SDAG JULY 2023

PRESIDENT'S CORNER

Hello SDAG Members!

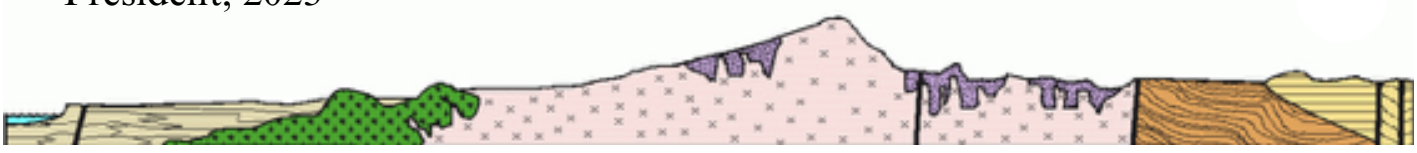
I hope you are all happy and healthy!
This month is usually one of the most fun for me, because we get to welcome our scholarship winners to the SDAG stage!

Jasmine Peach is a graduate student at SDSU under Dr. Dave Kimbrough and Dr. Rafael Almeida. Her thesis is titled: “Structural, petrological, and geochronological characterization of the Mesozoic high-grade metamorphic rocks of the Cordillera Real in the Pimampiro-Monte Olivo- Sigsipamba Area of northern Ecuador.”

Adan Silva is an undergraduate student at SDSU under Dr. Rafael Almeida and his thesis is titled: “Analysis of the depositional stratal geometry of the Fish Creek-Vallecito Basin in the Anza-Borrego desert, southern California”.

Please come join us and welcome these new geologists to the community! Please fill out and send in your membership forms if you haven’t already (and sponsorship forms, too).

Cheers,
Luke Weidman
President, 2023



SDAG

JULY 2023

MEETING ANNOUNCEMENT

Our July Meeting is THIS WEEK! We are excited to welcome our student scholarship winners as this meetings guest speakers!

Please find the details below:

DATE: Wednesday July 19th 2023

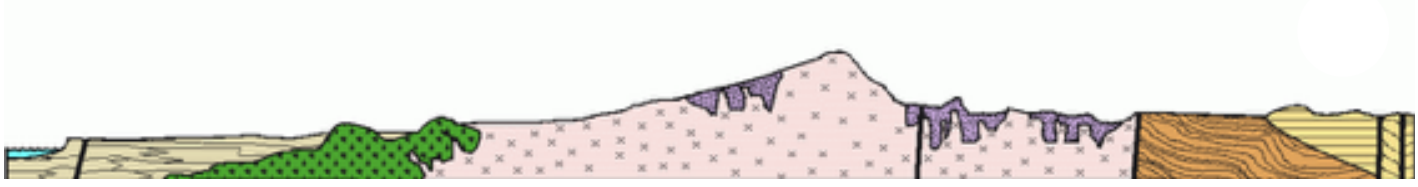
PLACE: Georgia's Greek Cuisine
3550 Rosecrans St. San Diego, CA 92110
This location has a 40 person capacity limit

TIME:

6:00 PM - HAPPY HOUR
6:45 PM - DINNER
7:45 PM - ANNOUNCEMENTS
8:00 PM - MEETING BEGINS

MEMBERS: $40.00 **NON-MEMBERS:** $45.00 **STUDENTS:** $25.00

REGISTER NOW ›



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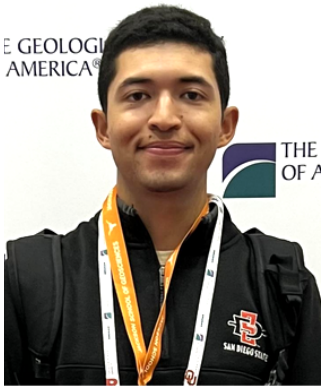
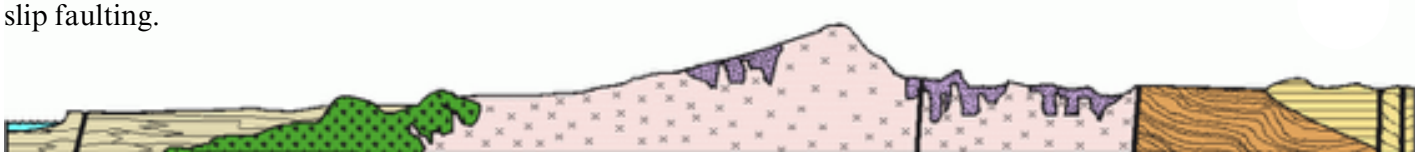


ADAN SILVA
SDSU Student
Dr. Rafael Almeida
SDSU Undergraduate Thesis Advisor

BIO: Adan was born in San Diego and grew up playing baseball in Tijuana. He is a big fan of sports (Go Padres) and he likes trying new foods.

