L319452
L477385
L477386
L477389
L103640
L429934
L495017
L476661
L476660
L477188
L477186
L522657
L522656
L522655
L522638
L522641
ESTRANGEMENT LAKE
L857313
L857276
L477388
L477387
L411210
L429150
L495018
L522640
L522639
L522659
L522658
L522654
L522660
MANY METALS MINES
L476662
L496570
L511621
L522662
L522663
L522664
L857280
L857279
L522642
L798831
McELROY TWP.
HEARST TWP.
L522675
L798833
L857283
L857281
L798832
L522676
L821676
L522717
L522716
L522715
L798842
L522677
L522720
L522721
L522725
L522722
L522729
L522730
L522727
L522724
L522723
L522728
L522731

LEGEND

DISTANCES FROM D.D.H. COLLARS TO A CLAIM POST

FALCONBRIDGE LIMITED

CLAIMS MAP

#63.4636
ONSR-6-P-356

320/4

McVITTIE

HEARST

L496995

L496994

L447515

L45203(P)

L40080(P)

L40081(P)

L42435(P)

L92591

L45204(P)

L41648(P)

L41649(P)

L92592

L41650(P)

L50522(P)

L50523(P)

L447513

L447514

L522650

L476601

DAVEY LAKE

L92593

L496277

L496442

L522651

L476447

L429935

L50524

660-11 -45°

660-12 -45°

L476664

L476446

L496276

MANY METALS MINES

L477384

L319453

L429936

L495048

L476659

L477187

L477185

L522652

L476666

L476665

L420721

L495049

660-09 -45°

660-08 -50°

660-10 -45°

660-13 -45°

L477385

L319452

L103640

L476660

L477188

L477186

L477386

L429934

L495017

L476661

LARDER LAKE

LEGEND

DISTANCES FROM D.D.H. COLLARS TO A CLAIM POST

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

ONTARIO

CLAIMS MAP

#63.4636

OM84-6-P-356

DEC 86

Dec 85

320/4

GEOPHYSICAL LEGEND

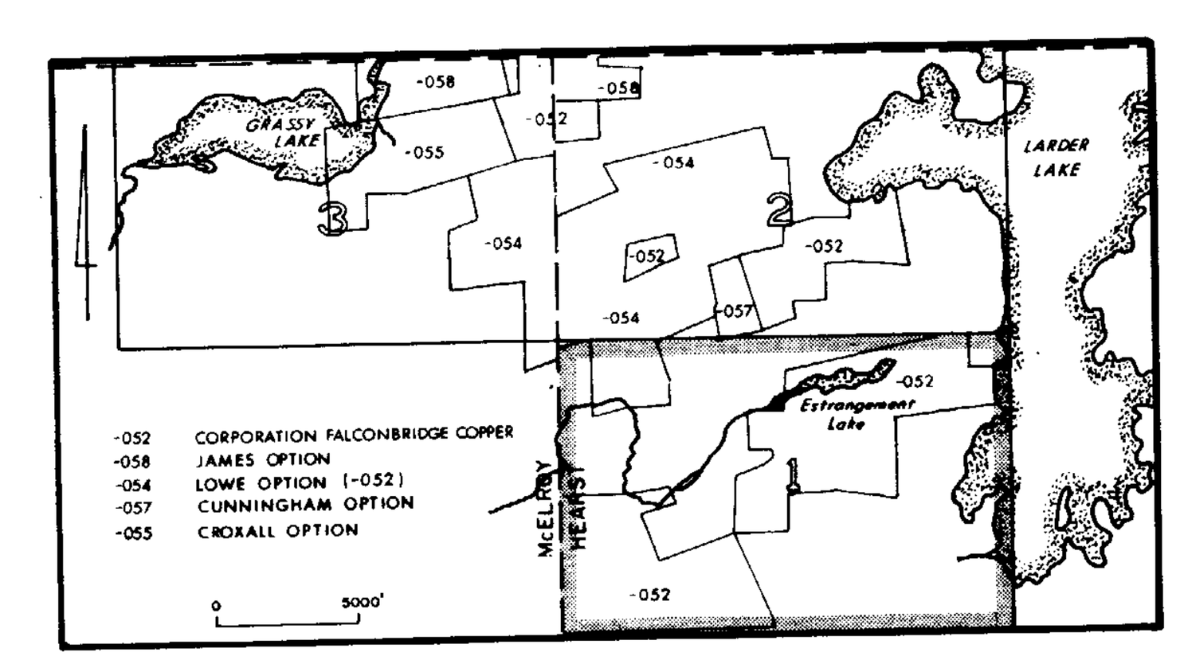
MAGNETIC SURVEY

800 Magnetic contour (gammas)

Magnetic axe

NOTE: Add 58,000 gammas for true readings.

OM84-6-P-356
63.4636



FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 1

MAGNETIC CONTOURS

Scale: 0 400 800 1200 1600 ft

Traced: GEOLA LTEE	Date: Sept 1985	Inst.: Scintrex MP-3 magnetic gradiometer
Interpreted: C. Lavoie Ph. D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no. 85-168-03

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

(McCULLOCH)

-052

-053

-054

-055

-056

-057

-058

GEOPHYSICAL LEGEND

MAGNETIC SURVEY

800 Magnetic contour (gammas)

Magnetic axe

NOTE: Add 58,000 gammas for true readings.

OM84-6-P-356

63.4636

-052 CORPORATION FALCONBRIDGE COPPER
-056 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROKALL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

MAGNETIC CONTOURS

Scale: 1" = 400 800 1200 1600 ft.

Traced: GEOLA LTEE	Date: Sept 1985	Inst.: Scintrex MP-3 magnetic gradiometer	
Interpreted: C. Lavoie Ph.D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no. 85-168-11

FALCONBRIDGE LIMITED

VLF-NAA/NSS FRASER VALUES COMBINATION
CONTOURS

ONTARIO

#63A46%
DM84-6-P-356

GEOLA /85
GEODES 01/86

320/4

McELROY TWP.
HEARST TWP.

MANY METALS

ESTRANGEMENT LAKE

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

#63.4636

OMSG-6-P-356

VLF-NAA/NSS FRASER VALUES COMBINATION

CONTOURS

DRAWN	GEOLA	DATE	/85
CHECKED			
APPR.	GEODES	DATE	01/86

Malcolm Bernier P.Eng. 05

320/4

McELROY TWP.
HEARST TWP.

ESTRANGEMENT LAKE

MANY METALS

-052

-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROXALL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 1

ROCK GEOCHEMISTRY

Au (ppb)

#63.4636

ON84-6-P-356

Scale 1" = 400'

0 400 800 1200 1600 ft

Surveyed: P. NADEAU	Date: 12/85	Revised/May/June/Sept/Oct Date: Dec. 85
Interpreted:	Date:	
Drawn: GEODES	Date: 12/85	N.T.S. 32 D/4

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

63.9636

OM89-6-P-356

ROCK GEOCHEMISTRY

Au(ppb)

SURVEYED P.NADEAU Date 12/85

COMPILED

PLOTTED GEODES Date 12/85

Date Dec 85

320

320NW0169 63.9636 HEARST

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 1

ROCK GEOCHEMISTRY

CO_2 (%)

Scale 1" = 400' 0 400 800 1200 1600 ft

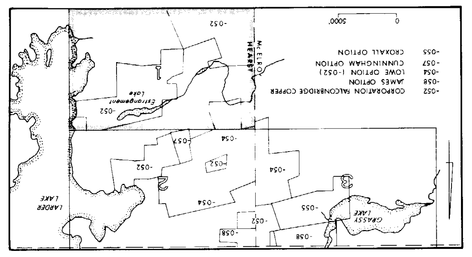
Surveyed / P. NADEAU	Date: 12/85
Interpreted	Date:
Drawn: GTO35	Date: 12/85

N.T.S. 32D/4

Revised 1986 Dec 05

63.4636

CM84-6-P-356



McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

-052

-058 CORPORATION, FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CRICKALL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS
ONTARIO

P 63.4436
ON84-6-P-356

SHEET 2

ROCK GEOCHEMISTRY
CO_2 (%)

Scale 1:5000
400 800 1200 1600 ft

Surveyed P. NADEAU Date 12/85
Interpreted Date
Plotted GEODES Date 12/85

Revised Date
N.T.S. 32D/4

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 1 BASELINE DATA

MAGNETIC & GRADIOMETRIC READINGS

Scale: 1" = 400' — 0, 400, 800, 1200, 1600 ft.

Traced: GEOLA LTEE	Date: Sept. 1985	Inst.: Scintrex MP-3 magnetic gradiometer	
Interpreted: C. Lavoie Ph.D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no: 85-168-01

INGÉNIEUR CLERMONT LAVOIE 16824 QUÉBEC

32D04SE0172 63.4636 HEARST

300

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 1 LINE DATA

MAGNETIC & GRADIOMETRIC READINGS.

Scale: 1" = 400' — 0, 400, 800, 1200, 1600 ft.

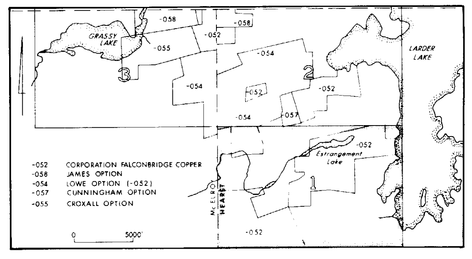
Traced: GEOLA LTEE	Date: Sept. 1985	Inst: Scintrex MP-3 magnetic gradiometer	
Interpreted: C. Lavoie Ph. D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no: 85-168-02

INGÉNIEUR CLERMONT LAVOIE 16824 QUÉBEC

310

McELROY TWP.
HEARST TWP.

B4
B2
A4
C2
D2
C3
D3
E2
G
H
MAG-11
MAG-3
MAG-6
MAG-2
613-03
613-01
613-02
ESTRANGEMENT LAKE
L-0 (LINE)
L-16S
L-16N
L-0
L-10N
BL-10
48E



LEGEND

- MAG axis
- I P axis
- V L F axis
- Gradiometric highs (>± 100)
- 613-02 Recent diamond drill holes
- 660-10

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS #63.4636

ONTARIO OMSG-6-P-356

SHEET 1

GEOPHYSICAL COMPILATION MAP

Scale 1" = 400' 0 400 800 1200 1600 ft

Surveyed:	Date:	Revised	Date
Interpreted: M. BERUBE	Date: 01/86		
Drawn: GEODES	Date: 01/86	N.T.S. 32 D/4	

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

A1 A2 A3 B1 B4 C1 C2 C4 D1 D4 E1 E3 F

MAG-1 MAG-4 MAG-5 MAG-7 MAG-8 MAG-9 MAG-10 MAG-12

660-08 660-09 660-10 660-11 660-12 660-13

50 N ℮ 30E

50 N ℮ 30E

20 N ℮ 34E 34E

TL-20NW

TL-44NE

TL-0

BL-0 (McGILLOUGH)

L-12W

L-1W

LEGEND

MAG axis

I P axis

VLF axis

Gradiometric highs (≥ ± 100)

613-02 Recent diamond drill holes

660-10

-052 CORPORATION FALCONBRIDGE COPPER

-058 JAMES OPTION

-054 LOWE OPTION (-052)

-057 CUNNINGHAM OPTION

-055 CROXALL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

GEOPHYSICAL COMPILATION MAP

Scale: 1" = 400'

Surveyed:	Date:	Revised:	Date:
Interpreted: M. BERUBE	Date: 01/86	M. Berube	Dec 88
Drawn: GEODES	Date: 01/86	NTS 32D/4	

63.4636

ON84-6-P-356

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 1

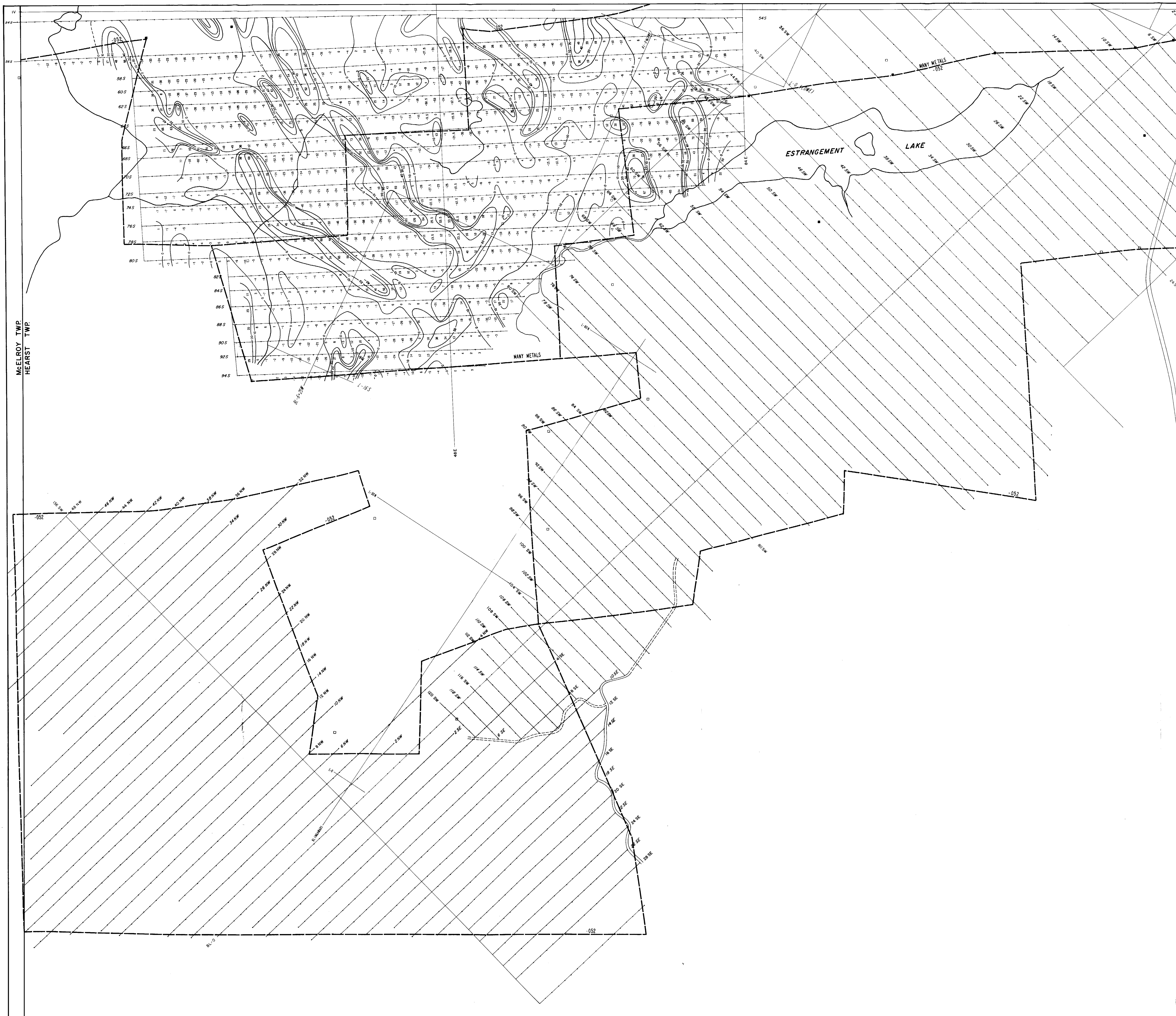
V.L.F. (PROFILES)

Scale: 1" = 400' 0 400 800 1200 1600 ft.

Traced: GEOLA LTEE	Date: Sept. 1985	Inst.: Scintrex IGS-2	Freq.: 24.0 kHz.	Stat.: NAA(Cutler).
Interpreted: C. Lavoie Ph.D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no.: 85-168-05	

INGENIEUR CLÉMENT LAVOIE 16824 QUÉBEC

340

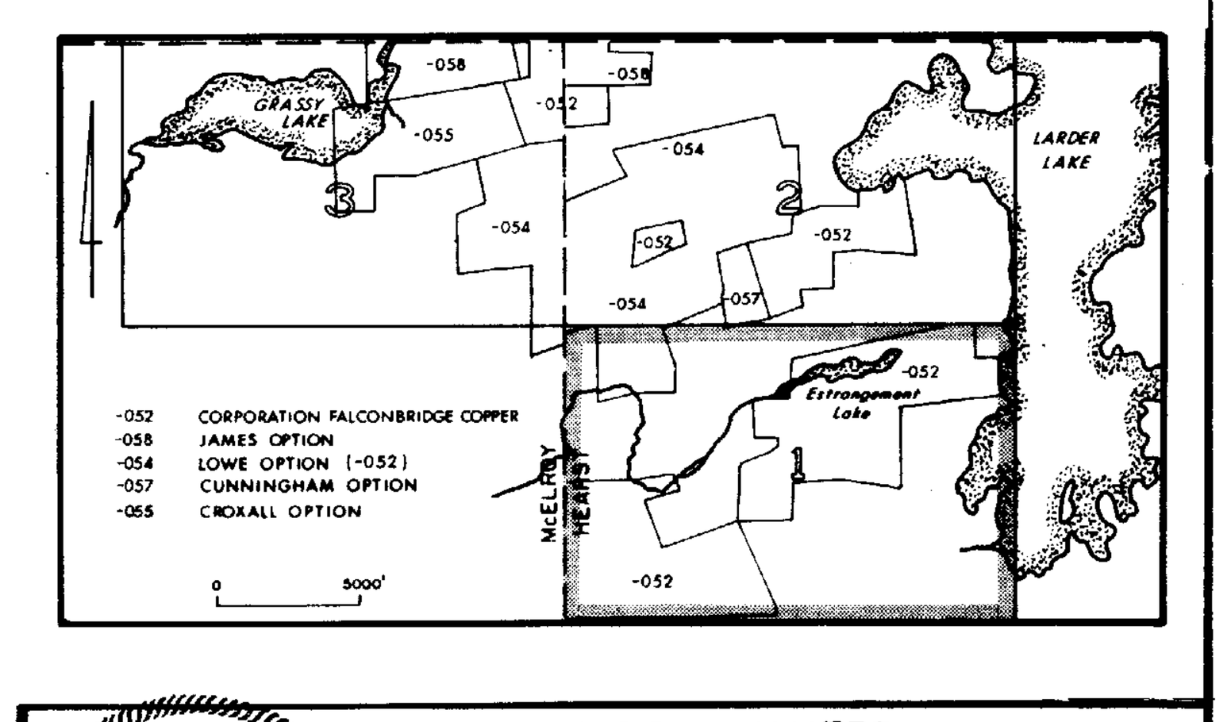


GEOPHYSICAL LEGEND

ELECTROMAGNETIC SURVEY

10 Fraser method contour

OM84-6-P-356
63.4636



INGÉNIEUR CLERMONT LAVOIE 16824 QUÉBEC

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS
ONTARIO
SHEET 1
V.L.F. (FRASER METHOD CONTOURS)

Scale: 1" = 400' — 0, 400, 800, 1200, 1600 ft.

Traced: GEOLA LTEE	Date: Sept. 1985	Inst.: Scintrex IGS-2	Freq.: 24.0 kHz.	Stat.: NAA (Cutler)
Interpreted: C. Lavoie Ph.D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no: 85-168-06	

350

MAGNETIC & GRADIOMETRIC PROFILES

SHEET 1

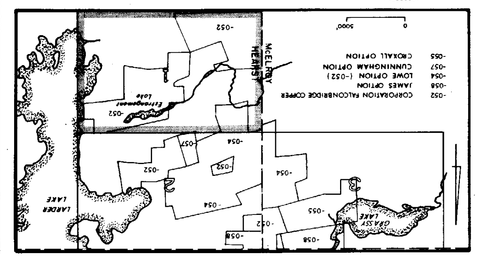
HEARST & McELROY TWPS
ONTARIO

HEARST TWP PROJECT, PN-660

FALCONBRIDGE LIMITED

Traced: GEOLA LITE	Date: Sept 1985	Int: Scintrex MP-3 magnetic gradiometer
Interpreted: C.Lavoie Ph.D	Date: Sept 1985	N.T.S: 32 D/4 Plan No: 85-168-04

Scale - 1" = 400'
0 400' 800' 1200' 1600 ft.



CM84-6-P-356
63.4636

NOTE: Add 58,000 gammas for real readings

GEOPHYSICAL LEGEND

MAGNETIC SURVEY
Magnetic axis

MAGNETIC PROFILE

GRADIOMETRIC PROFILE

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

(McCULLOUGH)

ONDAS-6-P-356
63.4636

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

MAGNETICS & GRADIOMETRIC READINGS

Scale 1:5000 — 400 800 1200 1600 ft.

Traced: GEOLA LTEE	Date: Sept 1985	Inst.: Scintrex MP-3 magnetic gradiometer	
Interpreted: C. Lavoie Ph.D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no.: 85-168-09

-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROKALL OPTION

McELROY TWP.
HEARST TWP.

MANY METALS -052

ESTRANGEMENT LAKE

MANY METALS

-052

L-18N

L-19S

L-18S

L-1N

BL-0

380

ON89-6-P-356
#63.4636

-058 CORPORATION FALCONBRIDGE COPPER
-056 JANES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROXALL OPTION

0 5000'

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS
ONTARIO

SHEET 1

(FRASER METHOD CONTOURS)

INGENIEUR
GILLES JOSEPH LAVOIE
16224
QUEBEC

400 800 1200 1600 ft

Traced:	Date:	Inst:	Freq:	Stat:
GEOLA LTEE	Sept 1985	Scintrex IGS-2	21.4kHz.	NSS(Annapolis)
Interpreted:	Date:	N.T.S.		Plan no.


McELROY TWP.
HEARST TWP.
MANY METALS
ESTRANGEMENT
LAKE
L-0 (LOWE)
-052
GEOPHYSICAL LEGEND
ELECTROMAGNETIC SURVEY
Ground V.L.F. anomaly
V.L.F. profile
In-Phase
Out-of-Phase
+100%
-100%
100% = 1 in.
N
ON84-6-P-356
#63.4636
-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROXALL OPTION
0 5000'
Estrangement Lake
INGÉNIEUR
10324
QUÉBEC
FALCONBRIDGE LIMITED
HEARST TWP PROJECT, PN-660
HEARST & McELROY TWPS
ONTARIO
SHEET 1
V.L.F. (PROFILES)
Scale: 1" = 400'
0 400 800 1200 1600 ft.
Traced: GEOLA LTEE
Date: Sept. 1985
Inst.: Scintrex IGS-2
Freq.: 21.4 kHz.
Stat.: NSS(Annapolis)
Interpreted: C. Lavoie Ph.D.
Date: Sept. 1985
N.T.S.: 32 D/4
Plan no: 85-168-07
390

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

-052

50 N

20 N

TL 20 NW

TL 44 NE

BL 0 McCULLOUCH

TL 1 NE

8 NW

C NW

GEOPHYSICAL LEGEND

MAGNETIC SURVEY

Magnetic axis

MAGNETIC PROFILE

GRADIOMETRIC PROFILE

NOTE: Add 58,000 gammas for real readings.

