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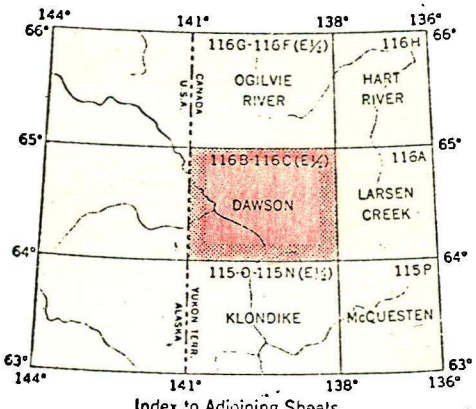


Index to Adjoining Sheets

DAWSON

116B & 116C (E½)

EDITION 1 ASE

# LODE OCCURRENCES

(Silver)

#1 Silver City Property (64°18½'N, 139°52'W)

References: Cockfield (1928a, pp. 8A-10A)*; Green and Roddick (1962); Green and Godwin (1963, p. 20, 1964, pp. 18-19); Green (1965, pp. 23-25).

1965

Silver City Mines Limited (N.P.L.), formed by some of the backers of the 1962 and 1963 work, has optioned 7 claims from J. Risco of Dawson, Yukon, covering the original showing and holds an additional 41 claims in the area. The showing, on the north bank of the river, is about 2 ½ miles downstream from the mouth of Fifteenmile River. The property is an old one and has been prospected intermittently since about 1900. Cockfield (1928, p. 9A) reported that a shipment of 5 tons was made from material that occurred as float on the beach of the Camp Bird claim, the site of the present work.

Ore on the property consists of quartz carbonate rock, believed to have formed through the alteration of basic or ultrabasic rocks (Green, 1965, p. 24-25), that contains small amounts of sulphide minerals, particularly galena and argentiferous tetrahedrite. This rock consists of sugary white dolomite, buff iron-bearing dolomite, quartz, and streaks of green nickel-bearing material. It is not known whether the silver-rich ore occurs as vein, pods, or disseminated throughout the quartz-carbonate rock.

During the summer of 1965, a crew of up to 6 men continued the hydraulic operation commenced in 1963, built a road from the camp at the river to a new portal site about 425 feet above the river, drove an adit 185 feet in length, and drilled two diamond drill holes from the adit. The adit was driven on a bearing of N 4° E from a point about 125 feet east of the original tunnel driven by J. Risco.

Both phyllite and quartz carbonate rock are exposed in the adit plus some pale buff highly sheared rock composed mainly of carbonate but containing numerous lens of altered phyllite. The latter rock may have formed in part through the carbonate alteration of phyllite as some of it contains considerable fine mica. No unaltered basic or ultrabasic rocks were cut nor was any mineralization encountered in place. A diamond drill hole, drilled for 93 feet at an elevation of plus 10 degrees along the line of the adit, did not cut mineralization. The core contained much greenstone, in part altered to quartz carbonate. One particularly fresh piece consisted of gabbro containing labradorite and clinopyroxene, with most of the latter altered to fine-grained secondary amphibole.

(Silver) NTS 116 B 5

#1 Silver City Property (64°18 1/2'N, 139°52'W)

1964

References: Cockfield (1928, pp. 8A-10A)*; Green and Roddick (1962); Green and Godwin (1963, p. 20; 1964, pp. 18-19).

Silver City Mines Limited (N.P.L.), formed by some of the backers of the 1962 and 1963 work, has optioned 7 claims from J. Risco of Dawson, Yukon, covering the original showing and holds an additional 41 claims in the area. The showing, on the north bank of the river, is about 2 1/2 miles downstream from the mouth of Fifteenmile River. The property is an old one and has been prospected intermittently since about 1900. Cockfield (1928, p. 9A) reported that a shipment of 5 tons was made from material that occurred as float on the beach of the Camp Bird claim, the site of the present work.

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*Reprinted in Geological Survey of Canada, Memoir 284 (Bostock, 1957, pp. 576-578).

During the summer of 1964, a crew of 4 men continued the hydraulic operation commenced in 1963, in an attempt to locate the source of the silver-bearing float. In the course of this work the adit driven in 1962 and 1963 was destroyed, but an earlier adit, driven by Risco about 300 feet above the river, and two adits near river level were exposed. None of the above was visible when the author visited the property in mid-July, but the owners report that they were able to examine one of the adits near river level later in the season. An estimated total of 75,000 cubic yards of overburden was removed in the hydraulic operation.

The area being explored lies on a steep slope above the Yukon River and is heavily mantled by talus. When visited, only the upper end of the cut, about 400 feet above the river, had reached bedrock, consisting of basic or ultrabasic rocks that had been altered to a rusty-weathering rock composed principally of dolomite, but containing some ankerite and streaks of green, nickel-bearing material, probably mica. On the slope above, this outcrop appears to be overlain by about 300 feet of grey phyllite, followed by about 100 feet of limestone and associated limy shale, and followed in turn by about 100 feet of altered greenstone. The rocks appear to strike northeast and dip to the northwest at about 30 degrees. On the hillside to the west of the cut a large buff exposes buff-weathering quartz carbonate rock underlain by grey phyllite and in fault contact with altered greenstone. The quartz carbonate rock consists of irregular bands of sugary white dolomite, somewhat finer grained ankerite (?, refractive iron-bearing dolomite* ankerite (?) refractive index No. about 1.715) and streaks of green, nickel-bearing material, probably mica. A specimen of the rock assayed*: trace of gold, 2.68 ounces of silver per ton, 1.3 per cent lead, and 0.1 per cent zinc.

Near river level, a small cut to the east of the main cut exposes similar quartz carbonate rock, apparently in place. Sulphide minerals were not observed in the material in place, but small amounts of scattered sulphide minerals, chiefly galena and sphalerite, were observed in loose material, presumably hand-sorted, along the sides of the cut.

Two specimens reported to have been selected from the hydraulicked material differed only from the outcrops on the hillside and in the lower cut in that they contained numerous lenses, up to about 10 mm in diameter, of galena and, less commonly, argentiferous tetrahedrite*. These assayed*: (i) 0.02 ounces of gold and 127.3 ounces of silver per ton, 3.8 per cent lead, and 0.2 per cent zinc and (ii) 0.005 ounces of gold and 47.1 ounces of silver per ton, 7.2 per cent lead, and 0.6 per cent zinc.

The quartz carbonate rock on the property is very similar to that observed at the Caley and Clinton Creek asbestos properties, about 10 miles to the west and 28 miles to the northwest, respectively, except that the iron-bearing carbonate is dolomite* rather than magnesite*. As at these properties, it is believed to have originated through the alteration of ultrabasic rocks, although the latter were not observed on the Silver City property. Sulphide minerals were not observed in the quartz carbonate rock on the asbestos properties, but they are also absent in much of the quartz carbonate rock on the Silver City property. Further exploration work should concentrate on tracing the quartz carbonate rocks on the property and determining the extent and distribution of sulphide minerals within them.

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*Identified by X-Ray Diffraction Laboratory, Geological Survey of Canada.

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## FIFTEENMILE RIVER AREA

#1 Silver City Property (64°19'N, 139°50'W) NTS 116 B 5

References: Cockfield (1928b, pp. 8A-10A)*; Green and Roddick (1962); Green and Godwin (1963, p. 20).

### 1963

J. Risco of Dawson, Yukon, owns 7 claims in the Silver City area on the right limit of Yukon River, at the bend below the mouth of Fifteenmile River, 22 miles northwest of Dawson. L. Patnode of Whitehorse and W. Kaufman of Dawson optioned the property late in the 1962 season, and during March 1963 staked an additional 39 claims in the area.

The area carries silver-lead and antimony occurrences. Cockfield (1928) reported a 5-ton shipment of hand-sorted material from float on the beach. Talus above the beach contains blocks of quartz-carbonate rock that contain nickel-bearing serpentine, disseminated galena, and a few specks of tetrahedrite. Country rock consists of crumpled, chloritic and quartz sericite schists, and shattered greenstones (unit D, Green and Roddick).

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*Reprinted in Geological Survey of Canada, Memoir 284 (Bostock, 1957, pp. 576-578).

The deformation of the country rock may be due to structures related to the Tintina Trench, only 3 miles to the northeast.

During 1963, Kaufman and up to 2 helpers, drove a 3-foot by 5-foot adit to a total length of 276 feet, most of which was driven using hand steel. Late in the summer 3 cuts, totalling approximately 40,000 cubic feet, were hydraulicked in the overburden. Equipment used in this operation included a 2-stage centrifugal pump driven by a 240 hp gas motor. A cut about 350 feet vertically below the adit encountered galena-rich float.

## Silver City

### #1 Silver City Property (64°19'N, 139°50'W)

Reference: Cockfield (1928, pp. 8A-10A)*

1962

J. Risco of Dawson, Yukon, owns seven claims in the Silver City area on the right limit of the Yukon River, at the bend below the mouth of Fifteenmile River, 22 miles northwest of Dawson. L. Patnode of Whitehorse and W. Kaufman of Dawson optioned the property late in the 1962 season and during March 1963 staked an additional 39 claims in the area. A maximum of 3 men were employed during the winter of 1962-63.

The area carries silver-lead and antimony occurrences. Cockfield (1928) reported a 5-ton shipment of hand-sorted material from float on the beach. Country rock consists of crumpled, chloritic and quartz sericite schists, and shattered greenstones (unit D - Green and Roddick, 1962). The deformation of the country rock may be due to structures related to the Tintina Trench, only 3 miles to the northeast.

