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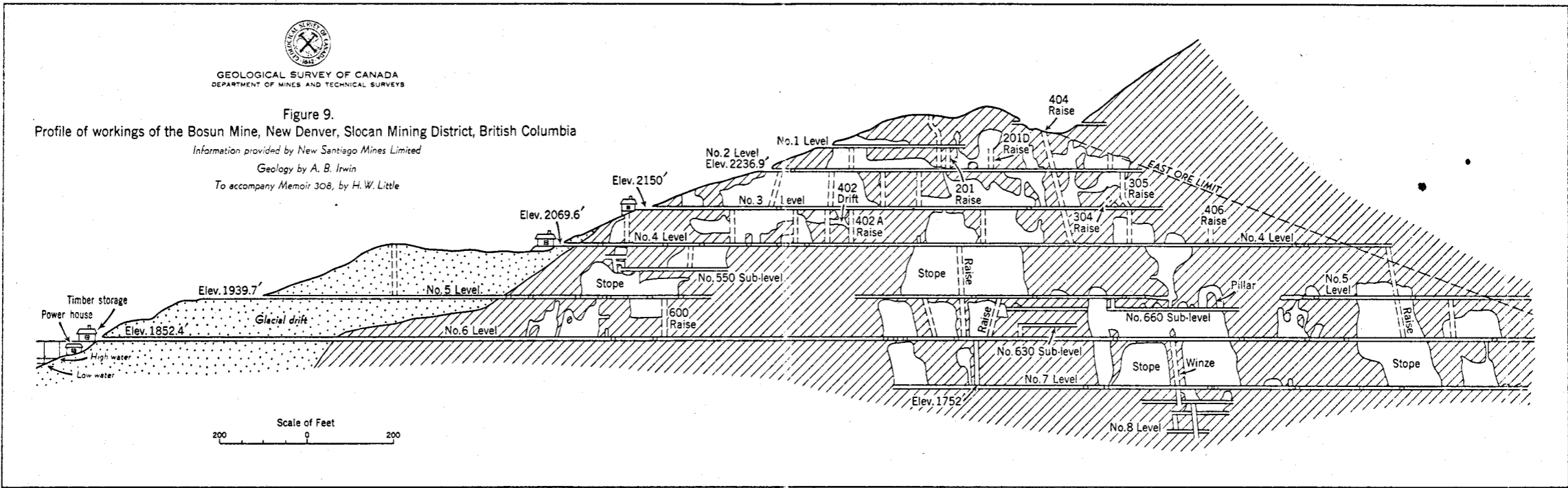
SUBJECT

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Bosum

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PROPERTY FILE
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Cartography by the Geological Survey of Canada
Published, 1960

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Figure 9

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PROPERTY FILE
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An exploration drive is planned to investigate the Standard-Mammoth lode system, starting about 500 feet above the inner workings of the Standard No. 5 level and passing about 850 feet below an ore zone on the Hecla claim. The ultimate objective is a connection with the Mammoth No. 12 level, which is about 200 feet higher than the new drive. The entire project involves several thousand feet of underground work. The adit for the Hecla drive, as it is called, is above the Standard No. 5 level at an elevation of 4,170 feet, on the Surprise Crown-granted claim. Access to the adit is by 1 mile of new road which leaves the old Standard camp at No. 5 level.

The mine plant and surface installations were started in October and completed early in December. Power was brought to the plant by a 2,300-volt transmission-line from the old Standard line. A 7- by 8-foot drift was started in December and is being driven north 65 degrees east toward the Standard-Mammoth lode. Drift footage at the end of 1962 was 260 feet. A crew of fifteen men was employed for two months; six were employed underground.

Bosun
(New Santiago
Mines Limited)

(49° 117° N.E.) Company office, 511, 850 West Hastings Street, Vancouver 1. R. Crowe-Swords, president. Capital: 3,000,000 shares, 50 cents par value. The Bosun mine is on the east shore of Slocan Lake, 1½ miles south of New Denver on the Nelson-Nakusp highway. W. H. MacLeod, of Silverton, did some development work off the winze which was sunk previously. A small amount of stopping was done on the vein. A total of 42 tons of ore was shipped to the Western Exploration mill.

Hewitt (Kopan Developments Limited).—(49° 117° N.E.) Company office, 906, 11 Adelaide Street West, Toronto. W. W. Dennis, president. Lessees F. Pho and J. Hichert continued mining below the No. 10 level. A short shaft was sunk and the ore was hauled to the Western Exploration mill. The total ore treated was 625 tons.

Enterprise

(49° 117° N.E.) F. Pho and J. Kelly, of Silverton, leased this mine and operated it for five months. The mine is on Enterprise Creek, 8 miles by road from the Slocan City-New Denver highway. Operations ceased in November. The ore was hauled to the Western Exploration mill. The total ore treated was 345 tons.

