

REPORT BY A.P. BEAVAN, Ph. D.

PROPOSED PROGRAMME OF EXPLORATION

ATLIN-RUFFNER MINES (B.C.) LTD.

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PROPOSED PROGRAMME OF EXPLORATION, ATLIN-RUFFNER MINES (B.C.) LTD.

SUMMARY

Based on the work and recommendations of Dr. V. Dolmage, with which I concur, a new programme of exploration is outlined for the period April-December 1951, with costs to be defrayed in part by shipment of high grade ore.

The immediate objective will be to determine the extent of rich oxidized ore along the two main veins by stripping, and to study further the possibility of locating substantial ore shoots of primary ore in the structures.

The estimated cost of the programme, to continue to December 31st, is \$150,000. The work to be done for this sum will include the production of at least 1000 tons of shipping ore which, it is reasonable to expect, may yield a net return to the Company of \$70,000. Should the results of exploration warrant it, the rate and period of ore shipments could be increased with consequent larger net profit.

I INTRODUCTION

The mining property of Atlin-Ruffner Mines (B.C.) Ltd. has been fully described in the report of Dr. Victor Dolmage, of November 1947. I regard this as the most modern and comprehensive of the several reports on the property, and am in full agreement with the recommendations made therein. The purpose of this memorandum is to appraise the indicated ore in the light of present costs and metal prices, and to outline plans, with estimated costs, for implementing the development recommended by Dr. Dolmage. A very brief summary of his findings is therefore in order as explanation for the proposed new work.

II SUMMARY DESCRIPTION OF PROPERTY

Geology and Mineral Deposits -- The Atlin-Ruffner is a silver-lead-gold-zinc prospect sixteen miles by road northeast of Atlin, B.C. It was explored intermittently between 1899 and 1934. In the period 1922-1927, during the course of exploration, fourteen shipments of sorted ore, totalling 281,34 tons, and having an average net smelter value then of \$61.26 per ton, were made to smelters in California and Idaho. Since 1934, when low metal prices discouraged operation, no work has been done.

The mineral deposits of the property are confined to fault zones which follow large lamprophyre dykes cutting granodiorite of the Coast Range batholith. The dykes, up to 30 feet wide, strike N 75° E and dip steeply north. "The faults extend continuously along their respective dykes for thousands of feet horizontally and no doubt for equal or greater distances vertically. The zones of gouge accompanying the dykes vary from 5 to 20 or 30 feet in width and are usually very soft and cave readily in stopes and tunnels. Because of their size and softness they form surface depressions, even where the overburden is of considerable thickness, and these depressions enable them to be easily traced for long distances in areas containing no rock out-crops. Where the faults are occupied by vein material its presence can also be detected on the surface by scattered fragments of quartz in the depressions. Prospecting of the area is therefore comparatively easy." (V. Dolmage, p.12)

"The veins proper consist of lenses of quartz with varying amounts of galena, zincblende and other sulphides, or in some places of solid lenses of galena, zincblende and pyrrhotite with no quartz. While the faults and their associated dykes are large and continuous for great distances the veins are scattered widely and irregularly through the faults and in reality occupy only a small proportion of their total volume. The veins or the ore lenses as they should be called, vary in length from one foot or less to 6 or 7 feet. They are not sharply defined but are surrounded by zones in which small lenses, blebs and particles of sulphide become gradually smaller in size and fewer in number with increasing distance from the central ore body." (V. Dolmage, p.12-13)

All the ore so far known is in two large parallel fault-dykes about 1500 feet apart, known as No.2 and No.4 fault-dykes. Workings on No.2 are distributed over a strike length of 5500 feet and a vertical range of 1700 feet. No.4 dyke is explored at intervals for 3300 feet and over a vertical range of 1000 feet. The distribution and extent of workings is most readily shown on the attached vertical longitudinal sections. (Fig.I).

Several other veins are mentioned on the property but have not been established as comparable in size or importance to No.2 and No.4 dykes.

The work done on the veins shows that at and near the surface the ore minerals "are more or less replaced by lead and zinc carbonate with much limonite and probably some secondary silver mineral. Ruby silver has been reported. The ore in this zone is higher than average grade."

"There appears to be a gradual change in the composition and a lowering of grade of the primary ore from the higher to the lower levels. The zincblende, pyrite and pyrrhotite become more abundant and galena less abundant. The gold, silver and lead contents are much lower in the deeper workings and in the deepest tunnel gold is practically absent."

