



Susie Mason's request for a contribution to the "Faces" series comes just as I start my service as the 2014-2015 Chair of the GSN Board. Many of you know me from my tenure as the Elko GSN President at a time before this Board existed, and when the winds of change began blowing an incipient "Jolly Roger" that flew over that group. The resulting actions, initiated by several of the founders and early members of the organization, were dynamic and far reaching, and we now find ourselves with a stronger and more coherent group of professionals spanning not just Nevada, but with field offices all over the world!

As I write this I am imagining a few hours of windshield time on the way to the field, and I will do what we geologists do best – I will tell you stories. It's a trip that many of us have taken with a new colleague sitting next to us, and is maybe the place of greatest comfort for many of us with a million field miles under our belts! I just hope that I can honor some of the people and events that have formed the foundation of my career, and to entertain you while providing a background to who I am!

First Outcrop

I grew up in a small town north of the Twin Cities, with a mid-western work ethic and northern accent that comes out best when I am hanging with my Canadian colleagues. I enrolled at the University of Minnesota on the St. Paul "farm campus" in the fall of 1979 and took an aggressive curriculum track focusing on microbiology and biochemistry. I had grown up in a family of rock hounds (mostly Lake Superior agates) and had always been interested in the earth sciences. In the spring of 1980, I ended up taking Geo 101 over on the Minneapolis campus just for fun. Early in the class our professor, a geophysicist named George Shaw was showing typical panoramic slides of spectacular mountain scenery and explaining geologic features to us, when he suddenly turned into the class exclaimed with all the energy of a four year old on his birthday that the best thing about geology is that *"they pay you to do this!"*

Later that spring Mount St. Helens erupted in a totally unexpected and dramatic way. A land slide had caused a breach which directed the initial force of the eruption sideways. Despite close monitoring by the geoscience community the mountain took out several people that day including a USGS geo named David Johnston, and spread a layer of ash over the western US. This event galvanized our class into what would be remembered by George as the single best group of students in his career, and provided an adrenaline push that eventually compelled me to change majors and to pursue the earth sciences as my true passion.

Run Away!

During the summer of 1983, my field partner Melisa Fry (side note, her father Arthur invented Post-It notes after a botched attempt by another scientist at 3M to produce a super adhesive) and I were fortunate to take top honors in our field camp which was held in the southern Sawatch Range outside of Gunnison Colorado. We were both awarded NAGT scholarships to institutions of our choice. Melissa headed off to Woods Hole and I was granted an internship at the David A. Johnston Cascades Volcano Observatory (named after the dead guy who found himself in the wrong place that spring morning pursuing his passion) in Vancouver Washington, just across the Columbia River from Portland. That summer was truly magical, and I was assigned to the crater deformation team which allowed me to fly into the breached crater of St. Helens every day weather allowed. We monitored the lava dome which had formed there after the catastrophic failure and eruption three years prior. By the end of the summer I came to view the Bell Jet Ranger as just a bus ride to work, but the volcano itself was always fresh, metastable and never routine!

The crater was a truly dynamic environment with constant rock falls off the sheer cliff high-walls. These became increasingly frequent as the day warmed and the ice “glue” holding the walls together melted back. The biggest of these falls would actually hit the crater floor and divert to flow toward and lap up onto the dome itself. This was cool, except that several of our survey stations were exposed to this hazard, which made the process of setting up the theodolite and turning the angles to the retro reflectors mounted on the dome all the more exciting. In the end the mountain taught you that only the biggest reverberating CRACK from the walls above was worth paying attention to.

I fell in love with volcanology at St. Helens. It is geology that “you might have to run away from”, and it adds a unique dimension to the concept of geologic time that we sometimes forget about while focusing on reading fossilized events in a static pile of rocks that are millions to billions of years old. My best advice from this field is to always check the sky during any volcanic event. If the specks coming toward you keep getting bigger then step aside...it’s when people turn their backs to run that the volcano has its best chance to take you out! That said I have three now-dead colleagues who I had worked with at St. Helens who ironically found themselves looking at a Japanese pyroclastic flow at Mt Unzen that was much like the one that took out Johnston and found nowhere to run to...