By October 1962 an adit 3 feet wide by 5 feet high and about 200 feet long had been driven almost due north into the talus about 300 feet above the river in an attempt to locate a sulphide vein that J. Risco reported he had intersected in 1929. Bedrock was encountered 90 feet from the portal. At 122 feet from the portal a fault with 2 1/2 feet of gouge strikes east-west and dips 80 degrees to the north. No important mineralization was seen in the bedrock portion of the adit, which was mainly crumpled schists. In the talus, both in the adit and on the surface, blocks of quartz-carbonate rock contained nickel-bearing serpentine, disseminated galena, and a few specks of tetrahedrite.

(Silver-Lead) NTS 116 C 2

#1 Per Group (64°00'N, 140°47'W)

Reference: Cockfield (1921).

1965

P. Johnson of Whitehorse, Yukon holds 16 claims of the Per and Peg groups covering a silver-lead showing located on the edge of the dredge tailings on the right limit of Sixtymile River about 3/10ths of a mile upstream from Miller Creek. The showing, an old one discovered during dredging, was staked and re-examined in 1965 by P. Johnson and P. Gaudard, both of Whitehorse, Yukon. It is reached by a secondary road about 10 ½ miles in length that leaves the main Sixtymile road to the International boundary at Mile 48.

When visited early in August, the showing had been stripped for a distance of several hundred feet, but because of sloughing the vein itself was only exposed for a distance of about 30 feet at that time. Stripping by bulldozer is difficult as the vein occurs in frozen and altered rock that thaws to produce a gumbolike mud and as the showing is at river level and would require a bedrock cut several thousand feet in length for adequate drainage.

The showing exposed comprises a galena-bearing vein up to 32 inches in width occurring in altered volcanic rocks of probable Tertiary age (Cockfield, 1921). The vein strikes about N 60°E and dips steeply. A chip sample across the 32 inch width, which contains galena with the exception of a 4 inch barren zone in the centre assayed*: 0.04 ounces of gold and 12.5 ounces of silver per ton, 26.4 per cent lead, and 4.7 per cent zinc. Another sample, about 10 feet to the southwest along the vein, taken over a width of 18 inches composed mainly of altered clayey material with some pyrite assayed*: 0.08 ounces of gold and 0.80 ounces of silver per ton, 1.2 per cent lead and 0.4 per cent zinc. A composite sample of three pieces of massive galena from the vein assayed*: 0.02 ounces of gold, and 33.5 ounces of silver per ton, 85.5 per cent lead, and 0.6 per cent zinc. Later in the season, two short diamond drill holes were put down one of which did not cut vein material and the other cut 7½ inches of galena at a depth of 26 feet below surface.

Most bedrock is decomposed in the vicinity of the showing but scattered outcrops of altered, buff weathering, pale brown to grey, volcanic rocks, of probable felsic composition remain. These have a glassy grey matrix and are crowded with altered feldspar phenocrysts, both euhedral and rounded, to about 3 mm in size. Under the

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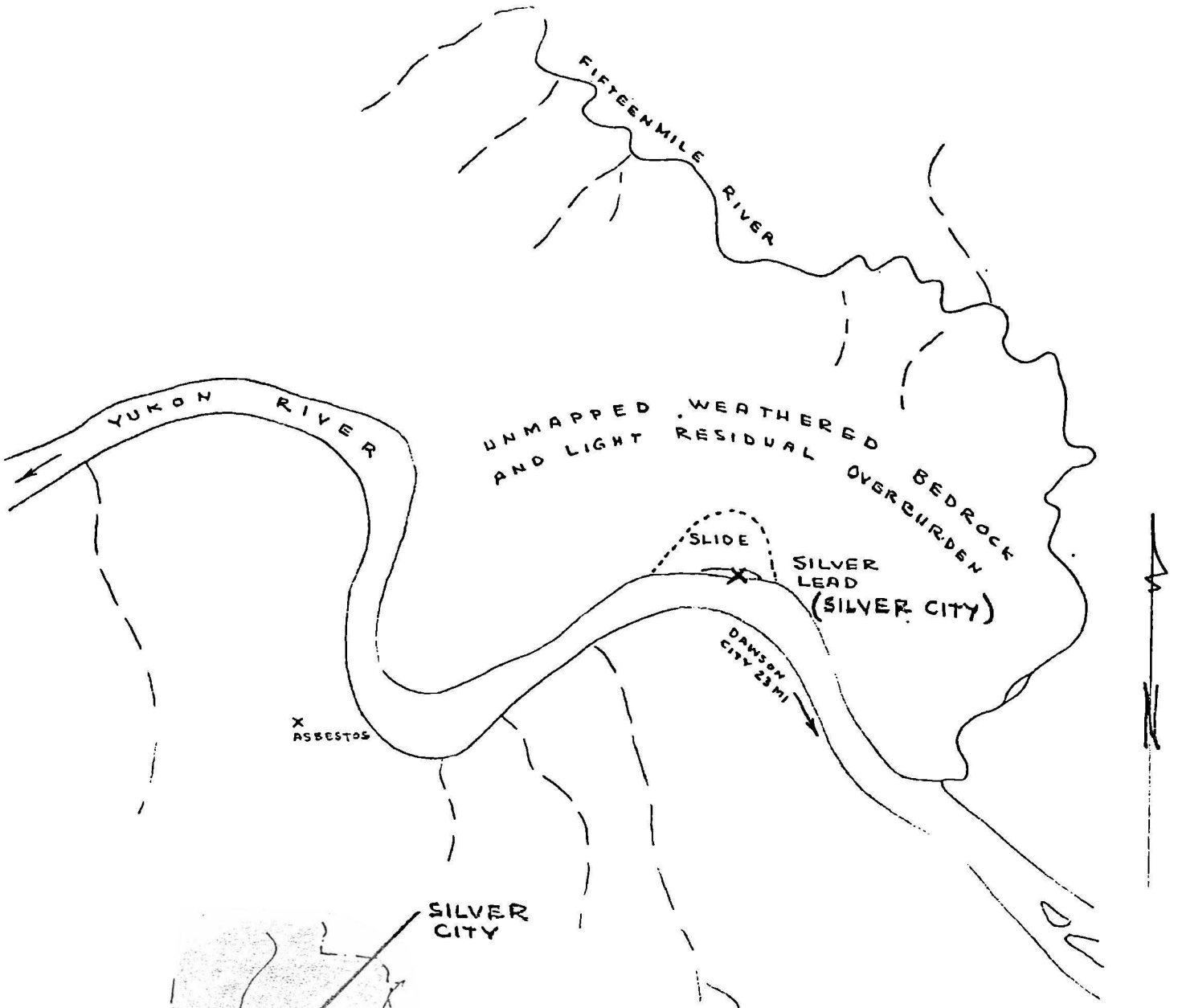
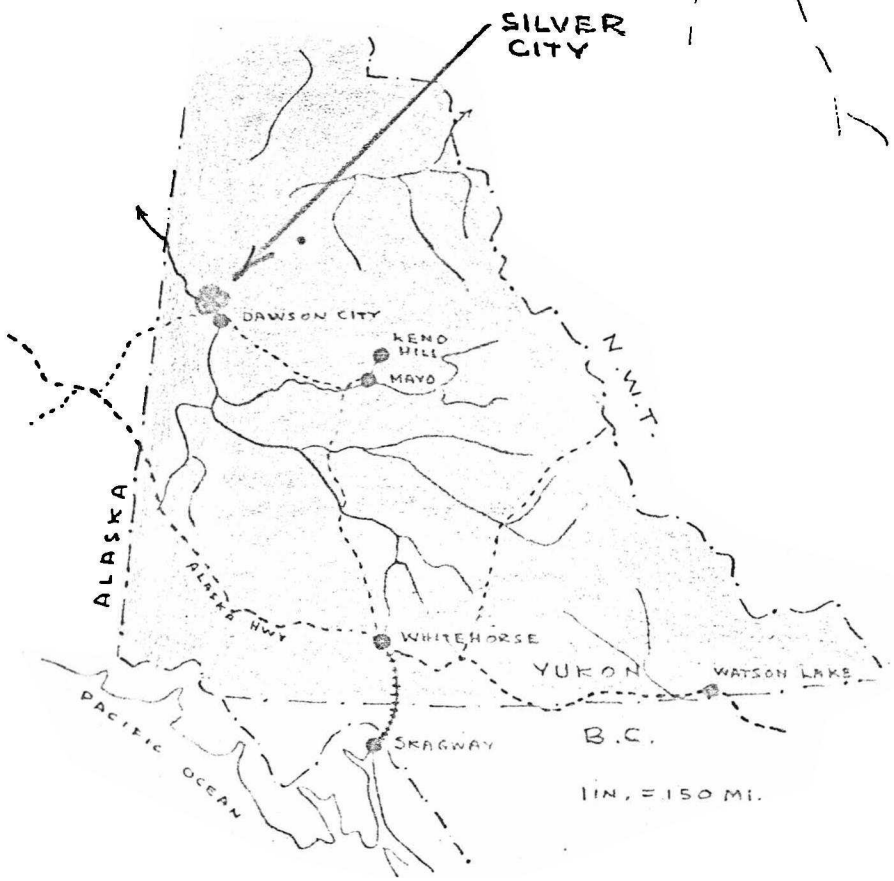
* Assayed by G. Spalding, Whitehorse, Y.T.

microscope the rocks were found to be highly altered to secondary minerals with little or none of the original minerals remaining. Much of the secondary material is indeterminate but abundant carbonate, probably magnesite (No about 1.70) and some fine mica is present.

