

W.A. NO.

NAME

Ministry Refs.

SUBJECT

82FNW216 Morning Star

PROPERTY FILE
002497

was made to drill the quartz vein which dips steeply within granite walls. Small lenses of stibnite are exposed in this quartz vein, chiefly at the higher altitudes. The drill was set up to the west of the vein exposure, and three down holes were drilled. No antimony was obtained in the drill cores.

[Reference: *Minister of Mines, B.C., Ann. Rept., 1948, p. 148.*]

SPRINGER CREEK (49° 117° N.E.).*

Silver.

Ottawa.

This property, about 3½ miles up Springer Creek, was operated by two groups of lessees during 1949. R. Christie made one shipment of 3 tons, and A. Olsen, E. Grove, and P. Grove also made shipments.

Production: Ore shipped, 70 tons. Gross contents: Silver, 15,701 oz.

Morning Star.

This property is on Dayton Creek, a northerly flowing tributary of Springer Creek. It is owned by W. Clements, but a lease and bond were obtained in 1949 by G. A. MacMillan, who made a small shipment.

Production: Ore shipped, 2 tons. Gross contents: Gold, 5 oz.; lead, 88 lb.; zinc, 106 lb.

LARDEAU (50° 117° N.E.).*

Silver-Lead-Zinc.

Spider (Sunshine Lardeau Mines, Limited).

Company office, 942 Pender Street West, Vancouver. W. J. Scorgie, manager. Capital: 3,000,000 shares, no par value. This company obtained an option in 1949 on the Spider group from the owner, I. G. Nelson, of Nelson. The claims are Spider, Spider No. 1, Winton, Anaconda, May Fraction, and Gold Bird. The property is 7 miles by road from Beaton. During 1949 shipments of ore were made from oreshoots located on No. 2, No. 3, and No. 5 levels.

Production: Ore shipped, 26 tons. Gross contents: Gold, 3 oz.; silver, 942 oz.; lead, 9,839 lb.; zinc, 7,028 lb.

G.Y.P.

This group consists of two fractions lying adjacent to the Nettie L group on the southeast slope of Nettie L Mountain. They belong to J. Main, of Ferguson, who has leased them to A. E. Petersen, of Revelstoke. Late in 1949 Mr. Petersen put three men on the property to repair the trail, road, and camp. It is reported that some work was done later in an old tunnel which follows a mineralized quartz vein.

Wagner (Lead-ridge Mining Company, Limited).

Company office, 640 Pender Street West, Vancouver. F. Cameron, president. Capital: 10,000 shares, no par value. This company, a wholly owned subsidiary of St. Joseph Lead Company of New York, did some trenching and diamond drilling on the Wagner and Jewel groups and some mapping on the Abbott group near the head of Hall and Healy Creeks. The months of June and July were spent rebuilding the 18 miles of trail up Healy Creek. A bridge was constructed across the Lardeau River, 3 miles below Gerrard, and though considerable effort was spent on the trail, pack-trains had difficulty supplying the tent camp established at elevation 6,500 feet, near the summit, between Hall and Healy Creeks.

The main workings are on the Duncan claim. Here the vein outcrops on a small knoll, which protrudes through the Wagner glacier. At elevation 8,200 feet a drift has been driven on the vein in a direction north 50 degrees west for 105 feet, and from the end of this drift a crosscut has been driven to the southwest for 42 feet. A winze sunk on the vein 55 feet from the portal was pumped out in 1949. The vein dips 70 degrees to the southwest. The winze is 54 feet deep with a 20-foot crosscut into the hanging-wall at the bottom. Little mineralization shows in the walls of the shaft, but the

* By J. W. Peck.

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levels, and approximately 1,000 tons of ore has been drawn. A diamond-drilling programme was started, and 700 feet of drilling had been completed at the end of the year. The crew has been built up to thirty men.

Mammoth.—The Mammoth mine remained closed throughout the year.

Enterprise.—During 1947 most of the production was from the Enterprise mine. The development programme started there in 1946 was continued until April 30th, 1947, during which time 447 feet of drifting and 623 feet of raising were done. Shrinkage stoping was commenced at the Enterprise on May 1st on No. 6 and No. 7 levels. The mill at Silverton was reopened at this time, and from then to the end of the year a total of 6,125 tons of ore was trucked from the mine and milled at Silverton. A crew of thirty-two men is being maintained.

Production: Ore milled, 7,124 tons. Net contents: Gold, 11 oz.; silver, 66,008 oz.; lead, 432,683 lb.; zinc, 1,475,083 lb.

