

# Lake George Gem & Mineral Club

## Club News

July, 2020



### CANCELLATIONS!

The coronavirus pandemic has resulted in statewide emergency regulations and public health advisories against group gatherings. Cancellations include all **LGM Club meetings**, and **programs**, as well as **classes** such as Rockhounding 101, Mineral Identification, and Basic Wire Wrapping. We will let you know when these events can be rescheduled.

The 2020 **Lake George Gem & Mineral Show** has now been cancelled as well.

### FIELD TRIPS are ON again!

Event Name	Details	Event Date	Event Leader(s)
Wigwam District club claims - joint trip with Mile Hi RAMS	Fluorite, Quartz, Amazonite	July 12th, 2020 09:00 am	Dave Alexander, John Rakowski and Chris Rayburn (RAMS)
The Time Assassin Claim	Amazonite, Fluorite, Rare Earths	July 12th, 2020 09:00 am	Taylor Harper & Richard Kawamoto
The World Famous Smoky Hawk (Trip #1)	Amazonite, Smoky Quartz	July 17th, 2020 08:00 am	Dave Alexander & Laura Canini
Topaz Mountain Gem Mine (Trip #2)	Topaz, Smoky Quartz	July 18th, 2020 08:00 am	Taylor Harper
South Park Blue Barite	Blue Barite	July 23rd, 2020 09:00 am	Linda Watson & Dave Alexander
World Famous Smoky Hawk Mine (Trip #2)	Amazonite, Smoky Quartz	July 31st, 2020 08:00 am	Steve Kahler & Richard Kawamoto
Arroya Gulch Blood Red Garnets	Garnets	July 31st, 2020 09:00 am	Linda Watson
Book Cliffs Barite (with Mile Hi RAMS)	Clear Barite	October 3rd, 2020 09:00 am	Dave Alexander
Douglas Pass Green River Formation Fossils (with MileHi RAMS)	Fossils	October 4th, 2020 09:00 am	Dave Alexander

Event Name	Details	Event Date	Event Leader(s)
Book Cliff Barite (with Mile Hi RAMS)	Clear Barite	October 4th, 2020 09:00 am	Chris Rayburn (Mile Hi RAMS)

**Field Trip Leaders:** We have a full July program of collecting adventures to world-class collecting sites! We are looking for field trip ideas for August and September; once we get ideas and we can confirm a date, we will need volunteers for leading the trips.

Volunteering to lead a trip is simpler than you may think. If it's your first time to lead a trip we'll ensure you are comfortable enough doing it alone or we will pair an experienced leader with you. Dave or any past leader can answer all your questions and provide you with tips. The key responsibilities are:

- 1) You will need to be at the meeting point at the documented time, pass a sign-up sheet around to get everyone to sign in and collect any waiver that the trip may require
- 2) You will lead the caravan of participants to the collecting site to meet the claim owner (as necessary) or start the collecting adventure.
- 3) You will need to share information about the trip (already documented on our event page) so everyone is aware of what to collect and any additional rules.

Leading a trip is a lot of fun; and allows us to have more trips each season!

The field trip coordinator (Dave Alexander) will do the work getting the event on our events/field trip website (although you are welcome to participate) and will work with the appropriate people to secure the ability to visit the collecting site, as necessary (again, you are welcome to do this too).

### **COMING EVENTS OUTSIDE THE LGGM CLUB:**

\* \* \* \* \*

Our LGGM Club class on **Basic Wire Wrapping** has been cancelled, but if you are interested in wire wrapping some of your stones while you are at home during the coronavirus pandemic, you might want to visit <https://www.perfectlytwistedjewelry.com/classes.html> and to check out the online video wire wrapping classes that Susan Gardner offers by internet. LGGM Club members can contact Jerrolynn Kawamoto at [jerrolynn@wildblue.net](mailto:jerrolynn@wildblue.net) or by calling 719-748-8152 to receive Susan's gem club discount code for \$10 off of the price of the \$30 class. Or go to <https://www.perfectlytwistedjewelry.com/free-tutorials.html> to watch her 101 Basic Cabochon Wire Wrapped Pendant YouTube video tutorial.