The silver to lead ratio of the Per group is low and the deposit is difficult to explore because of drainage problems. However, silver-bearing galena has been reported from placer concentrates on Miller Creek (Cockfield, 1921, p.42), in a prospect near the head of the Creek(op.cit. p. 51) and on the CCL group described in this report and the general area would appear worthy of careful prospecting.




MAP SHOWING LOCATION OF

# SILVER CITY AREA, Y.T.

APPROX SCALE 1 IN. = 2000 FT.

A.E. AHO MAY, 1961

#2 Clinton Creek Mine (Cassiar Asbestos Corporation Limited) (Asbestos) (64°27'N, 140°42'W)

References: Green and Roddick (1962); Green and Godwin (1964, pp. 19-21); Green (1965, pp. 25-27; 1966, pp. 25-26); Christian (1966).

## 1966

During 1966, Cassiar Asbestos Corporation Limited continued preparations for bringing its Clinton Creek open-pit asbestos mine into production. The deposit, near Clinton Creek about 48 miles northwest of Dawson, was discovered in 1957 and initially explored during 1957 and 1958. In 1963 and subsequent years exploration was intensified and early in 1965 a production decision was announced.

The property is reached by a 26-mile mine access road that leaves the Sixtymile road near mile 33 and crosses Fortymile River by a new bridge near the mouth of Clinton Creek.

Work during 1966 consisted of about 1 million tons of pre-production stripping from the orebody, about 5,000 feet of diamond drilling to delineate the west extension of the orebody, and construction of various parts of the mine-mill complex. The mine and crusher, located on Porcupine Hill south of Clinton Creek, will be connected via an aerial tramway to the mill on Trace Hill across Clinton Creek valley. The tramline will transport crushed ore about one mile and elevate it about 500 vertical feet to the mill on Trace Hill. Using 3,300-pound buckets, the transport capacity of the tramline system will be about 300 tons per hour. By late 1966, construction of the crusher site and tramline terminal on Porcupine Hill, and erection of the mill complex on Trace Hill was proceeding on schedule with most foundation work completed and sheeting-in of mill, service, and office buildings in progress. Construction of a townsite for a population of 600 to 700 was begun near Fortymile River, about 5 miles from the mine.

Initially, the Clinton Creek mine will produce 60,000 tons of asbestos fibre annually, mainly of Canadian Group 4 category for use in cement products. Production plans call for tonnage to be increased to 80,000 tons by the third year of operation. The asbestos fibre will be shipped by truck to Whitehorse, thence by rail and ship to Vancouver via Skagway. Open-pit mining will begin during the summer of 1967, with full production from the mill scheduled for late 1967 or early 1968. About 200 men will be employed in the operation.

The Clinton Creek orebody is contained within the western part of an irregularly lensoid serpentinite body about 4,500 feet long and up to 1,000 feet wide. The intrusion is one of a cluster of six or more ultramafic bodies exposed within a radius of 3 miles of the mine site. Low grade asbestos occurs in other bodies but no mineable deposits have been found. The ultramafic lenses have been emplaced in a mixed volcanic and sedimentary assemblage of uncertain age, tentatively dated as Palaeozoic (Green and Roddick, 1962). The assemblage includes argillite, quartz-sericite-muscovite schists, carbonaceous limestone and chloritic schists derived from volcanic rocks. The Clinton Creek ultramafic lens strikes about west and dips 45-55 degrees north. The principal rock type is aphanitic serpentinite, probably formed from dunite or pyroxene dunite. Along its north margin a brown-weathering quartz-carbonate alteration zone up to 400 feet wide is present. Similar alteration material is visible in an exploration adit driven through the south contact of the body at an elevation of 1,400 feet. There, asbestos stringers in serpentinite have been transformed in-situ to quartz-carbonate assemblages, retaining their original fibrous morphology and indicating that the quartz-carbonate alteration was a late-stage post-serpentine, post-asbestos process.

As of late 1966, proven ore reserves were 14,325,000 tons with an estimated value of $14.25 per ton and a waste to

ore ratio of 3.3:1. An additional 9,529,000 tons of indicated ore with a value of $12.40 per ton and a waste to ore ratio of 6.5:1 are estimated (Northern Miner, December 15, 1966).



FORTYMILE AREA

NTS 116 C 7

(Asbestos)

#2 Clinton Creek Property (64°27'N, 140°42'W)

References: Green and Roddick (1962); Green and Godwin (1964, pp. 19-21); Green (1965, pp. 25-27); Christian (1966).

1965

Cassiar Asbestos Corporation Limited holds 179 claims covering the property, discovered in 1957. The company did exploration work on the property in 1957 and 1958 and from 1963 on. Early in 1965, the company announced that the property would be brought into production in 1968. During 1965 preliminary construction and additional exploration were undertaken.

Access to the property is by a road about 26 miles in length, that leaves the Sixtymile road near mile 37, follows the ridge line west of Mickey Creek to the valley of the Fortymile River, and then the valley of Clinton Creek. The portion of the Sixtymile road between Dawson and the turn-off is to be rebuilt by the federal government and the government and the company are to share the cost of both the remaining 26 miles from the turn-off to the property and the bridge over the Fortymile River. In the earlier exploration, a tote road to the property followed the same general route but several soft spots and difficulties with the ford on Fortymile River limited its usefulness during the summer season when the camp was serviced by aircraft operating from an airstrip located about 2 miles north of it.

Proven ore reserves at the end of 1965 were 14,545,775 tons, valued at $14.12 per ton with a waste to ore ratio of 3.3 to 1 and indicated ore an additional 9,529,614 tons valued at $12.40 per ton with a waste to ore ratio of 6.5 to 1. Additional drilling is planned for 1966. (Christian, 1966). Most of the production will be of Group 4 asbestos fibre, used mainly in cement products. Initial production is planned at a rate of 40,000 tons of fibre per year, rising to 80,000 tons by 1970.

The deposit is located on Porcupine Hill, on the south side of Clinton Creek, about 5 miles from the mouth. From the crushers at the pit, the ore will be moved by trailine to the mill located on Trace Hill, about one mile to the north on the opposite side of Clinton Creek. The townsite, planned for a population of 600 to 700 is to be located about 5 miles away in the valley of the Fortymile River upstream from the mouth of Clinton Creek.

Exploration work carried out on the deposit in 1965 consisted of 32 vertical diamond drill holes with a total length of 18,158 feet designed to test the continuity of the main orebody to the south-west. The latter, has now been traced for about 3,000 feet with an average horizontal width of about 300 feet and ranging in depth to up to 800 feet beneath the surface.

The Clinton Creek property occurs in one of a number of small bodies of ultrabasic rock that occur in metamorphic rocks of the area (Green and Roddick, 1962). Enclosing metamorphic rocks observed on the property include shiny black phyllite, grey argillite, and brown weathering, micaceous, gritty quartzite. The body containing the showing is probably little more than a mile in maximum diameter. Typically, the serpentine is lustrous, green to grey-green, with numerous polished slip surfaces. Nearly all of the asbestos occurs as cross-fibre veins, generally $\frac{1}{4}$ inch or less wide. A number of other ultrabasic rocks, nearly all containing traces of asbestos fibre, occur in the general area but, to date, no other mineable deposits are known.

(Asbestos)

NTS 116 C 7

#2 Clinton Creek Property (64°27'N, 140°42'W)

References: Green and Roddick (1962); Green and Godwin (1964, pp. 19-21).

1964

Cassiar Asbestos Corporation Limited holds 175 claims covering the property, discovered in 1957. The company did exploration work on the property in 1957 and 1958 and from 1963 on. During the 1964 season up to 41 men were employed in an exploration program involving diamond drilling, re-sampling of the underground workings, stripping, and geologic mapping. Early in 1965, the company announced (The Northern Miner, 4 March 1965, p. 1) that the property would be brought into production by 1968.

In the earlier work, a road about 26 miles in length was built to the property from near mile 37 on the Sixtymile road; the road follows the ridge line west of Mickey Creek to the valley of the Fortymile River, fording the river and then following the valley of Clinton Creek. Heavy winter snow on the Sixtymile road, difficulties with the ford on Fortymile River, and soft spots in the valleys of Fortymile River and Clinton Creek have limited the use of this road for heavy hauling. Nevertheless, in the spring of 1964 supplies were moved to the property by a winter tractor train over this route. In addition some supplies were freighted by river to Clinton Landing using the river freighter Brainstorm and barges. An airstrip, suitable for use by DC3 aircraft, is located on a ridge about 2 miles north of the main camp in the valley of Clinton Creek. Float-equipped aircraft can land near the ford on Fortymile River, about 5 miles from the main camp, when the river is high, otherwise the landing is on the Yukon River at the abandoned town of Fortymile.

Late in 1964, the company announced (The Northern Miner, 10 December 1964, p. 1) that the continuity of the main (or Porcupine Hill) orebody explored in 1957 and 1958 had been established and that the extension of this orebody to the southwest had been explored by diamond drilling. A preliminary estimate of the ore outlined to date is 12,300,000 tons, with 6 to 7 per cent fibre, a current value of $12.32 per ton, and a waste to ore ratio of 2.4 to 1. Potential mill products from the property would be mainly of a cement fibre grade.