Turning angles to retro-reflectors mounted on the lava dome. We tracked movements of up to several centimeters a day, with more rapid movement during the two dome building eruptions that happened during my time there. You have to love the tube socks and the physique similar to that of the tripod!

Under Pressure

It took five years for me to complete my two undergraduate degrees, and I accepted an ARCO fellowship in Geophysics under George Shaw to start my PhD track, studying high pressure geophysics in a laboratory. My dream at that time was to develop a

commercially viable way to reduce the pressure required to produce diamonds in the lab by replacing transition metals with alkali metals as catalysts in that process. My initial work as a grad student involved deriving equations of state and understanding phase transitions for the simplified atomic structures of the liquid alkali metals. This was a baby step towards the diamonds, but two quarters into that work I grew restless for the field. With George's help I headed to East Africa where I volunteered with Project PROBE, a Duke University program that was conducting waterborne seismic surveys of the rift lakes there. I showed up in Kisumu, a town on the northeastern shore of Lake Victoria. Here I participated in two transits of the lake towing a kilometer and a half of seismic cable behind a 36 foot boat! We used onboard air guns to generate the sound waves which took all the engine power available, so during our cruises we were towed by the larger Kenyan vessel Utafiti (meaning "research" in Swahili). From crocodiles and hippos to tilapia (Victoria is where this commercially farmed species originates), this lake was teeming with life, and the Kikuyu and Luo crewmen taught me valuable lessons on the dynamics of engrained tribalism that seem to affect not just Africans but much of the world's politics.

After finishing with PROBE I hitchhiked the region for 3 months with a friend and was able to climb Mt. Kenya (most of it anyway, but it gets technical if you really want to reach the top) and Mt. Kilimanjaro. We explored the saline rift lakes, hot springs and extensive (lava tube) cave systems of the rift valley. Both of these volcanoes are comprised of rocks liberally endowed with very cool, very large (1-2 inch or longer) anorthoclase crystals that speak to a weird and wondrous crystallization/transportation history, and that represent a magmatic history that has been trapped in the layers of lavas that comprise these peaks.

Later that year I traveled to New Zealand to attend a Volcanological Congress I had seen a flyer on in the Department. On the bus ride during a pre-meeting field trip, I met my future advisor Philip Kyle. We were making small talk when he asked me what I wanted to do with my grad school studies. I told him that I had a "PhD pass" on the entrance exams at Minnesota and that I had started work in solid earth geophysics, but that I was very attracted to physical volcanology. I told him that my dream would be to do my thesis work on an active volcano...and that he said he had one with a permanent, convecting lava lake. I told him that I had a full ride on a research fellowship at Minnesota...he said that he could offer me full research funding as well. But it was when he told me that his volcano was located in Antarctica, one of the most exotic and hard to get to destinations in the world as I knew it, I was sold on this all-expense paid adventure!

I spent two seasons on Mt. Erebus, which forms the central peak on Ross Island and provides an idyllic back drop for McMurdo Base which meets the sea ice on the frozen coast. With a summer time population of ~1200, McMurdo was more akin to an Alaskan bush town with five bars, one or two churches and prostitution (which would ended with the ITT service people being escorted off the ice when found out). Once we put into the field after prepping in McMurdo, we camped in Scott tents on the summit plateau where the ambient temperatures hovered around -25 and the sun never quite set. As long as the wind was not up, I was able to work in shirt sleeves. But, when the wind blew we would be weathered in by ground blizzards, sometimes for days. Erebus is the second highest volcano in Antarctica at 12,448 feet, but because the Earth's atmosphere bulges out at the equator due to rotational forces, the air column is thin and the pressure altitude reads well over 13,000 feet and is near the limit of the Twin Huey helicopters that the Navy supported our program with. Due to the high altitude there was an intermediate camp set up on the Fang Glacier. Here we acclimatized and put-in to the upper camp using snowmobiles to transport our gear. With the very steep approach to the summit plateau this annual ritual became its own form of extreme sport.



