

Silvana
887712

TFS → Slocan



- > Home
- > About Us
- > About Management
- > Projects
 - Slocan Mining Camp
 - Purcell Basin
 - Klondike
 - Sullivan
- > Investor Relations
- > Corporate Information

Slocan Mining Camp

HISTORY OF THE SLOCAN MINING CAMP

Silver, lead and zinc were first discovered in the Sandon area in 1891 by prospectors Eli Carpenter and John L. Seaton. The two had teamed up and headed into the Slocan area on news of a discovery of silver-lead ore about 13 miles up Kaslo Creek. By early September they were within sight of Slocan Lake but were unsuccessful so far in their search for silver. They had originally split up for the return journey but joined up again as Carpenter decided not to return via Slocan Lake. He rejoined Seaton who was in the middle of staking a claim over what became the Payne vein, the first discovery of the area. As the story goes, the two returned to Ainsworth to record their claims and have specimens of the vein assayed. The local newspaper, the Nelson Miner, reported on September 26, 1891, that Carpenter and another prospector, E.A. Bielenberg, "quietly packed up their blankets and left for the Slocan River, by way of Nelson". Seaton, upon learning of Carpenter's betrayal, gathered his own prospecting party and headed up to the Slocan by the shorter Kaslo route. He arrived two days before Carpenter. While on his way to the Payne claims he and his party discovered another vein which became the Noble Five mine. Before the year ended, 191 claims had been staked. (from West Kootenay: the pioneer years by G. Basque, 1990)

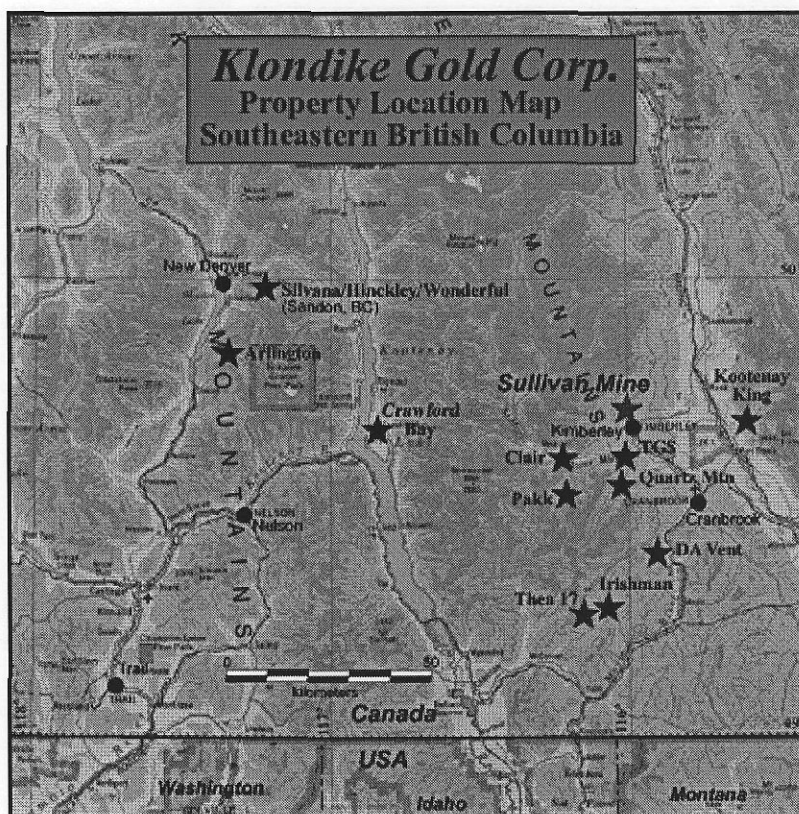


Sandon was founded in 1892 to service the growing exploration and mining activities in the area. Since that time over 100 vein deposits have produced silver lead and zinc. Production increased with some slowdowns until 1918. After 1918 production dropped; only when metal prices rose did activity increase. The town of Sandon was destroyed by a flood along Carpenter Creek in 1955. Currently, efforts are underway to restore the remaining buildings and to rebuild some of those destroyed to promote tourism in the area.