**Mabou, Ohio,
and Neepawa
(Terley Mining,
Milling &
Smelting Co.).**

Company office, Medical Arts Building, Nelson. D. W. Rowley, managing director. The Mabou, Ohio, and Neepawa claims are on the southern side of Enterprise Creek valley. Repairing and improving the switchback road from the Enterprise camp, suspended the preceding autumn, was resumed in 1947. The road, a mile in length, leads to a camp-site on Neepawa Creek, on the Mabou claim, where four buildings were erected. These consist of a cook-house 18 by 20 feet, a bunk-house 20 by 32 feet, a dry-house 12 by 16 feet, and a blacksmith-shop 12 by 16 feet. An old cabin at this site was repaired to serve as a shelter for a 350-horsepower Sullivan portable compressor.

From a point a short distance east of the camp a crosscut was driven 40 feet toward what is considered to be the extension of the Enterprise vein, which is exposed in an adit some 130 feet higher. It is reported that about a ton of ore was sorted from that adit dump and was shipped to the Trail smelter with unsorted material from the Neepawa No. 4 dump.

Production recorded: Ore shipped, 4 tons. Net contents: Silver, 151 oz.; lead, 285 lb.; zinc, 371 lb.

**Dumac Mines,
Ltd.**

Mine office, Nelson. G. Allan MacPherson, president; W. R. Thompson, secretary-treasurer; W. S. Hamilton, consulting engineer. This company was formed to purchase and develop a group of claims on Enterprise Creek down-stream from and adjoining the Enterprise (see Western Exploration Co., Ltd.). A mineralized zone located in and angling away from the bed of a small stream was uncovered for 200 feet by ground-slucing. The zone is a strong shear in granite and has considerable gouge on the walls. Sections of the zone are well mineralized with galena and sphalerite, and occasionally native silver is also seen.

White Hope. This property has been acquired by M. L. Craig and associates, Nelson. Five men were hired for three days to clean out an old open-cut and ship a small lot of ore to the Trail smelter. This lot netted \$205 after freight and treatment. Production: Ore shipped, 5 tons. Net contents: Silver, 49 oz.; lead, 1,407 lb.; zinc, 1,778 lb.

SPRINGER CREEK (49° 117° N.E.).

Gold.

Morning Star.—This property was reopened by George A. McMillan toward the end of 1947, after being shut down since the previous winter. Mechanical ventilation was provided, and work was started on a winze to investigate the vein at shallow depth below the adit before embarking on a more ambitious programme.

**Western
Exploration
Co., Ltd.**

Company office, Silverton, B.C. This company operated the *Standard* mine on Emily Creek, about 3 miles from Silverton, and the *Mammoth* mine on Avison Creek, about 4½ miles from Silverton. Both operations were under the supervision of A. M. Ham, of Silverton. The *Standard* mine worked continuously throughout the year, employing an average crew of sixty-two men, including those in the mill, power plant, and on the tailings dredge. Development-work included 762 feet of drifting, 200 feet of cross-cutting, 448 feet of raising, and 300 feet of diamond-drilling. Haulage facilities in the mine were greatly improved by the installation of a Mancha Trammer and, in connection with this, the 6th level track was reconditioned and 910 feet of old workings retimbered. The ore was trucked from the mine to the mill. During the summer the tram from the *Mammoth* to the *Standard* mill was repaired and the *Mammoth* camp and mine reconditioned. Mining was commenced in September and continued throughout the year with a crew of twenty-eight men on a one-shift basis, due to the labour shortage. Development at the *Mammoth* included 85 feet of crosscutting, 114 feet of raising, and the retimbering of 500 feet of old workings. A total of 73,128 tons of ore was treated in the *Standard* mill during the year; 50,000 of this came from the old tailings dump in Slocan Lake and the remainder from the *Standard* and *Mammoth* mines. Prior to October 1st, 1942, the lead and zinc concentrates were shipped to the United States Smelting and Refining Company plant near Kellogg, Idaho. After that date the concentrates were shipped under a contract with the Metals Reserve Corporation of Washington, D.C.

Enterprise. This property is on Enterprise Creek, about 5 miles from the Slocan Highway. It is operated under lease and bond by S. N. Ross and associates, of Nelson. From three to seven men were employed from June until November, when work ceased because of winter conditions. The mill treated 510 tons from the old tailings dump.

SLOCAN CITY.

Ottawa. This property is on Springer Creek, about 5 miles from Slocan City. It was operated under lease by W. Hicks and associates, of Slocan City. Three men were employed and hand-steel only was used. A total of 15 tons was mined and 5,263 oz. of silver was produced.

NOTE.—In addition to the above operation, a small amount of work, chiefly development and assessment, was done on the following properties in this area: *Bell*, by J. H. Traynor; *Morris*, by W. Clough; *Morning Star*, by W. R. Clemens; *Jack and Jack*, by J. L. Howard; *White Hope*, by C. W. Tipping; and *L.T.* mine, by D. B. O'Neil.

CRANBROOK AREA.

**Consolidated
Mining and
Smelting Co. of
Canada, Ltd.**

Company office, 215 St. James Street, Montreal, Quebec; mine and smelter office, Trail, B.C.; S. G. Blaylock, President and Managing Director; J. E. Riley, Secretary; J. Buchanan, General Manager. Sullivan mine general office, Kimberley, B.C.; W. Lindsay, General Superintendent; J. R. Giegerich, Mine Superintendent; H. R. Banks, Mill Superintendent. The company owns and operates the *Sullivan* mine on Mark Creek and the Sullivan concentrator at Chapman Camp, about 3 miles away, near the town of Kimberley.

The results of the past year at the *Sullivan* mine constituted a new record. Beside a considerable increase in production, very satisfactory progress was made with underground development and preparations for a simplified handling of the output from the parts of the mine below the 3,900-foot level, since these are now assuming considerable importance in the planning of future operations. The main haulage system

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SILVERTON-NEW DENVER.

Bosun. This property is situated on Slocan Lake, between New Denver and Silverton. It is owned by Colin J. Campbell, of New Denver, and was operated by several small groups of leasers during the year. Hand-steel only was used. A total of 95 tons yielded 2 oz. of gold, 5,856 oz. of silver, as well as lead and zinc.

Galena Farm Consolidated Mines, Ltd. Company office, 616 Stock Exchange Building, Vancouver, B.C.; S. W. Miller, President; James Anderson, Secretary-Treasurer. Capital: 2,500,000 shares of no par value; issued, 1,602,203. This company owns the *Hewitt* mine, about 6 miles from Silverton. Early in the year it was leased by Ed. Mathews and R. Sherradan, who mined by hand-steel. Later it was operated under lease for a short time by H. V. Dewis, of Silverton, and associates. A small semi-portable compressor plant was installed and four men were employed. A total of 317 tons was mined, which yielded 4 oz. of gold, 8,427 oz. of silver, as well as lead and zinc.

Western Exploration Co., Ltd. A. M. Ham, General Superintendent; B. Avison, Mine Superintendent; T. Leask, Mill Superintendent. This company operates the *Standard* mine, situated on Emily Creek, 2 miles from Silverton. It is equipped with a complete mining plant and a 200-ton selective flotation-mill. The mill was put into operation on September 11th on a rate of about 170 tons a day to treat zinc tailings which had been dumped into Slocan Lake from earlier operations. A total of 16,197 tons of these tailings was milled. New equipment, installed for recovering tailings, included an electrically-driven double-drum hoist and drag-line scraper, with a bin and belt-conveyer to put the tailings in the fine-ore bin in the mill. Early in November a small crew started to open up old underground workings and prepare for stoping. Some 50 feet of old raise was reconditioned. From underground mining 343 tons of ore was recovered. The number of men employed varied from twelve when the mill alone was operating to a total of thirty-four in both the mine and mill. A total of 1,884 tons of concentrates was shipped to the U.S. Smelting, Refining, and Mining Company at Salt Lake City, Utah. This yielded 5 oz. of gold, 29,909 oz. of silver, and lead and zinc.

AINSWORTH.

Amazon. This property is situated on Woodbury Creek, about half a mile from Kootenay Lake. It is owned by T. E. Levasseur, of Nelson, and was operated for a short time under lease by J. Flagel and four partners. Hand-steel only was used to mine 31.5 tons of ore.

Other properties in this area from which small amounts of ore were shipped are as follows: *Highland*, 7 tons; *Silver Coin*, 4 tons; and *Silver Cup*, 3.5 tons.

SLOCAN CITY.

Ottawa. This property is situated on Springer Creek, about 5 miles from Slocan City. During the year it was operated under lease by W. Hicks and associates, of Slocan City. Four men were employed. Hand-steel only was used for mining, although a mechanical ventilation system was kept in operation. A total of 85 tons of ore yielded 1 oz. of gold and 22,392 oz. of silver. Development consisted of 175 feet of raising.

Meteor.—This property is located at the head of Tobin Creek, a tributary of Springer Creek. Messrs. Larsen and Lundstrom, of Slocan City, operating under lease with hand-steel, shipped 7 tons of ore during the year.

In addition to the above operations a small amount of work, chiefly development and assessment, was done on the following properties in this area: *Speculator*, *Richmond*, *Myrtle*, *Jack*, and *Morning Star*.

NELSON AREA.

Emerald. This property is situated 8 miles from Salmo. Three men, using hand-steel, were employed throughout the year. Development included 159 feet of drifting and 60 feet of crosscutting. This development is

Morning Star.—Situated on Springer Creek. P. W. Munroe and H. E. Scovil shipped 6 tons of ore from this property, the total metal contents being 7 oz. gold, 55 oz. silver, 340 lb. lead, and 344 lb. zinc.

McAllister.—This property, situated on London Mountain, was operated first by the Denver Mining Syndicate, the affairs of which were wound up in December, and afterwards by the Slocan Silver Mines, Limited, with George Allen as manager in both cases. A crew of five was employed underground. The tonnage mined and shipped amounted to 1,281, this yielding 17 oz. gold, 83,317 oz. silver, 179 lb. lead, and 129 lb. zinc.

GOLD-SILVER-LEAD-ZINC DEPOSITS.

YMIR CAMP.

Howard.—This property, situated on the South Fork of Porcupine Creek, about 9 miles by road from Ymir, is operated by the Durango Mines, Limited (head office, 850 Hastings Street West, Vancouver), with Major A. W. Davis as manager, Jno. Anderson as mine foreman, and Wm. B. Donohue as mill superintendent. During the greater part of the year operations were limited to exploratory development and construction work. A mill was built close to Porcupine Siding, on the G.N. Railway, most of the machinery installed being brought from the *Dentonia*. At the mine a power plant consisting of a Canadian Ingersoll-Rand 15½-inch and 9½-inch compressor, driven by a 120-horse-power Fairbanks-Morse Diesel engine, and an Ingersoll-Rand 7½-inch and 12-inch compressor, driven by a 72-horse-power Diesel engine was installed. An aerial tramway 5 miles in length was built to link the mine and mill. The development-work done totalled 1,688 feet; this including 723 feet of drifts, 165 feet of crosscutting and 800 feet of diamond-drilling. The tonnage milled was 650, with production of 27 tons of lead concentrates yielding 52 oz. gold, 291 oz. silver, 12,007 lb. lead, and 3,840 lb. zinc; and of 28 tons of zinc concentrates with total metal contents of 4 oz. gold, 40 oz. silver, 1,099 lb. lead, 149 lb. cadmium, and 19,948 lb. zinc.

Nevada Group.—David Grobe, of Spokane, employed a few men in exploratory-work on this property, situated on Porcupine Creek. Ten tons of ore shipped to the Trail smelter by the owners, J. A. and M. Armes, of Vancouver, yielded 2 oz. gold, 56 oz. silver, 1,144 lb. lead, and 715 lb. zinc.

Porcupine Group.—An option on this property, owned by E. Haukedahl, of Ymir, was taken late in the year by C. Wolf, of Spokane.

DRY SILVER-ORES.

VICINITY OF SALMO.

Florence.—Three tons of ore shipped from this claim by R. Sapples and C. Peterson yielded 72 oz. silver, 58 lb. lead, and 155 lb. zinc.

SLOCAN LAKE AREA.

Ottawa.—Situated on Springer Creek about 6 miles by road from Slocan City, and operated by the Ottawa Silver Mining and Milling Company, Limited (head office, 401 Sherwood Building, Spokane). W. R. Green, formerly in charge of operations, resigned late in the year, and was succeeded by C. R. Thomas, of Spokane, with D. D. Fairbanks as assistant at the mine. A new power plant, consisting of a Canadian Ingersoll-Rand 13½-inch and 8- by 8-inch L-type compressor, driven by a Deutz 150-horse-power Diesel engine, was installed. The development-work done was limited to the advancement of No. 8 adit crosscut over a distance of 1,000 feet. The number of persons employed varied between twenty (eleven underground) while the mill was being operated, and nine (seven underground) in December. The total tonnage mined was 375. Fifteen tons of dry ore sent to the Trail smelter yielded 1 oz. gold and 4,722 oz. silver; while the 18 tons of concentrates produced contained 8,749 oz. silver and 3,444 lb. lead.

L.T. and Riverside.—B. E. O'Neil, of Slocan City, shipped 4 tons from the *L.T.*, this yielding 794 oz. silver, 844 lb. lead, and 524 lb. zinc; and T. Elsmore, of Silvertown, shipped 17 tons from the *Riverside*, with metal contents of 714 oz. silver, 759 lb. lead, and 679 lb. zinc.

SILVER-LEAD DEPOSITS.

VICINITY OF NELSON.

Boadicea.—Lessees working on this property shipped 9 tons of ore, yielding 393 oz. silver and 5,042 lb. lead.

TABLE XXI.—METALLIFEROUS MINES SHIPPING IN 1937—Continued.

Mine or Group.	Location of Mine or Mill.	Owner or Agent.	RATED DAILY CAPACITY.		Operating at.	Date of First Operation.	Process.	Character of Ore.
			1936.	1937.				
			Tons.	Tons.	Tons.			
Mountain Chief	Silverton	J. Cechelero, New Denver						Silver, lead, zinc.
Noble Five	Cody	Noble Five Mines, Ltd., Nelson	100	*100	*100	1920	Table concentration ; flotation	Silver, lead, zinc.
Number One	Sandon	J. M. Harris and F. T. Kelly, Sandon						Silver, lead, zinc.
Palmita	Alamo	C. Cunningham, Alamo						Silver, lead.
Queen Bess	Alamo	C. Cunningham, Alamo						Silver, lead, zinc.
Rambler-Cariboo	Retallack	Ross Mining Syndicate, Nelson						Silver, lead, zinc.
Rio	Silverton	J. H. Pendry, New Denver						Silver, lead, zinc.
Ruth Hope	Sandon	Leasers from Ruth Hope Mining Co., Ltd., Vancouver	100	100	†100	1927	Table concentration ; flotation	Silver, lead, zinc.
Slocan Monitor	Three Forks	Leasers from Slocan Monitor Mines, Ltd., Vancouver						Silver, lead, zinc.
Sovereign	Alamo	Leasers, E. J. Vandergrift, agent, New Denver						Silver, lead, zinc.
Springfield	Sandon	P. Chmelar, Sandon						Silver, lead, zinc.
Victor	Sandon	E. Doney, lessee, Sandon						Silver, lead, zinc.
Slocan Arlington	Slocan	Slocan Arlington Mines Development Co., Pen-ticton						Silver, lead, zinc.
Lakeview	Slocan City	Lakeview Mining Syndicate, Slocan City		10	10	1937	Concentration	Silver, lead, zinc.
L.T.	Springer Creek	D. B. O'Neil, Slocan City						Silver, lead, zinc.
Morning Star	Springer Creek	P. W. Munro and Scovil, leasers, Slocan						Silver, lead, zinc.
Ottawa	Springer Creek	Ottawa Silver Mining & Milling Co., 401 Sher-wood Bldg., Spokane, Wash.		*100	*100	1937	Concentration	Silver, lead, zinc.
Port Hope	Slocan City	H. L. Fife, Slocan						Silver, gold.
Riverside	Slocan City	T. Elsmore, Silverton						Silver, lead, zinc.
Arlington	Erie Creek	R. O. Oscarson, leaser, Erie						Gold, silver, lead.
Athabasca	Nelson	Noble Five Mines, Ltd., Nelson						Gold, silver, lead.
Bayonne	Tye	Bayonne Cons. Mines, Ltd., Vancouver	50	50	50	Nov., 1936	Cyanidation	Gold, silver.
Bear	Hall Creek	C. Peterson and T. A. Mighton, Trall						Gold, silver.
Black Cock	Ymir	Blackcock Mines, Ltd., Calgary, Alta.						Gold, silver, lead, zinc.
Bondica	Nelson	Leasers, Nelson						Silver, lead.
California	Nelson	Leasers, Alex. Poelzer <i>et al.</i> , Nelson						Gold, silver, lead, zinc.
Clubine Comstock	Boulder Creek	Clubine Comstock Gold Mines, Ltd., Nelson						Gold, silver.
Daylight	Nelson	Peter Rolick, Nelson						Gold, silver.
Euphrates	Nelson	General Lee Mining & Milling Co., Ltd., 300 Insurance Bldg., Seattle, Wash.						Gold, silver, lead, zinc.
Florence	Salmo	R. Sapples and C. Peterson, Salmo						Silver, lead, zinc.

* Intermittent.

† Idle at present.

work has to be carried on slowly and carefully, with hand-steel, a very small consumption of explosives, regular timbering, and close filling. There is no mine-timber fit to be considered as such on the property. The tonnage mined and shipped amounted to 1,078; this yielding 12 oz. gold and 58,251 oz. silver.

