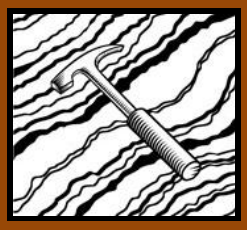
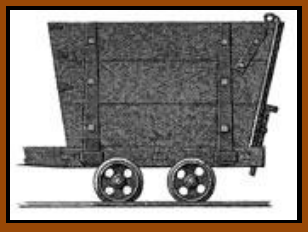
Gem Hunter – The Prospector's Newsletter





Vol 2, No 7 July 2010 *The GemHunter's Newsletter*

DOUGLAS CREEK PLACER GOLD DISTRICT, WYOMING

The cool mountain air trimmed the harsh Wyoming sun making the day pleasant. Winter had finally receded, but evidence of an occasional snow drift hid in the shadows of the forest. I drove into the heart of the Medicine Bow National Forest with a group of prospecting students. The course curriculum called for a gold panning session with discussions of gold and diamonds in fluvial systems. Our caravan entered the Bobbie Thompson Campground on Douglas Creek just south of the Keystone village.

As we climbed out from the vehicles, I asked the class to think about the specific gravity of gold (15 to 19.3 times heavier than water), and where we might expect to find it in the drainage. The group focused on the many large boulders in the creek, suggesting the large rocks acted as obstacles to stream velocity providing natural traps for the heavy gold. Other class members suggested much of the gold would be located on bedrock at depth (about 10 feet down at this particular location). These were good thoughts. I pointed out gold is often concentrated by flash flooding events, and it is up to the prospector to find evidence of these events. But without a backhoe, mining permit, and a major bond, and months to wait on Feds to issue permits, we were restricted to discussing theoretical possibilities.

How about diamonds? Diamond has a specific gravity of 3.5, heavy enough to concentrate with black sands. So if we recover black sand in our gold pan, we have a good chance of retaining diamond. Diamond had not yet been found in Douglas Creek, but the nearby discovery of gem-quality diamonds at Cortez Creek by a local prospector from Saratoga, the recovery of diamond indicator minerals in several drainages in the Medicine Bow Mountains (as well as here at the Bobbie Thompson Campground by an Arizona prospector) and the discovery of nearby cryptovolcanic structures suggested that we should keep our eyes open for the gemstone.