Base Camp on the Fang Glacier. This was used for 2-4 days of acclimatization to the higher altitude coming off of sea level at McMurdo. Ground blizzards could keep us in the tents for days, and kept the helicopter support grounded as well.

The Antarctic summer started for us in October, and by the end of November and each year we would bury a stuffed holiday turkey in hot ground on the summit cone to slow cook. In reality the ground temperature hovered somewhere on the edge of incubation, and the whole business was fairly stinky when you pulled it out of the oven. Still, the meat fell off the bone and made for good tucker as my Kiwi adviser would say. I read recently that these same warm grounds are the topic of recent study in pristine ecosystems where scientists suit up to protect the sites from cross contamination with non-native “bugs”. I have to wonder if they are scratching their heads at finding exotic salmonella strains in amongst the local microbial flora and fauna...

We also enjoyed evening trips to the “sauna caves” that lie below great towering 30-40 foot chimneys of ice that condense when the warm vapor from the caves rises to meet the frigid air of the mountain. Chop a hole into the base of one of these, rappel down ~30 feet to a skylight in the underlying lava tube, strip off all of your gear and walk uphill in the cave until the temperature becomes ideal for sitting and sweating. Despite the technical climb required to get in, the hardest part is actually having to jumar back up the rope after your muscles have been reduced to rubber, and then driving the snowmobiles half way around the mountain to get back to base camp as the sun has dipped to its lowest point of the “night”, all done with wet hair, damp cloths and the irreverence of youth! What mother doesn't know...



This is a typical ice tower, rising above a spot of warm ground. Some of these have breached lava tubes under them that have channeled the warm air and water vapor to that spot. The Sauna Cave is one of these, and is entered through a skylight breach in the top of the tube.

Another ice cave near our permanent camp was also site of an old crashed Coast Guard helicopter keeled over on its side, the victim of a hard landing due to the rarified air of the summit plateau (think pressure altitude again). This cave was mineralogically unique in that it held clear hexagonal ice crystals as large as dinner plates along with other ephemeral speliethem forms made of crystalline water. This was kind of an eerie place where there are still oranges, now freeze dried, lying on the ground at this site along with other gear abandoned by the crew.

Erebus is the only active phonolite volcano in the world, and its permanent lava lake affords a direct look into the top of a magma chamber! The mountain offered up several small eruptions every day, though only a few of these were strong enough to throw bombs over the lip of the summit crater. When these landed nearby you could chop into them with your ice ax to reveal a spongy taffy-like expanded lava within the largely hollow interior of the bombs. Sometimes bombs as big as a cow would land on the crater rim. Interestingly, and in testament to the interconnectedness of life, Mt. Erebus lava is located in a rift setting and has very large anorthosite crystals just like the ones that I had seen in the East African Rift. I looked closely at the detailed geochemical fingerprint of the episodic and rapid cyclical growth of these crystal forms using the microprobe in Wellington New Zealand. These crystals are riddled with layers of melt inclusions ranging from microscopic to sub-millimeter size and arranged much as rings are in trees, and they have similar growth stories that can be unraveled through their systematic study.

It was during a night session on this instrument that I experienced my first earthquake while working on an upper floor of the Geology Department. I felt the floor move up and down and side to side. Then people were chattering and running through the hall outside my lab. I followed them and they hit the stairwell and went UP the stairs. We ended in front of a series of real time pen and drum seismographs in a hall display case! These were all geology students who were not concerned about saving themselves, but wanted to see how big this one was. Wellington is on the southern tip of the North Island, and the large transform fault that runs snakes through the straight that separates the North from the South Island had ruptured in a fairly large +7 event. I was no longer a virgin...



