

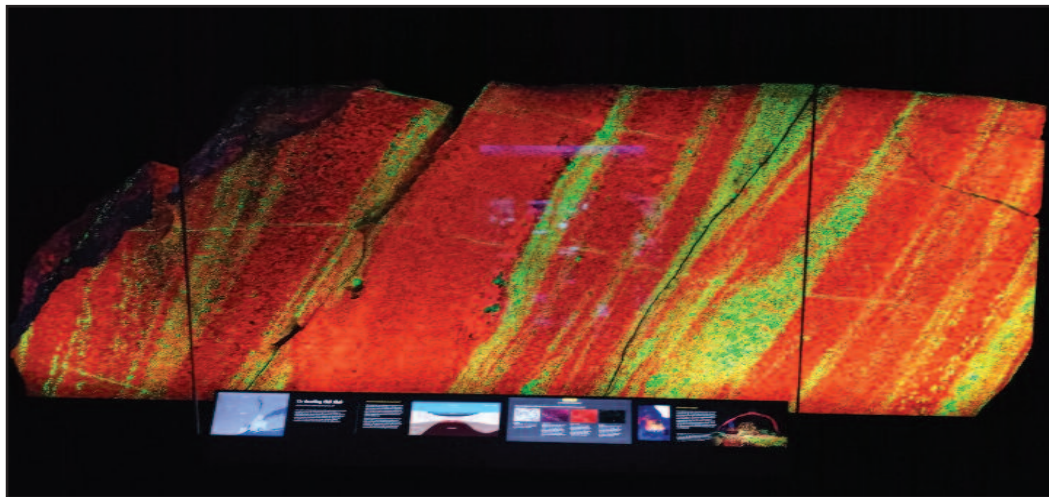


Fall/Winter 2021
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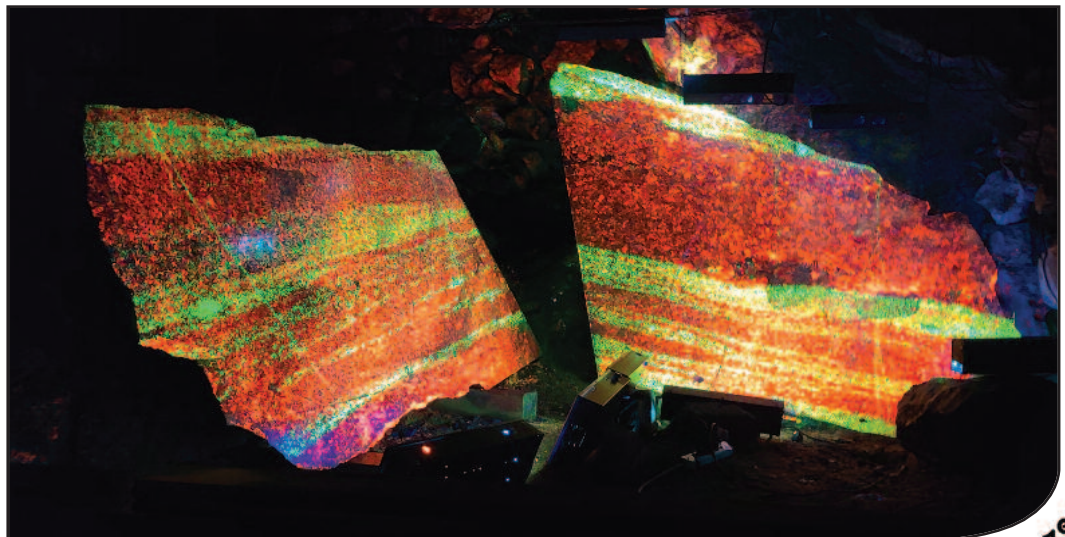
STERLING HILL NEWSLETTER

Recipient of the 1999 Carnegie Mineralogical Award



The Sterling Hill fluorescent slab in the new Mignone Hall of Gems and Minerals, at the American Museum of Natural History (see article on page 9).

The Sterling Hill Mining Museum “companion” fluorescent slabs in the old stope (see article on page 11).



preservation, scientific research and earth science education.



President's Message

Bill Kroth

While the great "COVID pause" of more than one year gave us an opportunity to tackle many projects on our to-do list, July 1, 2021 was our gradual re-opening to the public, our key mandate. Having no idea whatsoever how many people would show up at our reopening, we were careful in limiting that number by using a reservation system that we still are utilizing. Although more work is required to answer the phone and record the information, it guarantees that we will have enough tour guides to meet the demand. Our guide staff has decreased by approximately one-half during the COVID pandemic. In this situation, we are only open for public tours on Saturdays and Sundays at 1:00 PM, until further notice; however, we are booking groups, such as camps and larger families, on any day of the week. We hope to have enough staff in the next month or so to be open seven days a week, especially on Sundays which have traditionally been high volume days.

With COVID still a big concern, our Gift Shop building is only open for use of the restrooms and the Snack Bar. We have installed movable partitions to direct folks from the north door toward the restrooms. The Gift Shop itself is closed, and all transactions are made through the south window across from our sluice. The sluice and collecting dump are open and that slightly offsets the loss of revenue from our Gift Shop.

Our visitors, on the whole are understanding; however, some have short fuses and are looking for arguments with our staff and with each other. We have been criticized for being both too cautious and not cautious enough; for wearing masks where our words are muffled and for not wearing masks so that we may be heard. Many people who make inquiries by phone are looking for guarantees that they will be 100% safe from COVID if they visit. We calmly reply that perhaps they should visit at a later time when COVID is no longer a major health concern. We are doing our best to protect our staff, which in my opinion is paramount.

Our typical family summer visitation over the last several weeks has been averaging about 125 people in total for the five, 1:00 PM tours; not too bad. However, only five camps have visited over the summer, and we have only two schools booked for the entire fall season. Pre-COVID, our school bookings would have been maxed

out for the next full year, at ten groups per day! I hope that when the schools get back into their programs of in-person learning, normalcy will return and visitations to Sterling Hill will return to previous levels, since that is our greatest resource.

The news that I have reported in the preceding paragraphs is certainly not good, but Denise and I are encouraged and bolstered by the people who have volunteered to help keep the Sterling Hill Mining Museum alive and improving. A partial list follows:

Wayne Franek, an Ogdensburg resident and nearby neighbor, volunteers several mornings every week in mowing our lawns and weed-whacking our paths. As we had no visitors for the past year, there was little need for manicuring the property. As such, things were a bit out of control, but Wayne's hard work has brought our site back to a park-like setting.

Bruce Bannon, a Scottsdale, Arizona resident, geologist, and past miner at Sterling Hill, volunteered the whole month of August giving tours and doing numerous



Ogdensburg resident and volunteer, Wayne Franek, was an electrician for the local school system. Now retired, he spends several mornings each week taking care of our grounds.

hands-on jobs around the property, including painting, rock sorting, and carpentry work. When Bruce first visited several months ago for a tour I was struck by the large and unusual gold ring on his finger. Bruce was a professional football player for the Miami Dolphins, and got the ring as a member of the Dolphins team when they won the 1974 Super Bowl! His geological knowledge and familiarity with our mine allowed him to

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PRESIDENT'S MESSAGE

Continued from page 2

quickly get into giving tours. And when I would announce to the unsuspecting visitors that they were getting a tour by a sports celebrity, they were really impressed!

Doug Francisco, of Van Nuys, California, is a Sterling Hill Board Member, and former miner at Sterling Hill. Doug spent the entire month of July with us, working on many key projects that required skills beyond the norm. Doug was part of the team that lowered and set into final place



Bruce Bannon was a Sterling Hill miner in the early 1970s and graduated from Penn State University with a degree in geology. He played pro football for the Miami Dolphins and was part of the winning Super Bowl team in 1974. Bruce was with us for the entire month of August giving tours, painting exhibits, and performing other helpful tasks.

the two American Museum of Natural History “trim slabs” in the north end of the flooded stope (see article on page 11). He gathered over 80,000 pounds of rock from the Passaic Pit for sale to museums in China. He built a soil and boulder loading ramp that allowed him to easily set approximately 40,000 pounds of fluorescent rock into a 40-foot long container. That shipment was sent at the end of July, and the next one is slated for October. Doug performed major site-wide cleanup by recycling steel and over 100 fluorescing tube bulbs, gathering all of our granite counter top trimmings, removing the old wooden ventilation building over the flooded stope, and setting in place a new one. The blasting demonstration room has been much improved as Doug installed the rocker shovel loader that used to be positioned outside of the mine, the large cone-shaped air handler, and an actual warning whistle. Board member Gordon Powers and Doug worked together to modify our blasting sound tract to now include the sound of the warning whistle in the simulated blast. Now the blasting story is complete and much easier to understand, especially with the rocker shovel showing how the rock was removed after blasting.

