

South Pass City

STATE HISTORIC SITE, WYOMING

Events 2015

Catch the Night Shift

Scotch Tasting & Lantern Tour
June 20th, 6:30 pm

The Flora & Fauna of South Pass City

A guided Hike with John Mionczynski
June 26th, 12:30 pm

Gold Rush Days

July 11th & 12th

www.southpasscity.com/events.html

Tours 2015

Carissa Tours

Memorial Day thru Labor Day
Thursday-Sunday
2 p.m.

www.southpasscity.com/tour.html

Flood & Hindle Ming Trail Guided Walk

July & August
Saturdays
11 a.m.

www.southpasscity.com/walks.html

South Pass City Opening Mothers Day

South Pass City State Historic Site will be opening early to celebrate Mothers Day!

The holiday of Mother's Day was first celebrated in 1908. South Pass City in 1908 was seeing the end of the second boom. So take your mother on an outing, a drive or a frolic & visit South Pass City State Historic Site.

To celebrate the **Smith—Sherlock General Store** will offer a **10% that day only!!!**



Dynamite at the Carissa

South Pass City recently received a grant from the Wyoming Cultural Trust Fund to continue exhibitions work in the Carissa Mill. The Grant will be used to restore several large pieces of historic mining equipment. Funding is also being used for exhibits to help us tell the Carissa's Story.

Dynamite was a necessary item for hard rock mining. Using historic examples in South Pass City's permanent collections SPC staff recreated a shipment of Dynamite crates That will be displayed at the Carissa Hoist.

www.southpasscity.com/wctf.html



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Underground at the Carissa

The Carissa Mine last boomed in the years immediately following World War Two. As a result of over a decade of litigation, Montana mining engineer, Ray E. Tower, obtained an option to buy the property from the court. Tower transferred his option to Mica Mountain Mines Corporation & stayed on as operating manager. During the war years, Tower had been a metallurgist at a government chromium mill in southern Montana. With the government's laboratory at his disposal, Tower took the time to squeeze in a few examinations of the Carissa's ore as well. Tower then realized the necessity of completely revamping the Carissa Mill, & proposed an expansive remodel of the gold recovery equipment to Mica Mountain Mines officials as a result.

Just as with an earlier remodel of the Carissa's milling facilities by Midwest Mines Corporation in 1929, a significant amount of up-front expense had to be assumed by Mica Mountain Mines. As a result, the corporation was especially keen to see a quick return on investment. Underground mining practice was adapted accordingly. Shrinkage stoping, essentially the removal of valuable ore without using much support for the worthless wall rock, was employed in order to begin the removal of the ore bodies first opened up in the 1898 boom under the management of the Federal Gold Mining Company. Federal had elected to leave the ore intact as a means of enticing a buyer to take over the property. It was nearly five decades later, but Mica Mountain Mines began to remove this previously exposed ore.

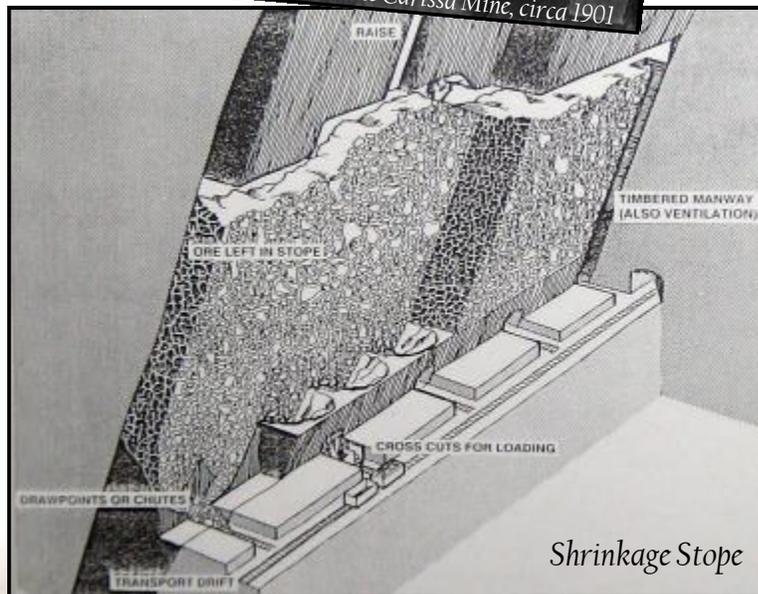
Our understanding of the actual mining practice at the Carissa in the post-World War Two era is limited. None of the underground miners who worked the property were interviewed before they died or left the area. Evidence of the actual drilling & blasting practice is informed by the type of ore deposit (a distinct quartz vein sandwiched between nearly vertical walls of schist) & the underground examinations made both before & after the Mica Mountain Mines era. Additionally, publications like the U.S. Bureau of Mines' Metal-Mining Practice, published in

1939, indicate common practices among mines similar to the Carissa.