"A similar but less marked lowering of grade and change in mineral composition appears to be demonstrated between 2X and 2D tunnels." but "the above evidence does not prove that this change in composition with depth is a regional characteristic to be expected of all veins in the district." (V. Dolmage, p.14)

Estimated ore available at present -- Owing to the general limitation of most of the previous exploration to horizontal workings, and to the manner in which samples were taken and recorded, an accurate estimate of the amount of ore at present available is not possible.

An indication of the dimensions and metal content of the ore bodies is given in the attached table (after Dolmage) based on study of all available mine plans and supplemented by resampling of some of the accessible workings in 1947. (Table I)

From the table it may be seen that high grade ore is limited to 2D 2B and 2X workings on No.2 dyke, and to 4AA tunnel on No.4. Of these areas, 2X tunnel is by far the most important. In it "there are six short sections or lenses of rich ore. The total length of these is 525 feet and the average width 2.5 feet. This would amount to $525 \times 2.5 = 131$ tons per foot of depth. Owing to the shortness of the lenses and to the absence of any commercial ore on the 2D level it is dangerous to assume even 100 feet of depth. Besides this,

much of the richest ore has already been mined and shipped. It is doubtful if there is 10,000 tons of ore in these workings." (V. Dolmage, p.30).

With the additional unknown amounts of ore in 2C, 2B and 4AA workings it appears probable that 10,000 tons of ore could be obtained from the present showings. However, considerable rehabilitation of workings would be necessary before all this could be mined, so that the net profit might be small.

An indication of the grade of material that might be obtained by sorting, both from surface and underground workings, is given in the attached Table II of ore shipments made 1922-1927 (after Dolmage). The proportion of waste sorted to make these shipments is unknown.

Possibilities of Additional Ore -- As mentioned above, the veins, near surface, contain enriched oxidized ore; below this zone there is a good grade primary ore which also appears to be limited to a comparatively shallow zone. Should these zones extend more or less continuously along the two fault dykes, a large amount of rich ore would exist. Such ore is known at intervals along 8800 feet of the No.2 and No.4 structures, of which only 10% has been prospected. In the light of the known characteristics of the primary ore shoots it is probably too much to expect a continuous capping of rich oxidized ore; but there would seem to be a reasonable chance of finding important amounts of such ore by stripping along the two main structures with a bulldozer. This method of exploration would be cheaper than underground work; ore exposed would be mineable by open-cut and shallow underground mining at lower-than-normal costs, and the possibilities of developing sufficient primary ore to warrant mill installation would to some extent become apparent as work progressed. (The enriched oxidized ore is not amenable to ordinary milling processes).

Recommendations -- Further exploration of the property is fully warranted, and should take the following form:

1. Systematic prospecting of fault dykes by stripping with bulldozers.
2. Mining and shipping rich oxidized or primary ore found by stripping.
3. Mining and shipping ore from 2X workings, as a means of extending exploration in this area.
4. Limited tunnelling wherever necessary to supplement the surface exploration by following ore downward or laterally.

The estimated costs of the work, and possible profit from shipping the crude ore, are examined below.

III PROPOSED PROGRAMME OF EXPLORATION

The main chance of rapidly and substantially improving the ore position of the property lies in thorough surface exploration of No.2 and No.4 veins. Therefore, stripping by bulldozer must start as soon as the ground is reasonably free of snow, say June 1st.

While exploration, looking to the establishment of a permanent mining operation, is naturally the principal object of the year's operation, the secondary objective -- limited production through

shipments of high grade ore -- can materially assist in this aim. In order to make the most of summer conditions it is therefore advisable that, pending the outcome of the surface stripping programme, initial mining and ore shipments be started as early as possible (June 1st ?) from the 2-X workings. If and when new areas or rich oxidized ore are opened by stripping, preference should then be given to mining these for shipping ore.

The estimated cost of the season's work is \$150,000; this is broken down in the attached Tables III-V. These figures are based on the assumptions that surface work will be possible to September 30th, trucking ore to October 31st, and that work in the period November and December would therefore be limited to underground development without shipments of ore.

Since the ore to be shipped will be recovered during a programme of exploration, the possible rate of production will naturally be variable and limited. If an objective of \$70,000 net profit from ore shipments is set for the summer's operations, the scale and tempo of ore extraction may be estimated as follows:

Objective: Net profit of \$70,000 from ore shipments.

