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TANGIER & WAVERLY PROPERTY

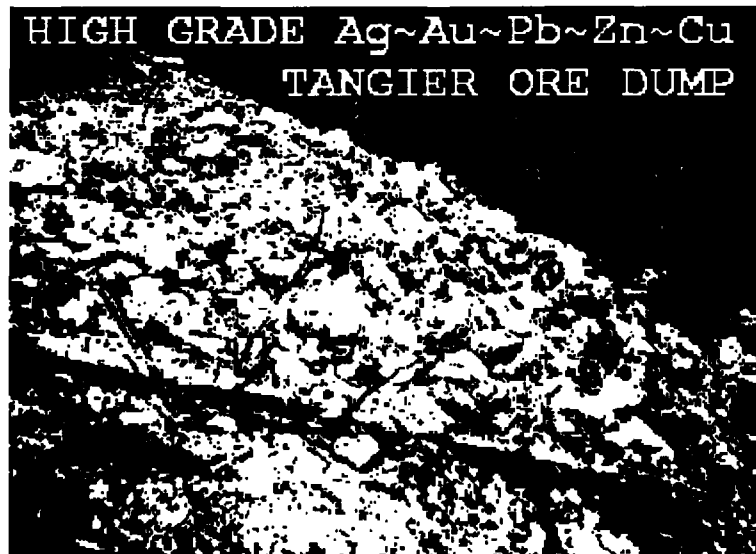


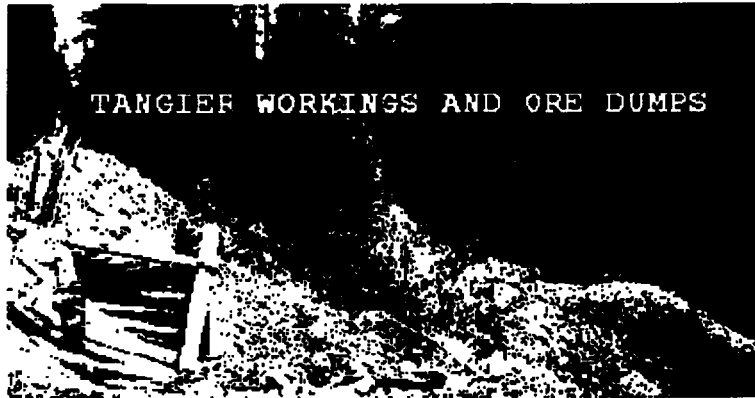
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TANGIER ORE DUMP





The following is a brief description of our newest poly-metallic mineral property acquisition

POLY-METALLIC ~ SILVER ~ GOLD ~ COPPER ~ LEAD ~ ZINC DEPOSIT

The Waverley Tangier mineral claims have been staked by the principles of Lodes Exploration Inc., after significant research into properties that have the potential to host economic deposits of gold, silver, lead, zinc and copper. These deposits are known as poly-metallic mineral deposits and have a better chance of economic success due to the multiple mineral commodities hosted within them.

The property consists of 24 mineral claim units, covering an area of 600 hectares or approximately 1320 acres. The claims cover known high grade mineralization and highly prospective and favorable geology. The claims cover seven old crown grant mineral claims that have now reverted (lapsed) and have come open for acquisition by conventional mineral claim staking.

INTRODUCTION

The Waverley-Tangier property is a re-staking of a prospect originally discovered in 1896 and worked until 1920.

The property is mineralized by polymetallic silver lead zinc veins with additional minor values in gold and copper. There are also showings that appear to fit the description of polymetallic silver lead zinc manto type mineralization on this property.

Individual grab samples from this property have yielded economic assay grades. No proven or drill indicated ore reserve tonnages have been proven-up on this

property to date.

The purpose of this report is to propose an exploration program to investigate these showings using modern exploration techniques.

LOCATION AND ACCESS

The Waverley-Tangier property is located in south central British Columbia in the Revelstoke Mining Division, on NTS map sheet 082N5W at Latitude 51 27 00N Longitude 117 57 35 W.

The Waverley showing is located 1.75 km southwest of the confluence of Sorcerer and Holway creeks, on the western slope of Sorcerer Mountain, about 56 km northeast of the town of Revelstoke, B.C.

The Tangier showing is located 750 meters west of the Waverley showing. The Tangier shaft is located along Sorcerer Cr. immediately below and west of the Waverley workings and about 1 km southeast of the confluence of Sorcerer and Holway creeks.

Sorcerer and Holway Creeks are located on the east side of the Columbia Rive at the headwaters of the North Fork of Downie Creek. (Note; historically, Sorcerer Creek was known as Downie Creek in 1896).

Access to the property is currently by helicopter. Historically, a wagon road from the south accessed the property. This road was built in the late 1890s from the village of Albert Canyon on the main CPR rail line. The road followed the course of the North Fork of the Illecillewaet River for approximately 28 miles over the Tangi Pass to the headwaters of Sorcerer Creek and the Waverley- Tangier property. Th road then branched off from the valley floor onto several packhorse trails which climbed the steep slopes to the mine workings in the area. This road is currently totally overgrown with alder as it has not been used since 1920.