Fred Rowett, an Ogdensburg resident and excavating contractor, loaned us his machinery, including a very large front loader and a clamping, track-mounted excavator that enabled Doug Francisco to perform many of his tasks. Fred has been a major help at Sterling Hill for decades with countless projects. In particular, he has a unique talent in building rock, gravity walls. He just constructed a real beauty at the entrance to the upper property. As a result, I have asked Fred to construct a small rock-lined shallow pond and waterfall adjacent to our parking lot to the south of the ten-stamp mill. That work will start as soon as our tree frog tadpoles mature and leave the 750 gallon plastic tank that I had left-over from a previous personal project. Finally Fred, as one of our tenants on the upper property, is spearheading a much needed improvement to that area; the resurfacing and repaving of the access road. Fred has canvassed all of our tenants to chip in approximately \$18,000 to cover half the cost of that road, and he also will coordinate the patching and actual paving. Sterling Hill will cover the other half of the cost.



Ogdensburg resident and good friend, excavating contractor Fred Rowett, has been helping us for decades on countless projects with his skills and his machines. We have tackled jobs we had no business doing, simply because Fred was with us!

Dominic Zampella, an Ogdensburg resident and retired science teacher, spends several days per week giving tours and using his excellent wood-working skills to construct, modify, and restore many of our display cabinets. While we often take the display cabinets for granted and just concentrate on what is in them, the museum has over 200 and they do indeed require the skills of a craftsman such as Dominic.

PRESIDENT'S MESSAGE

Continued from page 3



Ogdensburg resident and former science teacher, Dominic Zampella, assists with tours and cabinetry projects several days each week.

Many others, not mentioned, have helped over the past difficult year; their friendship, support, and hard work keep us encouraged as we look forward to reaching all previous visitation levels. Sterling Hill is a unique and important treasure, and I am sure that eventually, with all of our improvements and perseverance, we will even surpass our pre-COVID levels! 🐼

COMING SOON!

A NEW BOOK ABOUT THE STERLING MINE,
TITLED:

**A PICTORIAL HISTORY OF
THE STERLING MINE**

BY CARISSA HORUZY

In 1990, not long after the Sterling Mine closed, and shortly before the opening of the Sterling Hill Mining Museum, Paul Horuzy, then mayor of Ogdensburg, wrote *The Odyssey of Ogdensburg and the Sterling Zinc Mine*, describing the history of the mine and the Borough of Ogdensburg. Carissa Horuzy, granddaughter of Paul Horuzy, has now written a greatly expanded book about the history of the Sterling Mine, including numerous archival photographs. The book is being published and sold by the Sterling Hill Mining Museum and will be available within the next few months. More information will be provided on the Sterling Hill website and in the newsletter.

...“there’s no other place like it on Earth.”



Listed on the
National Register of Historic Places since 1991

Sterling Hill Newsletter

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The *Sterling Hill Newsletter* is the official journal of the Sterling Hill Mining Museum Foundation, a nonprofit institution. It is published two times a year, in April and September.

Subscription to the *Sterling Hill Newsletter* is included with membership in the Sterling Hill Mining Museum Foundation. For details look for the membership form in this issue. If the form is missing, contact the museum for information.

Sterling Hill Classics - Mcgovernite

Richard C. Bostwick

[Ed. Note] Each edition of the Sterling Hill Mining Museum newsletter will include this Sterling Hill Classics feature, focused on specimens from the Sterling Hill Mining Museum collection. Local mineral expert and former Sterling Hill miner, Richard Bostwick, will select and write about specimens worthy of this special focus. These specimens will be available for viewing at the museum, and all will have come from the Sterling Mine. Some will be the proverbial “eye candy,” but others may be rare, unique, or have an interesting provenance. The first Sterling Hill Classic is mcgovernite.



Bronzy rosettes of mcgovernite on calcite-willemite-franklomite ore, 800 level, Sterling Mine. John Kolic specimen #529, 11 cm. x 7 cm. (4½ in. x 2¾ in.). Photo by Earl R. Verbeek.

Mcgovernite is an unusual and distinctive mineral known only from Sterling Hill. In better examples, like the John Kolic specimen pictured, it occurs in willemite-franklinite-calcite ore as attractive, glossy, bronze-tinted rosettes. The initial find was described by Harvard’s Charles Palache and the New Jersey Zinc Co. chemist Lawson Bauer, in the 1927 *American Mineralogist*, vol. 12, pp. 373-374. Here are excerpts from U.S.G.S. Professional Paper 180, Palache’s 1930 monograph, *The Minerals of Franklin and Sterling Hill, Sussex County, New Jersey*: “Mcgovernite was found in 1927 in the mine at Sterling Hill, in the north drift, 900-foot level. It forms the principal filling of a vein in massive ore, as a rather uniformly cross-grained mass. But few specimens of it have been preserved...The mineral is named for J. J. McGovern, of Franklin, who died in 1915. For many years he was in charge of the picking table at the shaft head, and he was one of the foremost of the local collectors and added much to the knowledge of Franklin mineralogy...Crystals of mcgovernite are not known. It is

found in coarse granular form, the individual grains showing pronounced micaceous cleavage. In reflected light it is bronzy red, and in transmitted light it is deep red-brown...”

In July of 1990, mcgovernite was found again at Sterling Hill by legendary superminer John Kolic, in the keel of the orebody at 780 pillar, 600 level. The illustrated specimen, one of the finest known, is from this find and is in the collection of John Kolic, now on view in Zobel Hall at the Sterling Hill Mining Museum. For more information on John Kolic's mcgovernite find see: *Recent Mineral Finds from the Sterling Mine, Ogdensburg, New Jersey* by John Kolic and Steve Sanford, in *The Picking Table, Journal of the Franklin-Ogdensburg Mineralogical Society*, Vol. 34, No. 2, Autumn/Winter 1993, pp. 12-21. The museum’s Kolic collection presents many more fine local minerals for your viewing pleasure.

Future issues of the Sterling Hill Newsletter will include photos of more specimens to see at the Sterling Hill

STERLING HILL CLASSICS - MCGOVERNITE

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Mining Museum. You are welcome to visit and see our minerals, mining artifacts, and memorabilia, while enjoying mine tours, finding your own specimens on our dumps and outcrops, getting something to eat and drink, and attending our special events. Don't be a stranger!


The formal Franklin Mining District includes the closed Franklin and Sterling Mines, several abandoned iron mines and marble quarries, and the still-operating Braen Franklin Quarry on Cork Hill Road.

To the average mineral collector, the Franklin Mining District remains of interest because of the Franklin Mineral Museum, the Sterling Hill Mining Museum, and their mineral dumps where some of the many minerals found in the District still can be collected.

Note that the District has yielded more than four hundred different minerals, including seventy-one for which the District is the type locality, and about twenty that, like mcgovernite, have been found nowhere else.

Franklin and Sterling Hill together remain the most prolific U.S. locality for mineral species; third in the world

behind the Mont Saint-Hilaire quarry in Quebec and the Clara Mine (Grube Clara), in Germany. The historical and mineral wealth of Sterling Hill and Franklin is still accessible to visitors – a national treasure that all can share.

There is no question that the Franklin Mining District is one of the world's most significant mineral localities overall, and that the two best places to experience and enjoy its minerals are the Sterling Hill Mining Museum and Franklin Mineral Museum. 

Richard Bostwick joined the Franklin-Ogdensburg Mineralogical Society in 1960, when he began collecting the fluorescent minerals of Franklin and Sterling Hill. Since 1980 he has maintained the check-list of those minerals, as well as speaking and writing about them. He worked as a miner at the Sterling Mine from 1975 to 1978. He and his wife, Tema Hecht, were co-managing editors of The Picking Table from 1995 to 1999, and are still on its editorial board. A Fluorescent Mineral Society member since 1974, Richard was inducted into the FMS's Hall of Fame in 2020. The rare Franklin mineral bostwickite was named for him in 1983 by Pete Dunn and Peter Leavens.

STERLING HILL MINING MUSEUM Calendar of Events

Due to the coronavirus (COVID-19) pandemic, and out of an abundance of caution, the Sterling Hill Mining Museum currently is open for tours only on Saturdays and Sundays at 1:00 PM, until further notice. Reservations are required, so please call in advance as tour spaces are limited. Reservations are not available online.

Private tours are available for groups of at least 15 paying people. We will try to accommodate your request on the day of your choice if we have staff and space available. Please call to discuss details, availability, and to make reservations. Reservations should be made at least two weeks in advance.

Mineral collecting on the Mine Run Dump is avail-

able and is recommended for avid rock collectors age 18 and older, but not for children. Sluicing for minerals, gemstones, and fossils would be a better option for children.

Please contact the museum at (973) 209-7212 to make reservations (required) for tours. We hope to fully reopen in the not-too-distant future. Please check the Sterling Hill Mining Museum website (<https://www.sterlinghillminingmuseum.org/>) for updated information and announcements.

Sterling Hill Mine - Recreating History for a Digital Age

Keith Russ

Like all good stories, the creation of the computer model of the Sterling Hill Mine has a good plot, interwoven with some occasions when chance or fate played its part.

