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REPORT ON DIAMOND DRILL HOLE PROGRAM

CAMP SITE ZONE

Mackelcan Township Property
Sudbury Area , Ontario

for

FLAG RESOURCES (1985) LIMITED

(April - July 1990 drilling period)

by

Frank P. Tagliamonte , P.Eng.

November
1990

OM90-016

SUMMARY REPORT

ON

DIAMOND DRILL HOLE PROGRAM

(period April - July 1990)

FLAG RESOURCES (1985) LIMITED

Mackelcan Township Property

Wolf Lake Project

CAMP SITE ZONE
(No 1 zone)

Sudbury Area

O n t a r i o

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INTRODUCTION

A second phase diamond drill program was initiated on the Camp Site Zone during the spring of 1990 by management of Flag Resources (1985) Limited . It was anticipated that the near surface gold-copper mineralization indicated in a 1983 drill program could , if extended , provide a source of perhaps limited but potentially exploitable gold-copper ore. The drill program proceeded through to July during which period 24 holes were drilled. Seven (7) of the twenty four (24) holes intersected good grade gold and copper mineralization. At least the main core of mineralization appears to have a steep NEast plunge.

Drilling on the No 1 zone implies that the mineralization occurs in small localized pods or lenses.

This report abstracts the work that has been done on the Camp Site Zone during both the 1983 program and the current one. The better mineralized intersections have been highlighted in the report. A series of drill hole cross-sections have been prepared which attempt to provide a data base for a better interpretation of the style and attitude of the mineralization. This data has not been processed in any detail but will provide the basis for a more detailed evaluation of the drill programs if required at a later date.

Management of Flag Resources (1985) Limited have requested the preparation of this report to satisfy the requirements of the Ontario Mineral Exploration Program.

COMPANY

FLAG RESOURCES (1985) LIMITED
Suite 1970 , 540 - 5th Avenue S W
CALGARY , A l b e r t a
T2P 0M2

Murdo C. McLeod , president

PROPERTY

Mackelcan Township
Sudbury Mining Division
Ontario

DRILL AREA

Portions of Claims : S 472930 , S 472926 , S 572587 , S 472927
Camp Site Zone and No. 1 zone

PRINCIPAL REFERENCES

1) Report on Diamond Drill Hole Program , Spring and Summer 1988 , Mackelcan Township Gold Prospect (Wolf Lake Gold Property) Hecla Mining Company of Canada Option , Flag Resources (1985) Limited property , Sudbury Mining Division , Ontario for North Coast Industries Ltd., by R. M. Blais , P.Eng., and Frank P. Tagliamonte , P.Eng., September 1988

2) OGS Report 213 , Geology of the Wanapitei Lake Area , district of Sudbury by Burkhard O. Dressler , 1982 (Map 2450)

DATA SUBMITTED

DDH logs & sections : DDHWLC90-1 to DDH#WlC90-27
(Submitted by Flag Resources (1985) Limited - Calgary office)

DATA ATTACHED

In Body of Report

Figures: Figure No 1 ; **D.D.H. DATA - 2 sheets**

Figure No 2 ; **Index & Gold Zone Location Map**

In Folder with Report

DDH Logs & sections: DDH#WLC90-27 - deepened portion
DDH#WLC90-28

DDH Plans: 1:250 Scale - Full Plan

1:250 Scale - Significant assay intersections projected vertically , plus some geology and development
1:500 Scale - Full Plan

DDH Sections (15)

5 - East-West sections looking North
1 - NWest-SEast section looking NEast
8 - North-South sections looking West
1 - NEast-SWest section looking NWest

DIAMOND DRILL PROGRAM MANAGEMENT & SUPERVISION

The Drill Program was conceived , managed and directed by Murdo C. McLeod , President , Flag Resources (1985) Ltd.

GEOLOGICAL SERVICES

Core logging , sampling & recording of geological data provided by:

Geological Engineering Services
North Bay , Ontario

Frank P. Tagliamonte , P.Eng., geologist
Frank H. Toews , geologist

DIAMOND DRILL HOLE STATISTICS

Figure No 1 documents the technical statistics of the drilling done during the period. Diamond drill hole locations are shown on the attached **DIAMOND DRILL HOLE PLAN "Camp Zone Area".**

All the drilling done , except for the following diamond drill holes : WLC90-12 ; -19 ; -22 ; -23 , have been drilled on the designated Camp Zone or Camp Site Zone. The holes listed above were drilled on the No 1 Zone.

A total of 28 holes were drilled during the period:

24 DDH's	; Camp Site Zone	; 5,599'
4 DDH's	; No 1 zone	; 1,280'
28 DDH's		6,879'

Previous drilling done on the Camp Site Zone (1983) amounts to approximately 17 holes for a total of approximately 4,520 feet. All holes drilled dating back to 1983 are shown on the Diamond Drill Hole plan.

Some of the better results obtained during the 1983 Diamond Drill

township. These are prominently bedded grey-green variably granular quartzites. Local thin conglomeritic beds with quartz clasts up to about 1" are common within the quartzite unit.

The gold occurrences on the property are situated within the SEast sector of a large elliptical shaped basin of Lorrain quartzite measuring approximately 8 miles East-West by 14 miles North-South. Underlying the Lorrain quartzite are wackes of the Gowganda formation.

A maximum thickness of 11,000' of Lorrain quartzite lies within the basin located in Mackelcan , Aylmer , Tefler , and McConnell townships.

Numerous lineaments and fault structures bisect the basin. These structures are sometimes prominently evident in topography appearing as scarps , elongated valleys and linear depressions. Sudbury type breccia appears to be localized along and adjacent to some of these structural features. It is conspicuous along and adjacent to the gold bearing occurrences on the Flag property.

Albitized , variably tinted brick red and pink arkosic quartzite and mineralized quartzite breccia are localized within and along some of the lineaments.

Diabase and undifferentiated mafic dykes also occur within some of the lineaments.

Camp Site Zone

Gold mineralization on the Flag property in Mackelcan township is localized within albitized , variable reddish and pink quartzite breccia zones. Milk white quartz and quartz-carbonate veins and fragments are the principal constituents in the breccia zones mainly as matrix filling. Principal associated alteration comprises local combinations or zones of hematitic , limonitic , kaolinitic and chloritic alteration.