TITLE:
"**Analysis of the depositional stratal geometry of the Fish Creek-Vallecito Basin in the Anza-Borrego desert, Southern California."**

ABSTRACT: The Fish Creek-Vallecito Basin (FC-VB) represents an uplifted and folded 5.5-km-thick sedimentary section located in the northwest Salton Trough (Dorsey et al., 2011). Deposited and filled on the hanging wall of the Miocene-age West Salton detachment fault, the Fish Creek-Vallecito Basin is characterized by marine and non-marine sedimentary units that range from late Miocene to early Pleistocene. After deposition, the Fish Creek-Vallecito Basin was folded by 1.2 Ma NW-trending right-lateral strike-slip faults caused by the tectonic reorganization of the San Andreas fault zone (Dorsey et al., 2012), and broken up by cross-cutting NE-trending strike-slip, or transverse faults (Dibble, 1996). Published reconstructions of the basin propose that the strata within the Fish Creek-Vallecito Basin remained horizontal throughout the entire life of the West Salton detachment fault. However, in extensional regimes, strata deposited on the hanging wall of normal faults generally have fanning dips that are formed as the older strata are tilted by continued slip on the basin-bounding normal fault, in this case, the West Salton detachment fault. For this thesis, a study of the stratal geometries of the Fish Creek-Vallecito Basin is performed in order to tease out the pre-deformation stratal geometries of the FC-VB and attempt to gain a greater understanding of the deformational styles, either normal-faulting or strike-slip faulting. To do this, existing structural measurements in the basin to characterize its fold geometry were compiled and existing geologic maps (Dibblee, 1996) of the FC-VB were digitized and updated according to satellite imagery. To better understand the units used in these maps, 1488 m of stratigraphic A along Sin Nombre Canyon in the Coyote Mountains were measured. Lastly, a geologic cross-section was constructed across the basin but was unable to constrain the depositional geometries since we were unable to determine the base of the Palm Springs Group along the Sin Nombre Canyon. However, the geometry of the FC-VB and its subsequent deformation is consistent with strike-slip faulting.



SDAG JULY 2023

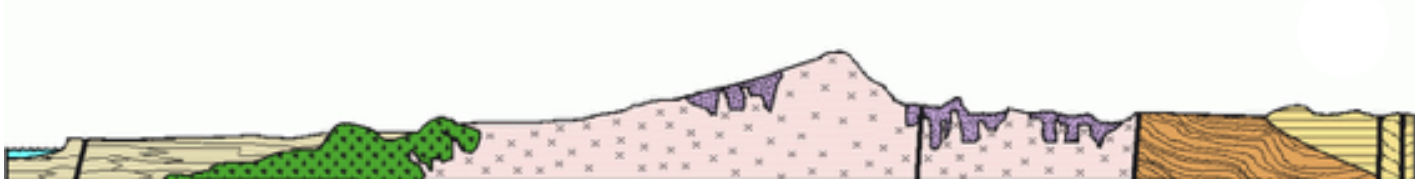
WALAWENDER SCHOLARSHIP FUND

SDAG/SDGS established this fund after Dr. Michael J. Walawender passed away in 2011. Scholarships are provided as monies allow. Mike was a professor of Geological Sciences at SDSU for 32 years prior to his retirement. He was head of the Department of Geological Sciences from 1989-1995. Mike supervised nearly 100 Masters and Bachelors theses on a wide variety of topics generally centered on the nature and origin of the Peninsular Ranges Batholith.

He is author of the book "The Peninsular Ranges: A Geological Guide to San Diego's Back Country" which was first published by Kendal Hunt in 2000, then updated and published by SDAG/SDGS in 2022. Mike is known for his talk titled Mud to Magma, the evolution of gem pegmatites in Southern California.