One might ask, how does a mining engineer, born in Kent, UK, end up creating a model of a mine, which until a few years ago (at the time of writing) he had never heard of was located in a country he had never visited, and then write an article about it. Well our story starts over 30 years ago, when I studied at the world-famous Camborne School of Mines, Cornwall, UK. A little digression here to say that Camborne is a small town, with a population 21,000, with a long history of hard rock mining, stretching back to the 1500s. The last deep mine (tin and copper) closed in 1998, bringing with it the end of hard rock mining in Cornwall. Whilst I was studying for my degree, a final year project was announced which attracted my attention and interest. This was to model, using computer software, an old lead mine in Derbyshire, UK. The choice of this project would change my life, not that I knew it at the time (this is the first link in our story). I've been building models ever since, and I am known worldwide as someone who creates images of our past.

Upon creating this model, I developed an interest and curiosity about what mines looked like and how we might visualise them in a way that can be easily understood by one and all, including those who do not possess a mining background. This formed the basis of my PhD project, which was completed in the mid 1990s. During this time I started to model a number of the mines around Camborne. Over the next 30 years I created more than 350 separate mine models, covering the whole of Cornwall and West Devon. The mine models were given a first public outing in 2015 (link two).

With the advent of and increased use of social media, a decision (link three) was taken to use both Facebook and a website to show and inform those who might be interested in my work. To date the Facebook page – aptly named “abandoned mine models” – has over 5000 likes

and followers, which is pretty mind-blowing and shows that people are interested in the pretty pictures I create or, more importantly, interested in their history and the ability to visualise what lies beneath.

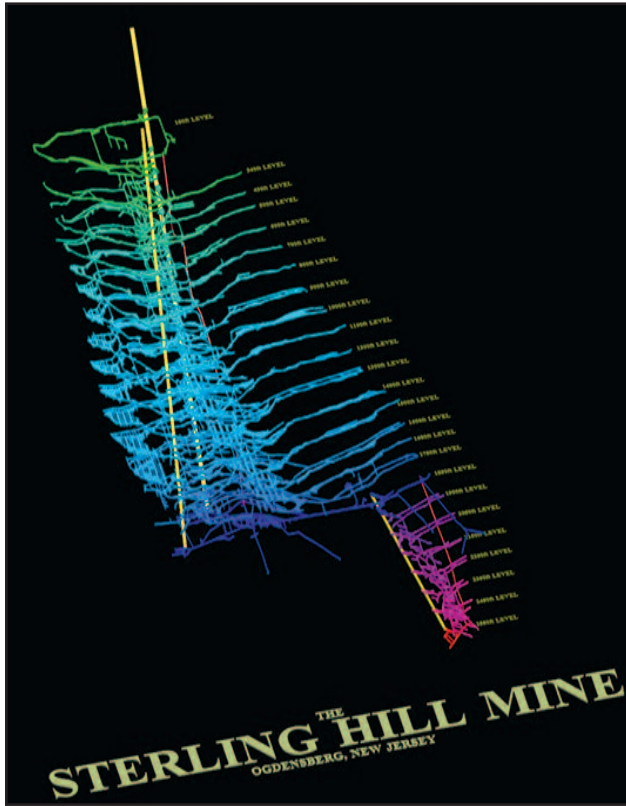
The Cornish miners travelled the world, and I expect that at some stage miners from Cornwall were working in mines in New Jersey. Thus, an interest in the mines in the USA started to grab my attention and, over the years since 2015, I have been building models of a number of famous mining districts. One day I received a message from a gent called Doug Francisco, who had been a miner at the Sterling Hill Mine (link four). Doug asked if I had heard of the Sterling Hill Mine and if I had thought about creating a model of it – getting closer to home! The simple answer was that I had heard of the mine through a Google search, but “no” I had not at that stage thought about modelling it. An offer was made to let me have copies of mine plans that Doug possessed, and in return I would construct a model. Some more in-depth searching of a state government website revealed a source of mine plans (link five). From these plans the model was created.

The process of modelling is simple (I would say that after nearly 500 models), but time-consuming. The most difficult part is the location of the plans, maps, and other information, required to build the model. In the case of the Sterling Hill Mine, the photographed or scanned plans were stored as a collection of PDF documents. Upon downloading these, I converted each image to a JPG photo. This allows me to load the image into the CAD software through which the models are created. Luckily, each image of the various levels belonging to Sterling Hill was drawn on a coordinate grid system. Thus, over a period of time, the levels were individually traced and referenced to the mine grid coordinate system. After a week or so, the process of tracing was complete and I had a drawing which now held all the various mine levels stacked one upon the other; but this was only two-dimensional. The process of magic to turn this flat drawing into a fully rendered three-dimensional model requires that the elevation of each level relative to each

STERLING HILL MINE - RECREATING HISTORY FOR A DIGITAL AGE

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other be assigned. In the mining world, the levels are numbered beginning from surface, and in many cases are labelled as feet below surface, i.e., 100 ft., 200 ft., 300 ft., etc. The trick here is to realise that the mine



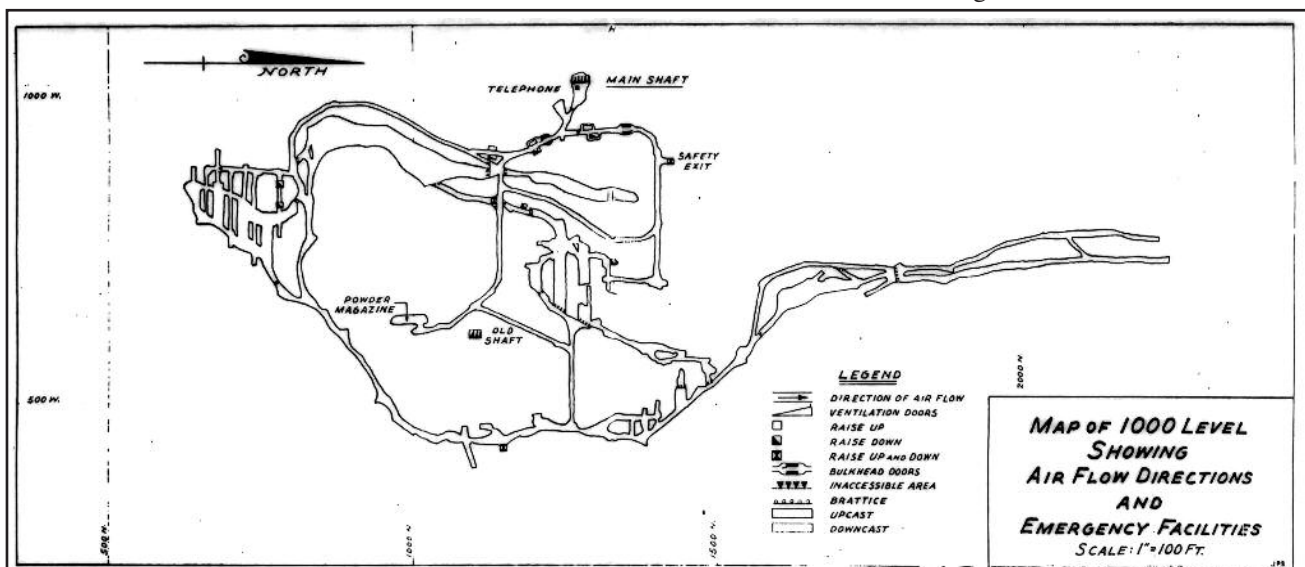
Three-dimensional representation of the Sterling Hill Mine. The colours representing each level change with increasing depth below surface. Shafts are shown in yellow.

workings go down from the surface (taken as zero), so the first level would then be minus 100 ft. below surface, the second minus 200 ft. below surface and so on. We are approaching the finish line. Once the correct elevation below surface at each level was obtained, the digitised outline was extruded upward to create a solid shape representing that particular level. The shafts were added along with some of the raises. Even after 30 years of building, sometimes plans can be a little difficult to interpret, especially when you don't have any first hand knowledge of the mine. Finally the levels were coloured (sorry UK spelling) from green to red. Some labelling of the levels was added to give each one a name, and a title was added.

I sent the resulting image(s) to Doug for his approval. I forgot to mention that, like myself, Doug works as a volunteer at the mining museum (link six), and he was keen that the images should be used to inform the visitors how the mine actually appeared. The process is continuing, in that the last task is to add the surface features and other buildings locally to give context and scale.

Some time passed and I received an email from Jeff Osowski, Vice President of the board of trustees at the Sterling Hill Mining Museum. He asked if I would be interested in writing an article for the museum newsletter about the process of building the Sterling Hill Mine model, which you now are reading.

So, after a strange and sometime convoluted route, with twists of chance or fate, you now know that there is in a far-off land a mining engineer who builds computer models, and there is a model of a place that you all know well. So the Sterling Hill Mine is the first US



One of four original Sterling Hill Mine level plans, from which the mine model was constructed.

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STERLING HILL MINE - RECREATING HISTORY FOR A DIGITAL AGE

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mine model to appear in a mining museum, and as a result of some more interesting connections (chance or fate), I have created or am in the process of creating models for the Tombstone Mining District, Arizona and Tonopah Mining District, Nevada. Others are planned.

The animated model of the Sterling Hill Mine may be viewed via the following link: <https://www.facebook.com/407369656071364/videos/320794982653937>. You can also view this and other mine models on the Facebook page: "Abandoned Mine Models" or via the website: www.abandonedminemodels.com.