The principal sulphide is pyrite occurring as fine disseminations but usually as coarse disseminated grains , patches , or narrow seams. Chalcopyrite is variably present in the mineralized breccias at Wolf lake but is absent at Jess and Jones lakes. The principal carbonate minerals are calcite and ankerite but other unidentified types may be present , notably a pale green variety.

Goethite and chalcocite(?) are present in the No 1 Zone and in the Camp Site Zone.

The Camp Sit Zone appears somewhat atypical when compared to already identified gold bearing mineralized breccia zones on the

Flag property. Massive patches of chalcopyrite and associated pyrite occur in brecciated vuggy quartz-carbonate fragments and in narrow veinlets within a variably kaolinitic , hematitic stained and locally fractured mixture of Lorrain quartzite and Sudbury breccia. The mineralized breccia zone appears as a possible shallow 'octopus-like' blob containing a mixture of essentially massive chalcopyrite and quartz-carbonate in a cross-fractured zone adjacent to the No 1 Zone and No 2 Zone lineament or fracture system.

A possible alternate possibility is that the Camp Site Zone mineralization is localized in a steep NEasterly plunging , fracture controlled cigar-shaped lens.

The zone is notably locally enriched in gold and copper. An example of some high copper values with associated gold are:

.250 oz Au ; 5.00 % Cu / 8.5'
.382 oz Au ; 4.40 % Cu / 2.79'

RESUME OF DIAMOND DRILL HOLE RESULTS

Diamond drilling completed during the current drill period may be described as check drilling , infill drilling , local extension drilling and prospect drilling. Virtually all the drill holes on the Camp Site Zone lie within a square measuring approximately 130' x 130'.

Diamond Drill Hole locations are as shown on the enclosed diamond drill hole plans.

Attached diamond drill hole cross-sections also show the location of some of the drill holes with geology , sample locations and in some cases , sample values.

Specific data may be acquired by an examination of the diamond drill hole logs and sections and by viewing the photo folios - one copy only of which are filed in the company's Calgary office.

Statistical data on each drill hole is documented on attached Figure 2 (2 pages).

A brief resume of deemed significant results from each of the drill holes completed is as listed below.

DDH#WLC90-1

Number of samples taken: 17

Significant values obtained:

.255 oz Au / 58.5'

or
.317 oz Au / 43'
or
.224 oz Au / 27.5'
or
.351 oz Au / 11'

Highest individual assay values obtained:

.686 oz Au / 4.5' (within section above)
.94 % Cu / 4.5' (on bottom edge of sctn.)

.936 oz Au / 1' (isolated quartz stringer)

Remarks: Long section of mineralization intersected

DDH#WLC90-2

Number of samples taken: none

Remarks: Drilled on edge of zone or may have overshot zone

DDH#WLC90-3

Number of samples taken: 19

Significant values obtained:

.267 oz Au / 73.5' (high assays cut to 1 oz.)
.519 oz Au / 73.5' (uncut)

Highest individual assay values obtained:

4.98 oz Au / 3.5'
1.98 oz Au / 6'

Remarks: A contiguous 73.5' of mineralization intersected in the hole.

DDH#WLC90-4

Remarks: Hole lost

DDH#WLC90-5

Number of samples taken: 13

Significant values obtained:

.075 oz Au ; .72 % Cu / 18.5' (upper part of Hole)

.04 oz Au / 7.5'

.595 oz Au / 11'
(Discontinuous zones of mineralization)

lighest individual assay values obtained:

.559 oz Au / 1' (vuggy quartz stringers)
1.06 oz Au / 6' (series of low angle quartz stringers)

emarks: Two distinct mineralized zones intersected in which patchy areas of mineralization are localized.

DH#WLC90-6

umber of samples taken: 1

ignificant value obtained:

.187 oz Au / 1' (Charcoal grey Sudbury breccia fragment)

:marks: No distinctive mineralized zones intersected.

)H#WLC90-7

mber of samples taken: 1

gnificant values obtained:

.052 oz Au / 1' (Sudbury breccia fragment)

marks: No distinctive mineralized zones intersected.

H#WLC90-8

nber of samples taken: 6

gnificant values obtained:

.084 oz Au / 9'

hest individual assay value obtained:

.10 oz Au / 4'

arks: Two individual quartz vein and breccia zones intersected. Sparse mineralization present.

#WLC90-9

)er of samples taken: 1

Remarks: No significant value obtained.
Weakly altered Lorrain quartzite and Sudbury breccia intersected.

DDH#WLC90-10

Number of samples taken: 1

Remarks: No significant value obtained.
Weakly altered Lorrain quartzite and Sudbury breccia intersected.

DDH#WLC990-11

Number of samples taken: 5

Significant values obtained :

.149 oz Au / 4.5'

Highest individual assay value obtained:

.304 oz Au / 2'

Remarks: Weakly altered Lorrain quartzite and Sudbury breccia intersected.

DDH#WLC90-12 (No 1 zone)

Number of samples taken: 10

Significant values obtained:

.112 oz Au / 17'

Highest individual assay values obtained

.172 oz Au / 2'
.286 oz Au / 3'

Remarks: No significant value obtained.
One weakly mineralized zone intersected in otherwise altered Lorrain quartzite and Sudbury breccia.

DDH#WLC90-13

Number of samples taken: 1

Remarks: Altered Lorrain quartzite and Sudbury breccia intersected.

DDH#WLC90-14

Number of samples taken: 5

Remarks: No significant values obtained from samples taken Altered Lorrain quartzite and Sudbury breccia intersected.

DDH#WLC90-15

Number of samples taken: 2

Remarks: No significant values obtained from samples taken Altered Lorrain quartzite and Sudbury breccia intersected containing occasional , rare quartz veinlets.