-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CADBALL OPTION

ONSR-6-P-356
#63.4636

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

MAGNETIC & GRADIOMETRIC PROFILES

Scale: 1" = 400'

Traced: GEOLA LTEE Date: Sept. 1985

Interpreted: C. Lavoie Ph.D Date: Sept. 1985

Inst: Scintrex MP-3 magnetic gradiometer

N.T.S.: 32 D/4

Plan no: 85-168-10

400

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

TL: 50 NW

TL: 44 NE

TL: N-S

TL: 20 NE

GEOPHYSICAL LEGEND

ELECTROMAGNETIC SURVEY

Ground V.L.F. anomaly

V.L.F. profile

In-phase Out-of-Phase

In-phase Out-of-Phase

+100% -100%

100% = 1 in.

-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROKALL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

V L F (PROFILES)

Scale 1" = 400' 0 400 800 1200 1600 ft.

Traced: GEOLA LTEE	Date: Sept. 1985	Inst. Scintrex IGS-2	Freq. 24.0 kHz. Stat.: NAA(Cutler)
Interpreted: C. Lavoie Ph.D.	Date: Sept. 1985	N.T.S.: 32 D/4	Plan no. 85-168-12

ONS9-6-P-356

63.4636

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

-052

-053

-054

-055

-056

-057

-058

50 N

20 N

TL 60 NW

TL 44 NW

TL 28 NW

TL 12 NW

BL 0 (McGILLOUGH)

TL 12 NE

TL 28 NE

TL 44 NE

TL 60 NE

C.N.R.

GEOPHYSICAL LEGEND

ELECTROMAGNETIC SURVEY

Fraser method contour

OMB4-6-P-356

#63.4636

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

VLF (FRASER METHOD CONTOURS)

Scale 1" = 400'

Traced: GEOLA LTEE Date: Sept. 1985

Interpreted: C. Lavoie Ph.D. Date: Sept. 1985

Inst: Scintrex IGS-2 Freq. 24.0 kHz. Sta. NAA (Cutler)

N.T.S.: 32 D/4 Plan no. 85-168-13

320845E0172 63.4636 HEARST

420

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

TL 20 NW

TL 44 NW

TL 44 NE

TL 20 NE

TL (McELROY)

TL (HEARST)

GEOPHYSICAL LEGEND

ELECTROMAGNETIC SURVEY

Ground V.L.F. anomaly

V.L.F. profile

In-Phase | Out-of-Phase

+100% | -100%

100% = 1 in.

OMSA-6-P-356
63.4636

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

V L F (PROFILES)

Scale 1:5000 — 0 400 800 1200 1600 ft.

-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CRIDALL OPTION

Traced:	Date:	Inst.:	Freq.:	Stat.:
GEOLA LTEE	Sept 1985	Scintrex IGS-2	21.4 kHz.	NSS(Annapolis)
Interpreted: C. Lavoie Ph.D.	Date: Sept 1985	N.T.S.: 32 D/4	Plan no.: 85-168-14	

32D04SE0172 63.4636 HEARST

430

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

-052

TL 30 NW

TL 44 NE

TL 1 NW

BL-0 (McQUILLIGAN)

TL 1 NE

50 N

20 N

-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROKALL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

MAGNETIC & GRADIOMETRIC READINGS

Scale: 0 400 800 1200 1600 ft.

Traced: GEOLA LTEE Date: Sept. 1985

Interpreted: C. Lavoie Ph.D. Date: Sept. 1985

Inst.: Scintrex IGS-2 magnetic gradiometer

N.T.S.: 32 D/4

Plan no.: 85-168-16

ONSG-6-P-356

63.4636

440

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

MANY METALS

BL-0 (McCULLOCH)

TL-270NE

TL-90NE

TL-45NW

TL-45NE

TL-0

GEOPHYSICAL LEGEND

ELECTROMAGNETIC SURVEY

10 Fraser method contour

OM84-6-P-336

63.4636

-052 CORPORATION FALCONBRIDGE COPPER
-054 LAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CROSHALL OPTION

INDEX MAP

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS

ONTARIO

SHEET 2

(FRASER METHOD CONTOURS)

Scale 1:5000 0 400 800 1200 1600 ft.

Traced:	Date:	Inst.	Freq.	Stat.
GEOLA LTEE	Sept 1985	Scintrex IGS-2	2 kHz	NSS Annapolis
Interpreted:	Date:	N.T.S.:	Plan no:	
C. Lavoie Ph.D.	Sept 1985	34 D/4	85-168-15	

McELROY TWP.
HEARST TWP.

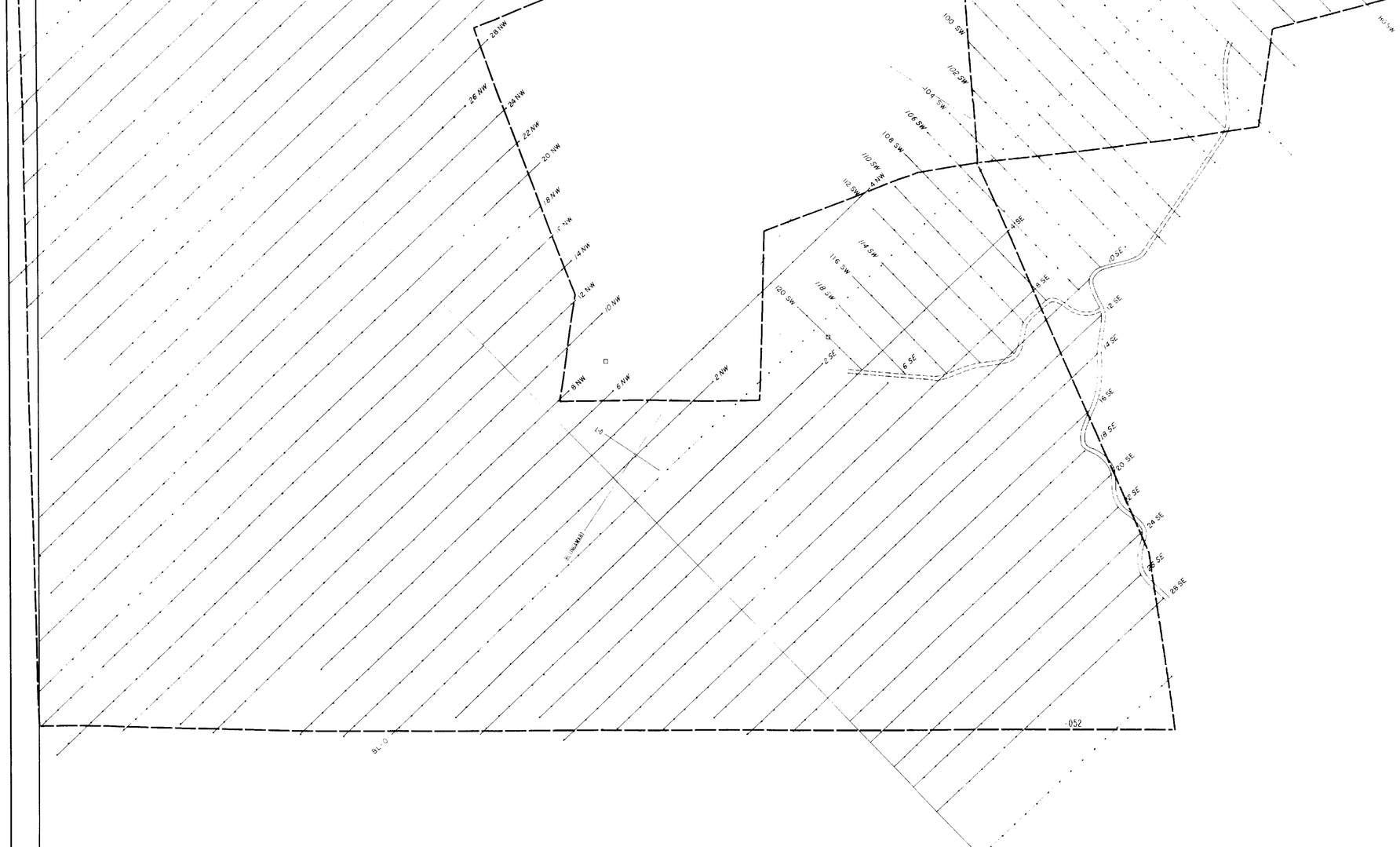
A4 B2 C2 D2 C3 D3 E1 E2 G H

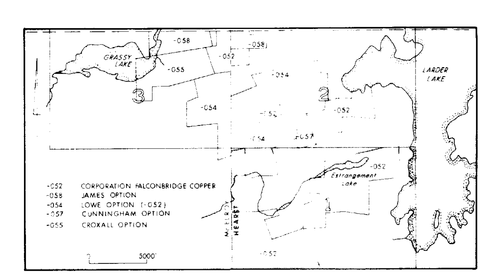
H.R. L.R.

MANY METALS

ESTRANGEMENT LAKE

052





LR (HR) Dividing line between zone of High and Low Resistivity

B2 Frequency Effect axes and identification letter (and number if segmented)

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS #63.4636

ONTARIO

SHEET 1 ON84-6-P-356

INTERPRETATION I.P.

Scale 1"=400' 0 400 800 1200 1600 ft

Surveyed: P.Belanger	Date: /85	Revised: Date: Dec. 85
Interpreted: M. Bérubé	Date: 10/85	
Drawn: Géodès	Date: 10/85	N.T.S. 32 D/4

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

1984 Power Line

1984

-052

MANY METALS

H.R.

L.R.

A1 A2 A3 B1 B2 B3 B4 C1 C4 D1 D4 E3 F

LR/HR Dividing line between zone of High and Low Resistivity

B2 Frequency, Effect axes and identification letter (and number if segmented)

-052 CORPORATION FALCONBRIDGE COPPER
-058 JAMES OPTION
-054 LOWE OPTION (-052)
-057 CUNNINGHAM OPTION
-055 CADORAL OPTION

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

HEARST & McELROY TWPS #63.9636

ONTARIO OM84-6-P-356

SHEET 2

INTERPRETATION I.P.

Scale: 1"=400'

Surveyed R.Bélanger	Date: /85	Revised:	Date
Interpreted M.Bérubé	Date: 10 /85		
Drawn Géodex	Date: 10 /85	N.T.S. 32D/4	

McELROY TWP
HEARST TWP

ESTRANGEMENT LAKE

MANY METALS

MANY METALS

BLACK ROCK

BLACK ROCK

LEGEND

ROCK TYPE
VOLCANIC ROCKS

- V5 Intermediate or mafic
- V6 Andesite
- V7 Basalt
- V10 Agglomerate
- V13 Ultramafic flows

SEDIMENTARY ROCKS

- S Undetermined
- S1 Conglomerate
- S3 Greywacke
- S4 Argillite
- S5 Quartzite
- F4 Iron formation (carbonate)

INTRUSIVE ROCKS

- 1S Syenite
- 2D Diorite
- 3 Mafic undetermined
- 3G Gabbro
- 3D Diabase
- 3L Lamprophyre

METAMORPHIC ROCKS

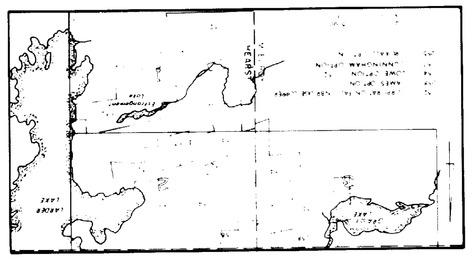
- M Undetermined

SUFFIXES

- ‡ Sheared
- Ⓓ Pillowed
- △ Brecciated /msitu
- ⍙ Flow breccia
- ||| Porphyry
- □ Porphyritique
- Gp Graphite
- Gn Galena
- Sp Sphalerite
- Py Pyrite
- Po Pyrrhotite
- Mt Magnetite
- q Quartz
- Fu Fuchsite
- σ Silicified
- ж Sericitic
- ▾ Pyritized
- η Carbonated
- ι Talcose
- ε Epidote
- c Chlorite
- φ Chloritized

SYMBOLS

- Abandonned shaft or pit
- □ Claim post
- Trench
- Diamond drill hole
- Glacial strie
- Anticline, syncline
- Bedding undetermined, vertical, inclined
- Foliation undetermined, vertical, inclined
- Geological contours or contacts
- Hall outline
- Outcrop, small or large
- Fault



FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

ONTARIO

SHEET 1

GEOLOGY

*G3.4636

CNB84-6-P-356

400 0 400 800 1200 1600 2000 2400 2800 3200 3600 4000 4400 4800 5200 5600 6000 6400 6800 7200 7600 8000 8400 8800 9200 9600 10000 10400 10800 11200 11600 12000 12400 12800 13200 13600 14000 14400 14800 15200 15600 16000 16400 16800 17200 17600 18000 18400 18800 19200 19600 20000 20400 20800 21200 21600 22000 22400 22800 23200 23600 24000 24400 24800 25200 25600 26000 26400 26800 27200 27600 28000 28400 28800 29200 29600 30000 30400 30800 31200 31600 32000 32400 32800 33200 33600 34000 34400 34800 35200 35600 36000 36400 36800 37200 37600 38000 38400 38800 39200 39600 40000 40400 40800 41200 41600 42000 42400 42800 43200 43600 44000 44400 44800 45200 45600 46000 46400 46800 47200 47600 48000 48400 48800 49200 49600 50000 50400 50800 51200 51600 52000 52400 52800 53200 53600 54000 54400 54800 55200 55600 56000 56400 56800 57200 57600 58000 58400 58800 59200 59600 60000 60400 60800 61200 61600 62000 62400 62800 63200 63600 64000 64400 64800 65200 65600 66000 66400 66800 67200 67600 68000 68400 68800 69200 69600 70000 70400 70800 71200 71600 72000 72400 72800 73200 73600 74000 74400 74800 75200 75600 76000 76400 76800 77200 77600 78000 78400 78800 79200 79600 80000 80400 80800 81200 81600 82000 82400 82800 83200 83600 84000 84400 84800 85200 85600 86000 86400 86800 87200 87600 88000 88400 88800 89200 89600 90000 90400 90800 91200 91600 92000 92400 92800 93200 93600 94000 94400 94800 95200 95600 96000 96400 96800 97200 97600 98000 98400 98800 99200 99600 100000 100400 100800 101200 101600 102000 102400 102800 103200 103600 104000 104400 104800 105200 105600 106000 106400 106800 107200 107600 108000 108400 108800 109200 109600 110000 110400 110800 111200 111600 112000 112400 112800 113200 113600 114000 114400 114800 115200 115600 116000 116400 116800 117200 117600 118000 118400 118800 119200 119600 120000 120400 120800 121200 121600 122000 122400 122800 123200 123600 124000 124400 124800 125200 125600 126000 126400 126800 127200 127600 128000 128400 128800 129200 129600 130000 130400 130800 131200 131600 132000 132400 132800 133200 133600 134000 134400 134800 135200 135600 136000 136400 136800 137200 137600 138000 138400 138800 139200 139600 140000 140400 140800 141200 141600 142000 142400 142800 143200 143600 144000 144400 144800 145200 145600 146000 146400 146800 147200 147600 148000 148400 148800 149200 149600 150000 150400 150800 151200 151600 152000 152400 152800 153200 153600 154000 154400 154800 155200 155600 156000 156400 156800 157200 157600 158000 158400 158800 159200 159600 160000 160400 160800 161200 161600 162000 162400 162800 163200 163600 164000 164400 164800 165200 165600 166000 166400 166800 167200 167600 168000 168400 168800 169200 169600 170000 170400 170800 171200 171600 172000 172400 172800 173200 173600 174000 174400 174800 175200 175600 176000 176400 176800 177200 177600 178000 178400 178800 179200 179600 180000 180400 180800 181200 181600 182000 182400 182800 183200 183600 184000 184400 184800 185200 185600 186000 186400 186800 187200 187600 188000 188400 188800 189200 189600 190000 190400 190800 191200 191600 192000 192400 192800 193200 193600 194000 194400 194800 195200 195600 196000 196400 196800 197200 197600 198000 198400 198800 199200 199600 200000 200400 200800 201200 201600 202000 202400 202800 203200 203600 204000 204400 204800 205200 205600 206000 206400 206800 207200 207600 208000 208400 208800 209200 209600 210000 210400 210800 211200 211600 212000 212400 212800 213200 213600 214000 214400 214800 215200 215600 216000 216400 216800 217200 217600 218000 218400 218800 219200 219600 220000 220400 220800 221200 221600 222000 222400 222800 223200 223600 224000 224400 224800 225200 225600 226000 226400 226800 227200 227600 228000 228400 228800 229200 229600 230000 230400 230800 231200 231600 232000 232400 232800 233200 233600 234000 234400 234800 235200 235600 236000 236400 236800 237200 237600 238000 238400 238800 239200 239600 240000 240400 240800 241200 241600 242000 242400 242800 243200 243600 244000 244400 244800 245200 245600 246000 246400 246800 247200 247600 248000 248400 248800 249200 249600 250000

Drawn	10/85
Traced	
Checked	
Recommended	
Approved	
Date	Sept. 85
Scale	1:2500

D. Boucher

N.T.S. 32D/4

Falconbridge Limited

McVITTIE

HEARST

LARDER LAKE

DAVEY LAKE

FALCONBRIDGE LIMITED

HEARST TWP PROJECT, PN-660

ONTARIO

GEOLOGY

#63.4636

OM84-6-P-356

D. Boucher

GEODES 10/85

329/4

Dec. 85

REPORT OF WORK PERFORMED IN 1985

BY FALCONBRIDGE LIMITED

on the properties of

CORPORATION FALCONBRIDGE COPPER (PN-660)

and of

MANY METALS MINES LIMITED (PN-613)

Hearst township, Ontario (NTS 32 D/4)

Dec. 30, 1985 Magloire Berube, P. Eng.

RESUME

During 1985, Falconbridge Limited pursued its gold-oriented exploration program in Hearst township, Ontario.

Falconbridge (FL) owns one group of 132 claims in Hearst and McElroy townships, Ont., 117 of which having been optioned from Corporation Falconbridge Copper (CFC) in 1984 and 15 of which having been optioned from Many Metal Mines Limited (MMM) in 1985.

The work done by FL on these 2 properties in 1984-85 comprises:

	1984	1985		total 85	total 84-85
Option	CFC	CFC	MMM	CFC & MMM	CFC & MMM
Claims covered	38	25	9	34	72
Lines cut (km)	22.5	9.7	22.5	32.8	55.3
Mag survey (km)	115.0	62.8	21.0	83.8	198.7
VLF survey (km)	19.3	62.8	21.0	83.8	103.1
I.P survey (km)	56.3	30.0	10.5	40.5	96.8
Geochemistry "	-	62.8(42 ac)	21.0(37 ac.)	83.8(79 ac.)	83.8
Geology "	-	62.8	21.0	83.8	83.8
D. D. Holes	7(3954)	6(3420)	3(2345)	9(5765)	16(9719')
Costs	186 967$	124 281$	74 213$	198 494$	385 461$

Most exploration in 1984 was concentrated on the CFC claims requiring assessment work whereas most exploration in 1985 was concentrated on the CFC and MMM claims located in the vicinity of the alteration zone longing the Mitchell-Hearst fault.

A lot of anomalies were obtained from the several surveys performed during 1985.
The 9 diamond drill holes bored in 1985 encountered a lot of pyrrhotite, pyrite, graphite or carbonate (Kerr-Addison type) but failed to intersect any significant gold values.

The main data have been interpreted and compiled on maps contained in pockets at the end of the present report. More detailed maps from the same surveys are contained in two separate reports considered as parts of the present one.

Additional work is recommended for 1986: a) on 1985 anomalies left unexplained; b) on claims farther northwest, in McElroy and Hearst townships, where precious and base metals have been reported, and c) on the Hemlar property forming an enclave within the Falconbridge group of properties. The 1986 program has not yet been worked out in detail but should include a complete review of all old data, a systematic gophysical coverage of the Hemlar property and a diamond drill compaign where stripping is not feasible.

The budget for this program is estimated between 200 000 to 300 000 $.

TABLE OF CONTENTS

INTRODUCTION

This report briefly describes the results of geophysical, geological and geochemical surveys together with the results of a diamond drill campaign carried out during 1985 in Hearst township, Ontario. This work was performed by Falconbridge Limited (FL) on two adjacent properties optioned from Corporation Falconbridge Copper (CFC) and of Many Metals Mines Limited (MMM).

Many maps are inserted in two complementary geophysical reports, one containing the pseudo-sections provided by Remy Belanger Enrg. who carried out the Induced Polarization survey, and the other one, provided by Geola Ltd who carried out the magnetic and V.L.F. electromagnetic surveys. The maps by Geola also integrate the computerized data obtained in 1984 in other parts of the CFC property. For all types of surveys, the data coming from both the CFC and MMM properties have been plotted together on the same map.

DESCRIPTION OF PROPERTIES

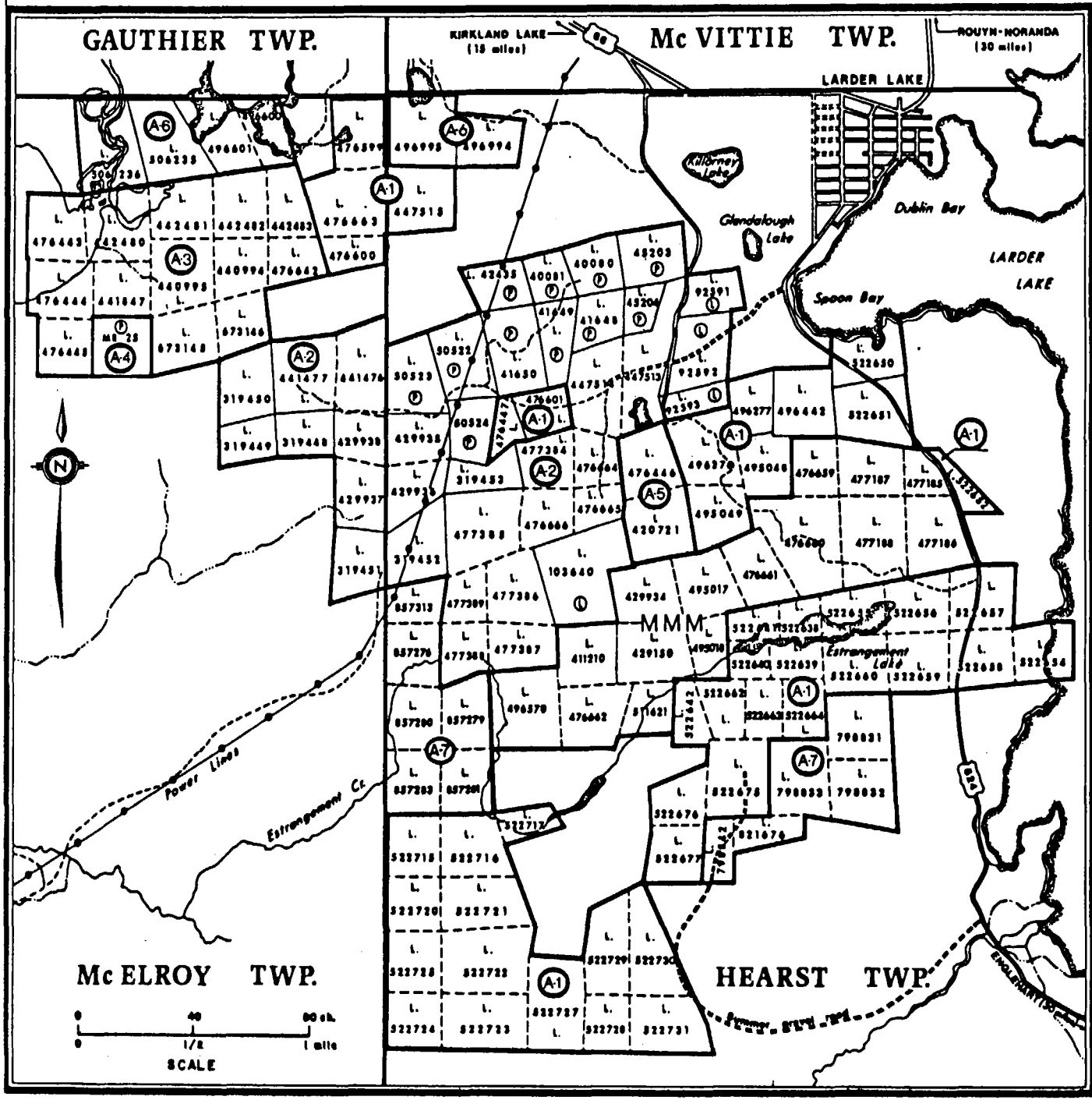
The CFC option comprises 117 claims located in Hearst and McElroy townships whereas the MMM option comprises 15 claims in Hearst township. The claims distribution is illustrated on the claim sketch inserted next page whereas the claims numbers are listed in appendix A. The CFC option itself, for CFC purposes, was sub-divided in 12 blocks of claims and/or sub-options.

The center of the properties lies about 2 miles southwest of the mining town of Larder Lake. Most claims are easily accessible: first, highway 66 passes just north of the property; secondly, road 624 relying the towns of Larder Lake and of Englehart straddles the eastern limit of the properties and is opened all year round; thirdly, numerous summer roads and trails open for mining, timbering, hunting or sport purposes lead in or close to most claims.

REGIONAL AND LOCAL GEOLOGY

The geology of the area is well illustrated on map 1947-1 accompanying Volume LV1, part V111, 1947, of the fifty-sixth annual report of the Ontario Department of Mines, volume entitled: "Geology of Hearst and McFadden townships".

Geological surveys have been done on both properties by CFC and MMM. The local geology can be summarized by highly folded and faulted, steeply dipping, interlayered sedimentary and volcanic formations belonging to the Larder Lake Group. The sediments are mainly represented by greywackes with minor argillites and conglomerates whereas the volcanic rocks, by intermediate to ultramafic flows (classified as tholeiitic and komatiitic by CFC). Several syenitic plugs and dioritic dikes have been mapped or drill intersected.



LEGEND

- LEASES
- PATENTED
- KING'S HIGHWAYS
- POWER LINES
- CLAIM BLOCKS
- CLAIM BLOCK NUMBERS

BLOCK NAMES AND NUMBERS

Block	Name	C.F.C. No	FL No
A-1	CLAIMS C.F.C.	PN 052-70	PN-660
A-2	OPTION - MANY METALS	PN 054-70	PN-660
A-3	OPTION - CROXALL	PN 055-70	PN-660
A-4	OPTION - HUDSON BAY	PN-056-70	PN-660
A-5	OPTION - CUNNINGHAM	PN-057-70	PN-660
A-6	OPTION - JAMES	PN-058-70	PN-660
A-7	CLAIMS C.F.C.	PN-052-70	PN-660
MMM	MANY METALS MINES LTD.		PN-613

FALCONBRIDGE LIMITED

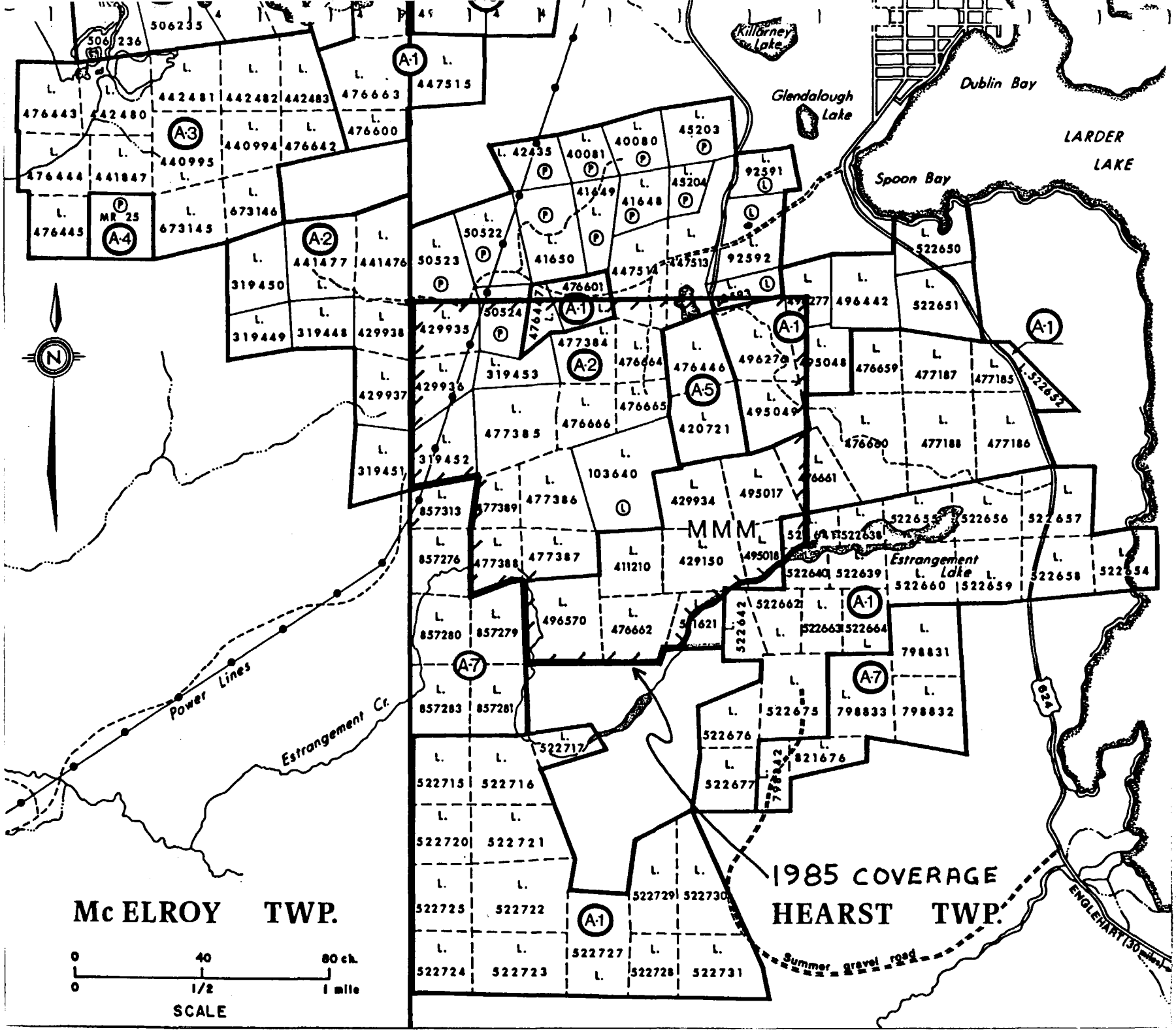
OPTION CORP. FALCONBRIDGE COPPER
OPTION MANY METALS MINES LTD.

HEARST & McELROY TWP.

CLAIMS MAP

DRAWN BY: SERVICES EXPLORATION SERVICES corp. (03/86)

REVISED BY: SÉOSÉS Inc. (01/86) FOR: FALCONBRIDGE LTD.


Killarney Lake
Glendalough Lake
Dublin Bay
LARDER LAKE
Spoon Bay
Estrangement Lake
Power Lines
Estrangement Cr.
Summer gravel road
624
ENGLEHART (30 miles)
MMM
1985 COVERAGE
Mc ELROY TWP.
HEARST TWP.
0 40 80 ch.
0 1/2 1 mile
SCALE

The Larder-Cadillac break, well known and famous for the prolific gold deposits found in its vicinity, passes just North of Larder Lake village and separates the Larder Lake Group from the Timiskaming Group, farther North. Two major cross-faults and related subsidiary faults to which gold-bearing deposits are believed to be genetically or spatially associated, traverse the properties in an almost N-S direction: the Mitchell-Hearst fault and the one crossing the Fitzpatrick Bay in Larder Lake. An almost E-W fault has been assumed to pass underneath Estrangement Lake.

Wide zones of "dolomitization" with fuchsite have been locally observed along these major faults.

Pyrite, pyrrhotite or graphite zones are frequent. Gold have often been reported associated with syenites, diorites or 'dolomitized' volcanic rocks.

PREVIOUS WORK

Prospecting for gold and base metals has been intensively but sporadically pursued on both properties in the past. Stripping, blasting and trenching were later followed by modern geological, geochemical, ground and airborne geophysical surveys carried out by many companies whose respective works have already been summarized in reports by D. Comba, 1977, F. Balint, 1982 and M. Berube, 1984. Over 100 diamond drill holes totalling in excess of 50 000 feet have been bored on both properties. Most of this work had been carried out outside the portion of the CFC property intensively worked by FL in 1985.

RECENT WORK

During 1985, Falconbridge Limited (FL) performed the following quality and quantity of work on both properties:

Type of work	CFC	MMM	Total
Line cutting	9.7 km	22.5 km	32.8 km
Magnetometer	62.8 km	21.0 km	83.8 km
VLF EM survey	62.8 km	21.0 km	83.8 km
I. P. survey	30.0 km	10.5 km	40.5 km
Geochemistry	62.8 km	21.0 km	83.8 km
Geology	62.8 km	21.0 km	83.8 km
Diamond drilling	6 holes (3420')	3 holes (2345')	9 holes (5765')

The work done in 1985 covers only the western half of the MMM property and the southern part of the north block on the CFC property. It was concentrated to the vicinity of the Mitchell-Hearst fault structure.

The line cutting has been contracted by Exploration Colinex Inc. of Rouyn, Que. Most lines have been cut in an E-W direction, with pickets at 100-foot intervals along lines 200 feet apart. Much time has been spent in the field looking for old base lines, old

pickets and claim posts in order to be able to overlay any plan from previous works (once reduced at the scale of new plans,1" = 400') and in order to tie the sets of claim posts recently localized, with the new grid of lines. The new claim map integrates all new lines, all old base lines and most claim posts.

The geophysical surveys carried out by Geola Ltee of Val d'Or, Que. include measurements of both the total field and the vertical gradient of the earth magnetic field, at intervals of 50 feet and also the readings of a VLF electromagnetic survey measured on 2 frequencies, at intervals of 100 feet. The computerized results have been presented as profiles and/or contours on maps accompanying the report by Geola. The author re-interpreted all VLF results on a new VLF compilation map to be found in pocket at the end of the present report.

The Induced Polarization (I.P.) survey had been carried out by Remy Belanger Enrg of Evain, Que., with Phoenix 1PV-1 and 1PT-1 instruments working in the frequency domain. Both the Frequency Effect (F.E.) and the Resistivity (Res.) were measured at spacings of 200 feet and for depths of N = 1 to 5. Remy Belanger provided a set of pseudo-sections showing all readings of Res. and F.E. altogether with the calculated metal factor. The author interpreted the data contained in the pseudo-sections by reporting anomalies as bars on his own plan, bars later joined by axes from line to line.

The geochemical survey was conducted by a crew of 2 technicians (Gilles Carrier and Paul Nadeau) who walked along all the lines for mapping and sampling all outcrops of bedrock. Each sample was theorically composed of several pieces of rock aggregating about 5 pounds and broken within 100-foot radius from the reported location on the geochemical map. The 379 geochemical samples collected that way were sent to Chimitec Ltee of Sainte-Foy, Que., who prepared them by fire assay before sending them at Bequerel Laboratories of Mississauga to be assayed for gold in ppb by neutronic activation; Chimitec Ltee also had then assayed for CO2 by a gravimetric method.

The geological survey has been executed by Donald Boucher of Kirkland Lake, Ont., who visit, mapped and sampled the outcrops previously outlined by the crew of technicians doing the geochemistry. In addition, the author also presents in pocket a geological map compiling data from recent and previous geological mapping, from diamond drill results, from a few visits on the property and from geophysical interpretation.

The diamond drilling campaign has been contracted by Dominik Drilling (1981) Ltd of Porcupine, Ont. All the core have been logged and geochemically sampled at Kirkland Lake before being transported to the Timmins core shack for storing. The logging has been done by M.Berube, Donald Boucher or J. Andre Carrier. Splitted core samples have been sent to Swastika Laboratories Limited and geochemical samples of core have been sent to

Chimitec Ltee of Sainte-Foy for assaying. Each geochemical sample was composed of pieces of core 1" to 2" long taken at intervals of 1.8 feet along a same geological unit (more samples were taken in units exceeding 100 feet). The diamond drill logs are inserted herewith as appendix A, the diamond drill geochemical results, as appendix B and the diamond drill sections for each hole , as apendix C.

DISCUSSION AND INTERPRETATION OF RESULTS

Geophysical surveys

Let's first describe the results for each type of geophysical surveys before comparing them with each other.

Magnetic and gradiometric results

Geola Ltee plotted the magnetic and the gradiometric results on 4 sets of maps (each set comprising 2 base maps provided by FL, one covering the northern part, the other, the southern part of the properties). Results of all other surveys carried out by FL are all shown on the same set of base maps.

The broadest magnetic features contoured on the magnetic map have a northwest-southeast direction and are refered below from the southwest to the northeast:

- a high mag (> 1000 g), caused by ultramafic rocks (see geology)
- a low mag (< 200 g), 500-1000' wide, underlain by volcanic and sedimentary rocks (could be the low side of polarized high mag)
- a medium low mag (200-500 g), 1500-2000' wide, underlain by sediments
- a medium high mag (600-1000 g), probably underlain by intermediate volcanic rocks

These broader magnetic features are locally cross-cut by smaller linear anomalies marked Mag-1 to 12 on the general geophysical compilation map, and briefly described below:

Mag-1: bi-polarized mag., oriented N 20 E, sub-parallel to line 84 E in its north part: massive py, po, graphite at places.

Mag-2: low mag., oriented N 35 E, sub-parallel to the southern extension of the alteration zone (see geological map)

Mag-3: high mag. problably caused by ultramafic flows or syenite

Mag-4: high mag., E-W, possibly a gabbroic dyke stopping against the fault passing by thealteration zone (Mitchell-Hearst fault)

Mag-5: high mag. probably caused by a gabbroic intrusion because such an outcrop has been observed in its centre

Mag-6: high mag., concordant linear structure, unxplained

Mag-7: low mag., unexplained

Mag-8: high mag., explained by heavy pyrrhotite in hole 660-08

Mag-9: high mag., explained by pyrrhotite in hole 660-09

Mag-10: high mag., explained by pyrrhotite in hole 660-10

Mag-11: high mag., one outcrop of iron formation reported nearby

Mag-12: high mag., over a pit containing a 6-30" wide copper-bearing quartz vein

There are other still smaller magnetic anomalies that might indicate mineralization, specially if confirmed by other surveys. Offsets along bigger anomalies may also be structurally important because possibly caused by cross-faults.

A gradiometric map on which the highest absolute readings have been contoured succeeded to pin-point most of the anomalies described above. This gradiometric map had not been included herewith but the more significant anomalies appear on the general geophysical compilation map in pocket.

VLF electromagnetic results

Geola reported the VLF results on 4 other sets of maps. The more significative sets are the ones showing the In Phase components from the NSS station as profiles and contours. The set showing the In Phase components from the NAA station is not valid because the profiles have been drafted along E-W lines instead of theorical N-S lines on the profile presentation and because the filtering has also been done along E-W lines instead of theorical N-S lines on the contour presentation. For this reason, the author re-calculated all In Phase readings from NAA along theorical N-S lines, using the Fraser method.

Then the author integrated all In Phase data on a new set of map proceeding that way: first, only the positive values contained on on both NSS and NAA maps have been transfered on a new map; secondly, all values have been countoured by Geodes (with author's own method); finally, the contoured amplitudes have been interpreted as explained below.

The strongest anomalies have been labelled from VLF-1 to 10 on the VLF compilation map accompanying the present report, as a matter of reference only, before being classified as real or false anomalies.

Induced Polarization (I.P.) results

On the pseudo-sections, the higher Frequency Effect (F.E.) are generally associated with the higher Resistivity (Res.) readings and they also largely coincide with area of outcrops, suggesting

that most anomalies are sub-surface or false anomalies. The F. E. peaks or axes are almost always closely associated with high Res., apparently marking the crests of hills.

Once transfered on an I.P. compilation map, most F. E. axes are effectively located over the area of outcrops. The have been labelled from A to F, these letters being followed by numbers when axes are segmented.

One rare I.P. anomaly whose F.E. is associated with a low Res. and do not seems to correspond to an outcroping area is anomaly F which has been explained by diamond drill hole 660-08. This hole cut a lot of sulphides with minor graphite.

Correlation between Mag., VLF and I.P. results

A general geophysical compilation map has been specially built to superpose the main VLF, I.P., Mag. and gradiometric axes, for comparaison and interpretation.

The new VLF compilation map outlines both sub-surface (false) and bedrock (real) conductors. The first rule of thumb used to differentiate between both types of anomalies consists to superpose the VLF compilation map over a well documented geological map (one outlying rocky hills and swamps or conductive overburden, for example). In the absence of real conductors (in bedrock), the highest amplitudes will coincide with vallies filled with conductive overburden whereas areas of rocky hills stay blanks. Then, a VLF anomaly located over a hilly area have a better chance to be a real one. The second rule of thumb to discreminate between false and real conductors inside as well as outside hilly areas consists to superpose the VLF compilation map over the I.P. compilation map. While most false VLF anomalies are located outside areas of outcrops, most false I.P. anomalies, on the contrary, are located inside areas of outcrops, then not coincident. When a VLF and an I.P. conductor coincide, then the conductor have a better chance to be caused by a real or bedrock conductor, by sulphides or graphite. See anomaly VLF-5 for instance.

When a VLF anomaly and/or an I.P. anomaly coincide with a magnetic anomaly, the reliability for a real conductor is still better, as it happens over anomalies VLF-5 and VLF-8

Unfortunately, on the claims surveyed during 1985, coincident anomalies are very few and, which is still worse, axes of different surveys are cross-cutting instead of being parallel to each other.

Geochemical survey

Two complementary geochemical surveys (with local overlapping) have been conducted over the property, the one previously conducted by CFC and the recent one, by FL. Samples were assayed

for precious, base metals and for oxides by CFC and samples from surface and from diamond drill holes have been assayed for gold and CO2 by FL.

The geochemical map in pocket shows the geochemical results obtained by FL in 1985 but also shows a few gold assay results obtained from a reconnaissance geochemical survey done by FL in 1984, when localized in 1985 by observation of flaggins left in 1984.

To make it short, very few assay results for gold are anomalous and most highly anomalous assay results for CO2 have been obtained over the main alteration zone. The previous surveys by CFC yielded much more anonalous gold assays (the area covered was not necessarily the same as the one covered by FL).

Geological survey

Let's sub-divide the geology into lithology, structure, alteration and mineralization. The legend for the symbols used on the geological compilation map in pocket is inserted as appendix D.

Lithology

The lithology appearing on the geological compilation in pocket is not much different from the ones previously filed by other companies like CFC, MMM, etc. It is mainly composed of three units: sediments (mainly greywackes), ultramafic flows (komatiites) and intermediate volcanic (tholeiites) rocks. There is a big difference, though, between the governmental map and all companies' maps: the rocks forming the hill over the Mitchell-Hearst fault, identified as syenite on the government's map are identified as altered volcanic and sedimentary rocks on companies' maps.

Structure

The main structures are locally identified by geological observation and magnetism: the NW-SE trending contact betwenn ultramafic and intermediate flows is well defined by the magnetism except to the SE, on the southern extension of the main alteration zone where the ultramafic flows become 'demagnetized' by alteration. Elsewhere, on the property, the magnetism, the I.P. and the VLF do not seem very effective tools to define the structures, maybe because of local intense alteration and complex folding and faulting.

Several faults however have been tentatively drawn on the geological compilation map.

The bedding and even top determinations have often been observed at many places over the sediments and the volcanic rocks.

Both sedimentary and volcanic rocks have been frequently

breccicated in situ and their hairline fractures have been filled by some black graphite, as observed on surface and in many drill holes, but these breccias are not always easily followed by geology or geophysic.

Alteration

The more important type of alteration is the "dolomitization" of volcanic and sedimentary rocks, along the Mitchell-Hearst fault. This alteration has hardened the rocks to the point of forming a hill, because more resistant to erosion. This hill is by far the strongest topographic feature on both properties.

Mineralization

Pyrite and pyrrhotite has been found at many places, often associated with graphite. For instance, heavy nodular pyrite has been encountered in the wide pit at coordinates 26 S-83 E and in hole 660-08, hole which also contains some heavy pyrrhotite. All sulphide mineralizations have been assayed for gold and, except for weak values intersected in hole 660-13, no significant amount of gold or base metals have been obtained from geochemistry, geology and diamond drilling in 1985.

Diamond Drill hole campaign

On CEC option

The first five diamond drill holes on this option were drilled under I.P. anomalies located outside outcrop areas and the sixth one was drilled across the northern extension of the alteration zone exposed on the MMM option, farther south.

