REPORT

ON

LUSTDUST PROSPECT

1952.

673116

BRALORNE PIONEER MINES LIMITED

Mr. M. M. O'Brien,
Managing Director,
Bralorne Mines Limited,
Vancouver, B.C.

Dear Sir:

I herewith submit my report on the Lustdust Prospect together with proposals for an exploration and development program.

INTRODUCTION.

This report deals with the results of examination and preliminary surface exploration done in September-October 1952 on the Lustdust Group near Takla Mercury Mine in the Cassiar District of British Columbia. The property was optioned by Bralorne on September 23, 1952. Values in gold, silver, lead, zinc and antimony are indicated over mining widths. The local geology was mapped in some detail as a guide to exploration and future development. A proposal for initial exploration is included.

SUMMARY and CONCLUSIONS.

The Lustdust property comprises 11 adjoining claims held by location which give a coverage of roughly 3500 feet along the strike of the ore zone and good protection on dip.

The geological conditions are in my opinion favorable to the discovery of ore shoots of commercial grade and tonnage.

The property contains ore shoots along a mineralized fault zone some 30 feet wide and 1500 feet long.

The largest ore shoot indicated to date is 255 feet long with an average grade of .127 oz.Au and 23.4 oz.Ag across 7.0 feet besides important values in lead, zinc and antimony.

Values up to .40 oz.Au and 127.2 oz.Ag were obtained across a 1.0 ft. width and massive sulphide shoots are not uncommon.

The ore is sitting along a strong break which could have a much greater length. The ore minerals were introduced at a late stage and the ore shoots are relatively undisturbed.

The property is well situated as to topography and is connected by road with Vanderhoof and C.N.Railways. Because it already has transportation and is particularly well suited to exploration by

diamond drilling and development by adit workings, it can be explored and brought into production at less cost than the majority of similar prospects.

No estimate of production costs can be made at this time except that shipment of concentrate by truck to Vanderhoof and rail to smelter is economically feasible on a year round basis.

An exploration program comprising a first stage of 2500 feet of diamond drilling followed by a conditional second stage of 1000 or 1500 feet is recommended for 1953, in addition to minor surface stripping, trenching and prospecting.

For protection it is recommended that additional claims be staked to the north.

4 plans accompany this report.

PROPERTY.

There are at present 11 adjoining claims of which 2 were located in 1950, 6 in 1951 and 3 in 1952. Assessment work has been recorded on 8 claims. The particulars of their present standing are as follows:

Name of claim	Date located	Recorded	Assessment work must be recorded before
Lustdust No.1	Aug.30,1950	Sept.8,1950	Sept. 8, 1955
Lustdust No.2	Aug.30,1950	Sept. 8,1950	Sept. 8, 1955
Lustdust No.5	Aug.29,1951	Aug. 30,1951	Aug. 30, 1955
Lustdust No.6	Aug.29,1951	Aug. 30,1951	Aug. 30, 1955
Lustdust No.7	Aug.29,1951	Aug. 30,1951	Aug. 30, 1955
Lustdust No.8	Aug.29,1951	Aug. 30,1951	Aug. 30, 1955
Lustdust No.9	Aug.29,1951	Aug. 30,1951	Aug. 30, 1955
Potluck No.1	Aug.29,1951	Aug. 30,1951	Aug. 30, 1955
Maybe No.1	Sept.10,1952	Sept.18,1952	Sept.18, 1953
Dust No.1	Oct.10,1952	Oct. 27,1952	Oct. 27, 1953
Dust No.2	Oct.10,1952	Oct. 27, 1952	Oct. 27, 1953

The claims are recorded at Smithers, B.C.

OWNERSHIP.

The claims are held by location by John Patrick O'Regan and Lois Shirley O'Regan (Mr.&Mrs.), P.O.Box 1652, Quesnel, B.C.
Under tentative agreement signed September 23, 1952 they have optioned an 85 percent undivided interest to Bralorne.

LOCATION.

The claims are situate in the Omineca Mining Division near the divide between Silver and Kwanika creeks and about one mile west of Bralorne's Takla Mercury Mine.

