



AAPG

Energy Minerals Division

Unconventional and Alternate Energy Resources

Officers

President: Justin Birdwell

jbirdw1@gmail.com

Past President: Ursula Hammes

hammesu@gmail.com

President Elect: Mike Bingle-Davis

mikeb@kirkwoodcompanies.com

Vice President: David R. Blood

randy@drbgeological.com

Secretary: Claudia Jane Hackbarth

cjhackbarth@mac.com

Section Councilors

Africa Region: Biyai Garrick

Asia Pacific Region: Barry Goldstein

Canada Region: Jock McCracken

Eastern Section U.S.: Randy Blood

Europe Region: Kevin Taylor

Gulf Coast Section U.S.: Yingcai Zheng

Latin America/Caribbean Region: Miguel Nacho-Pacheco

MidCon Section U.S.: Andrew Govert

Middle East Region: VACANT

Pacific Section U.S.: VACANT

Rocky Mtn. Section U.S.: Marron Bingle-Davis

Southwest Section U.S.: Troy Tittlemier



Ward Charcoal Ovens State Park, Egan Mountain Range, Eastern Nevada. Used from 1876 to 1879 to process silver ore found in the surrounding mountains. Once mining ended, the ovens were used by travelers and as hideouts for stagecoach bandits. Photograph by Marron Bingle-Davis

From the President

Happy New Year EMD Members! I hope everyone had a great holiday season and that your 2022 outlook is good, or at least getting better. It's been a rough couple of years for many in the petroleum geology and energy geoscience fields. Between Covid-driven shifts in supply and demand rattling markets and the apparent acceleration of the energy transition, the landscape has been littered with uncertainty leading to tough times for many of our friends and colleagues. But prospects in geothermal, critical minerals, energy storage, and other emerging fields along with improving conditions in the oil patch

(fleeting though they may be?) will hopefully provide opportunities for the many geologists and geoscientists looking to start, continue or pivot their careers. Here at EMD, one of our goals is to provide Members with access to information and training materials to facilitate career development and continuation, so if you have ideas for things, we can do to achieve that goal, please reach out and let us know.

This is the first EMD Newsletter we've released since Past President Wayne Camp resurrected the newsletter January - June 2019. Prior to that, the last newsletter was distributed in 2010(!) The rapidly rising importance of EMD interests, we intend to send this plus another newsletter in Q2 2022. These will supplement [EMD's webpage](#) on the AAPG website, which unfortunately can't be updated timely. After the AAPG-SPE merger results are known, we'll move forward as most appropriate to serve all members whose technical/ professional interests fall into the EMD realm.

Recent Activities

EMD volunteers have continued to develop and present content on subjects relevant to the EMD mission and to serve the geoscience community. The "Freeware for Freelancers" initiative started under Past-President Ursula Hammes' watch continues to find new venues to showcase the wide array of free software. This hopefully helps geoscientists who've ventured into the consulting world and can't or don't want to pay for the more expensive packages (see our [YouTube channel](#) for recordings of past events). Back in August, several EMD Members and officers participated in a "Members in Transition" webinar to discuss their [article](#) featured in the July issue of RMAG's *The Outcrop* that provided information on several key freeware alternatives for things like data analysis, GIS, and a variety of other applications.

In September, EMD volunteers collaborated with Ken Wisian and the Texas Bureau of Economic Geology to put on the Geothermal 101 Workshop. A full-day of talks provided an introductory overview of the geology, engineering, policy, regulatory, and legal issues around geothermal resource development, along with case studies showing how previous efforts have fared. Based on the robust response we received, the workshop recording is being made available through the [AAPG Store](#) (coming soon) and a follow up workshop or webinar series is being considered.

2021 IMAGE Conference

At the 2021 IMAGE conference in September/October, our Theme 9 sessions covered a wide range of topics, including geothermal, gas hydrates, uranium, thorium, and helium. The hybrid in-person/virtual panel discussion on "What's new in Energy Minerals" included several EMD officers and committee chairs who provided updates on Division activities and developments around the commodities they cover. There was also a discussion of the opportunities and issues facing the energy industry as we transition to a broader geologic energy landscape. Many thanks to EMD Secretary and IMAGE committee chair (and candidate for **AAPG President-Elect**) Claudia Hackbarth for all her hard work helping to organize the EMD contribution to IMAGE.