SPRINGER CREEK*

Silver

**Anna (Silver King
Mines Limited)**

(49° 117° N.E.) This group of five claims is owned by Silver King Mines Limited; mine office, Slocan City. B. Marasek, president and manager. The property is on the northern side of Springer Creek, adjoining the Ottawa mine on the east. It is accessible by 5 miles of good road from Slocan City.

B. Marasek and one man worked on the property for eight months. The ventilation raise from No. 4 level to No. 3 level was completed, a total distance of 120 feet. Diamond drilling consisted of nine holes with a total footage of 940 feet. A 40-foot crosscut was driven to explore the shear. Two tons of ore was shipped to the Trail smelter.

* By J. D. McDonald.

Discovery Fraction (49° 117° N.E.) This claim is near the summit of Mount Payne, north of Sandon. It is owned by E. H. Petersen, of Sandon, who made a small shipment to the Trail smelter. Previous production was in 1953. Production: Ore shipped, 9 tons. Gross content: Silver, 1,035 oz.; lead, 11,739 lb.; zinc, 450 lb.

SLOCAN LAKE*

Silver-Lead-Zinc

Mammoth, Standard, Enterprise, Monarch (Western Exploration Company Limited) (49° 117° N.E.) Company office, 38 South Dearborn Street, Chicago, Ill.; mine office, Silverton. M. P. McCullough, Chicago, president; A. M. Ham, Silverton, managing director; R. A. Avison, mine superintendent; C. E. Towgood, mill superintendent. Capital: 2,000,000 shares, 50 cents par value. This company owns the Mammoth, Monarch, and Standard mines near Silverton, and the Enterprise mine on Enterprise Creek, 12½ miles by road south of Silverton. The Monarch lode, which lies between the Mammoth and Standard mines, has been under development since 1952. As a result of several thousand feet of drifting and crosscutting in the Monarch adit (elevation 5,350 feet), followed by diamond drilling, an orebody was indicated below the adit. The Hecla drift, on the No. 7 adit level of the Mammoth mine (elevation 5,040 feet), was extended to a total length of 4,000 feet in 1955 to reach under this orebody. A raise was started in the hangingwall of the lode toward the orebody and was completed in 1956 to the Monarch adit. A sublevel was established half-way in the raise in the vicinity of the orebody. In the Hecla drift a mineralized section 500 feet long was explored by several box holes, and the broken material from the drift and the box holes was milled as a large bulk sample totalling about 1,000 tons. The results were sufficiently encouraging to warrant the start of a diamond-drilling programme to explore this orebody at depth.

Production started from the Mammoth mine, which had been idle since 1952. The main haulage level is No. 7 adit, which is connected by a 45-degree raise to No. 9 adit level, 340 feet below. The last production was from No. 8 level, where a square-set stope was carried up nearly to the mined-out block above No. 7 level. In 1956 a stope was started on No. 9 level near the main raise, and the adit was driven to a point about 400 feet east of the main raise. Mineralization encountered was sufficient to warrant prospecting by box holes. This development ore and the stope production, and the Hecla drift ore, was delivered to the mill via the 16,000-foot tram-line. Electricity and compressed air were supplied from the company's hydro plant on Silverton Creek. The living-quarters on site were used.

The Standard was idle except for leasing operations. J. Kelly and W. Postlethwaite obtained about 300 tons from Nos. 2, 6, and 7 levels. This ore was milled at the company's mill.

The Enterprise mine remained closed, but the camp is intact and a watchman is employed.

The mill operated throughout 1956 treating Violamac ore on a custom basis. Company ore amounted to about one week's run per month. The number of men employed averaged thirty-five.

Bosun (New Santiago Mines Limited)

(49° 117° N.E.) Company office, 511, 850 West Hastings Street, Vancouver. R. Crowe-Swords, president. Capital: 3,000,000 shares, 50 cents par value. The Bosun mine is on the east shore of Slocan Lake, 1½ miles south of New Denver on the Nelson-Nakusp Highway. The main haulage, No. 6 adit, is driven beneath the highway from a site 40 feet above the lake. The mine has been idle since 1953, except for a small crew engaged to unwater the winze section in 1955. In 1956 a lease

* By J. W. Peck.

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was given to W. H. McLeod, of Silverton, who, with the aid of two partners, started an exploratory crosscut in the south centre section of the mine to investigate a vein reported to have been intersected by a diamond-drill hole many years ago. The crosscut was driven beneath the hole, which had been drilled slightly upward. The crosscut was driven 132 feet and an additional 35 feet was diamond drilled from the face, but no vein was encountered. A raise was then started to locate the exact position of the old diamond-drill hole.

**Van Roi, Hewitt
(Slocan Van Roi
Mines Limited)**

(49° 117° N.E.) Company office, 532 Burrard Street, Vancouver; mine office, Silverton. W. Tattrie, mine manager; T. Leask, mill superintendent. Capital: 5,000,000 shares, no par value.