The surface showings lie at an elevation of 4300 to 4500 ft. along an open hillside facing east and south, overlooking Kwanika - Silver Creek valley. There is good saw timber and props on the northern claims and a spring supplies enough water for a preliminary camp. Water for diamond drilling is available at the adit tunnel and there are several springs half a mile north. For advanced development Canyon Creek at the north end of the claim group is a good water source.

TRANSPORTATION.

In 1950-51 the B.C. Department of Mines extended a development road via Germansen Lake to Takla Mercury Mine. The new road is 43 miles long from where it leaves the Manson Creek highway at a point 127 miles north of Fort St. James, so the distance by road from Takla Mercury Mine to Fort St. James now is 170 miles and to C.N.Railways at Vanderhoof 210 miles. The new road is narrow but good enough for trucks except the last 15 miles which were not graded or ditched and require further work before trucks could use it regularly.

A cat road built in 1945 from Takla Mercury Mine climbs 700 feet in 2 miles to the Lustdust camp and is passable by truck for the first mile but requires some fills and repairs along the last mile. It is therefore possible at the present time to drive a truck to within a mile of the showings and with small expenditure an all-weather truck road to rail head at Vanderhoof can be had. The snow fall along this route is normally 2 - 3 ft. on the level except for shorter stretches where it may reach 4 - 5 ft. The road is at present kept open for 16 miles north of Fort St. James during the winter.

POWER.

The nearest hydro power site is on Kenny Creek 7 miles by road north of Takla Mercury Mine. Stream flow measurements and preliminary surveys were made by Cominco in 1945 and these records would be available from Victoria. I believe the site could develop 6-800 HP depending on amount of storage provided in the lakes above.

Another possible and larger site is at the west end of Germansen Lake by utilizing a drop of 4-500 feet into Twentymile Creek and Omineca River. This would be 30 miles away.

HISTORY.

According to Geol. Survey Canada, Mem.252 : "The original discovery was made by R. McKee who staked the KAY Group in 1944. This was optioned to Leta Explorations Ltd. in 1945. After a program of surface development including the driving of one adit tunnel 320 feet

long, the option was dropped. The assay results obtained on surface exposures were quite encouraging, as much as 100 oz. silver a ton and an appreciable gold content. Underground development however, was disappointing and assay returns much lower."

The KAY claims ran out and the ground lay open for several years. Mr. and Mrs. J.P.O'Regan started prospecting the area in 1950 and found an extension to the vein 600 feet north of the old workings. They staked the Lustdust claims which after examination by me were optioned to Bralorne in September, 1952. A program of surface work and trenching was carried out between September 29 and October 20, 1952.

DEVELOPMENT.

The old adit workings are 320 ft. long of which 260 ft. is drifting along the fault zone. It was not well timbered and has been caving. It makes considerable water, all of it coming from the last round of drill holes at the face of the west crosscut. The rest of the workings are dry. With a crew of 3 men we mucked out the main drift and put in a few posts and caps to hold the ground. It would not be an expensive job to re-condition the workings. There are light rails most of the way in and one small mine car.

The 6 old surface cuts were cleaned out and extended and so were 12 of O'Regan's cuts. 26 new trenches and a number of small test pits were dug.

The overburden is light, seldom over 2 feet deep where the work has been done so far. Future trenching will run into deeper ground and much of it can better be done by bulldozing.

GENERAL GEOLOGY.

The Kwanika - Silver Creek trench marks the contact between triassic - jurassic sediments and the Omineca batholith to the east and a thick succession of permian sediments to the west. The Pinchi regional fault zone bisects the area from southeast to northwest and lies along the central part of the trench. Takla Mercury Mine is a few hundred feet west of the fault and the Lustdust showings are one mile west of it. The permian sediments are steeply folded, interbedded limestones, cherts, argillites and quartzites with narrow bands of greywacke, conglomerate and greenstone which have a northwesterly trend, are partly overturned and are part of a major anticlinal structure plunging northwest and widening to the southeast.