A logging road currently approaches the property from the north, up the valle Downie and Sorcerer Creeks. This road comes within 8 km of the Waverley and Tangier workings. It would be possible to extend this road up Sorcerer Creek to t mine workings to give 4x4 truck access to the property.

The Waverley workings are on the north side of Sorcerer Creek on a steep mountainside, between 5,300 and 7,200 feet above sea level (asl).

The Tangier shaft is on the northeast bank of Sorcerer Creek, at an elevation 4,800 feet asl, and about 1,600 feet west of the Waverley workings.

TOPOGRAPHY

The property is in steeply mountainous, rugged terrain. The slopes rise from valley floors with elevations around 3,500 feet asl to ridges over 7,000 feet asl at angles from 40 degrees on the lower slopes, to near vertical cliffs on the upper slopes.

The valley floors and lower slopes are forested with commercial size spruce an hemlock. The property is covered by a tree farm licence. Treeline is crossed near the lower Waverley adit and the upper Waverley workings are well above treeline.

PROPERTY HISTORY

Exploration work in this part of the West Kootenays commenced around 1896. The Downie Creek (now Sorcerer Creek) properties were discovered that year.

A wagon road was built by the government from Albert Canyon in 1896, to access these properties on upper Downie Creek.

Surface prospecting located several mineralized showings including the Waverley, Tangier, Montague, Juno, Tiger and Black Bear veins. The first three were opened up by underground workings and the remainder by hand trenching surface outcrops. A group of 16 claims were staked on these showings and 6 were later taken to Crown Grants, including the Waverley, Tangier and Montague.

A tunnel was collared on the Waverley claim in 1896 by Gold Fields of British Columbia Ltd., a company formed in England. This underground exploration continued until 1898. The operation was closed down in 1899 and remained idle until 1919.

The property was acquired in 1919 by G.H. Walter of Spokane from T. Graham and O. Sandberg of Albert Canyon, B.C. Mr. Walter formed Waverley Mines Co. and carried out some additional work on the Waverley vein from 1919 to 1920, reportedly extending the earlier underground workings by about 200 feet. However, the road from Albert Canyon was in very bad condition by 1920 and lack of access hampered development. Work was abandoned by 1921.

An attempt to reopen the road from Albert Canyon in 1951, by the Albert Canyon Syndicate, was abandoned after only 6 miles due to forest fires in the Tangier Creek valley. The property remained idle until the last of the Crown Granted claims were allowed to lapse and the ground was re-staked by Lodestar Exploration Inc. within the last year.

REGIONAL GEOLOGY

A detailed regional geological report is beyond the scope of this report. Various GSC and BCGS reports are available if required.

Briefly, the area is located within the Selkirk Mountains in the Omineca Tectonic Belt in the Kootenay Terrane. Dominant host rocks in the area are sedimentary rocks of the Lower Cambrian. These rocks include limestone, quartzite, argillaceous carbonaceous and graphitic schists and phyllites and talcose and sericitic schists.

These sediments are very close to the contact with granitic rocks of the Selkirk Allochthon, located several miles east of the Waverley-Tangier property.

Regionally, the country rocks on both sides of this granitic belt contain highly mineralized quartz veins. These veins carry high grade assays in silver and gold with additional values in copper, lead and zinc, and further north, nickel. This mineralized belt runs southeast to Kootenay Lake and northwest to the Big Bend of the Columbia River.

PROPERTY GEOLOGY

The Waverley-Tangier property occurs in Lower Cambrian stratified limestone a small distance west of the transition of the granite. As well as limestone, there are slates, quartzites, and schists all striking northwest-southeast and dipping northeast. Both the Waverley and Tangier veins occur in limestone wall rocks and both veins appear to be conformable with the stratigraphic bedding of the limestone country rock.

The stratigraphic bedding strikes N40W and dips 60-65 NE with steeper dips, up to near vertical, observed locally.

The rocks underlying the claims are described as "light grey, coarsely crystalline limestones with interbedded argillaceous, carbonaceous or siliceous varieties that are generally fine grained quartzites, argillaceous and carbonaceous to graphitic schists and phyllites and some grey talcose and sericitic schists. Minor folding of a complex nature is abundant and shear zones and fissures are common. In the crystalline limestone at the Waverley two major joint systems, striking north 15 degrees east and north 45 degrees west and dipping 70 degrees northwest and 3 degrees southwest, respectively, are developed.

All the workings on the Waverley group are in a band of light grey, crystalline limestone with fine grained, argillaceous and carbonaceous limestones intercalated the whole calcareous member being about 2,500 feet thick. Below, or west of the marble, are argillaceous to carbonaceous grey or black schists and phyllites, and above, or east of it, green or grey phyllites appear as intercalations in limestone before the latter gives way to grey or brown quartzites with interbedded green and light grey phyllites. All the rocks dip steeply to the northeast and strike northwest. They are rather complexly contorted by minor folds. It appears from the exposure examined that the Waverley veins are confined to a zone of dark grey or black, fine grained limestone within the main light grey, coarsely crystalline band, and this zone is more complexly folded and twisted than the surrounding rocks. Within this zone are intercalations of the normal light grey marble." (GSC Summary Report 1928).

"On the Tangier claim a band of white to grey marble at least 120 feet wide strikes north 30 degrees to 35 degrees west and dips very steeply east or is vertical. In it are at least two small bands of grey to black carbonaceous schist. On the west the marble is adjoined by a considerable thickness of pyritic, black, carbonaceous schist." (GSC Summary Report 1928).

VEINS AND/OR MANTOS

The Waverley-Tangier property is mineralized by polymetallic veins carrying values in silver, lead and zinc with additional values in gold and copper. All of the veins appear to be conformable to local stratigraphic bedding. Some evidence of wallrock replacement of the limestone and marble walls with vein mineralization may indicate the presence of polymetallic manto type mineralization as well.

The primary ore minerals are; argentiferous galena, argentiferous tetrahedrite (grey copper), sphalerite and pyrite (some of which is auriferous). Other minor or minerals reported include; stephanite (brittle silver) and cerargyrite (horn silver), well as auriferous (?) jamesonite.

Oxidation minerals include anglesite and cerussite (from the galena), malachite and azurite (from the grey copper), smithsonite (from the sphalerite) and limonite (from the pyrite).

Vein gangue minerals include quartz and calcite and associated carbonate minerals.

As previously noted, the veins are conformable to stratigraphic bedding of the country rock and strike northwest-southeast and dip steeply northeast.

There are at least 6 known veins on the property. These include the main (footwall) Waverley vein, the Montagua vein (which appears to be the northwest strike extension of the hangingwall Waverley vein), the Tangier, Juno, Tiger and

Black Bear veins.

WAVERLEY VEINS

"The veins found on the Waverley and Montague and adjoining claims on Dow Creek, are enclosed in walls of calcite, and a tunnel has been driven on the Waverley close to the hangingwall, showing a continuous body of highly mineralized ore (at this point about 6.5 feet wide), composed of quartz, galena, tetrahedrite (grey copper), with some hydrous ferric oxide, resulting from the decomposition of iron pyrites, and occasionally stephanite (brittle silver) and cerargyrite (horn silver). Of six samples taken from this portion of the vein, the average amount of silver per ton was 104 ounces, some picked specimens running as high as 1,400 ounces per ton. The total width of the vein is about 40 feet, containing 9 feet of good ore, 6 feet on hangingwall and 3 feet on footwall, the vein, in conformity with others found in this district, having a northwesterly and southeasterly trend, and an easterly underlie of about 2 feet to the fathom. The cropping can be traced for many claims showing it to be continuous and following its natural course..." (Report to the Minister of Mines 1896 pages 543-544).

"The vein, which conforms to the bedding of the country rock, can be traced by open cuts and stripping for over 2,000 feet along the outcrop, showing marked persistence in strike and dip (strike N40W; dip 60 to 65 degrees to N50E). The width of the vein on the surface varies from 18 inches to 4 feet.

The ore is chiefly carbonates with small amounts of galena, the gangue consisting of altered country-rock, decomposed calcite, and quartz. The average silver content of the ore indicated by the few samples taken by the writer would appear to lie between 30 and 50 oz. to the ton, the lead content varying from a trace to 18 per cent. The gold values, generally speaking, appear to be negligible. Some of the ore shows copper-stains, indicating a small percentage of the metal. There is undoubtedly a very considerable tonnage of oxidized silver-lead ore available.

The underground workings, which in aggregate will amount to about 3,000 lineal feet, mostly cross-cut and develop one big ore-shoot. In the case of this shoot, which lies on the footwall side of the vein, replacement of the limestone walls has occurred on an extensive scale.

The examination was necessarily confined to the surface showings, No.1 and No.2 tunnels, as the workings below No.2 tunnel were inaccessible owing to a caving near the portal of No.3 tunnel and the bad condition of the timbers in the winze below No.2 tunnel (the lower workings have since been made accessible). Practically all the development was done on the Waverley and Montague claims, principally on the former.

Commencing at the surface and proceeding downwards, the workings are briefly as follows:-

On the Montague claim, at an elevation of about 6,200 feet, a short crosscut encountered the vein at a distance of 20 feet and a winze was sunk 17 feet on carbonates containing streaks of galena. A sample across 4 feet near the bottom of the winze gave: gold 0.04 oz.; silver 8 oz.; lead 11 percent. About 350 feet southeasterly along the outcrop a sample across 18 inches in a shallow cut gave: gold 0.02 oz.; silver 14.4 oz.; lead 14.9 percent." (This vein is probably the northwest extension of the Waverley hangingwall vein).

