

Western Exploration Co. Ltd.  
Silverton, B. C.

June 26, 1954.

ESTIMATED ORE RESERVES IN THE MONARCH MINE  
BASED ON DIAMOND DRILL HOLES.

Five holes show commercial ore; they indicate an approximately flat oreshoot between 65 and 115 feet vertically below the tunnel level and 225 feet long.

To obtain the estimated tonnage lines were drawn on the maps enclosing the area presumed to be ore, on both plan and elevation. The square feet of the area was calculated and the breadth of the ore in the plane of the vein found. Tonnage was figured at 10 cu. ft. of ore per ton, amounting to:-

By horizontal area	8775 tons )	) average 8268 tons.
By vertical area	7762 tons )	

For safety and convenience use 8,000 tons estimated ore.

Metal Content of Ore

In all cases some core was lost; the recovered core was split and one part assayed.

Sludges were saved and those which might possibly show metal were assayed. In steep drill holes the heavy metallic minerals showed a strong tendency to hang back in the hole and to come up in two or more of the following sludge samples; the metal content of the following sludges have therefore been added to the first one showing ore.

Content of Individual Drill Holes

	<u>Pb %</u>	<u>Zn %</u>	<u>Ag. Ozs.</u>	<u>Width - Feet</u>
D. H. A21 No core recovered	-	-	-	
Sludge	13.7	0.7	24.0	4.6
D.H. A22 Core 24.2 - 18.3 - 33.2 - 1.3				
brought up to 4.1 width	7.7	5.8	10.5	4.1
Sludge	4.2	11.0	13.7	4.1
Combined	6.5	7.5	11.9	4.1
D.H. A25 Core	18.7	7.2	67.5	5.4
Sludge	5.2	2.3	22.5	5.4
Combined	12.0	4.8	45.0	5.4

Content of Individual Drill Holes (continued)

	Pb %	Zn %	Ag. Ozs.	Width - Feet
D.H. A38 Core (14.0 - 26.7 - 604.8 - 1.3) (11.8 - 9.0 - 218.0 - 0.8) true assays combined and cut to - 13.1 - 20.0 - 114.0 - 2.1 and raised to 3.2 width	8.6	13.1	74.8	3.2
Sludge	7.5	18.2	68.1	3.2
Combined	8.1	15.7	71.5	3.2
D.H. A41 Core 6.1 - 3.3 - 33.0 - 3.2 true raised to 5 foot width	3.9	2.1	21.1	5.0
Sludge	7.3	2.6	41.0	5.0
Combined	5.6	2.4	62.2	5.0

The combined averages of the five holes are:

A. By core plus sludge of A21 where no core was recovered	14.6	7.1	52.0	3.3
B. By sludges only	9.2	6.5	37.3	4.5
Average of "A" brought up to 5.0' width	9.4	4.8	35.8	5.0
Average of "B" brought up to 5.0' width	8.2	5.4	34.6	5.0
Final average of "A" & "B" brought up to 5.0' width	8.8	5.1	35.2	5.0

Gross value per ton @ 14¢ lead, 11¢ zinc & 85¢ per oz. Ag. \$65.78  
 Value per ton converted to concentrates by T. M. Leask \$42.93  
 Total value converted to concentrates 8000 tons @ \$42.93 \$343,440.

This, I believe, is a conservative estimate of the metal content of the ore. It may be possible to mine a considerable proportion of the ore over widths less than 5 feet, with a corresponding increase in the per ton value.

Summary

Estimated cost of driving Mammoth No. 7 level under the Monarch orebody and raising through it to the Monarch tunnel	\$71,750	
Advisable extension of No. 7 level	5,000	
Advisable exploratory crosscuts across vein	5,000	\$81,750
Estimated cost of mining and milling 8,000 tons ore		120,000
Estimated smelter returns from concentrates		\$343,440
	201,750	343,440
Estimated profit (Before depletion & taxes)	141,690	
	343,440	343,440

Cost of the Monarch tunnel to April 30th, 1954 is \$106,143

There is also a very good chance of picking up additional ore on the No. 7 level and/or below it by diamond drilling from a crosscut to be driven later.

Under the conditions as outlined above the driving of the Mammoth No. 7 to open up the Monarch orebody is more than justified and I heartily recommend that it be done.

