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FAX COVER SHEET

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DATE: 8 Dec 88

TO: Kevin Atherton

FROM: Gregg Tilson

Number of Pages 5 including Cover Page.

Circulation and/or Comments:

Some imaginary metallurgy for you - Page 1 and 2
are the current results with estimated percent
of ore that is like the composite. The combination
at end ^{of page 2} may be ^{meaningful} ~~meaningful~~ for average ^{clean and pure} EG ore.
Page 3 and 4 show in CANAC/KRAL numbers
for the composites we don't have results for yet and
the combination at the bottom of page 4 may mean
something for average Vanguard ore.

If all pages were not received, please contact: _____

VANGORDA DEPOSIT
 PRELIMINARY LOCKED CYCLE TESTS ON 1987 DRILL CORE
 FROM LAKEFIELD RESEARCH VIA DICK COLEMAN BY PHONE

VERY PRELIMINARY, DO NOT USE FOR PLANNING

 COMPOSITE 1A: POROUS CORE OF EG ORE WITH NO OXIDATION NOTED

| | LEAD | ZINC | GOLD | SILVER |
|-------------------------|------|------|------|--------|
| HEAD GRADE | | | | |
| LEAD CON GRADE RECVY | | | | |
| ZINC CON GRADE RECVY | | | | |

RESULTS NOT AVAILABLE YET

PRELIMINARY TESTS NOT AS GOOD AS 1B,2&3

COMPOSITE 1B: NON-POROUS CORE OF EG ORE WITH SOME OXIDATION NOTED
 10%

| | LEAD | ZINC | GOLD | SILVER |
|-------------------------|---------------|---------------|--------------|-------------|
| HEAD GRADE | 5.85 | 6.10 | 0.79 | 75.6 |
| LEAD CON GRADE RECVY | 63.90 83.5 | 7.17 8.3 | 6.17 60.0 | 701 70.8 |
| ZINC CON GRADE RECVY | 1.03 1.7 | 57.20 82.2 | 0.31 3.8 | 38.4 4.8 |

COMPOSITE 2: EG ORE FROM SOUTHEAST END OF DEPOSIT
 30%

| | LEAD | ZINC | GOLD | SILVER |
|-------------------------|---------------|---------------|---------------|-------------|
| HEAD GRADE | 4.88 | 5.51 | 1.09 | 63.4 |
| LEAD CON GRADE RECVY | 65.40 89.3 | 8.93 10.8 | 11.19 74.4 | 705 74.1 |
| ZINC CON GRADE RECVY | 1.07 1.7 | 54.70 76.9 | 0.84 6.5 | 56.9 7.0 |

COMPOSITE 3: EG ORE FROM NORTHWEST END OF DEPOSIT
 60%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------|------|------|--------|
| HEAD GRADE | 4.14 | 5.19 | 0.73 | 59.7 |
| LEAD CON GRADE | 66.20 | 7.17 | 8.56 | 814 |

| | | | | | |
|----------|-------|------|-------|------|------|
| | RECVY | 88.4 | 7.6 | 65.0 | 75.3 |
| ZINC CON | GRADE | 1.03 | 55.30 | 0.28 | 48.5 |
| | RECVY | 2.0 | 85.6 | 3.2 | 6.5 |

COMPOSITE 4: GRAPHITIC ORE (4A)
0%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------------------------------------|------|------|--------|
| HEAD GRADE | LAKEFIELD RESULTS NOT AVAILABLE YET | | | |
| LEAD CON GRADE | | | | |
| | RECVY | | | |
| ZINC CON GRADE | | | | |
| | RECVY | | | |

COMPOSITE 5: SEMI-MASSIVE LOW-GRADE SULPHIDES FROM DEPOSIT FOOTWALL
0%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|------------------------------|------|------|--------|
| HEAD GRADE | LAKEFIELD TESTS NOT DONE YET | | | |
| LEAD CON GRADE | | | | |
| | RECVY | | | |
| ZINC CON GRADE | | | | |
| | RECVY | | | |

