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82KSW030 (3E) (Homestake)
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Geological Report on Leo #1 -
Application for Limited Production Lease
March 1975 E. W. Grove
PROPERTY FILE

Application For Limited Production Permit

Leo #1, M 17375

Kaslo, NTS 82K/3E

82KSW138 Homestake

March 1975

E. W. Grove

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Recommendation

1. A Limited Production Permit be granted on the Leo #1 Fraction. If mineralization is to be removed from the Kaslo claim this should be confirmed and dealt with as required.

2. The Resident Geologist at Nelson should visit the property in order to evaluate the potential of the mineralized zones, and to upgrade the geology of the area where possible.



E. W. Grove,
Senior Geologist

Geological Report on Leo #1 - Application for Limited
Production Lease

PROPERTY FILE

Location

The claim, Leo #1, M 17375 (NTS 82K/3E) formerly known as H S Fractional lease No. 5717 M and originally known as the Homestake Fraction, is located at Retallack, B. C. about 1500 feet north of highway 31A and 1000 feet east of Murray Creek.

History

The Leo #1, or Homestake Fraction was part of a claim group comprising the Wellington mine. Exploration and development on the property dates from 1892 and has been intermittent since then. The workings on the Homestake and surrounding claims are shown in Figure 1, (pocket) which was compiled in 1944. Most of the development which involved long cross-cuts was apparently intended to intersect the western extension of the Whitewater vein system and entailed driving across the Homestake Fraction at several levels.

Production from the Wellington mine from 1892 to 1934 was 1,961 tons yielding 4 oz gold, 123,240 oz silver, 510,324 # lead, and 192,434 # zinc. No individual production record for the Homestake Fraction has been noted and it is assumed production from this claim was insignificant.

Geology

The geology of the Retallack area was studied by M. S. Hedley (BCDM Bull. 22, 1945) who studied the mineral deposits in terms of structure and ore control. More recent geological work by J. Wheeler (GSC) has not yet been published. Hedley's geological map of the Retallack area is included as figure 2.

Hedley has indicated that the rocks in the Retallack map area form part of the Triassic Slocan series, a unit consisting mainly of argillaceous material. Limestone occurs as bands of varying thickness within this sequence. At Retallack, Hedley mapped 13 limestone bands as well as two quartzite members which he used as an aid in tracing rock structure. As far as known all the lead-zinc mineralization in this area is confined to the limestone members.

The relationship between lithology, rock structure and mineralization has been detailed in Hedley's bulletin (1945) and revised in a report in the Annual Report Minister of Mines 1946 (Appendix 1).

Permit Application

The information supplied with the application for a Limited Production Permit indicates that about 15 tons of broken Pb, Zn, Ag ore has been stockpiled at three locations and that the operation is still in a prospect state. As a result the potential of the mineralization zones is still unknown.

Two of the stockpiles are located on the Leo #1 Fraction and the third on the Kaslo mineral claim.

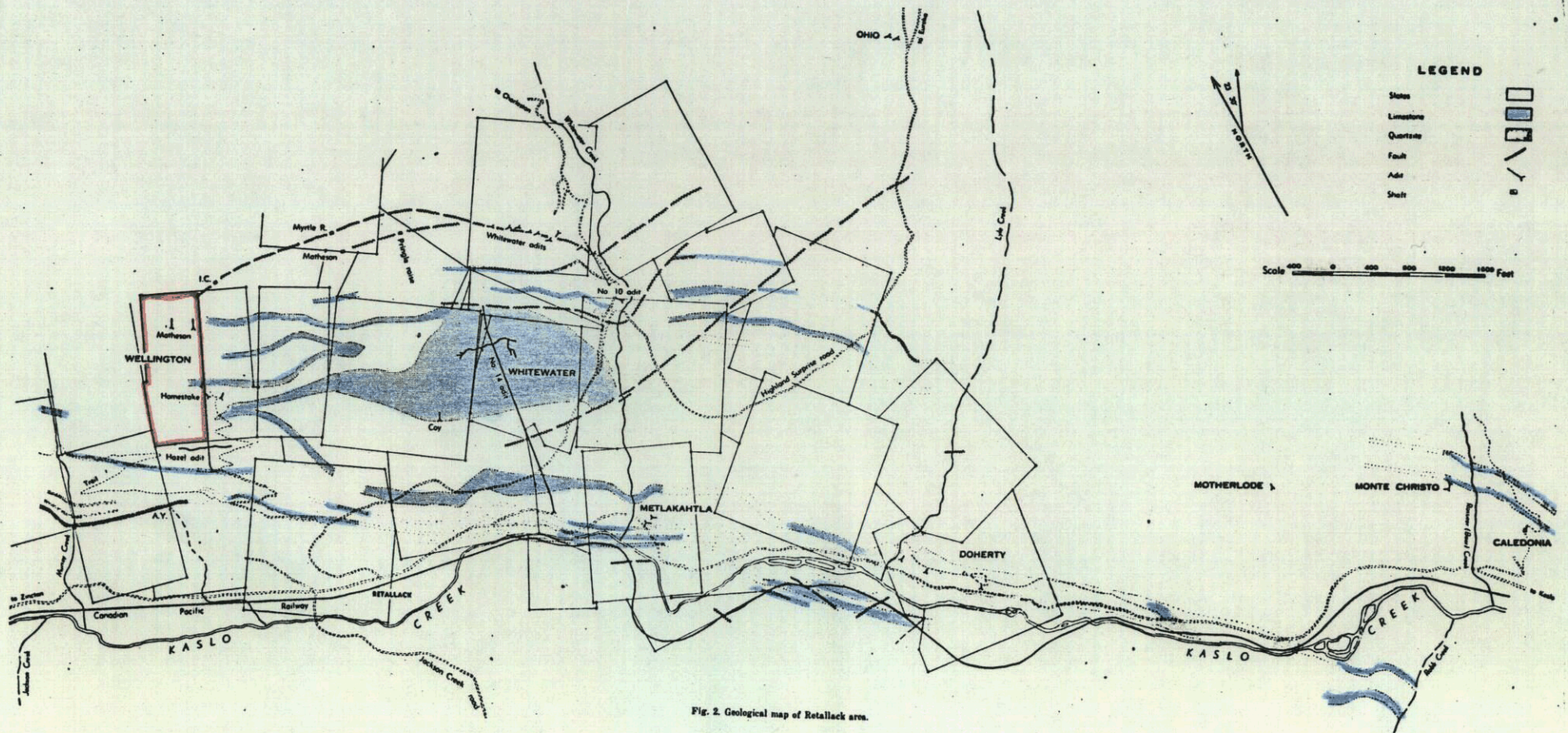


Fig. 2. Geological map of Retallack area.