JASMINE PEACH
SDSU Masters Student
5th awardee of the Walawender Scholarship Fund
Dr. Rafael Almeida and Dr. David Kimbrough
SDSU Faculty Advisors.

BIO: Jasmine is a 2nd year Geoscience master's student at San Diego State University, where she also received her bachelor's degree. Her favorite areas of study are tectonics and field geology and sharing those passions with students as a teaching assistant and mentor. She has participated in international studies and research in the countries of Argentina, Ecuador, and Turkey.
Her hope for the future is to work as a field geologist in remote, unique places around the world.
In her spare time, she enjoys hiking, snowboarding, painting, and binge-watching Netflix with her husband.



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TITLE:

"Structural, petrological, and geochronological characterization of the Mesozoic high-grade metamorphic rocks of the Cordillera Real in the Pimampiro-Monte Olivo-Sigsipamba Area of northern Ecuador."

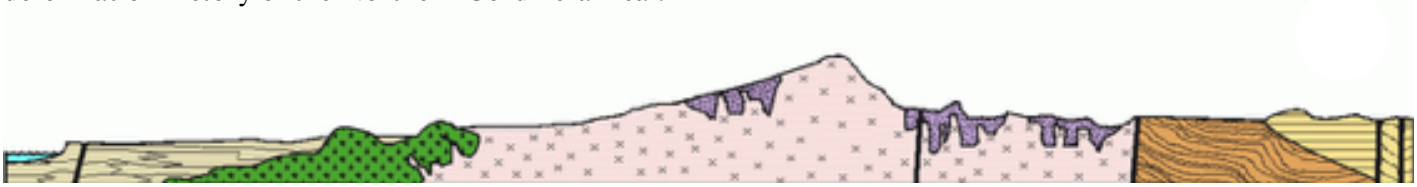
ABSTRACT:

A 6-week field season (June-August 2022) was conducted in the highly deformed Mesozoic metamorphic rocks of the Cordillera Real of northern Ecuador with the goal of mapping lithologic units, characterizing structures, metamorphic assemblages, and sampling for metamorphic and igneous ages. These rocks are thought to record evidence of high-grade eclogite facies metamorphism (Flores et al., 2019).

Thermobarometry analyses yield peak pressures up to 17 kbar (~50 km depth) implying that these rocks may be part of the Mesozoic subduction complex, and an unusually deep crustal exposure in the Cordilleran Andes. Field work was concentrated in a ~15 kkmm2 field area is located east of Pimampiro, in the Imbabura Province of Ecuador and was first mapped at a reconnaissance scale by the British Geological Survey in the 1980s (Aspden and Litherland, 1992). Field investigation focused on the Pimampiro granodiorite (K-Ar 81.9+/-3.6Ma; Litherland et al., 1994), Monte Olivo meta-psammites and schist, Agoyan paragneisses and shists, the Tres Lagunas orthogneiss (U-Pb 227.3 ± 2Ma; Litherland et al., 1994) and the Condue Granite (proposed Cretaceous; Litherland et al., 1994). First order, qualitative results from field investigation resulted in an updated geologic map that shows more accurate unit contacts as well as the location of garnet bearing facies in the Agoyan Unit that may indicate high-grade eclogite facies metamorphism. Structural data measured in the field corresponds to attitudes of features such as foliations and lineations, transposed dikes, small-scale folded intrafolial rootless quartz veins, mylonites, and porphryoclasts, all of which suggest sub-vertical tight isoclinal folding, formed by both pure and simple shear, which strikes NE-SW, sub-parallel to the Northern Cordillera Mountain belt.

Cross cutting and folded dikes in the Agoyan and Monte Olivo have been described and sampled for petrological analysis and zircon U-Pb dating to time constrain the deformation ages. Structural analysis of the field data using stereonets is currently being carried out to identify trends in foliation, lineations, folding and directions of shear and a detailed-composite map and cross section will be created.

Additional petrological and geochronological work on ninety-two samples collected in the field is in progress to determine whole rock chemistry via X-ray fluorescence spectrometry, metamorphic temperatures and pressures via electron probe analysis of garnet bearing samples, metamorphic ages via monazite U-Th-Pb age dating and zircon U-Pb detrital ages of the Monte Olivo, Tres Lagunas, and Agoyan. Igneous ages of the Pimampiro Pluton, the Condue Granite and cross cutting dikes with be analyzed by zircon U-Pb dating to compare to reported K-Ar and U-Pb ages. Oriented thin sections of the Monte Olivo, the Agoyan, and the Tres Lagunas will be analyzed for microscopic petrological structures and deformation that may further enhance the understanding of the deformation history of the Northern Cordillera Real.