BLEND OF COMPOSITES (ON ASSUMPTION THAT GRADE AND RECOVERY
COMBINE IN LINEAR FASHION BY WEIGHT PERCENTAGE)

| 1A | 0% | | | | |
|----------------|-------|-------|-------|--------|-------|
| 1B | 10% | | | | |
| 2 | 30% | | | | |
| 3 | 60% | | | | |
| 4 | 0% | | | | |
| 5 | 0% | | | | |
| TOTAL | 100% | | | | |
| | LEAD | ZINC | GOLD | SILVER | |
| HEAD GRADE | 4.53 | 5.38 | 0.84 | 62.40 | |
| LEAD CON GRADE | 65.73 | 7.70 | 9.11 | 770.00 | |
| | RECVY | 88.18 | 8.63 | 67.32 | 74.49 |
| ZINC CON GRADE | 1.04 | 55.31 | 0.45 | 50.01 | |
| | RECVY | 1.88 | 82.65 | 4.25 | 6.48 |

VANGORDA DEPOSIT
 PRELIMINARY LOCKED CYCLE TESTS ON 1987 DRILL CORE
 FROM LAKEFIELD RESEARCH VIA DICK COLEMAN BY PHONE

VERY PRELIMINARY, DO NOT USE FOR PLANNING

 COMPOSITE 1A: POROUS CORE OF EG ORE WITH NO OXIDATION NOTED

| | LEAD | ZINC | GOLD | SILVER |
|-------------------------|---|------|------|--------|
| HEAD GRADE | | | | |
| | RESULTS NOT AVAILABLE YET | | | |
| LEAD CON GRADE RECVY | | | | |
| | PRELIMINARY TESTS NOT AS GOOD AS 1B,2&3 | | | |
| ZINC CON GRADE RECVY | | | | |

COMPOSITE 1B: NON-POROUS CORE OF EG ORE WITH SOME OXIDATION NOTED
 10%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------|-------|------|--------|
| HEAD GRADE | 5.85 | 6.10 | 0.79 | 75.6 |
| LEAD CON GRADE | 63.90 | 7.17 | 6.17 | 701 |
| RECVY | 83.5 | 8.3 | 60.0 | 70.8 |
| ZINC CON GRADE | 1.03 | 57.20 | 0.31 | 38.4 |
| RECVY | 1.7 | 82.2 | 3.8 | 4.8 |

COMPOSITE 2: EG ORE FROM SOUTHEAST END OF DEPOSIT
 25%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------|-------|-------|--------|
| HEAD GRADE | 4.88 | 5.51 | 1.09 | 63.4 |
| LEAD CON GRADE | 65.40 | 8.93 | 11.19 | 705 |
| RECVY | 89.3 | 10.8 | 74.4 | 74.1 |
| ZINC CON GRADE | 1.07 | 54.70 | 0.84 | 56.9 |
| RECVY | 1.7 | 76.9 | 6.5 | 7.0 |

COMPOSITE 3: EG ORE FROM NORTHWEST END OF DEPOSIT
 50%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------|------|------|--------|
| HEAD GRADE | 4.14 | 5.19 | 0.73 | 59.7 |
| LEAD CON GRADE | 66.20 | 7.17 | 8.56 | 814 |

| | | | | |
|----------------|------|-------|------|------|
| RECVY | 88.4 | 7.6 | 65.0 | 75.3 |
| ZINC CON GRADE | 1.03 | 55.30 | 0.28 | 48.5 |
| RECVY | 2.0 | 85.6 | 3.2 | 6.5 |