Assumptions: 1. Surface work feasible to Sept. 30th; trucking to railhead feasible to Oct. 31st.
2. Surface results such that only 1 ton of rich oxidized ore available for every three tons of ore in 2X workings.

Then, net smelter value of ore shipped (see Table VI) will be:

Surface ore	1 x 180.57 =	180.57
2X ore	$\frac{3}{4}$ x 69.04 =	<u>207.12</u>
		387.69

Average net smelter value =	96.42
Less tpt & smelter charges =	<u>27.48</u>
∴ net return per ton shipped.	\$69.44

say, \$70.00 per ton

To obtain \$70,000 must ship 1000 tons. Using one 7-ton truck and two drivers, make one round trip to railhead per day; then number of trips required = 145; i.e., total period June 1 to October 31.

Assuming that at least one quarter of shipping ore is to be obtained from surface cuts, and that this will largely govern the rate of mining elsewhere on the property, the 1000 tons should be produced during the period June 1 - Sept. 30 (120 days), or at a rate of 9 tons daily.

This rate should be within the capacity of the recommended crew for the operation.

Sequence of Operations --

April 15th to June 1st - Advance party including geologist (asst. manager) and cook to rehabilitate camp and assay office, commence necessary surface mapping.

The manager should be available early in May to take delivery of equipment and supplies and prepare 2X workings for mining as soon as possible after June 1st.

June 1st - Commence stripping with bulldozers and mining in 2X area.

June 15th - Commence shipping ore to railhead.

Once operations are well under way, source of shipping ore will be determined by results of stripping, the object being to ship as high a grade of ore as possible and preferably oxidized ore. Consideration should be given early in the operation to sorting the crude ore.

By the time that stripping of Nos. 2 and 4 veins is complete, it is expected that geological study and detail mapping and sampling will have proceeded sufficiently to locate any other veins or showings on which stripping should be done, and to indicate some new areas on the veins where tunnelling may be advisable.

The estimated monthly expenditures for the year are shown on the attached Table V.

"A.P. BEAVAN"

February 6, 1951

ATLIN-RUFENER MINES (B.C.) LIMITED

TABLE I

Tabulation of information concerning quantity
and grade of ore

Area on long. section	Length	Depth	Width	<u>No. 2 Fault Dyke</u>					
				Tons	Au oz	Ag oz	Fb %	Zn %	
1	70'	70	3.3'	1617	0.11	56.4	19.1	-	
2	-	-	1.3	?	0.02	39.0	37.0	2.7	
3	60	-	2.2	?	0.12	25.3	-	-	
4	-	-	3.2	?	0.04	37.9	4.0	2.7	
2X Tunnel:									
5	110	-	2.3	?	0.29	129.1	9.4	3.0	
6	85	-	1.8	?	0.10	17.3	5.1	6.2	
7	75	-	2.6	?	0.19	137.3	7.6	5.1	
8	55	-	2.1	?	-	21.4	4.0	-	
9	<u>200</u>	-	<u>3.1</u>	?	<u>0.06</u>	<u>53.7</u>	<u>1.9</u>	<u>0.06</u>	
Average 2X	525'		2.5'		0.12	71.7	5.6	2.8	
10	15	20	4.1	123	0.04	24.3	5.0	2.6	
11	120	-	3.7	?	Tr.	14.4	5.1	2.8	
2D Tunnel									
	75	-	4.5	?	Tr.	4.3	1.5	2.8	
	78	-	3.6	?	Tr.	4.5	2.1	3.1	
	25	-	2.1	?	Tr.	4.1	4.1	5.1	
	50	-	2.3	?	Tr.	1.6	1.5	4.2	
	121	-	5.1	?	Tr.	1.2	1.5	2.2	
	<u>25</u>	-	<u>3.8</u>	?	<u>0.24</u>	<u>5.6</u>	<u>6.2</u>	<u>4.2</u>	
Average 2D	374'		3.5'		-	3.5	2.8	3.5	
<u>No. 4 Fault Dyke</u>									
12	10	-	3.0	?	Fair	Poor			
13	-	-	1.3	?	0.16	37.2	14.6	-	
14	35	-	2.6	?	0.18	50.0	12.1	3.3	
15	140	-	3.4	?	0.06	15.4	3.0	-	
16	<u>280</u>	-	<u>1.2</u>	?	<u>0.03</u>	<u>10.7</u>	<u>2.4</u>	<u>3.5</u>	
Total	465		2.7'	Average	0.08	22.6	6.4	1.3	