The continuity of the original 5,000,000 ton orebody was established by means of 29 horizontal drill holes with a total length of 4,310 feet drilled from the underground workings and three vertical holes with a total length of 1,337 drilled from the surface.

The extension of the main orebody to the southwest indicated by geophysical and geological surveys in the 1963 field season was tested by 10 vertical diamond drill holes with a total length of 5,897 feet drilled on 200 foot centres. In the drilling it was traced for 700 feet with an average horizontal width of 400 feet and was still open to the southwest. A hole, 512 feet in length, drilled 1,100 feet from the last intersection is reported (op. cit.) to have cut ultrabasic rock at a depth of 350 feet and passed through 122 feet containing 7.5 per cent fibre before it was lost due to caving. This suggests that the apparent plunge of 10 to 15 degrees to the southwest may flatten and that the intervening area could contain a sizeable area suitable for an open-pit operation.

The Clinton Creek property occurs in one of a number of small bodies of ultrabasic rock that occur in metamorphic rocks of the area (Green and Roddick, 1962). Enclosing metamorphic rocks observed on the property include shiny black phyllite, grey argillite, and brown weathering, micaceous, gritty quartzite. The body containing the showing is probably little more than a mile in maximum diameter. Typically, the serpentine is lustrous, green to grey-green, with numerous polished slip surfaces. Nearly all of the asbestos occurs as cross-fibre veins, generally 1/4 inch or less wide. Carbonates, present as thin veins and coating fracture faces, include calcite and dolomite. Part of the body has been altered to a buffy brown weathering quartz-carbonate rock composed of iron-bearing magnesite* (refractive index No. about 1.700), quartz, and lesser amounts

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*Identified by X-Ray Diffraction Laboratory, Geological Survey of Canada.

of white dolomite, and magnetite. In some specimens of this rock, the outline of replaced asbestos fibre is still visible.

Clinton Creek

#2 Clinton Creek Asbestos Group (64°27'N, 140°42'W)

References: Western Miner and Oil Review (Jan. 1959, p. 42); Green and Roddick (1962, pp. 15-16).

1963

The Clinton Creek claim group of 153 claims is wholly owned by Cassiar Asbestos Corporation Limited, a corporation in which Conwest Exploration Company Limited has the managing interest. The claims on Clinton Creek are about 45 miles northwest of Dawson, Y.T. Access is provided by a 5-mile jeep road to the Fortymile River and by two airstrips. One airstrip is 1,900 feet long and 1 mile from base camp; the second, constructed in the fall of 1963, is 4,500 feet long and 1 1/2 miles from camp. When the water level is high, float planes land on the Fortymile River; when the water level is low, they land on the Yukon River near the abandoned town of Fortymile. A road from the northern side of mile 34 on the Sixtymile Road was constructed in 1958, but this has been abandoned.

Asbestos was discovered on Clinton Creek by G. Walters, and staking of the area in 1957 was financed by the Caleys (all of Dawson, Y.T.). The property was then optioned by Conwest Exploration Company Limited in 1957. In September 1957, Cassiar Asbestos Corporation Limited optioned the property from Conwest and, during 1960, purchased the prospectors' interest for cash, fulfilled their option with Conwest, and gained complete ownership of the property.

Base camp, established in 1957, is at the junction of Clinton Creek with Porcupine Creek. Four asbestos showings occur in the vicinity of the camp, and they are:

(1) Porcupine Hill, southwest of camp.
(2) Snowshoe Hill, south of camp.
(3) Wolverine Hill, northeast of camp.
(4) Trace Hill, north of camp.

The Porcupine Hill showing is the most interesting one to date. In 1957, about 9,300 feet of surface trenching was done, and in 1957 and 1958, two adits were driven on the 1,220-foot level and the 1,320-foot level that totalled 4,100 feet. A detailed magnetometer survey over the hill was carried out early in 1963, and a possible western extension of serpentine that was indicated by this survey was tested with a NX-coring diamond drill. The program began in 1963 and will be continued in 1964.

On Snowshoe Hill, in 1957 and 1958, about 5,700 feet of trenching was done, and an adit and crosscut totalling 1,200 feet was driven on the 1,180-foot level. Although some of the surface trenches contain good fibre, only minor cross fibre was encountered underground. The deposit is, consequently, considered to be shallow and bowl-shaped.

On Wolverine Hill trenching in 1957 encountered mainly surface fibre in what appears to be a minor showing.

Trace Hill, in the past, has had very little work done on it. Surface prospecting in 1963, however, turned up interesting fibre, and 4,500 feet of trench were excavated. Trenching was followed by drilling late in the summer.

On all the showings there has been a total of about 25,000 feet of trenching. The Annual Report of Cassiar Asbestos Corporation Limited for the year ended 30 September 1958 (Western Miner and Oil Review, Jan. 1959, p. 42), reveals that a total of 5,300 feet of drifts and crosscuts were driven under the showings exposed by trenching. In conjunction with the underground work, 5 separate bulk samples totalling 423 tons were shipped to Cassiar and milled on a production scale to determine the fibre content and recovery. Smaller samples were run in the pilot mill to obtain the distribution of values as a check on the bulk sampling. The work was carried out under the direction of the general superintendent, N.F. Murray, who reports more than 5,000,000 tons of high-grade asbestos ore indicated to 50 feet below the adit level with a waste-to-ore ratio of approximately 2 to 1.

In 1963, engineering and geological work was done on the property to permit future planning. At base camp a crew of up to 25 men was under the supervision of geologist R.A. Dodge. A claim survey was conducted and survey lines were used as magnetometer lines. In addition, a grid over the showings adjacent to the camp was established for detailed magnetometer work. A total of 32.8 miles of magnetometer survey was conducted. Other work included the construction of a new airport, and prospecting by 3 parties that used pack dogs in the area roughly bounded by the Yukon River, the Yukon-Alaska border, and the Sixtymile Road.

The asbestos occurs in reddish brown weathering, dark green serpentinized ultrabasic rocks (unit A, Green and Roddick, 1962), which apparently intrude a quartzite, schist, and gneiss unit (unit C) that also includes minor crystalline limestone. In the vicinity of the base camp units include: (i) dark green serpentine, (ii) quartz-carbonate rock, (iii) platy slate, phyllite, and blocky quartzite.

Serpentine bodies on the property are probably irregular, but the one on Porcupine Hill appears to strike northeasterly and dip to the northwest. Fibre is associated with concentrations of magnetite, and serpentine that is often bleached light green. Underground, in Porcupine Hill, excellent cross-fibre stringers were noted; locally these stringers formed a rhombohedral pattern on faces of drifts. Plus 5 per cent visible fibre is considered, from an exploration point of view, to be of "ore" grade.

Quartz carbonate rock envelops the serpentine bodies. Locally, the quartz-carbonate contains chrome mica (fuchsite), nickeliferous serpentine (garnierite), and altered serpentine. In the trenches the quartz-carbonate rock is distinguished by its rusty buff-weathering. The enveloping quartz-carbonate alteration is characteristic of all the Clinton Creek showings and is similar to the alteration around the Cassiar Creek asbestos showing that is about 18 miles to the southeast.

Country rock, apparently intruded by the serpentine, is mainly black to grey platy phyllite and argillite. Light brown to grey quartzite with good foliation occurs in several localities near the showings.

Prospecting in the area is extremely difficult, owing to overburden and abundant vegetation. Creep has moved bedrock for considerable distances from its origin and makes geological mapping difficult. Dip-needle surveys or other magnetic methods are undoubtedly valuable aids in locating serpentine deposits in the area. The best indication of asbestos is found beneath the vegetation as a brownish grey asbestos fibre mat, which may be as much as several inches thick.

NTS 116 c 7

3-#3 Foxy Group (Asbestos Corporation (Explorations) Limited) (64°29'N, 140°44'W)

Reference: Green and Roddick (1962).

1964

Asbestos Corporation (Explorations) Limited holds the Foxy 7 and 9 to 12 group of mineral claims located about 3 miles north of the Clinton Creek asbestos property adjacent to the landing strip for the latter. In June 1964, 2 diamond drill holes with a combined length of 990 feet were drilled on Foxy 11 claim. Both holes cut serpentinized ultrabasic rocks with traces of asbestos.

(Asbestos) NTS 116 C 8

#4 Caley Property (64°18'N, 140°12'W)

References: Green and Roddick (1962); Green and Godwin (1964, p. 22).

1964

Canadian Johns-Manville Company Limited optioned the Caley property from F. Caley and associates of Dawson, Yukon, in September 1963. The property, consisting of 51 claims, is located on the west side of Cassiar Creek about 2 miles from the mouth and is reached by an access road, about 9 miles in length, that leaves the Sixtymile road near mile 29.

The property, originally staked in 1956, was optioned to Conwest Exploration Company Limited, and subsequently transferred to Cassiar Asbestos Corporation Limited in September 1957. In 1959, Cassiar Asbestos Corporation Limited carried out extensive surface stripping, drove 2 northwest-trending adits totalling 1,180 feet, and shipped a 3 1/2-ton sample to Cassiar, B.C. for mill tests. The company dropped their option in 1963, at which time Canadian Johns-Manville Company Limited optioned the property. During the 1964 field season, the latter company employed a crew of up to 10 men in a program of geological and geophysical work and diamond drilling of 12 holes with a total length of 2,000 feet. The writer visited the property in mid-July.