The GemHunter Newsletter
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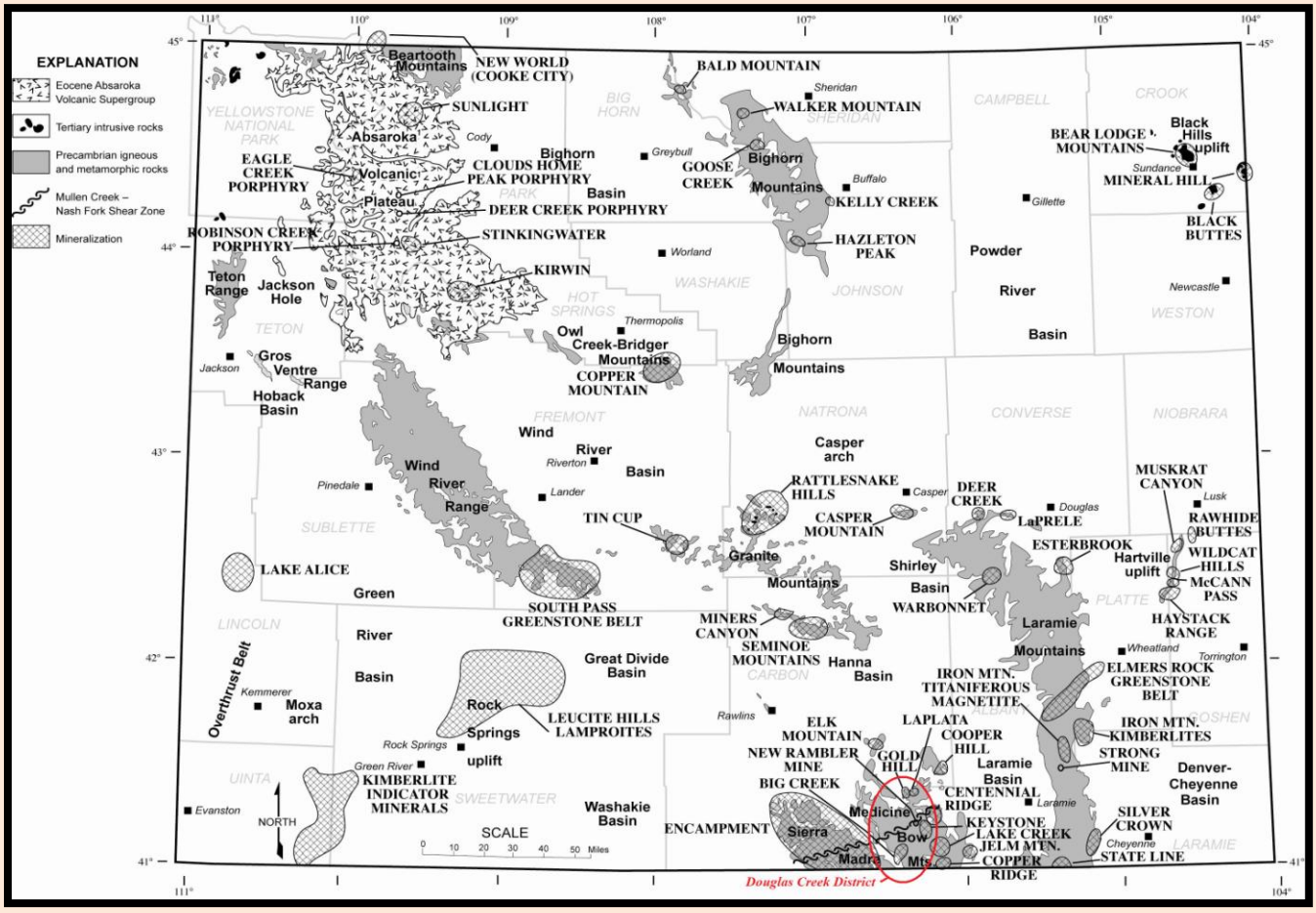
The GemHunter

If we were able to dig down to bed rock, it would be prudent to sample the entire vertical stratigraphic section in the drainage, to search for lenses with concentrations of black sand, pebbles and cobbles, as these should provide evidence of flash flood events and lead to paystreaks. Some of these horizons might even be more productive than bedrock.

I pointed out to the group that the Douglas Creek drainage extended beyond the active stream. We were standing 20 feet from the creek and 2 or 3 feet higher than the water level, but this was gravel deposited by Douglas Creek in the relatively recent past – so it should also contain gold.



Map of mineralized terrains and districts of Wyoming showing location of Douglas Creek in red (compiled by the author).

To prove my point, I asked the group to get their gold pans, screens, grizzlies and shovels and sample the dry gravel next to the campground. They started to dig with excitement each dreaming about the gold nugget they were about to find. The digging was difficult because of all of the boulders, but they were all able to find some dirt. They worked this material through their grizzly pans that had quarter inch holes drilled in the

pans. These were designed to remove the coarse gravel. No nuggets were seen in the grizzlies so one by one the students discarded the waste rock. Next they worked the material through the screens we had purchased at the local hardware store: just fly screen used in screen doors and windows with 4 mm^2 openings. The screen is used to speed up the panning process. The material that worked through the screen was panned first – you could hear the excitement as class members started to recognize black sands. The excitement was contagious tiny pinpoints of gold were found in the pans.

I told them to think back to the lecture on alumina-rich gemstones – remember what sapphire and ruby looked like? I asked them to watch for these as Wyoming has many corundum deposits.

