



# San Joaquin Geological Society

**Date:** Tuesday, January 14<sup>th</sup>, 2014

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

**Place:** American Legion  
2020 H St. Bakersfield, CA 93301

**PSAAPG Members & Mesozoics**  
\$25 w/ reservation  
\$30 without reservation

**Non PSAAPG Members**  
\$30 w/ reservation

**Full-time Students with ID:**  
Free, Courtesy of Chevron & Occidental

## **SJGS WEBSITE**

<http://www.SanJoaquinGeologicalSociety.org/>

## **SJGS OFFICERS**

### **PRESIDENT**

**Laura Bazeley**  
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### **PRESIDENT-ELECT**

**Anne Draucker**

### **PAST-PRESIDENT**

**Vaughn Thompson**

## **\* RSVP \***

By: Friday, Jan. 10<sup>th</sup>, 2014

By Replying to this email  
or by phone 412-5143

or PayPal on the Website:  
<http://www.SanJoaquinGeologicalSociety.org/>

## **Is a Little Diatomite Hiding your Oil? Core Descriptions, Facies Identification and Implications for Mixed Diatomite and Siliciclastic Provenance Alluvial Fan, Tulare Formation**

**Emily Fisher, Development Geologist**  
North Midway-Sunset Field - Aera Energy, LLC

The results of core description and lithofacies interpretation results of 200' of continuous conventional core, shows the sediments have a dual provenance, one being a muddy siliciclastic Temblor formation and the other being the Monterey Formation. The diatomaceous clasts create a log signature that masks the siliciclastic reservoir. California has many active oil fields where there may be siliciclastic reservoirs that cannot be seen with resistivity logging alone, due to the presence of a few diatomaceous clasts.

The Pleistocene Tulare Formation in the Midway Sunset Field (MWSS), San Joaquin Basin, records a unique and complex mixed facies of alluvial, braided fluvial and lacustrine environments. Due to continuous tectonic activity, changes in depositional environment can be rapid both laterally and temporally. This study describes a shallow, undocumented section of the Tulare Formation found in western MWSS called the Upper Tulare.

Core plugs were sampled every foot, while ultraviolet light photography were taken and the samples analyzed for porosity, permeability and saturation measurements. Two samples were identified for further analysis by thin-section petrography, Scanning Electron Microscopy (SEM), X-ray diffraction (XRD). Five samples were selected for viscosity, API gravity, Saturate-Aromatic-Resin-Asphaltene geochemical assessment and pyrochromotography.

The Upper Tulare is of an alluvial fan depositional environment which has clasts sourced from both Miocene diatomaceous Monterey and Miocene-Oligocene siliciclastic Temblor Formations. The Temblor Formation is a marine clastic reservoir composed of arkosic sandstone and micaceous claystone. The Monterey is composed of deep marine diatomite and siliceous shale. The two formations were synchronously uplifted and eroded due to transpression along the San Andreas Fault. Sediments were deposited north-eastward into the San Joaquin Valley basin.

### **Emily Fisher – Bio**

Emily Fisher received her undergraduate double majoring in Geology and Environmental Science from Miami University (Ohio) researching rotational faults on the Mendez Metamorphic Core Complex, Western Turkey. She then moved to California for the tectonics, pursuing her Masters in Geology from Fresno State on evolution of bends and step overs in the Eastern Californian Shear Zone. She has worked as a surveillance and development geologist in North Midway-Sunset Field for Aera Energy for the past 4 years, where she has developed the Tulare and Etchegoin formations. Emily enjoys AAPG society activism and has served several rolls as an AAPG officer.