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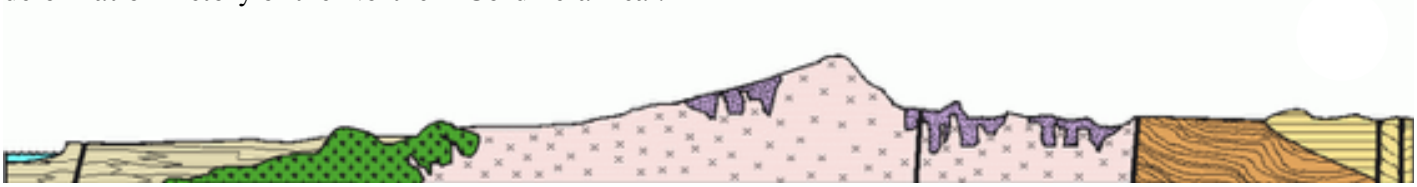

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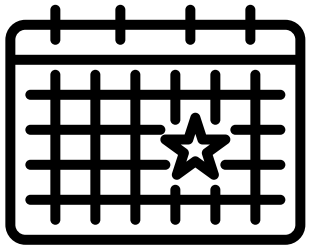
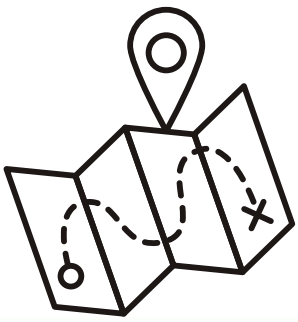
MARK YOUR CALENDAR

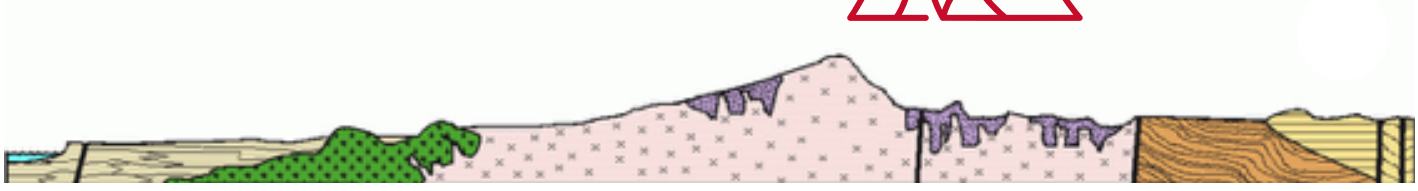


Our **NEXT MEETING** will be **AUGUST 23rd.**
On this meeting, our guest will be **DAVE KIMBROUGH**

SDAG 2023 FIELDTRIP!

OCTOBER 6th - OCTOBER 8th
Details to follow soon!





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VICE-PRESIDENT: John Teasley jtea@cox.net
SECRETARY: Mariana Aguilar petishu@gmail.com
TREASURER: Neil Seitz neilseitz@hotmail.com

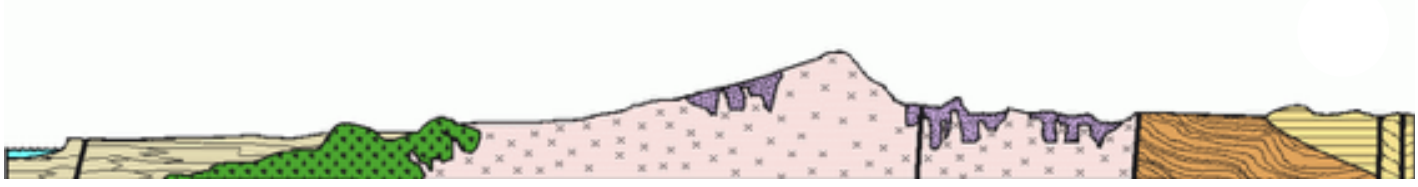
Call for Photos

Any recent field tips or exciting outings?
SHOW OFF YOUR PICTURES!
Please Submit to: petishu@gmail.com

PLEASE SEND YOUR PHOTOS & SHARE YOUR ADVENTURES!