\* \* \* \* \*

**Nearly all events that are held in college facilities or local community facilities have been cancelled until further notice. Others have been postponed and may be postponed again.**

### **Cancelled Gem and Mineral Shows:**

**Thurs.-Sun., July 23-26, Fairplay Contin-Tail Gem, Mineral, and Jewelry Show, Fairplay River Park.**

**Thurs.-Sun., Aug. 6-9, Buena Vista Contin-Tail outdoor gem and mineral show, Buena Vista Rodeo Grounds.**

**Fri.-Sun., Aug. 14-16, Lake George Gem and Mineral Show**

**Thurs-Sun Aug. 13-16 Woodland Park Rock, Gem and Jewelry Show, Aug. 13-16.**

**Fri.-Sun., Sept. 18-20, 53<sup>rd</sup> Annual Denver Gem and Mineral Show**, at the Denver Mart. 2020 theme is “Fabulous Fluorite”.

**We do not yet know which of the outlying Denver shows held in September are cancelled.**

**OTHER EVENTS OUTSIDE THE LGGM CLUB:** (Nearby gem, mineral, fossil and geology events that you may enjoy.)

- **Cañon City Geology Club**, cancelled until further notice. <https://www.canoncitygeologyclub.com/>
- **Columbine Gem & Mineral Society**, meetings TBD. <https://rockaholics.org/about/>
- **Colorado Springs Mineralogical Society** meetings cancelled until further notice
- **Pueblo Rockhounds**, meetings cancelled until further notice.

\* \* \* \* \*

***Check the following links for information on lecture series when they resume:***

**Colorado Café Scientifique in Denver**, monthly lectures on science topics

see <https://coloradocafesci.org/>

**CU Geological Science Colloquium** (Cancelled until further notice - Wednesdays, 4 p.m.)

see <http://www.colorado.edu/geologicalsciences/colloquium>

**CSU Dept. of Geoscience Seminars** (Cancelled until further notice - Fridays, 4 p.m.),

see <https://warnercnr.colostate.edu/geosciences/geosciences-seminar-series/>

**Van Tuyl Lecture Series, Colorado School of Mines**, (Cancelled until further notice - Thursdays, 4 p.m.): <https://geology.mines.edu/events-calendar/lectures/>

**Denver Mining Club** (Mondays, 11:30), see <http://www.denverminingclub.org/> .

**Denver Museum of Nature and Science, Earth Science Colloquium series**, (Cancelled until further notice - 3:00-4:00 p.m.), VIP Room unless noted, meeting dates and day of the week vary. Museum admission is not required; see <http://www.dmns.org/science/research/earth-sciences/>

**Denver Region Exploration Geologists Society (DREGS)**; (Cancelled until further notice - usually 1<sup>st</sup> Monday, 7 p.m., Room 241 Bethoud Hall, CSM campus, Golden) <http://www.dregs.org/index.html>

**Florissant Scientific Society (FSS)**; (Cancelled until further notice - meets monthly in various Front Range locations for a lecture or field trip; meeting locations vary, normally on Sundays at noon; all interested persons are welcome to attend the meetings and trips); see <http://www.fss-co.org/> for details and schedules.

**Friends of Mineralogy, Colorado Chapter**, (Cancelled until further notice -usually meets on the 2<sup>nd</sup> Thursday of odd-numbered months, 7:30 p.m., Berthoud Hall Room 108, CSM campus, Golden; see <https://friendsofmineralogycolorado.org/>).

**Golden Beer Talks** , 2<sup>nd</sup> Tuesday, 6-8 p.m.), at the Buffalo Rose, 1119 Washington Ave., Golden. Doors open at 6; Talk begins at 6:35; Intermission – 7-7:15; Q&A/clean up 7:15-8. “Golden’s grassroots version of TED talks, Expand your mind with a beer in your hand”. See <http://goldenbeertalks.org/> for more information.

**Nerd Night Denver** is a theater-style evening featuring usually 3 short (20-minute) TED-style talks on science or related topics; held more-or-less monthly at the Oriental Theater, 4335 W. 44<sup>th</sup> Ave., Denver; drinks are available; for ages 18+. Admission is \$6 online in advance, \$10 at the door.

See <https://www.nerdnitedenver.com/> .

**Rocky Mountain Map Society** RMMS; Denver Public Library, Gates Room, 3<sup>rd</sup> Tuesday, 5:30 p.m.), <http://rmmaps.org/> All meetings cancelled until further notice.

**Western Interior Paleontological Society (WIPS)**; WIPS has virtual meetings (rather than their usual meetings in person on the 1<sup>st</sup> Monday of the month, 7 p.m., in Petroleum Hall, Green Center, 924 16<sup>th</sup> St., Colorado School of Mines campus, Golden) See <http://westernpaleo.org/> for more info.

