

tonnes which yielded 29 561 grams silver and 471 kilograms lead.

Underground workings include two adits connected by a 20-metre raise, crosscuts and stopes which total less than 75 m, all presently inaccessible. The workings follow a shear zone 2 to 5 metres wide striking 040 degrees and dipping 85 degrees southeast in coarse grained hornblende potassium feldspar porphyritic granite.

Mineralization occurs in quartz stringers and veins within the argillic-altered lode and comprises galena, pyrite, lesser sphalerite with freibergite and silver sulphides.

SILVER CUP (MINFILE 82FNW114)

The Silver Cup is located 1.5 kilometres southwest of the Sun workings. Silver Cup produced 4 tonnes of ore in 1940 that yielded 31 grams gold, 4417 grams silver, 891 kilograms lead and 118 kilograms zinc.

Mineralized quartz and carbonate veins are hosted in a limonitic fracture zone that is less than 7 metres wide. Veins on surface are less than 5 centimetres wide. Brecciated clay-altered wallrock, hornblende potassium-feldspar porphyritic granite, occurs within veins. Mineralization comprises coarse sphalerite and galena in a gangue of coarse pink and white carbonate.

ORO FINO (MINFILE 82FNW122)

The Oro Fino workings occupy a 25 hectare claim located at the headwaters of Nilsik Creek, south of Sunset and Outlook Mountains. Production in 1940 totalled 4 tonnes and yielded 62 grams gold, 964 grams silver, 48 kilograms lead and 112 kilograms zinc.

Development work includes two adits at the 2086-metre and 2118-metre elevations and surface trenching at 2196 metres elevation outlining a strike length of approximately 100 metres. The quartz vein occupies a tight fracture in potassium feldspar-porphyritic granite which strikes 030 degrees and dips 65 degrees southeast. Vein mineralogy comprises pyrite, sphalerite and galena: stronger mineralization is associated with smoky quartz. Wallrock is oxidized and altered to sericite and argillite assemblages up to 10cm on either side of the vein.

A grab sample of mineralized vein material stockpiled at the upper portal returned 24 grams per tonne gold, 380 grams per tonne silver, 2.8% lead and 3.8% zinc. Altered wallrock sampled from directly inside the lower portal returned 0.11 gram per tonne gold, 8 grams per tonne silver, trace lead and 0.01% zinc. Assay sample results from the surface trenching are given in Table A.

BOOMERANG (MINFILE 82FNW116)

The Boomerang is situated on Enterprise Creek, 3 kilometres west of the park boundary. It produced 3 tonnes of ore in 1956 that yielded 4479 grams silver, 121 kilograms lead and 123 kilograms zinc. The vein was explored by two adits, about 30 metres vertically apart (Cairnes, 1935).

The narrow mineralized quartz vein is hosted by potassium-feldspar porphyritic granite. Zones of argillic alteration, limonitic weathering and locally silicification occur adjacent to the main fault that hosts the quartz vein. Mineralization is sparse but includes galena, light coloured sphalerite, pyrite and reportedly native silver and argentite. The vein strikes north and dips about 80 degrees east.

MINERAL DEPOSITS OUTSIDE KOKANEE GLACIER PARK

Five other deposits, Cork Province, Wintrip, Alpine, Enterprise, and Westmont, are included in this discussion because they occur within 5 kilometres of the park boundary (Map 4) and they had significant production (Table 4).

CORK PROVINCE MINE (MINFILE 82FNW094), WINTRIP (MINFILE 82FNW097)

The Cork Province is one of nine sediment-hosted deposits which occupy bedding-parallel, northeast-striking, steeply dipping structures in the Keen Creek metasedimentary re-entrant. Mineralization is chiefly veins and wallrock replacement, best developed where structures crosscut calcareous horizons.

The Cork Province workings are located south of Keen Creek and north of the park boundary. The first shipment of ore was recorded in 1900. Over the life of the mine, a total of 191,411 tonnes of ore yielded 1896 grams gold, 16 278 kilograms silver, 5846 tonnes lead, 9034 tonnes zinc and 69 900 kilograms cadmium. Most production occurred in two periods, from 1915 to 1929 and 1949 to 1965. The workings have since collapsed and are now inaccessible.

The Slocan Group metasediments comprise recrystallized limestone, biotite and andalusite schists and, in places, carbonaceous and thinly bedded argillite and quartzite. The Nelson batholith contact lies approximately 500 metres to the north of the workings. The fissure-filled lodes are sheared and brecciated zones, about 0.5 to 2 metres wide with some disseminated sulphides in the wallrocks. Mineralization is composed of disseminated sphalerite, galena, pyrite and minor chalcopyrite. The gangue consists

dominantly of carbonate, minor quartz and wallrock fragments.

