

Notes on Coal-mining in the Bow Valley

By Ben Gadd

Walter Riva, former manager of Canmore Mines and author of a definitive mining history of the area, notes that the aboriginal Stoney/Nakoda people knew of coal along Devil's Creek, the original outflow of Devil's Lake, now dammed to become Lake Minnewanka.*

The first written account of coal in the Bow Valley is often credited to **Pierre-Jean de Smet**, a Belgian Catholic missionary who was working out of St. Louis. However, in his *Oregon Missions and Travels over the Rocky Mountains in 1845 46*, de Smet makes no mention of coal in the Bow Valley or its surroundings.†

What de Smet does say about coal begins on page 159 —

In pursuing our route, the 27th [of September, 1845] on one of the branches of the river “a la Biche” (Red Deer on the maps) [his parentheses], we remarked several sulphurous fountains, which furnish great quantities of sulphur, and a coal mine, apparently very abundant.

I here beg the favor of a short digression from my subject. Coal abounds east of the Rocky Mountains, on the border of the Missouri and the Yellow Rock, on the Sascatchewan and Athabasca.”

He had to be speaking of foothills and prairie coal, which he saw exposed along many rivers east of the front ranges.

Thus, crediting de Smet as the discoverer of Bow Valley coal is probably incorrect. We do know that G.M. Dawson, Alfred Selwyn and Eugene Coste collected coal along the Cascade River in 1883 as part of the Geological Survey of Canada's mapping project along the new **Canadian Pacific Railway** line. This is the first official report, although by then the presence of coal in the valley must have been common knowledge.

By the way, de Smet wrote about coal on the *west* side of the Rockies. In a letter dated 2 September 1845 (pages 124-125 in de Smet's book) written on the Tobacco Plains of the southern Rocky Mountain Trench, near present-day Grasmere along the Kootenay River (he called it the “Flatbow”), he notes —

and having remarked large pieces of coal along the river, I am convinced that this fossil could be abundantly procured.

De Smet was almost certainly referring to coal beds found in the **Kishenehn Formation**, up to 2500 m thick and late Eocene to late Oligocene in age, 42–24 million years old. The Kishenehn is mostly coarse

* Riva, Walter J. (2008) *Survival in Paradise, a Century of Coal Mining in the Bow Valley*, published by the Canmore Museum & Geoscience Centre, page 2

† Travelling northward up the Kootenay River from what is now northwestern Montana, de Smet and his party followed the Rocky Mountain Trench to what is now Radium. There they left the trench and followed Sinclair Creek—the route of today's Highway 93 through Kootenay National Park—over Sinclair Pass to join the Kootenay again in its upper section. From there they followed the Cross River to White Man Pass, where they crossed the divide into what is now Banff National Park. Following White Man Creek down to the Spray River, they continued down the Spray to the Bow. De Smet's account states that “the aspect of the country offered nothing very interesting.” He doesn't mention coal. He goes on mainly about how difficult the riding was, at times in a snowfall. At one point he was left hanging from a “fir” (Douglas-fir?) branch as his horse continued without him.

material (sand, gravel, boulders) eroded from the mountains on either side of the trench, plus lakebed deposits of silt and oil shale.

De Smet then mentions **lead** in the area, which could have only been in the environs of what is now Kimberly and the **Sullivan Mine** —

Great quantities of lead are found upon the surface of the earth; and from the appearance of its superior quality, we are led to believe there may be some mixture of silver.

Then he goes on to say immediately, in the next paragraph —

Poor, unfortunate Indians! they trample on treasures, unconscious of their worth, and content themselves with the fishery and the chase. When these resources fail, they subsist upon roots and herbs; whilst they eye, with tranquil surprise, the white man examining the shining pebbles of their territory. Ah! they would tremble, indeed, could they learn the history of those numerous and ill-fated tribes that have been swept from their land, to make place for Christians who have made the poor Indians the victims of their rapacity.

Clearly, de Smet could see what was coming for the area.

Bow Valley mines

According to Walter Riva, and most of the info from here on has been taken from his book or in conversation with Gerry Stephenson,[‡] mining began before 1883—but perhaps only a year or two prior—at the **Marsh Mine**, named for Marsh Creek, which drains the steep slopes at the eastern end of Wind Ridge, on the west side of the Bow Valley 8 km southeast of Canmore.[§] When the Canadian Pacific Railway was built through the Bow Valley in 1883, they found miners already at work at the Marsh Mine, hoping, no doubt, to sell coal to the CPR.