The area immediately west of the Pinchi fault along the west flank of the trench, are predominantly limestones which occur chiefly as parallel bands that pinch and swell along their strike and at depth. The greatest single thickness of limestone is probably 5000 feet or more. Smaller irregular bands as much as 1000 feet thick

occur at intervals throughout the section. These rocks are cut by feldspar porphyry dykes which are particularly numerous on the Lustdust claims, and by several small stocks of grey granite to the north and south. J.E.Armstrong considers the Pinchi fault zone to be the site of major thrust faulting from the west in tertiary time and the porphyry intrusives, faults and mineral deposits in the near-by permian section are probably closely connected with this major structure. It is a point to have in mind for further exploration.

LOCAL GEOLOGY.

The Lustdust mineral deposits lie along a fault zone which also contains a feldspar porphyry dyke. The ore was introduced towards the close of a period of activity which probably started with faulting, was followed by dyke intrusion and then by repeated adjustments and re-opening of the structure. There is reason to believe that erosion has just barely exposed the top of the ore. The adit tunnel and a number of surface cuts afford good exposures of the geology.

The claims are underlain by permian sediments, mainly limestone with minor argillite, chert and derived schists, see Plan No.2. The beds form a tight anticlinal fold which plunges rather steeply to the northwest. It has been overturned and all component beds show westerly dips of 45 to 75 degrees.

The sediments are cut by feldspar porphyry dykes, most of which are light colored acidic types but there are also dark colored andesitic types. Some of the larger dykes have the texture and composition of a fine grained granodiorite. They are seldom less than 4 feet and may be up to 60 feet thick. Some of them are at least 2000 feet long and probably more and have a vertical range of at least 1600 feet. They have steep varying dips, from 70 degrees west thru vertical to 80 degrees east and strike from 30 degrees west of north to 10 degrees east of north. They cut across the bedded rocks at fairly small angles both on dip and strike. Many show contact effects such as chilled margins and wallrock alteration in the limestones accompanied by some pyrite and manganese oxides.

ORE BEARING STRUCTURE.

The fault zone is 25 to 35 feet wide and bounded by two well defined parallel walls which are slickensided and graphitic. A seam of gouge and/or crushed schist up to a foot wide may be present. Both walls have fairly constant dips of 70 to 80 degrees easterly and strike north 15 degrees west at the southern end, gradually swinging around to north 5 degrees east at the northern end. The horizontal displacement appears to have been about 400 feet at its southern end, the west wall moving north relatively. The movement seems to have been much less at the northern end and it may be a hinge fault with the west (foot) wall moving up. The zone is known to be at least 1500 feet long and is mineralized for this distance.

Complementary shears within the zone strike northwesterly and northeasterly with varying dips and appear to be the main ore control. They sometime penetrate the west (foot) wall of the zone to continue as tangential shears into the footwall formations and are evidently a late feature. They contain ore and may be important.

The zone contains a feldspar porphyry dyke which is exposed in the adit workings and all surface cuts north to #11 cut. It does not come to the surface in #12 cut but probably reappears further north. It may split or terminate sharply against a cross slip, to re-appear further on in a slightly displaced position. This habit is either due to post-fault, pre-ore adjustments but could also be an early fracture pattern along which the dyke was intruded. It often contains "horses" and fragments of local sediments but its contacts are sharp and in places show no signs of movement. It has been highly altered by sericitization and bleaching and contains some pyrite. It is often the host rock for the massive ore stringers and shoots.

Post-ore adjustments along the fault zone have caused some crushing of the ore at certain places but I was unable to find evidence of ore being displaced or dragged. The east-west cross fault shown immediately south of #2 cut may possibly be later than the ore and has at any rate affected the lateral and downward continuation of No.2 ore shoot. It is an open, brecciated fissure which at one time has deposited antimonial tufa on the surface.

ORE SHOOTS.