*Chas. C. Starr*

WESTERN EXPLORATION COMPANY LIMITED

Silverton, B. C.

June 26, 1954.

Estimated Value of 100 Tons of Monarch Ore

Converted to Concentrates

Lead

11.9 Tons  
70.0 %  
251.4 Ozs. Silver

Zinc

8.3 Tons  
55.0 %  
46.6 Ozs. Silver

Prices:	Pb. 14¢ lb.	Zn. 11¢ lb.	Ag. 85.25¢ per oz.	@ 2% Discount
Silver	251.4 X .95 X .8254	\$ 197.13	Silver	46.6 X .65 X .8254 \$ 25.00
Lead	1400 X .925 X .1022	132.35	Zinc	1100 X .83 X .0678 61.90
Premium	20¢ per unit for 18 units	<u>3.60</u>	Cadmium	<u>2.30</u>
		\$ 333.08		\$ 89.20
	<u>Deduct :</u>			<u>Deduct:</u>
Treatment		15.00	Treatment	12.00
Freight		<u>7.00</u>	Freight	<u>6.00</u>
		<u>\$ 311.08</u>		<u>\$ 71.20</u>
11.9 Tons @ \$311.08			8.3 Tons @ \$71.20	

Lead Production \$ 3,701.85  
Zinc Production 590.96  
\$ 4,292.81

Value per ton of ore \$42.93

WESTERN EXPLORATION COMPANY LIMITED

SILVERTON, B. C.

Estimated on 100 tons of Monarch Ore.

PRODUCTION STATEMENT.

~~XXXXXX~~ June 26, 1954.

	MILL FEED	LEAD CONCENTRATES	ZINC CONCENTRATES	TAILS
TONNAGE	100	11.9	8.3	
ASSAYS				
Lead	8.8	70.0		
Zinc	5.1		55.0	
Silver	35.2	251.4	46.6	
PRODUCTION				
Lead	17,600	16,720		
Zinc	10,200		9,180	
Silver	3,520	2,992	387	
RECOVERIES				
Lead		95.0		
Zinc			90.0	
Silver		85.0	11.0	

Possible Running Time - ..... Hours

Actual Running Time - ..... Hours

Efficiency - ..... %

Western Exploration Co. Ltd.

Silverton, B. C.

June 27, 1954.

Estimated Cost of Driving No. 7 Level of the Mammoth Mine to a Point Under the Orebody Diamond Drilled Below the Monarch Tunnel and Raising through the Ore to the Monarch Tunnel.

<u>Preparation</u>	Stripping Monarch Tunnel of rails, pipe etc, Moving and installing same in Mammoth #7 level	\$2,000
<u>Tunneling</u>	Drifting from Mammoth #7 Level face to point opposite Monarch #1 H.W. X-cut 1630 feet @ \$25	40,750
	Crosscuts for switching cars 8 @ 25 ft. long @ \$25	5,000
	Raise to Monarch Tunnel 480 feet @ \$50	<u>24,000</u>
	Cost of necessary work to reach Orebody & Monarch tunnel	\$71,750
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	Advisable extension of drift beyond point opposite #1 H.W. X-cut of Monarch 200 ft. @ \$25	5,000
	Eight crosscuts through vein at 250ft. intervals @25 ft each @ \$25	<u>5,000</u>
		<u>\$81,750</u>
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Western Exploration Co. Ltd.

Silverton, B. C.

	<u>Tons</u>	<u>Assays</u>		
		<u>Pb%</u>	<u>Zn%</u>	<u>Ag. Oz.</u>
<u>MAMMOTH MINE</u>				
Ore estimated from diamond drill holes between levels No. 7 & #9, August 14, 1944	18,250	3.3	9.5	6.0
Total pounds of metal Pb. 1,204,500 Zn. 3467,500 Ag. Oz. 109,500				
Ore extracted between Levels No. 7 & #9 from start to November 30, 1952	24,047	1.7	8.3	4.3
Total pounds of metal Pb. 817,598 Zn. 3,991,802 Ag. Oz. 103,402				
Estimated ore reserves between levels No. 7 & #9 as of November 30, 1952.				
Probable grade same as ore extracted	23,334			