DDH#WLC90-16

Remarks: No significant mineralization intersected Altered Lorrain quartzite and Sudbury breccia intersected

DDH#WLC90-17

Number of samples taken: 53 (entire hole sampled as an experiment)

Significant values obtained:

.119 oz Au / 32.15'
.176 oz Au / 17.75'
.048 oz Au / 14.40'
.061 oz Au / 79.46'
.059 oz Au / 83.46'
.045 oz Au ; 1,37 % Cu / 45.50'
.115 oz Au / 33.14'
.060 oz Au / 80.47'
.059 oz Au / 84.45'
.044 oz Au ; 1.34 % Cu / 46.49'
.045 oz Au / 15.39'

(the above averages were taken from different combinations of sample sequences within an 84' interval of variable mineralization)

Highest individual values obtained:

.502 oz Au ; 0.62 % Cu / 2.7'
.136 oz Au ; 3.20 % Cu / 3.9'
.240 oz Au ; 1.90 % Cu / 1.6'
.014 oz Au ; 3.20 % Cu / 3.0'
.068 oz au ; 3.49 % Cu / 3.2'

Remarks: Mineralization occurs in a mixture of Sudbury breccia , kaolinized quartzite and quartz veins.

DDH#WLC90-18

Number of samples taken: 32

Significant values obtained:

.404 oz Au / 6.9'
.284 oz Au / 10.3'
.155 oz Au / 26.6'

Highest individual assay values obtained:

.158 oz Au ; 0.86 % Cu / 2'
.347 oz Au ; 0.64 % Cu / 1'
1.03 oz Au ; 0.16 % Cu / 1.2'
.478 oz Au ; 1.76 % Cu / 3.3'

Remarks: Mineralization occurs in random quartz-carbonate vein zones in altered Lorrain quartzite.

DDH#WLC90-19 (No 1 zone)

Number of samples taken: 5

Highest individual assay value obtained:

.208 oz Au ; 0.34 % Cu / 1.5'

Remarks: Short section of mineralization within quartz veins in altered and brecciated Lorrain quartzite at the top of the hole.

DDH#WLC90-20

Number of samples taken: 4

Highest individual assay value obtained:

.382 oz Au ; 4.4 % Cu / 2.79'

Remarks: A short section of mineralized vuggy quartz-carbonate intersected in altered and Sudbury brecciated Lorrain quartzite.

DDH#WLC90-21

Number of samples taken: 1

Remarks: No significant mineralization intersected.
Altered Lorrain quartzite and Sudbury breccia

intersected.

DDH#WLC90-22 (No 1 zone)

Remarks: Altered Lorrain quartzite and Sudbury breccia intersected

DDH#WLC90-23 (No 1 zone)

Number of samples taken: 6

Significant values obtained:

.036 oz Au / 7'

Highest individual assay obtained:

.038 oz Au / 4'

Remarks: A short section of mineralization intersected at the top of the hole.
Most of the hole intersected bedded Lorrain quartzite.

DDH#WLC90-24

Remarks: Both altered and unaltered Lorrain quartzite intersected in the hole.

DDH#W.C90-25

Number of samples taken: 2

Highest individual assay value obtained:

.07 oz Au / 1'

Remarks: Lorrain quartzite and minor altered Lorrain quartzite intersected.

DDH#WLC90-26

Number of samples taken: 16

Highest individual assay value obtained:

.036 oz Au / 2'

Remarks: Altered and unaltered Lorrain quartzite intersected.
Random quartz threads with minor pyrite appear to yield anomalous values in gold.

DDH#WLC90-27

Number of samples taken: 10

Highest individual assay value obtained:

.032 oz Au / 2.62'

Remarks: Altered Lorrain quartzite and Sudbury breccia intersected.
Sparsely mineralized charcoal grey siliceous seams in Sudbury breccia appear to yield anomalous values in gold.

DDH#W.C90-28

Number of samples taken: 5

Highest individual assay value obtained:

.016 oz Au / 1.25'

Remarks: Altered Lorrain quartzite and Sudbury breccia intersected.

The most significant mineralization encountered on the Camp Site Zone was localized to the following drill holes: DDH#WLC90-1 ; 90-3 ; 90-5 ; 90-11 (?) ; 90-17 ; 90-18 ; 90-20. These holes are highlighted on the DDH Plans.

SUMMARY & CONCLUSIONS

The principal interpretive evidence from the current drill program on the Camp Site Zone suggests that it is a restricted mineralized structure trending locally East-West to NEast with an interpreted steep NEast plunge. There appears to be a possible NWest trend to a portion of the mineralization which may be due to fracture influenced apophyses from the main mineralized lens.

At least 7 of the 24 holes drilled yielded significant values in gold and copper. Some of the higher grade intersections are:

DDH#WLC90-1	.317 oz Au / 43'
DDH#WLC90-3	.519 oz Au / 73.5' (uncut)
DDH#WLC90-5	.595 oz Au / 11'
DDH#WLC90-11	.304 Oz Au / 2'
DDH#WLC90-17	.502 oz Au / 2.7'
DDH#WLC90-18	.404 oz Au / 6.9'
DDH#WLC90-20	.382 oz Au ; 4.4 % Cu / 2.79'

Two (2) of 4 holes drilled on the No 1 zone yielded significant values as listed below:

DDH#WLC90-12 .286 oz Au / 3'
DDH#WLC90-19 .208 oz Au ; .34 % Cu / 1.5'

The No 1 zone appears to be a small pod or small pods of mineralization.

Drilling completed on the No 1 zone and on the Camp Site Zone in particular , demonstrates that portions of the mineralized structures on the Flag property in Mackelcan township are enriched in gold and copper. The enrichments are significant enough and frequent enough to suggest that larger concentrations are likely to be discovered on the property.

The main core of mineralization within the Camp Site Zone appears to be somewhat cigar shaped with a possible very steep plunge to the NEast. Although it appears to be bracketed by drill holes , the mineralization within the Camp Site Zone structure may very well continue to depth along narrow feeder breccia and feeder stringer structures.

It is possible that further drilling may trace the mineralization to depth but this will require meticulous , precision drilling.

RECOMMENDATIONS

Review , process , compile and carefully evaluate all available data on the Camp Site Zone and the No 1 zone in detail before any further drilling is contemplated.

The property possesses several intriguing surface stripping target areas and potential drill targets that may very well be considered priorities over the pursuit of any further drilling on the Camp Site Zone as it is currently understood.

Respectively submitted,

Frank P. Tagliamonte , P.Eng.
10 November 1990

Geological Engineering Services

North Bay

O n t a r i o

FLAG RESOURCES (1985) LTD. - WOLF LAKE, MACKELCAN TP.