A final footnote: I shall be paying a visit to the Sterling Hill Mine the next time I come to the USA and look forward to seeing the reality, rather than just a model. 🐜

Keith Russ, BEng, PhD is an independent mining consultant, based in Cornwall, UK. He graduated from the famous Camborne School of Mines twice and was a lecturer in Surveying and Computer Packages. After leaving teaching, he worked at the South Crofty Tin Mine for 18 years, as a Technical Services Engineer, for a small company trying to reopen the mine. He is a past president of the Cornish Institute of Engineers. He now runs a website www.abandonedminemodels.com which is dedicated to the display of 3D mine models, bringing to life our important mining heritage, so that generations to come will be able to view the amazing work undertaken by previous generations of miners.

The Mignone Hall of Gems and Minerals - American Museum of Natural History

Alan Rein

The American Museum of Natural History (AMNH) has been undergoing a major renovation over the past few years, and the first new exhibit opened to the public on June 12, 2021.

The Allison and Roberto Mignone Hall of Gems and Minerals replaces the Morgan Memorial Hall of Gems and Harry Frank Guggenheim Hall of Minerals. Many of us were influenced in our love of rocks and minerals by those two original gem and mineral halls. The new exhibit hall is very different than the previous halls in that it is light, spacious, and highly interactive. The new mineral hall is located in the same area of the museum as before, but rather than being at a "dead end" in the museum, it will be part of the new flow of the overall floor plan. This will not only increase the traffic in the gem and mineral hall, but also give more access to its neighboring Arthur Ross Hall of Meteorites.



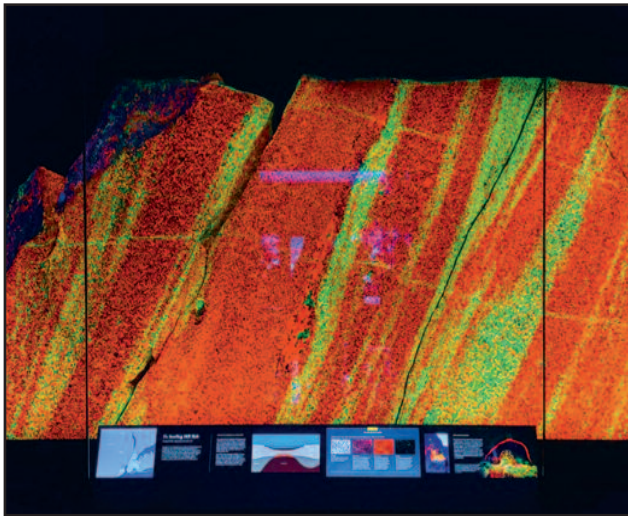
When entering the new mineral hall, it is hard to miss the amazing amethyst geodes from the Paraná Basin, which straddles parts of Brazil, Paraguay, Uruguay, and

THE MIGNONE HALL OF GEMS AND MINERALS

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Argentina. The taller of the two geodes is 13 feet high and weighs about 9000 pounds; the other amethyst geode is nine feet tall and weighs around 11,000 pounds. The deep purple crystals are relatively small in size and the LED illumination gives them a twinkling star-like appearance. These two geodes are examples of a trend in the Hall to exhibit very showy, super-sized mineral specimens, further exemplified by the remarkable 1000 pound crystallized stibnite specimen from China, as well as a three-foot high elbaite crystal from Minas Gerais in Brazil.

Leading the list of favorite super-sized specimens (of course!) is the giant willemite/calcite fluorescent slab from Sterling Hill.



Our slab is located in a separate area of the Hall that exhibits how light interacts with minerals. The slab is illuminated by white light, longwave UV, and shortwave UV, which are continually sequenced. There is also a period of darkness, allowing for visualization of phosphorescent willemite streaks in the slab. The concept here is to enable the public to see how varying light energy excites the slab, resulting in color change of the fluorescence. Under longwave radiation, the calcite appears pale pink, and the willemite is lime green; under shortwave, we see the expected vibrant red/green fluorescence of the slab. In addition to the slab, there is labeling describing how the ore body at Sterling Hill formed, how fluorescence was discovered there, a brief description of mining activity, and a photo of the Rainbow Tunnel at the Sterling Hill Mining Museum.

The Sterling Hill Slab

Sterling Hill Mine, Ogdensburg, New Jersey, USA

This slab of rock showcases some of the spectacular fluorescent minerals you can see at the Sterling Hill Mining Museum in Ogdensburg, New Jersey. About 90 fluorescent mineral species are found at Sterling Hill and the neighboring Franklin deposit, some of which have been found nowhere else. Pause here to watch the slab change color under different lighting conditions—and pay close attention when the lights go out.

FROM MINE TO MUSEUM

This slab comes from the Sterling Hill ore body in Ogdensburg, New Jersey, site of the former Sterling Hill Mine and present-day Sterling Hill Mining Museum. The mine operated between 1850 and 1984, producing 11 million tons of unusually rich zinc ore. It wasn't until the early 1900s that the mine's true colors shone, when sparks from a flickering electric lamp revealed the flamboyantly fluorescent minerals in the ore body (left).

Sterling Hill still contains up to 1 million tons of unmined ore, and the remaining tunnels within its fluorescent minerals in all their glowing glory. These tunnels, including the spectacular Rainbow Tunnel (right), are accessible only through the Sterling Hill Mining Museum.

Near the slab, there is a small case of minerals including scheelite, corundum, diamond, fluorite, and other minerals, with an explanation of the physics of fluorescence and phosphorescence (referred to as persistent luminescence).

The new Hall has a series of exhibits dedicated to mineral-forming environments and our tri-state region is well represented. There is a section on the zeolites from Paterson, NJ and a large slab containing the giant garnets found at Gore Mountain in NY. In a section on Metamorphic Environments, the NJ zinc deposits are discussed, and there is a large case of Franklin and Sterling Hill specimens. The geochemistry and formation of the ore bodies are discussed in some detail. Also, the remarkable abundance of mineral species found at Franklin and Sterling Hill, including fluorescents, is recognized in this exhibit.


The new Hall does an excellent job of demonstrating mineral systematics and mineral classification by chemistry. There is also an in-depth discussion of crystals and crystal systems, as well as exhibits showing various properties of minerals. As a chemist, I particularly liked

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THE MIGNONE HALL OF GEMS AND MINERALS

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the giant interactive Periodic Table video screen, demonstrating how elements combine to form specific minerals. How minerals form, and the geochemistry and geology of specific mineral environments are discussed on great detail.

In addition to the enjoyment of viewing the remarkable exhibits, the new Hall of Gems and Minerals is a great resource for teachers and students that are studying Earth Science at all levels of education. With its Hall of the Universe, Hall of Planet Earth, and now the Hall of Gems and Minerals, the museum does an excellent job of demonstrating the dynamic universe, how elements were/are being formed, and why/how minerals occur on our planet. A visit to this new resource for mineralogy is highly recommended for those with either a causal or an in-depth interest in Earth Science. 

Alan Rein, Ph.D. is a member of the Sterling Hill Mining Museum Advisory Committee. His background is in chemistry and spectroscopy. After research positions at Merck & Co. and management positions at IBM, he and a group of colleagues spent the next three decades developing novel scientific instrumentation for the pharmaceutical industry, for homeland defense, and in support of aviation safety. In addition to his position at SHMM, he is a Teaching Volunteer and Earth & Space Explainer at the American Museum of Natural History, and is on an advisory committee for Bergen County's Academy for Science and Technology, a STEM-focused high school.

“Trimmings” from the American Museum of Natural History Return to Sterling Hill

Bill Kroth

During November 2017, the Sterling Hill Mining Museum and the American Museum of Natural History in New York (AMNH) embarked on a very ambitious and rewarding project – the excavation and removal of a 44,000-pound slab of fluorescent ore from our fill quarry. The purpose of mining this slab was to present a world-class example of fluorescing minerals to the public at a soon-to-be built addition to the famous AMNH in New York. This collaborative venture, which included a group of Italian stone cutters, was well documented in our Spring/Summer 2018 newsletter, and it was certainly one of my most memorable experiences at Sterling Hill.

Due to construction delays and COVID closings, the opening of the Mignone Hall of Gems and Minerals did not officially occur until mid-June 2021. During that

time, we more-or-less forgot about the slab and concentrated on our own issues here at Sterling Hill, knowing that the great unveiling eventually would happen.

We were informed that the slab from our fill quarry was too heavy and surpassed allowable floor loadings for the new addition to the AMNH. Hence, it was shipped to Minnesota for trimming to make it lighter, consisting of a “butterfly” cut that resulted in the same surface area, but a thinner profile. As a result, the only loss would be in the thickness, and the view on display to the public would not be impacted.

Several months ago, I was contacted by Dr. George Harlow (Curator of the Department of Earth and Planetary Sciences at AMNH) who told me the trimmings from the slab were available; all we at Sterling Hill had to cover were the transportation costs from

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“TRIMMINGS” Continued from page 11

Minnesota. The AMNH was also going to keep a small portion of the trimmings for special purposes. Weeks later, George contacted me again to tell me that AMNH would cover all costs!