APPENDIX I

The drawing of any but the most general section is only possible where there are mine-workings or, rarely, where there are bluff exposures across the strike.

THE TOTAL EFFECTS OF DEFORMATION.

Although no obvious major folding into anticlines and synclines exists, a careful search was made for evidence of isoclinal folding in the two sections studied, namely on the road and railway and on the Jackson Road, but none was found. Isoclinal folding is difficult to detect in beds with such little diversity in character as the Slocan slates, and the limestone-bands are not sufficiently uniform along their strike to permit of positive correlation across the limbs of a postulated fold. Isoclinal folding would of course produce a great thickening of the section through repetition of strata.

It might be argued, for instance, that the Whitewater and Lucky Jim limestone-belts are one and the same, and that obvious differences in thickness of limestone could be accounted for by regional variations in sedimentation, but the geological sections of the two belts are stratigraphically so different that they can not be the same. Some rock units which contain a higher than average proportion of harder beds are recognized on Bear and Fish Lakes and also on the Jackson Road. If there had been a major doubling of the section brought about by isoclinal folding, it would be detected by a repetition of these units and of some limestone-bands, but none was seen.

It is concluded that no major isoclinal folding and no thickening of the section by wholesale duplication have taken place, but there is abundant evidence that the geological section has been greatly thickened by minor structures. The amount of thickening can not be measured.

RETALLACK AREA.

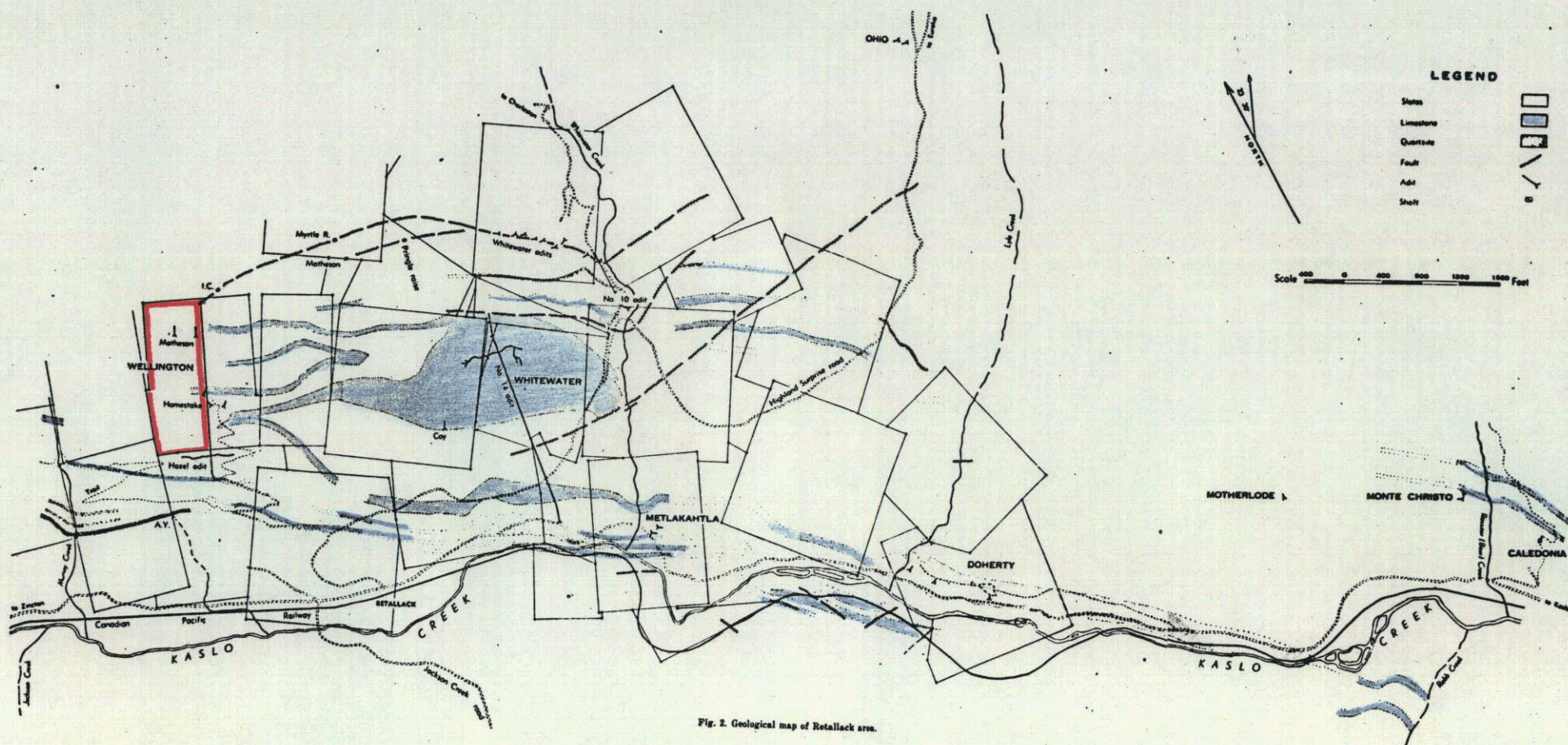
GEOLOGY.

This area, Fig. 2, and outlined in Fig. 1, includes the Whitewater limestone-belt between Murray and Rossiter (Bear) Creeks. Farther to the north-west outcrops are rare, much of the ground is covered by dense forest-growth, and extensive masses of glacial drift derived from the higher greenstone range cover the hillsides. The rocks north of the Whitewater lode are very poorly exposed and detailed mapping of them has not been attempted. Within the area itself exposures are not abundant, and it is only by virtue of the stream canyons and the cuts along road and railway that more than a cursory study is made possible. Many conclusions regarding the structure could not have been reached without the presence of mine-workings.

The slates are distinctly fissile rocks for the most part. There is a wide variation from argillaceous and graphitic types to calcareous and quartzitic beds, but on the whole the general similarity, the complexities of structure, and the poorness of exposure make detailed subdivision of them impossible. There is a tendency for the rocks to be more quartzitic to the west and for limestone to increase to the east. The softer slates are phyllitic and glistening and the cleavage surfaces are finely rumpled or plicated in many places. (Plate III., B.)

The distinctive horizon-markers are bands of limestone, some of the smaller of which contain an admixture of slate, and rare beds of quartzite. Only two bands of quartzite, more or less readily traceable and consequently useful as horizon-markers, were recognized; both are 15 to 30 feet thick. One is near the southern margin of the area and the other lies beneath the limestone members to the north.

