

September 15, 1954.

Noranda

FLOTATION TESTS ON ORE SAMPLE OF PROSPECTORS AIRWAYS

A 76-lb. composite sample of crushed drill core of Prospectors Airways lead-zinc ore was received on September 6, 1954, from Bell-White Laboratories Limited, Haileybury. Eleven flotation tests were run by the Noranda Concentrator Research Department. This memo summarizes the metallurgical results obtained from these preliminary tests.

(1) Calculated Head Assay:

Au	-	.015 oz./Ton
Ag	-	1.56 oz./Ton
Cu	-	.15%
Pb	-	3.2%
Zn	-	4.9%
As	-	
Sb	-	
Fe	-	21.7%
S	-	22.2%
Pyrite	-	32.9%
Pyrrhotite	-	10.5%
Insol.	-	34.7%

(2) Lead Metallurgy:

- (a) Rougher Flotation.
86.6% recovery with 37.8% Pb concentrate.
- (b) Cleaner Flotation.
59.6% recovery with 54.4% Pb concentrate.

(3) Zinc Metallurgy:

- (a) Rougher Flotation.
83.1% recovery in 26.6% Zn concentrate.
- (b) Cleaner Flotation.
49.5% recovery in 53.0% Zn concentrate.

(4) Silver Metallurgy:

50.9% recovery in Pb concentrate assaying 54.4% Pb.

(5) Copper Metallurgy:

26.6% recovery in Pb concentrate assaying 54.4% Pb.

(6) Remarks:

- (a) On the basis of the appearance of the tests in the cell the ore should be less refractory than the New Brunswick ores tested recently. This is usually a sign that fairly good metallurgy can eventually be worked out.
- (b) Rougher recoveries of Pb and Zn were good.
- (c) Cleaner recoveries were disappointing. Fine grinding of middling products is indicated but how much it would improve recoveries is not known.
- (d) The next step in testing this ore would require at least two months, and could be much longer, of intensive work. If this is desired it should be discussed with Mr. McLachlan.
- (e) The sample may have been oxidized sufficiently to adversely affect flotation.

(7) Results of a typical test (No. 10) are as follows:

Results Test No. P.A. 10

	Wt. Gms	Assays				% Dist'n.			
		Ag	Cu	Pb	Zn	Ag	Cu	Pb	Zn
Lead Cleaner Conc. No. 1	140	19.19	1.15	54.4	7.9	38.9	26.6	59.6	5.3
Lead Cleaner Conc. No. 2	75	11.04	.56	30.6	11.8	12.0	6.7	18.0	4.2
Combined Cleaner Conc.	(215)	16.34	.97	46.1	9.3	50.9	33.3	77.6	9.5
Lead Cleaner Tails	56	6.38	.56	14.0	9.9	5.2	5.0	6.2	2.6
Zinc Recleaner Conc. #1	142	1.73	.22	2.33	54.7	3.6	5.0	2.6	37.0
Zinc Recleaner Conc. #2	54	2.69	.48	3.53	48.5	2.1	4.2	1.5	12.5
Combined Zinc Reclean. Conc. (196)		2.00	.29	2.66	53.0	5.7	9.2	4.1	49.5
Zinc Recleaner Tails	32	5.01	.47	4.9	22.1	2.3	2.4	1.2	3.4
Zinc Cleaner Tails	280	2.45	.36	2.45	12.7	9.9	16.2	5.4	17.0
Final Tailings No. 1	1636	.50	.06	.23	1.1	11.9	15.7	2.9	8.6
Final Tailings No. 2	1637	.60	.07	.20	1.2	14.1	18.2	2.6	9.4
Heads	4052	1.71	.15	3.15	5.2	100.0	100.0	100.0	100.0

HIA:jt

c.c. Mr. C. L. Coleman.
 Mr. C. G. McLachlan.
 Dr. P. Price. ✓

H. L. Amos