

To: D. H. James 21st January, 1964.  
 From: R. A. Hrkac  
 Subject: Lustdust Tonnage Calculations - Based on work by E. Bronlund.

*These are possible tonnages only and not  
Zone 1 to be released out of office.*

Zone 1, was subdivided into four areas. Surface calculations were made using the assays and sample widths of E. Bronlund. The weighted average width and the weighted average for gold and silver (only) content, derived by using the formula 
$$\frac{\sum X_1 W_1 + X_2 W_2 \dots}{\sum X_1 + X_2 \dots}$$
 was used for each area.

A depth for this zone was obtained by using the "indicated" ore sections in D.D.H.'s 1 - 9.

Area 1 - Trenches 1 to 3

Surface Calculations - from total of 29 samples.

Width	Length	Area	Tons/vert.ft.	Au	Ag	Gross Value/ton
4.8'	320.5	1550	129.16	.062	20.35	\$30.66

This area has not been tested by drilling but an adit was driven and drifting was done along what was thought to be the structure. Results were disappointing.

Extending the results of D.D.H. No. 1 to include this zone and allowing for the decrease in elevation from Trench 5 to Trench 1 a depth of 100 feet was arrived at and gives the following results.

Total tonnage  $129.16 \times 100 = 12,916$  tons @ \$30.66/ton  
 Gross Value = \$396,004.56

Arithmetic average of lead, zinc and stibnite assays gave:

Pb - 0.74%                      Zn 0.91%                      Sb 3.87%

Area 2 - Trenches 4 to 12 - See diagram

Surface Calculations - from total of 55 samples.

Width	Length	Area	Tons/vert.ft.	Au	Ag	Gross value/ton
6.3'	254.3	1620.3	135	.119	19.28	\$31.15

Extending this zone to the depth of intersections in D.D.H.'s 1 - 2 and 3 gave a total tonnage figure of 26,217 tons and a gross value of \$816,659.55.

Arithmetic average of lead, zinc and stibnite assays gave:  
 Pb - 1.89%                      Zn - 0.45%                      Sb 3.24%

Area 3 - Between Trenches 12 and 13

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This is a slide area and no surface showings were uncovered.  
Diamond Drill holes 4, 5 and 6 "indicated" mineralization persists through  
this area.

Surface calculations, inferred by projection:

Width	Length	Area	Tons/vert.ft.	Gross value/ton
4	580	2320	193.3	\$25.00

At assumed depth of 270' - Tonnage = 52,191 tons  
Gross value = \$1,304,775

Area 4 - Trench 13 to 15

Surface Calculations - from total of 6 samples.

Width	Length	Area	Tons/vert.ft.	Au	Ag	Gross value/ton
3.39'	90'	305.5	25.46	.08	13.12	\$21.17

D.D.H. No. 9, vertical depth to intersection is 340' - Tonnage = 8,656.46 tons  
Gross Value = \$183,257.26

Arithmetic average of lead, zinc and stibnite:

Pb - 3.625%                      Zn - 2.875%                      Sb - 11.875%

Totals Area 1-4

Tonnage	Area 1	12,916
	Area 2	26,217
	Area 3	52,191
	Area 4	<u>8,656.46</u>
	Total	99,980.46 tons

Gross Value	Area 1	\$396,004.56
	Area 2	816,659.55
	Area 3	1,304,775.00
	Area 4	<u>183,257.26</u>
		\$2,700,696.37

Discussion: The above calculations were made to obtain some idea of the potential of Zone 1. The results, except for surface calculations of Areas 1, 2 and 4, are based on data that, at best, can only infer the extension of mineralization.

D.D.H. Summary.

Hole No. 1 - 136'-146' ore indicated - no core 13'-66' Bleached Porphyry.  
66'-150' limestone  
150'-168' bleached porphyry.