Little Daisy.—This property, situated on 8-Mile Creek and owned by Mrs. McNaught, of Silverton, was operated under lease by A. G. and A. E. Erickson for a little over eight months. The development-work done during this period consisted of 20 feet of drifting, 56 feet of raising, and 38 feet of sinking. The 23 tons of ore shipped yielded 41 oz. gold and 48 oz. silver. Late in the year the Slocan Lake Gold Mining Company, Incorporated (headquarters, 503 West Sprague Avenue, Spokane, Washington), took an option on the property, but little was done beyond an examination by a consulting engineer.

DRY SILVER-ORE DEPOSITS.

SLOCAN AREA.

Ottawa.—Operated by the Ottawa Silver Mining and Milling Syndicate; manager, W. R. Green, Nelson. The mine is situated on Springer Creek, about 6 miles by road from Slocan City. It was worked rather extensively at one time, but was abandoned by the Consolidated Mining and Smelting Company of Canada in 1917. Afterwards various groups of lessees worked on the dumps, from which several shipments were made. A mill, built in 1921 by L. H. Biggar, to treat the low-grade ore on these dumps was completely destroyed by fire in the following year, and the property had been totally abandoned for a considerable time when the present operating company acquired it in 1935.

The workings are in ground none too strong at many points and requiring careful timbering. The management had no plans of the old workings on hand at the time of the last inspection, and the exact location of No. 6 level, driven from a winze and now flooded, was not known with any degree of certainty. A crew of six was employed during the year; the reopening of two levels was completed and a new adit was started. Some small stringers of high-grade ore, discovered accidentally in the hanging-wall, were mined out by hand. A vertical 9 $\frac{3}{4}$ -inch and 5 $\frac{1}{2}$ - by 5 $\frac{1}{2}$ -inch air-compressor, supplied by the Chicago Pneumatic Company and driven by a portable Hercules Motor Corporation 4 $\frac{1}{4}$ - by 5 $\frac{1}{4}$ -inch gasoline-engine, was installed. A flotation-mill was built about a mile away from Slocan City, but it had not been brought into operation at the end of the year.

Morning Star.—Henry E. Scovil had a small crew engaged in exploratory work on this property, situated on Springer Creek, from the month of July until the beginning of winter.

Nettie L.—The Security and Investment Corporation, Limited (I. Rosenthal, president, 814 Hall Building, Vancouver), employed five men for some time during the summer, mostly in trail improvements and repair-work to buildings.

SILVER-LEAD-ZINC-DEPOSITS.

CRANBROOK AREA.

*Sullivan.**—Owned and operated by the Consolidated Mining and Smelting Company of Canada, Limited; general superintendent, A. B. Ritchie; mine superintendent, W. Lindsay; mill superintendent, H. R. Banks.

The waste-filling programme was resumed in the beginning of August and finished for the season on November 15th. During this period 115,000 cubic yards of gravel was placed in the mine by means of a 70-degree shaft 800 feet in length; operations on the surface were carried on with two "Caterpillar Diesel" tractors, one of which operated with a "Carco" bulldozer and the other with a "Le Tourneau Carryall." The thickness of the gravel at the shaft-collar was approximately 40 feet, and the above machines transported the gravel to the shaft from within a radius of 400 feet. About 10 per cent. of water was added to the gravel at the top of the shaft, and this eliminated the dust as well as distributing the material to all corners of the stope. An extensive programme of development and general improvement has been carried out during the year at the 3,901-shaft district. This included the building of ore and waste pockets at the 3,350 level, as this will be the main loading and hoisting station for all ore extracted between this elevation and the 3,900 level. The hoist-room at the top

* By John MacDonald.

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As certain rather optimistic reports concerning the ore reserves at this mine have been circulated, it is considered advisable to mention that the official production figures from 1903 to 1934 were 6,448 tons, containing 764,650 oz. silver and 750,540 lb. lead; there was no production between 1926 and 1934. The total tonnage given includes ore removed from the dump.

In Geological Survey of Canada Memoir 184, Cairnes says: "In 1921, 1,440 tons of mill-feed averaging less than 5 oz. in silver were extracted. Production of all other years has been of higher-grade material and has, exclusive of 1921, amounted to 4,758 tons of ore with an average content of 159 oz. of silver a ton." From this it would appear that the total of crude shipping-ore taken from the stopes amounted to 4,758 tons. It is quite improbable that in mining this quantity of shipping-ore any very large tonnage of second-grade ore could have been left in the stopes.

Crude Ore.—Shipments of crude ore, usually from leasing operations, were made to Trail from the following properties. Of these properties the *Molly Hughes* at New Denver produces ore carrying important values in gold.