THROW BACK
to the SDAG
Sunrise Highway Cleanup
April 2023

John Teasly



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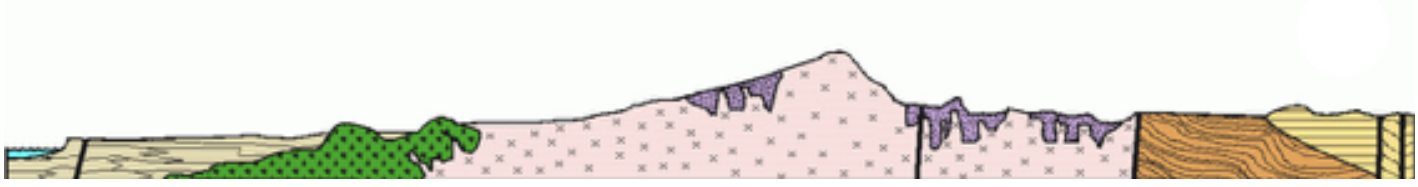
Milky Way and
Old Overland
Stage Trail
Anza Borrego

Photo by
Howard Betts

Submitted by
Greg Cranham

Rolling Hills
Estates
Landslide view
from across Agua
Amarga Canyon

Photo by
Greg Cranham



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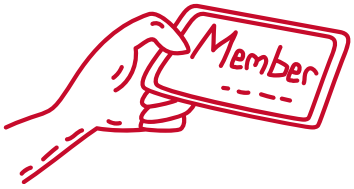
2023 MEMBERSHIPS



PLEASE RENEW YOUR MEMBERSHIPS!

We ask that you take the time to renew your membership for 2023 and if you have not renewed it in a while, this is a great time to resume!

We have made it even easier for you to renew! - now you can fill the form on our website and submit payment electronically! So, if you are anything like me (hardly ever make it to the mailbox) this just makes it so convenient!

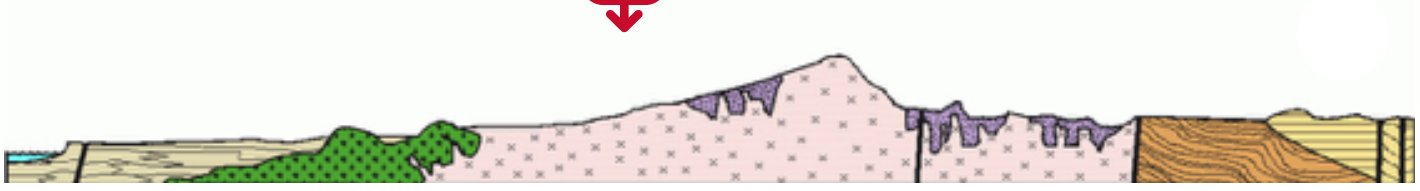
If you prefer to to renew with a check, there are 2 ways:

1. We will have forms at the check in table at our next meeting.
2. You can download the form using the link below and mail it or bring it to the meeting.

Your membership dues help fund scholarships, publications and, on occasion, cover some of the cost of the meetings. Your contributions are so important to us !
PLEASE RENEW.

ELECTRONIC MEMBERSHIP RENEWAL 

DOWNLOAD PDF FORM



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RESEARCH TOOL

A comprehensive listing of all papers published by SDAG, whether as annual field trip guidebooks or special publications, is available on our website.
Entries are sorted by primary author, or chronologically by date of publication, starting with our first guidebook in 1972 to Southeast San Diego, as far out as Calico and the Mojave Desert in 2018, and finally up to San Diego's Back Country in 2022-23.