LOCATION & SETTING

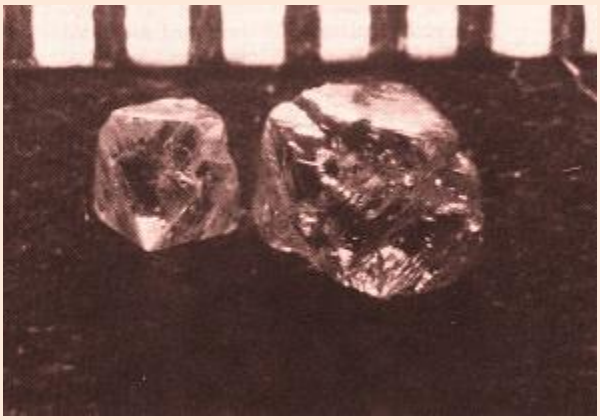
The prospecting class on that day convened 3 miles downstream from the original gold strike in 1868 by Ira Moore. The area of the strike, named in honor of the discoverer, has ever since been known as Moore's Gulch. A historical gold camp established nearby was called Last Chance, possibly an indication of the frustrations often associated with prospecting.

Moore's Gulch is a tributary of Douglas Creek. The headwaters of Douglas Creek originate a few miles to the north of Moore's Gulch, and from the headwaters, Douglas Creek runs in a southerly direction for several miles until it makes a sharp bend to the west before joining the North Platte River 12 to 14 miles from Moore's Gulch. The union of these waterways lies along the western flank of the Medicine Bow Mountains.

Much of the gold-bearing gravel in Douglas Creek is 8,500 to 9,000 feet above sea level. The district is generally considered to encompass all placers along Douglas Creek and its tributaries. Another district was later established within the confluence of Douglas Creek, known as the Keystone district. This district includes some lodes along the banks of Douglas creek south of Ira Moore's initial discovery.

Another district overlaps a portion of the Douglas Creek district northwest of Keystone, which is known as the New Rambler district. This latter district was build around the New Rambler mine – one of the few historic palladium and platinum mines in North America. From 1900 to 1918, the New Rambler mine produced copper, gold, silver, palladium and platinum. Palladium and platinum were also detected in nearby mines, and other platinum anomalies were detected several years later in the Centennial Ridge district 6 to 8 miles to the northeast (Hausel, 2000a). More recently palladium, platinum chromium and titanium anomalies were identified in the nearby Lake Owen and Mullen

Creek areas. A few companies exploring Lake Owen and Mullen Creek identified some thick, mineralized cumulates in the layered complexes that yielded very interesting palladium anomalies. In 1997, I discovered a very interesting anomaly at Puzzler Hill, a complex everyone else missed, but had highly anomalous palladium, nickel and minor copper, gold, silver and platinum (Hausel, 2000b). At the nearby Charter Oak mine, I recovered some very nice specularite specimens which were cut and polished into some very attractive cabochons.



The Boden diamonds found on Cortez Creek north of Douglas Creek in 1977.

Geologically, the Medicine Bow Mountains, which includes all of these mining districts (with the exception of Puzzler Hill), is highly fractured and interpreted to have high potential for discovery of diamonds. Diamonds were found on Cortez Creek to the northwest of Douglas Creek by Paul Boden in 1977, and kimberlitic indicator mineral anomalies (notably pyrope garnet) were found at several locations in the forest since the first diamonds were found in the forest. It is also notable that the two largest kimberlite districts in the United States lie within 20 miles of the Medicine Bow National Forest. One of these has been the source of more than 130,000 gem and industrial quality diamonds that included microdiamonds to macrodiamonds weighing more than 28 carats. To a geologist, the Medicine Bow Mountains lie along the edge of a craton (ancient continental core) that is considered favorable terrain to hunt for diamonds, as well as gold, platinum-group metals, nickel, chromium, titanium, vanadium, tantalum, copper, several other precious, strategic and base metals, including ruby and sapphire.

Gold dredged from Douglas Creek by Paul Allred near the Bobbie Thompson Campground. Note the tiny red garnet sitting

on a flake near the large nugget – this turned out to be a pyrope garnet (diamond indicator mineral).