I.P. anomalies in the first 4 holes are well explained by a variable amount of graphite, pyrite and/or pyrrhotite, and do not carry any significant gold values. From the log, there is no good explanation for the I.P. anomaly in the fifth hole that the author has not seen yet. The sixth or last hole did cut the alteration zone but the alteration is reported weaker than in the third hole drilled on the MMM option to the south. This hole cut an anomalous gold zone averaging 190 ppb Au over 22 feet from 284.5 to 306.5 feet. A more detailed summary of the geology of each diamond drill hole follows:

The numbers of holes begin with 660-08 in 1985 because holes 660-01 to 07 have been drilled in 1984.

Hole 660-08

016-542: interlayered argillites, greywackes and conglomerates (or breccia?)

This hole cut several sections containing light to heavy sulphides, nodular pyrite and/or disseminated pyrrothite and some slightly graphitic sections. Fuchsite was

observed from 166 to 186 feet in an alteration zone.

Hole 660-09

042-297: interbedded argillites and greywackes, often brecciated in situ, the hairline fractures filled by graphite. Frequent py. and po.

297-606: intermediate volcanic rocks, partly brecciated, graphitic but barren of sulphides.

Hole 660-10

020-506: mainly mafic volcanic flows, local tuffs and a dyke of gabbro. These rocks are brecciated in situ from 157 to 251 and from 339 to 463. The hairline fractures in the breccia are black, being filled by graphite. The first breccia contains traces to 1% pyrrhotite and pyrite and the second one, up to 5% py-po.

Hole 660-11

074-526: mostly intermediate volcanic rocks, locally described as dacite, andesite, basalt and tuffs. a 15' dyke of syenite is noted at 461'. Graphite has been identified at 92', 121', 130-132' and at 262'. Frequent traces of pyrite.

Hole 660-12

080-282: intermediate to mafic volcanics, chloritized;
282-341: mafic valcanics, "
341-511: intermediate to mafic volcanics, "
511-516: gabbro-amphibolite

From the log, there is no explanation for the I.P. anomaly.

Hole 660-13

061-225: mafic and ultramafic volcanics;
225-379: altered (dolomitized) mafic volcanics?, local fuchsite, traces of pyrite;
379-708: weakly altered (dolomitized) metasediments, local graphite;
708-716: basic dyke.

65 core samples have been splitted in this last hole, the most anomalous ones being 5 consecutive samples splitted from 284.5 to 306.5: they averaged 190 ppb Au over 22.0 feet. The other best values are scattered and are 140, 100, 40, 30 and less.

On MMM option

The 3 diamond drill holes 613-01 to 03 have been drilled before having received the results of the geochemical survey. The first two holes were drilled across the southern extension of the Mitchell-Hearst fault and across the western extension of the Estrangement Lake fault, in an area covered by overburden where ultramafic rocks were not expected because of much lower magnetism. These 2 diamond drill holes encountered mainly talcose and "de-magnetized" ultramafic volcanics without any sign of the expected syenitic intrusions, 'dolomitized' alteration zone or gold-bearing quartz veins. The third hole has then been collared farther north so as to sample the carbonate zone, mid-way between the first two holes and a previous set of holes under the showing area. Here is a more detailed summary of the geology encountered:

Hole 613-01

072-629: highly talcose ultramafic flows;
629-794: slightly carbonated intermediate flows.

Both intermediate and ultramafic flows are cut by 12% of diorite dykes (6 of them). The shearing from 575 to 752 might have been developed by the Mitchell-Hearst fault.

No significant gold assay results were obtained.

Hole 613-02

023-726: talcose ultramafic flows all along.

No significant gold assay results were obtained.

Hole 613-03

006-368: intermediate to mafic volcanic rocks;
368-382: amphibolite or mafic tuffs;
382-576: alteration zone, bleached sediments, some fuchsite;
576-637: arkosic arenites
637-747: alteration zone, similar to above;
747-825: mafic to ultramafic volcanic rocks.

The highest assay results from 114 core samples were: 600 110, 90 and 70 ppb Au.

CONCLUSION

The magnetic map helps to better define larger geological structures (contacts, faults) and to pin-point concentrations of magnetic mineralization. Anomalies labelled Mag-1 to 12 on the general geophysical compilation map are described in the present report. The gradiometric anomalies have also been countoured on the same general map.

The VLF compilation map (the one combining both the NAA and NSS results, with the author's method) clearly differentiates areas of positive In Phase amplitudes (generally underlain by conductive overburden) from the one of negative In Phase amplitude (generally underlain by rocky hills). The 10 sharpest anomalies are labelled VLF-1 to 10 on the map. Very few of them are real bedrock conductors.

The I.P. compilation map contains numerous F.E. axes labelled A to H (each followed by nmbers when segmented), most of them taught to be caused by sub-surface effects, some by graphite or sulphides.

A general geophysical compilation map have been drawn to better show the associations between magnetic, gradiometric,, VLF and I.P. anomalies.

The geochemical maps failed to show any geochemically anomalous gold zones but clearly picked up the main carbonated alteration zone. Moreover, these maps were sometimes usefull for VLF interpretation when outlining areas of rocky hills from those of conductive overburden.

The geological compilation map differs from the government map 1947-1 which shows a wide 'syenitic' dyke instead of carbonated volcanic and sedimentary rocks along the Mitchell-Hearst fault. It does not differ much from the different companies'maps but permits to compile all old geological data and to compare then with the recent mapping.

None of the 9 recent diamond drill holes intersected significant gold intersections although they succeeded to explaine the geophysical anomalies or to cross-cut the structures looked for.

RECOMMENDATIONS

Only 72 of the 132 claims have been explored during 1984 and 1985. Some of these, the remmant of claims plus some adjacent properties deserve an aggressive exploration program for 1986.

Many geophysical anomalies are left unexplained in the area explored during 1985, particularly in the northwestern portion where some mineralization is present in a few pits and where the geology is structurally disturbed. Some VLF anomalies for instance should be detailed by I.P.along short N-S or E-W lines. Then, a few of them could be explained by stripping or by diamond drilling, depending on overburden conditions.

The northwestmost portion of the CFC option has not been explored yet by FL. Interesting mineralization and alteration has been reported from there, namely the base metal showing on claim MR 25 and many carbonate zones elsewhere. Geochemical anomalies of gold and CO2 deserve a second look with I.P. before stripping or drilling.

The Hemlar property located southwest of the MMM option and the portion of Larder Lake covering the Mitchell-Hearst fault extension, as for north as the Raven River and Laguerre gold deposits also constitute good prospecting ground.

December 30, 1985

Magloire Berube, P. Eng.

REFERENCES

Balint, Frank: 1980 Drill Program, Larder Lake Project Areas, PN 630 to 637 inclusive, McElroy-Hearst townships, Ontario, NTS 32-D-4, Corporation Falconbridge Copper, December 10, 1980

Balint, Frank: Larder Lake project 1981 Summary Report, PN 030, 032, 033, 034, 035, 036, McElroy and Hearst Townships, for Corporation Falconbridge Copper, April 1982.

Berube, Magloire: Report on a Diamond Drill Campaign by Falconbridge Limited on Project PN-660 or Property of Corporation Falconbridge Copper in Hearst township, Ontario. December 18, 1984.

Comba, Dave: Davey Lowe's Gold Claims Property Examination, memorandum to Dave Watkins, Corporation Falconbridge Copper (appendix X111 in Balint's report), September 28, 1977.

Seguin, M. K. and Berube, M.: Geophysical Report on IP, MAG and VLF surveys on 3 blocks of claims of Corporation Falconbridge Copper, Hearst Township, Ontario. December 18, 1984.

CERTIFICATE

I, the undersigned, Magloire Berube, residing at 1077 avenue Louis Jobin, Sainte-Foy, Province of Quebec, certify as follow:

1- I received a B. Sc. A. degree in Geology from Laval University in 1958 and I practice the profession of Geological Engineer since then;

2- I am a member of the Corporation des Ingenieurs du Quebec, of the Canadian Institute of Mining and Metallurgy, of the Prospectors and Developers Association and of the Quebec Prospectors Association;

3- I do not hold, nor I expect to receive an interest of any kind in the claims held by Falconbridge Limited, in Hearst and McElroy townships, Ontario, nor in any other properties of Falconbridge Limited;

4- The present REPORT OF WORK PERFORMED IN 1985 by FALCONBRIDGE LIMITED on the properties of CORPORATION FALCONBRIDGE COPPER and of MANY METALS MINES LIMITED, Hearst township, Ontario, dated December 1985, is based on 27 years of experience in exploration, development and mining in Northwestern Quebec and Northeastern Ontario, and on a good knowledge of all previous and recent work done on the properties of Falconbridge Limited in Hearst and McElroy towmships, Ont.

Sainte-Foy, December 30, 1985 Magloire Berube, P. Eng.

APPENDIX A

Falconbridge Ltd.

HOLE NO: 660-08 PAGE: 1/11

CLAIM L-495049

Drilled by: DOMINIK
Started: 21/10/85
Ended: 22/10/85

Property: (660) CORPORATION FALCONBRIDGE COPPER
Township: HEARST
Logged by: D. BOUCHER

LINE 48+00S
Latitude:
Azimuth: N 90°E
Élévation:

POST 73+50E
Longitude:
Dip: -50°
Length: 542 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
0	16	OVERBURDEN gravel								
16	72	INTERBEDDED CHERT, ARGILLITE SILTSTONE and ARENITE From 16 to 20.6 CHERT med gray hard trace py with a 1' brown carbonate unit at 18 From 20.6 to 27.3 Lamprophyre grey green earthy med grained minor biotite. From 27.3 to 28.8 CHERT same as above From 28.8 to 38.4 CHERTY ARENITE med to light grey, massive 2% diss py, po moderately magnetic From 38.4 to 46 ARGILLITE black very fine grained siliceous interbedded with cherty arenite thin to coarse bedded.								

T. J. MOORE LTÉE

Falconbridge Ltd. HOLE NO: 08 PAGE: 2/11

Drilled by: Property: Latitude: Longitude:
Started: Township: Azimuth: Dip:
Ended: Logged by: Élévation: Length:

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		From 46 to 47.2 ARENITE light grey, fine grained with black earthy 1/8" fragments. Trace Po slightly magnetic From 47.2 to 72.5 SILTSTONE med grey to black and brown fine grained with a weak slaty cleavage almost parallel to the core axis.								
72	200	INTERBEDDED CONGLOMERATES, ARENITES AND MINOR ARGILLITES From 72 to 87.7 ARENITE med grey med grained, massive, moderately magnetic 3% Po disst-stgs. From 87.7 to 91 CONGLOMERATE Pebbly to granular, Sub angular to sub. rounded, cherty arenite, greywacke and Fuchsitic fragments in a carbonate rich matrix								

T. J. MOORE LTÉE

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat	CO_2 %	
		up to 5% po, py. The contact is gradational with the lower unit								
		From 91 to 102.6 ARENITE med grey coarse grained, carbonate rich hard siliceous from 97 to 100								
		10% diss. po, py								
		From 102.6 to 125.3 Conglomerate	6001	102.5	106	3.5	30		0.049	
		same as above but with up to	6002	106	111	5	40		0.540	
		30% nodular pyrite rounded to	6003	111	116	5	60	50	0.400	
		sub-angular ½" to 3/4" in diameter	6004	116	121	5	30		0.239	
		The py is fine grained brownish	6005	121	125.3	4.3	30		0.760	
		with a thin rind of bright yellow								
		med. grained py								
		From 125 to 128.8 ARENITE light								
		grey green fine grained 3% diss Po								
		slightly magnetic. Gradually								
		changes to a med to dark grey								
		at the bottom of this section								

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		From 128 to 132 CONGLOMERATE med grey fine greywacke clasts in a conductive graphitic argillite matrix. 3% diss. Po 20% Py from 131 to 132 From 132 to 134.3 SILTSTONE med grey to light grey green med to thin bedded From 134.3 to 135.5 Same as 128.8 to 132 with black argillite clasts in a light grey matrix, porous 15% Po+Py From 135.5 to 148.3 ARENITE med grey to light green massive bedded 1% diss Po slightly magnetic, carbonate rich. From 148.3 to 166 ARGILLITE very fine grained, black, graphitic + conductive with a weak slaty cleavage at 20° to the core axis 1% diss Po								

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
		From 166 to 186.2 CONGLOMERATE mottled grey black, subrounded to subangular arenite, chert and emerald green fuchsite clasts with 10% blebs and stgs of Po+Py locally up to 20% moderately magnetic	6006	166	171	5	NIL		4.64	
			6007	171	176	5	NIL		5.75	
			6008	176	181	5	NIL		1.22	
			6009	181	186.2	5.2	NIL		3.80	
		From 186.2 to 188 ARENITE med grey to light green, med to coarse grained towards bottom of section 1-2% Py Po slightly magnetic								
		From 188 to 200 INTERBEDDED CONGLOMERATE AND ARENITE Same as 166 to 186.2 but cobbly to pebbly with Po and Py blebs upto 0.1' in diameter								

T. J. MOORE LTÉE

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
		From 347 to 352 ARGILLITE black siliceous massive thin bedded at 25° to the core axis								
		From 352 to 361 CONGLOMERATE same as above except the top of this section contains up to 40% nodular Py while the bottom contains only 1-2% Py Po	6020	352.3	358	5.7	30		0.41	
		From 361 to 366 ARENITE same as above								
		From 366 to 371 CONGLOMERATE same as above but with predominantly Po mineralization minor Py Very magnetic								
		From 371 to 377 ARENITE coarse grained								
		From 377 to 382 INTERBEDDED ARENITE SILTSTONE AND ARGILLITE 2-3% Po, Py stgs								
		From 382 to 347 CONGLOMERATE 1% Py, Po nodules								

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
397	542	ARGILLITE predominantly very fine grained sediments with numerous cycles from black graphitic argillites which are poor to very conductive interbedded with brown siltstones and minor fine to med grained arenites, greywackes and conglomerates The sediments are thin to massively bedded with abundant soft sediment deformation structures. At 406 1' qtz carb. vein From 486 to 488 graphitic argillite very conductive From 521 to 523.7 ARENITE chloritic with 1% diss P_yP_y From 523.7 to 527.7 GREYWACKE 1/8" carb. clasts with 1-2% diss P_o From 527.7 to 534.2 ARENITE chloritic with 1-2% diss P_o slightly magnetic bedding is at 35° to the core axis									
542		END OF HOLE								

Falconbridge Ltd.

HOLE NO: 08 PAGE: 11/11

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		NOTE: The coincident IP and magnetic anomalies have been satisfactorily explained by the drill hole. The drill hole intersected poor to very conducting graphitic argillites with 10 to 15% diss + nodular py. and po. The very magnetic Po bearing sections is the cause of the magnetic anomaly. ACID DIP TESTS 200' -37° 550' -30° CORRECTED Donald Bawden									

T. J. MOORE LTÉE

Falconbridge Ltd.

CLAIM L-420721

HOLE NO: 660-09 PAGE: 1/4

Drilled by: DOMINIK
Started: 23/10/85
Ended: 24/10/85

Property: (660) CORPORATION FALCONBRIDGE COPPER
Township: HEARST
Logged by: D. BOUCHER

LINE 48+00S
Latitude:
Azimuth: N 90° W
Élévation:

POST 60+00E
Longitude:
Dip: -45°
Length: 606 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
0	42	OVERBURDEN CLAY								
42	228.7	IN SITU BRECCIATE ARENITES light to med grey, moderately to heavily brecciated massive arenites. Fragments vary in size from boulders to small particles. The breccia interstices are hairline fractures up to 2" wide. These fissures were subsequently filled by a black, fine grained, graphitic cement which makes up to 15% of the rock locally. Some of the brecciated sections have a prefered orientation at 45° to the core axis where clasts and fissures are all aligned in this direction.								

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat	CO_2 %	
		From 187 to 200.6 MAFIC DYKE med to coarse grained, dark grey green, massive with chilled contacts.								
228.7	246.	ARGILLITE black, thin bedded, graphitic argillite interbedded with thin arenite beds. From 228 to 237.7 nodular Py and Po	6021	227.5	228.8	1.3	NIL		1.65	
			6022	228.8	231	2.2	10		1.11	
		From 237.7 to 240 massive coalesit Pynodules with a thin rind of bright yellow medium grained Pyrite.	6023	231	236	5	NIL		0.900	
			6024	236	240	4	70	70	0.798	
		From 240 to 243 10% Po, Py stgs and nodules	6025	240	242.7	2.7	NIL		1.38	
			6026	242.7	245.5	2.8	NIL		1.61	
		The contacts are gradational with the upper and lower units. Pyrrhotite rich sections are very magnetic.								

Falconbridge Ltd. HOLE NO: 09 PAGE: 3/4

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
246	291	IN SITU BRECCIA same as above								
291	297.3	ARGILLITE black, graphitic thin bedded with minor thin arenite beds 5% Po moderately to very magnetic	6027	291	293	2	NIL		2.37	
			6028	294.5	297.7	3.2	NIL		3.40	
297.3	356	IN SITU BRECCIA same as above but clast composition are intermediate to mafic Volcanics								
356	493	INTERMEDIATE VOLCANIC med grey to light green, Vary fine to med grained chloritic and carbonate rich, massive. At 465 8" white qtz carb. vein At 349 and 352, 1' and 6" Blue grey qutz carb. veins								

T. J. MOORE LTÉE

Falconbridge Ltd. HOLE NO: 09 PAGE: 4/4

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
493	606	IN SITU BRECCIA same as above but clast composition are intermediate to mafic volcanics.								
606		END OF HOLE								
		NOTE: The coincident IP and Mag. anomalies have been satisfactorily explained by the drill hole. The hole intersected a thick graphitic argillite unit with massive, coarse nodular pyrite and up to 10% disseminated stgs of Pyrrhotite (magnetic)								
		ACID DIP TESTS 200' -40° 400' -32° 600' -35° CORRECTED Donald Bawden								

T. J. MOORE LYÉE

Falconbridge Ltd.

HOLE NO: 660-10 PAGE: 1/6

CLAIMS L 103640 & L 476665

Drilled by: DOMINIK
Started: 25/10/85
Ended: 26/10/85

Property: (660) CORPORATION FALCONBRIDGE COPPER
Township: HEARST
Logged by: D. BOUCHER

LINE 50+00S
Latitude:
Azimuth: N 45° W
Élévation:

POST 49+50 E
Longitude:
Dip: -45°
Length: 506 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
0	20'	OVERBURDEN FROM 0 to 19: Clay FROM 19 to 20: Gravel								
20	48.3	MAFIC VOLCANIC grey green, fine grained massive and non magnetic. Flow breccia from 31 to 35 and 1/8" pyroxene needles from 46.4 to 48.3								
48.3	51	MAFIC TUFF grey green med grained thin bedded at 25° to the core axis								

T.J. MOORE LTÉE

Falconbridge Ltd.

HOLE NO: 16 PAGE: 2/6

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
51	86.5	MAFIC VOLCANIC grey green, fine grained massive non magnetic. Lava flows are 3 to 5 ft thick with flow breccias at the same intervals From 79 to 80 Mafic tuff thin bedded								
86.5	111	GABBRO med to dark grey, coarse grained, massive from 95 to 96 magnetic At 105 - 6" feldspar porphyry dyke with sharp contacts at 60° to the core axis.								

T. J. MOORE LTÉE

Falconbridge Ltd.

HOLE NO: 10 PAGE: 3/6

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
111	157	MAFIC VOLCANIC grey green, fine grained massive with short flow brecciated sections. At 140' - 6" qtz carb. vein 1% pyrite At 149' fault mud seam and rubble								
157	199.2	IN SITU BRECCIA moderately to heavily fractured mafic volcanic. Fragments vary in size from boulders to small particles. The breccia interstices are from hairline up to 2" wide. The Breccia is held together by a black fine grained graphitic cement. It is conductive along slickenside surfaces and locally where graphite is concentrated.								

T. J. MOORE LTÉE

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		From trace to 1% fine grained po. is found throughout this section with the more mineralized sections being more magnetic from slightly to moderately magnetic. From 193.5 to 195.5 Dioritic dyke with chilled contacts. At 200' acid dip test -41°								
199.2	212	MAFIC VOLCANIC fine to med. grained grey green with flow brecciated sections.								
212	251	IN SITU BRECCIA same as 157 to 199.2 At 215'-5" qtz carb. vein From 228 to 229.5 coarse grained mafic dyke with chilled contacts								

Falconbridge Ltd.

HOLE NO: 10 PAGE: 5/6

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
251	339	MAFIC VOLCANIC med to dark grey fine to coarse grained from the edges to the core of massive flows. From 292.5 to 295 porphyritic light grey white feldspars in a grey fine grained matrix. Slightly magnetic 1% diss. pyrite								
339	463	IN SITU BRECCIA same as 157 to 199.2 except that clast compositions are MAFIC and INTERMEDIATE VOLC. FROM 372 to 404 moderately silicified, carbonated and pyritized up to 3% py. AT 381 scattered 1/8 to 1/2" blebs of po up to 5% very magnetic	6041	376	380	4	NIL		4.61	
			6042	400	404.5	4.5	NIL		3.65	

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
		From 416 to 419.5 1-3%								
463	506	INTERMEDIATE VOLCANIC med grey, fine to coarse grained, massive. From 479.5 to 481, 491 to 493.3 and 502 to 506 2 to 5% disseminated and blebs of PO, Py and minor cp	6043	490.0	492.5	2.5	NIL		0.958	
			ACID DIP TEST							
			200' -41°							
506		END OF HOLE	400' -42° CORRECTED							
		NOTE: The coincident IP and Mag anomalies have been satisfactorily explained by the drill hole. The hole intersected two IN SITU BRECCIATED ZONES cemented by a black fine grained graphitic cement. The graphitic cement is conductive. The magnetic anomaly is caused by local concentrations of Pyrrhotite									

Donald Bowles

Falconbridge Ltd.

HOLE NO: 660-11 PAGE: 1/6

CLAIMS L 496276 & L 476446

Drilled by: DOMINIK
Started: 28/10/85
Ended: 29/10/85

Property: (660) CORPORATION FALCONBRIDGE COPPER
Township: HEARST
Logged by: D. BOUCHER

LINE 25+00S
Latitude:
Azimuth: N 45°W
Élévation:

POST 64+00E
Longitude:
Dip: -45°
Length: 526 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
0	74	OVERBURDEN Sand								
74	245	INTERMEDIATE VOLCANIC From 74 to 92 med. grey green, coarse even grained massive, dioritic From 88.6 to 89.4 dark grey unit with sharp contacts at 60° to the core axis. Trace diss. py. slightly magnetic From 92 to 92.5 black fine grained hard graphitic unit. conductive From 92.5 to 245 med to light grey green fine to med. grained massive andesite trace to 1% diss. Very fine py. slightly to non magnetic. At 121 3" graphitic sheared zone @ 20° to the core axis								

FROM	TO	DESCRIPTION		SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
			From 129.6 to 132 black fine grained, hard. conductive graphitic zone At 138 1' weakly sheared section From 165 to 166 IN SITU BRECCIA ½ to ¾" clasts cemented with a black, fine grained cement At 192.5, 196 and 201 2" white qtz veins								
245	251	TRACHYTE	grey brown, fine grained rubbly poor core recovery 3% diss py.	6049	245	248	3	NIL		5.66	
				6050	248	251	3	NIL		8.68	
251	254	Dacite	dark grey, fine grained massive, hard trace to 2% diss Py over 6"								

T. J. MOORE LTÉE

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
200	397	INTRA FORMATIONAL CONGLOMERATES ARENITES AND MINOR ARGILLITES The arenite units are med grey, med to coarse grained, massive and generally carbonate rich and carry 1 to 3% diss. Po and minor Py The conglomerates are Pebbly to granular Angular to subrounded clasts with an overall med grey colour. Clast composition vary from fine to coarse grained arenites, siltstone, ~~and~~ argillite and chert. The matrix is a conductive graphitic argillite. The conglomerate sections are generally heavily mineralized with nodular pyrite and Po from 3-10%. The pyrrhotite rich sections are very magnetic. From 200-216 Arenite fine grained to granular trace Po, Py slightly magnetic									

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
		From 216 to 236 CONGLOMERATE 2% po, py diss. + blebs								
		From 236 to 245 ARENITE same as above								
		From 245 to 251 ARGILLITE black, graphitic conductive, thin bedded at 20° to the core axis with up to 7% P_o P_y very magnetic								
		From 251 to 254 ARENITE fine to med grained chloritic 1% P_o slightly magnetic	6010	248.2	250.7	2.5	NIL		0.479	
		From 254 to 266 CONGLOMERATE similar to above but with a med grey carbonate rich matrix. 3% P_o P_y diss + blebs	6011	253.5	256	2.5	NIL		3.22	
		1' Argillite bed at 263.6								
		From 266 to 283 ARENITE massive chloritic 1-2% P_o, P_y	6012	256	261	5	NIL		6.28	
		At 274, 279, 281 — .4' blue grey qtz, carb. veins	6013	261	266	5	NIL		5.76	
		From 283 to 285 ARGILLITE black siliceous. Contact with lower unit is sharp at 25° to the core axis								
		From 285-291 ARENITE same as above								

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
		From 291 to 293 ARGILLITE siliceous bedding is at 45° to the core axis								
		From 293 to 300 ARENITE same as above	6014	299.7	302	2.3	NIL		0.600	
		From 300 to 302 CONGLOMERATE similar to above but clasts show evidence that they formed by soft sediment deformation (slumping). Mottled earthy light grey, porous from 15 to 20% Py minor Po								
		From 302 to 308 ARENITE same as above								
		From 308 to 311 CONGLOMERATE 5% Po, Py stgs and blebs.	6015	308.2	311.5	3.3	NIL		0.577	
		From 311 to 329 ARENITE massive some light green spotting slightly magnetic								
		From 329 to 341 CONGLOMERATE 10%	6016	329.4	334	4.6	NIL		0.467	
		Po, Py in a black argillite matrix	6017	334	339	5	NIL		1.23	
		From 341 to 344 ARENITE same as above with light green spotting	6018	339	341.5	2.5	NIL		0.898	
		From 344 to 347 CONGLOMERATE same as above	6019	344.6	346.6	2.0	NIL		0.956	

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
254	258	INTERMEDIATE TUFF light grey green thin bedded at 40° to the core axis								
258	284	INTERMEDIATE VOLCANIC light grey green fine grained, massive At 262 2" qtz vein From 270.3 to 272 black fine grained, graphitic Very conductive zone 5% diss. and stgr of po Very magnetic								
284	286	INTERMEDIATE TUFF light grey green thin bedded at 40° to the core axis								
286	297	MAFIC VOLCANIC grey olive green fine grained, massive, chloritic trace to 2% diss py locally slightly magnetic								

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FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb		CO_2 %	
297	310	INTERMEDIATE TUFF light grey green, coarse grained crudely bedded at 30° to the core axis								
310	444	INTERMEDIATE VOLCANIC light to med. grey fine to medium grained massive, non magnetic								
444	453	MAFIC VOLCANIC grey olive green fine grained massive								
461	476	Syenite dark grey coarse grained massive with light grey to pink orange feldspar 20% dark amphiboles 1% · diss. py	6051	471	476	5	NIL		1.20	

Falconbridge Ltd. HOLE NO: 11 PAGE: 5/6

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
476	504	INTERMEDIATE VOLCANIC med grey fine grained massive with short flow brecciated sections more magnetic								
504	517	INTERMEDIATE TUFF med grey, med grained thin to thick bedded at 40° to the core axis From 508 to 511 minor ¼ to 1" black fine grained seams with 3% po, py and minor cp								
517	526	MAFIC VOLCANIC dark grey green fine grained massive chloritic slightly magnetic. Trace fine grained diss. py.								
526		END OF HOLE ACID DIP TEST 200' -43° 400' -39° CORRECTED Donald Bowes								

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FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		NOTE: The IP anomaly has been satisfactorily explained by three ½ to 3 ft. graphitic and conductive zones.								

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HOLE NO: 660-12 PAGE: 1 of 3

CLAIM L-496276

Drilled by: DOMINIK DRILLING (1981) INC. Property: HEARST TWP., C.F.C. JOINT VENTURE (PN-660) Latitude: 27+00S Longitude: 68+00E

Started: 85 11 04 Township: of HEARST Azimuth: 135° Dip: -45° (collar), *

Ended: 85 11 05 Logged by: J. André Carrier, Eng. Élévation: —— Length: 516 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
0	80	NW casing								
0	80	AW casing								
80	516	AQ wireline core (good to locally poor R.Q.D.; excellent to fair core recovery) laid into 19 wooden boxes.								
~3	80	OVERBURDEN Sand.								
80	282.5	INTERMEDIATE TO MAFIC VOLCANIC ROCKS Medium grey, generally very fine to fine-grained flows (might include some tuffs).	M 6166	137.0	139.0	2.0	NIL			
			M 6167	172.5	176.0	3.5	NIL			
		Practically non-magnetic, well chloritized and rather soft.	M 6168	213.0	218.0	5.0	NIL			
			M 6169	262.0	267.0	5.0	NIL			
		Local foliation: ~50°C/A (138, 174), 35° (257), 35-60° (277).	M 6170	267.0	269.0	2.0	NIL			
			M 6171	269.0	274.0	5.0	NIL			
		Local brecciation: 138, 218, near 268, 276-278.	M 6172	274.0	279.0	5.0	NIL			
			M 6173	279.0	282.5	3.5	NIL	NIL		
		Average of 1% millimetric to centimetric calcitic white stringers, often increasing in brecciated or foliated portions.								

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FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb			
		Brecciated quartz veinlet 267.5-268.5. Usually traces to minor Py.								
282.5	341	PORPHYRITIC TUFFACEOUS MAFIC VOLCANIC ROCK								
		Black-dotted, dark gray, medium-grained (1 to 5mm), well chloritized; varying from well foliated to fairly massive. Could be called an amphibolite (analogous to 368-382 of hole 613-03). ~1% mm. to cm. white stringers of calcite with quartz. Only minor Py in places.	M6174	282.5	287.5	5.0	NIL			
			M6175	287.5	291.5	4.0	NIL			
			M6176	291.5	296.5	5.0	NIL			
			M6177	296.5	301.0	4.5	NIL			
			M6178	301.0	306.0	5.0	NIL			
		288.5-293.5 & 330-336: fine-grained intermediate volcanic rocks; 6-inch carbonate veinlet at 289.5. Approximate contact attitudes: 60°C/A (330) & 35° (336). Foliation: 50°C/A (295), 45° (331). Lost core: 1.5 feet from 296 to 300. Some fault gouge recovered above 300.								
341	511	INTERMEDIATE TO MAFIC VOLCANIC ROCKS								
		Medium to dark greenish gray, fine-grained, well chloritized flows. More mafic (darker & bluish tinged) below 414. 1-3% white stringers of calcite and quartz; reaching 10% & over at 354-359 & 391-400. Centimetric veinlets at 421 & 502.	M6179	354.5	359.0	4.5	NIL			
			M6180	391.0	396.0	5.0	NIL			
			M6181	396.0	401.0	5.0	NIL			
			M6182	496.0	498.0	2.0	NIL			
			M6183	498.0	503.0	5.0	NIL			

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb			
		>2% Py from 496 to 498. Only traces elsewhere. Not much good foliation: ~30°C/A (343), ~35° (472).								
511	516	CHLORITIZED GABBRO-AMPHIBOLITE Dark grey, medium-grained (mostly 1-5 mm), fairly massive appearance. Practically not magnetic. Finer-grained in upper 2 feet. Trace of calcite. Not more than traces of sulfides (more at upper contact).								
	516	END OF HOLE. Casings pulled out. Red painted wooden post, bearing an aluminum identification tag, set into the hole collar. * Etch tube dip determinations: -44° (200), -44° (400). J. André Carrier, Eng. 85 11 21								

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HOLE NO: 660-13 PAGE: 1 of 5

CLAIM L 420721

Drilled by: DOMINIK DRILLING (1981) INC.
Started: 85 11 07
Ended: 85 11 09

Property: HEARST TWP., C.F.C. JOINT VENTURE (PN-660)
Township: of HEARST
Logged by: J. André Carrier, Eng.

Latitude: 52+00 S
Azimuth: 270°
Élévation: ——

Longitude: 64+00 E
Dip: -45° (collar), *
Length: 716 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
0	60	NW casing								
0	62	AW casing								
61	716	AQ wireline core (very good to fair R.Q.D.; excellent to good core recovery) laid into 28 wooden boxes).								
~3	61	OVERBURDEN 0-50 : sand, 50-60 : gravel.								
61	122	ANDESITES Greenish grey, relatively homogeneous; very fine to fine-grained, chloritized, a little calcitic in some places. Slightly to non-magnetic. 1-2% mm. to cm. white calcitic stringers. Foliated (nearly schistose): ~30° C/A (106-109). Practically no sulfides. Somewhat gradual lower contact.	M 6184	106.0	111.0	5.0	NIL			
122	~151	MAFIC TO ULTRAMAFIC VOLCANIC ROCKS Dark to blackish grey; fine to nearly medium-grained. Weakly magnetic. Might include several tuffaceous intervals. 1-4% quartz-calcite stringers.	M 6185 M 6186 M 6187	142.0 145.0 148.0	145.0 148.0 151.0	3.0 3.0 3.0	NIL NIL 20	 NIL		

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FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb
		Last 3 feet look bleached. Minor Py 142-145.					
~151	~225	MOSTLY MAFIC VOLCANIC ROCKS					
		Medium to dark grey flows (might include tuffaceous portions); locally porphyritic intervals. Chloritized, with some greenish tinges. Slightly magnetic in places.	M 6188	151.0	156.0	5.0	NIL
			M 6189	156.0	161.0	5.0	NIL
			M 6190	199.0	202.0	3.0	NIL
			M 6191	209.0	214.0	5.0	NIL
		No good bedding nor foliation (except ~35°C/A near lower end). Gradual lower contact.	M 6192	220.0	225.0	5.0	NIL
		Some alteration (bleaching) evident below 200, and increasing with depth.					
		1/4% Py in the upper first feet; minor Py here & there (mostly below 200).					
		~1% quartz-calcite stringers generally; a 1-inch quartz stringer with bleached walls at 200.					
~225	~379	ALTERATION ZONE					
		Intermediate to mafic volcanic rocks (might include some arenites), discolored in light grey to beige and in bright green (occasional medium to dark grey portions). Fine to medium-grained. Generally non-magnetic.	M 6193	225.0	230.0	5.0	NIL
			M 6194	230.0	235.0	5.0	NIL
			M 6195	235.0	239.5	4.5	NIL
			M 6196	239.5	241.0	1.5	NIL
			M 6197	259.5	264.5	5.0	NIL
			M 6198	264.5	269.0	4.5	NIL
			M 6199	269.0	274.0	5.0	NIL
		Darker grey (less altered) portions: 250,	M 6200	274.0	279.5	5.5	30

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
		259-260.5, 262, 265, 286-288, 298-299, 302, 324.5-327.	M6201	279.5	281.0	1.5	10			
			M6202	281.0	283.0	2.0	20			
		Fuchsite (green)-bearing intervals:	M6203	283.0	284.5	1.5	20			
		230.5-235, 278.5, 279.5-281.5, 284, 306.5-311 (bright green), 315-316, 324, 327-329 (bright green), 342.5-345 (fairly bright green), 349-351, 352.5-353.5.	M6204	284.5	288.5	4.0	280	410		
			M6205	288.5	293.5	5.0	210			
			M6206	293.5	298.0	4.5	140		190/22'	
			M6207	298.0	301.0	3.0	190			
			M6208	301.0	306.5	5.5	100			
		Minor to trace Py are widespread; a little more at 200, 294-301 (~½% Py), 323.	M6209	306.5	311.0	4.5	20			
			M6210	311.0	316.0	5.0	10			
			M6211	316.0	321.0	5.0	10			
			M6212	321.0	326.5	5.5	140	140		
		264-352: 2-5% quartz stringers frequent; in places, dm. quartz stringers raising total quartz to more than 10% (279.5-285 & 344-352.5).	M6213	326.5	330.0	3.5	20			
			M6214	330.0	334.0	4.0	NIL			
			M6215	334.0	339.0	5.0	10			
			M6216	339.0	342.0	3.0	10			
			M6217	342.0	345.0	3.0	NIL			
		Good foliation (in places): ~40°C/A(239), ~35°(267), 45°(306), 35°(331), 45°(379).	M6218	345.0	349.0	4.0	NIL			
			M6219	349.0	350.5	1.5	NIL			
			M6220	350.5	353.5	3.0	30			
			M6221	353.5	358.0	4.5	10			
~379	708.5	WEAKLY ALTERED ZONE	M6222	358.0	363.0	5.0	NIL			
		Light greys, mostly fine-grained, somewhat discolored tuffaceous or greywacke-like metasediments (analogous at several places to in-situ brecciate arenites described at 42-228.7 of hole # 660-09) mixed with mudstone (especially in the upper portions). Very slightly to non-magnetic.	M6223	373.0	379.0	6.0	NIL			
			M6224	379.0	384.0	5.0	40	30		
			M6225	391.5	394.0	2.5	10			
			M6226	421.0	426.0	5.0	NIL			
			M6227	453.0	457.5	4.5	NIL			
			M6228	457.5	461.0	3.5	10			

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
		Hairline to centimetric complex shapes (decimetric at 450 & 479) black cement (from traces to reaching 5% of the rock at several places). Softer & slightly graphitic in places (mostly 417-461 & 479-525); very hard (cherty) in places below 600.	M6229	571.0	576.0	5.0	NIL			
			M6230	584.0	586.0	2.0	NIL			
			M6231	586.0	591.0	5.0	NIL			
			M6232	591.0	596.0	5.0	NIL			
			M6233	609.0	614.0	5.0	NIL			
			M6234	633.0	638.0	5.0	NIL			
		Quartz vein material at 391.5-393.5, 584.5-585.5; dm. veinlets of quartz-carbonate at 592, 662, 675.5, 679, 690.5, 704 & 706.	M6235	638.0	643.0	5.0	10			
			M6236	643.0	648.0	5.0	100	150		
			M6237	648.0	653.0	5.0	10			
			M6238	653.0	658.0	5.0	NIL			
		Generally criss-crossed by 1-3% mm. to cm. white stringers of carbonates with calcite, often weathering brown; sometimes open fracture with well formed crystals; locally more abundant due to arrangement of stringers subparallel to core axis.	M6239	658.0	663.0	5.0	NIL			
			M6240	663.0	667.0	4.0	NIL			
			M6241	667.0	671.0	4.0	NIL			
			M6242	671.0	675.0	4.0	NIL			
			M6243	675.0	680.0	5.0	NIL			
			M6244	680.0	685.0	5.0	NIL			
			M6245	685.0	691.0	6.0	NIL			
		Only traces to locally minor Py; 2 mm segregated stringer at 668.	M6246	691.0	696.0	5.0	NIL	NIL		
			M6247	703.5	708.5	5.0	NIL			
708.5	716	BASIC DYKE								
		Blackish, fine-grained, quite homogeneous. Chilled upper contact (60° C/A). Very hard in the upper 4 feet. Practically non-magnetic. Little altered. No sulfides.	M6248	708.5	712.5	4.0	NIL			
		Rare hairline to mm. calcitic stringers.								

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HOLE NO: 660-13 PAGE: 5 of 5

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au			
	716	END OF HOLE.								
		Casings pulled out.								
		Red painted wooden post, bearing an aluminum identification tag, set into the hole collar.								
		* Etch tube dip determinations:								
		-45°(200), -43°(400), -38°(600).								
		J. André Carrier, Eng.								
		85 11 21								

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HOLE NO: 613-01 PAGE: 1 of 4

CLAIM L-476662 & L-511621

Drilled by: DOMINIK DRILLING
Started: OCT. 22, 1985
Ended: OCT. 26, 1985

Property: MANY METALS MINES LIMITED
Township: HEARST, ONT.
Logged by: MAGLOIRE BERUBE, P.ENG.

Latitude: L-86+00S
Azimuth: 315°
Élévation: surface

Longitude: P-54+00E
Dip: -45°
Length: 794 feet

FROM	TO	DESCRIPTION AQ CORE SIZE	SAMPLE NO.	FROM	TO	LENGTH
0	72	Ooverburden { 0-64: gumbo clay, 64-72: gravel. CASING PULLED OUT				
72	206	ULTRAMAFIC LAVAS light to medium grey, highly talcose, soft, massive, very uniform, weakly magnetic, rare traces of cubic pyrite 72.0-106.5: very light grey, mostly talc, very soft, locally schistose 90° with core axis. 106.5-114.5: basaltic inclusion, dark bluish green, massive, hard, brittle, aphanitic, very uniform, strongly magnetic, sharp contacts at 20° and 35°. idem at 120.0-120.6 and 140.5-141.5 114.5-206.0: as described, grey, highly talcose				

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TROU NO.: 613-01 PAGE: 2 of 4

DE	A	DESCRIPTION	Échantillon No	DE	A	Longueur	Au ppb		CO_2 %	
206.0	436.0	ULTRAMAFIC LAVAS Bluish grey, highly talcose, soft, massive, very uniform, moderately magnetic. No pyrite Frequent muddy seams (talcose), most of them at high angle with core axis (60°-70°), the main ones at: 176, 229, 245, 291-295, 310-311, 341, 385-398, 416, 471-476.								
436.0	629.0	ULTRAMAFIC LAVAS OFTEN CUT BY DIORITIC DYKES similar to above but generally schistose at 60° and rarely magnetic. 484.5-500.0: DIORITE, altered, dark grey, fine-grained, hard, massive, very uniform, not magnetic, traces of dissem. py. 550.0-551.5: DIORITE, massive, contacts at 55°, traces to 1% py. idem at: 545-546,	M 6044	548.5	552.0	3.5'	NIL		2.16	
		555.5-575: DIORITE AS 484.5-500.0, dark grey, sharp contacts 60° & 70° ½% dissem. py.								

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DE	A	DESCRIPTION	Échantillon No	DE	A	Longueur				
		575.0-595.5 : schistose ultramafic lavas, as described, but strongly foliated at rather low angle with core axis (0°-45°).								
		595.5-622.5 : DIORITE as 484.5-500.0 dark grey, massive, sharp contacts 60°, local dissem. py (tr)								
		606-607 : strongly schistose 45°, fault gouge in centre								
		622.5-629.0 : as described from 575 to 595.5								
629.0	660.0	INTERMEDIATE FLOWS OR TUFFS medium-green, very fine-grained, hard, uniform, good foliation given by calcite infiltrations along fractures (bedding?) at 40°. Not magnetic. No py.								
660.0	674.0	DIORITE DYKE dark grey, fine-grained, massive, as above contacts at 40°								
674.0	712.0	INTERMEDIATE FLOWS similar to 629-660 but less carbonated and massive to foliated (bedded: tuff/lapilli?) Trace to 1% dissem. cubic pyrite								

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HOLE NO: 613-01 PAGE: 4 of 4

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au ppb	Recheck	CO_2 %	
712.0	752.0	SHEARED AND SILICIFIED INTERMEDIATE FLOWS? strongly foliated 40° with core axis, showing chlorite rich green bands finely alternating with silica-rich white bands. Traces of fg., locally up to 1%	6045	746.5	750.0	3.5	100	140	3.90	
752.0	789.5	INTERMEDIATE FLOWS AS 674-712 frequent carbonated infiltrations rare curbs of fg.								
789.5	794.0	DIORITE, dark grey, massive, fine-gr., uniform contact 45°. Traces of fg.								
	794.0	END OF HOLE								
		DIP TESTS: 200': 42° after correction 400': 44.5° " " 650': 36.5° " "								

T. J. MOORE LTÉE

Falconbridge Ltd.

HOLE NO: 613-02 PAGE: 1/5

CLAIM L-476662

Drilled by: DOMINIK
Started: 27/10/85
Ended: 29/10/85

Property: (613) MANY METALS MINES LIMITED
Township: HEARST
Logged by: D. BOUCHER

LINE 90+00S
Latitude:
Azimuth: N45°W
Élévation:

POST 46+00E
Longitude:
Dip: -45°
Length: 726 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
0	23	OVERBURDEN Gumbo clay								
23	29.5	ULTRAMAFIC VOLCANIC bluish black to dark grey, fine to coarse grained, soft and talcose. It is very blocky, breaking up in 1-2" core length. moderately to very magnetic								
29.5	34.0	GABBRO Very dark grey green, med to coarse grained, massive and earthy, chloritic non magnetic								

T. J. MOORE LTÉE

Falconbridge Ltd. HOLE NO: 02 PAGE: 2/5

Drilled by: Property: Latitude: Longitude:
Started: Township: Azimuth: Dip:
Ended: Logged by: Élévation: Length:

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
34	726	ULTRAMAFIC VOLCANIC bluish black to dark grey, fine to coarse grained soft talcose and carbonate rich. Very blocky at the top of the section becoming more massive with depth. Scattered 1" to 1 ft Gabbroic nodules ie at 44, 51, 56 The ultramafic volcanics are generally moderately to very magnetic except from 300 to 460 where they are only slightly to non magnetic Traces of pyrite is found throughout with up to 1-2% py locally usually in short 1-4" sections widely scattered. Probably at the flow contacts.								