Following is a summary of a few of the top past producers in the area including the mines acquired by Klondike Gold Corp.:

Mine Name	Mined (tonnes)	Silver (kilograms)	Lead (tonnes)	Zinc (tonnes)	Gross Metal Value (1992 CDN\$)
Standard	743,000	272,536	38,401	49,350	\$144,913,391
Silversmith	355,000	225,946	32,499	11,751	\$76,516,920
*Silvana	397,000	191,407	22,190	18,545	\$73,684,976
Whitewater	437,000	106,172	13,924	22,363	\$61,067,342
Victor	149,000	129,033	21,742	14,222	\$58,097,725
Payne	111,000	116,386	17,377	1,024	\$31,966,385
*Van Roi	285,000	86,690	8,091	7,601	\$30,890,639
*Hewitt	109,000	59,696	1,727	2,703	\$14,654,147
*Arlington	19,000	31,456	867	120	\$5,691,695
*Wonderful	28,000	13,058	1,622	1,213	\$5,113,605

* - denotes properties owned by Klondike Gold Corp.
 0.0311 kilograms = 1 ounce for silver conversion; 1 tonne = 2204.6 lbs for lead and zinc conversions



SLOCAN MINING CAMP PROPERTIES

Silvana Mine: Sandon, BC - Lead/Zinc/Silver

The Silvana mine is situated on the south side of Carpenter Creek, between White and Tributary creeks at 1430 metres elevation above sea level in the Slocan Mining Division. The Ruth-Hope property adjoins to the east and the Carnation and Jenny-Evening to the west.

Regionally, the area lies on the western margin of the Kootenay Arc, in allochthonous rocks of the Quesnel Terrane. The Silvana mine is hosted by predominantly interbedded black argillite and medium to dark grey quartzite and argillaceous quartzite of the Slocan Group. Argillaceous limestone, limestone and slate are also found in varying proportions in the sequence. The sedimentary rocks have been folded, fractured, faulted and regionally metamorphosed to greenschist facies. Silicification is present in the sedimentary rocks and the vein structures.

The Main vein is the most productive in the area and strikes east or northeast and crosscuts the synclinal axis. It is an 8 kilometre long structure that has hosted various producing mines. The strike is mainly east with a variable dip of 13 to 68 degrees south. The Main vein has a separate hangingwall and footwall structure for the majority of its strike length. In places these structures can be separated by up to 45 metres. The vein structures are less than 15 metres wide and most are approximately 0.6 to 3 metres wide. Within the lode structure there can be up to 4 mineralized veins present which pinch and swell along strike and downdip. The main ore mineralization consists of argentiferous galena and sphalerite. There are minor amounts of chalcopyrite,

tetrahedrite, native silver, pyrrargyrite and very minor amounts of stephanite, argentopyrite and acanthite.

The oldest workings in the vicinity are apparently on the Mascot claim which was staked in 1895. Kelowna Exploration Company, Limited held Mascot, Carnation and Minniehaha claims, which were worked in the late 1920's, and adjacent claims during the period 1939-1951. Extensive geological investigations were carried out over the company's holdings, and underground exploration was done on the Carnation property about 1.6 kilometres to the west. Drilling by Silver Standard in 5 surface holes in search of the Carnation-Hope lode suggested a target area just west of the Ruth-Hope property. An agreement was negotiated with Carnegie Mining Corporation Limited to use the Ruth-Hope No. 5 level (4000' or 1219.2 metres elevation) which terminated near the east boundary of the Orient Fr. claim. Rehabilitation of the 4000' level was carried out late in 1962 and exploration work began in January 1963. The level was extended westerly for about 1305 metres to a lode intersection which was subsequently explored for about 244 metres. The initial program, which was completed in November 1963, included 921 metres of crosscuts and drifts, 39 metres of raise, and 1130 metres of diamond drilling. Work was discontinued in the latter part of 1967 due to lack of funds. Development work was resumed in October 1968 in a new adit which was collared at the 4323' elevation at the north edge of the Minniehaha claim. During 1968-69 the crosscut adit was driven southerly some 853 metres to the lode which was explored along 305 metres of strike and 61 metres down dip by 1503 metres of drifts and raises and 865 metres of diamond drilling in 23 holes. By April 1970 sufficient reserves had been outlined to justify production. The 150 ton per-day mill owned by Carnegie Mining Corporation was rented and production began August 26, 1970. A decline below the 4625' level was begun in 1973 and a ventilation raise was driven to the old Mascot workings at the 5000' elevation. During the following years exploration down dip at the east end of the mine located additional mineralized zones.