Currently, Douglas Creek is a popular place where prospectors experience the cold waters of the creek while they dredge and pan for gold. The nearest towns are Saratoga and Encampment, about 20 miles as the crow flies to the west. Centennial is located 10 miles as the crow flies to the northeast. Laramie lies 30 miles east of Centennial.

DOUGLAS CREEK DISTRICT

The historical information and gold production data for the Douglas Creek district are sketchy. However, history indicates that Ira Moore discovered gold in 1868, and the Douglas Creek district (*originally referred to as the Foley district*) was organized. In the following year, about 400 ounces of placer gold were recovered.

Makeshift dragline left by early gold miners near Moore's Gulch.

According to Henry Beeler, a territorial geologist in the late 1800s, gravel in the district typically contained gold values ranging from 0.017 to 0.085 oz/yd^3, and the precious metal was in the form of flour to coarse nuggets. As much as 25% of the gold was coarse and jagged with nuggets weighing 5 to 20 pennyweights (1 ounce = 20 pennyweights). The fact that there is this much jagged gold suggests that it originated in the immediate area. Jagged gold is mostly found adjacent to a lode deposit because gold is so malleable that it is rapidly smoothed into rounded and flattened grains in active streams. There are some lodes in this area, but probably not enough to account for all of the jagged placer gold in the district. This suggests a good possibility for hidden lodes.

The largest reported nugget found during the early gold mining activity weighed 3.4 ounces. Larger nuggets may have been found and not reported. The purity of the gold was 0.890 to 0.960 fine (1.000 fine = pure gold). Impurities in natural gold usually include as much as 10% silver and traces of platinum and palladium. The gravel along

Douglas Creek is 3 to 20 feet thick and averages 5 feet thick. Estimated resources for some placers were reported by Beeler (1906) as:

PLACER	GRAVEL VOLUME	GRADE	CONTAINED GOLD
Douglas Creek	**3,020,160 yd^3**	**0.024 oz/yd^3**	**72,485 ounces**
Dave's Creek	**70,000 yd^3**	**unknown**	**-**
Moore's Gulch	**60,000 yd^3**	**>0.048 oz/yd^3**	**>2880 ounces**
Elk & Bears Creeks	**250,000 yd^3**	**unknown**	**-**

During the early activities on Douglas Creek, the mining operations were separated into three properties: Albany, Home, and Douglas Creek Consolidated placers.

Gold panned from Douglas Creek.

Albany Placers. The Albany placers were located in the north near the headwaters, and included about 5 miles of Douglas Creek and all or portions of Moore's Gulch, Elk Creek, Bear Creek, and Dave's Creek. The Rob Roy reservoir, later constructed on Douglas Creek, flooded large portions of these placers.