There are five principal bands of limestone. The central one, about 50 feet thick, is referred to as the Whitewater band. It contains the replacement deposits of the Whitewater mine. Two upper bands, from 10 to 30 feet thick for the most part, are parts of a calcareous zone which appears to contain a variable amount of limy slate in



different sections. Changes in sedimentation along the strike appear to account for the fact that on Robb Creek there is one band equal in width to the Whitewater band, with intervening slates and limy strata; the whole assemblage at Robb Creek, including the Whitewater band, is about 300 feet thick. Two other limestone-bands, 30 to locally 100 feet thick, occur beneath or north of the Whitewater band; they have not been traced positively from Whitewater to Rossiter Creek and on the east they are much farther separated from the Whitewater band than on the west.

No granitic dykes have been mapped, although some are associated with a small stock east of Jackson Creek, and some are reported to occur near the east end of the area. A lamprophyre dyke occurs in Whitewater canyon and extends south on the Metlakahtla claim. Another dyke of the same composition closely follows the Whitewater lode, and others occur west of the mouth of Murray Creek.

Apart from the large Whitewater drag-fold the structure is not well understood. The prevailing dip is south-westward with many complications in detail. A synclinal structure of relatively small amplitude passes through lower Murray Creek, but it is poorly exposed and could not be traced along the strike; on upper Murray Creek the dips are steep to the south-west.

Whitewater Creek canyon provides a good cross-section. In the upper part the rocks are nearly vertical, in the central part they are involved in drag-folding, and in the lower part they dip on the average between 50 and 60 degrees south-westward. At the mouth of the creek there is a local reversal in dip produced by underfolding of the strata.

On Lyle Creek the steeply dipping rocks at the mouth flatten to an average dip little more than the gradient of the stream. At the upper end of the canyon rocks of relatively low dip are faulted against vertical strata. On the railway opposite Lyle Creek there are some low dips, but the structure is complicated by faulting and by repeated deformation.

On Rossiter Creek the strata dip steeply for the most part, and on Robb Creek the dips average 60 degrees south-westward. Throughout the area there is local contortion and many anomalies, more frequently in dip than in strike.

The Whitewater fold is a warped, asymmetrical drag-fold which displays reversals of plunge. There has been much thickening of the principal band of limestone and, by inference, of the associated slaty sediments. The Whitewater limestone, as exposed from Retallack to Bear Creek, is about 50 feet thick, but on the Pauper's Dream and Hazel claims it is drag-folded in such a way as to produce an outcrop showing an apparent width of about 1,200 feet, being somewhat exaggerated by the slope of the hillside.

Fig. 3 shows this fold in diagrammatic cross-section. The surface outline and eight cross-sections illustrate its nature. No claim is made that the sections are strictly accurate.

The plan in Fig. 3 is drawn as the result of direct observation and some inference. Outcrops are not abundant on the thickly wooded hillside that locally is as steep as 40 degrees, and exact contacts can not be drawn with accuracy. On the western limbs of the drag-fold the position of limestone has been determined by zones of lime soil between actual outcrops of limestone, and in the major area mapped as limestone there may be narrow infolds of slate which were not seen on the ground. The general outline of the surface expression of the folding is nevertheless believed to be accurately represented.

The cross-sections A and G are the most certain. Section A could not be proved from underground study because the Hazel adit was inaccessible. Bad air was encountered in this adit 300 feet from the portal, and the full width of the outermost (south-western) limestone limb was not seen. Section A does show, however, the general outline of the folding, with only the depth of the synclines a matter of doubt. Section G shows the folding as known in the vicinity of Whitewater No. 14 adit, incomplete as to detail but certain as to general outline above the adit. The intervening sections are more hypothetical and are drawn to illustrate the changes in plunge and the rotation of

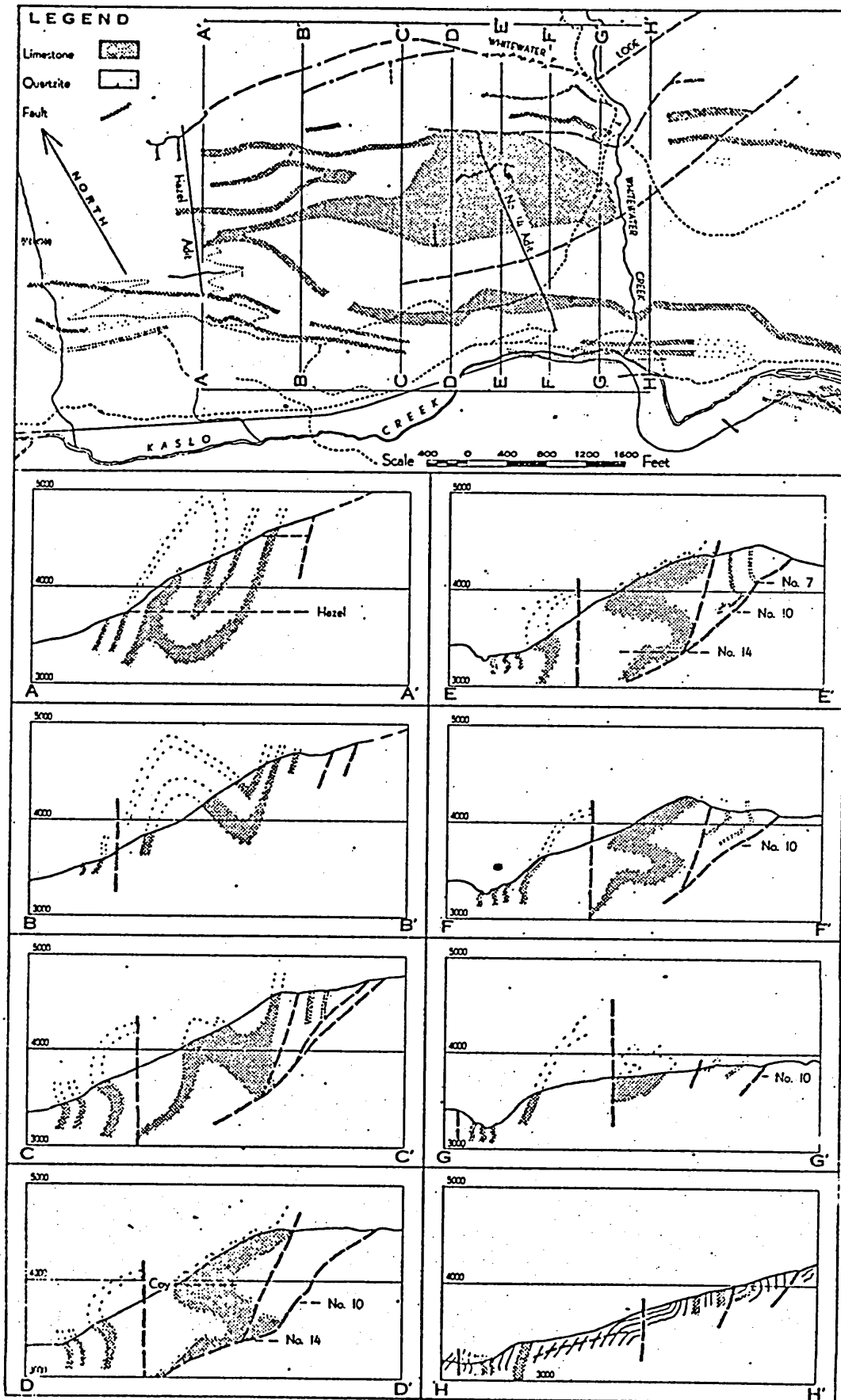


Fig. 3. Plan and diagrammatic cross-sections of the Whitewater drag-fold.

