007224

Curragh Resources Inc.

Inter Office Memorandum

TO: B. Dunn, Chief Mine Engineer

FROM: G. McDonald, V.P., Metallurgy

SUBJECT: Testwork DATE: October 2, 1990

The testwork on Vangorda diamond drill core samples that were sent to Lakefield Research is progressing quite well. The attached draft report does indicate some success in the treating of Vangorda foot-wall material by flotation methods. The permeability tests on several selected pieces of diamond-drill core were not successful. The Zyglo penetrant oil wetting did not identify any micro fractures in the samples so the potential of crushing the low grade material and recovering the gold by a heap leach method, is not possible.

Lakefield will proceed with a larger laboratory bench flotation test on the footwall material, to determine the gold distribution and recovery in separated Lead and Copper concentrates. Mineralogy for precious metal association and grain size will be done on the flotation products (lead concentrate and copper concentrate) from this test programme.

If you have any questions about the laboratory programme please let me know.

cc. D. Tenney
E. Beaumont

LAKEFIELD RESEARCH

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TO: **GODFREY MCDONALD** Company: CURRAGH

FROM: Doug Newman Fax No.: 416-363-1732

Date: Sept 28, 1990 Reference: 4042

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If there is any problem involving this transmission, please contact Development Group secretary at Ext. #245.

September 28, 1990

Head assays, heavy liquid separation, one flotation test, and 6 days of permeability testing have been completed.

1. Head Assays:

Element	Assays, %, g/t
Cu	0.34
Pb	0.87
Zn	0.48
Fe	32.2
S_T	29.5
Au	1.20
Ag	15.4

2. Heavy Liquid Separation at 3 g/cc:

Most (87%) of the ore reported to the sinks, and gold was not concentrated. A sample was therefore not submitted for mineralogy, as per your instructions. Is this what you intend?

The balance is as follows.

Test No.	Prod.	Weight g	Weight %	Assays, g/t Au	% Distribution Au
2	Sink	445.8	86.8	0.94	80.1
	Float	67.7	13.2	1.54	19.9
	Head	513.5	100.0	1.02	100.0

3. Flotation (As Test 82, 3458B):

One flotation test has been completed. Gold recovery in the Pb 1st Cl. Conc was 60%, with a grade of 18 g/t. Gold in the zinc rougher + scavenger concs was 8%, and overall gold recovery was 68.5%. Test conditions and results follow. Additional tests are being planned.

4. Permeability (Samples 1-9):

Cuts have been made after 3 and 6 days of soaking. The majority of the samples exhibit minor micro fracture penetration. Sample 8 exhibits moderate macro fracture/vein/vein-let penetration and adjacent matrix permeability. Another cut might be advisable after, say 12 days. Could you advise us on this? M/S

LAKEFIELD RESEARCH

Test No.: 1 Project No.: 4042 Date: Sept 20, 1990 Operator: DN

Purpose: Initial test to determine gold occurrence.

Procedure: Similar to Test No. 82, 3458B on Composite 5 Vangorda ore. (Pb Ro + 5 scav, 1st cleaner and cleaner scavenger, plus Zn Ro + Scav flotation only).

Feed: 2000 grams of -10 mesh Composite (ore

Grind: 40 minutes at 65% solids in a laboratory ball mill (rod)

Conditions:

	REAGENTS ADDED, GRAMS PER TONNE							TIME, MINUTES			
	Na_2CO_3	NaCN	A 3477 3418A	MIBC	Na_2SiO_3			GRIND	COND.	FROTH	pH
Grind	2000	200						40			9.2
Pb Roughers			5	15					1	3	
Pb Scav.			5	10					1	3	
			2.5	10					1	3.5	
Pb Regrind		75	20					-30			
Pb 1st Cl.		20		2.5	100				1	3.5	8.9
			1	2.5					1	3	
Pb 1st Cl. Scav			5	5					1	2	
Feed: Pb Scavenger + Pb 1st Cleaner Scavenger Tailings											
Zn Circuit:											
	$Ca(OH)_2$	$CuSO_4$	A 350	DF 1012							
Conditioning	2500								5		11.5
		800							5		11.3
Zn Roughers			20	10					2	3	
Zn Scav			15	7.5					1	2	

Stage		Pb Ro + Scav	Pb 1st Cl/Cl Sc	Zn Ro + Sc		Pb 1st Cl Conc 75 wet
Flotation Cell		1000g DI	500g DI	1000g DI		Cl Sc Conc 9
Speed: r.p.m.		1700	1500	1700		Zn Ro C 113
% Solids						Sc C 64
6 —	mesh					

Test No. 1

	Product	Weight g	Weight %	Assays,%,g/t Cu	Pb	Zn	Ag	Au	% Distribution Cu	Pb	Zn	Ag	Au
1	Pb Cl. Conc	65.0	3.24	6.47	20.1	0.94	209	16.2	61.0	73.7	6.1	36.8	59.8
2	Pb 1st Cl Scav Conc	7.2	0.36	3.7	3.46	1.85	70.2	2.76	3.9	1.4	1.3	1.4	1.0
3	Zn Ro Conc	97.2	4.85	0.92	0.93	8.69	38	1	13.0	5.1	64.9	10.0	4.9
4	Zn Scav Conc	51.4	2.57	0.4	0.6	0.55	25.3	1.06	3.0	1.7	2.8	3.5	2.8
5	Zn Scav Tail	1782.3	88.98	0.074	0.18	0.14	10	0.35	19.1	18.1	24.9	48.3	31.5
	Head Calc.	2003.1	100.00	0.34	0.89	0.50	18.4	0.99	100.0	100.0	100.0	100.0	100.0

Combined Products

1-2 (Pb 1st Cl+Cl Scav Concs)	3.60	6.19	18.44	1.03	195	16.66	64.90	75.1	7.4	38.2	60.8
3-4 (Zn Ro+Scav Concs)	7.42	0.74	0.82	4.57	34	1.02	15.96	6.8	67.7	13.5	7.7

Plan to repeat the test:

10 Kg sample ground

float a Bulk Pb Conc

→ then do a Cu / Pb Separation.

Ore has very low permeability therefore not amenable to an extraction by creation of a heap leach, crushed ore: