



**SEG
2018**

Metals, Minerals, and Society

Keystone, Colorado, USA
September 22-25, 2018



SEG 2018 Field Trip Itinerary (Preliminary)

FT02 - Rare Earth and Precious Metal Systems of the Mojave Desert Region

www.seg2018.org/field-trips.html#2

Date: September 17-22, 2018

Location: Departing from and returning to
Las Vegas, NV, USA

Leaders: William X. Chávez, Jr. and Erich U. Petersen

Included: Five nights (September 17-21) lodging (double occupancy); bus transportation from and back to the McCarran Car Rental Center, Las Vegas; some breakfasts, in-the-field lunches, and Certificate of Completion.

Not Included: Airline flights to and from Las Vegas; some breakfasts, all dinners, and incidental expenses.



Depart from and return to Las Vegas, Nevada. Participants should be at the Las Vegas McCarran Car Rental Center no later than 1:00pm on Monday, September 17, 2018, for field trip start-up. Participants may plan on departing LAS airport no earlier than 10:00am on Saturday, September 22, 2018.

This field trip emphasizes the exploration geology and geochemistry of Au-Ag epithermal systems of the western Basin-and-Range Province and adjacent Mojave Block; we will also discuss and have a planned visit to the Mesoproterozoic-age (1.38Ga) Mountain Pass Carbonatite complex. In-the-field observations and discussions of the geochemistry of epithermal systems, complemented by the use of activity diagrams to explain alteration-mineralization assemblages, form the basis for this practical trip. Visits to operating mines and prospects will give participants the opportunity to see hydrothermal systems from various exposure levels. Evening "take-away" sessions allow participants to discuss their observations in a collective forum, adding to the overall learning experience.

Itinerary

Day 1 - Monday, September 17, 2018

- 2:00pm: Assemble at McCarran Airport Car Rental Center; All participants board SEG bus for Beatty, Nevada at 2:00pm; driving distance: 121 miles.
- 6:00pm: Evening meeting Safety and logistics, field trip expectations.

Car Rental Center, 7135 Gilespe Street, Las Vegas, NV

Take free shuttle from Baggage Claim area outside of Door 11 on first island (there are people to direct one to the shuttle buses) to the Car Rental Center. Please wait at the Car Rental Center - there are bathrooms inside, and snack kiosks. Pick-up will be at the small parking area on the island outside the shuttle bus arrival curb.

Accommodation

Death Valley Inn, 651 US-95, Beatty, NV 89003

(continued on next page)

Itinerary *(cont.)*

Day 2 - Tuesday, September 18, 2018

- 6:00am: Breakfast; depart for North Bullfrog Au-(Ag) Prospect (Corvus Gold); discuss low-sulfidation hydrothermal systems; alteration and geochemistry.
- Drive to Kingman, Arizona; driving distance: 222 miles.

Accommodation

Best Western "A Wayfarer's Inn and Suites", 2815 E. Andy Devine Avenue, Kingman, Arizona
+1 (928) 753-6271

Day 3 - Wednesday, September 19, 2018

- 7:00am: Depart for Moss Mine Au-Ag system, Oatman District, Arizona (Northern Vertex Mining).
- Drive to Laughlin, Nevada; driving distance: 63 miles.

Accommodation

Edgewater Hotel and Casino, 2020 South Casino Drive, Laughlin, Nevada
+1 (702) 298-2453

Day 4 - Thursday, September 20, 2018

- 7:30am: Depart for Castle Mountain low-sulfidation, rhyolite-hosted Au deposit; Jean, Nevada (Equinox Gold); Discuss felsic intrusions and low-sulfidation hydrothermal mineralization.
- Drive to Jean, Nevada; driving distance 88 miles.

Accommodation

Gold Strike Hotel, 1 Main Street, Jean, Nevada
+1 (702) 477-5000

Day 5 - Friday, September 21, 2018

- 6:00am: Visit 1.38Ga Mountain Pass Rare Earth Carbonatite complex. Discuss ultra-potassic intrusion geochemistry and middle-Proterozoic alkaline rocks of eastern Mojave Desert region. Drive to Las Vegas for overnight.
- Drive to Las Vegas, Nevada; driving distance 67 miles.
- Evening: Final dinner as SEG 2018 field trip participants; certificate ceremony.

Accommodation

Highland Inn Las Vegas, 8025 Dean Martin Drive, Las Vegas, Nevada
+1 (702) 896-4333

Day 6 - Saturday, September 22, 2018

Field trip ends; participants may depart at their leisure; morning flights to Denver.

Leaders

William X. Chávez, Jr.

Field Trip Organizer

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Key References

1. Castor, S.B., 2008, The Mountain Pass rare-earth carbonatite and associated ultrapotassic rocks, California: *Canadian Mineralogist*, 46 (4), p. 779-806
<http://canmin.geoscienceworld.org/content/46/4/779>
2. Olson, J.E., Shawe, D.R., Pray, L.C., and Sharp, W.N., 1954, Rare-earth mineral deposits of the Mountain Pass district, San Bernardino County, California: U.S. Geological Survey Professional Paper 261, 75 p.
<https://pubs.er.usgs.gov/publication/pp261>
3. DeWitt, E., 1987, Proterozoic Ore Deposits of the Southwestern U.S.A.: Society of Economic Geologists Guidebook Series, Vol. 1, 188p
www.segweb.org/store/detail.aspx?id=EDOCGB01
4. Haxel, G.B., 2005, Ultrapotassic mafic dikes and rare earth element- and barium-rich carbonatite at Mountain Pass, Mojave Desert, southern California: summary and field trip localities: U.S. Geological Survey Open-File Report 2005-1219, 56 p
<https://pubs.usgs.gov/of/2005/1219/>

Participant Checklist and Notes - Please Read!

- Participants must arrive at the Car Rental Center by 2:00pm on Monday, September 17, 2018.
- Responsibilities of participants: SEG provides bus transportation to/from the Las Vegas airport McCarran Car Rental Center; breakfasts are provided by SEG or by our hotels, and SEG will provide field lunches.
- Participants are responsible for dinners and for any other expenses (taxi fares, laundry, alcohol, and the like).
- Participants must sign waiver and medical forms **prior** to participation in the course. Please bring your insurance ID card with you.
- Bring all prescription medications and your prescriptions. If there are any conditions that might affect you during the course, please advise SEG prior to the field trip.
- All participants **must - repeat...MUST** - bring hardhat, STEEL-TOE boots, reflective vest, gloves, and eye protection (clear glasses; and sunglasses for surface visits). DO NOT plan to obtain these items during the course, as there is no time to do so!
- Participants must bring long pants and long-sleeve shirts for the mine visits.
- We will be traveling in a 29-passenger bus with limited baggage space - please pack lightly. Use duffel bags or other soft-sided baggage for your field gear, and regular luggage for your Keystone, Colorado, clothing.
- The weather in the Mojave Desert during late September is generally very warm, with warm evenings. Please plan accordingly.
- Sunscreen, lip balm, sunglasses, a hat or cap, and a water bottle are strongly recommended.