Drilling in 1979 cut ore-grade intersections at elevations from 1292 to about 1341 metres. Subsequent work indicated in excess of 136,000 tonnes at 548.5 grams per tonne silver, 5.9 per cent lead, and 5.7 per cent zinc (CMH 1977-78, p 257).

Production through the 4000' level began in 1979. A raise was driven to connect the 4000' and 4625' level workings. During 1980, lateral work on the 4000' level totalled 621 metres. In the east decline area, lateral work and raising totalled 1865 metres. There were 5058 metres of underground exploration drilling done. Silvana amalgamated with Dickenson Mines Limited under the name of Dickenson Mines Limited.

The Silvana mine closed indefinitely in April, 1993. In October, 1994, Amcorp Industries Ltd. signed an agreement to buy the Silvana mine and mill at Sandon from Treminco Resources Ltd. A review of the Silvana and Hinckley mines' ore reserves by Amcorp indicated that about 54,400 tonnes of ore grading 290 grams per tonne silver, 3.4 per cent lead and 4.7 per cent zinc, remain in the developed areas of the mines with potential to develop additional reserves.

Production from the Silvana between 1913 and 1993 yielded about 242 tonnes of silver, 28,691 tonnes of lead, 26,299 tonnes of zinc and 72 tonnes of cadmium from 510,964 tonnes mined.

In May 1999, Klondike Gold Corp. acquired the Silvana and Hinckley mines. Selective mining on the 4625 level commenced in the fall of 1999. A total of 3577 tonnes of ore was mined yielding 138 tonnes of lead, 114 tonnes of zinc and 1443 kg of silver.

The Company believes an underground diamond drilling program on the Silvana Property is required in order to increase the tonnage and grade from the current indicated mineral resource. This drilling will focus on areas that

can provide additional resources readily accessible for near-term mining.

Hinckley Mine: Sandon, BC - Lead/Zinc/Silver

The Hinckley property is situated on Shea Creek in the Slocan Mining Division. The underground workings are on Crown grant Lot 1720 at 1220 metres elevation above sea level.

In 1898 the property, owned by the Hinckley-Black Colt Mining Company, was developed by R.A. Grimes in 1923, and by the Standard Silver-Lead Mining Company in 1924 and 1925. In 1936 and 1937 it was worked under lease and a small amount of ore produced. Some additional work was done in 1941 but remained dormant until 1954.

Workings consist of 5 adits and a shaft. A fifth adit on the Bear Paw Mineral Claim passes into the Hinckley from the north. Three short adits, one of which is caved, are located at an elevation of nearly 1160 metres, at the edge of the creek. A short access road was made in 1954 to one of these adits, located on the east side of the stream, and between 1954 and 1957 mining operations were carried on intermittently by the owners, and the adit extended.

The property is underlain by quartzite and argillaceous quartzite of the Slocan Group. A prominent sill or dike of porphyritic quartz diorite about 45 metres wide is exposed along Shea Creek. The sedimentary rocks have been folded, fractured, faulted and regionally metamorphosed to greenschist facies. On the Hinckley property, the strata generally strike east and dip steeply south.

Mineralization occurs in a vein up to 1 metre thick. The vein follows a near vertical, northeast-trending fissure which is parallel to a joint set within the quartzite. The fissure vein has been explored with at least six short adits and a vertical shaft. It consists of lenses of massive, coarse grained, commonly cubic pyrite containing irregular to wispy bands of coarse-grained sphalerite, fine to coarse grained, sheared galena, and a discontinuous band of siderite at the footwall. Quartz forms irregular lenses and bands in the vein.

Past production from the Hinckley mine, between 1936 and 1988, yielded 265,512 grams of silver, 113,309 kilograms of zinc, 54,840 kilograms of lead, 59 kilograms of cadmium and 481 grams of gold from 106 tonnes mined.

