



San Joaquin Geological Society

Date: Tuesday, November 8th, 2022

Time: 6:00 PM Social Hour
7:00 PM Dinner
8:00 PM Lecture

Place: American Legion Hall
2020 H Street, Bakersfield, CA 93302

PSAAPG Members
\$30 with reservation
\$35 without reservation

Non PSAAPG Members
\$35 with reservation

Full-time Students with ID
\$15

*** RSVP ***

**By: noon Monday,
November 7th, 2022**

Register online:
[http://www.SanJoaquinGeological
Society.org/](http://www.SanJoaquinGeologicalSociety.org/)

Pay online or at the door

2022 SJGS OFFICERS

PRESIDENT

Jennifer Prosser
EnviroTech Consultants, Inc.
jprosser@envirotechteam.com

VICE PRESIDENT

Tom Howard
PayZone Inc.
tomh@payzoneinc.com

SECRETARY

Kenton Crabtree
Berry Corporation
kjcrabbytree@gmail.com

TREASURER

Sara Maloney
Sentinel Peak Resources
smaloney@sentinelpeakresources.com

PRESIDENT-ELECT

Lisa Alpert
Aera Energy
laalpert@aeraenergy.com

PAST-PRESIDENT

Jeff Kimber
CalGEM
Jeff.kimber@conservation.ca.gov

Reinterpretation of the Depositional Environment and Structural Framework of McKittrick Oil Field, California

Presented by: Emily Fisher

Abstract: The McKittrick Oil Field is one of the oldest in California, originally developed from the natural seeps in the 1800's. Despite its long-lived history and prolific production, detailed sedimentary and structural descriptions are somewhat limited in the literature. In this integrated field study, a previously undeveloped lease is characterized as a prograding fluvial delta in the Etchegoin, Amnicola and Tulare formations. Structures include sealing faults and differential folding of sandy units accommodated by the deformation of clay interstitial units.

205' feet of conventional core was cut then described for sedimentary structures and ichnofacies along with ten image logs to characterize the depositional environments. Dipmeters, well logs, and atypical oil-water contacts helped characterize the folding and faulting critical to the development of the synclinal structure. Various special core analyses (Thin-sections, XRD, SEM, Capillary Pore Pressure, LPSA) and oil composition analyses (API/Viscosity, SARA, Pyrochromotography) were used to distinguish the superior reservoir quality and pinpoint the unique production challenges of very heavy oil. These observations were integrated into a 3D model for OOIP calculations differentiated by sub-unit and fault block. The insights from this analysis allowed for significant reserves adds as well as operational insights into flow connectivity and fault compartments observed in production. The detailed and integrated understanding of the structure, depositional environment, reservoir quality, and oil typing were pivotal to overcoming operational challenges associated with very heavy oil in a step-out development. A comprehensive understanding of all geological aspects is vital to the optimal development of heavy oil and serves as a great example of what can be accomplished with the application of geologic analysis.

Biography: Emily is a senior petroleum geologist at Aera Energy. Throughout their 14-year career, they've held positions doing surveillance and development in Midway-Sunset, Cymric, McKittrick, and Ventura oil fields, and exploration of the West San Joaquin Valley. They specialize in near-field step-outs and reinterpretation of mature fields to find new opportunities, most notably finding a dual provenance model for North Midway-Sunset Tulare. Emily has drilled and completed hundreds of heavy oil wells and identified millions in reserves. Emily holds a bachelor's in Geology & Environmental Science from Miami University of Ohio, a Master's in Geology from Fresno State, and is pursuing an MBA from California State University, Bakersfield. They've held many positions throughout AAPG, leading the build of the SJGS website, being part of many convention teams, and spearheading the liaison to student chapters position for the Pacific Section then implementing that model for over 300 chapters in the US.

November Sponsor:

PayZone Inc.

PAYZONE INC.

www.payzoneinc.com

Petrophysical, Geological, and Geophysical Consulting Services for the Petroleum Industry

Deborah M. Olson, President, Geologist-Petrophysicist
dmolson@payzoneinc.com 661-747-0375

Thomas M. Howard, Geologist/Image Log Expert
tomh@payzoneinc.com 832-407-2862