Standing on the rim of the summit cone of Mt Erebus. The lava lake is hidden under steam in the lower left hand corner of the photo, and bomb debris can be seen sprayed across the lower shelf in front of my boot. Only the biggest of the gas belches from the lake propel bombs over the rim.

Getting a Day Job

The geographic happenstance of my birthplace and subsequent University education would turn out to be my union card into the minerals industry when I was inducted by “Brother” Don Kohls into what was known as his Minnesota Mafia at Gold Fields Mining Corporation, a wholly owned sub of the London based Consolidated Gold Fields PLC. Due to the timing of the southern field season, I had only spent two full semesters on campus at New Mexico Tech. Growing up in the swamplands and forests of Minnesota provided a sharp contrast to New Mexico. After awhile, I began to see beauty in the shades of brown that made up the desert and I had fallen in love with the New Mexico lifestyle at Tech, but by the spring of 1988 I was broke and off the financial umbilical of my research position, so I applied for a summer job with Gold Fields in Roswell (think aliens). Here I became a one-man field office supporting an off-topic exploration program that Mike Thomsen had managed to sell to Don Kohls.

Don, a PhD of the Porphyry era, maintained that the average geologist was too smart by half, which I think was his way of saying that we should not over think this business. He did not emphasize genetic models, but instead expected each of his 65 field geologists to hit the outcrops hard and assay everything regardless of whether they “thought” it would run. Trace elements were of secondary importance in the early years, and in fact were openly discouraged. This basic philosophy led Gold Fields to huge successes at Ortiz, Mesquite, Shafter, Chimney Creek, Mule Canyon, Elkhorn, Springpole Lake and others at a time when the exploration world in the US was becoming increasingly model driven and focused on the Roberts Mountain Thrust and Carlin systems.

Although Gold Fields was clearly focused on gold and silver, Don's core philosophy held that we are not actually in the business of mining gold, but that we are in the business of making money. This is why I think he was willing to divert resources to a quest for native sulfur deposits in the Delaware Basin of southeast New Mexico and West Texas. At \$140/t a modest size sulfur deposit would yield greater returns than the average gold deposit. I spent three years working out of Roswell and then Carlsbad before the sulfur market crashed with the discovery of a giant deposit hosted in a salt dome on an offshore lease called Main Pass 299. Jim Bob Moffett and the geologists at Freeport effectively shut us down, and I transferred out to Mule Canyon to work with Andy Schumaker and Kent Thompson as that project accelerated on to a fast track development trajectory.

Working with the Mule Team put me up close and personal with volcanic rocks of the Northern Nevada Rift. This was a brilliant grass roots discovery by Andy who followed a low level 15 ppb stream sediment anomaly up drainage for ~2 miles where he found outcropping sinter with VG. Remarkably there was not a prospect pit anywhere near the sub-cropping discovery zone (or anywhere else in this part of the range for that matter). This despite easy accessibility to the Humboldt trails and later the freeway, not to mention that you can pan free gold in the dry wash. A virgin discovery in 1986 made the old fashioned way is now a hole in the ground that stands as a testament to the generations of prospectors and geologists who knew better than to look for gold in a bunch of basalt! Too smart by half...gold is where you find it, not where it is "supposed" to be.

When I arrived in Elko, there were 16,000 feet of dead stacked core in the warehouse and three types of rock recognized in their logging; vesicular basalt, massive basalt and basaltic dike. By the time we finished interpreting the volcanic sequence there were over 12 distinct units and we had a stratigraphy that was generally predictive to within 5-10 feet anywhere within the six deposits we delineated there. The density of drill information at Mule Canyon provided an unprecedented view into the third dimension of a young and fully intact system. The core control allowed us to map vent facies that transitioned downward into vesiculating dikes that meld into the solid dike fill material that fed them. The geologic models we built for Mule Canyon ended up reconciling to the actual mining to better than 90%, which is outstanding for a volcanic environment. This environment was comprised of stacks of localized lava flows interspersed with larger, blanketing fire fountain events. These events straddled the temperature/flux line between pyroclastic and effusive flows with welding and remobilization common in these very fluid basaltic andesitic lavas. This resulted in continuity along the long axis of the Rift that was far beyond anything that I would have imagined possible, and a shift in thinking about the application of volcanic stratigraphic concepts in mineralized systems.