Not to be. The Marsh Mine soon closed. In 1883 the **Cascade Coal Company** began mining near what would soon become the town of **Anthracite**, not far from the Banff hydro plant, as did the competing **Black Diamond** company. In 1886 the **Canadian Anthracite Company** began mining at Anthracite proper and built a village there. **In 1887 they opened the first mine at Canmore, the No. 1**, along Canmore Creek near its confluence with the Bow. The tipple was about 500 NW of the No. 2 minesite.

Other mines were opened by other companies, including the **Cochrane** (1885, near the Canmore No. 1, same side of the river, nothing to do with the town of Cochrane to the east) and the **Georgetown** (1913, 5 km northwest of Canmore, also along the southeastern bank of the Bow).

None of these were CPR companies, but they all needed CPR business to succeed. When the railway opened its own mine at **Bankhead**, northeast of Banff, in 1904, the other mines were doomed—except for the Canadian Anthracite Company's No. 1 mine and their **No. 2 mine, which opened in 1903**. This is the minesite at the car-caravan stop.

[‡] Chief engineer at Canmore Mines late in its history. I spoke with him 27 May 2010. His CSPG slide talk on Canmore mines (I have a PDF) provides more facts and figures, including the total tonnage produced by all the Canmore mines, 16 million.

[§] Not much is known of the Marsh Mine, although workers in Canmore Mines' No. 3 Mine, which opened in the same area in the late 1940s, unexpectedly broke into the old Marsh works.

Both No. 1 and No. 2 produced exceptionally good coal, better than Bankhead's, yet the company was never taken over by the CPR. In 1938 Canadian Anthracite became **Canmore Mines Ltd.**, eventually expanding into a total of **eight underground mines and three strip mines.**

The Canmore mines survived the closing of Bankhead in 1922. Until the early 1960s the CPR was the main customer (85 percent of production), because Canmore coal worked well in locomotives and for heating passenger cars. Sales for industrial and domestic heating comprised the rest.

There were ups and downs in the market, but production continued, albeit reduced, through the Great Depression. World War II revived the operations.

Then, in the 1950s the railways switched to diesel locomotives. The use of coal for heating in western Canada declined in the 1960s, replaced by natural gas and electricity. Coal-mining in Canmore might have ended, but **the Japanese steel-making boom** revived the mines for a time in the late 1960s and early 1970s. Rockies coal was excellent for use in iron smelters, and little suitable coal was found in Asia.

However, open-pit coal-mining was becoming a cheap alternative to underground mining. Canmore-area coal seams were (a) too thin and (b) sloping too gently to provide enough coal for the amount of rock that had to be removed. Not that the company didn't try, opening pits in the mid-sixties at what is now **Quarry Lake** (25 m / 80 feet deep) and the small **Salamander Ponds** nearby, close to Canmore, and the **Walker Strip Mine** farther northwest, in the heart of today's **Nordic Centre.**

In 1979, by which time little coal was being mined here, the entire operation shut down. The total amount of coal produced by all eight Canmore mines was about **16 million tonnes.**

Structures at the No. 2 minesite

The Lamphouse is the only roofed structure left at the No. 2 minesite. This is where the miners' lamps were kept when not in use, a way of recording the times the miners went in and out of the mine—equivalent to punching in and out—and just importantly for safety, knowing exactly who was underground at any time.

According to Gerry Stephenson, of the two mine entries, both of which follow the **Sedlock Seam** gently downward, **the one made of concrete was the main mine portal**, with the most activity in and out. The other was also used, but less so. **The entry along Three Sisters Parkway is another entry to the No. 2 Mine**, but I'm not sure which seam.

Together the two lower entries formed a **ventilation loop.** Fresh air was drawn in at the main portal and on through the mine. Exhaust air containing dust and methane was pulled out by fans near the other portal. For areas deep in the mine, **ventilation shafts** were driven upward to the surface.

The function of the horizontal box-like concrete structure is uncertain. This feature came to light during excavations for the Three Sisters development a few years ago. There were many mine-related buildings at this location, including the big **tipple** (coal-processing plant) built in steps along the slope to use gravity to move the coal through it, and a large **briquette plant** for mixing tar with coal fragments to produce heating fuel. Gerry Stephenson thinks the box-like structure was probably a foundation of some sort. Another possibility, judging from the maps and diagrams I have, especially the map on pages 70 and 71 of Riva's book, is that the box is part of the "**Gantry Ramp Enclosure,**" a long housing for a

cable that hoisted and lowered coal cars. This structure—a gantry in the sense of a structure directing a hoisting and lowering cable—was built parallel to the slope and curved into the main mine portal at the southern end.

*** BG, 28 May 2010