This company owns the Van Roi and Hewitt mines near Silverton. Transcontinental Resources Limited has directional control. As in

1955, work was concentrated in the Hewitt mine, 6¼ miles by road southeast of Silverton. On the lowest or No. 10 level, an orebody about 2,000 feet from the portal has been stoped in the past above the level. In 1956 a 10- by 7-foot winze, inclined at 65 degrees, was sunk in the hangingwall and a level established 100 feet vertically below No. 10 level. A crosscut was driven 100 feet south to reach the vein, and drifting was done east and west. This work exposed a section 95 feet long, well mineralized over drift width with galena, sphalerite, and ruby silver. Development of this ore block was in progress at the end of 1956.

Above No. 10 level a lease was given to M. Tarnowski, of Silverton, to mine remnants in the 1026 stope. Tarnowski and two partners removed 563 tons for milling at the company's concentrator.

The Van Roi mine and camp are one-quarter mile by road east of the Hewitt No. 10 portal. Since 1953 the mine has been under lease to M. Slobodzian, J. W. Miller, and L. Fried, who are known collectively as the S.F. and M. Mining Company. Most of the ore in 1956 came from stopes above No. 1 level and some from the winze area in the southwest end of No. 3 level. Development was started of a block of ore below the mined-out "Brookes" stope in the extreme southeast end of No. 3 level. With company assistance a crosscut was driven under this ore from No. 4 sublevel. Leasing operations employed as many as eight men.

Another lease was given in the latter half of 1956 to V. Hansen and C. Higgins (Higgins & Co.) to mine ore on No. 5 level in the 546 south stope. Considerable track and pipe had to be installed to service this area.

The Van Roi mill is 1 mile south of Silverton on the Nelson-Nakusp Highway. It had been shut down since 1952. It was rehabilitated and milling started in March, 1956. It operated on company and custom ore at a rate of 40 to 50 tons per day. The following tonnage was treated:—

	Net Tons
A.U. (N.G.N. Partnership)	97
Van Roi lessees (S.F. & M. Mining Co.)	3,684
Hinckley Mining Co.	96
Galena Farm (F. Mills)	238
Westmont (Myers & Thickett)	170
Hewitt lessee (M. Tarnowski)	563
Van Roi lessees (Higgins & Co.)	405
Fisher Maiden (F. Mills)	75
Austin (L. Gormley)	34
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Total custom milling.....	5,362
Company production, Hewitt	2,049
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Total.....	7,411

on No. 2 vein and west on No. 4 vein, but no worthwhile mineralization was found. A diamond-drilling programme followed. A raise was then driven and a sublevel established 75 feet above the adit. Additional diamond drilling found the No. 3 level, and a raise was driven from the sublevel to connect with it. About 100 tons of ore was salvaged from the work in 1953. A compressed-air locomotive was used for haulage on No. 4 level. Three men were employed.

**Min, Cork
(Mincor Mines
Limited)**

(49° 117° N.E.) Company office, suite 215 Pemberton Building, 744 West Hastings Street, Vancouver. George Schuster, president; A. Lakes, managing director. Capital: 2,000,000 shares, 50 cents par value. This company was formed in 1953 to develop the Min and Cork claims, which are south of the Monitor mine and adjacent to Violamac ground. During June and July a Nelson contractor, R. Golac, was engaged to extend the upper Min adit. This adit is at an elevation of 3,600 feet and is reached by a half-mile of road from the new Violamac mine road at a point 1.2 miles from the Three Forks-Sandon road. It is reported that 173 feet of drifting was done, to make the adit 453 feet long. The number of men employed averaged five.

Discovery Fraction (49° 117° N.E.) This is a located claim near the summit of Mount Payne, north of Sandon. It is owned by E. H. Petersen, of Sandon, who made a small shipment to the Trail smelter. Production: Ore shipped, 6.2 tons. Gross content: Silver, 584 oz.; lead, 6,908 lb.; zinc, 707 lb.

SLOCAN LAKE*

Silver-Lead-Zinc

**Bosun
(New Santiago
Mines Limited)**

(49° 117° N.E.) Company office, Suite 4, 423 Hamilton Street, Vancouver. W. Postlethwaite, superintendent. Capital: 1,500,000 shares, 50 cents par value. The Bosun mine is on the east shore of Slocan Lake, 1½ miles south of New Denver, on the Nelson-Nakusp Highway. The No. 6 or main haulage level is driven beneath the highway from a site 40 feet above the lake. In the winze zone a raise was driven on the vein from No. 7 to No. 6 level from a point about 200 feet east of the winze. From the raise two intermediate levels were driven 30 and 70 feet above No. 7 level. These were driven 20 feet west and 35 feet east respectively. About 3 tons of zincy ore was obtained from the west intermediate but was not shipped. In the centre zone of the mine a crosscut was extended about 100 feet to investigate old diamond-drill intersections. Three men were employed in this work. The mine was inactive during the latter half of 1953, and the winze was allowed to flood.