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the axial plane of the folding. It is not known how much the limestone may be thickened by flowage and how much by rumpling and close folding.

The western continuation of the fold is obscured by drift, as already stated, and in any event is uncertain in the vicinity of Murray Creek owing to the fact that it is sliced by the Whitewater lode fault system. The eastern continuation of the folding is not apparent, as the lower bands of limestone are not, as far as can be determined in a heavily drift-covered area, involved in a comparable structure. This latter discrepancy may be explained by the fact that faulting on Whitewater and Lyle Creeks has brought different parts of the general structure to the present erosion surface in such a manner that the drag-folding is either hidden or has been removed by erosion; on the other hand, the effect of the folding may die out to the east. The folding can not be traced without the presence of marker horizons, as the slaty rocks can undergo much distortion, thickening, and thinning without the nature of the deformation being apparent in scattered outcrops.

The drag-folded Whitewater limestone does not cross Whitewater Creek. The thickened and warped synclinal "keel" of the fold is exposed on the west side of the canyon, where it plunges 35 degrees westward, about 20 feet above the creek-bed. At this point it is cut by a nearly vertical fault with a vertical displacement estimated at 1,000 feet. This fault cuts the lower bands of limestone and may cross the Highland Surprise Road in a prominent dry gully farther to the north-east. This fault crosses the No. 14 level adit and, farther west, slices the structure at an acute angle without producing a marked off-set; the exact westward course of the fault is not known.

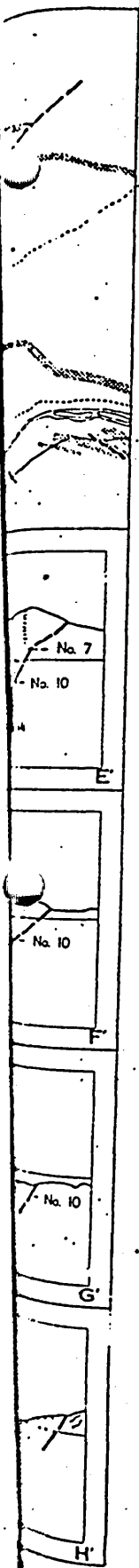
The thrust-fault which is occupied by the Whitewater lode has a displacement on the dip of possibly 400 feet. It is rudely parallel in strike to the general structure and dips at varying angles to the south-west. On the east the dip is about 45 degrees, flattening to about 20 degrees at lower elevations; on the west it apparently steepens to about 85 degrees. It is a complex zone of breaking and shearing, with one prominent hanging-wall branch which has not been explored. There is a marked tendency for the main plane of the fault to follow the bedded structure, as can be seen in the cross-sections of Fig. 5, and it is only in the upper, eastern part of the Whitewater mine that the average dip of the bedding is cut at a large angle.

A segment of folded rocks lies between the Whitewater lode and the steep hanging-wall branch. The folding in this segment is observable only on the western bank of Whitewater Creek and is shown in sections F and G. Rocks which at the surface are vertical are folded into an irregular structure the lower part of which is not seen, but which probably represents a subparallel continuation of the main drag-folding. This folding is intersected by the Whitewater lode below No. 7 level, at the approximate lower limit of the main ore-zone in the upper levels of the mine.

The relation between the thrust and the nearly vertical fault is not known, nor is the relation of either to the fault at the head of Lyle Creek canyon. Other faults seen along the railway-track apparently are of minor significance. The rocks within the bend of Kaslo Creek immediately below Whitewater Creek are much sliced by faulting and quartz has been introduced into them.

A curving flat fault-zone follows close to the bottom of the lower part of Whitewater Creek canyon (Fig. 3, section H). The displacement on it is not believed to be great but it is important in being mineralized locally with small amounts of siderite and sulphides.

The known faulting with which mineralization is related on Rossiter Creek is not intense. Exposures above the canyon are so poor that the possibility of strike-faults in that section could not be investigated.



in slates. The relation between the lode and the major steep fault that crosses No. 14 adit is not known; this relation would obviously be very important should exploration ever proceed to depth.

It may not be too much to point out again that the difference in mineralization between the upper and lower mine is primarily due to a change in geology and is not simply a function of depth.

By no means all of the limestone body has been explored for the existence of spathic ore, and actually only a very small zone contiguous to the lode has been investigated. It is known definitely that near the lode the presence of limestone-beds dipping towards the lode and of minor folds which have provided localization for ore-bodies are both favourable. Study of the generalized sections in Fig. 3 shows that similar conditions may exist at greater distances from the lode. Nothing that could be termed feeder zones to higher horizons in the limestones were recognized in the mine, but the presence of sulphides in surface working near the old Coy adit may be considered as proof that some such feeders to higher levels do exist. The fracture-zone which dips flatly southward in the bottom of Whitewater Creek canyon could undoubtedly act as a feeder, as it is mineralized locally and does not contain much gouge. Although this particular fracture possibly does not intersect the folded limestone, there is evidence of the existence of other similar fractures in the vicinity of the mine.

The south-eastern or "gutter" ore-body has been proved to extend below No. 14 level for a short distance. The present plunge of the structure would carry this ore-body southward, but a change in both strike and plunge is to be expected within a comparatively short distance.

Considerations regarding more extended exploration are more difficult. Ore may occur locally in any limestone-band in the general area, it must be agreed, but if it is of the same type and grade as the Whitewater spathic ore it must exist in quantity to be economic. Repetition of folding of Whitewater type, which involves a major band of limestone and has produced a great thickening of it, is hardly to be expected close to the present fold, but rolls in the dip of the limestone probably do occur beneath the general level of Kaslo Creek.

WELLINGTON MINE.

HISTORY.

The Wellington claim was located in 1892, and the early reports state that in 1894 350 feet of sinking and tunnelling was done on it. A "two and a half foot body of ore" was disclosed and 50 tons of silver-lead ore was shipped in the same year. In 1896, 400 tons averaging 173 oz. of silver and 30 per cent. lead was shipped and two adit-crosscuts were driven.

Little mention is made of the Wellington in succeeding years except that the A.Y. adit was driven 260 feet with the purpose of reaching the Hazel vein.