DDH #	DIP	APPROX. LOCATION RELATIVE TO WL 83-28	CASING	FINAL DEPTH	DATE STARTED	DATE FINISHED
WLC 90-1	-70°N	15.5mS / 5.5mW	2'	250'	10/04/90	10/04/90
WLC 90-2	-70°N; -70°@250'	16.5mS / 6 mE	4'	250'	10/04/90	11/04/90
			Deepened to	356'	25/06/90	27/06/90
WLC 90-3	-90°	4mS / 7mW	4'	250'	11/04/90	16/04/90
WLC 90-4	-70°N	18mS / 12mW	4' (pulled)	10'	17/04/90	17/04/90
WLC 90-5	-70°N, -68°@250'	13.2mS / 13mW	2'	250'	17/04/90	18/04/90
WLC 90-6	-70°N, -69°@250'	20mS / 12.3mW	4'	250'	18/04/90	19/04/90
WLC 90-7	-70°N, -70°@250'	18.2mS / 18mW	2'	250'	19/04/90	20/04/90
			Deepened to	350'	27/06/90	28/06/90
WLC 90-8	-90°	3 mS / 15.5mW	8'	150'	23/04/90	24/04/90
WLC 90-9	-90°	5.5mN / 6.1mE	2'	192'	24/04/90	25/04/90
			Deepened to	264'	21/06/90	21/06/90
WLC 90-10	-90°	5.5mS / 6.3mE	4'	175'	25/04/90	26/04/90
			Deepened to	225'	10/05/90	10/05/90
WLC 90-11	-70°W	13mS / 1.8mE	2'	195'	26/04/90	27/04/90
WLC 90-12	-90°	45.7mS / 28.3mW	4'	150'	27/04/90	28/04/90
			Deepened to	250'	30/04/90	30/04/90
			Deepened to	540'	17/05/90	24/05/90
			Deepened to	700'	03/07/90	05/07/90
WLC 90-13	-90°	45mS / 15.2mE	2'	150'	02/05/90	03/05/90
WLC 90-14	-90°	14.2mN / 5.8mW	5'	284'	04/05/90	04/05/90
			Deepened to	345'	22/06/90	22/06/90
WLC 90-15	-90°	11.3mN / 6mE	2'	251'	05/05/90	06/05/90
WLC 90-16	-45°W	13mS / 1.0mE	2'	200'	07/05/90	08/05/90
WLC 90-17	-70°SE	97mN / 13.8mW	5'	300'	08/05/90	09/05/90
WLC 90-18	-70°S	10.7mN / 8.7mW	2'	195'	14/05/90	14/05/90

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NORTH BAY, ONTARIO P1A 3N1

Figure No 2

D.D.H. DATA - WOLF LAKE, MACKELCAN TP.

FLAG RESOURCES (1985) LTD.

DDH #	DIP	APPROX. LOCATION RELATIVE TO WL 83-28	CASING	FINAL DEPTH	DATE STARTED	DATE FINISHED
WLC 90-19 (1)	-60°/254°	46 mS / 30mW	5' (Jew)	200'	03/06/90	04/06/90
WLC 90-20 (2)	-90°	12.2mN / 2mW	4' (Knocked out)	250'	01/06/90	05/06/90
WLC 90-21 (2)	-90°	21mN / 9mE	2'	250'	06/06/90	07/06/90
WLC 90-22 (1)	-45°/263°	54.5mS / 14mW	11'	145'	07/06/90	08/06/90
WLC 90-23 (1)	-65°/~123°	4.3mS / 29.2mW	4' (spare)	235'	08/06/90	11/06/90
WLC 90-24	-90°	15.8mS / 6.5mW	2'	135'	11/06/90	12/06/90
WLC 90-25	-90°	7.7mN / 16.3mW	8'	155'	12/06/90	13/06/90
WLC 90-26	-90°	10mN / 9mW	2'	309'	18/06/90	20/06/90
WLC 90-27	-90°	~11.5mN / 1mE	2'	325'	05/07/90	11/07/90
WLC 90-28	-70°W	~19.6mN / ~9.8mW (Approx. spotted location)	4'	185'	11/07/90	16/07/90
ALS 28				6,879'		

Note: - casings from 90-23 & 90-19 pulled in order to set up & deepen 90-12 from 540' to 600' & 600' to ~~600'~~ 700'

- casing for 84-11 knocked out after moving drill from 90-14 (deepened portion)

- casing for 90-20 knocked out when moving drill onto 90-14 (deepened portion)