T. J. MOORE LTÉE

Falconbridge Ltd. HOLE NO: 02 PAGE: 3/5

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat	CO_2 %	
		AT 257 Fault with mud seam From 275 to 292 Syeno Diorite 1' purplish grey med. grained with 1% py Then change to coarse grained massive med. to dark grey to purple grey, magnetic with 1% diss 1/8 to 1/4" py cubes.	6046	275	280	5	NIL		1.88	
		At 326 Fault 1ft mud seam poor core recovery from 325 to 327 From 331 to 333 Syenite purplish grey dyke coarse grained 20% mafic minerals, 1% py.	6047	331	333	2	NIL		5.68	
		From 346 to 348 Syenite fine graine pinkish with 2% py AT 370 1' Diorite dike med. grey coarse grained with 5% py								
		From 296 to 400 abundant 1/4" white qtz, carb. veining From 401 to 405 Diorite med grey coarse grained massive slightly magnetic 1% diss py.	6048	401	406	5	250	150	9.57	

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HOLE NO: 02 PAGE: 4/5

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		From 434 to 436.3 Syenite fine grained grey dyke trace py Very magnetic.								
		At 426.5 and 441.5 well preserved olivine spinifex texture								
		From 408 to 429 abundant scattered ¼" qtz, carb. veining								
		From 446 to 456 Diorite med grey, med grained massive trace to 1% diss. py slightly magnetic								
		At 471 Fault with mud seam								
		From 471 to 474.5 Lamprophyre dark grey brown coarse grained massive biotite lamprophyre non magnetic								
		At 476 6" Lamprophyre dyke								
		At 461 well preserved olivine spinifex texture								

T. J. MOORE LTÉE

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH				
		At 541 Fault At 656 Fault with mud seam and brecciated from 652 to 656								
726		END OF HOLE Acid dip test at 200 -40° 400 -41° 700 -28° CORRECTED								
		NOTE: This hole was drilled a distance away from the main showing area where most of the work was done in the past. The purpose of the hole was to intersect the zone alteration zone along the Mitchell-Hearst fault. No Fuchsite or Carbonatized Zone was intersected Donald Bouchy								

Falconbridge Ltd.

HOLE NO: 613-03 PAGE: 1 of 6

CLAIM L-429150

Drilled by: DOMINIK DRILLING (1981) INC.
Started: 85 10 29
Ended: 85 11 05

Property: HEARST TWP., MANY METALS OPTION (PN-613)
Township: of HEARST
Logged by: J. André Carrier, Eng.

Latitude: 70+00 S
Azimuth: 135°
Élévation: ——

Longitude: 52+50 E
Dip: -45° (collar), *
Length: 825 feet

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
0	12	NW casing								
0	12	AW casing								
12	825	AQ wireline core (very good to fairly poor R.Q.D.; excellent to locally poor core recovery) laid into 34 wooden core boxes.								
~3	~6	OVER BURDEN Boulders on broken-in-place bedrock.								
~6	368	INTERMEDIATE TO MAFIC VOLCANIC ROCKS (might include interflow metasediments) Darker to lighter greys, frequently with tinges of green; very fine to nearly medium-grained. Several sections quite homogeneous & massive; others brecciated in-situ or showing rubbly, even locally pyroclastic-like structures (more brecciated in last fifth, with calcite near the end). Approximative S_0 attitudes: ~45° (44), ~30° S/A (119), ~50° (184). Often well chloritized. Frequent minor Py.	M 6052	50.5	56.0	5.5	NIL			
			M 6053	56.0	61.0	5.0	NIL			
			M 6054	61.0	63.0	2.0	NIL			
			M 6055	63.0	64.5	1.5	10			
			M 6056	64.5	65.5	1.0	10			
			M 6057	65.5	67.0	1.5	20	NIL		
			M 6058	67.0	69.5	2.5	NIL			
			M 6059	69.5	73.5	4.0	NIL			
			M 6060	172.0	177.0	5.0	NIL			
			M 6061	177.0	183.0	6.0	NIL			
			M 6062	183.0	188.0	5.0	NIL			

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb
		Generally non-magnetic (except slightly so, locally near the end).	M 6063	250.0	256.5	6.5	NIL
		1/2-2% millimetric to centimetric white stringers of quartz-calcite; moreover, two veinlets at 62.7-64.6 (calcite-rich) & at 261.5-263.2 (quartz-rich & holding ~1% Py).	M 6064	256.5	261.5	5.0	NIL
			M 6065	261.5	263.2	1.7	NIL
			M 6066	263.2	268.2	5.0	NIL
			M 6067	358.0	363.0	5.0	NIL
			M 6068	363.0	368.0	5.0	NIL
		Near 73: fault mirror ~ 2° C/A with slickensides 50° C/A					
		50.5-69.5 : ALTERED ZONE. Light brownish olivish grey; mixture of homogeneous and brecciated portions (might correspond to an altered arenite or greywacke); apparently weakly altered to 73.5. Not very siliceous, holding some sericite. Over 1% Py in the vicinity of calcite-quartz vein.					
		230-233 : greenish, poorly bedded, lapilli tuff.					
368	382	PORPHYRITIC TUFFACEOUS MAFIC VOLCANIC ROCK					
		Black-dotted medium grey, 20-50% medium to coarse-grained blackish, subhedral to subrounded (phenocryste ?) of mafic mineral in a medium to dark grey fine-grained matrix. Non-magnetic. Some appearance of a poorly	M 6069	377.0	382.0	5.0	NIL

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
		bedded oligomictic lapilli tuff; could be called an amphibolite. Somewhat gradual contacts. Suggestion of bedding: 35° C/A at 380.								
382	576.5	ALTERATION ZONE	M 6070	382.0	387.0	5.0	20			
		Greenish beige to yellowish grey bleached intersection, mostly of fine to medium-grained arenites & greywackes with some tuff bands. Non-magnetic.	M 6071	387.0	392.0	5.0	10			
			M 6072	392.0	394.0	2.0	NIL			
			M 6073	394.0	398.0	4.0	10			
			M 6074	398.0	401.0	3.0	80	100		
			M 6075	401.0	405.5	4.5	NIL			
		~5% quartz stringers in the lighter colored portions (especially 411-465 & 507-522).	M 6076	405.5	409.5	5.0	NIL			
			M 6077	409.5	413.0	3.5	10			
		Fuchsite green at several places (more intense 392-393, 409, 416.5-417.5, 422-424, 428, 445-446.5, 511-514, 519-522.5, 558.5)	M 6078	413.0	416.5	3.5	100	120		
			M 6079	416.5	419.5	3.0	20			
			M 6080	419.5	421.5	2.0	20			
		Approximative S_1 attitudes: 60° C/A (513), 50° (520), 45° (559).	M 6081	421.5	424.0	2.5	NIL			
			M 6082	424.0	429.0	5.0	20			
			M 6083	429.0	433.0	4.0	NIL			
			M 6084	433.0	434.0	1.0	NIL			
		469.5 ~ 499: less altered-looking & coarser-grained, darker medium grey tuffaceous amphibolite (in part analogous to 368-382) mixed with arenite in its central portion; some beige medium-grained clasts in the last foot. Py-bearing at several places.	M 6085	434.0	439.0	5.0	NIL			
			M 6086	439.0	444.5	5.5	NIL			
			M 6087	444.5	447.0	2.5	NIL			
			M 6088	447.0	452.0	5.0	NIL			
			M 6089	452.0	458.0	6.0	NIL			
			M 6090	458.0	463.0	5.0	450	750		
			M 6091	463.0	466.0	3.0	NIL			

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
		531-535, 541 ~550, also within 566-572.5: grey, spotted with lighter beige-tinged medium-grained clasts and complex shape mottlings (possibly porphyritic dacitic tuff). Fine-grained Py in the matrix.	M6092	466.0	469.5	3.5	NIL			
			M6093	469.5	472.5	3.0	NIL			
			M6094	472.5	477.5	5.0	NIL			
			M6095	477.5	481.0	3.5	NIL			
			M6096	481.0	484.5	3.5	NIL			
			M6097	484.5	488.0	3.5	NIL			
		~550-556: bleached brown, fine-grained, holding >1% very fine-grained Py.	M6098	488.0	492.0	4.0	NIL			
			M6099	492.0	496.0	4.0	NIL			
			M6100	496.0	499.0	3.0	NIL			
		Trace Cp near 569.	M6101	499.0	504.0	5.0	NIL			
		Well foliated ~65° C/A from 566 to 567.5.	M6102	504.0	507.5	3.5	10	10		
			M6103	507.5	511.0	3.5	NIL			
576.5	~637	ARKOSIC ARENITES	M6104	511.0	513.5	2.5	NIL			
		(Possibly porphyritic dacitic tuffs?)	M6105	513.5	518.5	5.0	NIL			
		Medium grey, with light grey subangular	M6106	518.5	522.5	4.0	NIL			
		to subrounded clasts (or deformed phenocrysts?)	M6107	522.5	527.0	4.5	NIL			
		Non-magnetic; weakly altered. Less	M6108	527.0	531.0	4.0	NIL			
		homogeneous in second half of intersection [intervals of light colored arenite, and of darker grey (more mafic, with some calcite) portions].	M6109	531.0	535.0	4.0	NIL			
			M6110	535.0	541.0	6.0	20			
			M6111	541.0	546.0	5.0	NIL			
			M6112	546.0	550.0	4.0	20			
			M6113	550.0	553.0	3.0	NIL			
		Some quartz & carbonate stringers in	M6114	553.0	556.0	2.0	NIL			
		last quarter.	M6115	556.0	561.0	5.0	NIL			
		So attitudes: 55° C/A (610).	M6116	561.0	566.0	5.0	10			
		Minor Py reaching 1% at several places.	M6117	566.0	568.0	2.0	20	10		
			M6118	568.0	572.5	4.5	NIL			
			M6119	572.5	576.5	4.0	NIL			

FROM	TO	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat		
~637	747.5	ALTERATION ZONE	M6120	576.5	581.5	5.0	NIL			
		(similar to 382–576.5); tuff bands more abundant in lower third of intersection.	M6121	594.5	599.5	5.0	10			
		So attitudes: ≈50° C/A (643), ~10° (706), 70° (726), ~35° (lower contact, 747.5).	M6122	613.0	618.0	5.0	NIL			
			M6123	618.0	623.0	5.0	30			
		Average of 1–2% quartz stringers (more at 667–678 & 743–745).	M6124	623.0	628.0	5.0	NIL			
			M6125	628.0	632.0	4.0	NIL			
		Traces to minor fuchsite above 706; fair to locally abundant 706–709, 719–726, 727.5–729, 743–746.	M6126	632.0	637.0	5.0	50			
			M6127	637.0	642.0	5.0	30			
			M6128	642.0	647.0	5.0	NIL			
			M6129	647.0	652.0	5.0	NIL			
			M6130	652.0	657.0	5.0	NIL			
		Widespread fine-grained Py (approximately 1% Py overall average) somewhat favouring light colored portions and stringers wallrock.	M6131	657.0	662.0	5.0	30			
			M6132	662.0	667.0	5.0	30			
			M6133	667.0	671.0	4.0	30			
			M6134	671.0	673.5	2.5	30			
747.5	825	MAFIC TO ULTRAMAFIC VOLCANIC ROCKS	M6135	673.5	678.0	4.5	30			
		(might include several tuffaceous portions)	M6136	678.0	683.0	5.0	30			
			M6137	683.0	688.0	5.0	30			
		Generally medium to blackish grey, fine to medium-grained. Bleached pale greenish grey from 771 to 776.5 (extending into nearby rock).	M6138	688.0	693.0	5.0	30			
			M6139	693.0	696.5	3.5	30			
			M6140	696.5	700.0	3.5	30			
		Practically non-magnetic; chloritized.	M6141	700.0	705.0	5.0	30			
			M6142	705.0	710.0	5.0	30	10		
		~1% millimetric calcitic white stringers; a little more 792–803 (with some quartz) and near 822. Some quartz at 762.5 & 772.	M6143	710.0	713.5	3.5	NIL			
			M6144	713.5	718.5	5.0	NIL			
			M6145	718.5	722.0	3.5	NIL			
			M6146	722.0	726.0	4.0	NIL			
		Occasional minor Py (mostly at upper end). So attitude: 45° (788).	M6147	726.0	729.5	3.5	NIL			

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HOLE NO: 613-03 PAGE: 6 of 6

FROM	TO	DESCRIPTION
	825	END OF HOLE. NW casing left in the hole. AW casing pulled out. Red painted wooden post, bearing an aluminum identification tag, set into the hole collar (NW casing). * Etch tube dip determinations: -44°(200), -38°(400), -34°(600), -31°(800). J. André Carrier, Eng. 85 11 21

SAMPLE NO.	FROM	TO	LENGTH	Au in ppb	Repeat
M 6148	729.5	734.5	5.0	NIL	
M 6149	734.5	738.0	3.5	60	80
M 6150	738.0	740.0	2.0	NIL	
M 6151	740.0	743.5	3.5	NIL	
M 6152	743.5	746.0	2.5	NIL	
M 6153	746.0	747.5	1.5	NIL	
M 6154	747.5	752.5	5.0	NIL	
M 6155	752.5	757.5	5.0	NIL	
M 6156	757.5	762.0	4.5	NIL	
M 6157	762.0	765.5	3.5	10	
M 6158	765.5	770.5	5.0	20	
M 6159	770.5	774.0	3.5	70	30
M 6160	774.0	776.5	2.5	NIL	
M 6161	776.5	781.5	5.0	NIL	
M 6162	781.5	786.5	5.0	NIL	
M 6163	786.5	791.0	5.0	NIL	
M 6164	791.5	797.0	5.5	NIL	
M 6165	811.0	816.0	5.0	NIL	

APPENDIX

B.

AU GEOCHEMISTRY

Diamond Drill Hole no: H-660-08 Township: HEARST

Log Summary			Geochemistry Sample			
Location (m) From	To	Rock type	Sample no.	Location (m) From	To	Au (ppb)	Remarks
16	20.6		01			1	
20.6	27.3		02			<1	
27.3	38.4		03			<1	
38.4	91.0		04			<1	
91.0	132.0		05			7	
132	186.2		06			1	
186.2	235.6		07			1	
235.6	266.1		08			<1	
266.1	302.0		09			2	
302.0	341.5		10			1	
341.5	371.0		11			5	
371	397		12			<1	
397	426		13			1	
426	445		14			<1	
445	471		15			1	
471	488		16			1	
488	506		17			2	
506	542		18			2	

AU GEOCHEMISTRY

Diamond Drill Hole no: H-660-09 Township: HEARST

Log Summary			Geochemistry Sample			
Location (m) From	To	Rock type	Sample no.	Location (m) From	To	Au (ppb)	Remarks
42	100		01			<1	
100	150		02			1	
150	200		03			2	
200	228.7		04			1	
228.7	243		05			21	
243	291		06			<1	
291	297.3		07			<1	
297.3	350		08			<1	
350	400		09			<1	
400	450		10			1	
450	500		11			1	
500	550		12			1	
550	606		13				

AU GEOCHEMISTRY

Diamond Drill Hole no: H-660-10 Township: HEARST

Log Summary			Geochemistry Sample			
Location (m) From	To	Rock type	Sample no.	Location (m) From	To	Au (ppb)	Remarks
20	60		01			<1	
60	100		02			1	
100	157		03			1	
157	199.2		04			<1	
199.2	251		05			1	
251	300		06			<1	
300	339		07			<1	
339	400		08			2	
400	463		09			2	
463	506		10			1	

AU GEOCHEMISTRY

Diamond Drill Hole no: H-660-11 Township: HEARST

Log Summary			Geochemistry Sample				
Location (m) From	To	Rock type	Sample no.	Location (m) From	To	Au (ppb)	Remarks
74	92	INT. VOLC.	01			1	
92	150	"	02			2	
150	200	"	03			<1	
200	245	"	04			<1	
245	254	TRACHYTE ?	05			1	
254	300	INT. VOLC.	06			6	
300	350	"	07			1	
350	400	"	08			1	
400	461	"	09			5	
461	476	DIORITE	10			<1	
176	517	INT. VOLC.	11			<1	
517	521	MAFIC VOLC.	12			<1	

AU GEOCHEMISTRY

Diamond Drill Hole no: 660-12 Township: of HEARST

Log Summary			Geochemistry Sample				
Location (ft.) From	To	Rock type	Sample no.	Location (ft.) From	To	Au (ppb)	Remarks
			660-12-01	80.0	150.0	< 1	
			-02	150.0	230.0	1	
			-03	230.0	282.5	< 1	
			-04	288.0	294.0	1	fine-grained
				300.0	336.0		intermediate
			-05	282.5	341.0	< 1	less above 1
			-06	341.0	414.0	< 1	white stringers only
			-07	341.0	414.0	< 1	less above 1
			-08	414.0	511.0	5	white stringers only
			-09	414.0	511.0	2	less above 1
			660-12-10	511.0	516.0	< 1	

AU GEOCHEMISTRY

Diamond Drill Hole no: 660-13 Township: of HEARST

Log Summary			Geochemistry Sample				
Location (ft.) From	To	Rock type	Sample no.	Location (ft.) From	To	Au (ppb)	Remarks
			660-13-01	61.0	122.0	< 1	
			-02	122.0	151.0	< 1	calcite-quartz only
			-03	122.0	151.0	< 1	less above 1
			-04	151.0	200.0	1	
			-05	200.0	225.0	3	
			-06	225.0	264.0	20	
			-07	264.0	352.0	7	quartz only
			-08	264.0	352.0	5	only fuchsite-rich
			-09	264.0	352.0	31	less 2 above
			660-13 -10	352.0	379.0	2	
				391.5	393.5		quartz vein assayed
			-11	379.0	417.0	2	less above 1
			-12	417.0	461.0	5	
			-13	461.0	479.0	<1	
			-14	479.0	525.0	1	
			-15	525.0	580.0	1	
			-16	580.0	600.0	1	quartz-carbonate only
			-17	580.0	600.0	<1	less above 1
			-18	600.0	650.0	1	
			-19	650.0	708.5	6	quartz-carbonate only
			660-13-20	650.0	708.5	1	less above 1
			-21	708.5	716.0	<1	

1

AU GEOCHEMISTRY

Diamond Drill Hole no: 613-01 Township: HEARST, ONT

Log Summary			Geochemistry Sample				
Location (m) From	To	Rock type	Sample no.	Location (m) From	To	Au (ppb)	Remarks
72	484	ULTRAMAFIC LAVAS	613-01-01	72	139	< 1	
		" "	02	139	206	2	
		" "	03	206	275	< 1	
		" "	04	275	350	3	
		" "	05	350	436	< 1	
		" "	06	436	484	< 1	
484	500	DIORITE, DISSEM. PY	07	484	500	3	
500	555	ULTRAMAFIC LAVAS	08	500	555	< 1	
555	575	DIORITE, 1% PY	09	555	575	1	
629	660	INTERM. FLOWS	10	629	660	< 1	
660	674	DIORITE DYKE	11	660	674	1	
674	712	INTERM. FLOWS	12	674	712	6	
712	752	SHEARED & SILICIF. INTERM.	13	712	752	101	
752	794	INTERM. FL. + DIORITE.	14	752	794	44	
	NOTE:	INTERM. FLOWS	SEEM	MORE	GOLD	BEARING	THAN ULTRAMAFIC FLOWS.

AU GEOCHEMISTRY

Diamond Drill Hole no: H-613-02 Township: HEARST

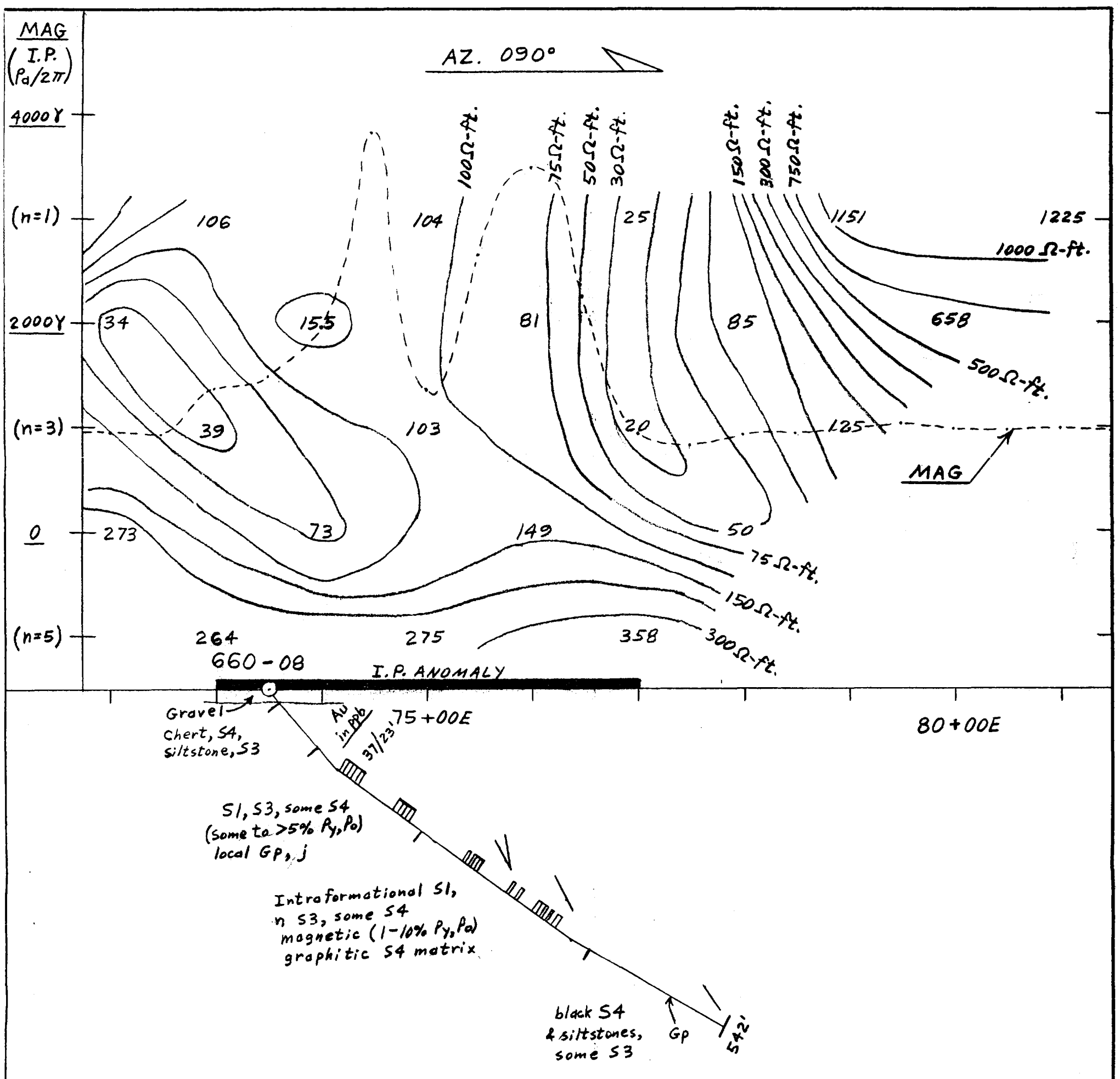
Log Summary			Geochemistry Sample			
Location (m) From	To	Rock type	Sample no.	Location (m) From	To	Au (ppb)	Remarks
23-	29.5	ULTRAMAFIC	01			<1	
29.5	34.0	GABBRO	02			1	
34	100	ULTRAMAFIC	03			15	
100	150	"	04			1	
150	200	"	05			<1	
200	275	"	06			<1	
275	292	DIORITE	07			1	
292	350	ULTRAMAFIC	08				
350	401	"	09				
401	407.5	DIORITE	10				
407.5	450	ULTRAMAFIC	11				
450	500	"	12				
500	550	"	13				
550	600	"	14				
600	650	"	15				
650	726	"	16				

AU GEOCHEMISTRY

Diamond Drill Hole no: 613-03 Township: of HEARST

Log Summary			Geochemistry Sample				
Location (ft.) From	To	Rock type	Sample no.	Location (ft.) From	To	Au (ppb)	Remarks
			613-03-01	12.0	50.5	3	
			-02	50.5	69.5	5	less next one
				62.5	65.0		quartz vein (assayed)
			-03	69.5	130.0	1	
			-04	130.0	210.0	2	
			-05	210.0	261.0	<1	
				261.0	264.0		quartz vein (assayed)
			-06	264.0	310.0	1	
			-07	310.0	368.0	2	
			-08	368.0	382.0	3	
			-09	382.0	469.5	2	quartz only
			613-03 -10	382.0	469.5	1	only fuchsite-rich
			-11	382.0	469.5	4	less 2 above
			-12	469.5	499.0	<1	
			-13	499.0	576.5	<1	quartz only
			-14	499.0	576.5	<1	only fuchsite-rich
			-15	499.0	576.5	2	less 2 above
			-16	576.5	637.0	4	
			-17	637.0	706.0	2	quartz only
			-18	637.0	706.0	3	less above 1
			-19	706.0	747.5	<1	quartz only
			613-03-20	706.0	747.5	4	only fuchsite-rich
			-21	706.0	747.5	2	less 2 above
			-22	747.5	825	2	

APPENDIX C.