Wellington Mines, Limited, was formed in 1927 and additional claims were acquired, bringing the holdings up to ten Crown-granted and three located claims. In 1928 work was apparently done on the eastern Matheson adit on what was considered to be the continuation of the Whitewater vein, and work was started to advance the Hazel adit, then 250 feet long as the result of former work. The Hazel adit was stopped in 1929, and work on the Ivanhoe adit at a higher elevation in search of a continuation of the Wellington vein was stopped in 1930.

Exploration under a leasing agreement by S. N. Ross was carried out in the Hazel and Matheson adits between 1932 and 1935 and the company did a little additional work in 1937.

Production from the old workings, between 1892 and 1915, amounted to 787 tons containing 117,452 oz. of silver, 475,622 lb. of lead, and 100,402 lb. of zinc.

WORKINGS.

The Wellington property adjoins that of the Whitewater on the west. The following description refers only to the southern part of the property and to workings which investigated continuations of Whitewater structures. The older workings on the Wellington lode, which lies more than 1,000 feet in the foot-wall of the Whitewater lode, were not accessible.

Workings include the A.Y. adit, completely caved; the Hazel adit, largely inaccessible owing to bad air; three Homestake adits, of which two are caved; two Matheson adits, of which only part of one is accessible; and two I.C. shafts which are caved. There are a few open-cuts and shallow workings at scattered points, most of which are caved.

The Hazel adit, elevation 3,746 feet, was originally driven to intersect the Hazel lode, a line of quartz float and caved open-cuts along the hillside. For 170 feet from the portal the adit crosses fine-bedded, steeply dipping slate, of which much is quartzitic, and then crosses limestone for at least 120 feet, at which point bad air was encountered in 1944. The limestone strikes north 65 degrees west and dips at 50 to 75 degrees southward.

A drift on the hanging-wall of the limestone extends for 110 feet to the west, following a narrow quartzose zone on the contact. A second drift within the limestone, 250 feet from the portal, extends for 230 feet to the east and 485 feet to the west; one crosscut from the east drift and two from the west drift extend southward to the contact of the limestone. The drift follows a bedded fissure-zone along which there has been some but probably no major movement. The zone is locally mineralized with siderite, sphalerite, and galena, the best section being 20 to 90 feet east of the crosscut and as much as 18 inches wide. This is probably the Hazel lode, although at the surface the lode is not in limestone.

It has been reported that the Hazel adit is 2,350 feet long and that diamond-drilling extended for 240 feet ahead of the face, but the only map of the workings available shows a length of 1,775 feet in August, 1929. A drift 1,625 feet from the portal extends westward, and there is reported to be a raise driven from this drift on a "break."

Three old adits on the Homestake claim, at elevations from 4,180 to 4,265 feet, are reached by trail from the Hazel adit. The two lower adits are completely caved. The uppermost one is collared in and roughly follows a 30-foot limestone-band for 145 feet along the course of a mud-filled fracture-zone which dips from 20 to 45 degrees southward. If this fracture-zone represents a large fault it could complicate correlation of the surface geology with that in the Hazel adit, and might partly invalidate section A in Fig. 3. Near the face of the adit a 30-foot crosscut to the north exposes gently dipping underlying slates, whereas the limestone for the most part dips southward at moderate to steep angles.

Two caved shafts on the I.C. claim are at an elevation of 4,745 feet and indicate by their dumps nothing more than crushed rock and some evidence of mineralization; the slates dip steeply and it is inferred that the lode is more or less bedded.

Two adit-crosscuts at an elevation of 4,540 feet, some 500 feet south-west of the shafts, are known as the Matheson tunnels. The eastern adit is caved, but plans show it to extend as a crosscut for 275 feet and to continue as a drift for 400 feet eastward below the I.C. shafts. The lode is indicated by this relationship to dip very steeply to the south. The western adit is apparently collared just north of the projected lode. It extends as a crosscut for 120 feet to intersect a prominent shear-zone which has a steep northerly dip and strikes north 60 degrees west at a large angle to the supposed Whitewater lode. The shear-zone is followed for 35 to 40 feet to a caved face in either direction. A prominent band of limestone between steeply dipping slates is crossed by the crosscut. Several very old surface workings 300 to 700 feet east of the eastern adit, in limestone, show evidence of mineralization of no obvious significance.

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Work for the year consisted in repairing the road, making the old bunk-house habitable, and improving facilities at the adit-portal, which was retimbered for the first 50 feet. On September 5th diamond-drill holes were being drilled from the west vein to test the east vein, but from the first drill set up at the crosscut, five holes were disappointing. Later in the year drilling was done to locate the veins in the region of the outer sections of the adit, with unknown results. The raise on the east vein was extended and had intersected galena ore but, at the end of 1946, had not yet reached No. 4 level. A sublevel was started at the point where ore was first encountered in the raise.

The power plant consists of a 450-cubic-foot Holman compressor driven by a Pelton wheel under a head of 250 feet. A wooden 10-inch pipe was installed, and repairs were made to the dam. A Petter blower and ventilation-pipe were installed.

About ten men were employed, in addition to the diamond-drill crew. Work during the winter was confined to raising, on contract by a reduced crew. No attempt was made to keep the road open, except for "go-devil" traffic.

Wellington
Mines, Ltd. Company office, Nelson. I. G. Nelson, President; A. W. Davis, Consulting Engineer; C. Lind, Foreman. Capital: 3,750,000 shares, 20 cents par value. The workings here described consist of the Hazel adit-crosscut on the Hazel claim at an elevation of 3,746 feet, two closely spaced Matheson adits 800 feet above on the Homestake Fraction, and two shafts on the I.C. claim.

The surface geology and some of the lower workings are described in Bulletin No. 22 of the British Columbia Department of Mines. At the time of examination (1944) the Hazel adit was not accessible beyond 300 feet from the portal, and the eastern Matheson adit was caved.

In 1946 the Hazel adit was ventilated to provide entry so that track from the inner parts and ventilation-pipe could be salvaged. The air in this adit is chronically bad owing to oxygen deficiency. The adit is 1,840 feet long, driven north 24 degrees east, except for a bend near the portal. At 150 feet from the face, drifts extend 180 feet eastward and 520 feet westward on an irregular curving fault-zone dipping 15 to 25 degrees southward. A caved crosscut is driven northward from the west drift. A raise on the fault-zone starting up at about 20 degrees above the main crosscut was inaccessible owing to bad air. There is a strong flow of water in the west drift. The zone apparently represents a strong fault, and is not mineralized where seen.