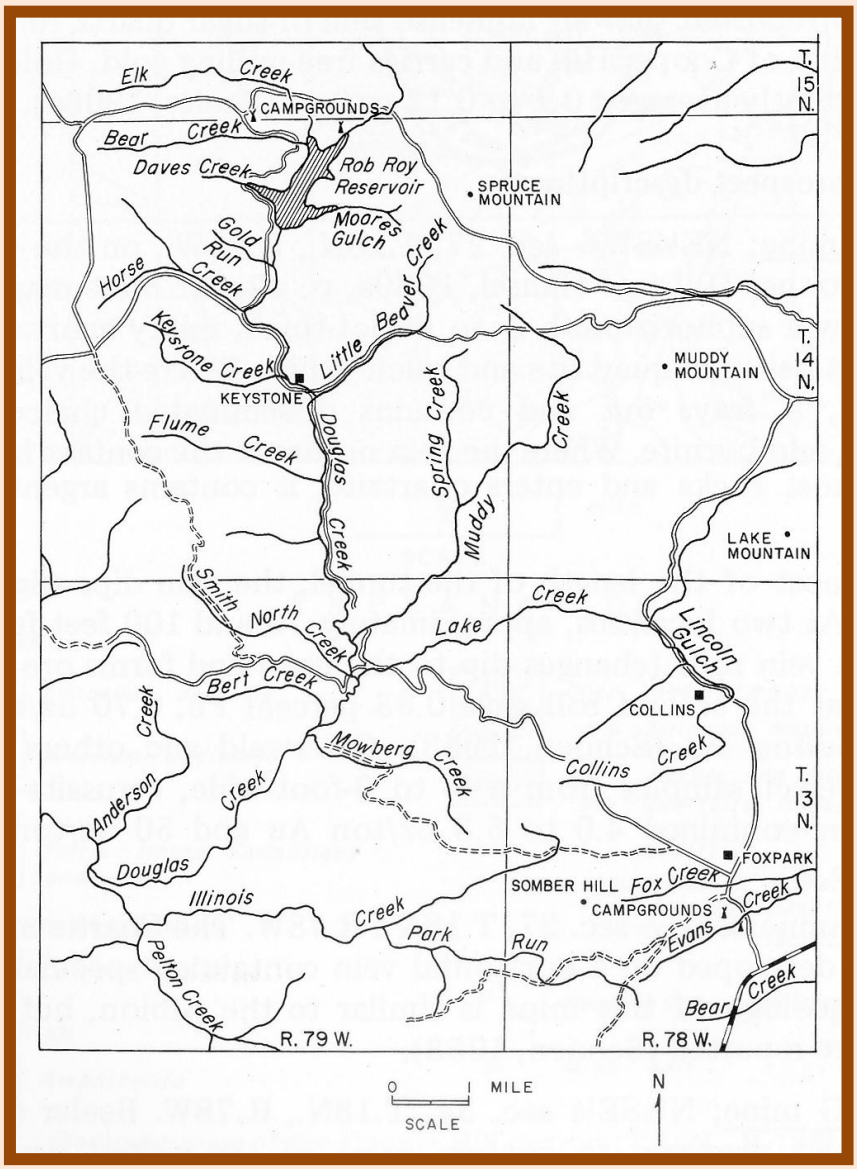
Gold from these placers was coarse and jagged with considerable flour with traces of platinum and palladium. In one early test, 25 yards of gravel between Dave's and Douglas Creek was mined and yielded 1.5 ounces of gold with some platinum and palladium. Another 2,200 yards of gravel were mined that averaged 0.077 oz/yd^3 and produced 170 ounces of gold. Moore's Gulch placers yielded 500 ounces of gold and were reportedly exhausted by 1870 (Knight, 1893). However, Beeler (1906) reported another 60,000 yds^3 of gold-bearing gravel remained unmined in contradiction to the earlier report.

Home Placers. The largest nugget found on Douglas Creek prior to 1906 was recovered from the Home placers. The Home Placers continued south of the Albany Placers and north of the Douglas Creek Consolidated Placers. This operation covered 4 to 5 miles of Douglas Creek beginning just south of Moore's Gulch, and also included Little Beaver Creek to the east. Much of Little Beaver Creek was not favorable for mining due the large size and abundance of boulders in the drainage.

Some testing on the Home placers included a 150-foot traverse along Douglas Creek north of Keystone. This material pan tested at 0.045 oz/yd^3. About 900 feet north of the traverse, a crosscut traverse was dug that pan tested at 0.05 oz/yd^3.

Below the mouth of Little Beaver Creek the gravel was not as coarse and the drainage opened up into Willow Flat, a 800 by 2000-foot area that had 3 to 8 feet thick gravels. The gravel mined at Willow Flat, yielded values ranging from 0.008 to 0.012 oz/yd^3.

In 1935, the Medicine Bow Mining Company operated a dragline and constructed a floating washing plant south of the village of Keystone. The company processed 48,176 yds^3 of gravel and recovered 287 ounces of gold and 34 ounces of silver (Hausel, 1989). Later, in 1958, the Moe Brothers Company used a similar dragline to mine gravel 1.5 miles north of the Keystone mine near Gold Run. The amount of gold recovered from this operation is unknown.