FALCONBRIDGE	LTD.
DDH 660-08 SECTION 48+00S	
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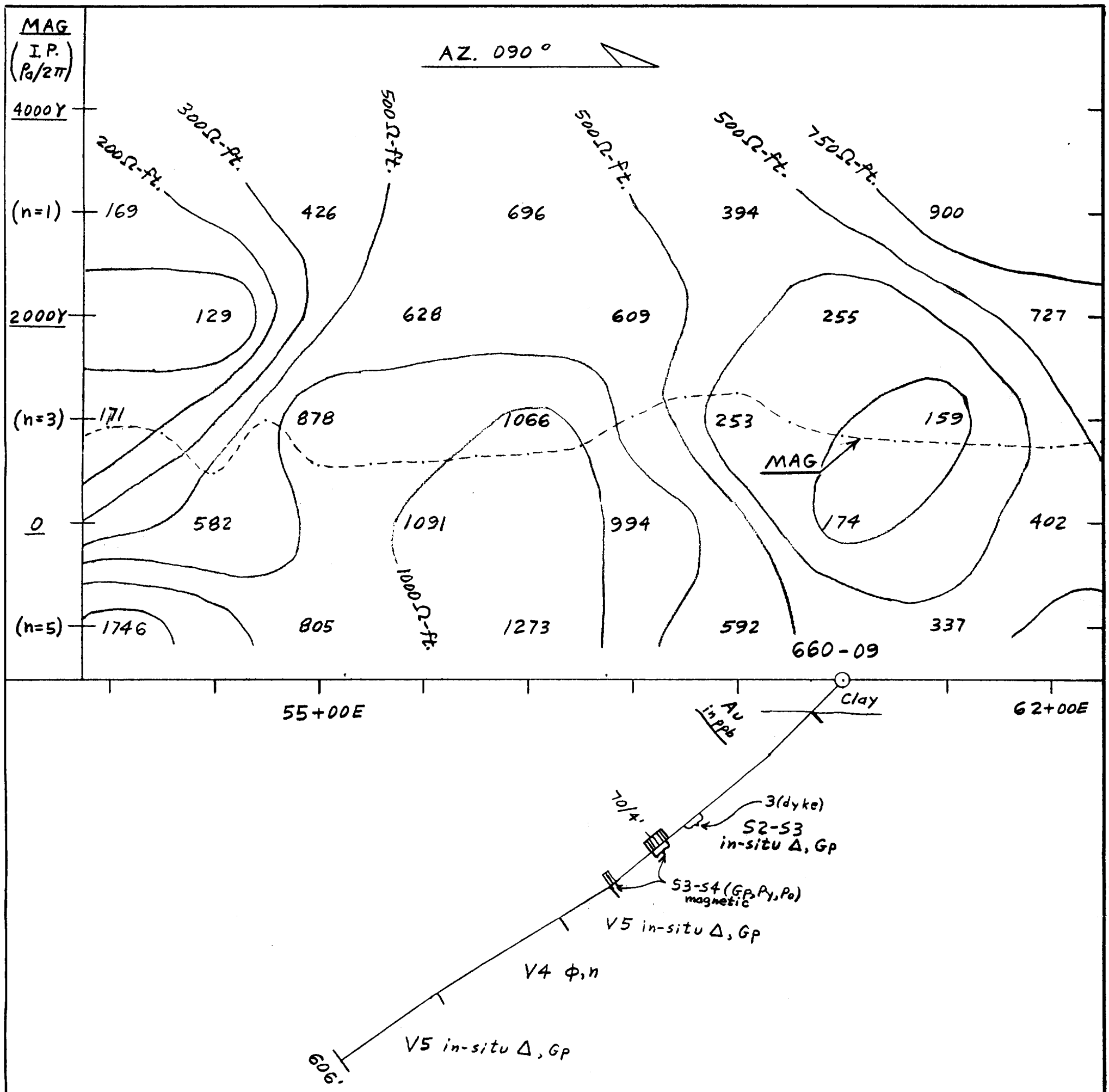
DATE 85 11 27	TRACED J.A. Carrier



FALCONBRIDGE LTD.

DDH 660-09
SECTION 48+00 S

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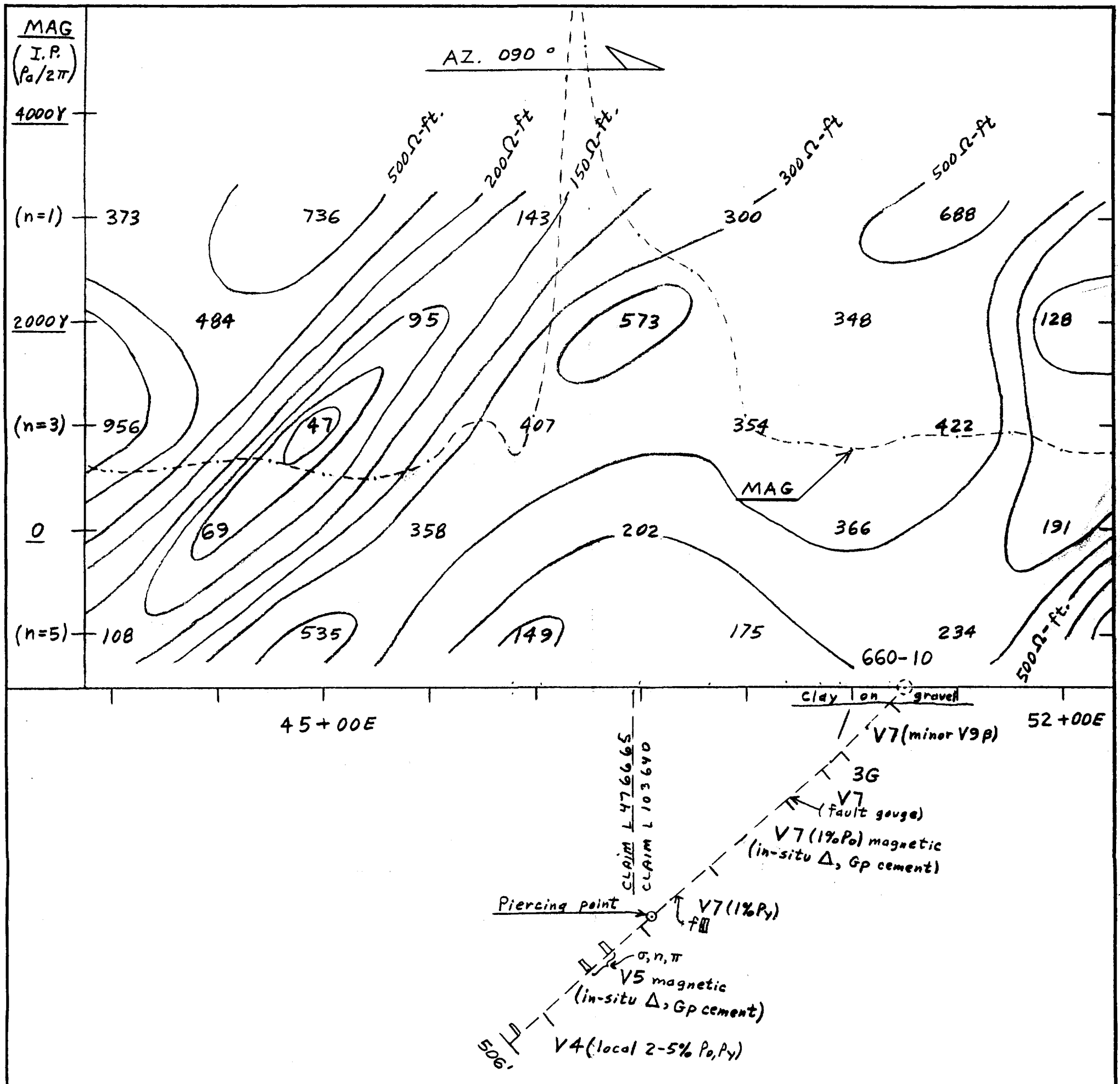
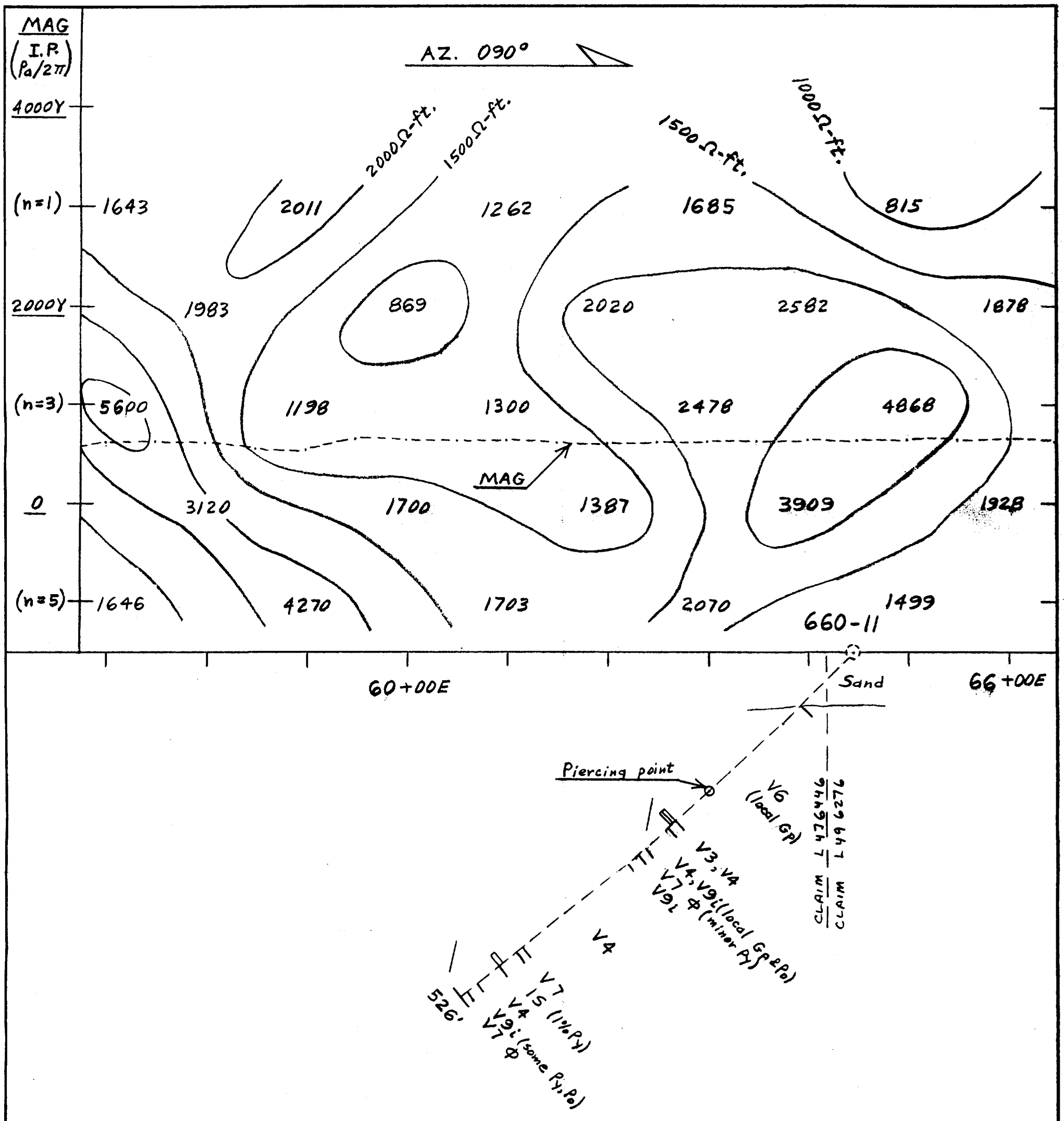
DATE 85 11 27	TRACED J.A. Carrier



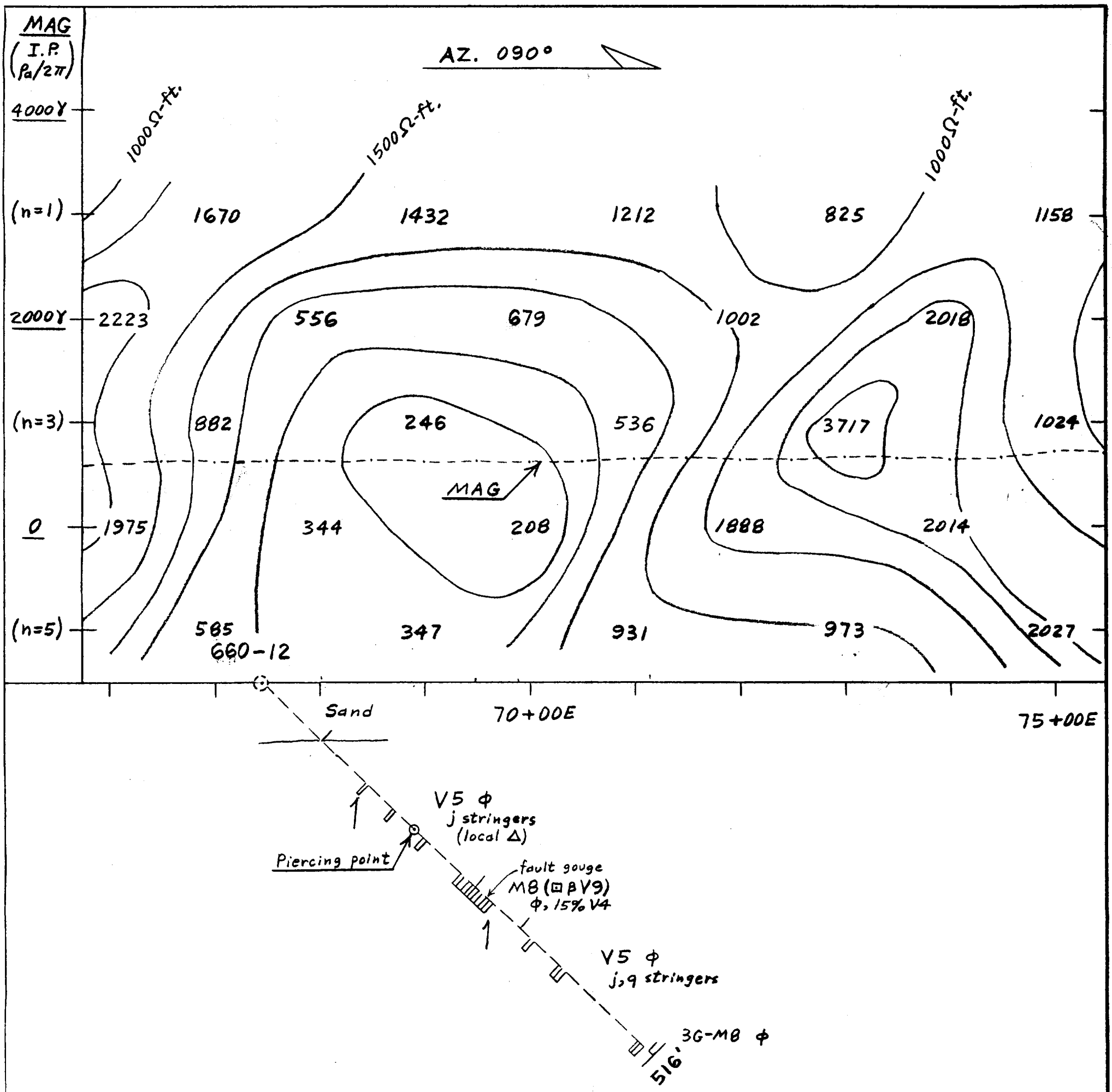
FALCONBRIDGE LTD.

DDH 660-10 pivoted unto SECTION 48+00S

SCALE	1:1200	LOGGED	D. Boucher
DATE	85/11/29	TRACED	J.A. Carrier



FALCONBRIDGE	LTD.
DDH 660-11 pivoted unto SECTION 24+00S	
SCALE 1 : 1200	LOGGED D. Boucher
DATE 85 11 29	TRACED J.A. Carrier