JK Crane, the original crane company that removed the slab, would be driving the trimmings back to Sterling Hill. We would then rent a crane to unload them. This news was amazingly good!

What made the situation even better was that AMNH and JK Crane supplied a crane truck at no cost and the “trimmings” consisted of two huge slabs, each approximately five feet by six feet. They were clean, flat, and perfect; hardly what others might refer to as “just trimmings.” We estimated that both slabs weigh over 10,000 pounds.



Denise and Bill Kroth, with the recently delivered two fluorescent slabs.

Both Denise and Doug Francisco came up with the idea of locating these slabs in our flooded stope area, where the “Zoolander” movie prop was displayed. Since the filming of that cult classic movie in 2001, the display had deteriorated and had served its useful life. Some of the “fake rocks and timbers” were repurposed in other displays, and the area was cleaned up to receive the two slabs. This location was ideal since the slabs could simply be lowered into place by a crane, and the area already had ample electrical outlets and UV lights.



JK Crane, moving the slabs to the stope.



Doug Francisco, guiding one slab into the stope.



John Gumbs, receiving the slab in the stope.

During mid-July, John Gumbs and Doug Francisco set the slabs in place via a large crane, and in subsequent days, utilizing jacks and hoists, got them into their final positions. A series of 140-watt UV lights mounted on chains provide illumination. More permanent fixtures are being fabricated that will support new 210-watt, weather-proof UV lamps by our friends at Ingenious Designs (our official supplier of ultraviolet lights).



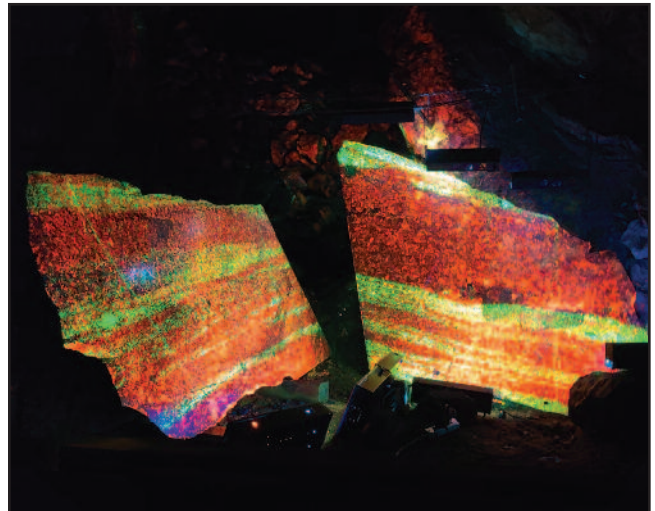
Arrival of the first slab in the stope.

“TRIMMINGS” Continued from page 12



Bill Kroth, adjusting the placement of the second slab.

The official opening of the Mignone Halls of Gems and Minerals was June 12, 2021, and our slab is certainly one of the main attractions (see article by Alan Rein in this newsletter). Advertising posters have appeared throughout the New York City area, on the streets, in subways, and at bus stops, showing the beautiful red and green fluorescent banding of our calcite and willemite slab. I can honestly say that our fluorescent slab has become an icon in the new AMNH Halls. Many visitors have told us that they are visiting us at Sterling Hill because they saw the slab in New York and they learned that we are only an hour away.



Our two fluorescent slabs under UV lights.

We are proud to have been asked to provide the slab to the AMNH and are thankful for the generosity of the amazing AMNH for giving the two large pieces back to our mine! Make sure you check it out next time you are at Sterling Hill. 🐛

Bill Kroth is a retired geotechnical and civil engineer who has been involved with the Sterling Hill Mining Museum since the early 1990s. Bill developed a love of minerals in the 7th grade and an interest in amateur astronomy in high school. Now in his mid 60's with plenty of "retirement time" Bill and his wife, Denise, are at Sterling Hill every day hoping to pass their love of science to the current generation and to help make the museum a world class attraction.

To our members and newsletter readers: We request your input regarding topics for future articles in the Sterling Hill Mining Museum newsletter. What topics would you like to read about?

- Mining history?
- Mineral collecting?
- Local history?
- First-hand accounts regarding the Sterling Mine?
- STEM (Science, Technology, Engineering, and Mathematics) education topics?
- People associated with the Sterling Mine and Ogdensburg?
- Miners' experiences in the Sterling Mine?
- What other topics would be of interest to you?

Please send your ideas for topics to the Sterling Hill Mining Museum newsletter editor, Jeff Osowski, at jvotmo@comcast.net. And we are always looking for new authors for the newsletter. If you would like to write an article, please email the editor at the address above. Thank you.

A Close Call in the Sterling Mine

Doug Francisco

One of the first things people ask when you tell them you were a miner is "Did you ever have a close call?" Here's that story.

I had already been working in the Sterling Mine for five years and should have known better, but I was young and thought I was invincible. I had come up through the ranks from runner's helper to drill runner and then to miner, and at the time of this event was in charge of an 800 longitudinal stope off the 340 foot level. A few months before this, non-electric blasting caps had been introduced to the mine. The 800 stope had been chosen to try out these new caps, and I was selected to host the representative from Ensign Bickford, the manufacturer of the new caps, to learn the procedure, so I could help train others on how to use them. These new caps revolutionized our blasting methods, and not only made our blasting safer, but allowed us to triple and quadruple the number of holes we could fire in a single event. Until this time, we were limited by electric caps to approximately 13 rows, because those caps only went from 0 to 13. The new millisecond caps went from 0 to 15, all in 15 thousandths of a second, and you could use a jumper cap from the last row of a series to the first row of a new series; so technically, there could be an infinite number of rows – a huge plus!

But I digress. Although I don't remember the exact date, I know that it was prior to 1980 because we still had two shifts. Both shifts had spent the previous two days loading explosives; each hole with its new millisecond cap. We had loaded over 3½ tons of powder (approximately 35, 50-pound bags of ammonium nitrate per shift). That was going to be a big shot!

Curiosity almost did kill the cat. I was so curious as to how the five series of millisecond rounds would break that I had to be the first one to see the results; but other miners on the cross-shift would see it first. How was I going to beat them to it? I came up with a plan.

For a big blast like that, everyone had to be out of the mine. Here's how that worked. The blast crew, i.e., you and your helper, would wait on the shaft level station for a phone call from the shift boss who was in the adit. The shift boss would check the tag board to verify that everyone was out of the mine, except the two who were doing

the firing. The shift boss would call the station where the two miners were waiting and give the "all clear" signal. These two men would then go back into the mine to where the blasting wire had been spooled-out to a safe place. They would connect the blasting box and fire. Then they would return to the shaft station, get on the empty man-cage, exit the mine, and go home.

My plan went like this. I would wait at the ladder-way tube that went up 50 feet into the stope. My helper would get the call and come back to give me the "all clear" signal. Then I would fire the blast and quickly climb up the ladder-way, check out the results of the huge blast, and leave, going back down the same way I had climbed up. The ventilation on the stope was excellent so I expected that, as in smaller blasts, the smoke would clear out quickly. Boy was I wrong! I did not take into account the fact that in this huge blast, the broken ore would completely cover the ventilation tubes and other airways that normally would have cleared out the smoke quickly. I also did not take into account the volume of smoke 3½ tons of powder would generate.

It was time for the blast, the call was made, and my helper came back with the "all clear" signal. I fired, and it sounded great. I flew up the ladder-way; with my cap lamp as the only light source.



This is the base of the man-way up into the 800 stope off the 340 foot level. These fences were built to hold back the fill rock. There were hundreds of these fences throughout the mine, some much bigger than this one.

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A CLOSE CALL IN THE STERLING MINE

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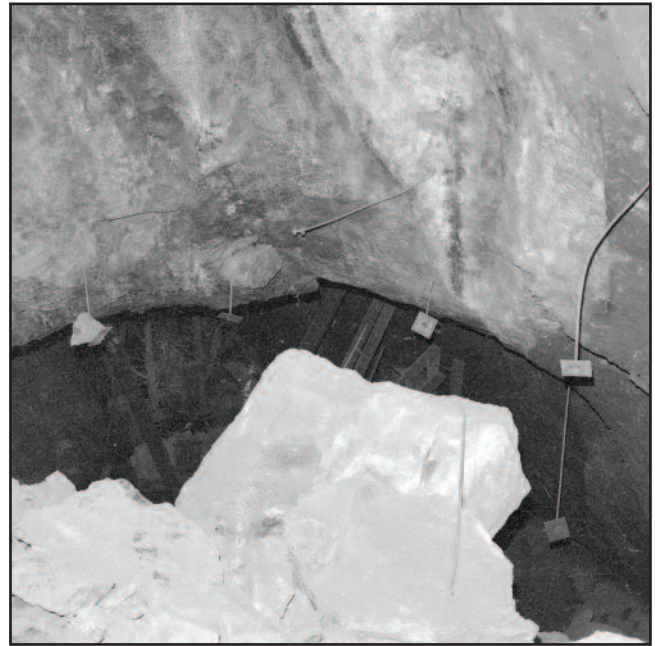
All of this took only a few minutes. I climbed up, emerged from the ladder-way tube, and took a few steps forward. There was a little smoke, but not enough to bother me. I couldn't quite make out what I wanted to see so I advanced another ten feet or so. In the course of about a second, a wave of thick grey-white smoke rolled over my head and dropped behind me. I could not breathe! The tiny breaths I could manage were like swallowing lumps of dry clay. I had bunched up my t-shirt around my nose and mouth as a mask, but that was useless. I ran a few feet in total blindness toward the ladder-way to get to a safe place. I couldn't find it, in those few feet I had gone off course! I was going to die there, and no one could come get me for at least an hour till the smoke cleared. What seemed like forever was probably only 20 seconds. It was then that I tripped and fell. When I put my arms out in front of me to break the fall, the very tip of my right pinky finger grazed a smooth angled surface. That was the hanging wall! I knew if I followed it, it would lead to the ladder-way. I crawled along a few more feet and cut my hand on the metal of the tube. I pulled myself upright, all the while holding onto the top ladder rung, and climbed down into fresh air.



