

June 2016
 Newsletter



SINCE 1950

Four Corners
 Geological Society

San Juan Basin Fieldtrip Success!



Thirty two FCGS members participated in the San Juan Basin fieldtrip led by Dr. Lesli J. Wood of Colorado School of Mines on “The Tocito, El Vado and Gallup Sands of the San Juan Basin” over June 4-5th. Lesli was assisted by graduate student Alex Cheney and recent FLC graduate Matt Huels.

The trip started in the Hogback area near Shiprock, NM looking at the Tocito sandstone in the Chaco River wash. After lunch we drove northeast to El Vado Reservoir to look at the Cooper Arroyo Sandstone and the El Vado



John Youle looks at ichnofacies in the Tocito.

ADVERTISING RATES

Full Page (7.5x9.5)	\$100/mo, \$1000/yr
Half Page (7.5x4.5)	\$50/mo, \$500/yr
Quarter Page (3.5x4.5)	\$25/mo, \$250/yr
Custom size	\$3.50/column inch

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Jim Fassett and Tom Staatz look for the regional unconformity above the Gallup SS.



Sandstone in it's type locality. After an overnight stay in Cuba, NM, we spent Sunday looking at the Gallup, Tocito and El Vado to the south near Cabezon Peak.

Discussion centered on facies (tidal and wave-dominated), water depth, distance to shoreline, mapped sand distribution and sand transportation mechanisms.

Tom Ann Casey and Helen Mary Johnson look at hummocky cross-stratification.



The trip left more questions unanswered than resolved, which means we have a good reason to return to the field next summer!

Officer Elections

We are still looking for candidates to fill the offices of President-Elect (Program Chair) and Secretary, as well as someone to serve on the FCGS Foundation Board. Please contact John Youle (jyoule@rwpc.us) if you are interested. Once we compile the slate, ballots will be emailed to Society members.

Upcoming FCGS Events

Dinner Meetings: The FCGS suspends our monthly dinner meetings from May through August. Dinner meetings resume in September under the guidance of the new President-Elect.

Summer Picnic: The FCGS holds an annual picnic towards the end of the summer (coordinated by the President-Elect). Stay tuned for more information!

Did you loose your sunglasses at the June 3rd FCGS meeting in Farmington? I picked up a pair with tortoiseshell rims, oversized lenses and gold, lattice arms from the treasurer's table. Email Kim (kim@mydurango.net) to reclaim.

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EVENTS, MEETINGS & COURSES *(by date)*

METRO STATE FLORISSANT FOSSIL QUARRY FIELD TRIP: June 11th. Meet at the quarry at 10 am with a bag lunch. More information from the Metro State student coordinator, Ben Eppley, at eppley.ben@gmail.com.

MINING HISTORY ASSOCIATION 2016 ANNUAL CONFERENCE: June 9-12, 2016. Telluride, CO. Talks, exhibits, plus field trips. For more info, see the web site: www.mininghistoryassociation.org.

DENVER MINING CLUB: Summer luncheon meetings at Golden Corral Buffet & Grill 3677 South Santa Fe Drive, Sheridan, CO 80110. For more info www.denverminingclub.org.

June 13, John Googins, Applications Engineer, Aggregate & Mining Consultants, LLC. The Rise and Fall of the Nordberg Corporation

June 20, Ray Lundin, Gemologist. My Adventures in the Andamooka, Australia, Opal Mines

June 27, Neil Bergstrom, P.E., Wellbore Positioning Advisor, Colorado Geoscience, Inc. Directional Drilling and Wellbore Surveying

RMAG IHS TRAINING: Kingdom Exploring in the 3D workspace (VuPAK): June 16th, IHS (321 Inverness Drive South, Englewood, CO 80112). Register through RMAG at staff@rmag.org.

AAPG ANNUAL CONVENTION AND EXHIBITION: June 19-22, Calgary, Alberta Canada. Abstract submission closed. More information at: <http://www.aapg.org/>.

ROCKY MOUNTAIN COAL MINING INSTITUTE. 112TH RMCFI ANNUAL CONFERENCE. June 26-28, 2016. COAL: The Catalyst – Heat, Electricity, Life. Steamboat Sheraton Resort, Steamboat Springs, CO. Contact: www.rmcfi.org.

DENVER GOLD GROUP JUNE NETWORKING LUNCHEON: Monday, June 27, 2016, 11:30-1:00 Ritz-Carlton Denver, 1881 Curtis St., Denver, CO 80202. Presenter Mr. Tom Brady, Economist, Newmont Mining, "Gold and Key Market Update and Outlook for M&A Activity". Cost: \$45.00. Register at <http://www.denvergold.org/other-events/tom-brady-june-2016/>

ROCKY MT ASSOC. OF GEOLOGISTS JULY LUNCHEON: Denver CO, July 6th., Maggiano's Little Italy - 500 16th Street Mall #150, 11:30am. Speaker Dr. Harry Rowe, "Handheld XRF Applications to Mudrock Chemostratigraphy: Methods, Pitfalls, and Examples" To register go to: <https://rmag.memberclicks.net/upcoming-luncheons>.