Hole No. 2 - 190.5 - 193', 0.2' of core assayed Au.12  
Ag 21.34, 2.3' core missing  
201-203, sand, Au.07, Ag 9.86

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- 235.7 - 238, 1.5' core, Au.28, Ag 251.86  
 Zn 7.9, Pb 5.1, Sb 9.1  
 239.5-240, 0.5' core, Au .03, Ag 39.3
- 180.5-204 - Porphyry  
 204-340 - Limestone
- Hole No. 3 - 223-236, 1.5' core, Au.05, Ag 1.88  
 243.5 - 244.5, 0.5' core, Au.06, Ag 2.80
- 210-223 bleached porphyry  
 223-262 limestone
- Hole No. 4 - 217-223, 1.5' core, Au.05, Ag 9.84
- 214-223 - limestone  
 223-227 porphyry  
 231-242 limestone
- Hole No. 5 - 228-238 ore indicated - little core recovery
- 178-247.8 limestone  
 247.8-250 andesite porphyry  
 250-341 limestone  
 341-353 diorite - andesite porphyry
- Hole No. 6 - 260-263, 2.0' of core, Au tr, Ag 6.20, Pb 1.8
- 158.5-165 andesite porphyry  
 165-236 chert, argillite  
 236-294 limestone
- Hole No. 7 - 289-299 no core - ore indicated by sludge  
 188-240 andesite porphyry  
 240-267 Chert  
 267-270.5 andesite porphyry  
 270.5-289 chert, argillite  
 289-299 - ?  
 299-304 chertz limestone ?  
 304-320 chert  
 320-340 limestone
- Hole No. 9 - 322-323.5, 1.5' core, Au.19, Ag 8.70 Pb 21, Sb 1.8  
 157-323.5 limestone  
 323.5-344 porphyry  
 344-352 limestone
- Hole No. 33 - Area of influence same <sup>as</sup> ~~an~~ hole No. 2  
 237-238, 0.8' of core, Au.38, Ag 15.84  
 244.3-249.3, 4.0' of core, Au.12, Ag 16.60  
 258.5-259.5, 1.0' of core, Au.15, Ag 8.00  
 318-320, 1.5' of core, Au.07, Ag 8.86  
 320-323, 1.5' of core, Au.06, Ag 26.32  
 325.5-327, 1.5' of core, Au.10, Ag 10.08  
 327-328.5, 0.5' of core, Au.10, Ag 26.74

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133-293 limestone  
 293-314 porphyry  
 314-323 limestone  
 323-337 porphyry

Zone 2

This zone includes trenches F 1 to F 6, F 1 the southernmost exposed 2' of ore assaying Au .18, Ag 69.0 Zn .5, Pb 11.8. However, it could not be traced.

F 2, 930' north of F 1 exposed 2' assaying Au .40, Ag 3.5, Zn 1.8, Again further trenching failed to show continuation of the ore.

Seven hundred feet north of F 2 two parallel ore shoots converging to the north are exposed in Trenches F 4, F 5 and F 6. Weighted averages for these shoots gave.

South shoot F 4 to F 6 - 4 samples.								
Width	Length	Area	Tons/vert.ft.	Au	Ag	Zn	Pb	Gross Value/ton
4.64	235'	1090	90.83	.077	4.72	1.90	2.97	\$21.54
North shoot F 5 to F 6 - three samples.								
Width	Length	Area	Tons/vert.ft.	Au	Ag			Gross Value/ton
5'	110'	550'	45.83	.117	5.8			\$12.22

Pb and Zn assays not run for all samples but samples in F 6 trench gave Zn 1.96, Pb 5.7.

Two trenches 150' and 280' respectively north of F 6 gave 1' of Au .15, Ag 1.24, Zn 1.68 and 2' of Au .10, Ag .46, Zn 1.57.

No drilling was done on this zone.

Zone 3

Primary deposit 'H' Zone (Oxides).

The zone was assumed to be continuous although trenching between H1 and H10, a distance of 210', did not penetrate the overburden. Type of mineralization and structural similarities in the trenches support the above assumption.

The zone was divided into three areas:

Area 1 - H23 to H10

Surface calculations - from 9 samples.