The strata crossed by the adit consist of slaty argillites and limestones. The dips are moderately steep to the south, with a reversal in dip in the innermost 60 feet of the crosscut. There may be repetition of beds by folding, but the structure could not be determined. In Bulletin No. 22, page 16, a hypothetical cross-section was drawn on the line of the Hazel adit, on the basis of the surface geology, showing the synclinal part of a drag-fold. Subsequent examination of the Hazel adit has shown that the amount of limestone in it is rather more than was expected, but the cross-section is not necessarily invalidated. The intense deformation and superposition of slaty cleavage in this region make it difficult to trace or even to recognize many of the folds, and in most instances it is necessary to have more than one line of section as supplied by a single crosscut before the structure can be worked out. Three closely spaced strike-faults near the central part of the crosscut do not appear to be large enough to have produced much duplication of strata.

The east Matheson adit, 800 feet higher than the face of the Hazel adit, is now accessible. It is driven as a crosscut, 470 feet at an average of about north 31 degrees east, then 570 feet at an average of about north 24 degrees east, then about 30 feet north, a total length of about 1,070 feet. At a point 260 feet from the portal there is a

drift westward on formation with crosscuts north and south from the drift, a total of 360 feet of accessible workings. At 220 feet from the portal a drift is run to the east on a large mineralized fault-zone. This drift is about 410 feet long, the face being 25 feet south of and about 200 feet below the collar of the I.C. shaft on the surface.

The rocks exposed dip steeply northward for the most part. They are dark-coloured slates, except for limestone at least 60 feet wide at the portal and a second limestone-band 30 feet wide against a steep fault in the hanging wall of the mineralized fault-zone. This fault-zone dips steeply to the south, is intersected by the western workings in a caved face, and apparently was not encountered in the western Matheson adit, which was collared north of it. There is little doubt that it is the western continuation of the Whitewater vein.

In the east drift the fault-zone or vein is irregular and has a tendency to branch. The zone contains up to 3 feet of sheared material and lenses, and small veins of galena and sphalerite. Locally there is some mineralization on both foot-wall and hanging-wall branches and some replacement in limestone which locally adjoins or is close to the lode. There is some extremely dense sphalerite, dark brown in colour, and of a stony or horn-like texture. This is essentially of the same character as some of the sphalerite found in the old upper workings of the Whitewater mine and in one or two other localities.

Starting in June, 1946, the road from Retallack to the Hazel adit was repaired, and a new road about a mile long was built up to the Matheson adit. The ventilation-pipe and the track from the inner section were removed from the Hazel adit for use above, and small buildings near the Hazel portal were dismantled and re-erected near the Matheson portal. A Diesel-driven compressor was installed.

The Matheson crosscut was reconditioned and was extended a few rounds northward from the face with a view to crosscutting to the Wellington vein. Galena was then found in an old pit 10 feet east of the eastern, or newest, I.C. shaft (caved), and it was decided to reopen the east drift. This surface showing consists of a lens of galena 8 inches wide in a mineralized zone about 18 inches wide and dipping steeply to the south. A sample of the galena assayed: Gold, trace; silver, 93.7 oz. per ton; lead, 82.9 per cent. The mineralized zone would, if continuous down the same dip as that observed at the surface, lie in the hanging wall of the vein followed in the east drift 175 feet below, so it was decided to explore a hanging-wall branch of the vein in that drift. Work had not progressed far when the operation was suspended for the winter. A crew of six men was employed.

[Reference: *Dept. of Mines, B.C., Bull. No. 22, 1946.*]

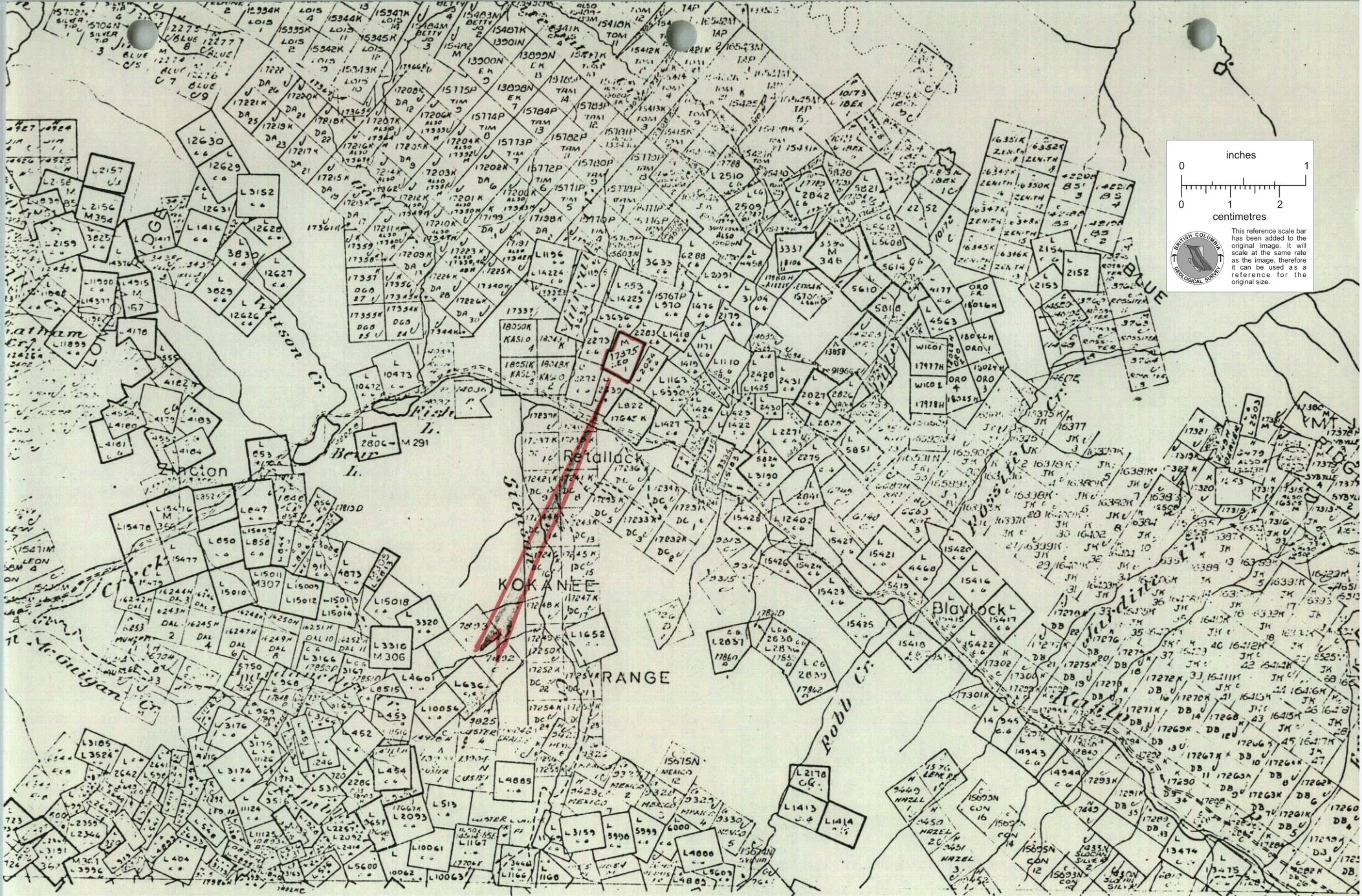
Company office, 609 Baker Street, Nelson. Ray MacDonald, President. Slocan Charleston Mining Co., Ltd.* Capital: 1,000,000 shares, \$1 par value. This company purchased the Keystone and Charleston groups of claims, adjoining the Whitewater mine at Retallack, from A. J. Harris. During 1946 the company repaired about 1 mile of road, which involved widening five switchbacks. In addition, about 3,000 feet of new road was built, making it possible to get a truck or car within 400 feet of the Charleston No. 5 adit-portal.