Mammoth, Standard, Enterprise, Monarch (Western Exploration Company Limited).—(49° 117° N.E.) Company office, 38 South Dearborn Street, Chicago, Ill.; mine office, Silverton. M. P. McCulloch, Chicago, president; A. M. Ham, Silverton, managing director; R. A. Avison, mine superintendent; T. Leask, mill superintendent. Capital: 2,000,000 shares, 50 cents par value. This company owns the Mammoth, Monarch, and Standard mines near Silverton and the Enterprise mine on Enterprise Creek, 12½ miles by road south of Silverton.

Mammoth.—This mine is serviced by a 2-mile road from the Standard camp and by a 16,000-foot aerial tram to the mill at Silverton. Operations ceased late in 1952, and the mine was idle during 1953.

Monarch.—The Monarch adit is alongside the Standard-Mammoth road, 900 feet west of the Mammoth mine. It is a crosscut for 570 feet and crossed the Mammoth lode at 490 feet from the portal. The lode was unmineralized, but a westerly drift, 760 feet long, was driven in 1952 in the hangingwall of the lode. This work started again in May, 1953, and the drift was advanced to a distance about 2,300 feet from the main

* By J. W. Peck.

plant and aerial tramway has been installed. The milling plant is one of the best of the many mills in the Kootenays and the flow-sheet is similar to most of them. It is roughly as follows: Ore is delivered to a 150-ton bin from the aerial tramway. The primary crushing is done by an 11- by 18-inch jaw-crusher in closed circuit with two vibrating screens, the resulting fines being stored in a 300-ton mill-bin. The ore from the mill-bin will be delivered by conveyor to the 6- by 48-inch Hardinge ball-mill and ground in closed circuit with a Dorr duplex classifier. The oversize from the classifier is delivered to the lead cells, there are eight rougher and two cleaner cells on the lead side, and the lead concentrate is thickened in a Dorr thickener and filtered with a 1-leaf American filter. The tailings from the lead unit are then delivered to the zinc cells, consisting of eight rougher and two cleaner cells, and the zinc concentrate treated in a Dorr thickener and in a 2-leaf American filter. The tailings from the zinc cells are run to waste storage. The lead and zinc cells are of the Minerals Separation sub-aerial type. Sufficient storage-space is provided for both lead and zinc concentrate in the concentrate-bins to enable a month's run to be stored. A system of conveyor-belts will deliver the concentrate direct to cars on barges at the mill slip.

Power for the mill will be supplied by a Pelton wheel driving a 400-k.v.a. Westinghouse alternator, located close to the mill. It was necessary to build several thousand feet of flume to supply the necessary water and head to drive the water-wheel, the water coming from Silverton creek.

The aerial tramway is the longest and largest one in the Slocan, having a length of 16,000 feet from the mill to the upper terminal at the mine No. 7 level. From the mine at an elevation of 4,925 feet at the No. 7 level the tramway climbs 200 feet to the break-over tower 4,000 feet west of the mine terminal. From the break-over tower to the angle tower at the *Standard* is 4,000 feet. The angle tower at 3,200 feet elevation deflects the tram 27° to the north. It is 8,000 feet distant and 1,400 feet vertically to the mill or lower terminal at 1,800 feet elevation.

During the year the mine was surveyed and assay plans made of all the levels. The raise connecting the No. 7 and the No. 4 levels was completed late in the year and a limited amount of lateral work was done off the raise on the No. 5 and No. 6 levels. When the property was visited in January, 1930, the mine crew was being used to finish the construction of the tramway, on the installation of necessary mining machinery and equipment, and in general preparing the property for production at the rate of 100 tons a day.

It was expected that the plant would be ready for operation in February, 1930, though it is considered doubtful if the prevailing market prices for the metals will be sufficiently encouraging for the company to start production operations.

During the summer of 1929 A. Jarvis and partner, of Silverton, obtained a lease on the old *Wakefield*, located on the north side of Silverton creek (locally called 4-Mile creek) and approximately 4 miles east of Silverton. The property has been idle for many years since the *Wakefield Mining Company*, an English company, suspended operations. The flat-dipping vein, containing appreciable amounts of calcite, contains small lenses of galena, sphalerite, and high silver values over small areas. The vein has been opened up on several levels and considerable stoping over narrow widths was done by the old company. Work in the past season has consisted of mining a few small remnants of high-grade lenses of shipping-ore from the lowest level and the sorting-over of the dumps left from former operations. A grab sample representative of the sorted ore to be shipped to the smelter assayed: Silver, 40 oz. to the ton; lead, 22 per cent. A total of 40 tons was shipped during the fall of the year by the two leasers.

NEW DENVER.

Bosun.* The *Bosun* mine, owned by C. J. Campbell, of New Denver, is situated on the shore of Slocan lake, about 1½ miles north of Silverton. The property has been worked at intervals since its discovery in 1898 and was owned first by the *Bosun Mines, Limited*, an English company, and latterly by the *Rosebery-Surprise Mining Company* until 1928.

The true fissure-vein in which the mineralization makes in small narrow lenses has a strike of N. 55° E. and dips to the south-east at 50°. The width of the vein varies from a few inches to 4 or 5 feet and the commercial section of the vein is from a few inches to a maximum of 2 to 3 feet in width. The ore consists of galena and sphalerite with some grey copper and associated silver values. The country-rocks in the vicinity of the vein are argillites and quartzites of the

Slocan series and the vein is characterized by sheared zones close to narrow porphyry dykes which offset the vein to the right for short distances. The displacement of the vein is invariably in the same direction along a N. 50° W. strike. The vein has been quite difficult to follow on account of the indefinite nature of the foot-wall and the large number of rolls that occur in the vein.

The mine has been opened up by six adit-tunnels and one level 100 feet below the No. 6 (or lowest) adit-level. This No. 7 level is approximately 75 feet below the surface of the lake and the vein has been drifted on for some 500 feet. During 1929 a small stope in the east end of No. 7 level was mined by the owner and a total of 958 tons of milling-ore was shipped to the Trail smelter. The average grade of the ore shipped has been reported as: Silver, 60 oz. to the ton; lead, 20 per cent.; zinc, 25 per cent.

The stope from which the above shipment was made played out, and in order to provide further ground for stoping operations it will be necessary to sink a shaft and start the development of a No. 8 level. This new development-work has not been undertaken to date, efforts having been made to dispose of the property to a company which could handle the necessary development programme with considerably less risk than would be the case were the risk assumed by one man. Since August 1st, when C. J. Campbell discontinued mining operations, fifteen leasers under eight different leases have been working at the mine. Two or three of the leasing parties are jigging the old dumps of the mine and making a product that has assayed 82 oz. silver, 22 per cent. lead, and 23 per cent. zinc when shipped to the Trail smelter. The remaining leasers are working underground, re-treating the old stope-fill and where possible mining any ground that is accessible and of grade good enough to ship. The latest group of leasers to start work at the dumps has installed a centrifugal pump and a 4-compartment jig operated by a 16-horse-power Crossley engine.

The Molly Hughes Mines, Limited, capitalized at 2,000,000 shares of \$1 par value, was incorporated in March, 1929, to acquire the property of the Pinto Mines, Limited, and 1,075,685 shares of the new company's stock were to be paid for the property, which has for long been known as the *Molly Hughes*. It is situated on the eastern shore of Slocan lake, 1 mile north of New Denver, and has been adequately described in the Annual Reports for the years 1904 and 1922 to 1928, inclusive.

Briefly, a series of quartz-filled fissure-veins, striking east and west with a dip of 60° to 70° to the north, occur in a granite batholith that is closely related to the Nelson batholith, which outcrops a few miles to the south of the mine. The principal development-work has been done on the *Kincara* vein, which has been developed to some 100 feet below the level of Slocan lake by a series of levels, connecting raises, and winzes. The ground above the lake-level, called the No. 3 level, has been largely stoped out by past operators. Recent work undertaken before the refinancing took place was the sinking of a winze from the No. 3 level and the establishment of the No. 4 level at a depth of 100 feet below No. 3 level. A limited amount of stoping close to the winze has been done. The purpose of the refinancing is to provide funds for sinking the shaft another 150 feet below the No. 4 level and to provide the necessary working capital for the working of the property.

The vein varies in width from 4 to 10 feet, but the mineralization of galena, argentiferous tetrahedrite, pyrite, and small amounts of sphalerite is confined to a narrow band varying in width from 6 to 12 inches and lying on the hanging-wall side of the quartz-filled vein. At several points in the underground workings splits in the vein mineralization give two narrow pay-streaks averaging 6 to 8 inches in thickness, one along the foot-wall and one along the hanging-wall of the vein. The property is well equipped for a small operation, being supplied with two Diesel-engine-driven air-compressors and the necessary air-hoists and air-drills used in power-mining. The results of the financing have not been made known to date and as these notes are being written the property is not being worked.

This property, 1½ miles east of New Denver, on the south side of Carpenter Mountain Chief.* creek, has been operated during the past season by three leasers, J. Cechelero, M. Zatoni, and L. Vingneaux. The claims under lease are the *Mountain Chief*, *Mammoth*, and *Ape*, and during the past year work has been confined to the *Mammoth* between the No. 1 and No. 2 levels.

A small pillar of the vein carrying galena, sphalerite, and associated silver values has been stoped from below the No. 1 level elevation, at 2,960 feet above sea-level. The ore, broken by

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The preliminary preparations to carry on extensive operations at this property included the rehabilitation of the old *Standard* power plant on Silverton creek by building 1 mile of new flume, the building of 2½ miles of new road from the *Standard* to the *Mammoth*, the installation of an air-line from the *Standard*, and the erection of a suitable camp at the mine for the accommodation of a crew of at least forty men, at which electric light, telephone, and electric heaters were installed. The erection of a concentrator on the old *Standard* mill-site is contemplated for the coming year. The ore will be conveyed by an aerial tramway which will connect with the *Standard* tram.

The *Standard* has also been acquired by the same company and attention will be directed to its further exploration as soon as development-work at the *Mammoth* has been brought to a definite conclusion. During the year a number of leasers were engaged at the *Standard*.

NEW DENVER.

Bosun. This mine, which is situated near New Denver, on Slocan lake, was successfully operated for a number of years by the Rosebery-Surprise Mining Company under the direction of J. P. McFadden. It was bought during the early part of 1928 by Colin Campbell, of New Denver. The history of the mine dates back for many years, and after a long period of inactivity was acquired by the above company in 1917 and turned into a profitable producer.

Until 1927 the ore was won from above the lowest or main adit-level, which has been driven along the direction of the strike of the vein from a point about 30 feet above the lake-shore. In 1927 a shaft was sunk and another level, known as the No. 7, was established at an additional depth of about 100 feet. For the last two years mining operations have been confined to the No. 7 level, where the vein has been drifted on for between 200 and 300 feet. The ore occurs in a fairly wide fractured zone, making in streaks and small tight lenses along the strike and filling small lateral fractures. A characteristic feature of the structural conditions is the faulting of the vein by small porphyry sills; the displacement is not great, but is persistent in the various levels and in each case is in the same direction.

In the east end of the workings, which are furthest into the hill, ore was exposed in the roof of the stope along a length of about 120 feet, varying in thickness from a few inches to about 1 foot. At the east end a slip cut the ore off, but conditions appeared favourable for it being picked up again by a small amount of drifting. About nine leasers were busily engaged in the old upper workings.

The ore is silver-lead-zinc, carrying high silver values. Both clean lead and a milling grade of ore were being mined for shipment to Trail. The values of the milling grade were about as follows: Silver, 66 oz. to the ton; lead, 17 per cent.; zinc, 23 per cent. The lead ore assayed about: Silver, 150 oz. to the ton; lead, 70 per cent.; zinc, 3-4 per cent. Towards the end of the year it is understood that negotiations were being made for the sale of the property to a mining company.

This property, which is situated on the shore of Slocan lake at a short distance from New Denver, is being operated by the Pinto Mines, Limited, under the superintendence of H. H. Dimock. The history of the mine dates back for many years, it having been operated intermittently by various interests.

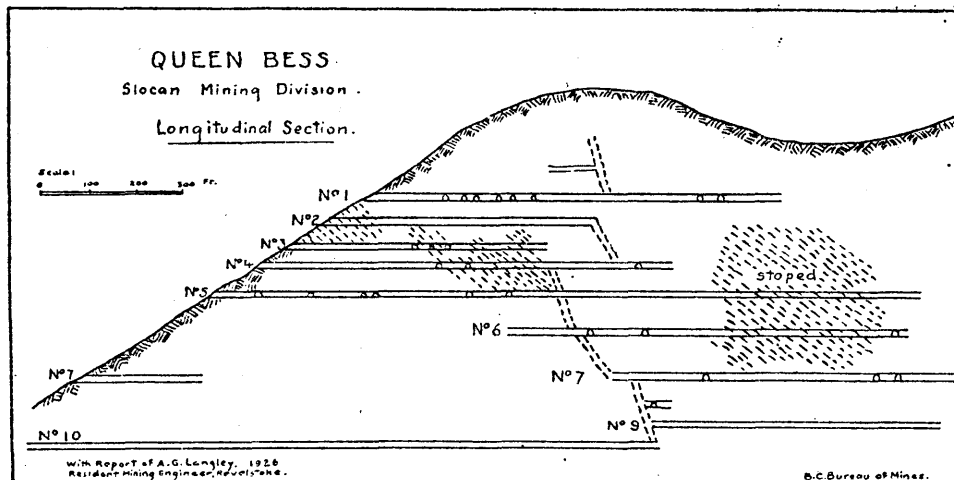
The vein, which lies in granite, dips at a steep angle and strikes in an easterly and westerly direction. It carries a narrow but persistent streak of high-grade gold-silver ore, with which is associated small percentages of lead and zinc. No concentration is necessary, the ore going direct to the smelter, where it is treated at low cost on account of the high silica content. The mine is opened by a 329-foot crosscut from the lake-shore. From above this level the bulk of the ore has been stoped to the surface. Hence the future possibilities depend on the results of development below this main level and the development of other parallel veins by further crosscutting.

When the present company took over the property a shaft had been sunk for 100 feet below the main adit and a small amount of drifting and stoping had been accomplished, when work was discontinued owing principally to inadequate and costly power. These conditions were rectified by the installation of two 50-horse-power Ingersoll-Rand direct-connected angle-compound oil-engines, while a 2-compartment incline raise, 192 feet in length, was driven to the

Alps Alturas.—The trail up the North fork of Carpenter to the *Alps Alturas* was repaired and W. J. McMillan, the owner, spent part of the summer at the mine. The principal values are in antimony.