Section and Mine.	Tons of Ore shipped.
Springer creek—	
Alma	2
Cub	9
L.T. (also known as <i>Olympic</i>)	6
<u>Morning Star</u>	4
Riverside	3
Enterprise creek— <i>Buster</i>	2
Silverton— <i>Metallic</i>	23
New Denver— <i>Molly Hughes</i>	61
Kane creek (Three Forks)— <i>Black Grouse</i>	11

SILVER-LEAD-ZINC DEPOSITS.

Cranbrook Area.

Sullivan.—The Consolidated Mining and Smelting Company of Canada, Limited, continues to be the most important factor in the economic life of the East Kootenay district and during the autumn brought this property to peak production. Total production for the year amounted to 1,861,245 tons, comprising 1,859,171 tons of lead-zinc ore shipped to the concentrator at Kimberley and 2,074 tons of crude lead ore to the smelter at Tadanac, an increase of 112,844 tons over the production of 1934. During the year the mine worked 278 days, the coarse-crushing plant 281.5 days, and the concentrator 312 days. The concentrator treated 1,859,221 tons, an average of 5,959 tons per day, and produced 226,837 tons of lead concentrates and 209,078 tons of zinc concentrates.

An interesting feature in this year's operations is the filling of "K stope" with boulder-clay from the surface. This is an initial and, to some extent, an experimental step in the programme designed to make possible recovery of the large tonnage of ore in mine pillars.

Dibble Mines, Ltd.—This company, promoted in Calgary by G. M. Wittichen, employed two or three men during the season, driving a crosscut 180 feet into the hill at 6,500 feet elevation. The *Dibble* group lies in a basin 4½ miles by steep pack-trail from the end of a branch road 10½ miles south-easterly from Fort Steele. Years ago there was some production of silver ore from small scattered quartz-lenses in schist exposed on the surface.

Sirdar.—This claim, leased by a Calgary syndicate represented by W. W. Douglas, is reached by a branch from the road to Bull River power plant, some 21 miles south-east from Fort Steele by road. A shaft sunk this year to a depth of 24 feet was full of water when the property was visited. This shaft prospects a showing which at the surface is 12 feet wide consisting of quartz containing fragments of limy wall-rock and bunches of sulphide mineralization, principally pyrite with some galena.

Pend d'Oreille River Area.

Michaely Silver Lead Co.—This company, operating the property formerly known as the *Red Rock* group, on the north side of Salmo river, shipped 35 tons of silver-lead ore to Trail.

			Tons.	Tons.	Tons.			
Dayton	Slocan City	P. W. Munro, Slocan City						Silver, gold.
Gold Viking	Slocan City	Geo. Henderson, Slocan City						Silver, gold.
Little Daisy	Slocan City	A. Erickson, Silverton						Gold, silver.
L. T.	Slocan City	B. E. O'Neil, Slocan City						Silver, lead, zinc.
Meteor	Slocan City	R. J. Johnson, Slocan City						Silver, gold.
Morning Star	Springer creek	Wm. Clements, Slocan						Silver, gold, lead, zinc.
Port Hope	Slocan	H. L. Fife, Slocan						Silver.
Republic	Slocan City	C. W. Tipping, Slocan						Silver, gold.
Riverside	Silverton	T. Elsmore, Silverton						Silver, lead, zinc.
White Hope	Slocan	C. W. Tipping, Slocan						Silver, gold, lead, zinc.
Daybreak	Retallack	D. P. Kane, Kaslo						Silver, lead, zinc.
Lucky Thought	Silverton	H. V. Dewis, Silverton						Silver, zinc, lead.
Utica	Kaslo	Utica Mines, Ltd., Vancouver						Silver, lead, zinc.
Whitewater	Retallack	Ross Mining Syndicate, Nelson	125	125	50‡	1927	Table concentration; flotation	Silver, lead, zinc.
Monarch	Field	Base Metals Mining Corp., Field	300	300	300§	Nov., 1929	Table concentration; flotation	Silver, zinc, lead.
Meridian	Beaton	Meridian Mining Co., Ltd., Vancouver		100	100	Jan., 1935	Flotation	Gold, silver.
Grimmett	Gerrard	A. M. Grimmett, Gerrard						Silver, lead, copper.
Arlington	Erie	Oscarson Bros., Erie						Gold, silver.
Athabasca	Nelson	Noble Five Mines, Ltd., Nelson		25	‡	1920	Amalgamation; cyanidation	Gold, silver.
Bayonne	Tye	Bayonne Mining Co.				1936	Cyanidation	Gold, silver.
Boulder City	Salmo	Clubine Comstock Gold Mines, Ltd., Nelson						Gold, silver.
California	Toad mountain	Anton J. Nilson, Nelson						Gold, silver.
Catherine	Nelson	W. Jarvis, Nelson						Silver, gold, lead.
Dundee	Ymir	Ymir Dundee Gold Mines, Ltd., Nelson						Gold, silver, lead, zinc.
Euphrates	Nelson	Euphrates Mining Co., Nelson						Gold, silver.
Fawn	Nelson	Fawn Mining Co., Ltd., Vancouver						Gold, silver.
Gold Fern	Nelson	Gold Fern Mines, Ltd., Toronto						Gold, silver.
Good Hope	Nelson	Allport and Martin, Nelson						Gold, silver.
Granite	Taghum	Livingstone Mining Co., Taghum	25	25	25	Sept., 1934	Amalgamation; concentration	Gold, silver.
Great Eastern	Nelson	John Sheplak, leaser, Nelson						Gold, silver.
Keystone	Erie	Fred Golightly, Erie						Gold, silver.
Kootenay Belle	Sheep creek	Kootenay Belle Gold Mines, Ltd., Vancouver	50	50	50	Oct., 1934	Amalgamation (blanket); flotation	Gold, silver.
Lakeview	Nelson	Gerald Timmons, Sanca						Gold, silver.
Michaely	Nelson	Michaely Silver Lead Mines, Ltd., Trail						Silver, lead, zinc.
Kelly, A. W.	Nelson	A. W. Kelly, Nelson						Silver, gold, copper.
Perrier	Nelson	Perrier Gold Mines, Ltd., leaser, Nelson	50	50		1936	Flotation	Silver, gold, lead, zinc.
Porto Rico	Nelson	B. A. Pickering, Nelson						Gold, silver.
Reno	Sheep creek	Reno Gold Mines, Ltd., Nelson	100	120	120	Dec., 1932	Cyanidation	Gold, silver.
Relief-Arlington	Erie	Relief Arlington Mines, Ltd., Erie	35	70	70	1933	Cyanidation	Gold, silver.
Rover	Nelson	R. Barron, Nelson						Gold, silver, lead, zinc.