Douglas Creek Consolidated Placers. The Douglas Creek Consolidated Placers continue south of the Home placers for 8 miles along Douglas Creek and included 5 miles of Muddy Creek. In one test on Muddy Creek in 1896, prospectors dug a 15x48 x7 foot test pit and recovered 9.75 ounces of gold. The gold included two nuggets weighing 0.2 and 0.4 ounces. Other pan tests yielded 0.019 to 0.029 oz/yd^3. Muddy Creek was reported to average 4 feet to bedrock. Average tests on Douglas Creek within the placer gave 0.04 oz/yd^3 (Beeler, 1906). Pan tests within a 160-foot traverse a few miles

to the south near Pelton Creek averaged 0.034 to 0.085 oz/yd^3. Some other placers lie near Douglas Creek including Lincoln Gulch, Small, Spring Creek, and Fox Creek.

Lincoln Gulch Placers. A 3-mile long placer on Lincoln Gulch to the east of Douglas Creek was reported to yield 20 to 80 ounces of gold annually prior to 1906. In places, the gravel was reported to be 20 feet thick.

Small Placer. Located above the mouth of Muddy Creek east of Keystone. The gravel was reported to be rich and to average 0.1 oz/yd^3.

Spring Creek Placers. The need for water in Spring Creek (a tributary of Muddy Creek) led a group of prospectors to dig 1000 feet of bedrock flume, 4,500 feet of ditch with 600 feet of fluming so they could hydraulically mine the drainage. A partial cleanup of the flume concentrates from 1200 yds^3 yielded 50 ounces of gold (Hausel, 1993a, b). Much of the gold from Spring Creek was coarse with nuggets weighing 0.05 to 1 ounce. Many of the nuggets still had quartz attached to the gold, indicating a proximal source. A 2.5-ounce nugget was found on Spring Creek in the 1980s (Robert E. Jones, pers. comm. 1988).

Fox Creek Placer. Located east of Douglas Creek and south of Lincoln Gulch. Some gravel mined from this placer yielded 0.012 oz/yd^3 in gold.

Bear Creek. This placer, located south of Fox Park and south of Douglas Creek, yielded some 0.5 to 1-inch nuggets (Robert E. Jones, personal communication, 1988).

CONCLUSIONS

Total gold production from Douglas Creek is unknown, but exceeded 4000 ounces. Unfortunately, Douglas Creek is limited in size, but the creek itself, and some of its tributaries, have not been thoroughly prospected. Modern day prospectors working in the Douglas Creek district often find coarse gold, some amalgamated gold (gold amalgamated with mercury), platinum and palladium. And there is a good possibility of finding diamonds and other gemstones in Douglas Creek.

The source of the gold from Douglas Creek is thought to be from a parallel group of northwest-trending shear zones that are cut by the creek and some of its tributaries. Mapping by Curry (1964) showed a few northwest-trending mineralized shears along Douglas Creek. One of these is cut by Moore's Gulch and is probably the source of gold in that placer as well as the Albany Placers along Douglas Creek.

One of several cryptovolcanic structures found in the Medicine Bow Mountains. This one is located adjacent to Douglas Creek. The circular depression in Precambrian basement appears to be structurally controlled. The origin of the depression remains unknown.

Two parallel gold-bearing shear zones further to the south may be the source of some of the gold in the Home and Douglas Creek Consolidated placers. Most notable is the Keystone-Florence shear zone that is intersected by Douglas Creek and probably continues further east into Spring Creek. Historical reports indicate that both the Keystone and Florence mines intersected some rich ore shoots near the surface. In fact, I found one excellent sample of quartz with considerable visible gold on the Florence mine dump a few years ago. Thus this shear may be the source of some coarse gold found on Spring Creek, and it may suggest that a one-mile extension of this shear zone has gone undetected.

Historical photo (1905) of the Keystone mine along Douglas Creek. About 5,000 to 10,000 ounces of gold were recovered from this mine between 1876 and 1893. The shaft was sunk 365 feet and included 5,000 feet of drifts (photo from the S.H. Knight Collection, University of Wyoming American Heritage Center).