## LGGM Club News:

**Membership Applications** for 2020 closed as of March 31, 2020. Although non-members are welcome to attend the educational programs at the monthly meetings, you must be a member to participate in any field trips with the club.

\* \* \* \* \*

**Award-winning articles.** Three of our club members have won awards at the Rocky Mountain Federation of Mineral Societies (RMFMS) annual meeting for their outstanding newsletter articles. **Paul Combs** was awarded first place in the Original Adult Articles category for his article entitled Fake Fossils: Every Rockhound's Headache, (published May, 2019). **Steve Veatch** won first place for Advanced Original Adult Articles with his article entitled Dura Antiquior: A Nineteenth-Century Forerunner of Paleoart (published January, 2019). **Bob Carnein** was awarded second place in the Advanced Original Adult Articles category for his article entitled Types of Granite Pegmatite (published July, 2019). Congratulations to all three authors. We greatly appreciate the knowledge of paleontology and geology that you share with our club members.

\* \* \* \* \*

**Our Field Trip** to the Dorris family's Topaz Mountain Mine on June 20 was a great success. All participants showed their concern for the others by wearing masks to reduce the possibility of spreading Covid-19 germs, and by spreading out on the mining claim while digging to maintain appropriate distances so that masks weren't necessary while searching for topaz.



Field trips offer a great opportunity for an outing with social distancing.





\* \* \* \* \*

**Member Reports on Private Rockhounding Activities.** Even though the club has resumed rockhounding field trips, any information you may have about other rockhounding you may have done on public lands that allow rock collecting, or on private lands or mines which allow fee digs or rockhounding with permission. Please tell us where you went, what you found, and provide contact information for obtaining permission (if required). Your information and photos may be included in future newsletters.

\* \* \* \* \*

### **Links to Interesting Gem & Mineral Articles Online:**

**Bob Carnein** sent us this link to a good summary article about gemstone optics:

<https://www.gemsociety.org/article/optics-gemology/>

\* \* \* \* \*

From **Wayne Orlowski** we received a notice that the Planetary and Space Science Centre at the University of New Brunswick, Canada has developed an online Earth Impact Database (EID) which lists confirmed impact structures from around the world. To date there are 190 confirmed impact structures in the database. [http://www.passc.net/EarthImpactDatabase/New%20website\\_05-2018/Diametersort.html](http://www.passc.net/EarthImpactDatabase/New%20website_05-2018/Diametersort.html)

**Wayne** also sent us a series of links to “Teacher Friendly Guides to Earth Science” which are excellent primers to the geology of various areas in the United States. They can be found at <https://www.priweb.org/science-education-programs-and-resources/teacher-friendly-guides>. The Southwestern guide can also be found at <https://paleontological.s3.amazonaws.com/PDF/TFG-EarthScience-Southwestern.pdf>. The priweb.org site also features a great collection of virtual fossils which can be downloaded at <https://www.digitalatlasofancientlife.org/vc/>.

**Note:** if you decide to download any of these guides, allow plenty of time for a full download as they may be several hundred pages long.

\* \* \* \* \*

The latest installment of “**Bench Tips**” by **Brad Smith:**  
([www.BradSmithJewelry.com](http://www.BradSmithJewelry.com))

## **SHEET & WIRE STORAGE**

The more you work with jewelry, the more problems you have finding the piece of metal you need. My pieces of sheet were generally stored in various plastic bags, and the wire was in separate coils. Few were marked, so it often took me a while to locate that piece of 26 ga fine sheet I bought last year, especially since I usually take my supplies back and forth to classes.

A tip from a friend helped me organize everything. I bought an expanding file folder from the office supplies store (the kind that has 13 slots and a folding cover) and marked the tabs for each gauge of metal I use. Then I marked all my pieces of sheet with their gauge, put them in plastic bags, marked the gauge on the bag, and popped them into the folder. I usually store coils of wire loose in the folder, but they can also be bagged if you prefer. I use one tab for bezel wire and one for the odd, miscellaneous items.

The resulting folder is really convenient when I want to take my metal out to a class or workshop, and it's colorful enough for me to easily find in the clutter of the shop !



Expanding File Folder

\* \* \* \* \*

## **LITTLE BALLS**

I often use little balls of silver and gold as accent pieces on my designs. They can be made as needed from pieces of scrap. Cut the scrap into little pieces, put them on a solder pad and melt them with a torch. Then throw the balls into a small cup of pickle. If you need to make all the balls the same size,

you need the same amount of metal to melt each time. The best way to do that is to clip equal lengths of wire.