FLAG RESOURCES 1985 LIMITED

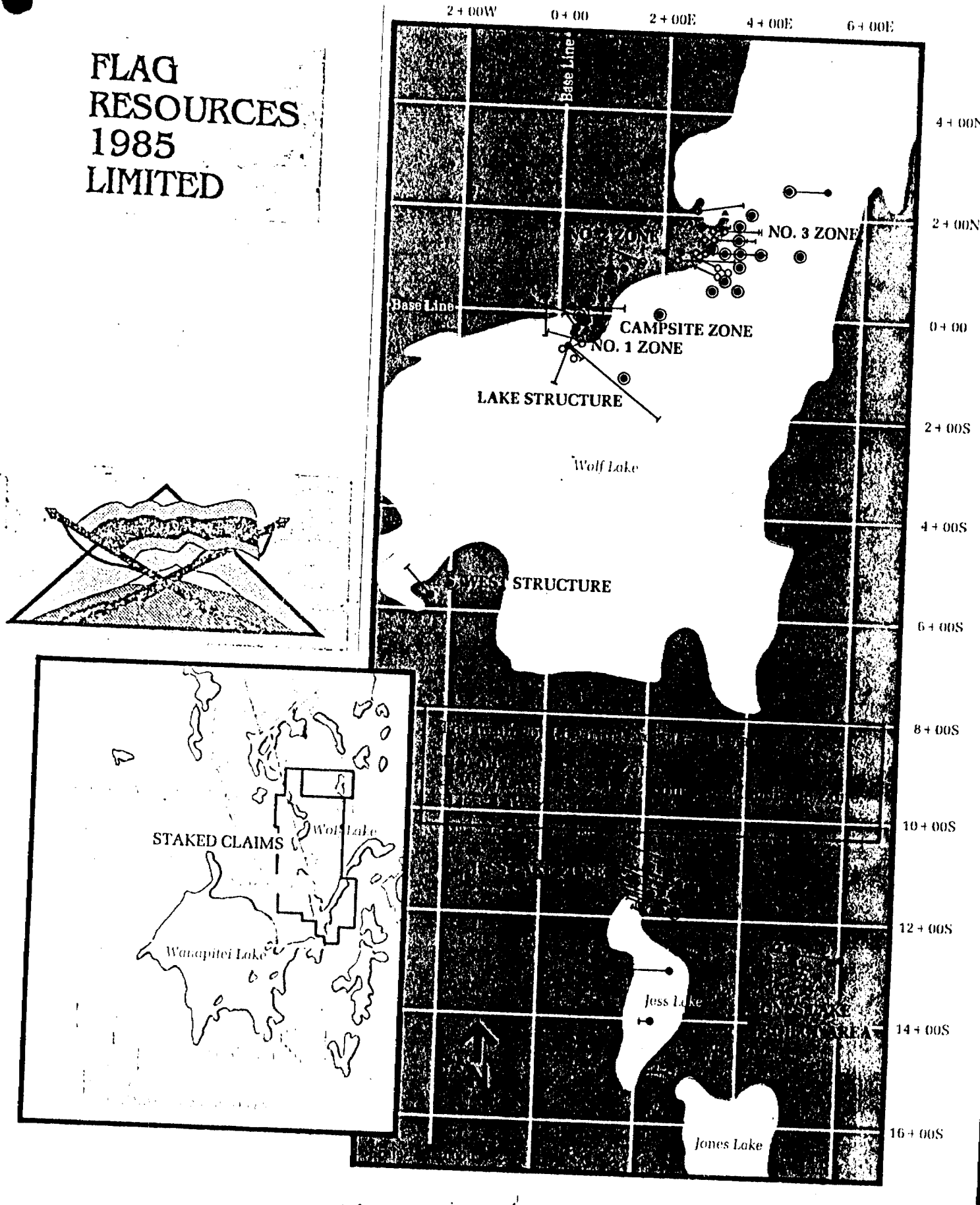