The papers can be accessed or downloaded as .pdf files. They are fully searchable in Adobe Reader or Acrobat, so if you are researching a topic, "oikocryst" for example, you can search for that keyword. This listing will be updated as new books are published. Thanks to Greg Cranham and Hargis + Associates, Inc., for making this possible. See the links below:

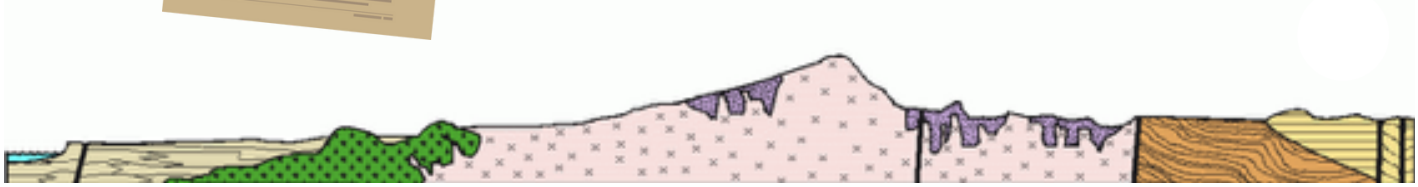
SEARCH BY AUTHOR

SEARCH CHRONOLOGICALLY

CALL FOR ARTICLES

SDAG invites members to submit articles on their current research or an interesting project they are working on for publication in the monthly newsletter.

The article should be no more than 1 page in length. Photos are welcomed; too. Please submit articles to the SDAG secretary via email.



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We many wonderful publications available for sale!
Please visit the **SDAG WEBSITE** for more details.

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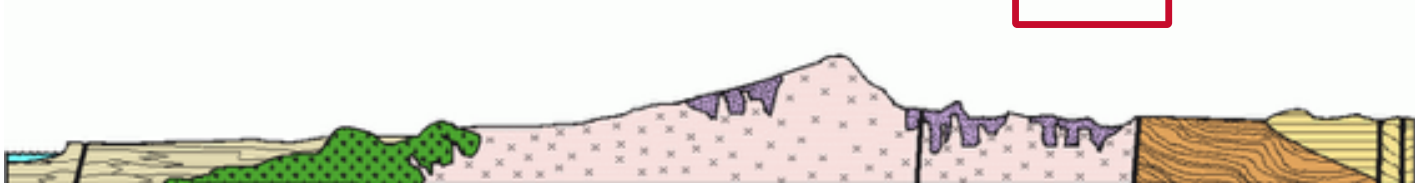
San Diego Geological Society, Inc. (SDGS), is a public benefit 501(c)3 nonprofit educational corporation. You donations are tax deductible.

Your Sponsorship will include a complimentary SDAG membership, and delivery of the monthly SDAG newsletter and announcements to the email address given.

Your donation will further the SDGS mission to promote geology and related fields in the greater San Diego region, operating through the San Diego Association of Geologists (SDAG), a committee of SDGS. To achieve our primary educational objective, we organize frequent field trips and maintain a program of monthly meetings featuring speakers on current geological topics. We also publish field trip guidebooks and other publications related to geology and natural history. We encourage scholarship and research by awarding scholarships from the elementary through graduate levels.



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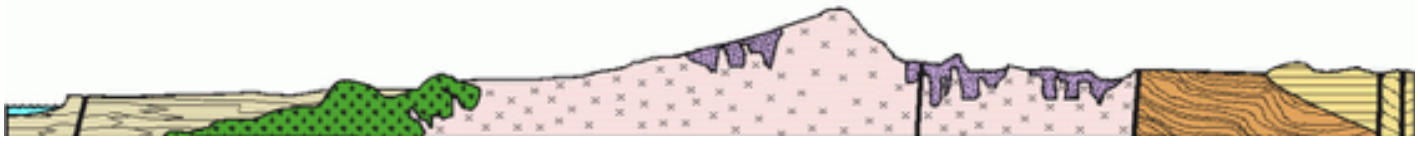

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HKM Employment Attorneys
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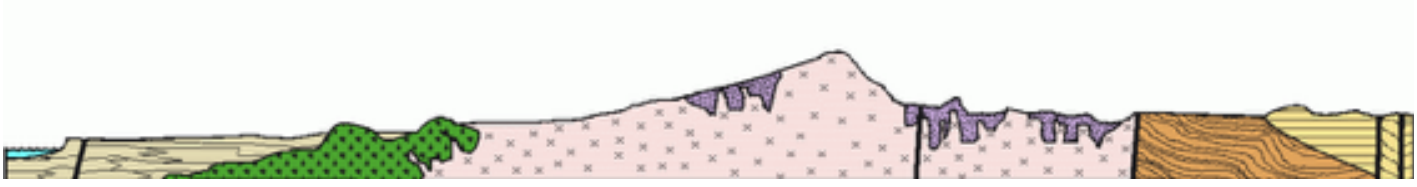

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