The main ultrabasic body on the property is partly exposed in a bluff on an otherwise timbered slope on the west side of Cassiar Creek valley. Numerous bulldozer cuts have been made across the body, and the surface expression of the ultrabasic and associated quartz-carbonate rock appears to be about 1,500 feet along and 3,000 feet up the slope. To the southwest, the ultrabasic is bounded by graphitic quartz-mica and chlorite schists, but to the northeast outcrop is lacking. Magnetometer work suggests that the ultrabasic terminates abruptly to the west, and the company geologist has interpreted this as a thrust zone. Results from the drilling suggest that the ultrabasic is a thin zone, 200 feet or less in thickness, forming a veneer on the hillside and underlain by a distinctive cataclastic talc schist underlain by minor basalt and normal schist.

Typical serpentine is a medium to dark green rock, chiefly antigorite, cut by light green bands of cross-fibre asbestos, generally 1/4 inch or less in width. Shiny slickensided surfaces are common. Much of the ultrabasic body has been replaced by rusty-weathering, light grey-brown quartz carbonate. In some specimens the outline of replaced asbestos fibre is still visible. The carbonate, of the magnesite group*, contains considerable iron, and spectrographic analyses of quartz-carbonate rock made for the company indicate a calcium content between 2 and 7 per cent and a magnesium content of 10 to 14 per cent. The $N_o$ index refraction for the mineral is about 1.700.

In addition to work on the Caley property, the company did some work on a small ultrabasic body overlooking the Yukon River about 7 miles to the east and about 1 mile east of Woodchopper Creek.

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*Identified by X-Ray Diffraction Laboratory, Geological Survey of Canada.

54 Caley Asbestos Property (64°18'N, 140°12'W)

Reference: Green and Roddick (1962, pp. 15-16).

1963

The Caley asbestos property, owned by F. Caley and associates of Dawson, Yukon, consists of 43 claims. The property is on the north side of Cassiar Creek, 2 miles upstream from the Yukon River. A road was constructed in 1958 from near mile 29 on the Sixtymile Road to the property, but it has been abandoned.

The asbestos deposit, originally staked by F. Caley and associates in 1956, was optioned by Conwest Exploration Company Limited, and subsequently was transferred to Cassiar Asbestos Corporation Limited in September 1957. When Cassiar Asbestos Corporation Limited dropped their option in August 1963, the property was immediately re-optioned from Caley and associates by Canadian Johns-Manville Company Limited. During the remainder of the 1963 field season the latter company carried out surface exploration on the property.

In 1959 Cassiar Asbestos Corporation Limited drove 2 northwesterly trending adits, totalling 1,180 feet. Bulk samples, totalling 3 1/2 tons and test milled at Cassiar, B.C., indicated that the value of recoverable fibre was low.

The crysotile asbestos deposit is in a lens-like body of serpentine (unit A, Green and Roddick, 1962) that roughly strikes northeast and dips, approximately parallel to the topography, to the southeast. The top part of the lens has apparently been eroded. The serpentine is enveloped by carbonate alteration, and intrudes quartz mica schist (unit D).

# PLACER OCCURRENCES

Bonanza Creek

NTS 116 B 3

#1 G. Heitman (64°00'N, 139°21'W) 1966

References: McConnell (1907; in Bostock, 1957, pp. 217-238); Skinner (1962, p. 8); Green and Godwin (1963, pp. 44-45; 1964, p. 56); Green (1966, pp. 92-93).

G. Heitman continued mining in 1966 on claims leased from Cripple Hill Mining Company Limited (Green and Godwin, 1964) on Cripple Hill, Trail Hill and Trail Gulch.

Working with 2 full time helpers and a D-8 bulldozer Heitman mined 70,000 bedrock square feet in Trail Gulch, and about 18,000 bedrock square feet on Trail Hill. Production was 640 ounces of crude gold. Heitman does not plan to work the property next year.

Bonanza Creek

NTS 116 B 3

#1 G. Heitman and C. Janus (64°00½N, 139°21'W)

References: McConnell (1907) ; Skinner (1962, p. 8); Green and Godwin (1963, pp. 44-45; 1964, p. 56).

1965

During 1965, partners Heitman and Janus mined White Channel Gravels on Cripple Hill in a combined hydraulic and bulldozer sluicing operation. The ground was leased from Cripple Hill Mining Company Limited which holds six creek claims on Bonanza Creek, one on Trail Gulch, three hill claims on Cripple Hill and on Trail Hill (all part of the old Bronson and Rae Concession). A crew of up to 4 men, including the partners, was employed. Production was about 241 ounces of crude gold.

White Channel gravels, named for their distinctive appearance have been an important source of placer gold on both Bonanza and Hunker Creek. Those on Cripple Hill are up to about 230 feet in depth and lie on a bedrock bench about 220 feet above the present level of Bonanza Creek. As exposed on the steep face they consist of a few well-rounded boulders, up to 1 foot in diameter and mainly of white quartz, and numerous cobbles, up to 6 inches and composed of about 30 per cent white quartz, 60 per cent chloritic phyllite (Klondike schist), and 10 per cent other rock types (Nasina series), all in a matrix of white quartz grains with considerable muscovite. The face shows strong horizontal stratification and sandy lenses to a few feet thick are common. Bedrock is mainly a deeply weathered grey mylonite formed from grey quartzite and graphitic phyllite. Nearly all the gold values are believed to be near bedrock and McConnell (1907, p. 10) found on sampling a 150 foot section on nearby Trail and Lovett Hills values of $2.55 per cubic yard on the lower four yards, including 1 foot of bedrock, and less than 2 cents per yard in the overlying 46 yards.

Prior to the present work, mining had been carried out on Cripple Hill first by underground and later by hydraulic mining. In the latter, the gravels had been removed for about 300 feet back from the face of the bench, mostly during the period the Twelvemile ditch was in operation (about 1909 to 1933) and more recently in the operations of the Cripple Hill Mining Company between 1961 and 1963 (Green and Godwin, 1964).

In the present operation water was pumped from Bonanza Creek to the top of Cripple Hill using a 12 inch pipe and 3 electrically driven pumps. The monitors were mounted on top of the hill up to 500 feet behind the face and the intervening gravel stripped and flushed over the lip of the bedrock bench into the valley of Bonanza Creek. As the top of the hill was cut down the monitors were shifted to the rear of the partially stripped area and the process repeated. In this manner the bulk of the gravel was removed from a very large area but considerable difficulty was experienced in removing the lower 50-70 feet above bedrock. This appeared to arise from the compacted nature of the latter and the inability of a monitor working from above to break up and "lift" the well stratified gravels. Consequently, bulldozer stripping was used for the last few feet of gravel and it was only found possible to clean about 13,000 square feet of bedrock. The values recovered from this were disappointing.

#2 Cripple Hill Mining Company Limited (64°00 1/2'N, 139°21'W)

1964

References: Skinner (1962, p. 8); Green and Godwin (1963, pp. 44-45; 1964, p. 56).

The company was inactive in 1964.

#2 Cripple Hill Mining Company Limited (64°00 1/2'N, 139°21'W)

References: Skinner (1962, p. 8); Green and Godwin (1963, pp. 44-45).

1963

The Cripple Hill Mining Company Limited, owned by P. Foth and R.E. Troberg, has 6 creek claims on Bonanza Creek, 1 on Trail Gulch, 3 hill claims on Cripple Hill, and 1 on Trail Hill (all part of the old Bronson and Rae Concession) about 2 1/4 miles up the Bonanza Creek Road. Foth and Troberg, with three hired men, hydraulic naturally thawed white channel gravels through bedrock cuts to the sluice-boxes. In addition, the rims of the bench are scraped into the sluice-box with the bulldozer.

The company's first two years of mining, 1961 and 1962, yielded about 1,260 ounces of crude gold from Cripple Hill claims Nos. 77 and 78 Below Discovery. A cut on claim 77 (150 feet by 150 feet by 50 feet high) and a cut on claim 78 (200 feet long by 150 feet deep by 100 feet high) yielded about 652 ounces of crude gold. Three types of gold may be distinguished by differences in its colour. On the average, however, gold is ragged, dark orange-yellow, and runs about 805 in fineness.

Equipment includes a D-6 bulldozer, 3 monitors, and 3 sluice-boxes, which discharge over the 220-foot high bench into Bonanza Creek. In 1963, only two of the three monitors and sluice-boxes were used. Water, a major cost, is supplied from Bonanza Creek by a 12-inch, 400 hp electric pump, which delivers 4,500 gallons per minute at 40 to 50 psi to a monitor.

Bonanza Creek

#2 Cripple Hill Mining Company Limited (64°04'N, 139°21'W)

Reference: Skinner (1962, p. 8)

1962

The Cripple Hill Mining Company Limited, owned by R.E. Troberg and P. Foth, has six creek claims on Bonanza Creek, one on Trail Gulch, three hill claims on Cripple Hill, and one on Trail Hill (all part of the old Bronson and Rae Concession) about 2 1/4 miles up the Bonanza Creek Road.

The company's first year of hydraulic mining in 1961 produced about 540 crude ounces of crude gold on the hill claims Nos. 77 and 78 Below Discovery. On the same ground from June 2 to October 7, 1962, a cut that was approximately 400 feet long by 150 feet deep by 100 feet high yielded about 720 crude ounces of gold. Typical gold is ragged, dark orange-yellow, commonly with adherent quartz grains, and runs about 800 in fineness.