Most of the Nevada based folks in our membership are familiar with passing tandem ore trucks on the freeway. What is not common knowledge is that you can thank the Mule Team for this shift too. Use of those trucks were key to moving a 16% IRR to +65% and a positive production decision for the mine. Processing offsite only became possible after Santa Fe took out Gold Fields and the Lone Tree autoclaves came available for processing the sulfide encapsulated ores of Mule Canyon. An added bonus for the operators at Lone Tree was that the 6-7% sulfide content created a BTU credit in the processing plant. The oxidizing of these ores was an exothermic process once the burn was initiated, and it produced more energy than it consumed eliminating the need for natural gas! With an average grade of 0.15 opt Au, Mule Canyon became the universal muck pile for Lone Tree. Suddenly a mine that had struggled to meet its production expectations prior to the introduction of Mule Canyon ore never missed a production quota again. While some may object to this characterization, I stand by my recollection from the viewpoint of the Mule Team!

Conquistador or Indian? Know your History

Over the last 25 years most of us in the minerals industry have experienced numerous takeover/consolidation waves. My first experience came within 6 weeks of signing on with. The year prior to my joining Gold Fields, its parent Cons Gold had come to Newmont's rescue to help thwart an attempt by T. Boone Pickens to take them over. Within six weeks of joining Minorco made a pass at Cons Gold. This attempt was deflected by titanium mineral sands in the eastern US that were held by one of its subsidiaries. Later on you will see how this strategic metal has re-emerged as an important player in my life as my current focus. At that time titanium was considered by the US Government to be a strategic metal, and the proposed take-over presented a potential monopoly on the resource, and lack of control by our Government, and the takeover was denied as a result. Just as everybody was congratulating themselves on a successful defense, Hanson industries (think Tony Armour golf clubs, clothing and Cessna spare parts) swooped in and took us out.

Hanson was a manufacturing/retail outfit, and they pulled the venerable old Cons Gold apart and sold off the pieces, keeping only those that were the most profitable. These included ARC aggregates in Britain and Gold Fields in the States. I remember George Shaw stopping the van above a gravel quarry on one of our 101 field trips and saying that what we saw in front of us was the underappreciated core of economic geology. In this light ARC just outside of London was a no brainer. On the Gold

Fields side we held two of the five lowest cost gold producers in the world and were slated to see a little over \$ 50 million in profit that year, and who isn't a sucker for the yellow metal?

The new boss assigned to Gold Fields actually came from the Cessna end of the Hanson conglomerate, and he brought with him a manufacturer/retailer's sensibility. To Grant Annabel, exploration properties represented inventory, and the first rule of retail is that you move inventory off the shelf as quickly as possible. Flash back to around the same time that Schumaker was following the float up the Mule Canyon drainage to find Art Leger prospecting the range on the north side of Crescent Valley. Art discovered a mineralized outcrop between the Gold Acre dumps which led to Gold Fields staking all of the open ground right up to the pit edge with Lode Claims. Everything was held in Millsite Claims by the Placer/Kennecott JV at that time. As you can imagine there were feathers ruffled by this action, and eventually Gold Fields agreed to pull their claims back, away from the pit edge, but followed up with testing the extension of the mineralized outcrops on the land they still held.