Underground work consisted of opening the Colorado No. 1 adit, Keystone No. 1 adit, the Harris adit, and the Charleston No. 5 adit. The last named was badly caved, and recovery operations, requiring considerable face-boarding, were still under way when winter conditions made it advisable to discontinue work. The face was then 150 feet from the portal.

It is the announced purpose of the company, once this caved area is penetrated, to extend the No. 5 drift 180 feet and then to drive a 220-foot raise to connect with the Harris adit above.


* By J. A. Mitchell.

APPENDIX II



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 This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

SLOCAN MINING DIVISION

TO SOUTH SEE MAP B2 F/14 E

DEPARTMENT OF MINES AND PETROLEUM RESOURCES
VICTORIA, B.C.

Fig. I

For up-to-date information on claims in any area you should apply to the Mining Recorder for the Mining Division conc-

This map is prepared to the positions of local and Placer Mining Leases and locates are a



DEPARTMENT OF MINES AND PETROLEUM RESOURCES

APPLICATION FOR A LIMITED PRODUCTION PERMIT BY AN INDIVIDUAL FREE MINER

Before completing form, please read information on back.

I, PETER LEONTOWICZ, address RR #1 NEW DENVER BC. (Please print)

Free Miner's Certificate No. 113930

issued Dec 23 1974, make application for an order of the Minister, pursuant to section 15 of the Mineral Act, permitting limited production from the following mineral claim or adjoining claims, under the provisions of the Mineral Act.

Table with 5 columns: Name of Claim, Rec. No., Lot No., Mining Division, Land District. Row 1: LEO #1 FR, 17375, SLOCAN, KOOTENAY.

(If space not sufficient, list additional claims on separate sheet.)

I intend to produce annually minerals not exceeding \$100,000 in gross value, and in the event that production exceeds \$100,000 in gross value annually, I will apply for a Production Lease, pursuant to section 59 of the Mineral Act.

I have prepared a plan of production, a copy of which is attached.

I have attached a statutory declaration of the last year's production under Permit No. *

I have complied with the provision of sections 10 and 11 of the Mines Regulation Act.

In the event of a boundary dispute I agree, if required by the Minister of Mines and Petroleum Resources, to have a legal survey carried out by a British Columbia land surveyor at my expense.

The sum of \$25 for each mineral claim included in the application, amounting to \$25.00 submitted in 1977, is submitted herewith.

I hereby certify that the information given in this application is true and complete in every respect.

Date: Feb. 14 1975. Signature: Peter Leontowicz

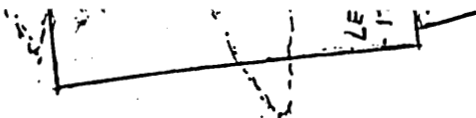
* Strike out if this is not an application for a renewal.

FOR OFFICE USE ONLY

According to the records in this office the above mineral claims are held in the name of

(Date) Mining Recorder

APPROX. 20 MIN. TO
SOUTH - ABOUT 15
MILES IN PERMIT
TERMINATION PERMIT.



(a) Application must be sent to the office of the Mining Recorder for the Mining Division in which the claims are situate.

(b) If more than one claim appears in this application, all claims must adjoin.

(c) Application for renewal must be made 30 days prior to termination of permit to ensure continuity of Production Permits.

(d) One permit only per person at any time which is renewable.

(e) Requirements for plan of operation are as follows:

(1) Sketch showing the approximate location of the orebody in relation to claim boundaries, main access route, mine workings, and location of main buildings.

(2) Estimate of rate of production.

(3) Nature of material shipped—ore or concentrates.

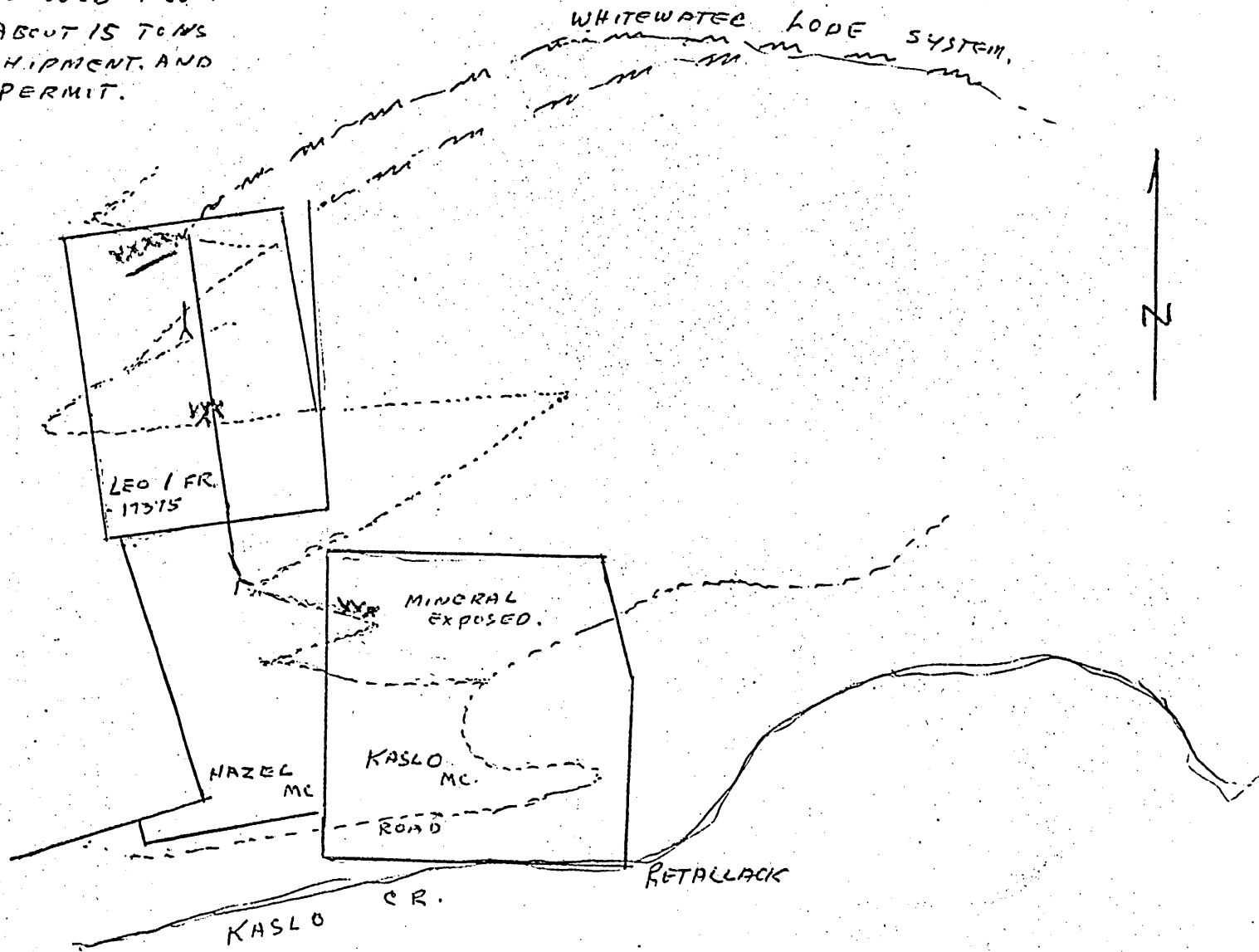
(4) Details of sales contract.