ATLIN-RUFFNER MINES (B.C.) LIMITED

TABLE II

Ore shipments 1922-1927

<u>Lot No.</u>	<u>Dry Wt. lbs.</u>	<u>Au oz</u>	<u>Ag oz</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Source</u>
1070	20988	.05	82.90	44.9	1.7	Surface No. 2C
1069	6138	.12	81.05	31.0	10.5	Surface No. 4
3061	19000	.07	86.20	51.8	4.8	2C Shaft
3062	4617	.05	82.30	7.2	9.8	Complex ore No. 2C Drift
					(cu. 4.1)	
2215	59436	.16	75.70	29.25	12.4	2C Shaft
6788	19898	.11	193.95	7.7	3.0	2X Surface
3657	63792	.09	110.30	17.5	1.3	2X Winze
4979	63343	.17	133.10	19.7	3.1	2X Winze
4820	69363	.16	202.00	21.8	3.6	2X Winze
8590	13880	.27	134.65	25.4	11.5	2X Tunnel
6192	114303	.17	124.30	11.9	4.1	2X Winze
1	1783	.04	215.25	52.35		2A Tunnel
9772	58974	.09	70.50	12.13	7.4	2X Drift
9895	48163	.09	74.77	13.43	5.2	2X Drift

Total weight 281.339 tons Total net returns \$17,231.45 \$61.25 average per ton

Smelter Settlement Basis

Gold 95% @ \$20.00 per ounce. Silver 95% N.Y. quotation. Lead less 1.5% of net assay less 1.5 cents per pound duty London quotation. \$1.00 per unit penalty for antimony and arsenic over 2%.

ATLIN-RUFFNER MINES (B.C.) LIMITED

TABLE III

Estimated labor force, man-days, salaries and wages,
April-December, 1951

<u>Personnel</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sep.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Rate/ month</u>	<u>Total</u>
Manager		31	30	31	31	30	31	30	31	\$600	\$ 4,800
Geologist (asst.mgr.)	15	31	30	31	31	30	31	30		350	2,625
Asst. geologist		31	30	31	31	30				225	1,125
Cook	15	31	30	31	31	30	31	30	31	250	2,125
Cooke			30	31	31	30	31	30	31	215	1,505
Bulldozer	15	31	30	31	31	30	31	30	31	225	1,915
Assayer			30	31	31	30	31	30	31	300	2,100
Assay asst.			30	31	31	30	31	30	31	225	1,575
Dozer ops. 4			120	62						360	2,160
Truck drivers, 2			60	62	62	60	62			330	3,300
Accountant		31	30	31	31	30	31	30	31	275	2,200
Storeman/time-keeper		31	30	31	31	30	31	30	31	225	1,915
Miners, 2			30	62	62	60	62	60	62	360	4,680
Helpers, 2			30	62	62	60	62	60	62	320	4,160
Compress.man			30	31	31	30	31	30	31	350	2,450
Timberman, etc., 1			30	31	31	30	31	30	31	300	2,100
Trammers, loaders, 2			30	62	62	60	62	60	62	300	3,900
Carpenter	15	15									
Gen. Manager, Consultant			15	62	62	15					1,800
Total man days per month	75	232	645	744	682	615	589	510	480		\$46,865
<u>Grand total</u>											<u>4572 man days</u>