This property, comprising a group of nine claims, is situated near Alamo and **Queen Bess.** is owned by Clarence Cunningham. A brief review of the history of this property reveals what may be accomplished in the Slocan by those who have the courage and tenacity of purpose to undertake systematic development-work in favourable localities. Similar results have been obtained at other properties and in all probability will be repeated for many years to come.

The records show that this mine was a steady producer up to 1904, with a total yield of \$225,000 net smelter returns. It was then considered to be worked out and was abandoned. In 1916 Clarence Cunningham, who acquired the property, put a small crew of men to work and in a short time discovered a new ore-shoot having dimensions of 400 feet long and 5 feet wide and extending from the sixth level to within a short distance of the surface. The production from this ore-body was approximately 12,000 tons of ore, which yielded net smelter returns of \$1,250,000. The old company missed this ore-body by not extending the main drift on the



fifth level for another 20 feet. In 1917 the mine was equipped with an aerial tram to the railway and steady shipments were made until 1920, since when the production has principally consisted of small tonnages from leasing operations.

The *Queen Bess* vein occupies a sheared fissure in slate and has a north-easterly strike and a dip of 55° to the south-east. The vein-filling consists of sheared and crushed oxidized material, in which the ore occurred as clean galena averaging 1½ oz. of silver to the unit of lead. The mine-workings, consisting of ten levels, are extensive. The downward continuation of the ore-shoot below the seventh level has not been definitely established, although indications on the ninth level appeared favourable and the lower horizons of the mine hold attractive possibilities for further exploration.

During 1925 two leasers extracted about \$30,000 worth of ore by gophering about above the No. 1 level, and the only work being done during the present year was the driving of a short crosscut and raising from the No. 1 level to pick up the continuation of this ore. Generally speaking, the mine-workings are in good condition and also the camp buildings, which provide excellent accommodation for the mine crew.

NEW DENVER AND SILVERTON.

Bosun. This mine is situated near New Denver and is operated by the Rosebery-Surprise Mining Company, of which J. P. MacFadden is superintendent. It has been a steady and profitable producer for a number of years. The production during the year was obtained from an ore-shoot between the sixth and fifth levels. This was discovered by raising on a tight seam of zinc exposed in the roof of the main drift

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Coal

Downward of the drift

work

on the No. 6 level. At 25 feet above the level this opened out into an important ore-body, having a length of about 85 feet and a width of from 12 inches to 3 feet of massive galena carrying high silver values. The ore was tightly frozen between slate walls and occurred as a lens, which at 60 feet above the level began to show signs of diminishing in width and regularity. According to recent reports this ore-shoot is now worked out and the company has commenced shaft-sinking from the No. 6 level on ore exposed in the bottom of the drift.

Exploration-work during the year was principally confined to the advancement of the No. 5 level through the faulted zone at the easterly end of the workings. The old upper workings are being worked under a lease by about twelve men. The company made substantial shipments of crude ore and high-grade milling-ore; a typical analysis of the latter is as follows: Gold, 0.01 oz.; silver, 73.1 oz. to the ton; lead, 12.8 per cent.; zinc, 23.9 per cent.; iron, 6.8 per cent. The lead concentrates from this ore contained the following values: Gold, 0.04 oz.; silver, 215.8 oz. to the ton; lead, 54.4 per cent.; zinc, 17.6 per cent. The zinc concentrates averaged: Silver, 65.8 oz. to the ton; lead, 1.7 per cent.; zinc, 50.7 per cent. The tailings carried: Silver, 4.8 oz. to the ton; lead, 1.1 per cent.; zinc, 2.5 per cent.

Molly Hughes.—The *Molly Hughes* mine near New Denver was operated by a local syndicate, composed of practical miners, during the latter part of the year and a shipment was made to Trail.

At the *Mountain Chief*, which is situated on the New Denver-Three Forks road, four Italian miners put in a busy season at reclaiming the old stope fillings.

The plant used was inexpensive and practical and might be profitably applied in other cases where water is available for power and washing purposes. The ore from the mine was dumped into a pocket on the dump, from which it passed over a small grizzly, where large pieces of waste were discarded and the fine stuff was fed into a launder, which delivered it into a small Blake crusher and then to two jigs. This miniature concentrator was operated by a 12-inch Pelton wheel at a head of about 400 feet. About twenty sacks of middlings were being made a day, said to average about: Silver, 64 oz. to the ton; lead, 25 per cent.; zinc, 35 per cent. This was shipped to the Trail concentrator for further treatment.

The Standard Silver-Lead Company's mill was destroyed by fire in July, soon after it had been restarted to treat an accumulation of tailings, and ore mined by a number of leasers. Leasing operations, however, are being continued and a few small shipments were made to Trail.

The *Hewitt* mine on 4-Mile creek was acquired under option by the Victoria Syndicate and a crew of men was put to work during the summer at further exploration and development under the direction of R. H. Stewart. It is understood that the work is being principally confined to the development of the vein from the lowest workings.