"On the Waverley claim, about 750 feet southeasterly from the above crosscut and at the same elevation, No.1 tunnel was driven 90 feet on the vein just below apex. In this tunnel the width of the vein varies from 14 inches to 2 feet. Near the

portal of the tunnel a winze was sunk on the vein to a depth of 45 feet, the lower portion of which was caved and inaccessible. A sample across 2 feet at the top of the winze gave: gold, 0.06 oz.; silver 39.02 oz.; lead 17 per cent.

About 300 feet southeasterly from and 84 feet vertically below No.1 tunnel, N tunnel is a crosscut 330 feet in length. At 85 feet in from the portal the footwall of the ore body was reached and drifted on for 85 feet northwesterly and for 50 feet southeasterly. The 85 foot drift breaks through to the surface. Above the intersection of the crosscut and the two drifts a small stope was started. A sample across a width of 10 feet in the stope gave: gold, 0.24 oz.; silver 77.2 oz.; lead 1 per cent.

The crosscut, passing through the ore-body, was then continued 245 feet farther. As the ore passes by insensible gradations into barren limestone, the width of what may constitute "ore" can only be determined by extensive sampling, having in view the grade of material which can be economically milled. The total width of the mineralized zone cut by the main tunnel is approximately 66 feet, including a horse of barren limestone of undetermined width, but which for sampling purpose was assumed to be 16 feet wide. The mineralization is strongest on the footwall side of the zone, as shown by the above mentioned sample taken in the stope.

Samples along the crosscut gave as follows: Across 34 feet, including the good ore on the footwall side: gold 0.02 oz.; silver 16 oz.; lead 2.5 per cent. The 16 foot limestone horse was then omitted and a sample across 16 feet on the hangingwall side of the zone gave: gold trace; silver 2.4 oz.; lead 0.2 per cent. Little importance can be attached to these results, however, mill tests being required to give reliable information on the values to be expected.

The hangingwall of the ore-zone, which is marked by a seam of calcite, was drifted on southeasterly for a distance of about 70 feet. The hangingwall seam was not drifted on in the opposite direction, but a little farther along the crosscut a semicircular tunnel driven northwesterly is in country-rock for the most part, but breaks into the hangingwall of the ore-zone near the face. As a short crosscut tunnel had been run off the drift at this point, it was possible to get a sample across a 16 foot section, which gave; gold trace; silver 2.8 oz.; lead 1 per cent.

Farther along the main crosscut another tunnel, driven 60 feet northwesterly along a seam of calcite, is in country-rock. Several short tunnels and a 26 foot raise off the main crosscut in the ore-zone show strong mineralization, a grab sample from several hundred tons of material stored in these places giving; gold 0.14 oz. silver 36.8 oz.; lead 15.5 per cent.

On the first southeasterly drift above mentioned, which follows the footwall of the ore-body; a winze was sunk 110 feet, at which point an offset was made to connect with a raise 260 feet up from No.3 tunnel.

The vertical depth between No.2 and No.3 tunnels is 350 feet, and three intermediate levels have been turned off from the big winze and raise, named the 150-foot, 250-foot and 350-foot levels, which means that they are respectively that distance vertically below No.1 tunnel. As, for reasons stated above, all the workings below No.2 tunnel were inaccessible, the information relating to them has been taken from the old company's maps and records, which show that the ore-body was encountered and developed on all three intermediate levels, with good results as to width, length and values.

No.3 tunnel, 450 feet vertically below No.1 tunnel, is a crosscut about 635 feet long (by scale), which apparently was discontinued a short distance from the expected intersection with the vein." (Report to the Minister of Mines 1922 pages 157-159).

"The ores exposed in the Waverley are highly oxidized and consist of decomposed limestone, vein calcite, quartz, limonite, anglesite (lead sulphate), some cerussite (lead carbonate), malachite and azurite, smithsonite (zinc carbonate), and occasional residual nodules of galena and argentiferous tetrahedrite. Silver and gold values are present. The total values are variable, ranging from practically zero to \$60 to \$70 per ton and more in the parts rich in residual sulphides. The present ores have been formed by oxidation, by descending meteoric waters, of the original gold and silver-bearing pyritic galena-sphalerite deposits in limestone. The sulphides were deposited along fissures in the limestone and by replacement of the limestone. Consequently the ores are found as irregular bodies more or less elongated along the predominating shear and fault zones. The zones trend about north 60 degrees west (astronomic) and are generally bedded. Other fissures, trending northwest to northeast, have influenced the location of the larger ore-bodies. Veins of quartz and calcite, trending more northerly than the main ore-zones, are also developed underground, but they are barren in most places.

The developments on the Waverley are as follows.