Commodity Committee News

At the October EMD leadership meeting, we discussed a proposal to start a commodity committee to address geologic-sourced and hydrocarbon-derived Hydrogen resources. The proposal was submitted by my colleague Geoff Ellis who is currently leading a geologic hydrogen scoping project for the USGS Energy Resources Program. The "Hydrogen Resources and Storage Committee" was formed and formally introduced to EMD leadership at our December meeting, and as the name indicates will also cover hydrogen storage issues. Geoff is working to recruit committee members and contributors, and so far, the committee includes Alexei Milkov from the Colorado School of Mines, Barry Katz from

Chevron, and Peter Eichhubl from the Texas Bureau of Economic Geology. Be on the lookout for hydrogen-related EMD content in the coming year.

In other committee news, we have a few consolidations to announce. Due to limited activity the Bitumen & Heavy Oil committee is being rolled into the Tight Oil & Gas committee and the Coal committee will merge with the Coalbed Methane committee. These are still important commodities and even if interest in these resources among Members seems to be waning a bit and it's been difficult to recruit new committee members and contributors, EMD leadership isn't ready to give up on them just yet (please reach out if you want to get involved). We also welcomed aboard several new members to our commodity committees, including: Kellen Gunderson (Geothermal Resources); Abbas Seyedolali, Bryony Richards, and Sarah Clay (Critical Minerals); and Franek Hasiuk (Kansas Geological Survey) has agreed to chair the newly combined Coal & Coalbed Methane committee. Franek will also serve as co-chair of the EMD IMAGE 2022 committee and as a contributor to the Critical Minerals committee.

Though things have slowed down over the holidays, we do have a few other Q2 activities to report. November was particularly busy for the Critical Minerals committee, with chair Ashley Douds and Past-President Ursula Hammes participating in and presenting at the [Critical Minerals Workshop of the Southern Midcontinent](#) held by the Oklahoma Geological Survey. Ashley, President-Elect Mike Bingle-Davis, and co-chair of the Helium Subcommittee Jeff Aldrich were also featured in an [article](#) in The Explorer on how battery and renewable energy needs are driving demand for critical minerals. As a follow up to the article, Ashley and I participated in [Episode 2](#) of the new "Explorer Live in Five" series to discuss issues around the future of Critical Minerals in the energy sector. Ashley and Mike also contributed to the Latin America and Caribbean Region's 2021 Energy Opportunities Conference (<https://energyopportunities.info/2021/>). In their last outreach activity of 2021, Critical Minerals committee helped coordinate the [RMAG December virtual luncheon talk](#) by Ali Jaffri titled "Beyond Red Beds: What Makes Sandstone-Hosted Copper Work?". Most recently, on January 21st Ashley Douds and Ali Jaffri contributed to the From Fossil Fuels to Critical Minerals: Bridging the Geology of the Energy Transition short course organized by the AAPG University of Utah Student Chapter and Utah Geological Survey.

NewOrg Uncertainty

AAPG is on the precipice of major changes that will certainly impact EMD, though how we will be impacted is not yet clear. Based on statements from AAPG elected officers and our Executive Director David Curtiss, regardless of the outcome of the upcoming merger vote, AAPG will be changing. This might mean integration with our SPE (and eventually SEG?) colleagues or continuing alone with substantial changes to the Association and how it operates. Currently it is unclear just what an independent AAPG might look like in the near term, but it's very clear that there would have to be reductions in services provided to Members and the energy geoscience community overall. Before you vote, I strongly encourage all EMD members to consider what kind of future the Association will have if our trajectory of declining membership and reduced industry support continues. I believe that joining with other professional organization(s) gives us our best chance to sustain the energy geoscience community that AAPG Members have helped create. But however you choose to vote, do vote!

What's to Come in 2022?

As I mentioned in my [November column](#) for The Explorer, EMD has a number of open spots on our administrative committees and Regions/Sections councilor positions, so we will be working hard to fill those over the next few months. It is my hope that as we fill these vacancies, we'll be able to recruit some new faces to the EMD leadership team, like Francisco Barrios Arismendi representing the Latin America and Caribbean Region. If you're interested in getting involved, please reach out on LinkedIn or [email me](#) or any member of [leadership](#) directly.