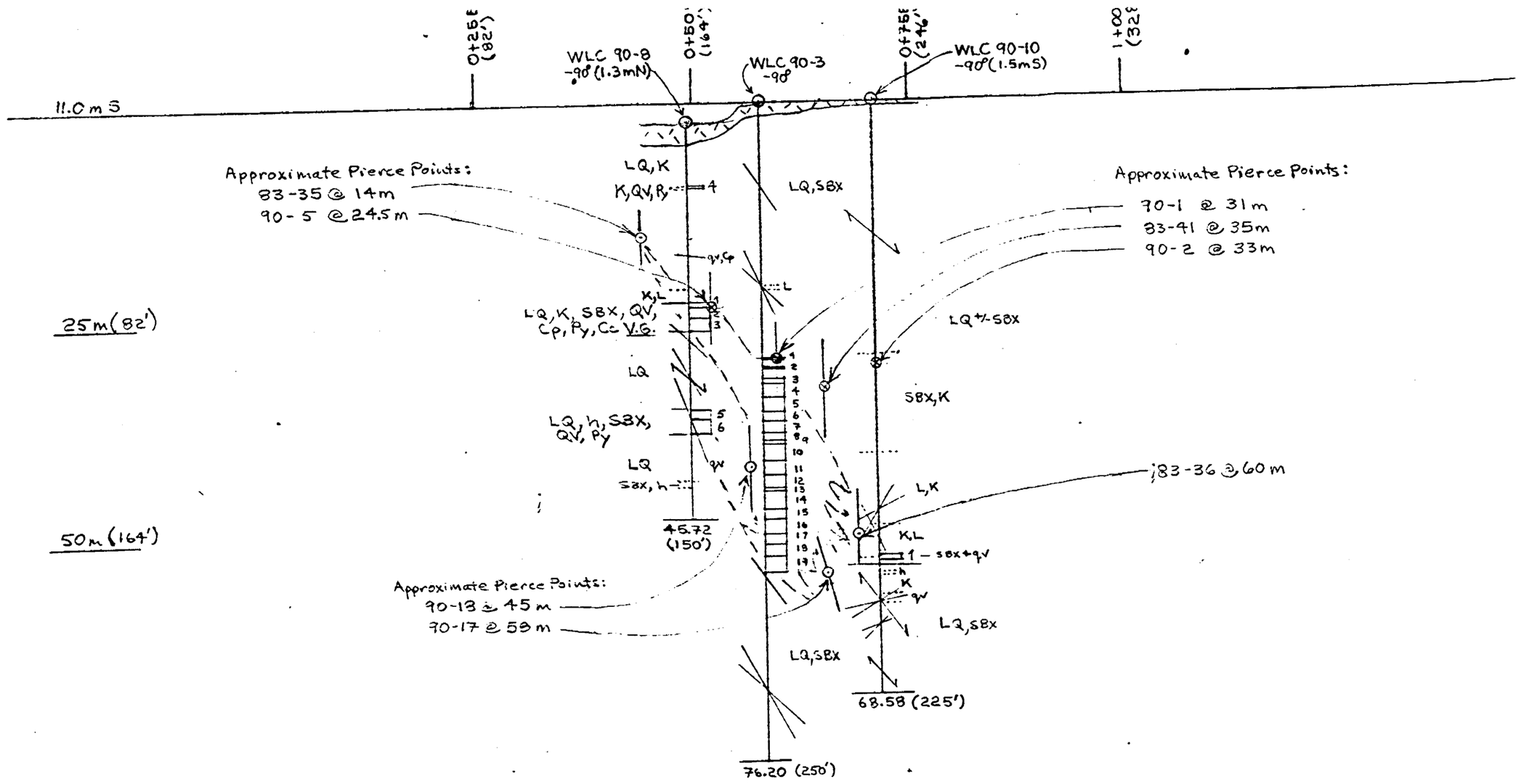
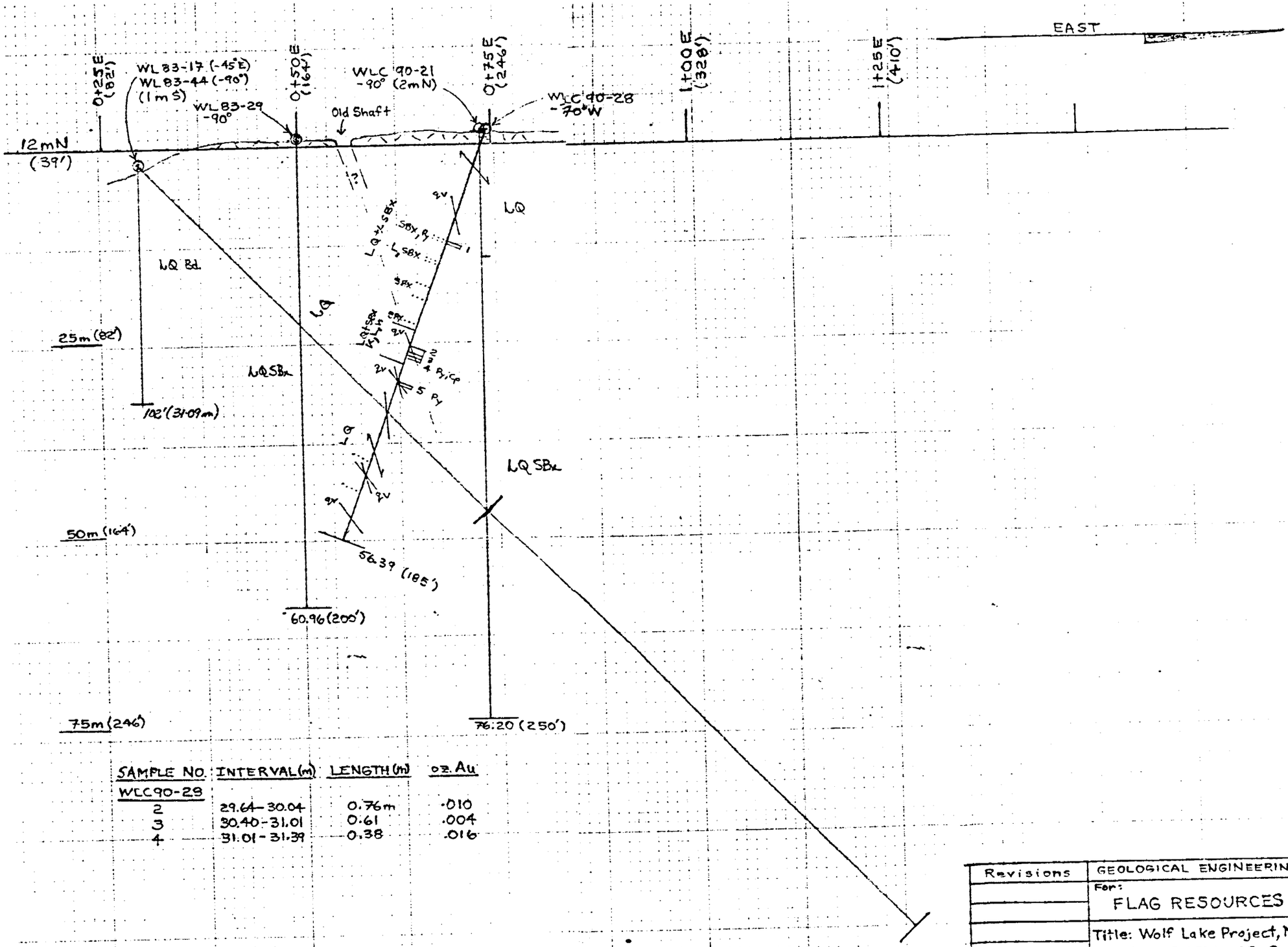