This is a 36-inch corrugated steel ladder-way pipe. There were thousands of feet of these pipes throughout the mine. Every time a mining cycle was completed we would add about 10 feet of this pipe to an existing pipe to advance the ladderway.

I went down the ladder-way, coughing and sputtering and gulping all of that fresh air. My helper had just gotten off the mine-train motor when I dropped down out of the ladder-way tube. I was covered in dust and probably looked a little crazed. The clean air felt wonderful as it rushed past when we exited back to the station on the mine-train motor.

I never told this story to anyone because what I did was really stupid and could have gotten me fired; not to mention, dead. If I hadn't tripped and fallen the way I did, a rescue team would have had to carry out a dusty corpse.



This is the "scene of the crime" after the blast. If you look closely you can see equipment stored so it would not get crushed. You also can see the ladder-way extending from the man-way tube.

The next day I remember seeing my dusty footprints. I could trace my entry, my run forward, then the spin, and the off-course steps, all in only about a ten-foot area. Oh yeah.....the blast results were perfect. 🐛

Doug Francisco, a trustee at the Sterling Hill Mining Museum, is a graduate of the Brinker School of Surveying and Mapping. For 12 years he was a miner at Sterling Hill; and he worked for 30 years in heavy highway bridge construction. His love for Sterling Hill runs deep.

A Look Back at the Ogdensburg Glowing Rocks Experiment

Krista Hornyak

It's hard to believe that it's coming up on 20 years since our science enrichment group began our journey with NASA. At a young age you're told to reach for the stars, and well, we did! With the guidance of our science teacher, Claude Larson, our group, composed of sixth and seventh graders at the time, became the first students to send fluorescent minerals into space. We were affectionately known as the O.G.R.E. (Ogdensburg Glowing Rocks Experiment) Team, and we selected Shrek as our mascot, making shirts and pins to express our pride in our project. Our shining proposal led us to be selected as part of NASA's Space Experiment Module. As a result, our project was going to get to fly aboard the space shuttle Columbia.

We were curious to see the effects of space travel on fluorescent minerals, some of which are found in our very own backyard. Our hypothesis was that the minerals would glow brighter after being sent outside the Earth's atmosphere. From the initial mineral selection, to their retrieval, cutting, labeling, and spectrophotometer readings – so many aspects of our experiment's preparation were done right on site at the Sterling Hill Mine.



That's me, with the O.G.R.E. project.

I remember when, after multiple launch delays, we finally got to watch the takeoff from our science classroom. While our team sat glued to the TV in silent amazement,

cheers erupted from the other classrooms as they also looked on. It was a sunny day, and I think we all felt on top of the world.

While the astronauts were in space, I remember recording and watching the daily footage on the NASA channel. From those viewings, I felt I really got to know the astronauts. Yes, they were doing a job – but you saw their humanity – their laughter – their playfulness. By the time they set back to return, I felt I had come to know them as friends.

Unfortunately, the shuttle landing did not go as planned. I remember waking up to my grandfather telling me to look at the TV and my parents telling me they were sorry. I didn't know what they meant – until I turned on my television for myself, and saw the playback of shuttle debris falling from the sky on every news station. The Columbia had exploded, killing the seven brave astronauts just 16 minutes shy of the shuttle's landing in Florida. We all dealt with the loss in our own ways; I wrote each of the astronauts' names on a chalkboard and hung it up in my room, and I sent out an email to pray for their families.

Looking back, what I find even more remarkable than the fact we had the opportunity to do this project in the first place, is that we had the capacity at that age to realize there was something happening much bigger than ourselves. Sure, the loss of our project was disappointing, but our thoughts immediately turned toward the astronauts' families. We wanted to honor what their loved ones had dedicated their lives to aboard the shuttle. I am happy to say we were able to raise enough money to send kits of fluorescent minerals and ultraviolet lights to the STS-107 crew's children, to serve as a reminder of all the positive contributions their parents made to science.

As I recently reflected on articles, photographs, emails, and keepsakes from my time as part of the O.G.R.E. team, I found a lyric sheet I had printed out and dedicated to those who had been aboard Columbia – Faith Hill's "There You'll Be." I think the lyrics really do express my

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A LOOK BACK
Continued from page 16

feelings best: "In my dreams I'll always see you soar above the skies, in my heart there'll always be a place for you for all my life."



The Space Shuttle Columbia astronauts.

We introduced the world to our close-knit community and brought attention to our area's incredible resources. We truly made history for our little town of Ogdensburg, and even better, we did it with heart. 🐜



Krista Hornyak is a life-long resident of Ogdensburg. She graduated from Ramapo College with a Bachelor's Degree in Communication Arts and is currently employed as a Social Media Specialist in the hospitality field. She has always had a passion for education and exploration, and loves giving back to the community, having recently completed a Little Free Library for the town of Ogdensburg.

John Kolic's Sterling Hill Mining Diaries

Doug Francisco

John Kolic worked in the Sterling Mine for 14 years, from 1972 until the mine closed in 1986. He recorded his experiences in great detail, in eight nondescript dime store notebooks that contain invaluable daily entries about his mining experiences and mineral finds in one of the oldest mines in the country.



This photo was taken on July 9, 1989, only a few weeks after the mine was reopened. On an exploratory mission, miners John Kolic, Chris Auer, and Doug Francisco walked through each workplace to check out the equipment and conditions in the mine. In this photo, John is checking out the ceiling in the 935 stope off the 500 level.

The previous batch of John's mining diaries brought us to June 18, 1990. The 1100 level had succumbed to the rising water and been abandoned. Work was continuing on the development of the rainbow tunnel, and John was continuing his search for specimens in what remained of the mine's upper levels. This latest batch of diaries, bringing us to mid-October 1992, will be released in October 2021 on the Sterling Hill Mining Museum website at:

www.sterlinghillminingmuseum.org/kolics-work-diaries



Element Sulfur

Gordon Powers



This thirteenth article in the continuing series on the periodic table display in the Zobel Hall will focus on the chalcogen (ore-forming) non-metal, sulfur. The six-foot by ten-foot periodic table display in the Zobel Hall is a teaching tool that helps people understand the science behind the everyday items they use in their lives and the role of mining in producing those items.

Pure elemental sulfur is pale yellow. Its melting point is 239° Fahrenheit. Sulfur has an atomic number of 16, and while it can be found in its pure elemental form in nature, it is more likely to be found as sulfide and sulfate minerals. Its chemical symbol is S, and it is the fifth most abundant element in the Earth's crust.

The name sulfur derives from either Sanskrit or Latin. Given that it can be found easily in its native elemental form, it was well known to the ancient Chinese, Indians, Greeks, and Egyptians. It was easily obtained in this native form, often in volcanic areas. Antoine Lavoisier, the 18th century French chemist, was the first person to identify sulfur as an element. The primary methods used in commercial mining of sulfur were the Sicilian and Frasch processes which basically involved heating the

sulfur until it melted, and then recovering the liquid. These methods were used until the late 20th century. Some of the minerals from which sulfur is extracted include pyrite, galena, and gypsum. It also has been recovered from salt domes using the Frasch process. The primary source for sulfur today is as a byproduct of purification processes used for natural gas, oil, and tar sands. The largest producers of elemental sulfur are China, the United States, Russia, and Canada. The United States produces approximately 66% of the elemental sulfur it uses and imports the remaining 33%, primarily from Canada.

Approximately 90% of sulfur consumed is in the form of sulfuric acid, which is used as a precursor in many chemical processes, such as phosphate extraction for fertilizers, oil refining, and wastewater treatment. It is used in the manufacture of cellophane and rayon. Elemental sulfur uses include the vulcanization of rubber, paper bleaching, in food preservatives, and in gunpowder. Other uses include silver polish, pesticides, fungicides, and herbicides. Sulfur is well known for its odor and, as such, organosulfur compounds are added to natural gas, which is odorless, to easily detect leaks. Organosulfur compounds are also found in garlic and, in one of its more infamous forms, in skunk spray. These compounds find use in dyes, agrochemicals, and pharmaceuticals, such as sulfa drugs, and in Epsom salts, which is magnesium sulfate. Sulfur has an essential biological role for all living things (it is the eighth most abundant element in the human body). It is a component of some essential enzymes and is necessary for certain intracellular chemistry. Of course not all forms of sulfur are good; for instance, some sulfide compounds can be toxic and sulfur dioxide in the atmosphere leads to acid rain.