EMD President-Elect Mike Bingle-Davis is working to develop an EMD podcast that will provide information on activities within commodity committees and other EMD activities. If you have an idea for a podcast episode, please reach out to Mike via LinkedIn.

New webinar ideas are being developed to provide information on opportunities in non-petroleum resources (Hydrogen, Critical Minerals, etc.). Some of these will likely be short, one-hour or less virtual presentations, but if there's sufficient interest we may also develop longer form workshops similar to the Geothermal 101 event from September 2021. Lindsay Ross has suggested we develop a webinar focused on "Crossover technologies from oil and gas to other industries" to show petroleum geologists and geoscientists how they can apply the skills they've developed to explore for, develop, and extract other geologic resources. Lindsay has also been part of discussions with David Beckett and Susan Nash to develop a series of "New Energy Economy" webinars that could include continuing education credits. We hope to make real progress on that effort this year.

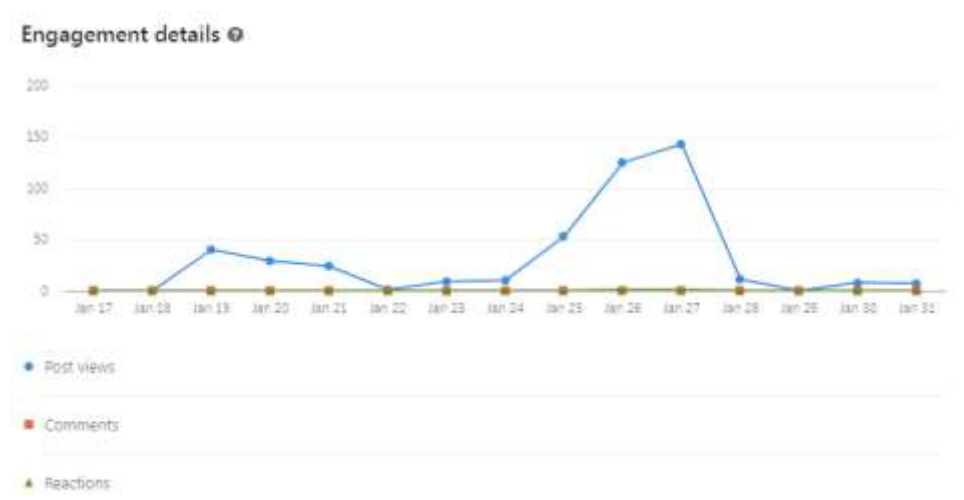
Jeremy Platt and Dieter Beike are developing a field trip and workshop to be held during IMAGE 2022 on "The New World of Energy in Texas". The plan is to visit the Mt. Belvieu Natural Gas Liquids storage hub where participants will discuss various aspects of the changing Texas and U.S. energy scene.

If anyone has suggestions for other EMD activities or initiatives, please let us know and if you have suggestions for officer candidates, reach out to Past-President Ursula Hammes. This year we need to recruit for President-Elect, Vice-President, and Secretary.

Online

WebFlux and Social Media Constructs – Contribution by Mike Bingle-Davis

Our LinkedIn and You Tube Pages are probably the best way to stay current on Energy Mineral Topics and News.

