



The Trouble with Geologists

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We *dumb field geologists*, and I proudly count myself in that category, are a rather odd lot. We're not your regular eight to five white collar types and we are way too educated to be real blue collar guys. Notice I say "guys" because we outnumber the fair sex in our business by about 9:1.

We have a minimum of four, often five years of college education (most of us couldn't graduate in four years; some of the less industrious were on the nine-year plan). If you got a real B.Sc. and not some watered down B.A. degree, it was steeped in calculus, chemistry, physics, and computer science for the first two years and included 35-40 hours of geology mostly as an upperclassman.

Sooner or later, most of us went to graduate school for a few more semesters (or years in my case), took courses in the esoteric specialties of the science, and the ones who stuck it out wrote a book (called a thesis or dissertation) that gathers dust in the university library stacks and has been read by a score, or at best, a few hundred other geologists.

During the summers, we loaded up an overstuffed duffel bag and a rucksack with our essentials and relocated for three months to an oilfield in some redneck burg in Texas, an offshore drill rig in the Gulf of Mexico, a series of flea-bag motels in bum-f*** Nevada, a high altitude camp in the Rockies or the Andes, or a bug-infested bog in the boreal forest of northern Canada where the sun never set and the work day never ended.

We serviced oilfield equipment or roughnecked on big oil rigs. Others sat small drill rigs, collected and logged core or cuttings, and yelled at drillers when they repeatedly ignored our instructions. Sometimes we hiked around every day, broke rocks or dug dirt, put them in little bags and carried them on our strong broad backs to the truck, helicopter, float plane, boat, mule, or wall tent. As we gained more experience, we got to carry around a masonite board affixed with a topographical map covered by mylar and drew lines on it and filled in the spaces with pretty pastel-colored pencils.

Every three or four weeks, we would all rendezvous and go to "town" or maybe even "the big city", or whatever a spot of civilization might amount to, for a little R & R which usually consisted of blowing lots of money on benders in bars and brief bouts of female companionship.

At the end of summer, we went back to college with just enough money to survive as poor students until the next seasonal job came along. That annual trek back to a meager student lifestyle after summers of high wages and expense accounts was enough to convince us that this schoolboy routine had to end sooner than later.

The smart ones soon realized financial opportunities in the mineral exploration business could lead to an adventurous and nomadic lifestyle for those so inclined or a comfortable upper middle class living for the more staid. Either way, an early *semi*-retirement was always in the cards if we could strike it rich with the right project, the right promoter, and the right company.

Finally, at some point they threw us out of the university and we found good paying jobs in the real world of mineral exploration. Most of us, though well-prepared in rock collecting, pulling IP cable, claim staking, sitting drill rigs, map making, and melding geological, geochemical, and geophysical data into drill targets, were ill-prepared for the corporate world.

We had become book geologists in college and rock jocks in the field but entered the real job market with few if any business or communication skills. These requisites had to be learned from experience on the job.

For my generation, it's now four decades later. Though most of my peers and compatriots have years of field and office experience in big and small companies, I find that many are still ill-equipped and ill-prepared to succeed in the world of business. And that folks, is *the trouble with geologists*.

So why is that?

Geologists are caught in a nether world, part blue collar workers and part white collar businessmen.

We are outdoorsmen at heart. We like to drive around on bad roads in big trucks, fly around in small planes and helicopters, and hike up, down, and around huge mountains. We wander around in the deserts, woods, swamps, and jungles, live in camps with no electricity or running water, go days without bathing or shaving, and supplement daily rations with fish caught and game slayed.

Some of us haggle over the price of gold nuggets with illegal miners, chase loose women, drink beers and shooters in the bar after work, and hang around with drillers, cat skimmers, miners, and local laborers. Our language is true blue collar, interspersed with four letter expletives when women aren't around and sometimes even if they are.

It's just about the best life there is for single guys of any age, though not always for married (i.e., soon to be divorced) men.

We go to work in the great out-of-doors almost every day. Much of what we do is manual labor but we are not typical blue collar guys. We tend to be lone wolves and are fiercely independent. Can you imagine a *geologists' union*? ...that would be like trying to herd cats!

Hells Bells, I've had mild disagreements over what kind of beer to drink lead to vehement arguments and degrade to highly personal insults. Once that confab is settled with a fresh Bud in a bottle versus a flat, smelly IPA on draft, we scribble away on bar napkins trying to show our equally inebriated geo-mates why the next drill hole is *guaranteed* to discover the Mother Lode of all gold deposits.

Many geologists would prefer that their professional duties be restricted to these roles. But the junior exploration and mining business is entrepreneurial and driven by Type-A personalities. It runs on high risk venture capital and the best geologists are the ones that can span the bridge between a bush camp and the corporate boardroom.

That said, many of my ilk are not as comfortable in a suit and tie 100 days a year as they are in hiking boots and a rock hammer 150 days a year. But it takes both to be successful in this business.

Whether they are prospectors, mappers, speculators, managers, promoters, Chief Geos, VPs, or CEOs, the geologists that understand the field and business become the successful men. These are the *economic* geologists: those that turn rocks into money.

The trouble with geologists is many have little knowledge of economics or business and sadly, they do not care to learn.

The problem begins with our college educations. We are trained as scientists in the university geology department and take math, science, computers, and geology and not much else. If you choose the liberal arts route, you don't get enough science to be a good geologist. But with two degrees in geology, I never took a single course in communications, economics, English, or technical writing. Yet my profession is geologist and I read, write, and speak on economics nearly every day. I learned these disciplines from personal motivation and experience.