This drilling was underway with Kurt Dechert as the lead geologist when Hanson took over. I recall hearing Curt Everson tell the story of a management meeting where Roger Newell said there was not enough room between the holes that Kurt had assayed (100 feet of 0.1 opt Au starting 400 feet downhole) and the JV claims on the south to fit the minimum one million ounces that Gold Fields wanted to see. Since Placer had offered to buy the claims for \$1 million, and the new policy was not to carry inventory, management saw this as a coup and there were high fives in room. Newell was correct about the million ounces; it turned out that this small strip of land held over seven million ounces in the end. After a lawsuit, Gold Fields was awarded another \$30MM in settlement, the Placer/Kennecott JV got the Pipeline deposit and the Hanson manager ended up leaving his wife and family and running off with his Russian-born Executive Assistant. It truly is dog eat dog in the retail world...

As profits tailed off, Hanson grew tired of the gold business and they sold Gold Fields off to Santa Fe in a Coal for Gold swap that involved their newly acquired holdings in Peabody. After joining Santa Fe my focus moved more towards geologic and ore reserve modeling, and I worked on several projects in the K-stans. I also had the opportunity to roll my sleeves up and get close to the volcanic hosted Rosebud and the fast tracked Golden Eagle project in Republic.

In Republic our team took the one million ounce resource that Hecla had outlined and pushed it to three million ozs in about eight months of work. We successfully put a detailed geologic context for the deposit together for the first time. As we did our first quick logs to set up the scope and calibration for the detailed work that followed, it quickly became apparent that nearly all of the core was intact and had never been sampled. The white quartz in the veins on the other hand was all split, and many intervals had seen multiple re-sampling campaigns as the larger composite intervals that ran gold were re-split to try to see exactly which part was hosting the gold. It turns out that by applying the "too smart by half" rule we were able to see beyond a district with over four million ounces of historic underground gold production from white quartz veins. By simply splitting all of the historic core that had been bought and paid for and stored on the racks intact, Santa Fe "discovered" that most of the two million "new ounces" that we delineated had been sitting on racks for years in what is probably the prettiest and best kept core libraries I have ever encountered.

The Evil Empire's Golden Parachute

Where Gold Fields was a bit mercenary in its approach to discovery and tended to use lone geologists as its soldiers of fortune in the field, Santa Fe was more a family affair. Within a couple of years the initial feeling of being on the wrong end of the takeover (always more comfortable as the conquistador) had faded and our whole working group was really clicking. The Santa Fe family was broken up very shortly after this point by a proposed merger with Homestake. In a last minute twist Newmont swooped in and ended up with the winning bid. In contrast to the Gold Fields/Santa Fe merger, only about 15% of our geologists took Newmont up on their offer of positions, and nearly all of these were laid off from those positions within 6 months!

Several of us split away from this merge with financial aid from Newmont (contractually obligated under the terms of the deal). With full salary for a couple of years Curt Everson and I travelled to Vancouver during Round-Up in 1997. This was just as Bre-X was reaching its zenith, and the markets were frothy. We were offered \$20MM to seed out a new Jr. based solely on our names and pedigree alone. We started out thinking that we could create a little Santa Fe with 12 of us, but in the end we trimmed down staffing and bifurcated forming two new junior explorers; Vancouver based Nevada Pacific Gold with Curt Everson, Steve Brown, David Hottman and Joe Kajszo, and OTC BB based Golden Phoenix Minerals where I was a founding Director along with Mike Fitzsimonds, Don McDowell and later Steve Craig.

Many of you will know me best from the NPG days, with our office on the second floor of the Elko USPS building taken straight out of a Mickey Spillane novel. Our entry door's hand painted sign fit with the 1930's sensibilities of the building, and the

comfy blue chairs in front of my desk were a center of mineral industry intelligence during those challenging years that followed the collapse of Bre-X. People would drop by unannounced and spend hours shooting the breeze with the NPG guys. From my view we probably knew more about what was happening in the Great Basin during those years than any other group. It was not uncommon for our guests to learn about what their own companies were up to from us before they ever caught wind internally!