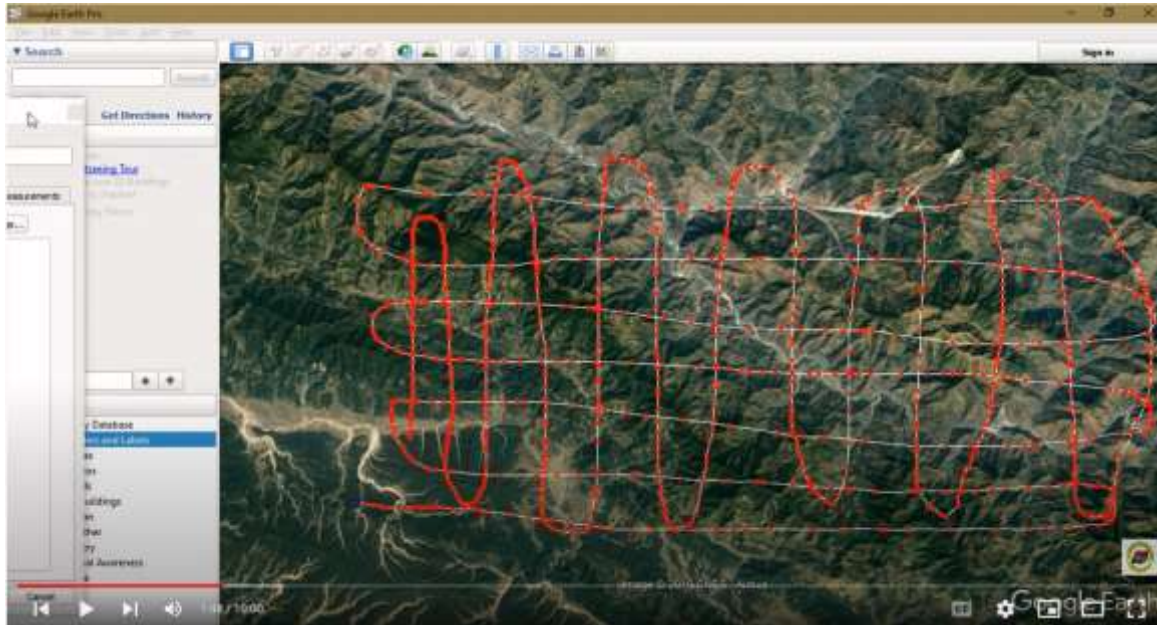


At the time of writing this newsletter we have a total of 104 followers on LinkedIn – we are aware of the cap restrictions at 20,000 and are closely watching. To check out the page, keep up on pertinent news and topics click here or search for EMD, <https://www.linkedin.com/groups/3712153/>

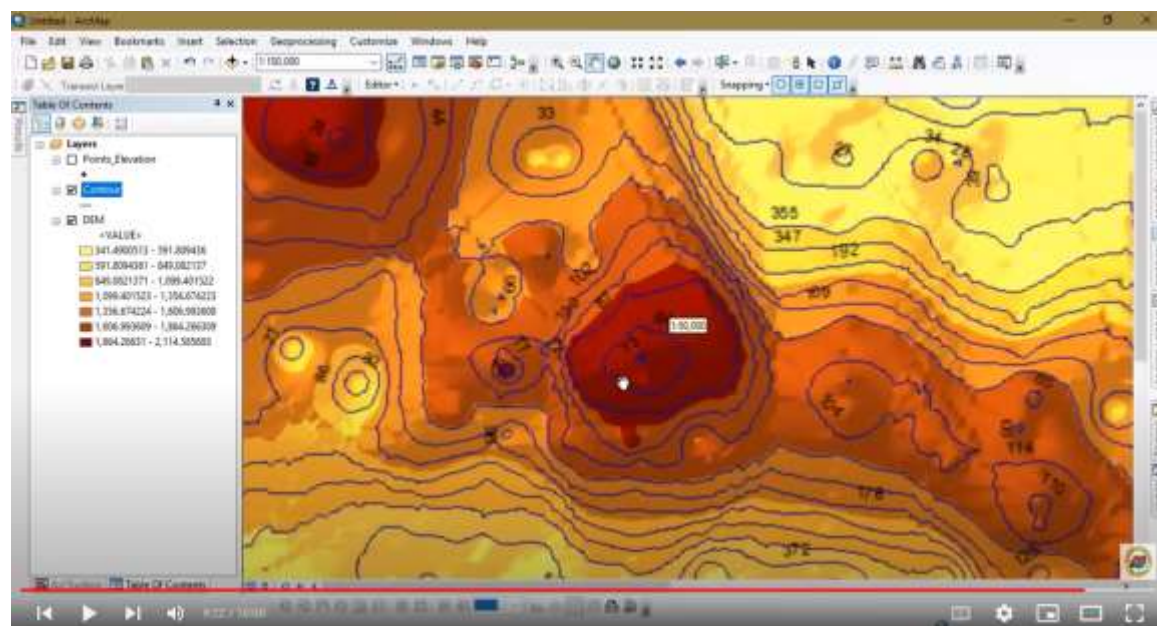
The YouTube page at <https://www.youtube.com/channel/UCBvZ93WBpvVy8gfuHNDIU7Q/playlists> has 20 subscribers as of the publication date. When you navigate to the page it is advised that you click on playlists – where the videos are sorted according to EMD Committees. Make sure to take a closer look at the Freeware, Online Services list.