The limited gold prospecting in this region over the past few decades is classified as 'Ma and Pa' type operations. Prospecting using small hobby dredges and gold pans

which do not appear to cause environmental damage. In fact, some prospectors indicate that they attract many trout while dredging as they disturb the nutrients in the gravel. Without any scientific studies of environmental damage caused by gold panning, it is very unfortunate that some government officials and at least one University of Wyoming faculty member have reported gold panning in Douglas Creek has killed most of the fish due to mud created by panning. Anyone who has panned for gold would realize how absurd this suggestion is. In past years when I've panned for gold or gemstones, I found the only damage I caused was to my back. Bending over and panning for gold requires a strong back and a lot of free time.

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GREENLAND TO OPEN SAPPHIRE & RUBY MINE

True North Gems is planning to open a gemstone mine at their Fiskenaesset ruby and sapphire deposit in Greenland. The company applied for a mining permit and announced that it plans to sell its current inventory of gemstones recovered during exploration. The gems include cut stones weighing up to 25 carats. These will be sold once the permit is granted. The company plans to mine 5,000 tons of ore during the first year of operation and expand to 20,000 tons of ore per year.

US HAS ENORMOUS OIL RESOURCES

It is unfortunate, but the Obama Administration does not seem to grasp scientific principals, whether it be related to global warming, space exploration, or oil resources and drilling. To place a moratorium on drilling in the Gulf Coast would lead to another

economic disaster, lost of hundreds (if not thousands) of jobs and gasoline price hikes to potentially rise near $5/gallon by 2012. The reason is simple. In exploration, one cannot stop drilling unless they plan to abandon a well because the hole will collapse and drilling in the gulf coast is very expensive – many $millions per hole. If there is a moratorium, the drill rigs and drilling companies will move elsewhere resulting in jobs lost in every sector of the oil and drilling business in the Gulf Coast at at time when unemployment is already >10%.

A few years ago, this happened to a company I was consulting for. Prior to the economic collaspe in 2008-09, I discovered some probable diamond deposits for an Australian company which planned to drill the anomalies. The company had to obtain duplicate permits from 3 different government agencies and was delayed in drilling a shallow 150 foot hole by a few months potentially costing the company nearly 10 times what it should have cost. At the time, there was a major economic boom in metals: essentially every small exploration drill rig was already leased. We finally found one rig after searching all over the country for weeks.

If the Obama Administration stops drilling in the Gulf Coast (and as I understand, it was the Clinton Administration that initiated deep water drilling), then the most logical move would be to open up oil and gas resources elsewhere. Personally, I like to eat seafood, so I would much rather see our government focus on opening land to exploration where there is little possibility of a oil spill. And because I drive a car, I would like to see gas prices remain reasonable.

The Obama Administration has misled the public. The Administration stated that the US has only 2% of the world's oil reserves when in fact, the US has ***essentially 2 trillion barrels of oil resources*** sitting in the ground in areas mostly withdrawn from exploration and development. As a comparison, Saudi Arabia's oil reserves are estimated at 267 billion barrels. The 2 trillion barrels are located within the Piceance Basin in Colorado, the North Slope of Alaska and the Bakken Formation in North Dakota. And there are many other oil fields in the US that are not included in this resource estimate. And with continued exploration, more will be found. The US could be energy self-sufficient more than a few hundred years if the Federal government would allow companies to explore and drill!

In addition, coal resources just in the Powder River Basin of Montana and Wyoming alone total more than 250 billion tons (I've even heard of estimates of 1 trillion tons when I worked for the US Geological Survey) which is enough to supply the country for the next 250 years at a minimum. Will this effect global warming? The question should

be – is there really human caused global warming? Global warming and cooling are a very natural part of the earth – so how can one differentiate what is caused by mother nature and what is not?