Trench No.	Width	Length	Area	Au	Ag	Zn	Pb	Gross Value/ton
H-23	13.5	37	499.5	.16	2.55	2.23	2.40	\$21.21

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Trench No.	Width	Length	Area	Au	Ag	Zn	Pb	Gross Value/ton
H-22	10	45	450	.035	2.3	5.35	5.9	\$33.99
H-21	15	155	2325	tr	1.5	8.26	6.3	\$39.96
H-10	3	177	531	.10	1.6	3.2	5.8	\$29.14
Weighted Ave.	9.2	414	3805.5	.039	1.75	6.42	5.67	\$35.24

Area 2-H11 to H12A

Surface Calculations from 3 samples.

Trench No.	Width	Length	Area	Au	Ag	Zn	Gross Value/ton
H-11	6	114	684	tr	.8	1.9	\$ 6.06
H-12A	7	64	448	tr	1.1	17.41	\$46.81
Weighted Ave.	6.36	178	1132	tr	.92	8.04	\$20.90

Area 3-H12A - South Shoot

Surface Calculation from 1 sample.

Trench No.	Width	Length	Area	Au	Ag	Zn	Gross Value/ton
H-12A	3	95	195	.02	.7	8.2	\$23.05

Tonnage and gross value (factor of 12 cu.ft. per ton)

	<u>Per vert. ft.</u>	<u>Per 100 ft. depth</u>
Area 1	317.1 tons	31,710 tons - \$1,117,460
Area 2	94.33 "	9,433 " - 197,149
Area 3	16.25 "	1,625 " - 37,456
Total		42,768 " - \$1,352,065

Offshoot - Trenches H7 to H8

- not included in above as there is some doubt as to the nature of mineralization.

Surface calculations - from 7 samples.

Trench No.	Width	Length	Area	Au	Ag	Zn	Gross Value/ton
H-7	23'	65	1495	tr	1.1	9.07	\$25.12
Tons/vert.ft.	= $\frac{1495}{12} = 124.58$						
West Shoot							
H-8	3'	50	150		.6	8.3	\$22.42
Tons/vert.ft.	= 12.5						
East Shoot							
H-8	4'	50	200		1.5	9.8	\$27.58
Tons/vert.ft.	= 16.6						

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Tonnage and gross value to depth of 100 ft.

H-7	12,458 tons	\$312,944.96
H-8	1,250 tons	28,025.00
H-8	1,660 tons	45,782.00
	<u>15,368 tons</u>	<u>\$386,752.76</u>

Primary Deposit 'J' Zone (oxides).

Trench No.	Weighted Averages.						Gross Value/ton
	Width	Length	Area	Au	Ag	Zn	
J-3	25	110	2750	tr	4.25	.25	
J-4	80	155	12400	.09	1.68	.74	
J-6	15	58	870	tr	1.46	6.16	
J-6	15	30	450	tr	1.33	2.53	
	<u>46.65</u>	<u>353</u>	<u>16470</u>	<u>.068</u>	<u>2.08</u>	<u>.99</u>	<u>\$ 7.86</u>

Note: Arithmetic Avg. of all assays (5' widths) gave \$8.61 Gross value per ton.

Tons per vert. ft. =  $\frac{16,470}{12} = 1,372.5$  tons

Note: A second calculation of area, using areas rather than zone of influence of sampling, gave 15,145 sq. feet or 1,262 tons/vert.ft.

Arithmetic average of D.D.Hole Sludge samples in oxide zone gave \$8.50 Gross value per ton.

Oxide Zone was found to extend to a depth of 150' at J-5.

150' x 1,372.5 = 205,875 tons

Gross Value 205,875 x \$7.8 = \$1,618,177.50. (Note: approximately 25,000 tons is readily available for open pit mining.)

Arithmetic value of D.D.H. sludge samples in Sulphide zone gave \$11.52 Gross value per ton.

The Sulphides were reached in three D.D.H.'s from J-5 i.e:

Hole 30 - 160-175	Sulphides
175-185	limestone, end of hole.
Hole 28 - 140-170	sulphides, end of hole.
Hole 29 - 160-186	sulphides
186-190	limestone end of hole.