During the end of 1997, underground access to the Hinckley and Silvana lodes was re-established. In 1997, Treminco Resources extracted and processed 1905 tonnes, averaging 285 grams per tonne silver, 5.29 per cent zinc and 5.15 per cent lead from the eastern extension of the Hinckley lode (GCNL #10, 1998).

Van Roi Mine: Silverton, BC - Zinc/Lead/ Silver

The Van Roi occurrence is situated southwest of the junction of Maurier and Silverton creeks, in the Slocan Mining Division. The underground workings are on the Mackinaw and Mountain Boomer Crown grants (Lots 6528 and 740).

The original claims were staked in 1892 and the initial production of ore was in 1893 from the Mountain Boomer claim. The Vancouver group, comprised of the Vancouver, Mountain Boomer, Le Roi, Iowa, and Poona claims, was operated from 1896 to 1907. In 1908 the Vancouver was acquired by the Van Roi Mining Co., an English syndicate, and operations continued until 1914. In

1950 the Van Roi Consolidated Mines Ltd. was formed to operate the Van Roi and Hewitt properties. In 1954 the company was reorganized under the name of Slocan Van Roi Mines Ltd. and leasers operated the mine until it was closed in 1957.

The property is developed on 9 levels, the workings following the fault zone for nearly 914 metres and to a depth of about 366 metres. To the west the same zone has been explored by the Hewitt mine and possibly it continues to the shore of Slocan Lake in the vicinity of the Galena Farm mine.

The Van Roi occurrence is hosted by quartzite, calcareous quartzite and argillites of the Slocan Group that strike 140 degrees and dip 73 degrees northwest. The occurrence is just north of the contact with the Nelson intrusions and the sedimentary sequence has been affected by contact metamorphism from the emplacement of the nearby intrusions. The Van Roi deposit is hosted by a zone of faulting and shearing with oblique normal-sinistral movement. The zone averages 35 metres in thickness, strikes 070 to 075 degrees and dips 75 degrees northwest. It has been explored in seven adits covering 900 metres of strike length and 365 metres vertically. The structure probably correlates with the North vein on the Hewitt property and may extend as far west as the Galena Farm property.

The shear zone hosts two main veins and numerous, less important ones. The Main or North vein is parallel to the shear structure. It has been developed on all the underground levels. The South or Beryl vein is present in the western part of the mine and exposed on levels 3 to 5. The South vein strikes 050 to 060 degrees and dips 65 to 75 degrees northwest. A number of orebodies are scattered at irregular intervals along both vein systems. The ore shoots generally plunge about 55 degrees to the west. Most of the ore was mined from shoots that were 30 to 60 metres long and 1 to 3 metres thick. Most shoots occurred between levels 2 and 5 of the mine. All ore shoots were similar and consisted of lenses and veins of massive galena and sphalerite, commonly associated with brecciated zones with fragments of ore and hostrocks cemented by quartz, siderite and calcite. The high grade portions of the ore shoots locally carried tetrahedrite, pyrrargyrite and some native silver. Pyrite and chalcopyrite were common accessory minerals.

In general, the boundaries of the ore zones were determined by the limits of commercial values rather than a structural break. However, in the western part of the mine the Main vein was terminated against a southeast striking fault zone. West of the fault the North vein could not be located but lateral displacement was probably not great because the Hewitt North vein lies almost directly on strike with the termination of the Van Roi North vein.

Production from the Van Roi mine between 1893 and 1958 yielded about 86 tonnes of silver, 8091 tonnes of lead, 7600 tonnes of zinc, 16 tonnes of cadmium and 9 kilograms of gold from 284,706 tonnes mined.

Hewitt Mine: Silverton, BC - Zinc/Lead/ Silver

The Hewitt mine is situated on the north flank of Mount Twigg south of Silverton Creek, in the Slocan Mining Division. The underground workings include at least fourteen separate levels and straddle the north face of the mountain. The adits are located on the Hewitt and Lorna Doone Crown grants (Lots 4440 and 1401). The portal of the No. 10 or main working level is at 1495 metres elevation above sea level.

Adits were driven on the Lorna Doone claims in 1893 by owners Rathbourne and Culver, and on the Hewitt claim in 1896 by owners Tatlow, Yates and associates of Vancouver. The Lorna Doone was Crown-granted to Frank Culver in 1898 and the Hewitt to Robert Insinger in 1902. Development work to that date totalled about 1524 metres in 4 adit levels and 2 intermediate

levels on the west (Hewitt) side of the hill. Lessees M.S. Davys, R. Sutherland and associates worked both claims from about 1903.

Van Roi Mines (1947) Ltd. was re-organized in 1950 to consolidate the Hewitt and nearby Van Roi (082FNW064) properties under the name Van Roi Consolidated Mines Ltd. A 100-ton per day mill was installed on Slocan Lake 1.6 kilometres south of Silverton in 1951 and stoping was carried out on No. 10 east level; operations ceased in July. The company name was changed in 1955 to Slocan Van Roi Mines Limited. The mine reopened in the latter half of the year and diamond drilling was done below No. 10 level. In 1956 a 198-metre winze was sunk in the hangingwall and a crosscut driven 30 metres south to the vein to establish No. 11 level.

In 1969 the property was leased to Frank Pho for a period of 10 years and the shaft was deepened to establish No. 13 level. Mr. Pho in 1970 assigned the lease to Surfside Explorations Ltd. No. 13 level was extended and stoping over a length of 18 metres was carried up to No. 12 level. Ground failure in stopes and the shaft area necessitated closing of operations in 1970 before all the known reserves were extracted. Indicated reserves were reported at 54,432 tonnes at 514.2 to 685.7 grams per tonne silver, 5.0 per cent lead and 7.0 per cent zinc (B.C. Published Reserves File).

The Hewitt mine is hosted by quartzite, calcareous quartzite and argillite of the Slocan Group intruded by an apophysis of hornblende granodiorite to quartz diorite of the Nelson intrusions and thin felsic dikes. The felsic dikes are strongly altered in the vicinity of the mineralized veins and in places difficult to distinguish from the sedimentary rocks. The strata strike 077 degrees, dip 70 degrees northwest and have been affected by contact metamorphism from the emplacement of the nearby intrusion.

Mineralization is hosted within a brecciated shear zone striking east and dipping 70 degrees north. The shear consists of at least four separate fissures that have been explored for about 365 metres vertically. The maximum width of the shear zone, as developed in the upper workings, was 30 metres. The main fissure or North vein marks the northern extend of the shear zone. It has been traced west as far as the Galena Farm property and east as far as the Van Roi property, for a total strike length of about 4 kilometres. The North vein was the most persistent of all veins mined and has provided the bulk of the ore from the mine. Above the No. 4 level the North vein followed the intrusive contact on its footwall. Below the No. 4 level the vein was entirely hosted within the Slocan Group. Other veins in the mine include the South or Main South, the West and the Main veins.

Most of the ore came from two main ore shoots lying directly beneath the summit of the divide. The stopes on the North and Main veins have an aggregate length of 210 metres on the second level and average about 3 metres in width. Where the North and Main veins intersect the third level, the ore was 4.8 metres wide. The North vein extended to the No. 7 level about 135 metres vertically below and contained the highest zinc ore, assaying up to 20 per cent zinc (Geological Survey of Canada Memoir 184). The ore shoot plunged about 70 degrees to the west.

The second ore shoot is in the eastern section of the mine. This ore zone was mined, between levels 6 and 10, for a vertical distance of 350 metres and 60 metres along strike. The ore had a maximum width of 7.5 metres. This ore zone also had a westerly plunge of about 70 degrees. The richest parts of the ore shoots were mainly above the No. 3 level of the mine. Ore minerals consists of galena, sphalerite and tetrahedrite. Pyrite and pyrrhotite are abundant within the ore. Pyrargyrite and native silver occur in the high grade portions of the ore shoots and minor stibnite and a mineral resembling boulangerite have been observed in ore samples.

Production from the Hewitt between 1900 and 1983 yielded about 59 tonnes of silver, 2708 tonnes of zinc, 1770 tonnes of lead, 2 tonnes of cadmium and 3 kilograms of gold from 112,573 tonnes mined.

Klondike Gold Corp. acquired the Van Roi, Hewitt and Arlington mines in December 1999.