COMPOSITE 4: GRAPHITIC ORE (4A)
10%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------------------------------------|-------|------|--------|
| HEAD GRADE | NA | NA | NA | NA |
| | LAKEFIELD RESULTS NOT AVAILABLE YET | | | |
| LEAD CON GRADE | 45.00 | NA | 3.00 | 500 |
| RECVY | 83.0 | NA | 25.0 | 65.0 |
| | THIS IS CYPRUS ANVIL DATA | | | |
| ZINC CON GRADE | NA | 51.00 | 0.80 | 45.0 |
| RECVY | NA | 83.0 | NA | NA |

COMPOSITE 5: SEMI-MASSIVE LOW-GRADE SULPHIDES FROM DEPOSIT FOOTWALL
5%

| | LEAD | ZINC | GOLD | SILVER |
|----------------|------------------------------|-------|------|--------|
| HEAD GRADE | NA | NA | NA | NA |
| | LAKEFIELD TESTS NOT DONE YET | | | |
| LEAD CON GRADE | 50.00 | NA | 5.50 | 485 |
| RECVY | 78.0 | NA | 40.0 | 50.0 ← |
| | THIS IS CYPRUS ANVIL DATA | | | |
| ZINC CON GRADE | NA | 50.00 | 1.90 | 65.0 |
| RECVY | NA | 82.0 | NA | NA |

BLEND OF COMPOSITES (ON ASSUMPTION THAT GRADE AND RECOVERY
COMBINE IN LINER FASHION BY WEIGHT PERCENTAGE)

| | |
|-------|------|
| 1A | 0% |
| 1B | 10% |
| 2 | 25% |
| 3 | 50% |
| 4 | 10% |
| 5 | 5% |
| TOTAL | 100% |

| | LEAD | ZINC | GOLD | SILVER |
|----------------|-------|-------|-------|--------|
| HEAD GRADE | NA | NA | NA | NA |
| LEAD CON GRADE | 62.84 | NA | 8.27 | 727.60 |
| RECVY | 87.08 | NA | 61.60 | 72.26 |
| ZINC CON GRADE | NA | 54.65 | 0.56 | 50.07 |
| RECVY | NA | 82.65 | NA | NA |

CURRAGH RESOURCES INC.

INTER OFFICE MEMORANDUM

To: R. Coleman
From: W. Scheduling
Subject: Final Compositing for Vangorda Metallurgical Testing Program at Lakefield.

May 17, 1988

We can now give Lakefield detailed compositing instructions, following the meeting of May 16th, with the following in attendance:

Curragh

Greg Gilson (Manager of Geology)
Lee Pigage (Senior Geologist)
Cameron Reed (Geologist)

Consultants

Dick Coleman (Metallurgy)
Ion Vintilla (Mine Planning)

Bill Scheduling (Chief Metallurgist)

Compositing on the basis of the core log gave us our preliminary categories. After printing out in spreadsheet form, it became apparent that porous and non-porous core had not been wholly separated by the procedure. Corrections are now being undertaken by Cameron Reed in Whitehorse - final versions will be available for faxing to Lakefield by Thursday, May 19th. Due to problems with FAX transmission on compressed print, it is recommended that a copy of the major composite composition be brought for Lakefield at your first meeting.

Compositing has been carried out in accordance with the following criteria:

- (i) Separation of porous and non-porous core, to minimize and isolate the effect of drilling additives on metallurgy.
- (ii) Ore-type, in accordance with the original core logging (conforming to the Anvil area lithostratigraphic code) and where distinctions are possible on a mining scale.
- (iii) Location within the deposit (east, west or centre).
- (iv) Visible weathering, core oxidation and sawn surface oxidation (according to geological log and subsequent surveys).

(v) Mining Plan - Material outside the pit limits and shovel - separable intervals of waste grade have not been composited into ore composites (except for Composite 5, which will be investigated separately). Waste intervals of insufficient width to be mined separately have been included in ore composites, where these bound the waste above and below. Exceptions to this rule are made for intervals of porous or heavily oxidized material, which may effect the whole composite adversely due to drilling mud effects or which do not allow the effect of oxidation to be seen in isolation.