Equipment used includes a D-6 bulldozer, 2 monitors, and 2 sluice-boxes that discharge over the edge of the bench. Water is supplied from Bonanza Creek by 12-inch, 400 hp electric pump, which delivers 4,500 gallons per minute at 40 to 50 psi to a monitor.

With a maximum crew of five, gravels are hydraulicked through bedrock cuts to the sluice-boxes and the bedrock is scraped by the bulldozer. Big boulders must occasionally be broken by hand so that they will pass through the bedrock cuts.

The hydraulic pit is about 220 feet above Bonanza Creek in naturally thawed White Channel gravels. When the writers visited the property in September 1962, the face was about 100 feet high by 800 long, but not all of this had been mined during the year. Several old drifts at the base of the White Channel section on the bedrock have been uncovered. The gravel is poorly graded with cobbles generally irregularly shaped and under 6 inches maximum diameter. Schistose cobbles are often tabular, and locally show a common horizontal orientation. About 30 per cent of the boulders are white quartz. Sandy material consists of fine fragments of quartz-mica schist and about 30 per cent quartz grains. The section is stratified, as is emphasized by irregularly shaped horizontal sandy lenses, which are often several feet thick. The bedrock is well exposed in the cuts to the sluice-boxes and is deeply weathered grey mylonite with lenses of crushed quartz and quartz eyes up to 3 mm long. Some of the quartz eyes are bright blue.

Bonanza Creek NTS 116 B 3

#2 Cripple Hill Mining Company Limited

1961

The Cripple Hill Mining Company Limited—owned by Ralph E. Troberg and Peter Foth—has six creek claims on Bonanza Creek, one on Trail Gulch, three hill claims on Cripple Hill and one on Trail Hill (all part of the old Bronson and Rae Concession) about 2 1/4 miles up the Bonanza Creek Road. In the company's first year of mining, 1961, it installed equipment and prepared ground from April 1 to July 4 and mined with a maximum crew of six from July 4 to September 30 on hill claims Nos. 77 and 78 Below Discovery. Production was about 540 crude ounces of gold.

Equipment used included a 12-inch pump driven by a 400-hp. electric motor, about 2,000 feet of 16-inch steel pipe, two No. 2 monitors with 4-inch nozzles, a 30-inch-wide by 48-feet-long sluice-box and a D-4 bulldozer. The pump supplied 4,500 gallons of water per minute from Bonanza Creek at a pressure of 90 pounds per square inch at the nozzle. The sluice-box grade is about 1 inch to the foot. The company planned to add 400 feet of 14-inch pipe, two monitors, and another sluice-box at the north end of the pit.

The hydraulic pit is in frozen White Channel gravels about 223 feet above Bonanza Creek. When visited on July 23, 1961, the face was 90 feet high and about 200 feet long. The gravel is stratified and compact and is composed of a groundmass of small angular grains of quartz and rock flour commonly enclosing rounded quartz pebbles 2 to 4 inches long. The lower 5 feet of the deposit, however, is coarser and contains boulders up to 12 inches long. The gold recovered is fine grained and is distributed evenly from top to bottom of the gravel. Some of the gold has quartz attached to it. The bedrock at the pit is green-grey quartz-chlorite schist that is cut by numerous quartz veinlets.

#3 E.M. Lintick and S. Berg (64°00'N, 139°22'W) NTS 116 B 3

Reference: Green (1966, p. 93)

1966

The Lintick and Berg families of Dawson hold 7 claims on Bonanza Creek near Sourdough Hill. No mining was done during 1966, but new ground was stripped in preparation for bulldozer mining in 1967. The property was not visited.

#3 E.M. Lintick and S. Berg (64°00'N, 139°22'W)

1965

The Lintick and Berg families hold 7 claims on Bonanza Creek in the vicinity of Sourdough Hill. Mining part time last summer, using a 4 inch high pressure pump and a No. 1 monitor, they produced about 27 ounces of crude gold.

#3 S.M. Berg and E.M. Lintick

1961

S.M. Berg and E.M. Lintick own two hill claims on Sourdough Hill and two bench claims below that hill on the left limit of Bonanza Creek about 3 miles up the Bonanza Creek Road. Berg and Lintick stripped ground from June 1 to October 15, 1961, in preparation for mining in 1962.

## Last Chance Creek
(Tributary of Hunker Creek)

#4 J. and I.C. Bremner (64°00'N, 139°07'W)

References: Skinner (1961, p. 10; 1962, pp. 10-11); Green and Godwin (1963, p. 48; 1964, p. 59); Green (1965, p. 59; 1966, pp. 97-93).

1966

J. and I.C. Bremner own 29 bench and hill claims and lease 9 creek and bench claims from G.M. Thompson on Lower Last Chance Creek, a main tributary of lower Hunker Creek. In 1966, the owners, working with one helper, continued mining upstream from last year's operation, a cut in White Channel gravels on Discovery Hill. In addition, test cuts were established in several other areas on the property, with little success. Mining operations were hampered by low water conditions. Total production for 1966 was about 42 ounces of crude gold. The property was not visited.

## Last Chance Creek
(Tributary of Hunker Creek)



#4 J. and I.C. Bremner (64°00'N, 139°07'W)

References: Skinner (1961, p. 10; 1962, pp. 10-11); Green and Godwin (1963, p. 48; 1964, p. 59); Green (1965, p. 59).

1965

J. and I.C. Bremner own 29 bench and hill claims and lease 9 creek and bench claims from G.M. Thompson on lower Last Chance Creek main tributary of lower Hunker Creek. In 1965, the Bremners with one hired man continued working their hydraulic pit in White Channel gravels on Discovery Hill. A point near the north edge of the hill with an area of about 10,000 square feet was mined with the production of 235 ounces of crude gold. Water for the operation is brought 5 miles from the forks of Last Chance Creek and has a head of about 40 feet at the monitor. Bedrock is soft and tailings from the sluice-box cut bedrock drains to the edge of the bench. Larger boulders must be broken or stacked.

When visited late in the season the following section was exposed in the face of the cut:

| | Thickness in Feet Unit | Total from Base |
|---|---|---|
| Silt and sand with some fine gravel..... | 6 | 33 |
| Gravel, rounded cobbles to 8 inches, mainly of quartz, with a sandy matrix..... | 17 | 27 |
| Gravel, boulders to 1½ feet, mainly of chloritic phyllite (Klondike schist) but about 1/3 white quartz and a few of grey quartzite, in a pale green matrix containing quartz, muscovite, and chlorite..... | 10 | 10 |
| Bedrock Volcanic rock, altered to a grey-brown clayey "gumbo" that locally contains lenses of gravel to 3 or 4 feet thick. Surface hummocky and best pay found in low areas. | | |

An additional 49 ounces of crude gold were produced on the claims leased from G.M. Thompson.

Germaine Creek

NTS 116 B 2

#5

A.R. Lindsay and J. Werbiski (64°03'N, 138°55'W)

References: Green and Roddick (1962); Green and Godwin (1963, p. 56; 1964, pp. 67-68).

1964

Partners Lindsay and Werbiski have a 1-mile placer prospecting lease on Germaine Creek. The property is readily accessible from about mile 95 on the Stewart Crossing-Dawson road. Since 1962, the partners have operated a bulldozer-sluicing plant on the left limit of Germaine Creek at the point where the latter enters the Klondike River valley. Production for 1962 and 1963 totalled 281 fine ounces of gold. During the first part of the 1964 season, they mined one cut with an area of about 10,000 bedrock square feet and recovered about 61 ounces of crude gold. The operation was subsequently abandoned owing to increasing depth and a drop in values back from the rim of the bench. The bench, about 50 feet in elevation above Germaine Creek and 90 above the present Klondike River, is covered by 8 to 10 feet of frozen boulder gravel. Boulders are up to 3 feet in diameter, but generally 1 foot or less; most are well rounded. Rock types included are quartz-pebble conglomerate (grit), blue-grey quartzite, diorite, syenite and "bull" quartz, all of which are prominent northeast of Tintina Trench (Green and Roddick, 1962), and were probably derived from that area. The matrix of the gravel is sandy and contains little clay. The gravels show some horizontal layering produced by sand lenses. The gravel is overlain by silt and black muck that is 4 feet thick near the rim, but rises rapidly to 15 feet behind. Bedrock includes dark brown shale and white quartz porphyry, both of probable Tertiary age. Much of the bedrock has undergone a clay alteration and considerable difficulty was encountered in sluicing because of its tendency to ball up and carry considerable gold with it. Typical gold is worn, flat, and flaky. Cassiterite of the wood-tin variety is abundant, generally in pebbles 1/4 inch or less in diameter. It is not highly worn and is probably derived from nearby quartz porphyry bedrock.

Germaine Creek

NTS 116 B 2

#5

A.R. Lindsay and J. Werbiski (64°03'N, 138°55'W)

Reference: Green and Godwin (1963, p. 56)

1963

Partners Lindsay and Werbiski have a 1-mile placer prospecting lease on Germaine Creek. The property is readily accessible from about mile 95 on the Stewart Crossing - Dawson Road.

In the first year of mining, 1962, 233 ounces of crude gold were produced. In 1963, approximately 9,000 bedrock square feet were mined over the period from the beginning of June to the end of September. Production figures are not available. Typical gold is worn, flat, and flaky, and cassiterite of the wood-tin variety is abundant. The mining was done on the left limit bench about 50 feet above Germaine Creek both parallel to the creek and away from it (behind the 1962 cuts). Difficulty with frozen ground was encountered.