The ore occurs as vein-like shoots in a quartz-carbonate gangue, as massive sulphides filling fractures, and as replacement in limestone. The ore minerals are Stibnite, Jamesonite, Arsenopyrite, Sphalerite, Galena, Pyrite, Andorite, Freibergite, native Silver and Gold. Andorite is a rare silver mineral similar to Freibergite. Realgar is present in the adit but seems confined to a few thin slips and is probably later than the other minerals. The ore is accompanied by a great deal of manganese oxides and other surface oxidation products. Several varieties of quartz are present, the commonest is finegrained, dark and often crustified. Assays indicate there may be several overlapping stages of mineralization. There seems to be little connection between the gold, silver and base metal contents. Native gold was seen in a milky quartz with traces of sphalerite. High silver assays are independent of the antimony-lead-zinc content. The ore minerals seem to be continuous along the fault zone and the mineralization however narrow or low grade, shows up in every trench but makes ore shoots only in certain places.

It is often difficult to recognize the original host rock because of intense alteration but the trend of the ore shoots within the fault zone vary from northwesterly to northeasterly, cutting across all the included rock types but apparently favoring the more competent types such as porphyry and limestone and those areas in the softer rocks which had previously been fortified by quartz-carbonates. As a whole I think the main ore control is the fracture and shear pattern, with

dyke contacts and possibly bedding planes as secondary factors and limestone in the case of replacement ore.

What connection there is between dyke and ore is not clear except that the dyke disappears immediately south of the adit and so does the ore.

It may be significant that the best ore shoot starts where the fault zone changes its strike to a more northerly course.

DESCRIPTION OF SHOWINGS.

There are four ore shoots indicated along the 1500 ft. length of zone explored to date. Plan No.3 shows the assays and detailed geology of the surface cuts, ore sections are shown inside the cuts, rock types in which they sit along margins of cuts.

The first 810 feet from the adit and north to #12 cut contains three shoots. Two of these lie near the southern end in disturbed ground where most of the previous work was done in 1945. Both are small lenses.

#1 ore shoot in #1 cut is 25 feet long, 13 feet wide with an average grade of .075 oz.Au and 36.5 oz.Ag. The adit tunnel cuts it 50 feet below where a 3 ft. width runs .04 oz.Au, 17.1 oz.Ag. Sampling could not be well done because of unsafe ground and there is some more ore to the west with barren sections between, but as a whole the ore underground is lower grade and much narrower.

#2 ore shoot in #2 cut is 25 feet long and 6 feet wide with an average grade of .095 oz. Au, 34.3 oz. Ag. A chip sample from a pile of about 2500 lbs. of ore removed from this cut assayed .14 oz. Au, 73.2 oz. Ag. The rock formations in the adit 100 feet underneath #2 shoot do not tally because of displacement along a cross fault and do not show the ore shoot.

#3 ore shoot is 255 feet long with an average width of 7.0 feet and average grade of .127 oz. Au, 23.4 oz. Ag. The smallest width is 3.5 ft., greatest width 16.3 ft. It starts at #4 cut and is exposed in 13 cuts up to and including #12. There is a good deal of massive sulphide ore up to 2 ft. wide bordered by quartz-carbonate ore of lower grade and the character of the ore shoot is very much the same in all trenches. The assays also show important values in lead, zinc and antimony but as several sample sections were not run for these, no averages have been computed.

#4 ore shoot lies 580 ft. further north in quite deep ground and is exposed in 4 cuts, #13A to #15 none of which expose the full width. The present data show a length of 75 feet, average width 40 inches and average grade .084 oz. Au, 14.9 oz. Ag. The combined lead-zinc-antimony content is higher than in #3 shoot and may average 12 to 15 percent. It is possible the reason for this is that oxidation and leaching is much less than elsewhere.

SAMPLING.

The work was done late in the Fall and there was no time to dig the trenches deep enough to get below surface oxidation. Most of the sample cuts are channels taken from the weathered exposures and corrected to apparent true width. Oxidation and leaching have been very active along most of the outcrops and many sample cuts show only a highly stained, porous boxwork of quartz-carbonates and manganese oxides without visible sulphides. This effect probably does not go very deep but must be considered in evaluating the assays. It is possible that the leaching may have salted some of the values to adjoining low grade or barren rock and so given a greater than true width in certain places. However, silver, zinc and antimony are readily leached out in the presence of pyrite and manganese and may have been partly removed from some sections. I do not think that under the circumstances prevailing, any surface enrichment has taken place. The several check samples taken from clean sulphide ore show generally higher silver, zinc and antimony in proportion to gold and lead than the oxidized ore.