No tonnage calculations were attempted for the sulphides.

In addition Hole 31 and Hole 32, 180 feet apart, each intersected 7 feet of fault gauge which assayed 17.05% and 11.28% Zn respectively.

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## No. 3 Zone Extension (oxides)

Trenches K2 to K4.

K2 is located 700' NNW of J-6.

Trench No.	Width	Length	Area	Au	Ag	Zn	Gross Value/ton
K-2	5	130	650	.02	1.8	0.6	\$ 4.78
K-3	5	160		.08	.90	2.35	\$10.17
				.28	1.0	4.80	\$23.68
	15	160	2400	.21	.97	3.98	\$19.05
Average	10.5	290	3050	.168	1.5	3.26	\$15.97

254.16 tons per ver.ft.

Further sampling in 1960 gave much lower Zn assays, and would reduce the Gross value to approximately half the above.

Other showings are exposed in the 'H' and 'J' zones by trenching and consist of carbonates often containing high zinc values. Due to lack of continuity of the showings, and difficulty in treating this type of mineralization, no attempt to estimate tonnages was made.

Zone 4B:

The length of mineralization exposed in trenches M6 - M15 is 920 feet. Trenches M10-M13 show mineralization with encouraging values but further trenching is required to determine the true width of the sulphide zone or zones.

## Surface calculations.

## Weighted Averages M6 - M10.

Width	Length	Area	Tons/vert.ft.	Au	Ag	Zn	Pb	Gross Value/ton
9.25'	440'	4072'	407.2	.08	.62	4.57	.66	\$17.21

## Weighted Averages M6 - M13 (Extending above).

Width	Length	Area	Tons/vert.ft.	Au	Ag	Zn	Pb	Gross Value/ton
8.24'	611	5033	503.3	.076	.50	3.86	.54	\$14.80

## East Shoot #1 M11-M12

## Weighted Average.

Width	Length	Area	Tons/vert.ft.	Au	Ag	Zn	Pb	Gross Value/ton
5.5'	90'	495	49.5	.034	.74	9.45	8.54	\$48.98

## East Shoot #2 M11-M12

## Weighted Average.

Width	Length	Area	Tons/vert.ft.	Au	Ag	Zn	Gross Value/ton
7'	90'	630'	63	.11	1.26	11.66	\$35.92

Tonnage and Value per 100 foot depth.

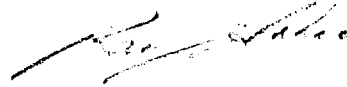
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M6 - M13	50,330 tons	\$744,884
East Shoot #1	4,950 tons	\$242,451
" " #2	6,300 Tons	\$226,292
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Total	61,580 tons	\$1,213,631
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HAR/1



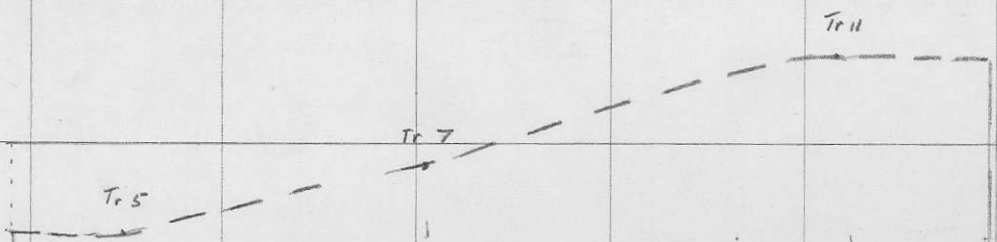


4600

Zone I. TRENCH 4-12 (D.D.H. - 1-2 #3 used for depth)

width x length x depth = tons

4500



Block A  $\frac{6.3 \times 254 \times 178}{12} = 22,253$

Block B =  $\frac{6.3 \times 50 \times 62}{2 \times 12} = 814$

Block C =  $\frac{6.3 \times 120 \times 50}{12} = 3,150$

Total 26,217

4400

4300

Tonnage: 26,217 @ \$31.15

Gross Value = \$816,659.55

4200