Equipment includes a TD-18 bulldozer, a T-6 gas bulldozer, a 4-inch Fairbanks Morse pump, and a 54-foot long by 2-foot wide sluice-box with pole riffles and a 12-foot long overhead dump-box and grizzly.

The muck rapidly increases in thickness from 4 feet at the rim of the bench to 15 feet in from the rim. It overlies about 10 feet of boulder gravel, which locally has a stratified appearance, as emphasized by silt lenses and cobbles with a common horizontal orientation. The matrix of the gravel is sandy and contains little clay.

Boulders in the gravel include: quartz pebble conglomerate (grit) blue-grey quartzite, diorite, syenite, and bull quartz. Rock types represented in the boulders are prominent northeast of Tintina Trench (Green and Roddick, 1962) and were probably derived from that area. The bedrock includes dark brown shale, and Tertiary(?) white quartz porphyry that is locally decomposed to clay.

Germaine Creek

#5

J. Werbiski (64°03'N, 138°55'W) NTS 115 B 2

1962

J. Werbiski has a 1-mile prospecting lease on a bench on the right limit of Germaine Creek. The property is readily accessible from the Stewart Crossing-Dawson City highway..

During 1962 approximately 7,000 bedrock square feet were mined from June to November. Difficulty with frozen ground was encountered. Production was 233 ounces of crude gold. Typical gold is worn, flat, and flaky. Cassiterite of the wood-tin variety is abundant.

Equipment includes a T-6 gas bulldozer and a sluice-box with pole riffles.

The muck varies in thickness, to a maximum of 15 feet. Gravels are 8 to 10 feet thick. Boulders in the gravel are well rounded and are generally about 1 foot maximum diameter. Boulders in the gravels include: quartz-pebble conglomerate (grit), blue-grey quartzite, diorite, syenite, and 'bull' quartz. Rock types represented in the boulders are prominent northeast of Tintina Trench (Green and Roddick, 1962) and were probably derived from that area. The bedrock is deeply weathered quartz-feldspar porphyry or rhyolite of probable Tertiary age.

#1 References: McConnell (1905, pp. 33A-37A; in Bostock, 1957, pp. 37-48); Cockfield (1921); Bostock (1936b, p. 1; 1939, pp. 3-4; 1941, pp. 3-4); Skinner (1961, p. 13); Green and Godwin (1964, pp. 69-71); Green (1965, pp. 66-67; 1966, pp. 105-107).

1962

The Sixtymile goldfield lies near the Alaska border about 40 miles west of Dawson. Access to the area is by a rough 10-mile road that leaves the Sixtymile-Boundary road near mile 49. The area includes several formerly important placer creeks, principal of which are Miller, Glacier and part of Big Gold. Part of the valley of the Sixtymile River was also mined.

Following discovery of placer gold in 1892, the area became an important producer, with a total recorded recovery of 213,600 ounces of fine gold, up to 1962, the last year of extensive operations. Various mining methods have been utilized, including hand mining, bulldozer sluicing plants and two dredge operations. Since 1962 activity in the area has been restricted to a few small individual operations and total production has been less than 500 ounces. For a complete historical description of the goldfield, the reader is referred to Green (1966, pp. 105-107).

SIXTYMILE GOLDFIELD

NTS 116 C 2

#1 References: McConnell (1905, pp. 33A-37A)*; Cockfield (1921); Bostock (1936, p. 1; 1937, p. 1; 1939, pp. 3-4; 1941, pp. 3-4); Skinner (1961, p. 13); Dep't of Mines and Technical Surveys (1964); Green and Godwin (1964, pp. 69-71); Green (1965, pp. 66-67).

1965

The Sixtymile goldfield is located near the Alaska boundary, about 40 miles west of Dawson, and is reached by a rough road, 10 miles in length, that leaves the main Sixtymile road near Mile 49. Miller and Glacier Creeks, the most important creeks of the goldfield, head near the International Boundary and flow SE to join Sixtymile River about 3 miles apart. Main placer areas include the two creeks, the portion of Big Gold Creek between the mouth of Glacier Creek and Sixtymile River and the valley of Sixtymile River between the two creeks. In addition, there has been minor production from other creeks in the area. The goldfield was discovered in 1892 by miners crossing the divide from the Fortymile goldfields in Alaska. Descriptions of work in the area in 1901 are given by McConnell (1905, pp. 33A-37A) and in 1917 by Cockfield (1921, pp. 37-51) and the area is mentioned briefly in later reports by Bostock (1936, p. 1; 1937, p. 1; 1939, pp. 3-4; 1941, pp. 3-4). In addition to hand mining, two dredges have operated in the area; the first built by North American Trading and Transportation Company worked on Miller Creek in 1915

and 1916 (Cockfield, 1921, p. 37) and was later refitted by Holbrook Dredging Company and operated in the valley of Sixtymile River between 1929 and 1941; the second built by Yukon Explorations Limited worked Big Gold Creek, downstream from the mouth of Glacier Creek, and the valley of Sixtymile River between 1947 and 1959. Since the late 1940's a number of companies and individuals have operated bulldozer-sluicing plants. The goldfield is still producing although on a much reduced scale since 1961.

Bedrock in much of the goldfield is quartzite, schist, and minor gneiss of unknown age. Volcanic rocks of Tertiary age are present on the lower portions of Miller and Glacier Creek and presumably in the covered areas of the Sixtymile River valley. The gravels are reported (Cockfield, 1921, p. 38) to be of local origin and include flattened disks of phyllitic material and boulders of quartzite and the younger volcanic rocks The ground is frozen and black muck is generally present.

Recorded production for the goldfield since discovery is about 213,600 ounces of fine gold including 123,000 ounces up to 1917 (Cockfield, 1921, p. 37), about 12,700 for the Holbrook Dredging Company for 1934, 1935, 1939, and 1940 (Bostock, 1936, p. 1; 1940, p. 3), 72,984 ounces for Yukon Explorations Limited, 1948 to 1961 inclusive (Dep't of Mines and Technical Surveys, 1964) 4,630 ounces for other operators between 1948 and 1962 (op cit), and about 290 ounces for later operations (Green and Godwin, 1964, pp. 69-71; Green, 1965, pp. 66-67). Total production for the goldfield is probably only slightly larger than recorded production.

Miller Creek is about 5 miles in length with Discovery Claim about 3 miles from the mouth on a small right limit tributary, Discovery Pup. The bottom of the main creek is narrow and when visited in 1917 by Cockfield (1921, p. 42) it had already been worked twice in some cases and the lower 3 miles had been dredged by the North American Trading and Transportation Company. Important bench deposits occur along the left rim of the creek and these have been worked or prospected for about 3 miles along the creek. Water for these operations was brought by ditch from upper Miller Creek, and from as far as Pat Murphy Creek, a tributary of Sixtymile River about 5½ miles to the SW. On the lower part of the creek, about 29 to 30 Below, the old channel was deeply buried and was mined through shafts up to 110 feet in depth (Bostock, 1939, 1941).

Glacier Creek is about 7 miles in length with Discovery Claim located near the end of the old wagon road, about 3 miles from the mouth. When visited by McConnell (1905, p. 34) in 1901, the creek bottom had been worked from about 28 Above down almost to the mouth, a distance of about 5 miles. Later, considerable work was done along the benches of the creek, mainly on the left limit, (Cockfield, 1921, pp. 43-44). Yukon Placer Mining Company, operated a bulldozer-sluicing plant on the creek from 1950 to 1961 and mined the ground between 30 Below Discovery to 40 Above.

Big Gold Creek meanders in a wide valley from the mouth of Little Gold Creek to the Sixtymile River, a distance of about 2 miles and the Sixtymile River itself is located in a similar, though wider valley between Miller Creek and the Big Gold Creek. Much of this ground has been worked by the two dredges operated in the area. The dredge operated by Holbrook Dredging Company worked the ground in the valley of Sixtymile River from near the mouth of Miller Creek to about 1½ miles downstream and the dredge operated by Yukon Explorations Limited much of the remaining ground in Sixtymile Valley and the valley of Big Gold Creek to near the mouth of Glacier Creek.

Little Gold Creek flows roughly parallel to Glacier Creek and at the closest point is about one-half mile north of it. Values on the creek were low and it was generally considered too poor to work in the early days (Cockfield, 1921, p. 45). However, in more recent years, bulldozer mining was done on about 1½ miles of the creek commencing about 1½ miles upstream from the mouth.

Bedrock Creek rises in Alaska and flows SE parallel to Miller Creek to join Sixtymile River about 2½ miles upstream from the latter. Cockfield (1921, pp. 45-46) reported that some prospecting but very little mining had been done on the creek in 1917. Since then some bulldozer mining has been done on the creek, ending in 1960 (Skinner, 1961, p. 13).

## SIXTYMILE RIVER AREA

### 1964

The Sixtymile Goldfield (Miller, Glacier, Big Gold, Little Gold, Bedrock Creeks, and Sixtymile River) is accessible via a rough road, 10 miles in length, that leaves the main Sixtymile Road near mile 49. The goldfield has been in production continuously since it was discovered in 1892, although on a much-reduced scale since 1961.