Video Spotlight: How to Generate DEM and Contours Using Google Earth

Digital Elevation Models (DEMs) are invaluable when conducting spatial analytics, including but not limited to geomorphology, mass movement, hydrology, line of sight analysis (viewshed), and many other applications. Digital Elevation Models are readily available online and at different resolutions.



1 Data from Google Earth



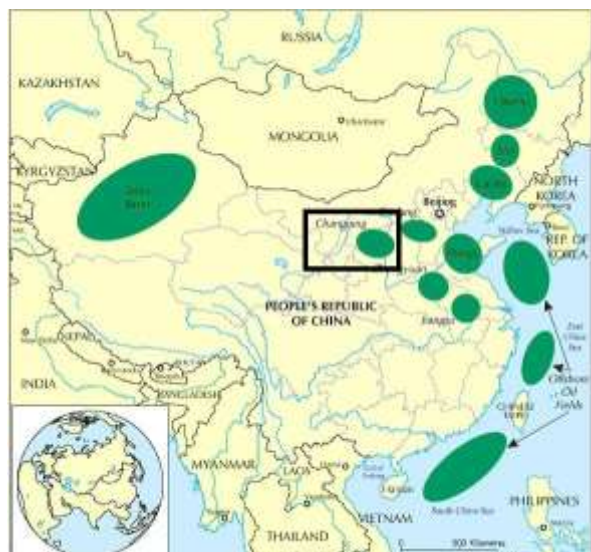
2 Post Processing of Data

This quick ten-minute exercise allows a user to combine freeware versions of Google Earth and (with a little searching) QGIS to create DEMs and contour maps very quickly and for very specific areas of focus.

EMD Committee Updates

Tight Oil and Gas – Contribution by Lucy Ko, Fnu Suriamin, Allison Gibbs

The Brent crude oil price has increased to average more than \$90 per barrel in January 28th 2022, having hit its highest level since October 2014 as global demand for petroleum products increased faster than production and ongoing political turmoil fanned concerns over tight supply. On the drilling and productivity side, report released by the U.S. Energy Information Administration (EIA) shows that the tight oil and gas production has increases in most large fields including the Anadarko, Appalachia, Bakken, Eagle Ford, Haynesville, Niobrara, and Permian Basins. The rig counts have shown a steady increase since mid-2020 in these all basins except for the Niobrara. Among all, the Permian Basin shows the most significant increase in oil production followed by the Eagle Ford and the Bakken. For the gas production, the Haynesville Region has the highest increase followed by the Permian and Appalachia Basins.



3 Chinese Fields (Energy-pedia)

Globally, China National Petroleum Corporation (CNPC) announced that CNPC's Changqing Oilfield Co. discovered China's largest shale oil field in the Ordos Basin with 1 billion tons of reserve in June 2021. Last year, PetroChina also announced that they have a breakthrough discovery in Gulong shale oil prospect, Songliao Basin, NE China with an estimated in-place shale oil resources of 1.268 billion tons. Despite the perception that the lacustrine shales are difficult to frack and the level of commercial recovery is highly uncertain, the state-run oil and gas producers in China are still actively testing and developing new tight oil and gas fields to meet the future energy demand.

In South America, according to a press release by Rystad Energy on Sept. 29th 2021, the Argentina's Vaca Muerta was named the world's quickest growing shale play. There were 73 oil and gas wells completed and put on production in the Vaca Muerta. Oil production rises beyond 160,000 barrels per day (bpd) and is projected to another 25% increases to 200,000 bpd by December 2021.

The AAPG EMD Tight Oil and Gas (TOG) committee strives to provide technical challenges, updates, and breakthroughs in the development and production of the domestic and global tight oil and gas basins. We continue to follow global activities in tight oil and gas development and strategy and is committed to share the update with all AAPG members in the EMD newsletter.