But there's an easier way to get a good supply of balls. Some casting grain comes in near perfect ball form. Just grab your tweezers and pick out the ones you need. When you need larger quantities of balls, pour the casting grain out onto a baking pan, tilt the pan a bit, and let all the round pieces roll to the bottom. Bag the good ones, and pour the rest back into your bag for casting. Balls can be sorted into different sizes using multiple screens.



Discover New Jewelry Tricks in Brad's "How To" Books  
[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)

Happy hammering,  
- Brad

## Notes from the Editors

Bob Carnein  
Co-Editor  
[ccarnein@gmail.com](mailto:ccarnein@gmail.com)  
719-687-2739

Jerrolynn Kawamoto  
Co-Editor  
[jerrolynn@wildblue.net](mailto:jerrolynn@wildblue.net)  
719-748-8152



## Colorado Type Minerals: Carnotite

by **Bob Carnein**

This is the fourth of an ongoing series of articles about minerals first described from Colorado. Unlike the previous three (creedite, zunyite, and rickardite), carnotite was a mineral of great economic

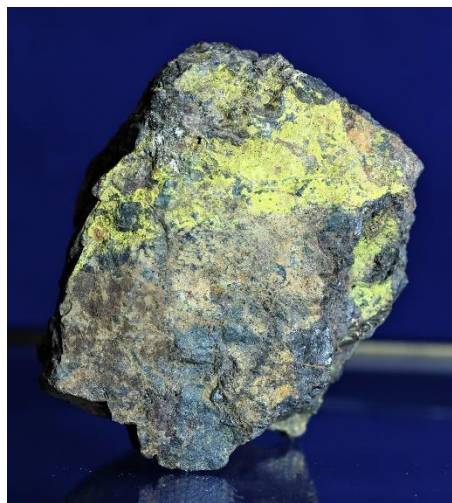


importance, at least until the Nuclear Test-Ban Treaty (1963), the SALT treaties (1972 and 1979), and the Three-Mile Island accident (1979), along with cheap uranium from overseas and environmental issues combined to throw the US uranium business into disarray. The last uranium mine in Colorado closed in 2009 (Wikipedia, accessed June, 2020). At one time, carnotite was an important source of radium, vanadium, and uranium.



Carnotite [ $K_2(UO_2)_2(VO_4)_2 \cdot H_2O$ ] was first described by C. Friedel and E. Cumenge in 1899 from samples collected in the Roc Creek area, now in the Uravan mining district, Montrose County, Colorado (Friedel and Cumenge, 1899; Eckel, 1997). The samples were sent to Charles Poulot for analysis, and the new mineral was named for French mining engineer and chemist Marie-Adolphe Carnot (1839-1920).

**Figure 1. Carnotite in sandstone. (ceas.oregonstate.edu)**

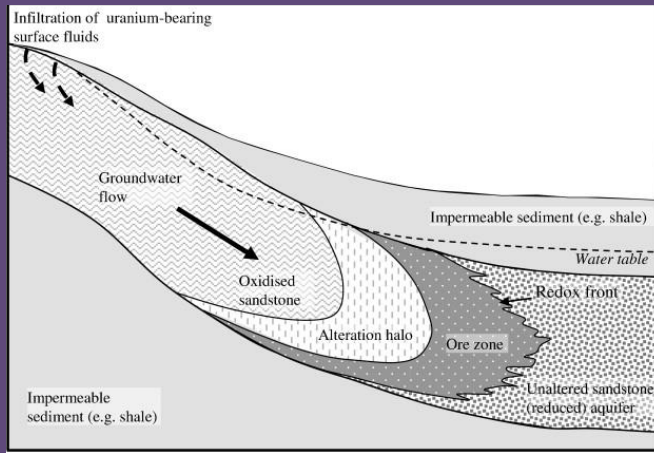


**Figure 2. Carnotite on ilmenite, Radium Hill area, Olary, South Australia. (Carnein photo and collection)**

Carnotite is monoclinic but rarely occurs as crystals, which are diamond shaped and very small (Anthony, *et al.*, 2000). More typically, it occurs as fine grained, disseminated, powdery aggregates. Its hardness (which is very difficult to measure) is 2, and its specific gravity is about 4.8. Color is its most distinctive but misleading property. It ranges from bright canary yellow to lemon yellow, sometimes with a greenish tint. Unlike some other yellow uranium minerals, carnotite does not fluoresce.