No.1 tunnel, at elevation 6,155 feet, is short and includes a winze down 28 feet on a lead of oxidized material containing some nuggets of galena and tetrahedrite. The lead is from 2 to 6 feet wide, strike north 20 degrees west, dips about 50 degrees east, and occupies a shear zone in dark grey limestone. The walls are smooth fault walls. From the bottom of the winze a short drift has been made to the northwest. A sample taken across 3 feet on the footwall side of the lead at the face of the drift contained a few small specks of galena in oxidized products and assay per ton; gold 0.01 ounce; silver 5.50 ounces; lead 2.43 per cent; zinc 3.60 per cent; copper nil.

Some material that would probably be higher grade occurs in the winze and is to 3 feet wide. In the face of the adit a large quartz vein, quite barren, was encountered. It is also exposed on the surface near the portal of the adit.

No.2 tunnel. No.2 tunnel is driven 300 feet as a crosscut below No.1 tunnel, at an elevation of 6,070 feet. In it are several hundred feet of drifting and a shaft to connect with a raise from No.3 tunnel below.

Fifty-five feet from the portal a bedded shear zone, dipping steeply north 30 degrees east, was encountered and drifted on to the northwest and southeast. Oxidized material, varying in width from a few inches to 6 feet, is exposed for a length of 120 feet, with the largest accumulation immediately west of a fault trending north 30 degrees west and dipping 60 degrees northeast. Southeast of the fault no important mineralization is found. At the junction of drift and main crosscut a small stope has been put up and in it up to 2 feet of oxidized ore may still be seen, lying along the bedded fissure. East of this lead, for nearly 60 feet, the wall of the main crosscut are extensively oxidized. The whole width is probably low-grade ore, although there are several horizons of practically barren limestone. A sample taken across 5 feet of the best looking material on the north side of the crosscut just east of the above mentioned drift assayed per ton: gold 0.12 ounce; silver 46.33 ounces; lead 2.10 per cent; zinc 26.70 per cent; and copper 1.35 per cent.

The sample contained several nuggets of sulphides and is undoubtedly richer than the average material exposed in the crosscut.

At the eastern end of this oxidized zone is a vein, 10 feet wide, of quartz and calcite. Exposed in a drift for 70 feet to the southeast, it pinches and swells between two smooth walls and is barren. A drift driven northeast from a point 25 feet east

the vein encountered it 100 feet from the main crosscut. A short crosscut expose the vein, partly oxidized, for a width of 5 feet. Assays shown on the original mine plan state that it contains good gold values at this point. It was not sampled by the writer. Eighty feet northeast of this vein a second vein of calcite and quartz has been drifted on for 80 feet in a north 15 degrees west direction. It varies in width from 18 inches to 5 feet and is quite barren.

No.3 tunnel. No.3 tunnel, elevation 5,700 feet, was driven as a crosscut below No.2 tunnel for 760 feet. It is connected by a raise with the shaft from No.2 tunnel and three intermediate levels- the 150-foot, the 250-foot and the 350-foot levels, elevations 6,005 feet, 5,895 feet and 5,790 feet respectively- have been made.

The 150-foot level, 65 feet below No.2 tunnel, is connected to the shaft from the latter. It is merely a short drift in crushed and oxidized material lying along an irregular shear zone. A channel sample across 5 feet on the northeast side of the drift assayed per ton: gold 0.08 ounces; silver 15.75 ounces; lead 14.24 per cent zinc 0.00 per cent; and copper nil.

Green copper stain is visible at several points in the drift.

The 250-foot level, at elevation 5,895 feet, is directly below the 150-foot level. Considerable work of a rather desultory nature has been done. Three major, approximately parallel fissures with well defined walls, striking about north 60 degrees west and dipping 70 degrees northeast, were encountered. The middle of these, corresponding to the mineralized one in No.2 tunnel, is mineralized with a few inches to over 5 feet of oxidized material, for a length, in drifts, of about 80 feet and the same material is exposed in the walls of the main crosscut for a width, across the strike of the lead to the east of the fissure, of about 28 feet. There are several barren horizons of limestone in this width. A sample across 6 feet in the main crosscut assayed per ton: gold 0.05 ounces; silver 21.84 ounces; zinc 6.77 per cent; lead 16.73 per cent; copper 0.29 per cent; and one taken across 12 feet on the east side of a drift to the northwest of the main crosscut assayed: gold 0.08 ounces; silver 11.47 ounces; zinc 5.50 per cent; lead 2.11 per cent; and copper 0.08 per cent.

The oxidized ore in this level tapers out, lens-like, to the northwest and southeast along the shear zone and is quite irregular in nature and distribution. The mineralization occurred at the junction of fissures, trending northeast, and west to north, with the main fissure.

Seventy feet northeast of the above mineralized fissure, on the west wall of a drift on a parallel fissure, about 25 feet of oxidized material was encountered. A sample across 13 feet of this contained a few nuggets of galena and assayed per ton: gold 0.10 ounces; silver 18.26 ounces; zinc 11.48 per cent; lead 11.88 per cent; and copper 0.09 per cent. This showing has no visible connection with the other ore on the level.