Sixtymile River NTS 116 C 2

#1 O. and D. Medby (64°00'N, 140°47'W)

References: Green and Godwin (1964, pp. 69-71); Green (1965, pp. 66-67; 1966, p. 108).

1966

O. Medby holds Discovery claim and 14 placer claims on a right limit bench of Sixtymile River, beginning about 1/4 mile upstream from Miller Creek. In 1965 production from a bulldozer-sluicing operation was about 149 ounces of crude gold. In 1966, low water conditions prevented mining, and, no production was recorded. New ground was prepared for mining next year. The property was not visited.

Sixtymile River

#1 O. and D. Medby (64°00'N, 140°47'W) NTS 116 C 2

References: Green and Godwin (1964, pp. 69-71); Green (1965, pp. 66-67).

1965

O. Medby holds Discovery claim and 14 placer claims on a right limit bench of Sixtymile River, commencing about 1/4 mile upstream from Miller Creek. Total production from the bulldozer-sluicing operation was about 149 ounces of crude gold.

Sixtymile River

#1 O. and D. Medby (64°00'N, 140°47'W) NTS 116 C 2

Reference: Green and Godwin (1964, pp. 69-71).

1964

O. Medby holds Discovery claim and 4 placer claims on a right limit bench of Sixtymile River, immediately upstream from Miller Creek. During the 1964 season, Mr. and Mrs. Medby, and E. Ballendine, operated a hydraulic plant on bench claims 1 and 2. Total production from this operation was about 100 crude ounces of gold.

SIXTYMILE RIVER AREA

Sixtymile River and Miller Creek

#1 O. and D. Medby (64°00'N, 140°48'W) NTS 116 C 2

References: Skinner (1961, p. 13; 1962, p. 15); Green and Godwin (1963, pp. 56-57).

1963

O. Medby holds a 1-mile placer prospecting lease on the Sixtymile River, the lower part of which is at the Miller Creek - Sixtymile River fork. His wife, D. Medby, holds a 3-mile placer prospecting lease on Miller Creek, the lower part of which is 1,000 feet from the baseline of the Sixtymile River. The properties may be reached by a 16-mile road that leaves the southern side of the Sixtymile Road at mile 49.

O. Medby and a helper sluiced on the right limit of the upper end of the 1-mile lease on the Sixtymile River. During 1963 they recovered 117 ounces of crude gold. Equipment used in this operation included a monitor, a sluice-box 40 feet long by 24 inches wide with a 16-foot dump-box, and a D-6 bulldozer. The following section was exposed:

| | Thickness in feet | |
|---|---|---|
| | Unit | Total from base |
| Black, organic soil and vegetation..... | 2 | 73 |
| Brown cobble gravel. This unit is marked by a common horizontal orientation of the abundant schist pebbles and cobbles. Matrix is sand, which contains more silt at the top of this unit than at the bottom. Near the top of this unit occur several blue silt and black organic layers up to 3 feet thick. The lower 10 feet of this unit are rust stained | 67 | 71 |
| Grey, clayey cobble gravel. Cobbles are composed of altered volcanic bedrock, rotten granitic rock, well rounded plates of schist, and minor, well rounded, equidimensional, rusty quartzite. The matrix is mainly micaceous clay and silt | 1 | 4 |
| Altered volcanic bedrock. Blocky fracture results in some silt along fractures. Bedrock is generally excavated to a depth of 3 feet | 3 | 3 |

From September 1962 to September 1963, J. Holstrom sublet the 3-mile lease on Miller Creek and drift mined on the left limit near the middle of the lease. Wood-fired steam equipment, including a steam hoist and steam points, was used to sink a shaft 40 feet deep and drift about 40 feet in the permafrost. In 1963, 25 ounces of crude gold were recovered by Holstrom. When visited by Godwin at the beginning of August the following section was exposed by the workings:

| | Thickness in feet | |
|---|---|---|
| | Unit | Total from base |
| Black, organic muck..... | 20 | 40 |
| Brown cobble gravel. Locally, the gravel has rusty bands. Matrix is sandy and contains little silt. The roof of the drift is in this unit and about 7 feet above bedrock..... | 15 | 20 |
| Brownish, grey silty cobble gravel. This unit is distinct from the overlying unit because it contains abundant silt in the matrix. Cobbles are commonly horizontally lain plates of schist, and locally some are white quartz. The gold is throughout this unit, but is concentrated on the bedrock | 5 | 5 |
| Bedrock ..... | 0 | 0 |

In general, the gold is found in a narrow width of gravel that is immediately above bedrock and marked by a silty and clayey matrix. The gold is coarse, deep yellow, and roughly flattened. Up to 30 per cent of the recovered gold is nuggets; the largest nugget found by O. Medby weighed 7 ounces. Heavy minerals include: galena, scheelite, magnetite, and cinnabar.

## SIXTYMILE RIVER AREA

### Miller Creek

#1 O. Medby (approx. 64°00'N, 140°51'W) NTS 116 C 2

References: Skinner (1961, p. 13; 1962, p. 15)

1962

O. Medby operated a bulldozer-sluicing operation on Miller Creek, a tributary of Sixtymile River. During 1962 he worked alone and recovered approximately 150 ounces of crude gold.

### Miller Creek

#1 O. Medby NTS 116 C 2

Reference: Skinner (1961, p. 13).

1961

O. Medby and one hired man, using a D-6 bulldozer and sluice-box, mined on Miller Creek, a tributary of Sixtymile River, from June 25 until September 15, 1961. Production was 108 crude ounces of gold. Medby has worked on Miller Creek since 1951. From 1951 until 1958 he was in partnership with J. Lamontagne who worked mainly on Bedrock Creek.

#1 Miller Creek 1960 NTS 116 C 2

Ole Medby, using a D-6 bulldozer-sluicing plant, mined from July 7 to September 29, 1960 on Miller Creek, a tributary of Sixtymile River, 3 miles above Glacier Creek. Production was about 150 ounces of gold.

#2 Miller Creek

D. Murphy and J. Simcox (64°00'N, 140°49'W) NTS 116 C 2

Reference: Green and Godwin (1964, p. 71).

1964

During the winter of 1963-64, Murphy and Simcox drift mined on the left limit of Miller Creek, about 1 1/2 miles from the mouth, and recovered about 100 ounces of crude gold. This is the same area as worked by J. Holstrom in 1962-63 (Green and Godwin, 1964, p. 71).

#3. W. Kaufman (64°00'N, 140°47'W)

Reference: Green (1966, p. 108).

1966

Under agreement, Kaufman worked parts O. Medby's claims 5 to 14 on the right limit bench of Sixtymile River during 1965. No further work was done in 1966.

#3 W. Kaufman (64°00'N, 140°47'W)

1965

W. Kaufman worked portions of claims 5 to 14 on the right limit bench of Sixtymile River, under an agreement with O. Medby. Considerable stripping was done preparatory to mining but only a small area was actually mined with a production of about 11 ounces of crude gold.

Glacier Creek

NTD 116 C 2

#4 J. Lynch (64°02'N, 140°53'W)

Reference: Skinner (1962, p. 15).

1964

During the 1964 season, J. Lynch recovered about 20 ounces of crude gold while testing the benches on Glacier Creek. The creek bottom has been mined previously (Skinner, 1962, p. 15).

#5 SIXTYMILE RIVER AREA NTS 116 C 2

References: Oliver (1909, pp. 56-57); Cockfield (1921a; 1930*, p. 2A; 1931*, p. 1A); Bostock (1933*, p. 4AII; 1934*, pp. 3A-4A; 1935, p. 3; 1936b, p. 1; 1937, p. 1; 1938, pp. 2-3; 1939, pp. 3-4; 1941, pp. 3-4); Gibson (1950, pp. 38-39).

Glacier Creek

Yukon Placer Mining Company

References: Gibson (1950, p. 38); Skinner (1961, p. 13).

1961

Yukon Placer Mining Company, managed by G.D. Franklin, has operated Yukon Exploration Company's property on Sixtymile River at the mouth of Glacier Creek since 1949. From 1949 to 1959 a 3 1/2-cubic-foot bucket-line diesel-electric dredge and an open-cut bulldozer-sluicing plant was added. In 1960 and 1961, only the sluicing plant was used. Yukon Exploration's production during 1947 and 1948 totalled about $66,000 gold and silver. Yukon Placer Mining Company's production from 1949 to 1961 inclusive totalled $2,536,430 gold and silver. In 1961 a crew of four men using three D-8 bulldozers, pumps, and sluice-boxes, mined from May 4 until August 5 and produced 1,521 fine ounces of gold and 261 ounces of silver. The 1961 operation brings to a close the Yukon Placer Mining Company's activity in the Sixtymile River area.

Sixtymile Ri

#5

Sixtymile River

1960

Yukon Placer Mining Company, managed by Glen D. Franklin, operates Yukon Exploration Company's property on Sixtymile River near the mouth of Glacier Creek, about 45 miles west of Dawson. From 1949 to 1959 two methods of mining were used: dredging with a 3 1/2-cubic-foot bucket-line diesel electric dredge with two D-7 bulldozers stripping in front of it; and open-cut sluicing with three or four D-9 bulldozers, a pump, and a sluice-box. In 1959, the dredge operating for 44 days, and the open-cut for the whole season, together produced $78,713 gold and silver. In 1960 the sluicing plant operated from May 4 to September 6 and produced $32,690 gold and silver.

#6 Placer cinnabar has been noted on Glacier Creek and Miller Creek.