Nearly simultaneous with the discovery of carnotite in Montrose County, Marie and Pierre Curie discovered radium (as a chloride) in 1898. The metal was not isolated until 1911. Uranium itself was not of much interest, but carnotite and other uranium minerals in the Slick Rock mining district, San Miguel County became the world's biggest source of radium in the 1910s and '20s. Until WWII, mining increased in deposits all over the Colorado Plateau (adjacent parts of southwestern Colorado, southeastern Utah, northwestern New Mexico, and northeastern Arizona), mainly for the production of vanadium.

After WWII and throughout the 1950s, the US responded to perceived threats from the USSR and other countries by carrying out a massive exploration program for new sources of uranium, first for atomic weapons and then for electricity production. The Atomic Energy Commission and US Geological Survey, aided by thousands of private prospectors armed with Geiger counters, staked claims all over the Colorado Plateau. In many cases, the distinctive yellow color of carnotite and its associated minerals helped amateurs to recognize pay dirt. Vanadium mills near Rifle, Naturita, Uravan, and Durango, Colorado were converted to include uranium production in the 1940s.



**Figure 3. Schematic of roll-front formation. (sciencedirect.com)**

All of this activity came about because of the relatively simple geology of the Colorado Plateau. Uranium/vanadium deposits occur mainly in paleochannels in Jurassic and Cretaceous sandstone of the Morrison and Dakota formations. The +6 cation of uranium, which is surprisingly abundant in Earth's crust, is easily dissolved and transported by groundwater that contains dissolved oxygen (Britannica.com, accessed June, 2020). As these solutions move through buried stream channels and dune sands, they may encounter

fossil carbon in the form of wood and other organic materials (including dinosaur remains!). The organic matter produces local reducing conditions, which, in turn, cause precipitation of the uranium to form uraninite ( $UO_2$ ), coffinite [ $U(SiO_4)_{1-x}(OH)_{4x}$ ], and other minerals, including vanadium-rich clays. Such deposits are called *roll fronts* because of their shapes in cross section (Figures 3 and 4).



**Figure 4. Roll front in Dakota Sandstone, Turkey Creek roadcut, near Denver, Colorado. Photo by James St. John.**

Exposure and weathering of the primary uranium and vanadium minerals of a roll-front deposit oxidizes those minerals, producing a wide variety of uranyl vanadates and other rare and obscure minerals, including carnotite, (meta)tyuyamunite, volborthite, tangeite, metatorbernite, rauvite, and vanuralite. Some of these contain copper and selenium—also components of the

suite of minerals in the original roll front.

Of the “hundreds of localities” for carnotite that Eckel (1997) mentions in Colorado, most occur in the southwestern part of the state. However, he also lists occurrences in El Paso (Mike Doyle claims); Fremont (Brandt, Colexco, Perry DeLellis claims, and Parkdale area); Jefferson (Leyden coal mine); Park (Garro deposit; Porcupine Cave); and Pueblo (Avery Ranch) counties, among others. Roll-front deposits are relatively rare outside of the Colorado Plateau, but the writer collected a suite of rare uranyl vanadates in Devonian rocks near Jim Thorpe, in northeastern Pennsylvania, where such deposits were found at several places. Rumor has it that, because of poor quality and environmental concerns, the small amount of uranium ore produced in Pennsylvania was shipped to New Jersey and buried!

#### References cited

Anthony, J.W., R.A. Bideaux, K.W. Bladh, and M.C. Nichols, 2000, *Handbook of Mineralogy, Volume IV, Arsenates, Phosphates, Vanadates*: Tucson, AZ, Mineral Data Publishing.

Eckel, E.B. and others, 1997, *Minerals of Colorado*: Golden, Colorado, Fulcrum Publishing.

Friedel, C., and E. Cumenge, 1899, Sur un nouveau mineral d'urane, la carnotite: *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, Paris*, Vol. 128, No. 9, p. 532-534.