At the *Van Roi*, which adjoins the *Hewitt* to the east, Clarence Cunningham, who owns the property, had a small crew engaged at the development of the ore which outcrops at the surface and is considered to belong to the South vein. A short tunnel which had been run along the strike of the vein below this outcrop exposed a strong width of low-grade ore which was encountered near the end of the drift, but not sufficient work had been done at the time of examination to prove its extent. Conditions, however, appeared promising for the development of an important ore-body in this section of the mine-workings, which is connected by a raise with the No. 5 level at the head of the tramway.

This well-known property, which has been operated intermittently for a number of years, is owned by the Patrick Clarke Estate, of Spokane. During the first three months of the year it was operated by the Porcupine Goldfields Development and Finance Company, which undertook a diamond-drill campaign to explore the downward continuation of the ore-bodies, and while this work was proceeding shipped 738 tons of milling-grade ore from the old stopes. Unfortunately the results obtained by the diamond-drill were not considered satisfactory and the option was relinquished.

During the latter part of the year Joe Johnson and Mathews, experienced Slocan miners, took a lease on the property and started work at the west end of the old stope. By following "drag ore" in a north-and-south fault which cuts off the westerly extension of the main ore-body a nice showing of ore was encountered at a height of about 10 feet above the top of the old stope and to the west of the fault. This ore was about 35 feet below the surface, but further prospecting at an additional depth of 40 feet had disclosed its downward continuation. Although

Mascot. This property is situated on Tributary creek at a distance of about 2 miles from Sandon. During the season it was being worked under the terms of a lease, under the direction of Joe Johnson, a well-known Slocan miner. The formation, consisting of slate, has been fractured and faulted, indicating that the small pockets and lenses of silver-lead-zinc ore occurring in this broken ground may possibly belong to a ledge farther in the hill.

To explore the ground below the surface exposures of ledge-matter and the upper workings, from which a small tonnage of good-grade silver-lead is said to have been extracted, a crosscut tunnel has been driven into the hill for 160 feet and in a direction of S. 30° E. At the end of this tunnel a little ore was encountered lying next the wall of a slip. From this point drifting has been done in a westerly direction for 156 feet, at the end of which a crosscut was being driven to strike the possible continuation of the vein.

Although the work done at the time of the writer's visit did not disclose ore in any quantity, the indications apparently fully justified further prospecting, especially as the property lies in a well-mineralized area.

NEW DENVER SECTION.

Bosun. This property was operated steadily during the year with a crew of twenty-seven men. The net smelter returns for lead and zinc shipments for the year total \$53,500. J. P. MacFadden, general superintendent, reports that the development accomplished has been the advancement of the lower (or No. 6) tunnel and an intermediate 80 feet above for a distance of 350 feet. Both the above pieces of work especially the lower, exposed some promising lenses of lead and zinc ore equal to that mined above, and stoping is just being commenced. In the intermediate level a stretch of galena 15 inches wide and 12 feet long displayed an exceptionally rich deposit of grey copper.

Molly Hughes. Development and mining has progressed steadily during the year with a crew of about seven men. According to recent reports, the work consisted of 123 feet of sinking, as follows: 78 feet in No. 1 winze, 25 feet in No. 2 winze, and 20 feet on the surface. A shipment of 46 tons from No. 1 winze yielded a total value of 6.9 oz. in gold and 5,441.75 oz. in silver. Twenty-eight tons was shipped from other parts of the mine.

New plant installed during the year comprised two 40-horse-power Fairbanks-Morse oil-engines, a compressor having a capacity of 314 cubic feet of free air a minute, a No. 5 Cameron sinking-pump, machine-drills, etc.

NOTE.—The annual report for 1922 read: "A total of 4 tons shipped during the year averaged the following values: Gold, 10 oz.; silver, 1,884 oz. to the ton." This was a typographical error; the values given were the total contents of the shipment of 4 tons.

Mountain Chief.—Mining operations were carried on during the year by F. Edwards and C. C. Clifford. A car-load of ore was shipped to Trail.

SILVERTON.

Standard. W. H. North, the manager, reports that the lessees have averaged about twenty men throughout the year. The ore mined totals about 7,200 tons and was mostly a zincky milling grade won from the old stopes. No new developments of any importance are reported. The shipments consisted of 362 tons of lead concentrates and 1,581 tons of zinc concentrates.

Mammoth. This is a new prospect which the Standard Silver-Lead Mining Company took under option at the beginning of the year and developed during the season. Work was stopped recently owing to the company not being able to conclude satisfactory arrangements with the owners. The property is referred to in last year's report as the *Monarch* group.

Van Roi. Owned and operated by Clarence Cunningham. The property has made a very satisfactory showing for the year. Ore mined and shipped as lead and zinc concentrates amounted to 3,798 tons, containing 23,801 oz. of silver, 271,896 lb. of lead, and 328,351 lb. of zinc.

Hewitt. M. S. Davys reports that he has been opening up the mine under the leasing system and has about twenty leasers working in different parts. The work accomplished is said to have shown up a considerable tonnage of both high-