Arlington Mine: Slocan, BC - Lead/Zinc/Silver

The Arlington property comprises the Arlington, Burlington No. 2 and Stephanite Crown granted claims and fractions situated on the north slope of the valley, near the confluence of Speculator and Springer creeks, 8 kilometres east-northeast of Slocan. Access to the property from the Slocan highway is via the Springer Creek road.

The mine was developed by eight adits over a vertical range of about 200 metres. In the early years, the bulk of the ore was taken from the fifth to seventh levels and from the original discovery at surface near the shaft. In the latter years, underground work was confined to the lowest two levels.

Production between 1897 and 1979 totalled 20,592 tonnes, yielding 31,429,872 grams of silver, 861,487 kilograms of lead, 118,863 kilograms of zinc, 743 grams of gold, 834 kilograms of copper and 46 kilograms of cadmium. In 1962, 576 tonnes was used as a silica flux.

The Arlington lode is a mineralized crushed zone, about 20 metres wide, in coarse-grained hornblende granite or granodiorite of the Nelson batholith; the zone contains basic monzonite inclusions. The zone includes a number of parallel fissures and maintains a uniform strike of 040 degrees, dipping 60 to 70 degrees southeast. The ore is largely replacement of the country rock, occurring as scattered breccia lenses on continuous fractures. The chief ore minerals are galena and sphalerite, with associated disseminated pyrite, chalcopyrite, stephanite, tetrahedrite and native silver. A sample of the dump taken in 1987 assayed 1280 grams per tonne silver, 0.03 grams per tonne gold, 0.0215 per cent copper, 5.7 per cent lead and 11.47 per cent zinc (Open File 1988-11).

The Arlington mine was worked extensively from 1899 through 1903, then intermittently until 1979. In 1969 and 1970, Arlington Silver Mines Ltd. stoped and shipped ore, which was mainly salvages from the old workings; they also explored, by diamond drilling, what appears to be the northern extension of the vein system.

A report by Cazador Explorations Limited in 1990 reports two areas which have potential for discovery of more ore. The first reference is to a surface drill hole, AS-08, at the Speculator property that intersected 42.7 ounces per ton of silver over 3.99 meters (13 feet) about fifty meters below surface that has not been followed up. The second area of potential lies within the Arlington workings on the hanging wall vein between sections 1360N and 1680N. It is parallel to the high grade stopes located at the roll in the footwall vein. The roll, which probably controlled ore deposition, is likely present in the hanging wall vein. A two to six foot wide galena vein with a grade of 5 to 25 ounces per ton of silver was followed on the hanging wall vein on B level, predominantly between sections 1510N and 1560N at the turn of the century, but probably remained unmined due to lead smelter penalties at the time. Some drilling and development has been done to locate this ore, but there is limited documentation.

The property was staked in about 1894 and comprises the Stephanite fraction, Burlington No. 2, Arlington No. 1 fraction, and Arlington No. 2 Crown-granted claims.

The first shipment of ore was made in 1897. The property was worked extensively from 1899 to 1903, production reaching a maximum in 1901. During this period the property was developed by three tunnels over a vertical

range of 46 metres. Most of the stoping was done in the upper 15 metres.

Arlington Silver Mines purchased 16 claims including the Arlington mine in 1964. The road and two adits were reopened. In 1969, Arlington became Western Arlington Resources Ltd. and in 1986 changed its name to Lightning Creek Mines Ltd. In 1981, Svienson Way Mineral Services Ltd. purchased 50 per cent interest in the property. From previous work there were blocked out 43,114 tonnes of proven surface dump ore at 487.8 grams per tonne silver, 0.49 per cent lead and 0.39 per cent zinc; 17,470 tonnes of indicated underground at 699.4 grams per tonne silver, 1.04 per cent lead and 0.85 per cent zinc (Vancouver Stock Exchange Statement of Material Facts (#108/90, 1990). In 1988, Lightning Creek Mines Ltd. listed proven, probable and indicated resources at 62,252 tonnes averaging 396 grams per tonne silver and 0.54 per cent zinc (CMH 1988-89, page 290). During 1989 and 1990, Cazador Explorations limited purchased the property. Cazador amalgamated in 1993 to become Granduc Mining Corporation, which amalgamated in 1996 with Black Hawk Mining Inc.