The final selection of composites is described below:

Composite 1

E G ore from both Eastern and Western sections of the deposit, which is either porous or shows signs of weathering or core and split oxidation. To be included, the interval must have a total oxidation indicator of 5 or more (combined score from weathering, core oxidation and split oxidation columns on spreadsheet).

This composite, comprising about 60 intervals and weighing about 250 kg, should not be combined at present. Further separation into the following categories may be required to assess the effects of drilling mud and oxidation independently:

(a) Porous core with oxidation indicator of 5 or less (about 25 intervals or about 100 kg)

(b) Non-porous core with oxidation indicators of 5 or above (about 15 intervals or about 80 kg). The remainder, in neither category should be left in original bags and will probably remain untested).

Composite 2

E G ore from the Eastern section of the deposit, which is non-porous and has an oxidation score of less than 5 (about 50 intervals, or 200 kg).

Composite 3

E G ore from the Western section of the deposit, which is non-porous and has an oxidation score of less than 5 (about 240 intervals, or 950 kg).

Composite 4

A-type ore from both Eastern and Western sections of the deposit, which is non-porous. Oxidation is not a consideration here, with the indicator never exceeding 3.

Composite 5

E C ore from both Eastern and Western sections of the deposit, in any state of porosity and oxidation and almost exclusively below cut-off grade. This material is 95% non-porous and has a lower oxidation level than the E G ore. Average head grades are in the 2% combined Pb and Zn range, with 20 g/t Ag and 0.7 g/t Au. This comprises about 225 intervals or about 900kg. Most of this material is within the final pit envelope and requires no stripping or has to be dumped to waste to reach other ore. It may also be representative of an extra 2,000,000 tonnes of similar material in the pit floor.

Testing of this composite is not of the the highest priority and preparation (or further subdivision) should take place in the future.

At present, only Composite 3 needs to be prepared. Testing should procede immediately thereafter. This represents the great majority of the ore-grade metal reserves and must form the basis of the future flowsheet and reagent scheme. While samples are being sorted, the other composites should be assembled in order and left in cold storage, but not combined and crushed until required. The whole interval may be used for compositing purposes, so long as all composites are kept in cold storage prior to testing. Duplicate (crushed) intervals from the other half drill core are available in cold storage at Faro, if required.

The centre of the orebody only had two drill-holes (87V0112) in this program - insufficient for compositing purposes. These will be stored and tested with further material, which should be forthcoming in a 1988 drilling program.

W. Scheding

W. Scheding
WS/ag

file 33

MEMORANDUM

TO: Bill Scheduling

FROM Gregg Jilson


RE: Vangorda composite changes

I appreciate your concern that the porous samples may artificially bias the sample of the main ore type at Vangorda because of potential drilling mud contamination and concur with your plan to remove them from the composite.

I do not, however, feel that these rejected intervals should be included in the oxidized composite. The ore types are unusually low grade and are mainly of non-baritic sub types that were lumped with the baritic ores because of proximity. The mass of the rejected intervals will compare to that of the truly near bedrock surface oxidized material and may bias the test results of the oxidized material so that it no longer represents the expected performance of the shallow ore.

I originally thought that the porous samples would provide a reasonable test of the effect of the drilling mud by comparison to the fresh non-porous ores but it is clear that this material is totally different than the remaining non-porous material and any comparison may not be valid.

I further question if it is advisable to exclude non-porous samples that show some natural oxidation from the deeper so called non-oxidized composite. If the rocks are somewhat oxidized at depth then it seems to me that the sample should reflect this if it is to be truly representative. If this oxidation can be shown to be post drilling then the exclusion of the sample is logical on the same grounds as the porous material. Perhaps it would be worthwhile to exclude any sample intervals that have indices of post drilling oxidation that are extreme or unusually pronounced rather than filtering on the sum of all oxidation parameters.


Gregg Jilson