The Wintrip workings are located 4 kilometres southwest of the Cork Province mine within the sedimentary re-entrant. The first shipment of hand-sorted ore was recorded in 1895 as 13 tonnes averaging 228 grams silver per tonne and 78 per cent lead. Over the life of the mine, a total of 613 tonnes of ore yielded 62 grams gold, 367 kilograms silver, 104 tonnes lead and 57 tonnes zinc. Most production occurred from 1926 to 1928. The workings have since collapsed and are inaccessible.

Six or seven adits were driven to explore two parallel structures, the "A" and "B" lodes. A third unexplored lode "C" is reported 75 metres southeast of the "B" lode (Cairnes, 1935). The "A" and "B" lodes are about 100 metres apart, strike 225 degrees and dip 75 degrees northwest, conformable with the enclosing metasediments. The metasediments comprise abundant recrystallized limestone, biotite schist and, in places, thinly bedded argillite and quartzite. The lodes are sheared and brecciated zones, 0.6 to 1.5 metres wide, comprised of cataclasite and fault gouge. Mineralization is composed of disseminated sphalerite, galena and pyrite associated with siderite and minor quartz.

**ALPINE MINE (MINFILE 82FNW127),
KING SOLOMON (MINFILE 82FNW257)**

The Alpine property is located at the head of Sitkum Creek along the divide that marks the southern edge of the park. Initial development of the vein was done in 1896 and 1897. Production commenced with a small shipment of ore in 1915 and continued sporadically until 1948. During this period 15 551 tonnes was mined and yielded 356 162 grams gold, 221 453 grams silver, 49 tonnes lead, and 17 tonnes zinc. Granges Exploration Ltd. drilled the vein in October and November, 1987.

The quartz vein strikes 255 degrees and dips moderately north, is traceable over 400 metres on surface and projects into the park. Contacts with hangingwall and footwall monzonite are sharp and variably sericitized. Vein width averages 1.1 metres. The vein is hosted by fine to medium-grained quartz monzonite (Phase 5; Figure 2). Pre-mineralization aplite and pegmatite dikes are common; post-mineralization lamprophyre dikes are less abundant. Mineralization comprises electrum, silver minerals, pyrite and lesser galena and sphalerite. Rare clots of molybdenum were identified in altered potassium-feldspar granite from the mine dump. The vein is limonitic weathering and highly jointed and fractured. Vein textures are massive crystalline, ribboned, or

banded and vuggy. Quartz is variably milky, white, grey and colourless, suggesting episodic deposition. Analytical results are listed in Table 8. The Alpine and King Solomon contain anomalous gold values with coincident zinc.

**TABLE 8
ALPINE MINE ANALYTICAL RESULTS**

Sample	Au (g/t)	Ag (g/t)	Cu (ppm)	Pb (%)	Zn (ppm)	Mo (ppm)
391A	19.2	6	6	0.10	221	<10
394A	50.0	7	<2	0.68	2000	<10
395A	19.8	1	<2	0.01	47	176
397A	1.6	3	<2	0.07	53	78
404B	2.8	8	<2	0.86	60	<10
406B	150.0	55	<2	3.00	11000	<10

Analytical results for grab samples. Locations: A = Alpine and B = King Solomon.

The King Solomon is situated 2 kilometres southwest of the Alpine. Published references to this property are unknown and it was Eric Denny (prospector from Nelson, B.C.) who identified the workings to the authors. The quartz vein occupies a shear zone 0.15 metre wide cutting quartz monzonite. The vein has sharply defined hangingwall and footwall contacts and strikes east with a shallow north dip. Vein mineralogy is similar to the Alpine vein with slightly more galena and sphalerite.

**ENTERPRISE (MINFILE 82FNW148),
WESTMONT (MINFILE 82FNW145)**

The Enterprise property is located 4 kilometres west of the park, on the south side of Enterprise Creek; the Westmont/Eastmont property is on the north side of the creek. Enterprise production occurred over 81 years, the first shipments were made in 1896. From 10 687 tonnes of ore mined, 217 grams gold, 32 676 kilograms silver, 1675 tonnes lead and 1057 tonnes zinc were recovered. At the Westmont 3149 tonnes of ore was produced which yielded 2 046 grams gold, 11 084 kilograms silver, 200 tonnes lead and 66 tonnes zinc. Arctex Engineering Ltd. has carried out continuous exploration on the Enterprise property since 1983. Diamond-drilling programs were completed in 1986 and 1987.

Two parallel veins outcrop on the Enterprise property. The western vein has received recent drilling exploration, the main vein 115 metres to the east is historically more important having produced the bulk of past production. It is continuous over 680 metres horizontal distance and developed over a vertical distance of 300 metres. Country rock is potassium-