The 350-foot level, at elevation 5,790 feet, directly below the 250-foot level, is rather discouraging. The only showing of ore in about 300 feet of drifting and crosscutting is 12 feet of oxidized material on the side of one drift. It probably lies on the downward continuation of the fissure mineralized above. In case of future work being done on the property, this would be a good place to start. If this showing represents the total downward continuation of the ore showings exposed above, its outline and trend should be defined. Barren, tight fissures, corresponding to those encountered on the 250-foot level, were encountered, and one large, barren calcite vein.

In the lower or No. 3 tunnel, elevation 5,700 feet, much work has been done, crosscutting and drifting below the upper workings, but no ore has been

encountered. The fissures are present, but they are barren of sulphides and contain no important quantities of oxidation products.

On the surface the vein encountered in No.1 tunnel has been exposed by shallow open-cuts for several hundred feet southeast from the portal of the tunnel. At the time of the writer's visit these cuts were in poor shape, but they indicated the general but irregular persistence of vein material. About 250 yards to the north of No.1 tunnel it is reported that a short crosscut on the Montague claim has exposed about 4 feet of oxidized ore on the northwesterly continuation of the main vein. The writer did not visit this occurrence.

Two principal veins of oxidized lead-silver ore, with additional values in gold and zinc, have been explored. The vein exposed in No.1 tunnel and probably encountered in the eastern end of No.2 tunnel has not been sufficiently developed to warrant an estimate of its value as an ore carrier. Some good ore occurs in the zone in No.1 tunnel on this vein. The second vein, lying southwest of the above, developed in No.2 tunnel and again on the 150- and 250-foot levels. The largest bodies of ore are irregular replacements in limestone, more or less elongated along the bedded fissure, where crosscutting fissures of northwesterly to northeasterly trend intersect the main vein. On the 350-foot level, 280 feet below No.2 tunnel, downward continuation of the ore exposed above is small and undeveloped. In the lower adit, 90 feet lower, no commercial ore has been found. The irregular nature and distribution of the ore typical of replacement bodies in limestone, render it manifestly impossible to estimate with any accuracy the amount and value of the ore exposed, as no work has been done between the levels mentioned. The raise from No.3 tunnel is driven on a barren fault lying west of the ore zone.

If the ore does not continue to greater depth than the 350-foot level the future of the mine is not very encouraging. Consequently, any further work contemplated should be done on the 250-foot level and above it, in an endeavour to define the outline and trend of the ore zone. The location of the property is such that any work will be expensive and larger ore reserves than are at present partly developed will be necessary before the property can be profitably put in the producing class. A good mine map is a first necessity to further development. It is possible that the ore follows the intersections of two or more of the intersecting fissures encountered underground and that the trend of this intersection has removed the ore zone beyond the limits explored in the lower workings. It is to be expected that, if the mineralization continues to greater depths, sulphide ores, similar to those from which the present oxidized ores have formed, will be found." (GSC Summary Report 1928 pages 178A-181A).

This was the last reported work on the Waverley and Montague veins until the present day.

TANGIER VEIN

"About 1,600 feet west of this vein" (the Waverley vein) "is also found a parallel vein, having the same course and dip, the ore being much of the same character, containing, however, mere gold but a less percentage of copper. The Tangier claim is on this vein, and assays taken went 100 ounces of silver and 1.3 ounces gold per ton." (Report of the Minister of Mines 1896 page 544).

"This group consists of the Tangier (Crown Granted), Tiger, Silver Tip and Black Bear claims, which are located along the bank of the creek immediately below and south of the Waverley group, at an elevation of 4,800 feet (collar of shaft). Outcropping along the creek-bed there is a well defined fissure vein with a similar strike and dip to the Waverley vein, also conforming to the bedding of the country rock, which can be traced by open cuts and stripping for over 1,000 feet along the surface. This vein, which varies in width from 1.5 feet to 5 feet, contains in places

small bunches and stringers of galena and zinc-blende, with streaks of grey copper. The gangue is quartz, calcite and limestone. The shaft was sunk on an ore-shoot lying on the footwall side of the vein at some little distance from it. The vein itself does not seem to have been reached by the underground workings.

The development on the Tangier consists of 110 feet of double-compartment shaft, 829 feet of tunneling and a 100 foot winze. The shaft is situated on the Tangier claim a short distance southeasterly from and a little above the creek. The ore developed in the workings is of the replacement type, probably connected with the above described vein.

The ore piled on the dump, amounting to several hundred tons, consists of galena, zinc-blende, pyrite with small amounts of grey copper in a gangue of quartz, calcite and limestone. A grab sample from this large pile of ore gave: gold 0.06 oz.; silver 16 oz.; lead 8.5 percent; zinc 5 percent. A picked specimen of pyrite and quartz from the same pile gave; gold 5.6 oz.; silver 8.2 oz.