There are many uses of this important element in today's world. Look a little closer at the items you use throughout your day to think how sulfur may have played a part in its production. And if you want to collect minerals containing sulfur at Sterling Hill or Franklin, there are many, with barite probably the best known. A good resource for a listing of local minerals containing specific elements is the Franklin-Ogdensburg Mineralogical Society (FOMS) website at: http://www.fomsnj.org/Franklin_Mineral_PeriodicTable.spx.

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ELEMENT SULFUR

Continued from page 18

One final note – you may have noticed the very large and perfect sulfur crystal in the picture on page 18. This single crystal was lab-grown by Dr. Kurt Nassau and, as far as we know, it is the single largest sulfur crystal in the world. Dr. Nassau worked for Bell Labs for 30 years and was a world-renowned expert on the chemistry and physics of crystals, on color in crystals, and in mineralogy. There is a display case in the Zobel Hall dedicated to

him, as he was a generous benefactor who donated many wonderful items to the Sterling Hill Mining Museum, including the crystal in the sulfur cubicle in the periodic table. 🐛

Gordon Powers, a trustee at the Sterling Hill Mining Museum, worked for the US Army as a civilian mechanical engineer for almost 39 years before retiring in 2017.

Ask a Miner

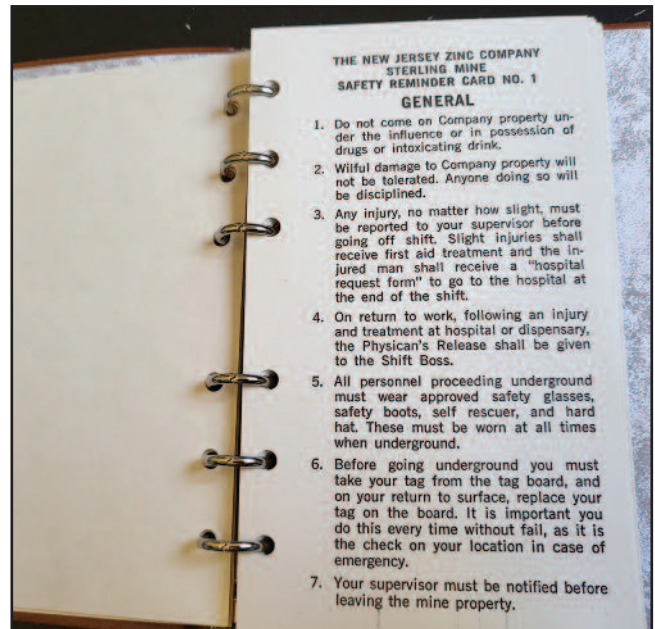
Doug Francisco



Each edition of the Sterling Hill Mining Museum newsletter will include this Ask a Miner feature. We have gathered questions from curious students who have visited Sterling Hill. Doug Francisco, a miner at Sterling Hill from 1974 to 1986, will answer the questions.

Did any of the miners get injured or die in the mine? Angela, 7th grade, Immaculate Conception School, Annandale, Hunterdon Co., NJ
Was it dangerous working in the mine? Cadence 5th grade, Franklin Twp. Elementary School, Warren Co., NJ

The short answer to these questions is “yes!” At the time our mine closed in 1986, mining was considered one of the top five most dangerous jobs. The top two were logging or timbering and deep sea fishing. Mining was the third most dangerous job. Most injuries in the Sterling Mine were hand injuries. We used our hands a lot in the mine – holding tools and drills, and moving very heavy things; all the time with just a small light on our helmet to see what we were doing. Unfortunately, about one miner died each year from accidents; and a long time ago, before safety regulations, many more than that. Mining today is much safer, because there is better equipment and lighting, and mining companies have instituted safety programs and training. As a result, mining has moved down on the list of most dangerous jobs.



The New Jersey Zinc Company was very good about safety. There was a Safety Rule Book, and we had weekly safety meetings. We never wanted to get hurt; you had to pay attention every minute of your day so you could go home as healthy as you came in.

How old is the Ogdensburg mine? Sofia, 4th grade, Ogdensburg Elementary School

That’s a good question, Sofia. Our mine was the fifth oldest mine in America. The Sterling Mine actually started as an iron mine, before it turned into a world-famous zinc mine. There were three different minerals that made up our zinc

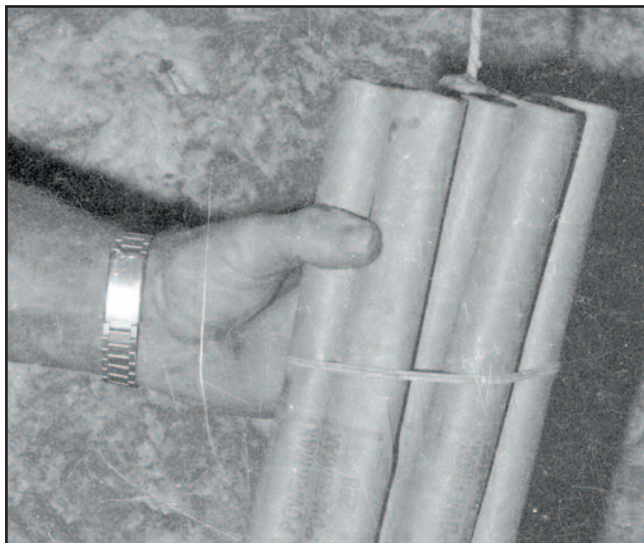
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ASK A MINER
Continued from page 19



This is good chunk of zinc ore. The franklinite is black, the zincite is red, and the white mineral is calcite.

willemite, franklinite, and zincite. Now franklinite, in addition to zinc, has a lot of iron in it. So way back in the 1700s they started mining for franklinite, and that means the Sterling Mine is over 250 years old!



This is one kind of dynamite we used in the mines. There is a lot of explosive power in those sticks.

How did you escape from the dynamite blast? Leah 3rd grade, Franklin Twp. Elementary School, Warren Co., NJ

“Dynamite blast” sounds very scary, doesn’t it? Dynamite was really just a tool we used to break the rock. A miner has to study and learn what happens when he uses dynamite. For example, how far will the rock go when it is blasted? Or, how small does he want the blasted rock to be? Or, what might be damaged by the blast?

We had to have answers to all those questions before we blasted the rock. And, of course, we had to make sure no one would get hurt by the blast. The miners were always in control and knew where we were going when we were blasting. We had to make sure everyone would get out before the blast. And we were always very careful with dynamite. 🐛



As you can see in this photo, working with explosives was dangerous.

Students

We would like to feature your questions about mining and the Sterling Hill Mine in future Ask a Miner articles.

Please send your questions to:
jvotmo@comcast.net

Include your first name, grade level, and school.

Thanks

Randi Lyn Hornyak

Sterling Hill Mining Museum

STEM Scholarship Recipient Update

I have had to do a lot of adjusting and adapting in many of my roles on campus this year, as a second-year student in the Doctorate of Physical Therapy (DPT) Program at Stockton University, amid a global pandemic. As a student, my classes were a mix of virtual and in-person, and schedules were constantly changing. As a Resident Assistant, I coordinated virtual programming for my residents, promoted COVID safety initiatives, and figured out ways to ensure my residents' health and wellness were always tended to, even over Zoom. As a teaching assistant and tutor, I was tasked with not only assisting first year DPT students with their academics, but also helping to unify a class that had to be physically split for social distancing purposes, while also easing their transition into graduate school under very uncertain and ever-changing circumstances.



Despite the challenges, I was able to find success in all of these endeavors, including making Dean's List for my academics with a 3.97 GPA, guiding my residents physically and emotionally through very trying times, and helping the first year DPT students become accustomed to our program. I also have continued to participate in community service activities, including raising money for Relay for Life and the Muscular Dystrophy Association.

Also, during this past year, I was honored to receive my doctoral "white coat" during my Commitment to Profession ceremony which symbolized the beginning of the first of three ten-week full-time clinical rotations. This summer my clinical rotation was at an out-patient orthopedic physical therapy facility. I treated patients with a multitude of musculoskeletal conditions including joint replacements, fractures, soft tissue injuries, chronic pain, and much more. This is extremely fitting as my course work over the past year focused largely on the musculoskeletal system and use of evidence-based practice in medicine. During this clinical placement, I worked under an experienced physical therapist to gain essential hands-on learning and practice. This experience has made me certain that I am heading down the correct career path, as I get to wake up every morning and use my knowledge of science and the human body to help people on their way to recovery. I go to bed every night knowing that I have helped to leave a positive impact on my patients' lives. I am incredibly excited and grateful that I get to do that every day for the rest of my career.