(5) Estimated reserves.

- This is in a prospect area
- crude ore (P.D. 2)
- not shipped yet
- questionable, as the
outcrop had not been worked on
at a lower elevation.

used
m. f.
u

XXXX - MINERAL REMOVED FROM
OUTCROP - ABOUT 15 TONS
AWAITING SHIPMENT AND
PRODUCTION PERMIT.



ining Recorder for the
l claims must adjoin.
to termin

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

FORMS A AND H
MINERAL ACT

82K/3 E (H)

RECORD NO. 17375

54685-E

KASLO

15TH

SEPTEMBER

1972

WRITE IN THIS SHADED AREA FOR OFFICE USE ONLY

[Handwritten signature]
MINING RECORDED

SIDCAN

MINING DIVISION

AFFIDAVIT FOR FRACTIONAL CLAIM

PETER LEONTOWICZ

AGENT FOR SELF

HILLS, B.C.

(ADDRESS)

(ADDRESS)

F.M.C. NO. 90920 DATE ISSUED May 29, 1972

F.M.C. NO. DATE ISSUED

MAKE OATH AND SAY:-

ON THE 15 DAY OF September 19 72 I LOCATED THE Leo #1 FRACTIONAL MINERAL CLAIM

SITUATE 1500 feet north of Highway 31A at Retallack, B.C. and 1000 feet due east of

(HERE DESCRIBE POSITION OF CLAIM AS NEAR AS POSSIBLE)

Murray Creek. The area was formerly held as the HS fractional lease No. 5717M.

I HAVE PLACED A NO. 1 AND A NO. 2 POST ON OR AS NEAR AS POSSIBLE TO THE LINE OF THE PREVIOUSLY LOCATED MINERAL CLAIMS.

I HAVE SECURELY FASTENED TO THE NO. 1 POST, METAL TAG NO. 208350 M EMBOSSED "INITIAL POST (NO. 1)", UPON WHICH THE FOLLOWING HAS BEEN IMPRESSED:- September 15/72 L.I.

NAME OF CLAIM Leo #1 FRACTION DATE OF LOCATION August 12, 1972 #2466 2672773

LOCATOR Peter Leontowicz AGENT FOR Self

APPROXIMATE COMPASS BEARING TO NO. 2 POST North Magnetic AND DISTANCE TO NO. 2 POST Approx. 50 FEET

I HAVE WRITTEN ON THE NO. 1 POST THE FOLLOWING WORDS:-

BOUNDARY ON THE NORTH BY Metis 3636 C.G. and IC 2283 C.G. ON THE SOUTH BY Hazel L. 2639 C.G.

ON THE EAST BY IC 2283 C.G. and L. 2024 C.G. ON THE WEST BY L. 3636 C.G., L. 2273 C.G., L. 2272 C.G.

I HAVE SECURELY FASTENED TO THE NO. 2 POST, METAL TAG NO. 208350 M EMBOSSED "FINAL POST (NO. 2)", UPON WHICH THE FOLLOWING HAS BEEN IMPRESSED:-

NAME OF CLAIM Leo #1 FRACTION DATE OF LOCATION X September 15, 1972

LOCATOR Peter Leontowicz AGENT FOR Self

I HAVE MARKED THE LINE BETWEEN NO. 1 AND NO. 2 POSTS AS REQUIRED BY THE PROVISIONS OF THE MINERAL ACT.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THE GROUND COMPRISED WITHIN THE BOUNDARIES OF THE SAID CLAIM IS UNOCCUPIED BY ANY OTHER PERSON AS A MINERAL CLAIM; IT IS NOT OCCUPIED BY ANY BUILDING AND IS NOT ANY LAND FALLING WITHIN THE CURTILAGE OF ANY DWELLING-HOUSE, OR ANY ORCHARD, OR ANY LAND UNDER CULTIVATION, OR ANY NAVAL OR MILITARY RESERVATION.

DC OF 5717

ORN AND SUBSCRIBED TO AT KASLO

[Handwritten signature: Peter Leontowicz]
SIGNATURE

15 DAY OF September 1972 BEFORE ME:-

[Handwritten signature]

NOTE: DRAW SKETCH-PLAN ON SHEET WHICH IS ATTACHED.

THIS AFFIDAVIT MAY BE TAKEN BY A PERSON EMPOWERED TO TAKE AFFIDAVITS

BY THE EVIDENCE ACT OF BRITISH COLUMBIA

R/S TO S. J. TUDLEY KASLO SEPT. 15/72

54685 E 5.00

RECORDED

M.R.

DATE OF EXPIRY

RECORD DATE

TRANSFERS
(BILLS OF SALE, ASSIGNMENTS, CONVEYANCES)

sept. 11/73

Rd. V.K.

Sept. 15/75

R. July 4/74

Sept. 15/75

OPTIONS, AGREEMENTS, ETC.

RECORD OR
FILING DATE

GROUPING NOTICES, INCLUDING NAMES OF CLAIMS



THE WELLINGTON MINE
 SLOCAN CONSOLIDATED SILVER MINES LIMITED
 SHEWING ADJOINING WHITEWATER MINE
 RETALLACK. BRITISH COLUMBIA.
 ARTHUR LAKES - MINING ENGINEER