DISCUSSION OF POSSIBILITIES.

My reasons for recommending this property are based mainly on the following interpretation of the geological chances for ore.

I think the surface geology as shown on Plan No.2 gives a suggestion of what could happen. The southern part of the fault zone from #4 cut to the adit lies in soft, incompetent rocks and the ore is small and scattered. The interesting ore is north of #4 cut where the zone lies in limestone. Because the zone dips east and the sediments west it is possible to predict that the zone will stay in limestone to a depth of possibly 3-400 feet below #6 cut, considerably more below #13 cut depending on dip and plunge of the sediments. It will then enter a band of chert and schist possibly 100 to 150 ft. thick and then re-enter the lower limestone which is at least 1000 ft. thick. If as seems likely, the limestone is the favorable host rock, #3 ore shoot might therefore continue down to the 4200 ft. level below #6 cut, pinch out at the schist band but show a northerly rake which could bring it down to the 3800 ft.level or lower, below #13 cut.

#3 ore shoot is strong, persistent and well mineralized and I think there is a good chance of it continuing laterally beyond #12 cut to join with #4 ore shoot, in which case there would be a length of 900 feet. There is a depth of say 300 ft. increasing to 700 ft. or more of favorable formation below this length and therefore room for a sizeable orebody, a 7 ft. width would give a quarter million tons. I think this is the main exploration chance on the property now, and can be quickly proven by short diamond drill holes. The lower limestone band would also be favorable and has greater tonnage possibilities which could be indicated by diamond drill holes about 500 ft. long.

Another aspect is the question of mineral zoning which in an epithermal deposit of this type might be important. In #12 cut for instance, the vein has split up into five bands and the slickensided walls seen at lower elevations are missing. The ore shoot exposed in #13A cut did not come to the surface but was found only after removing 4 to 5 ft. capping of manganese stained limestone. There is a chance therefore that the outcrops are close to the original top of the ore shoots in which case the best grade and width could be at lower elevations.

OTHER CHANCES.

Very little is known of the lateral extension north of #15 cut except that there are occasional limestone outcrops for about 1500 ft. and good ore float were found in all the surface cuts and test pits for 400 ft. north of #15 cut.

Some 3000 ft. north of #15 cut near Canyon Creek at the north boundary of the claim group, there is an extensive capping of limonite gossan and tufa overlying schist bedrock. It is fairly well on the strike of the ore zone. Mr. O'Regan sent a sample of this to Victoria and got the following assay report: nil Au, .6 oz. Ag, .2% Pb, 1.9% Zn.

The tangential shears which extend out into the footwall rocks at several places along the zone from #2 to #12 cut, may indicate replacement ore at depth. They contain good gold and silver values in a few places and where they lie in limestone, are surrounded by large alteration halos adjoining the footwall of the main zone. Rhodocrosite and quartz have been added and give the limestone a brownish tinge with sooty manganese oxides along fractures and bedding planes. Samples of this material show low values in silver, lead and zinc.

The possibility of other mineralized structures along this belt of rocks should not be overlooked. Silver Creek gets its name from the native silver recovered in old placer workings.

WORK PROPOSAL FOR 1953.

ROAD WORK.

In order to get to the property by truck, some road work is necessary. The 15 miles from Twin Creek to Takla Mercury Mine requires some grading, ditching and culverts. It should be possible to get the Department of Mines to do this as it is part of a public road. The last mile of the cat road up to Lustdust camp requires grading and a couple of culverts. This could be done by our own cat, later to be used for surface stripping etc.

CAMP.

There is room for a temporary tent camp at the end of the cat road. 5 tents and cook tent would be needed. Lumber can be reclaimed at the Takla Mercury camp.

DIAMOND DRILLING.

The property is well suited to diamond drilling, water is available near the proposed set-ups and no brush clearing or digging is necessary. So much decisive information can be had quickly by a series of short holes that I think this program should be started as early as possible and further deep drilling and eventual underground work governed by the results.