Lots of field geologists are only interested in pounding on rocks, that red and white outcrop plastered on the side of a mountain, what's on the back of the hill, venturing into old decrepit mines, and moving the rig to the next location. They like to invent a new geological model after their last three ideas were tested by the drill and failed. They may never question if the project they are working on has a snowball's chance in hell of making a mine.

I have found that the average exploration geologist lacks connection to the real world of economics, equities, marketing, finance, ore bodies, mines, IRR, and NPV. Many of my peers have never seriously considered what makes a good flagship property let alone what constitutes an ore deposit.

Folks, I submit that lithium brines in Nevada, graphite showings in Madagascar, metallic nickel plays in central B.C., rare earth element-bearing dikes in New Mexico, and narrow cobalt veins in Ontario (and Nevada) are not *mines in the making*.

They were not mines in the past, they are not mines now, and they will not be mines in your lifetime or mine. They might be interesting research topics to your professor at the university but they don't make ore bodies.

Yeah, these guys may be geologists but they are not *economic* geologists.

In resource exploration, we are always faced with very slim odds of success. Note I said that in an optimistic way. A pessimist might say "overwhelming odds of failure". One of every ten thousand prospects, one of every thousand drill targets, one of every hundred resources, and one of every five deposits with a *positive* feasibility study will make a profitable mine.

By a profitable mine, I mean one that pays back capital in five years or less, returns dividends or earnings per share to its initial investors consistently from year to year, and is reclaimed at a fraction of the profits delivered during its productive life. Mines that go bankrupt and are acquired by other companies, have

their capital costs written down, or end up with massive environmental liabilities borne by shareholders are not profitable mines in my book.

Four of every ten mines will fail; another four of ten simply trade dollars, and two out of ten will generate windfall profits.

And don't ever forget this: For every failed mine, there was a positive feasibility study.

That means that only one of five mines put in production is an *ore body*, i.e., it is mined *at a profit*. Exploration and mining is a capital-consuming business with much more money put into the ground than ever is taken out, let alone returned to the average shareholder. And these sobering statistics begin with *the trouble with geologists*.

Because geologists are faced with such overwhelming odds, we often develop unrealistic optimism for a favorite prospect.

With failure lurking at every turn of the drill, our mindsets project a positive spin: The next big mine is sure to be found in this newly discovered outcrop, those old prospects, or over that huge mountain and into the valley below. Bonanza will be struck in our next drill hole beneath the gravel cover, or with our re-interpreted cross-sections and new conceptual target, or our novel geological model developed from a similar deposit in another far-flung part of the world.

And that folks is also *the trouble with geologists*. Most of us are legally blind, eternal optimists.

Employing overly-optimistic viewpoints, geologists easily convince non-technical speculators, promoters, and scam artists who finance startup investment vehicles to acquire parcels of ground and make them flagship projects for public companies. Marginal prospects are spun into elephantine opportunities, commodities and deposits that have no future become a speculative bubble, and projects that are way too big or way too small for a junior company remain on the books after negative results. It's goddam hard for a geologist to admit when his company should walk if not run away.

Many a junior fails because the merit of its flagship project is merely a figment of the top geo's (often the CEO's) imagination. He may not understand what constitutes a good flagship project, he does not savvy when it's time to fish or cut bait, and/or he has a vested interest, i.e., *skin in the game*, both financially and intellectually. Simply put, the geologist is biased.

In a typical scenario, the unholy trinity of an overzealous geologist, a slick promoter (or "*con*"ologist) and a sophisticated financier, ex-broker, or fund manager raise a million or two dollars with a private placement for a new project. They are the one cent per share founders and then place all their "friends and family" in the cheap seed rounds.

A few months later the drill turns to the right, and a few, selected, gaudy drill intercepts generate a speculative market run. All the brokers jump in with their retail clients. And the retail lay investor, who has a penchant for gambling and greed and an even bigger fear of missing out on the *next big thing*, belatedly throws his money at the offer on the uptick. The wily insiders and their buddies take their profits, the bids dry up, trading volume drops, and the stock plummets when the next set of drill holes come in.

Such is the state of affairs and until more field geologists become real *economic* geologists, this flawed business model remains doomed to a wash, rinse, and repeat failure.

With my writings, interviews, and presentations, I hope to change this paradigm. But it begins with you, the geologists in this audience; you would not be here unless you were interested in the money end of this business. I hope and trust you will take my rant to heart and perhaps choose to give back and mentor some young geologists to become *economic* geologists.

Folks, this is a great and wonderful profession. You get to do a job you love; where you go to bed at night, look at the clock, and think: “How many hours do I have to sleep before I get to get up and go to work again?”

How can we be so lucky? Think about it; who else do you know who gets to:

- *See the world;*
- *Prospect and explore;*
- *Develop and mine;*
- *Create wealth;*
- *And make Earth a better place to live?*

Respectfully submitted,

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The [Mercenary Geologist Michael S. “Mickey” Fulp](#) is a Certified Professional Geologist with a B.Sc. Earth Sciences with honor from the University of Tulsa, and M.Sc. Geology from the University of New Mexico. Mickey has 35 years experience as an exploration geologist and analyst searching for economic deposits of base and precious metals, industrial minerals, uranium, coal, oil and gas, and water in North and South America, Europe, and Asia.

Mickey worked for junior explorers, major mining companies, private companies, and investors as a consulting economic geologist for over 20 years, specializing in geological mapping, property evaluation, and business development. In addition to Mickey’s professional credentials and experience, he is high-altitude proficient, and is bilingual in English and Spanish. From 2003 to 2006, he made four outcrop ore discoveries in Peru, Nevada, Chile, and British Columbia.

Mickey is well-known and highly respected throughout the mining and exploration community due to his ongoing work as an analyst, writer, and speaker.

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