Wonderful Project: Sandon, BC - Lead/Zinc/Silver

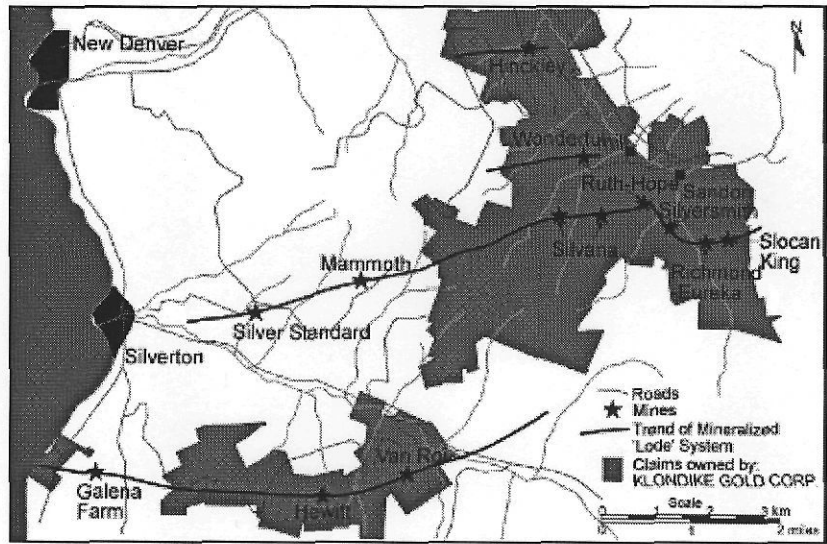
The Wonderful Pb/Zn/Ag deposit lies just west of the Silvana Mill at Sandon, B.C. The Sandon area, the richest part of the Slocan Mining Camp, is underlain by limestones, quartzites and argillites which are crossed at right angles by a number of lodes. The Wonderful mine is in the same sedimentary package that hosts the Victor Mine (ViolaMac) 2.5 km to the northwest. The Victor Mine produced 165,000 tons averaging 25 oz/t Ag, 14.5% Pb and 9.5% Zn. Most of this was mined between 1951 and 1963. The Silvana Mine is adjacent to the east and has produced since 1970, over 500,000 tonnes averaging 15 oz/T Ag, 5.8% Pb and 5.4% Zn.

The Wonderful Mine produced over 31,000 tons by 1936 with average grade 13 oz/t Ag, 5% Pb and 4% Zn. Zinc at the time was considered waste and zinc rich areas were avoided. Also the milling at that time was very inefficient and actual mining grades would have been much higher. The nearby Silversmith mine, one of the largest and most efficient at the time reported mill losses of 28% of the Silver, 29.5% of the lead and 48% of the zinc. Current recoveries at the Silvana mill are 98% of the silver and 97% of the Pb and Zn.

The only exploration that has occurred since 1936 was the Lookout cross-cut which tried to reach the extension of the known Wonderful lode but due to possible surveying errors it is presently uncertain as to whether this tunnel actually reached the target area. The position of the new workings with respect to the old mine was never established and the downward continuation of the vein beneath the slopes was never tested. It is reasonable to expect that a small resource exists here above track level. Grades should be similar to those encountered in the past. Excellent exploration potential lies structurally down-plunge of the old stopes. There has been no drilling done below track level of the #3 adit and there is every reason to believe that the ore continues below this level. Prospects below this level are also enhanced by the fact that a series of interbedded quartzites are projected to extend into the target area.

Trenching carried out by Klondike Gold Corp. in the fall of 1998 discovered the surface exposure of the lode east of the #3 tunnel. Podiform galena within the lode assayed 127 oz/t Ag, 77.4% Pb and 3.23% Zn. A select sample from the dump of the Lookout tunnel assayed 13 oz/t Ag, 5% Pb and 18.3% Zn. Soil geochemistry showed several anomalous areas that should be followed by trenching or surface drilling.

In the past, the Wonderful deposit was always owned separately from the Silvana mine and mill even though it is only a 1 km haul distance from the mill. Due to the separate ownership it remains relatively unexploited.



.....

© 2005 Kl