‡ Intermittent.

§ Idle at present.

|| Changed from flotation.

1901

The *Speculator*, adjoining the *Arlington* and on the same lead, has undergone steady development and has shipped about 10 tons. The bond on this property was taken up and the mine is now owned by the Ricowalibi Mining Company.

The *Two Friends* shipped 40 tons, but little other work has been done.

The *Black Prince* shipped about 150 tons. This property has been steadily developed and has shown up most favourably, the ore being a "dry silver," which is much in demand.

The *Hampton* shipped 17 tons and a small amount of development was done.

The *Esmeralda*, near the *Exchange*, has had development done sufficient for a Crown grant and has shipped 2 tons.

The *Phoenix* and *Viking* shipped 23 tons. The bond has been taken up on this property and 500 or 600 feet of development done.

The *Bondholder* has been worked under lease off and on during the year. About 30 tons of ore were shipped.

The *Tumarac* has been sold and development steadily carried on by 3 or 4 men. Five tons of ore were shipped.

The *Exchange* has been worked a little—under lease—by 2 men, and 5 tons have been shipped. Some exceedingly good ore was taken from this claim.

The *Ottawa* was worked by the owners for the last three months of the year and some exceptionally rich ore encountered while drifting on the lower level.

On the *Morning Star* 700 feet of tunnelling was done and some good free-milling quartz exposed.

The *Republic Group* has been sold to a company promoted by Mr. Charles Dempster. A wagon road has been surveyed and active development is contemplated shortly.

The *Transfer* is under bond and is undergoing development.

TWELVE-MILE CREEK.

On the *Bachelor* a 200-foot tunnel was driven, while the *Champion* and *Sapphire* have been sold to a company promoted by Mr. Charles Dempster, and development will be started shortly.

The *V and M* was worked for about three months and shipped about 10 tons of ore.

The *Ivy*, *Myrtle* and *Mistletoe* have been steadily developed by the owners and a large ledge, carrying good ore, has been opened up.

TEN-MILE CREEK.

The *Enterprise* has been worked by the Enterprise (B. C.) Mines, Ltd., continuously and nearly 800 tons of ore shipped. A concentrator has recently been erected.

The *Neepawa* is under bond to an English company which is at present developing the property.

On the *Iron Horse* development is being steadily continued.

LEMON CREEK.

The *Chapleau* shipped about 15 tons early in the year. The company owning this property suspended operations in the spring but the mine is being kept in order by two men and is expected to recommence working soon.

On the *Kilo Group* a small force has been at work for the last year on development only. This ore is free-milling and the results are encouraging.

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