FALCONBRIDGE	LTD.
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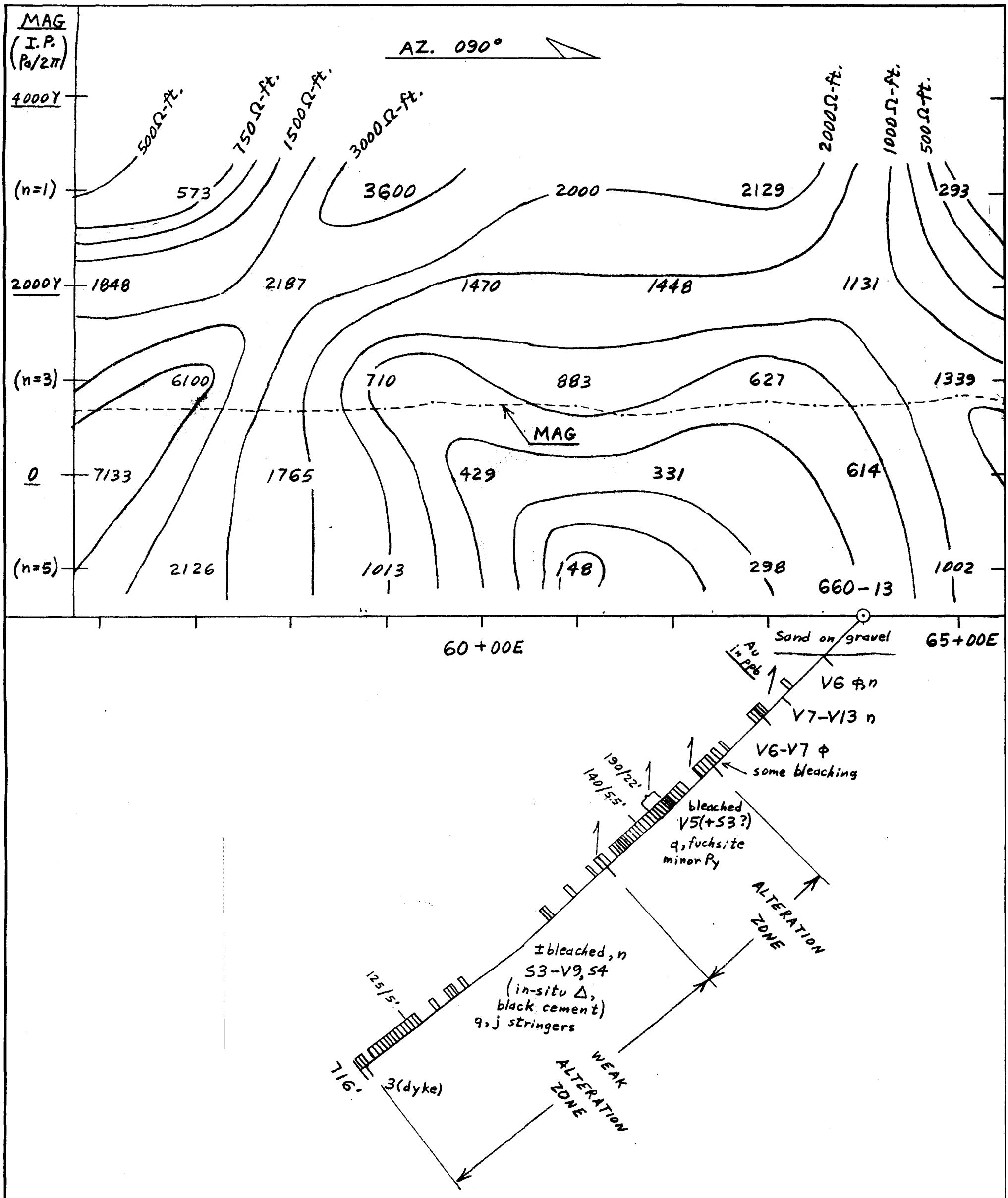
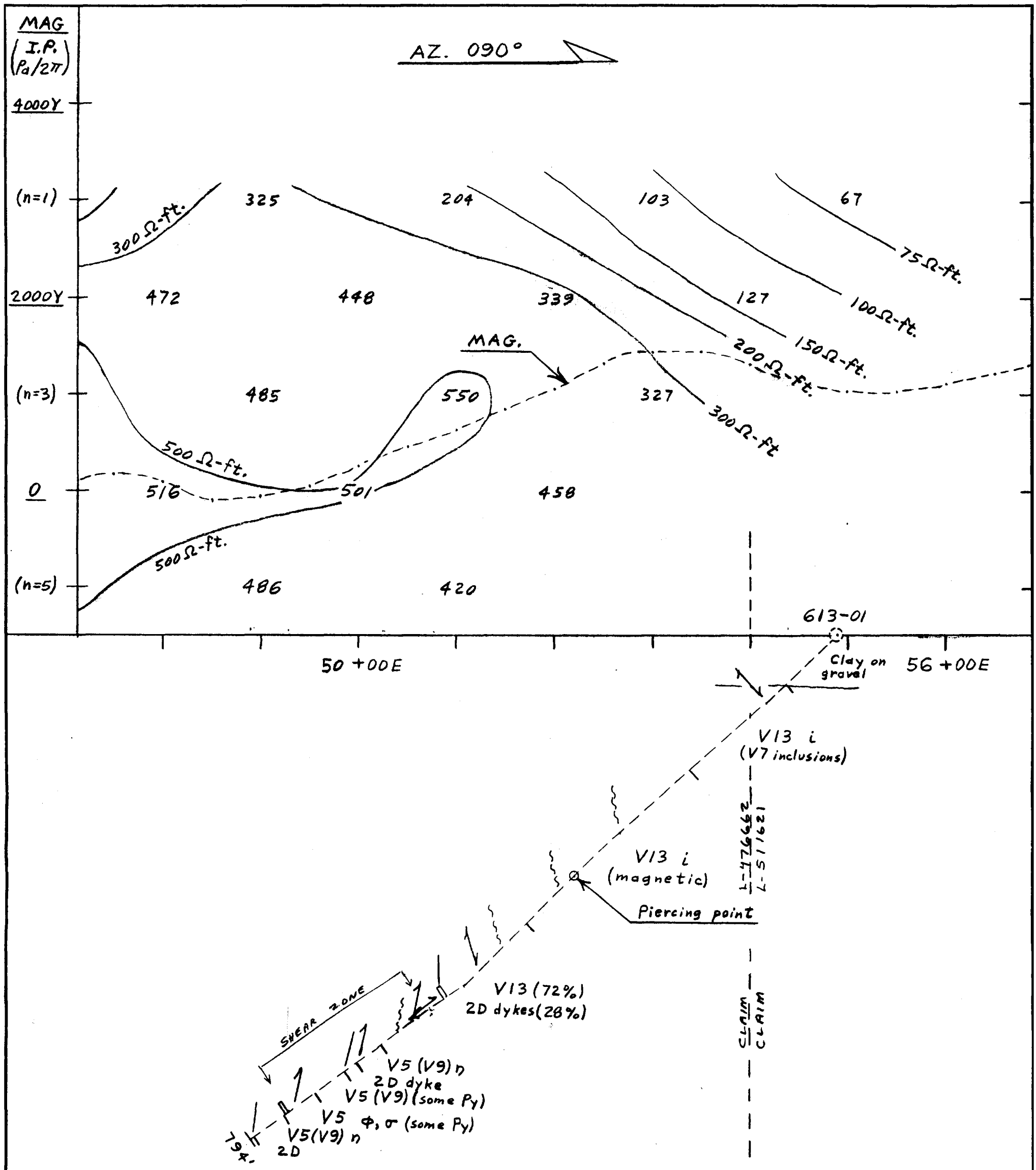
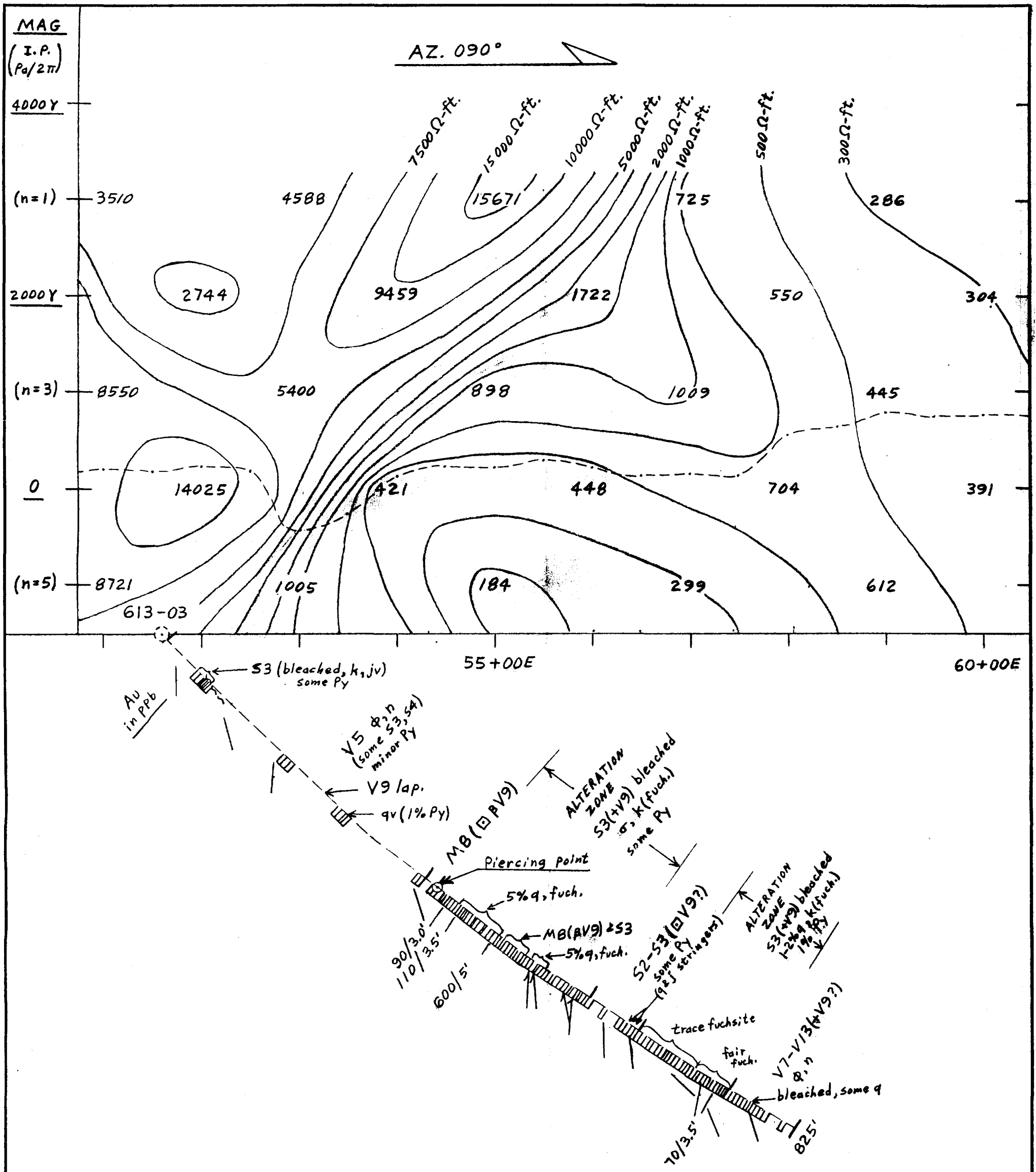
SCALE 1:1200	LOGGED J.A. Carrier
DATE 85 11 28	TRACED J.A. Carrier



FALCONBRIDGE	LTD.
DDH 660-13 SECTION 52+005	
SCALE 1:1200	LOGGED J.A. Carrier
DATE 85 11 28	TRACED J.A. Carrier



FALCONBRIDGE LTD.	
DDH 613-01 pivoted vnto SECTION 84+00S	
SCALE 1:1200	LOGGED M. Bérubé
DATE 85 11 26	TRACED J.A.Carrier



FALCONBRIDGE LTD.	
DDH 613-03 pivoted unto SECTION 72+00S	
SCALE 1:1200	LOGGED J.A.Carrier
DATE 85 11 27	TRACED J.A.Carrier

#63.4636

OM84-6-P-356

GEO LA LTÉE PHYSIQUE LOGIQUE

EXPLORATION — SERVICES

GEOPHYSICAL SURVEYS
PROPERTY OWNED BY
FALCONBRIDGE LIMITED
LARDER PROJECT
HEARST TOWNSHIP
PROVINCE OF ONTARIO

OCTOBER 1985 CLERMONT LAVOIE, Ph.D.

1020, 3e AVENUE EST (ROUTE 117 SUD), C.P. 418, VAL D'OR (QUÉBEC) J9P 4P4 Tél.: (819) 825-8212

GEOPHYSICAL WORK

During the period of August 1 to August 30, 1985, a V.L.F. electromagnetic survey (station NAA and NSS) and a magnetic survey were done on the property.

A total of 49.9 miles of lines was surveyed with the V.L.F. electromagnetic method using stations NAA and NSS. The readings were taken at 100 foot intervals. The instrument used was an IGS-2 from Scintrex.

A total field and vertical gradient magnetic survey (51.4 miles) was also done at 50 foot intervals. This survey was done using a proton magnemeter IGS-2 from Scintrex having a sensitivity of 0.1 gamma. The usual diurnal and datum corrections were made using an automatic base station recorder (MP-3) from Scintrex.

DISCUSSION ON THE METHODS

The V.L.F. electromagnetic method is normally used in non-conductive overburden areas to obtain information on the geological structure, reflected by conductive zones such as faults, shear zones and naturally, massive sulphides.

INTRODUCTION

A V.L.F. electromagnetic survey (stations NAA and NSS) along with a magnetic survey were carried out over a property owned by Falconbridge Limited in Hearst township, province of Ontario. These surveys were an extension of the previous surveys done in November 1984. We are referring you to our report of November 1984.

The V.L.F. electromagnetic survey was done to locate conductive zones which may contain economic mineralization. The magnetic survey was done to help the interpretation of the V.L.F. anomalies and to define the general structure.

PROPERTY, LOCATION AND ACCESS

The property is located approximately 10 km South of Larder Lake, in Hearst township, province of Ontario and includes two groups of option's claims. A list of these groups of claims are given at the end of this report.

Access to the property is easy from Larder Lake by using highway # 624 which crosses the northern part of the property. Also some bush roads surround the property.

The conductive zones are picked up with varying amplitude readings depending on the following parameters: overburden conductivity, conductivity of the zone, depth, angle with the transmitter station and the geometry of the conductive zone.

Normally, a V.L.F. anomaly is not a diamond drill target on its own. It has to be tested with other geophysical methods, especially in an conductive overburden area.

During a survey, it is a good policy to use two (2) different stations perpendicular to one another. This can allow the detection of more conductors. However, due to the electromagnetic fields line distorsion present at the edge of a conductor, a false short conductor may be obtained with another perpendicular transmitter station.

Concentrations of minerals having magnetic susceptibility will give rise to variations in the earth's magnetic fields. Systematic observation of the earth's total magnetic field has allowed us to contour the data outlining magnetic patterns or anomalies.

Minerals having strong magnetic susceptibility are magnetite and pyrrhotite and are usually, but not necessarily, associated as primary or accessory minerals in massive sulphide deposits; thus, coincident magnetic and electromagnetic anomalies could be important, but are not necessarily required.

DESCRIPTION AND INTERPRETATION

The V.L.F. electromagnetic survey done on this property has allowed us to detect 58 new anomalies with the NSS station and 3 new anomalies with the NAA station with respect to our previous survey done in November 1984. We are referring you to our report of November 1984.

Each new anomaly is described in tabular form and is provided with the following parameters:

- location of the anomaly: line, station;
- intensity of the peak to peak, which reflects the validity of the anomaly or its signals with respect to the noise ratio since the noise is approximately 1 to 2%;
- length of the anomaly;
- magnetic association.

(refer to tabular forms at the end of this report).

Among the 58 V.L.F. anomalies found with the NSS station, 23 of these were classified in second priority. Many of these anomalies were also detect with the NAA station, but were not renamed. With the NAA station, 3 anomalies were detected only with this station and they were classified in second priority.

Magnetic survey

The total field magnetic data was contoured at 0,200,500,750,1000,1500,2000 and 3000 gammas. The total field and vertical gradient magnetic data were also profiled.

Taking into account the small scale of the map and the small interval between the lines, we have used the exponential profile method in order to see the small anomalies. The strong anomalies were attenuated.

The magnetic contours reveal some North-West and North-South magnetic trends. With the help of the geological information, these magnetic data should be interpreted to define the geological formations and the structure.

CONCLUSION AND RECOMMENDATIONS

The V.L.F. electromagnetic survey has allowed us to detect 58 new anomalies. The second priority anomalies should be tested with an I.P. survey before recommending to drill them. With the help of the geological information, the magnetic survey should be interpreted. Using all this information, it should then be easier to prepare a diamond drilling program.

Respectfully submitted,

Clermont Lavoie, Ph.D.

DESCRIPTION OF V.L.F. ANOMALIES

PROJECT: PN-660

STATION(S): N S S

TOWNSHIP: Hearst

Anomaly no.	Line	Station intersection	Amplitude	Length ( )	Magnetic association	Notes	Priority
S-11	44 S	80+75 E	23	300	-	Possible overburden. Better define on L. 44 S	3
S-12	54 S	78+50 E	18	300	-	Poor cross-over	4
S-13	48 S	76+75 E	22	300	Possible contact.	Reversed ano. with NAA. Poor cross-over.	3
S-14	52 S	73+15 E	8	300	-	Poor cross-over	4
S-15	48 S	69+05 E	54	1400	-	Well define. Also detects with NAA.	2
S-16	48 S	65+75 E	27	1000	-	Well define on L. 48 S. Also detects with NAA.	2
S-17	52 S	63+75 E	11	700	-	Poor cross-over. Also detects with NAA.	4
S-18	32 S	72+45 E	12	1000	Possible contact.	Weak. Possible Extension of Ano. No. 15	3
S-19	30 S	66+35 E	13	400	-	Weak	4
S-20	24 S	64+75 E	21	1000	-	Weak. Possible North-West fracture.	3
S-21	42 S	54+25 E	14	1300	-	Poor cross-over	4
S-22	54 S	54+45 E	>30	600	200 ɣ on L.48S	Wide cross-over. Possible overburden	2
S-23	54 S	52+75 E	>36	400	-	Also detects with Naa. Poor cross-over.	4
S-24	24 S	51+15 E	>40	1000	Possible contact.	Also detects with Naa. Well define.	2
S-25	30 S	45+60 E	47	400	Possible contact.	Well define	2

DESCRIPTION OF V.L.F. ANOMALIES

PROJECT: PN-660

STATION(S): N S S

TOWNSHIP: Hearst

Anomaly no.	Line	Station intersection	Amplitude	Length ( )	Magnetic association	Notes	Priority
S-26	34 S	41+10 E	44	800	-	Wide cross-over. Also detects with NAA. Possible overburden.	3
S-27	48 S	42+30 E	15	-	300 γ possible	Poor cross-over. Also detects with NAA. May be real.	2
S-28	44 S	29+80 E	>90	1400	-	Poor cross-over. Also detects sith NAA. Possible overburden	3
S-29	26 S	34+60 E	69	800	Possible contact.	Better define on L. 26 S. Also detects in part with NAA.	2
S-30	36 S	25+30 E	56	3500	-	Wide cross-over. Also detects in part with NAA. Possible overburden.	2
S-31	42 S	23+80 E	>67	900	200 γ possible on L. 38 S.	Also detects with NAA. Poor cross-over	3
S-32	48 S	19+65 E	34	900	-	Also detects with NAA. Better define on L. 48 S.	2
S-33	24 S	20+80 E	12	600	-	Poor cross-over	4
S-34	32 S	17+20 E	20	500	200 γ possible on L. 34 S	Poor cross-over	4
S-35	42 S	13+70 E	29	700	-	Poor cross-over. Possible extension of Ano. 34. Possible overburden effect.	3
S-36	42 S	10+50 E	62	2400	-	Also detects in part with NAA. Possible overburden effect.	3
S-37	26 S	15+00 E	22	400	-	Weak. Possible extension of ano. 36.	2
S-38	20 S	16+00 E	26	400	-	Poor cross-over.	4
S-39	28 S	10+80 E	86	2600	-	Poor cross-over. Follow a creek. Possible overburden effect.	3
S-40	54 S	1+05 E	29	400	Possible contact.	Poor cross-over.	4

DESCRIPTION OF V.L.F. ANOMALIES

PROJECT: PN-660

STATION(S): N S S

TOWNSHIP: Hearst

Anomaly no.	Line	Station intersection	Amplitude	Length ( )	Magnetic association	Notes	Priority
S-41	52 S	2+80 W	≈40	400	-	Poor cross-over. Limit of survey.	4
S-42	42 S	1+00 W	≈40	400	Possible contact.	Poor cross-over. Limit of survey.	4
S-43	22 S	6+70 E	72	600	-	Also detects in part with NAA. Better define on L. 20 and 22 S.	2
S-44	28 S	2+80 E	26	800	-	Poor cross-over. Also detects with NAA.	3
S-45	26 S	1+60 E	61	-	50 γ possible.	Well define. One line only.	2
S-46	68 S	77+50 E	64	1900	-	Well define. Also detects with NAA.	2
S-47	60 S	75+50 E	17	1000	-	Wide. May be overburden.	3
S-48	64 S	72+70 E	60	400	100 γ possible on L. 64 S	Poor cross-over. Also detects with NAA.	3
S-49	64 S	67+00 E	21	3800	Possible contact	Poor cross-over. May be overburden effect.	3
S-50	58 S	64+50 E	> 60	700	-	Poor cross-over. Also detects with NAA.	3
S-51	56 S	55+00 E	101	1000	-	Better define on L. 56 S. Also detects with NAA.	3
S-52	64 S	56+20 E	24	800	Possible contact	Poor cross-over. Also detects with NAA.	3
S-53	60 S	52+30 E	> 100	400	-	Poor cross-over	3
S-54	88 S	49+50 S	43	1000	-	Poor cross-over	3
S-55	74 S	46+60 E	16	-	-	Poor cross-over. Also detects with NAA.	3

DESCRIPTION OF V.L.F. ANOMALIES

PROJECT: PN- 660

STATION(S): N S S

TOWNSHIP: Hearst

Anomaly no.	Line	Station intersection	Amplitude	Length ( )	Magnetic association	Notes
S-56	64 S	43+80 E	32	500	-	Better define on L. 64 S.
S-57	60 S	39+70 E	14	700	-	Poor cross-over. Also detects with NAA.
S-58	64 S	36+20 E	13	300	-	Poor cross-over
S-59	72 S	41+90 E	66	2400	-	Well define. Also detects with NAA.
S-60	64 S	30+40 E	17	800	3000 gammas on L. 62 S	Poor cross-over. Also detects with NAA.
S-61	62 S	25+30 E	83	3000	Variable	Well define. Also detects with NAA.
S-62	92 S	39+40 E	> 15	700	-	Better define on L. 94 S.
S-63	92 S	37+80 E	40	400	> 500 ɣ	Poor cross-over. Also dete with NAA.
S-64	92 S	34+50 E	35	600	Possible contact.	Poor cross-over. Also dete with NAA. May be disturbe by ano. 63
S-65	90 S	26+50 E	11	500	-	Poor cross-over. Creek
S-66	88 S	23+70 E	36	800	-	Poor cross-over. Also dete with NAA. Limit of survey
S-67	64 S	23+40 E	21	400	100 ɣ possible	Poor cross-over.
S-68	62 S	17+50 E	26	800	-	Poor cross-over. Also dete with NAA.
S-69	68 S	16+70 E	62	1400	-	Better define on L. 68 S. Also detects with NAA.

DESCRIPTION OF V.L.F. ANOMALIES

PROJECT: PN- 660

STATION(S): N A A

TOWNSHIP: Hearst

Anomaly no.	Line	Station intersection	Amplitude	Length ( )	Magnetic association	Notes	Priority
V-03	46 S	41+10 E	≈ 30	7000	-	Possible East-West fracture.	2
V-04	26 S	7+50 E	> 40	4200	-	Possible East-West fracture.	2
V-05	88 S	48+00 E	> 15	1100	-	Extension of Ano. S-61	2

LIST OF CLAIMS

C.F.C. OPTION PN-660	MANY METAL OPTION PN-613
103640	411210
319452	429150
319453	429934
420721	476661
429935	476662
429936	495017
447513	495018
477514	496570
476446	511621
476447	
476601	
476664	
476665	
476666	
477384 to 477389	
495049	
496276	

The V.L.F. and the magnetic survey have covered in part each of these groups of options's claims.

GEO LA LTÉE PHYSIQUE LOGIQUE
EXPLORATION — SERVICES

STATEMENT FOR ASSESSMENT WORK

I, the undersigned, Clermont Lavoie, for Geola Limity, certify to the following.

During the period of August 1 to August 30, 1985, a V.L.F. electromagnetic survey (49.9 miles) using the NAA and NSS stations was carried out over a property owned by Falconbridge Ltd. A magnetic survey (51.4 miles) was also done on the property.

This property is located approximately 10 km South of Larder Lake, in Hearst township, province of Onrario and includes two groups of option's claims, which claims are given at the end of this report.

V.L.F. Instrument: IGS-2 from Scintrex
Precision: 0.1 gamma.

Mag. Instrument: IGS-2 from Scintrex
Precision: 0.1 gamma.
MP-3 (base station) from Scintrex.

Operator: (27 days) M. Jean Paul Cloutier
R.R. # 1
D'Alembert P. Q.
J9X 5A3

Respectueusement soumis,

Clermont Lavoie, Ph.D.

1020, 3e AVENUE EST (ROUTE 117 SUD), C.P. 418, VAL D'OR (QUÉBEC) J9P 4P4 Tél.: (819) 825-8212

GEO LA LTÉE
PHYSIQUE
LOGIQUE
EXPLORATION — SERVICES

CERTIFICATE

1. I, the undersigned, Clermont Lavoie, residing at 1148 Bérard Avenue, Val d'Or, Quebec, graduated with a B.Sc.A. degree in Geology from Ecole Polytechnique in 1965. I have obtained a M.Sc.A degree in Geophysics from Ecole Polytechnique in 1968, and received a Ph.D. in Geophysics from McGill University in 1972.

2. I am a member of the Order of Engineers of Quebec, the Canadian Institute of Mining and Metallurgy, the Quebec Prospectors Association and the Society of Exploration Geophysicists.

3. I do not hold, nor do I expect to receive, an interest of any kind in these claims held by FALCONBRIDGE LIMITED nor in any other mining claims they may have.

4. The interpretation and recommendations described in this report are based partly on a personal and technical experience in this district of Quebec.

Signed in Val d'Or, this eight (8th) day of the month of October, one thousand nine hundred and eighty-five (1985).

Clermont Lavoie, Ph.D.

1020, 3e AVENUE EST (ROUTE 117 SUD), C.P. 418, VAL D'OR (QUÉBEC) J9P 4P4 Tél.: (819) 825-8212