2ND E. F. FOORD PEGMATITE SYMPOSIUM. Golden, CO, July 15-19, 2016. Lectures, field trips and reception. Sponsored by Colorado Chapter Friends of Mineralogy, Friends of the CSM Geology Museum, and Denver Region Exploration Geologists Society. For more information, see www.facebook.com/LikeCSMGeoMuseum/

WMMI GEM & MINERAL SHOW. Colorado Springs, CO, July 15-17, 2016. Plus gold panning, gem & mineral vendors, and operating stamp mill & other engines at the Western Museum of Mining & Industry, 225 North Gate Road,. See the web site for more info: www.wmmi.org/events.

PETROLEUM REFINING 101 SHORT COURSE: August 9-10, 2016. EUCI Offices, 4601 DTC Blvd, Suite 800, Denver, CO 80237. To get more info or to register, go to <http://www.euci.com/events/0816-refining-101/Register>

PETROLEUM ENGINEERING FOR NON-ENGINEERS: Denver, CO, August 30-Sept 1st. Instructor Mark Klins. Run by TU-CSE (University of Tulsa). For more information go to: <http://www.cese.utulsa.edu/programdetail.php?ID=127> . To register contact cese@utulsa.edu or 918-631-3088.

Recent FLC Geology Graduate Seeks Funding to Attend AAPG Convention, June 19-22nd in Calgary, Alberta, Canada

Matthew Huels, a 2016 graduate of the FLC Geoscience Department is looking for help in attending the AAPG annual convention in Alberta, Canada. His abstract has been accepted but he lacks travel funds. Mr. Huels worked as a student assistant on the recent San Juan Basin Fieldtrip which visited his senior thesis research area. He will be attending Colorado School of Mines in the fall.

Hello Members of the Four Corners Geological Society,

As you may already know, I have been given the opportunity to present my research at the American Association of Petroleum Geologists Annual Convention in Calgary Canada this summer. This is a great opportunity for me to meet industry professionals and get my name out there. Unfortunately this trip is very costly and school funding is next to none. Therefore I have created a fundraising page <https://www.gofundme.com/22je6znw> and would like to share it with you.

If you have a moment please check it out and spread the word. If you feel motivated to also contribute with a donation that will be very much appreciated. Whether or not you are able to contribute, I would like to thank you for reading my abstract. I would not be where I am today without the help and support of the Society over these past few years.

Sincerely,

Matt Huels

Nature of the Tocito Sands in the Southeastern Areas of the San Juan Basin,



ABSTRACT: The Tocito has been long proven to be a highly prolific reservoir system in the largest domestic onshore conventional gas basin in the U.S., the San Juan Basin (SJB). Similar shelf sand types associated with the pre-Tocito, the Gallup Sandstones, and the more transgressive post-Tocito, like the El Vado Sandstones have proven equally productive. Studies of these shelf sands from outcrops of the southeastern SJB reveal (1-2 meter) thick cycles of heterolithic wave-rippled, moderately bioturbated marine sands stacked in 8-12 meter thick shelf sequences that are spatially extensive throughout both the eastern and western SJB. The Tocito Sandstone in the northwestern SJB outcrops are much more proximal in deposition with both tidal channels and predominate bar facies associations. Tocito Sandstone outcrops in the southeastern SJB appear more marine in nature, composing six clastic parasequences. These parasequences are composed of 4 facies with thinly-laminated wave-rippled basal parasequence

sandstones (Facies 2) interbedded with marine shales (Facies 1) that progress upward to a moderately bioturbated sandstone (Facies 3). Shelf parasequences compensationally stack in the near paleo-shoreline regions around Cabazon Peak northward to subsurface localities at least 140 kilometers north of the paleo-shoreline. Eight kilometers northward of Cabazon Peak, near-shore parasequences transition to thinly bedded sands showing extensive mega-hummocks (Facies 4). Studies of the hummocks in the Tocito Sandstone by Arora (pers. Comm. 2015) suggest mega-swell waves up to 9 meters high may have impacted the paleo-shelf distribution sands widely across the region, and possibly contributed to the submarine erosion of up to over 100 meters of material from the paleo-shelf. This study of the Tocito Sandstone has helped to quantify the regional nature of sand distribution, extend consideration of super-greenhouse processes to potential shelfal submarine erosion and redistribution of sediments, and to examine

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RMS-AAPG and Pacific AAPG Sections Joint Meeting
DEADLINE EXTENDED FOR ABSTRACT
SUBMISSION TO JUNE 15th 2016