This coming fall marks the beginning of my final year at Stockton University. My remaining coursework includes courses covering the neuromuscular system, other specialties within the field of physical therapy, and issues in healthcare. Next year, I also will complete my remaining two clinical rotations, which will involve an in-patient and neurologic physical therapy affiliation. In May, I will graduate with my Doctorate of Physical Therapy.

This past year has been trying for many of us in a multitude of ways, but I am very grateful that I have been able to find it rewarding. As always, the generosity and support of the Sterling Hill Mining Museum has provided encouragement and assistance for me to keep persevering forward in my studies and to continue to help others along the way. I would like to thank you for helping me along journey that has now brought me within reach of my dreams of becoming Dr. Randi Lyn Hornyak, DPT. 🐼

Sterling Hill - Then and Now

Gordon Powers



trees that have grown since the first picture was taken. The train in the 1970s photo is heading through what is now the Mine Run Dump collecting area; and in both photos you can see the mine building that now is used for viewing, under UV lamps, fluorescent minerals gathered by collectors on the Mine Run Dump.

At the bottom left of the 1970s photo you can see the roof of what was the Change House, now the Zobel Hall Museum. Also on the bottom left is the roof of what was the Sterling Hill Supply House, and now is the Gift Shop at the Sterling Hill Mining Museum.

To show how Sterling Hill has changed over the years, the newsletter occasionally will include an article comparing an historic photo of the mine with one taken at the present time. To the degree possible, we will try to replicate the position and view of the older photo.

The first photo above, most likely from the 1970s, was taken from the conveyer, looking south. The second photo on the right was taken on August 30, 2021 using the Sterling Hill Mining Museum drone, from a similar vantage point as the first photo.



The Great Sterling Mill is not shown in either photo, as it was demolished between 1960 and 1964. It was in operation from 1916 to 1958. In the 1970s photo you can see the large, square concrete pad that was the base of the Great Sterling Mill. The basement of the Mill still exists and is currently the GeoTech Center, with a metal roof protecting it, as shown in the 2021 photo.

How many differences can you find between the two photos? Can you identify the buildings and structures still in existence today?

The drone is a tool that provides great flexibility as we capture photos such as these. We hope to have more for your viewing pleasure in the future. 📷

Toward the top right in the older photo you can see the Compressor Building (now known as the South Garage) and the Diamond Core Storage Shed, both of which still exist and cannot be seen in the 2021 photo due to the


Sterling Hill Mining Museum: A Unique Experience, Whether In-Person or Virtual

Missy Holzer

The Sterling Hill Mining Museum has been “the” school field trip destination, creating fond memories for thousands of students over the years, until the pandemic closed schools and stopped all field trips. Even with students back in schools during the 2021-2022 school year, there is a good chance that field trips will not return. However, the Sterling Hill Mining Museum can still be a part of any Earth and Space Science curricula using the resources on the museum’s website, such as the activities on the Education page of the website. Also available are the written transcripts of two videos, described below, that can be of great value to teachers integrating Earth Science and engineering into the course content and to those who would like to create a virtual field trip to Sterling Hill Mining Museum.

Throughout the museum’s website, teachers will find resources that will connect their students to New Jersey’s unique geology. A great starting point on the homepage is the “Sterling Mining Museum Historical Video.” Narrated by former miner Ron Mishkin, this 20-minute video tells the story of the Sterling Mine, including historic footage of the mining process. A transcript is available for the video which could be used to identify “pause points” where the teacher may stop the video, and discuss what students had just seen, or take time to complete one of the activities found on the museum’s website. These activities can be found under the “Education” tab at the top of the homepage within the “Educational Resources” webpage. A good pause point in the video is at the 6’28” mark. Here, teachers can open a discussion about the mining process using students’ ideas as a foundation. This could be followed up with the activities on the museum’s website called “Following in the Footsteps of Edison Parts 1-3.” These activities provide students with the opportunity to model key steps in the mining process before they watch the balance of the video, which includes historic footage of the process.

To introduce students to the Sterling Hill Mining Museum, teachers could show students “Sterling Hill Mining Museum Documentary” found at: <https://www.youtube.com/watch?v=Onr-AHIQQ7s&t=16s>. In this 11-minute video, Bill Kroth (President and Executive Director of the Sterling Hill Mining Museum) provides an overview of the various stops along a tour of the museum complex. Each section of the transcript for this video can be used independently to teach topics such as natural resources, fluorescence, the mining process, and the life of a miner. Additional information on each of these topics can be found on the museum’s website, along with the classroom activities to support integration of the topics into local curricula.

Whether in-person or virtual, the Sterling Hill Mining Museum is a great resource to enhance learning and inspire our next generation of scientists and engineers, as well as anyone interested in learning about New Jersey’s geologic past and contributions to our natural resource needs. Please share these ideas with teachers. The video transcripts are available upon request from Missy Holzer at missy.holzer@gmail.com. 

Missy Holzer, PhD, a trustee at the Sterling Hill Mining Museum, has taught Earth and Space Science for over 30 years to high school and college students. She also provides professional development for teachers on many topics.

Sterling Hill Mining Museum

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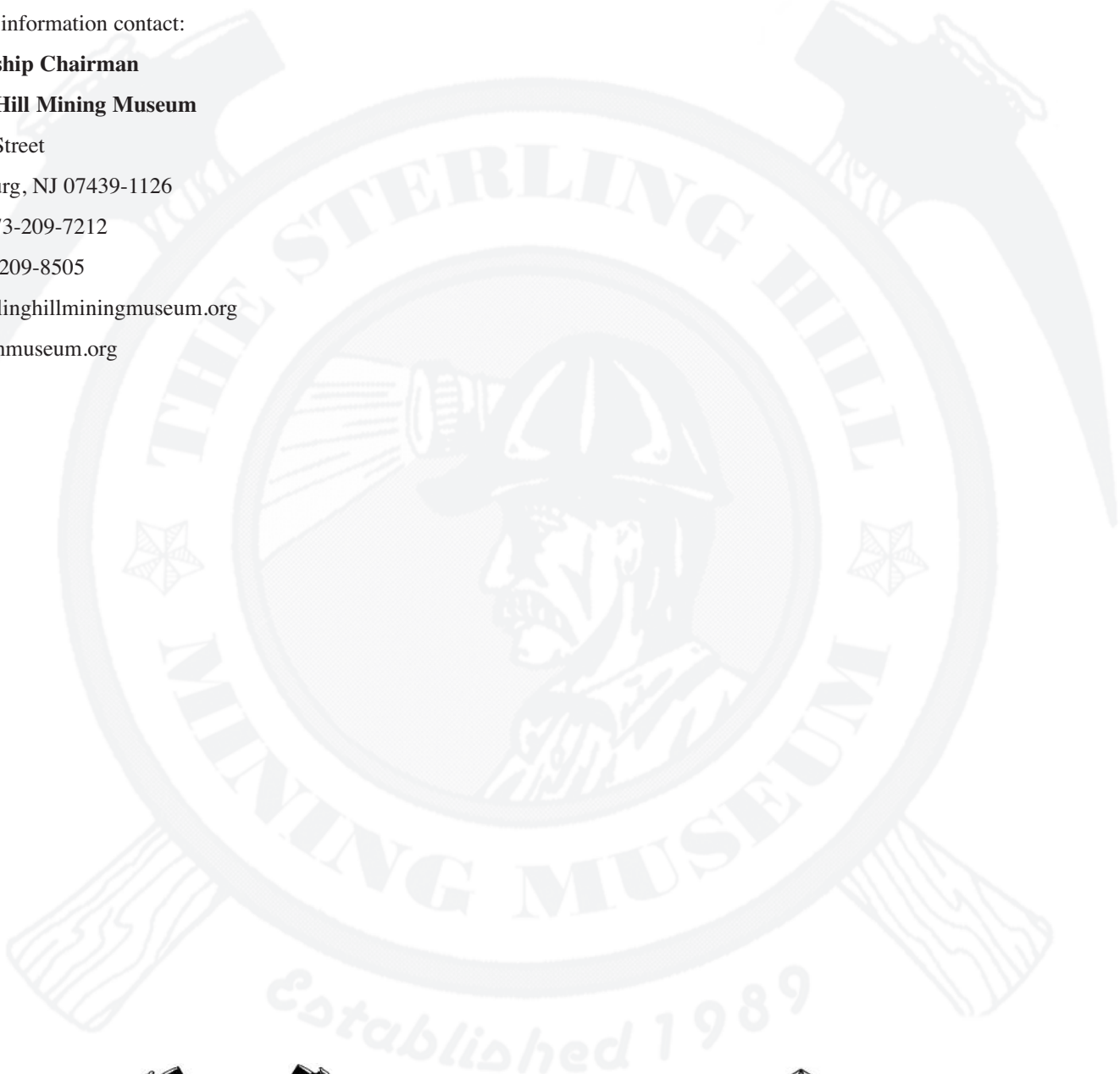
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Home of the Thomas S. Warren Museum of Fluorescence, the official fluorescent museum recognized by the Fluorescent Mineral Society