NPG was a truly generative group from inception, and embodied the original Gold Fields exploration approach using the three ex-Gold Fields geologists in Nevada to drive that process. Money is always difficult for junior miners, and the post Bre-X years were exceptionally amplified in this respect. We were able to find JV partners in Kennecott, Placer Dome and Newmont to augment our financing efforts, and we established one of the largest and best land positions of any junior company at that time.

I expanded my own skill set and found legs acting as a landman for NPG. During a routine land check I discovered that 25 square miles of checkerboard were standing open for location on the north side of Battle Mountain. We were working with Bill Howald (now famous for his own skills as a landman!) and Placer Dome at the time. I remember leaving Bill a message at the front desk at the Thunderbird hotel in Elko to see me that evening. In a meeting that took twenty minutes he approved NPG to stake that ground on behalf of our JV, and over the next couple of weeks we hit it hard using ourselves as well as Dan Harmening's All Points North staking crews. Most days we would stop to talk to Randy Vance who was with Newmont at that time, and who monitored our daily progress in the field. We assumed that we would be fighting for land with his own crews but that never materialized, either because Newmont never suspected that we would be grabbing the whole north side of the mountain, or because they simply could not get out of their own bureaucracy to make the decision to engage us.

Ultimately we also staked a large portion of the south side of the mountain as well, and over the years with the help of Tom Carpenter we amassed the largest and most complete gravity data set for the area. We were able to barter and trade both Marigold and Newmont for additional data, and finally had over 5000 data points that provide a clear image of pediment covered structures and many targets that remain untested to this day. When I look back on the secrecy of this industry at that time, being able to broker this exchange was itself a coup that I think none of us expected to execute, but we were not afraid to make the calls necessary to create the opportunity.

NPG moved into active production in an attempt to access the only sweet spot in that distressed financial market by purchasing the Magistral Mine in Sinaloa Mexico. Shortly after greatly expanding our land position in Mexico NPG was engulfed by the Mega Merge (Tone, White Knight and Coral Gold were also targeted, but Coral's deal did not consummate) orchestrated by US Gold and Rob McEwen. NPG provided much of the "meat" between the Newmont/Barrick buns on the Battle Mountain-Eureka Trend (McEwen's analogy not mine!), although in the end he added the Mexican generative to his list of marquee acquisitions in that push. Tired of always being at the mercy of the unwanted takeover, as NPG founders we set out to build value and orchestrate our own takeover. We succeeded, albeit ten years later!



Elko Free Press photo of NPG's first gold pour at Magistral. (David Caldwell left, Curt Everson right)

Naming Your New Junior Company

Note to self: When naming a company pay close attention to any legacy that may be attached by reference. Since inception, Golden Phoenix has crashed and burned four times, and much as its mythical namesake I have been there to help it rise from the ashes for the first three. The other part of this name-legacy business is that our receptionist often got calls for take-out orders...

As the proposed US Gold merger gained traction I was asked to join Golden Phoenix in a management position and to help them bring the Ashdown moly property into production. I accepted officer positions first as its President and then CEO, and was there as we set the company on the path towards its first cash flow positive quarter 13 years from the day it opened its doors for business. This was made possible by the hard work and good fortune enjoyed by Steve Craig and Mike Fitzsimonds who had managed to amass some great properties to work with during the early 2000's. Ashdown, Borealis and Mineral Ridge were the fuel that allowed us to rise from the ashes during the first three resurrections.

We had successfully brought Ashdown into production during 2007-2008 as one of the highest grade moly mines in the world, and we had done it by cobbling together parts from two used mills brought in from other Nevada properties and for less than a million dollars. Our JV with Win-Eldrich was not an easy one, but things were looking good up until the October 2008 metals crash which took moly from \$34/lb to \$8/lb inside of four weeks. This left our JV financially upside down (this was the third crash). We eventually worked our way out of this by leveraging a JV on Mineral Ridge with Scorpio Gold and I left the company in early 2010 to pursue my own private mining ventures in Latin America.