Figure No 2

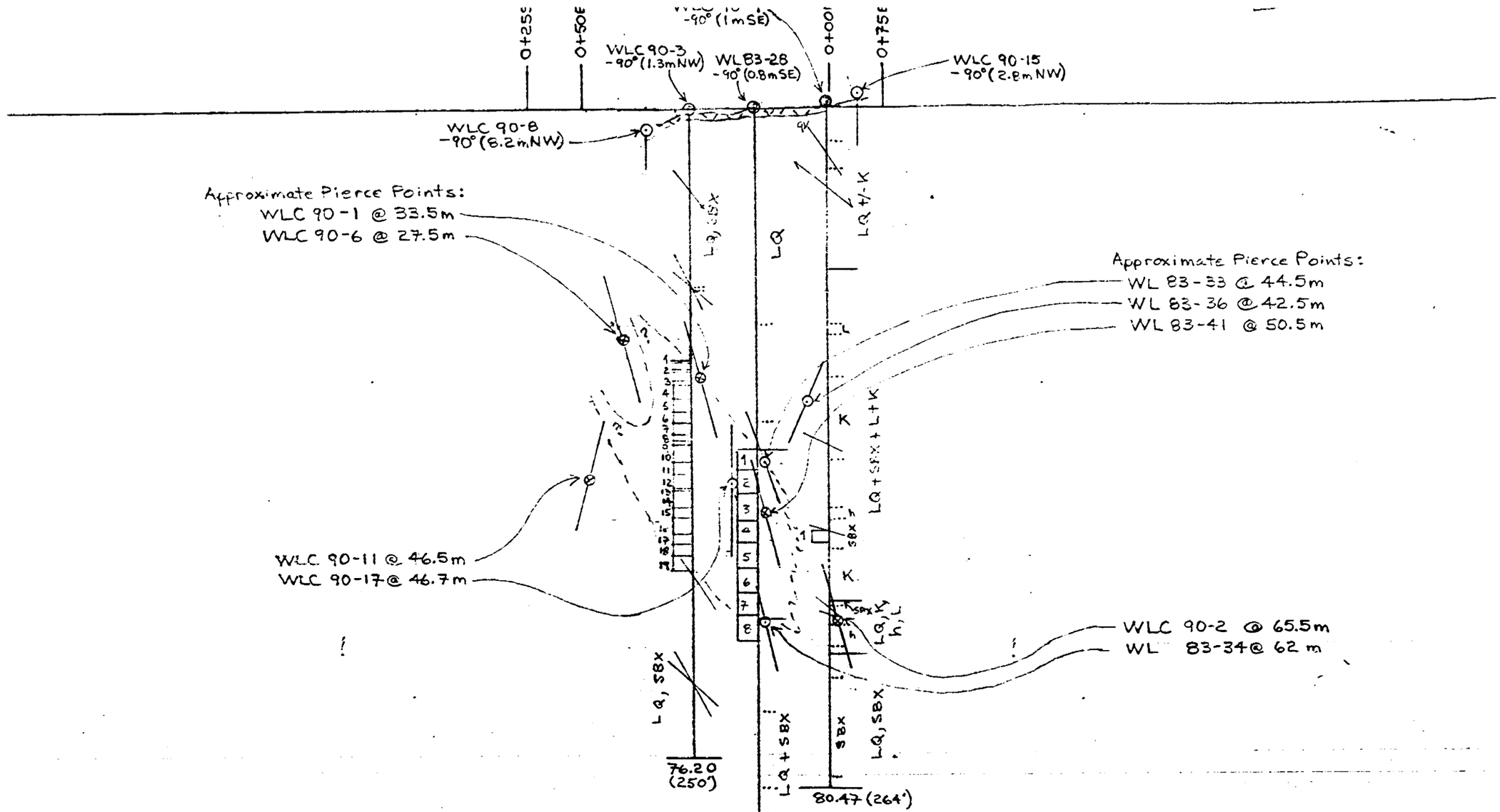


Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 11.0 m S
	D.D.H.# WLC 90-3, WLC 90-8, WLC 90-10
	Drawn: F.H.T | Scale-1:500 | Date: July '9



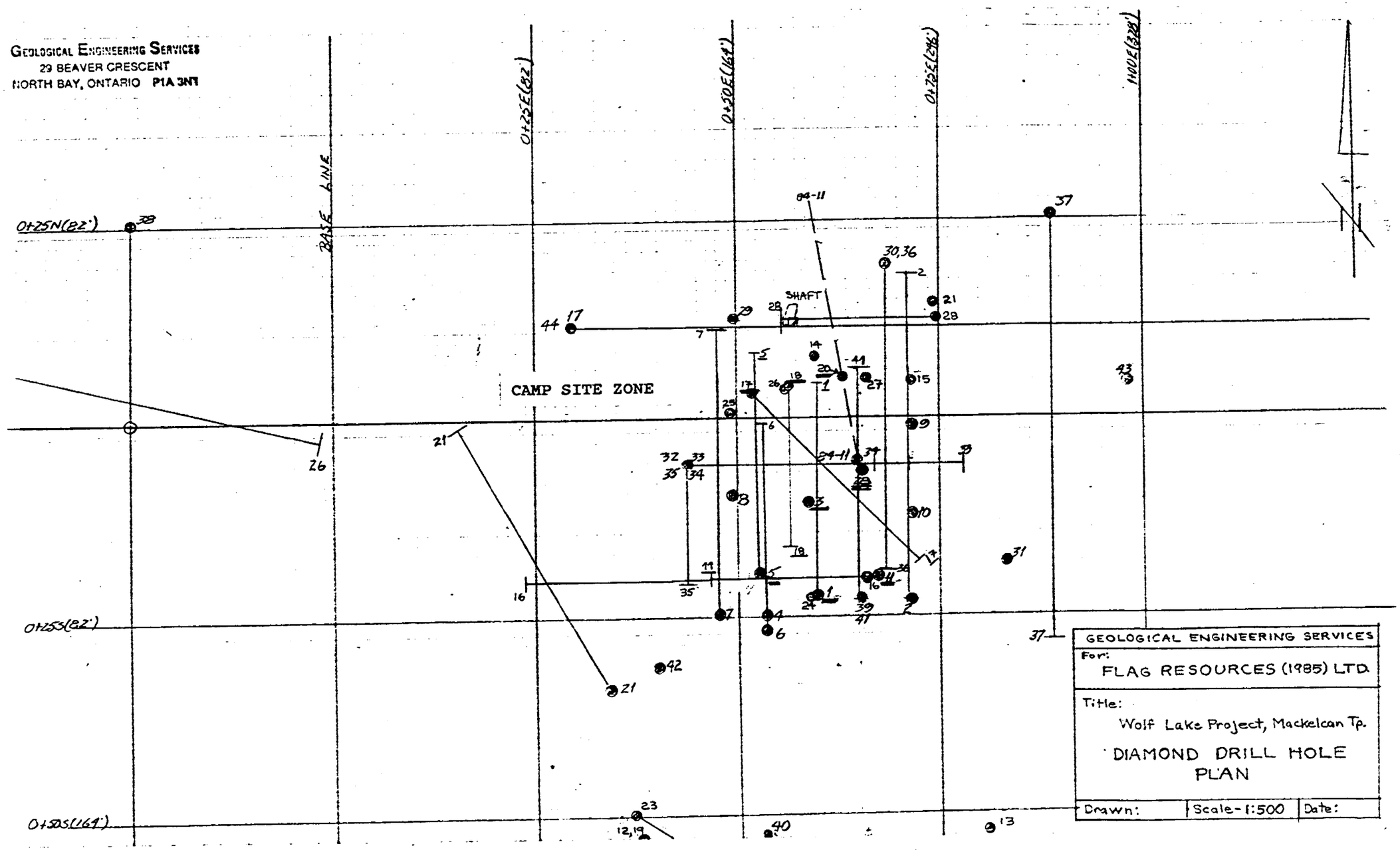
SAMPLE NO.	INTERVAL(m)	LENGTH(m)	oz. Au
WLC90-28			
2	29.64–30.04	0.76m	.010
3	30.40–31.01	0.61	.004
4	31.01–31.39	0.38	.016

Revisions	GEOLOGICAL ENGINEERING SERVICE
	For: FLAG RESOURCES (1985) LT
	Title: Wolf Lake Project, Mackelcan
	SECTION 12.0m N
	D.D.H.# WL 83-17 WL 83-29 WL 83-44 WLC 90-21 WLC 90-28



Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION THROUGH
	D.D.H.* WL 83-28, WLC 90-3, WLC 90-9
	Drawn: F.H.T. | Scale: 1:500 | Date: Aug/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



GEOLOGICAL ENGINEERING SERVICES

For:
FLAG RESOURCES (1985) LTD.

Title:
Wolf Lake Project, Mackelcan Tp.