The Tangier ore differs from that of the Waverley, in that there is generally less evidence of oxidation, and the Tangier ore contains appreciable gold values in association with pyrite. There is a separate pile (roughly estimated at 200 tons) near the shaft dump of black decomposed ore which apparently came from the winze below the 100-foot level. A grab sample of this material gave: gold 0.24 oz.; silver 21.2 oz.; lead 8.5 percent; zinc 15 percent. The workings are briefly as follows: A vertical double-compartment shaft was sunk for a depth of 100 feet. A small surface tunnel north of the shaft was run in and encountered ore, connection being made with the shaft at the 20 foot level. Records show a small stope was started from this 20 foot level and continued to the surface, the ore being stored in a pile below the shaft dump. At the time of the examination the shaft connection was full of ice and the portal of the adit was caved, so this level could not be inspected.

At the 100-foot level drifts were run northwesterly and southeasterly, encountering two mineralized zones, one on each side of the shaft. The ore shoot on the southeast drift, having the strongest showing, was prospected by a 100 foot vertical winze. At the time of the examination this was partly filled with water. A grab sample from a small pile of black decomposed material around the collar of the winze gave: gold 0.16 oz.; silver 35.6 oz.; lead 11 percent; zinc 3 percent.

This ore shoot in the southeast drift on the 100-foot level has an apparent length of 40 feet and a width of from 4 to 6 feet. A sample across 6 feet in the face of the drift gave: gold 0.1 oz.; silver 3.7 oz.; lead trace; zinc 1 percent.

The ore shoot in the northwesterly drift shows little mineralization, a sample across 4 feet giving: gold trace; silver 0.8 oz.; lead nil; zinc 2.5 percent.

In addition to the above workings, several hundred feet of tunnels have been in barren limestone, in which there are numerous open fissures and calcite seams." (Report of the Minister of Mines 1922 page 159).

"On the Tangier claim a band of white to grey marble at least 120 feet wide strikes north 30 degrees to 35 degrees west and dips very steeply east or is vertical. In it are at least two small bands of grey to black carbonaceous schist. On the west the marble is adjoined by a considerable thickness of pyritic, black, carbonaceous schist. The workings are on the edge of Downie Creek.

A shaft goes down 80 feet to the "100 foot" level and from the bottom of it crosscuts and drifts have been made. From the southeasterly drift, 180 feet southeast of the shaft, a winze has been sunk on the vein for about 50 feet. It is now partly filled with water.

The shaft is now timbered, but it was presumably sunk on a vein at the contact of limestone and pyritic schist. From the bottom of the shaft the vein has been drifted on for 220 feet to the southeast. It consists of calcite and some quartz and a fine grained mixture of pyrite, jamesonite, galena, sphalerite and at several places small amounts of grey copper. The mineral identified as jamesonite (lead sulph-antimonide) is quite abundantly but finely intergrown with the sphalerite and must contribute a large percentage of the lead in the ores. The vein is in the marble at near the schist contact and occurs generally between two well defined fault walls. Occasionally replacement of limestone by vein matter has enlarged the vein beyond the walls. Some mineralization was noted in the schists to the west of the vein proper. The width of the vein varies from 5 feet to a little more, to practically zero as the walls approach and withdraw, and averages about 2 feet.

The sulphides, occurring very clean in several places, are arranged in lenticular bodies along the vein. Grey copper seems most abundant where quartz is the predominant gangue mineral. At the southeastern face of the drift about 4 feet of quartz and calcite contain disseminations of sulphides and grey copper. The vein could not be carefully examined, but the vein matter persists to the level of the water.

In the drift to the northeast from the bottom of the shaft the vein is persistent varying in width from zero to 6 feet. It consists of quartz and calcite in brecciated marble between two fault walls, but, for the 140 feet exposed, the only ore minerals visible are small quantities of pyrite and occasional small bunches and specks of galena and sphalerite. There is much muscovite in parts of the vein.

Elsewhere in the underground workings nothing of commercial importance is exposed, although there are two or three large calcite veins and many small stringers, some of which contain a little pyrite. In the carbonaceous schist to the west of the vein pyrite is abundantly developed and quartz lenses are numerous.

It is reported that the vein has been traced for some distance on the surface and that an old tunnel a short way north of the shaft encountered some good ore. The workings are too badly caved to afford any information at present.

The writer took no samples for assay from the Tangier. Much of the ore is a so intergrowth of very fine grained sulphides that will require fine grinding for concentration. Assays given by B.T. O'Grady assistant resident mining engineer, sulphide ore from the shaft dump, show values of: gold 0.06 ounce; silver 16.0 ounces; lead 8.5 percent; and zinc 5 percent; and some of the cleaner pyrite assayed 5.6 ounces of gold per ton. These assays cannot be taken as representative of the ore exposed underground. It is reported by the present management that tons of sulphide ore, shipped to Wales in the early days, contained 1.5 ounces gold 130 ounces silver and 25 percent lead per ton. The shipment must have been carefully hand picked." (GSC Summary Report 1928 pages 181-182A).

This is the last reported work on the Tangier vein until the present day.

JUNO, TIGER and BLACK BEAR VEINS

"On the Juno, Tiger and Black Bear claims of the Tangier group some surface stripping has been done on quartz veins and stringers that are mineralized, irregularly, with bunches and streaks of grey copper and an as yet unidentified silver-bearing mineral which resembles bournonite under the microscope. Pyrite, sphalerite and galena are sparingly present. The deposits are typically small and the ore minerals erratic in distribution, but high silver values may be expected. Some of the veins might produce small quantities of high-grade ore which could best be extracted by two or three men by "gophering" methods. The showings on the Juno

a series of small quartz stringers across about 50 feet of limestone lying several hundred yards northwest of the Tangier shaft- appeared most promising at the time of examination. Those on the Tiger and Black Bear claims do not merit much more than the necessary yearly assessment work which should be expended in tracing the veins on the surface in the hope of finding worthwhile pockets of ore minerals." (GSC Summary Report 1928 page 182A).

This is the last reported work on these veins until the present day.

CONCLUSIONS

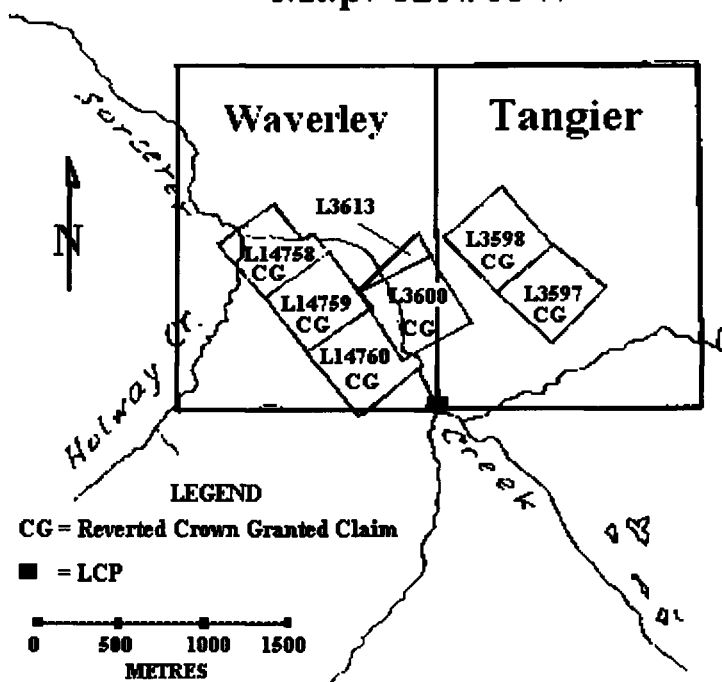
The Waverley Tangier property has received a limited amount of exploration work in the last 100 years, primarily surface prospecting and underground exploration.

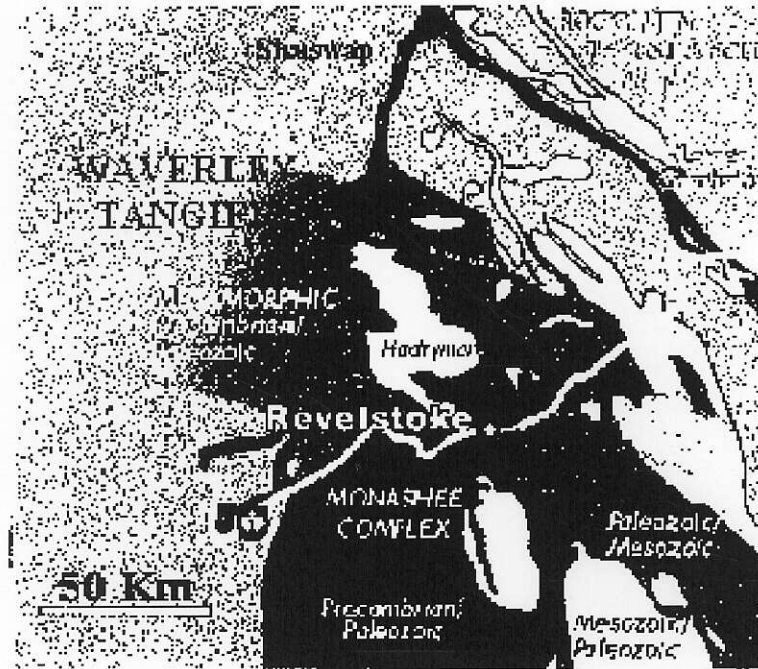
Virtually no work has been done on this property since 1921. The use of more exploration techniques is therefore recommended for this property.

The potential for the discovery of economically mineable, high grade, gold and silver ore bodies appears to be reasonably favourable on this property.

WAVERLEY TANGIER PROPERTY MAP

Map: 82N/05W





WAVERLEY TANGIER GEOLOGICAL LOCATION MAP

PROPERTY LOCATION X

WAVERLEY TANGIER REGIONAL GEOLOGY & MINERAL PROPERTY LOCATION MAP