While doing diligence on a large copper porphyry I was able to source the ex-Greenstone Santa Rosa Mine in Panama for Golden Phoenix. This proved to be the triggering event for their forth undoing as they leveraged a 30% carry to production at Mineral Ridge against a loan to allow them to purchase Santa Rosa. Production was delayed at Mineral Ridge during its re-start

and this led to a default in payment on the loan which led to foreclosure by Waterton. I bet more than a few of you have been too near Waterton's bite and this company rose into prominence as owner to several properties in Nevada that went to them as the lender of last resort only to experience similar results or near misses.



This is a photo showing ore from Ashdown mine (far right), the BlackRock mine (far left and described in text below) and a commemorative button from the first gold pour at the NPG Magistral mine. The backdrop is an Award that Golden Phoenix was given by Governor Jim Gibbons (himself a geologist) in 2007 showing Dave Caldwell on the left, Julie Caldwell in the middle and Gibbons on the right. I presented a piece of Ashdown ore to him and asked him to identify the sulfide mineral! There is a reason he turned to politics...

Into the Black

Along with my volunteer work with GSN, my current professional focus is centered in a place that has become my favorite name in the industry. It honor used to be held by the Sleeper Mine which is located in the Awakening District of the Slumbering Hills. Today it is Chibougamau. Although not as lyrically poetic as the Sleeper descriptive chain, it still rolls from the tongue in its own way and conjures exotic visions of a faraway place and time...Like the Summertime Gershwin tune from Porgy and Bess I have visions of "Chibougamau, and the living is easy".

OK, the real reason for this infatuation is that after using two 0% credit card cash advance checks (and everything my wife and I had in free cash at that time) to secure a group of claims that were set to lapse in Quebec, this project has taken on a life of its own and has evolved into the single most significant project of my career. As a vanadium/titanium/magnetite project this is way off topic for most of us, myself included. I had no previous experience with these metals, and this is why I did not pursue it the first time it was submitted to Golden Phoenix during the build out at Ashdown. Six months later the opportunity was submitted again, and this time found us in a better position to focus on other things as we were well on our way to production and were looking for the next big project.

What was easy to see from the limited data available was that the Lac Dore layered intrusive complex had world class size evidenced by a continuous magnetic anomaly covering over 20 km of strike, and \$20MM in development drilling and metallurgy completed by the vendor and its predecessors. Grades were very strong in V, Ti and Fe. Title was simple and contiguous 100% controlled. In keeping with Brother Kohl's mantra that we are in the business of making money and not to overthink the basics, and the tons and grade added up to potential world class status. With only three days left before the claims were to lapse I was able to talk a local Quebec geo named Rejean Girard into fronting the claim money while our cash advanced funds cleared a mandatory one week hold at the bank. I did not have a deal negotiated with the vendor at that time, but proceeded on a handshake and the faith that we would get there. It was six months of hard work before we were able to clean up the hair and the warts that had grown on this project, and to place a liability free asset in a new holding company called BlackRock Metals Inc.

Since that time BlackRock has been operating as a private company and has deployed about \$70MM in delineation and development work. Ironically the area that had seen all of the historic development work had lapsed between the first and second time it was submitted, and the opening of that ground led to a staking war and subsequent title dispute that went on for three years before the Ministry made final rulings. BlackRock was forced to develop a portion of the magnetic body immediately adjacent to this disputed ground and essentially took this project from having no three dimensional reality to full Feasibility, ~400MM tonnes of reserve and an IRR of 24% in just four years. We have currently drilled off only about 7km of the 17km of strike that we control, so the upside is huge as we plan to bring the company public on the big board in Toronto this fall. With luck in tough market we will secure ~\$1.2B to build the mine with initial production slated for 2017.

I am looking forward to the next year as the Chairman of GSN, and to the 2015 Symposium which will bring us all together one more time to reminisce and see old friends, and hopefully to make new ones.