The proposed set-ups are shown on Plan No.2. 45 degree down-holes bearing 270 degrees provide the shortest distance to the vein. A series of 10 holes spaced 100 ft. along a north-south line on coord. 580W would get the vein near the 4300' level below #5 cut with a hole length of roughly 200 ft. At the north end the hole would be about 220 ft. long to get the vein below #14 cut at approx. 4270' level. This is assuming an average dip for the vein of 75 degrees east. Add 40 ft. for the width of the ore zone and we get a total of 2500 feet in 10 holes.

If these holes are encouraging I would suggest drilling a second series while the outfit is there. It could be either 2 or 3 holes, also minus 45 degrees, bearing 270 but spaced 200 ft. along coord.340W. A rough calculation shows that the holes would be from 440 to 480 ft. long to get the vein near the 4000' level which would very likely be in the lower limestone band, below the schist. If these holes show ore you would then be able to plan the low level adit which would be the main development and production adit.

T. Connors estimate the costs of this program at slightly under $5.00 per foot for 4000 feet of drilling, slightly over this figure for 2500 feet, all on a 3 shift basis.

Steep-angle holes from any of these set-ups are not recommended because they would nearly parallel the dip of the sediments and there might be coring trouble.

SURFACE WORK.

Trenching or stripping between #12 and #13 cuts would be quite expensive because of the broken, rocky ground and diamond drilling would be the cheapest way of exploring it.

However, it would be advisable to do some trenching north of #15 cut and to the west of the present vein outcrops by extending some of the cuts. Some of this work can best be done by hand but much of it will require bulldozing. The sidehill is steep and the cat must be equipped with hoist.

Prospecting for parallel breaks further afield should be done at the same time.

A crew of 6 men would be needed consisting of cat driver, swamper and 4 surface labor. In addition 1 cook, engineer, plus drill crew, probably a total of 15 men.

UNDERGROUND.

#3 ore shoot can be developed underground from the 4300' adit. About 200 ft. of drifting from the present face will bring it under #4 cut. If the ore has a northerly rake it will be a little further. Backs will be from 180 ft. under #4 cut to 220 ft. under #12 cut. However, I think this should wait until we have further information from diamond drilling and surface development.