ATLIN-RUFFNER MINES (B.C.) LIMITED

TABLE IV

Estimated expenditure - April-December, 1961

<u>Item</u>	<u>Basis of estimate</u>	<u>Total cost</u>
<u>EQUIPMENT:</u>		
Assay office	New furnace \$1,000 2 balances 1,200 Miscellaneous supplies and repairs <u>1,800</u>	\$ 4,000
Compressor	D-13000 Cat-driven, portable compressor, 365 cu.ft.incl. freight	16,000
Truck	7-ton capacity, \$5,700 plus freight \$700	6,400
Mine equipment and supplies	2 machines @ \$700 \$ 1,400 Water hose 2,000' 500 Air hose 2,000' 1,000 Pipe - 1,000' each water and air 1,400 Track 1,000' 1,000 2 cars @ \$350 700 Bits, shanks, grinder 1,600 Powder - 200 cases @ \$15. caps, fuse <u>3,300</u>	10,900
<u>SUPPLIES:</u>		
Cookery	4,572 man/days @ estimated \$3.40 per man/day	15,545
Fuel Oil (diesel)	310 tractor days @ 8 hrs. @ 3 gph @ 50¢/gal \$3,720 Compressor - 210 days @ 8 hrs. @ 3 gph @ 50¢/gal <u>2,520</u>	6,240
Gasoline	150 return trips Whitehorse-Atlin, 33,000 miles, 15 mpg - 2,200 gals @ 52¢	1,400
Kitchen rehab. and equipment		1,000
Bunkhouse rehab and furnishing	24 beds and mattresses, hardware, heaters	800
Lumber	8,000 f.b.m. @ \$100	800
Small tools	Shovels, picks, axes, hammers, nails, etc, sundry supplies	1,000
TRACTOR RENTAL:	2 machines for one month @ \$1,400/MO. 1 machine for additional month	4,200
<u>ADMINISTRATION:</u>		
Vancouver office	9 months @ \$500	4,500
Travel expense		4,000
Insurance, unemployment insurance, etc.		<u>2,000</u>
Total (forward)		\$ 75,770

Atlin-Rufner MinesTABLE IV (Cont'd)Total Cost

<u>Item</u>	<u>Brought forward - Basis of Estimate</u>	
		<u>\$75,770</u>
Add wages and salaries		46,865
MINE ROAD CONSTRUCTION: 10 miles		
Estimated cost \$30,000; 50% of cost contributable by B. C. Public Works Department. Cost to Company		<u>15,000</u>
		\$ 140,650
10% contingency		<u>14,350</u>
		\$155,000.
Less deductions from payroll for board - say, 3,700 man/days @ \$1.50		<u>5,500.</u>
	Total	<u>\$149,500</u>

ATLIN-RUFFNER MINES (B.C.) LIMITED

TABLE V

Schedule of estimated monthly expenditures
April- December 1951

<u>Item</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total</u>
Wages and salaries	\$ 705	\$ 2055	\$6920	\$7480	\$6760	\$6460	\$5935	\$ 5275	\$ 5275	\$ 46,865
Cookery supplies	1000	3000	3000	3000	3000	2545				15,545
Fuel oil			3000		3240					6,240
Gasoline			300	300	300	300	200			1,400
Camp rehab.	1800	1800								3,600
Assay office & supplies		4000								4,000
Tractor rental			2800	1400						4,200
Truck, 7-ton		6400								6,400
Compressor		16000								16,000
Min. equip. & supplies		10900								10,900
Vancouver office	500	500	500	500	500	500	500	500	500	4,500
Travel	500		1000		1000		1000		500	4,000
Insurance		2000								2,000
Total	\$4,505	\$46655	\$17520	\$12680	\$15335	\$ 9805	\$7635	\$ 5775	\$6275	\$125,650
Total expenditures on road construct.			7500	11500	11000					30,000
	\$4505	\$46655	\$25020	\$24180	\$25800	\$ 9805	\$7635	\$ 5775	\$6275	\$155,650
Less:										
Payroll ded.		150	759	900	750	750	750	750	750	5,500
Refund. Portion of road const. expen. (\$15,000)						5000	5000	5000		15,000
Net monthly expenditure	\$4505	\$45505	\$24270	\$23280	\$25050	\$ 4055	\$1985	\$ 25	\$5525	\$ 135,100

ATLIN-RUFFNER MINES (B.C.) LIMITED

TABLE VI

Estimated net smelter value of ores
(Basis, attached smelter tariff, C.M. & S. Co. Ltd.)

1. Average ore in ZX Tunnel workings

Composition:	Au	0.12 oz. per ton	Fe (assumed)	15%
	Ag	70.0 oz. per ton	As plus Sb "	3%
	Pb	5.6%	Moisture "	2%
	Zn	2.8%	Silica -lime "	20%

Payments for metals:

Au	0.12 x 36.00 x 0.95	\$ 4.10
Ag	70.0 x 90¢ x 0.95	59.85
Pb	5.6 x 20 x 0.925 x (17-2¼)¢	16.65
Zn	½(2.7 x 20) x (18-6)¢	3.36
Gross value per ton		<u>\$83.96</u>

Deductions:

Base charge per ton	\$12.00	
Penalties - Zn 2.8 x 22¢	.62	
As-Sb 3 x 0.40	1.20	
Fe - will eliminate Zn payment	3.36	
	<u>\$17.18</u>	
Credit - Silica plus lime, 19 x 14¢	2.66	
Net deduction		<u>14.52</u>

Estimated net smelter value per ton \$69.04

2. Sorted surface ore - Average of lots 1070.1068 & 6788

Composition:	Au	0.08 oz. per ton	Fe (assumed)	20%
	Ag	129.0 oz. per ton	As plus Sb "	2%
	Pb	27.3%	Moisture "	4%
	Zn	3.3%	Silica plus lime	15%

Payments for metals:

Au	0.08 x 36.00 x 0.95	\$ 2.73
Ag	129 x 90¢ x 0.95	110.30
Pb	27.3 x 20 x 0.925 x (17-2¼)¢	78.51
Zn	½(3.3 x 20) x (18-6)¢	3.96
Gross value		<u>\$195.50</u>

Deductions:

Base charge per ton	\$12.00	
Penalties - Zn 3.3 x 22¢	.73	
Sb plus As 1 x 40¢	.40	
Fe will eliminate Zn payment	3.96	
	<u>\$17.09</u>	
Credit - Silica plus lime 14 x 14¢	1.96	
Net deduction		<u>15.13</u>

Estimated net smelter value per ton \$180.37

ATLIN-RUFFNER MINES (B.C.) LIMITED

TABLE VII

Estimated costs of shipping and smelting
crude ore, 1951

The following figures are based on costs supplied by United Keno Hill Mines pending receipt of official quotations on freight costs, etc. from the appropriate authorities.

The costs of production of metals by shipping crude ore from the Atlin-Ruffner property will include:

- A. Cost of mining and bagging ore.
- B. Transportation, mine to smelter.
- C. Smelter charges.

A. Mining Cost.

For an operation of 100-150 tons per day, this cost is tentatively estimated at, per ton \$ 15.00

Note: In the presently planned work, limited production during the course of exploration, the cost of extracting the ore is included in the estimated total cost of the year's program.

B. Transportation.

1. Trucking ore, mine to Whitehorse, estimated 7¢ per ton mile, equivalent to 2 x 110 miles x 0.07 per ton 15.40

Note: This figure charges the entire round trip to railhead against production. For the limited production estimated for this summer, this figure is included in the total estimated cost, where provision is made for purchase of truck and movement of 1000 tons of ore.

2. Whitehorse-Skagway (B.Y.N.) per ton	6.55
U.S. customs charge, say	.05
Cargo charge	.05
Skagway-Vancouver (CPR)	5.55
Vancouver-Trail (CPR)	10.28
Debagging ore, Vancouver	1.50
3. Ore bags - capacity 100 lbs. cost 35¢ per bag life, two trips equivalent to, per ton	<u>7.50</u>

Total estimated cost per ton of ore shipped \$ 57.88

For estimated 1000 tons shipment, 1951, deduct items A and B-1, above, as included in estimated total cost of season's operations 30.40

Estimated net cost of shipping and treating 1000 tons, per ton \$ 27.48

TERMS FOR PURCHASE OF LEAD CONCENTRATES AND ORES

C.M. & S. CO. OF CANADA LTD., TRAIL, B.C.

This schedule is not now freely obtainable from Trail; the following information is, therefore, derived from United Keno Hill Mines Ltd.: it is applicable to both ore and concentrates.

Payments: Gold, if over 0.03 oz/ton - 95% paid for at Mint price.
Silver, if over 0.30 oz/ton - 95% paid for at New York price.
Lead, if over 65%, 94% paid for;
if under 65%, 92 $\frac{1}{2}$ % paid for at New York price, less
2 $\frac{1}{4}$ ¢ per lb. (export charges).
Zinc, if over 2.5%, 50% is paid for at St. Louis prices.
(prime western) less 6¢ per lb. (export charges)

Penalties: Zinc - 22¢ per unit.
Moisture - 20¢ per unit over 5%.
Combined arsenic plus antimony - 40¢ per unit over 1%.
Iron - if iron content exceeds 1.7 times zinc content,
amount of zinc paid for reduced by 1.3% for each unit
of iron over 1.7 times zinc content.

Credits: Lead - 10¢ per unit over 30% Pb
Silica plus lime - 14¢ per unit over combined silica plus
lime

Base charge: \$12.00 per ton