Meeting Themes:

- New Insights in Pacific Exploration
- Frontier Exploration in the Rockies
- Redevelopment of Old Fields:
Finding the Green in Brownfields
- Unconventionals: West of the
Mississippi River
- Sedimentology and Stratigraphy:
Lacustrine to Deepwater
Reservoirs
- Geophysics and Petrophysics:
From Basins to Pores
- Structure and Tectonics:
New Perspectives and Challenges
- Energy and the Environment:
Regulations and Water Issues
- Geothermal, Hydrothermal and
Uranium Resources

Jackpot Sessions:

- RMAG's Hot Plays of the Rockies
- Mountains to Abyss: California Borderland as Archive of Geologic Evolution
- Basin-and-Range Province: Strategies for Challenging Conditions
- Alaska: Developments in Exploration and Production
Source Rock Investigations

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**AAPG
PACIFIC + ROCKY MOUNTAIN SECTIONS
JOINT MEETING**

NEW ROCKS, NEW PLAYS, NEW DAYS

> SAVE THE DATE !
for the first ever joint meeting
of AAPG's Pacific + Rocky
Mountain Sections & take
advantage of many technical
& social opportunities in
America's favorite convention
city.

2-5 OCTOBER 2016
PARIS LAS VEGAS HOTEL

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information
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CALL FOR PAPERS

Oil and Gas Fields of the
Four Corners, Volume IV
1983 to 2017



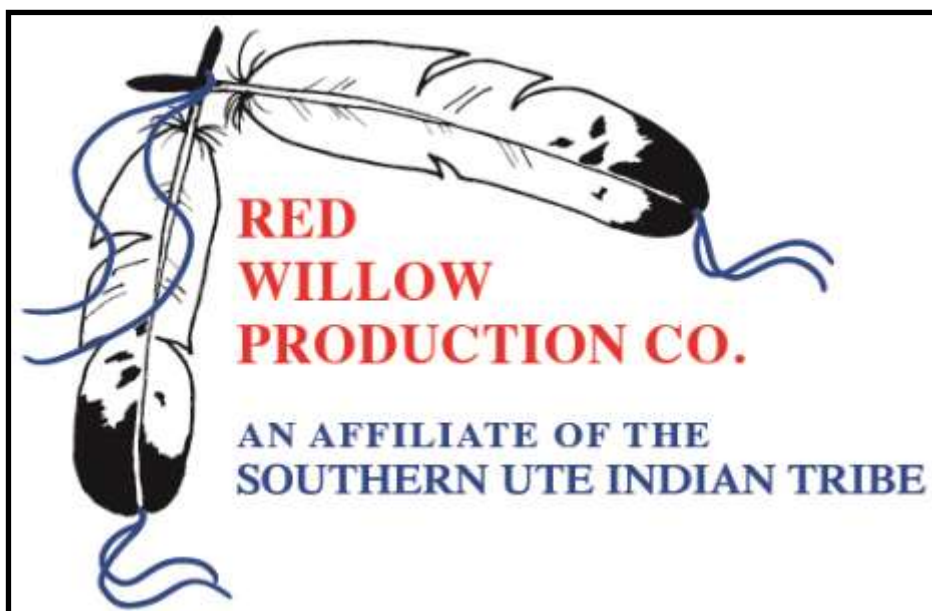
The publication will consist of two types of papers:

Field Studies. Short format field summaries similar to those in previous volumes, for fields discovered since 1983. Format to include: data table of field & reservoir attributes, brief descriptions of trap and discovery methods, type log, type cross section, key structure and isopach maps, and a field narrative. A template will be available to download from the FCGS website by April 15th.

Special Studies. Papers covering a wide range of topics describing innovations applicable to hydrocarbon production in the Four Corners area over the past 33 years (post Vol. III). Topics of interest may include: new coal facies models and technologies to develop CBM, 3D reservoir modeling and/or tertiary recovery methods, use of 3D seismic, new fields or discoveries, new sequence stratigraphic interpretations, horizontal drilling applications, new petrophysical methods and models for unconventional reservoirs, and new completion designs and methods.

Please contact Tom Ann Casey at tcasey@rwpc.us if you are interested in submitting a paper or have questions.

Abstract Deadline: September 15th, 2016



MISSING SOMEONE?

Help us find members we've lost touch with since our transfer into the digital age. Give us the names of people you haven't seen in a while and we'll try to find them.



LOST MEMBER CONTACT:
Tom Ann Casey
tcasey@rwpc.us

THANKS!



Mug o' Merit



Everything tastes better from the Mug o' Merit. Earn yours by sharing your knowledge with the membership.

Please contact Rebecca Helms rhelms@rwpc.us to set up your talk. OR heard a good talk lately? Speaker recommendations are also appreciated!