ARIZONA INVADED

The evening news in Gilbert, Arizona every night covers another home invasion, another murder, another drop house filled with illegal aliens, another hit and run, or another incursion of drug smugglers (and in one case that has been kept quiet, a rumored shootout in Phoenix between drug dealers and special forces of the Mexican Army last year). On last nights news, it was a drop house filled with 50 illegal immigrants from Guatamala and a roll over of a brand new, black, SUV with black, tinted, opaque windows filled with drugs to the roof from the back window to the front seat. Police were unable to find the driver and speculated that the driver was picked up by an accompanying vehicle.

If you live in Arizona, you will learn about problems along our border. Provding illegals with citizenship will not stop drug flow. The answer lies in securing our border. In a 2008 book entitled *"God's Middle Finger: Into the Lawless Heart of the Sierra Madre"*, published by Free Press, author Richard Grant reports that the Mexican drug industry sends $50 billion in illegal drugs across the Arizona border each year. And the second major contributor to the Mexican economy is money sent back to Mexico from illegal (and legal) immigrants in the US for which the pay little to no taxes on. Of the millions of illegal aliens crossing our border, there are hundreds of potential terrorists that arrive from countries that sponsor terrorism.

How does this affect mineral resources, gold and gemstones, which is the main focus of this newsletter? I recently learned that several mining companies will not allow exploration geologists to work in the field in Arizona south of Phoenix because of these dangers. Other companies require geologists to work in groups and to be armed (not sure that this will be of much help if they run into a group of drug smugglers carrying AK47s and other automatic weapons.

Photo shows the GemHunter leading one of many field trips to South Pass. Over 29 years, a few thousand people attended these trips. The

attendees included prospectors and geologists from all over the world.

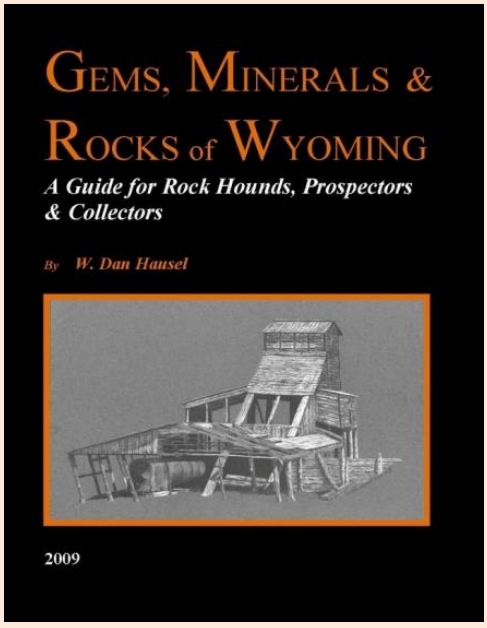
FIELD TRIPS

Looking for gold and gemstones? We're looking forward to spending time with you in July on our field trips to Douglas Creek-State Line and South Pass. For information, contact Johnny Walker. That's right; Johnny Walker is not just for drinking any more. And there are only a couple of slots available for people wanting to attend. As I understand, one of the two trips is now full.

LINKS

GemHunter
Diamond Prospector
Gemstone Hunter
Rubies and Sapphries
World Class Colored Gem Deposit discovered
Gold at South Pass
Gold Prospecting
Gold in Montana
Donlin Creek Gold
Gold in California
Gold in Alaska
Leucite Hills Lamproites and Peridot
FIELD TRIPS
Geological Consultant
Gold Prospector
Gems Minerals & Rocks of Wyoming
Discovery of Major Diamond Province
Jade Deposits
Rattlesnake Hills Gold Deposit
Seminoe Gold Deposit
Chrome Diopside
Mountain of Gold
Gold in Arizona
Giant Opal Deposit found in Wyoming
Gem Garnets
Copper King Gold Mine

BOOKS



Gems, Minerals and Rocks of Wyoming – A Guide for Rock Hounds, Prospectors and Collectors is available from Amazon: or order it from your local bookseller.

Other books by the author are available from different outlets and also at the Wyoming Geological Survey.