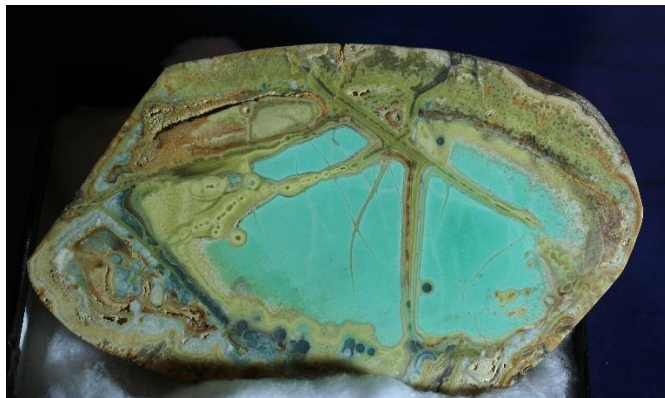
## Monthly Mineral Quiz

**Last Month's Mineral: Magnetite,  $\text{Fe}_3\text{O}_4$ .** If you carry your "tool kit" when you collect, this is an easy mineral to ID. It has a black streak, hardness of around 6, SG of about 5.2, and, of course, it's highly magnetic. Although it's isometric, cubes are rare. Crystals are most commonly octahedra, as in the specimen to the left, below. The variety *lodestone* is a natural magnet, but it's relatively uncommon. Ordinary magnetite is so common that it's useless to list localities. However, you may have collected it near Tarryall, in Park Co.; at the Calumet mine, in Chaffee County; or at the Sedalia mine, near Salida, where it occurs as nice octahedral crystals in chloritic mica schist with huge almandine crystals.



June's mineral. (Carnein collection and photos)

**This Month's Mineral.** Unlike last month's mineral, the mineral for July is relatively uncommon. However, if you go to mineral shows or surf the Internet, you may recognize it. It's especially famous from a locality in Utah (left, below), where it occurs with several other exotic minerals. However, good specimens also occur at other places, most notably Spain (right, below). Rarely crystallized, this mineral occurs in nodules or pisolitic concretions (right, below). Though its hardness is only about 4, this mineral is commonly cut into cabochons, and, if protected and handled carefully, makes a nice exotic pendant or brooch. It has an average SG and is usually green but may be red. What is it?



July's mineral, in specimens from Utah (left) and Spain (right). Carnein collection and photos.



**The Lake George Gem and Mineral Club** is a group of people interested in rocks and minerals, fossils, geography and history of the Pikes Peak/South Park area, Indian artifacts, and the great outdoors. The Club's informational programs and field trips provide opportunities to learn about Earth science, rocks and minerals, lapidary work and jewelry making, and to share information and experiences with other members. Guests are welcome to attend, to see what we are about!

The Club is geared primarily to amateur collectors and artisans, with programs of interest both to beginners and serious amateurs. The Club meets on the second Saturday of each month at the Lake George Community Center, located on the north side of US Highway 24 on the east edge of town, sharing a building with the county highway shops. **In the winter, we meet at 10:00AM. From April through September, we meet at 9:00AM, to allow more time for our field trips.**

Our organization is incorporated under Colorado law as a nonprofit educational organization, and is a member of the Colorado, Rocky Mountain, and American Federations of Mineralogical Societies. We also sponsor an annual Gem and Mineral Show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems, or jewelry. Annual membership dues (Jan. 1 through Dec. 31) are \$15.00 for an individual (18 and over), and \$25.00 for a family (parents plus dependents under age 18). New memberships and renewals are only accepted Jan 1 through March 31 each year.

### **Our Officers for 2020 are:**

**Richard Kawamoto**, President  
7584 Cedar Mountain Rd.  
Divide, CO 80814  
719-748-8152  
[kawahome@wildblue.net](mailto:kawahome@wildblue.net)

**Lorrie Hutchinson**, Secretary  
10915 Grassland Rd.  
Colorado Springs, CO 80925  
719-330-2795  
[4lohutch@gmail.com](mailto:4lohutch@gmail.com)

**C.R. (Bob) Carnein**  
Newsletter Co-Editor  
507 Donzi Trail  
Florissant, CO 80816  
719-687-2739  
[ccarnein@gmail.com](mailto:ccarnein@gmail.com)

**John Rakowski**, Vice President  
PO Box 608  
Florissant, CO 80816  
719-748-3861  
[rakgeologist@yahoo.com](mailto:rakgeologist@yahoo.com)

**Cathy McLaughlin**, Treasurer  
11595 Owls Nest Rd.  
Guffey, CO 80820  
702-232-3352  
[cathy\\_mclaughlin@hotmail.com](mailto:cathy_mclaughlin@hotmail.com)

**Jerrolynn Kawamoto**  
Newsletter Co-Editor  
7584 Cedar Mountain Rd.  
Divide, CO 80814  
719-748-8152  
[jerrolynn@wildblue.net](mailto:jerrolynn@wildblue.net)