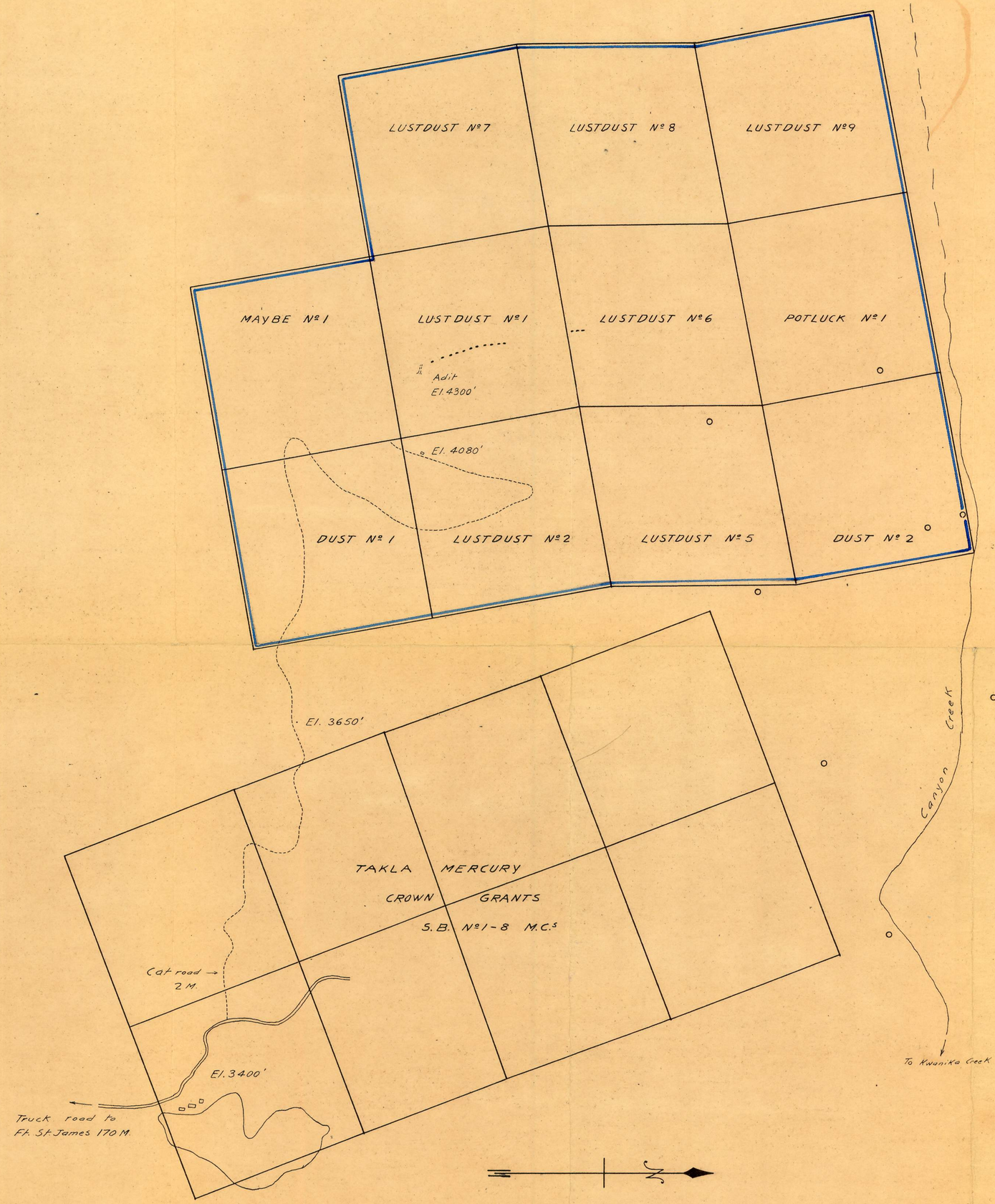
COST ESTIMATE 1953 PROGRAM.

2500 feet diamond drilling @ 5.-	12,500.00
1000 feet " " " (conditional)	5,000.00
Surface Labor, trenching, prospecting, 4 men x 120 days @ 15.-	7,200.00
Road work, stripping etc. 2 men & cat, 90 days @ 80.-	7,200.00
Camp expense, cookhouse, 1 cook	3,600.00
Supervision etc.	3,000.00
Option payment Sept 1, 1953	1,500.00
Contingencies	5,000.00
	$45,000.00

Vancouver, B.C.
Feb.18, 1953
Encl.: 4 plans

Respectfully submitted

E. Bronlund.



NOTE:

Boundaries and Position of LUSTDUST Group not surveyed and are approximate only.

O Shows surveyed corner posts of cancelled claims.

LUSTDUST PROSPECT

CLAIM PLAN

Scale: 1 inch = 600 Ft.

E.B. Oct. '52

PLATE Nº 1.

LUSTDUST PROSPECT

KWANIKA CREEK – OMINECA MINING DIVISION

GEOLOGICAL PLAN

Scale: 1 inch = 60 Ft.

E.B. Oct. '52

Nº 1 Zone

PLATE Nº 2.

Adit
El. 4300'
El. 4355'
El. 4400'
El. 4458'
El. 4486'
El. 4521'
El. 4567'
El. 4550'
ore pile approx 2500 lbs
Slide
ore float
Pond
Float at face of cut
No bedrock for 580' South to 12 cut
No bedrock North of 15 cut
LEGEND
Limestone
Argillite, Chert, schist
Feldspar porphyry dyke
Quartz-carbonates-Mn oxide
Sulphides
Shears
Au Ag Width Ft Sample Averages
LUSTDUST PROSPECT
SURFACE SHOWINGS AND ASSAYS
SCALE: 1 inch = 20 Feet
EB Oct/52
PLATE No 3.
No 1 ZONE