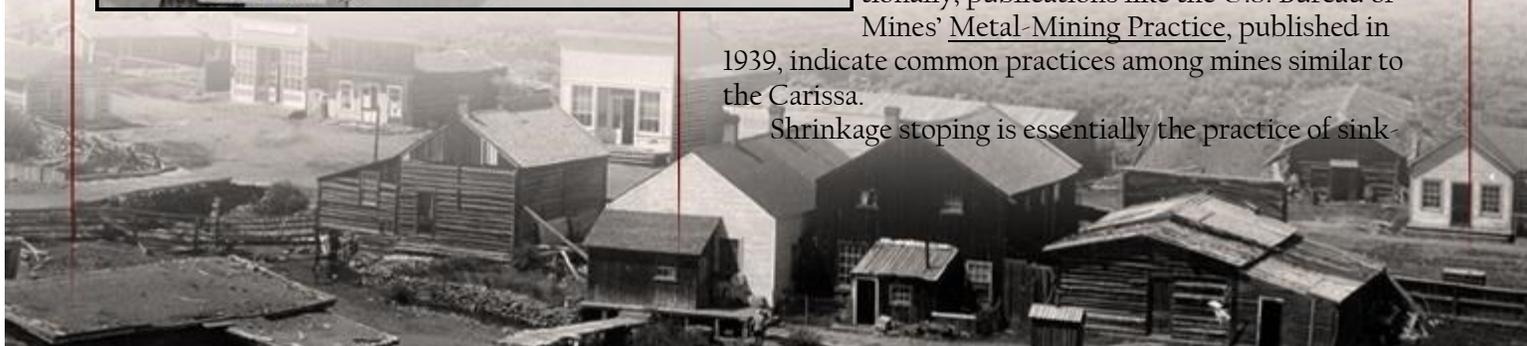
Shrinkage stoping is essentially the practice of sink-



Charles & Harold Titcomb in the Carissa Mine, circa 1901



Shrinkage Stope



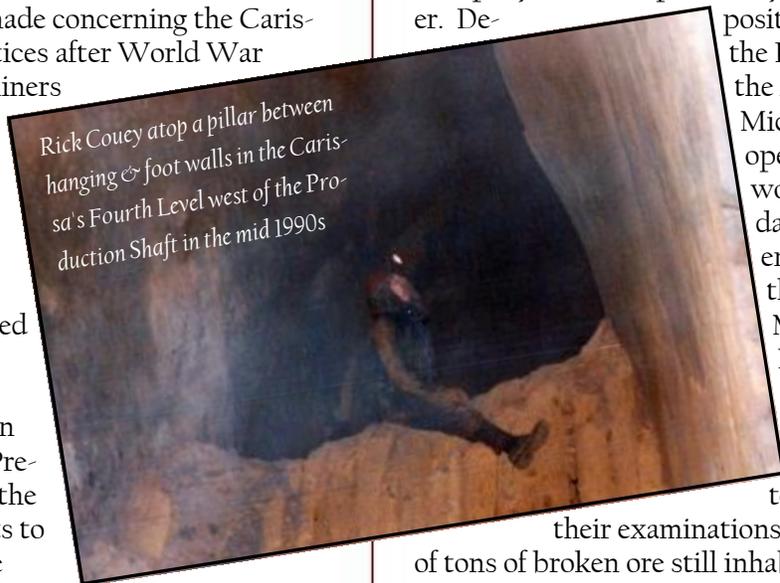
ing a shaft & then tunneling, or drifting, along the vein so that miners could then drill overhead holes in the ore in order to blast it down to be hauled out to the mill. As long as values continued, miners would carry on with the drilling & blasting in the growing void, called a stope, breaking down more & more ore for the mill. Minimal timber was required to support the walls, a significant cost savings in both time & material. According to Metal-Mining Practice, similar American mines using shrinkage stoping during the mid-20th century only saw actual drilling for about three hours of each shift. The remainder of the miners' time being devoted to barring down the back (roof of the stope), & hauling in drills, water & air hoses, & a supply of drill steels. Former Carissa employee, Terry Snowden, recalled that miners worked in two man teams comprised of a lead miner & his apprentice, a practice still seen in hard rock mines today.

While actual drilling & blasting practices employed in mines vary according to the very specific conditions at each mine, some reasonable inferences can be made concerning the Carissa's underground practices after World War Two. Underground, miners would likely drill about a 20-hole pattern in the back with their Gardner-Denver R-104 stoper drills. Holes near the perimeter may have been drilled as deep as 6 feet, but were likely shallower, especially those holes in the center of the cut. Presumably, it could take the better part of two shifts to prepare the back of the stope for the loading of explosives. Terry Snowden remembered that miners loaded & fired their own shots, with the hoist operator, Fred Fuller, often helping cut lengths of fuse to different lengths in order to stagger the blasting sequence. Very likely, between 60 & 100 pounds of 40% strength gelatin dynamite were loaded in drill holes & topped off with stemming compound composed of either clay or moist drill cut-

tings. Gelatin dynamites were favored due to their low freezing point, the reduced level of noxious fumes after detonation, & their resistance to deterioration by water prior to blasting. Detonation began with holes in the center of the cut & proceeded outward.

Broken ore fell onto the pile of muck below to be drawn off through chutes into ore cars. As much as 40% of the broken ore would be removed during active mining in the stope. This was done in part to provide miners adequate headroom to work; broken ore occupies more space than it does prior to blasting. Shrinkage stoping typically provides for upwards of 90% of the ore in the stope to be removed & milled, the remainder being left intact to act as pillars to stabilize the hanging & foot walls.

When seasonal conditions permitted operations in the mill, Mica Mountain Mines' hard rock miners worked around the clock in three shifts to keep the mill supplied with muck. Quickly, they removed a great deal of the ore that the earlier generation of miners under Federal Gold Mining Company had laid open nearly half a century earlier. De-



Rick Couey atop a pillar between hanging & foot walls in the Carissa's Fourth Level west of the Production Shaft in the mid 1990s

posits of gold bullion at the Denver Mint during the first two years of Mica Mountain Mines' operations would be worth \$2.3 million today. All booms must end, however, & in the decades since the Mica Mountain Mines era ended, other corporations have investigated the Carissa's potential. Amazingly,

their examinations revealed hundreds of tons of broken ore still inhabiting the Carissa's cavernous stopes, tantalizing yet another generation with the riches hidden within. The din of the drills & the thunder of the dynamite may have gone silent, but the ageless appeal of Wyoming's great gold mine endures.