Drilling at 4857 meters. Photo by Juan Bontana

Meetings

2022 AAPG CCUS Houston, Texas



Plan now to attend AAPG's Carbon, Capture, Utilization, and Storage (CCUS) Conference 29–31 March 2022, in Houston Texas. Themed "An Emerging Field for Energy Professionals," the in-person conference will highlight current CCUS work and address related challenges, including subsurface geologic storage, CO₂ enhanced hydrocarbon recovery, reservoir monitoring and risk assessment, case studies, industry applications, economics, incentives, and policy, infrastructure, non-technical considerations. <https://ccus.aapg.org/2022>

2022 ICE Cartagena, Columbia



The American Association of Petroleum Geologists (AAPG), in conjunction with the Colombian Association of Petroleum Geologists and Geophysicists (ACGGP), is proud to host the 2022 International Conference and Exhibition (ICE) in Cartagena, Colombia on 19–22 April 2022. <https://cartagena2022.iceevent.org/>

2022 URTeC Houston, Texas



The Unconventional Resources Technology Conference (URTeC) continues to be the best opportunity you'll have to exchange information, formulate strategic ideas and solve problems to manage and optimize your unconventional resource plays. Leveraging from all technical backgrounds and disciplines, URTeC is critical to you and your business by delivering the science, technology, and commercial opportunities on what's working with our current business environment. Plan now to attend URTeC 2022, 20–22 June at the George R. Brown Convention Center in Houston, Texas. <https://urtec.org/2022/>

Rocky Mountain Section Meeting

Rocky Mountain Section Annual Meeting

RMS - AAPG



July 24-27, 2022 **Denver, CO**

Registration and call for papers forthcoming

'Celebrating 100 Years of Rockies Exploration & Looking to the Future'

For more information contact:
Larry Rasmussen, General Chair
Phone: (303) 572 9000
Email: larry_rasmussen@eogresources.com

Thomas Hearon, General Chair
Phone: (303) 572 9000
Email: thomas_hearon@eogresources.com

About EMD

The Energy Minerals Division (EMD) was founded in 1977 and is the largest Division of AAPG with over 3400 members worldwide.

<https://www.aapg.org/divisions/emd>.

EMD is dedicated to:

- addressing the special concerns of geologists working with unconventional and alternate energy resources
- providing access to technical information on the latest developments in these resources
- assisting AAPG in providing training opportunities in local, regional, national, and international meetings, seminars, short courses, and conferences, and
- providing the general public and non-members of AAPG with information regarding unconventional and alternate energy resources and their exploration and development

Membership is available to all AAPG members at no additional cost.

Join today:

<https://www.aapg.org/divisions/emd/join>



Make sure to check out the Energy Minerals Division LinkedIn page:

<https://www.linkedin.com/groups/3712153/>



Also, the Energy Minerals Division YouTube page:

<https://www.youtube.com/channel/UCBvZ93WBpvVy8gfuHNDIU7Q/playlists>

*This link takes you to PLAYLISTS – which has the videos arranged according to topic

ON BEHALF OF ALL THE ENERGY MINERALS COMMITTEES, MEMBERS, EXECUTIVE STAFF WE WOULD LIKE TO SAY **THANK YOU** AND THE DIVISION WOULD BE NOTHING WITHOUT THE HARD AND SOMETIMES THANKLESS WORK PUT FORTH BY ALL OF YOU.

WE ASK THAT YOU LOOK AT THIS ISSUE OF THE ENERGY MINERALS DIVISION AS A WORK IN PROGRESS AND PLEASE CONTRIBUTE INTO MAKING IT THE BEST IT CAN BE.

IF YOU HAVE ANY IDEAS, THOUGHTS, SUGGESTIONS, PLEASE DO NOT HESITATE TO CONTACT MEMBERS OF THE EXECUTIVE COMMITTEE –

Newsletter – Ursula Hammes, hammesu@gmail.com, Marron Bingle-Davis, marron@sunshinevalleypetroleum.com, Mike Bingle-Davis, mikeb@kirkwoodcompanies.com