DIAMOND DRILL HOLE PLAN

Drawn:	Scale-1:500	Date:

0+50E

0+75

WLC 90-21
90° (250')

WLC 90-28
70°W (186')

WLC 90-14
90° (345')

WLC 90-18
70° (195')

WLC90-20
90°
(250')

WLC90-17
70° (300')

WLC
90-26
90° (309')

WLC90-27
90°
(300')

WLC 90-15
90° (251')

WLC 90-25
90° (155')

0+00

CAMP SITE ZONE

WLC90-9
90° (264')

WLC90-11

WLC 90-8
90°

WLC90-3
90°
(250')

WLC90-10
90° (225')

90-16

WLC90-5
68°

WLC 90-24
90° (135')

WLC90-1
70°
(250')

WLC90-11
70° (195')

WLC90-2
70° (355')

0+25S

WLC90-7
70° (350')

WLC90-4
70° (10')

WLC90-6
70° (250')

LAKE

WLC 90-23
70° (235')

NO 1 ZONE

WLC 90-12
90° (700')

WLC 90-19
60° (200')

WLC 90-22
45° (145')

WLC 90-13
90° (150')

WOLF LAKE

0+50S

0+75 E

Approximate Bedding Trend with Dip

0 5 10m

Angle DDH

Approximate Vertical Projection of Sample Number or Interval

Vertical DDH

EOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
ORTH BAY, ONTARIO P1A 3N1

GEOLOGICAL ENGINEERING SERVICES

For: FLAG RESOURCES (1985) LTD

Title:
Wolf Lake Project,
Mackelcan Tp.
VERTICAL PROJECTION OF DIAMOND DRILL HOLES & SOME SURFACE GEOLOGY (APPROXIMATE)

Drawn: F.H.T.	Scale - 1:250	Date: July/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT NORTH BAY, ONTARIO CANADA P1A 3N1
Tel: (705)476-2985
Fax: (705)476-3561

MINISTRY OF NORTHERN DEVELOPMENT AND MINES
NOV 22 1990
INCENTIVES OFFICE

21 November 1990

Mr. Ralph B. Higgins
Incentives Evaluator
MINISTRY OF NORTHERN DEVELOPMENT AND MINES
4th Floor
159 Cedar Street
SUDBURY , O n t a r i o
P3E 6A5

Dear Ralph:

RE: Diamond Drill Hole logs (14) - (Improved Photo Copies) , Camp Site Zone DDH program , Mackelcan township property , Sudbury Area , Ontario . To accompany Report on Diamond Drill Hole Program

---

Two (2) copies of improved photo copies of the logs you requested on the above captioned project are enclosed.

We will be pleased to supply you with any additional data or information you may require. For the present we will assume that you have all the necessary data to proceed with completion of the Flag work program filing.

Attached here is a copy of a letter from Murdo C. McLeod , president , FLAG RESOURCES (1985) LIMITED dated 29 October 1990 which undertakes to fulfil certain debt obligations. The reports (2) , and current package of logs , are submitted on the understanding and assurance that the undertaking in the letter will be fulfilled as stated.

Respectfully yours,

Frank P. Tagliamonte , P.Eng.

FPT/fpt

Encl 14 x 2

cc MCM ; SM

FLAG RESOURCES (1985) LIMITED

Suite 1970, 540 - 5th Avenue S.W.
Calgary, Alberta, Canada
T2P 0M2
TELEPHONE: (403) 262-8883

GEOLOGICAL ENGINEERING SERVICES
FRANK P. TAGLIMONTE
29 BEAVER CRESCENT
NORTH BAY, ONTARIO
P1A 3N1

OCTOBER 29, 1990

Dear Frank:

In written confirmation of our telephone conversation today, October 29, 1990, Flag Resources (1985) Limited hereby committs to pay Geological Engineering Services the sum of $6,000.00 immediately upon receipt of $50,000.00 from the Ontario Mineral Incentive Program. I was informed today that this amount has been approved, for Flag's exploration expenditures at Sudbury subject to receipt of a geological report on the completed drill holes.

On behalf of the board of directors,

Murdo C. McLeod
President

DDH#	WLC90-1
Dip	-70°
Azimuth	360° ±
Elevation	25' ± above Wolf Lake.
Co-ordinates	From DDH# 28 - 15.5 mS, 6 mW.
Claim No	
Core Size	BQ
Started	10 April 1990
Stopped	10 April 1990
Company	Flag Resources (1985) Limited
Property	Wolf Lake Project - Camp Site Zone
Contractor	Triangle Diamond Drilling, Sudbury, Ontario
Logged by	Frank P. Taglianonde, P. Eng
Depth	253' (76.2 m)
Note:	Drilled in feet, converted to metric during logging
Dip Test	250' 72°

0 - 2.61	CASING
2.61 - 28.65	LORRAIN QUARTZITE..

Pale green medium grained granular.
Alternating beds/bands of coarser grained quartzite.
Local zones with loosely distributed 2 cm± quartz pebbles.
Vague Sudbury Breccia features - fine grained darker, but pale green groundmass with liberally disseminated fine epiclastic beads.
Fractured throughout.
Prominent set from 25-35°
Higher angle set from 45-60°
Local variations as noted.

31-28.65 LORRAIN QUARTZITE --- cont'd ---

@ 18.29 1.5m fracture zone
Low angle and sub parallel to core, tight fractures with hematitic staining throughout.

Sharp contact @ 35°

65-49.99 ('94'-164') (70') 21.34m

MINERALIZED ZONE

(10% Sul.)
40% Qz.
Vuggy
Kaolinite
SB+
As.

Essentially a milk white quartz breccia and stringer zone impregnating Sudbury Brecciated Lorrain Quartzite.
Quartz veins and breccia fragments contain massive patches & granular pyrite in cubic and sub-cubic-like fragments.
40%± Vuggy and massive milk white quartz.
10%± sulphides mainly pyrite with occasional splash of chalcopyrite
Local prominent malachite staining in vuggy areas
Patchy intense kaolinitic alteration.
Patchy hematitic staining
Local variations as noted.

31.05 80cm zone with bands of intense porous kaolinitic alteration.
Minor chalcopyrite mineralization in quartz fragments within a 3cm band at upper contact.

30.78 50cm Breccia zone containing porous kaolinitic fragments intermixed with black chalky quartz containing large fragments of fine pyrite — 10%± pyrite

2865

MINERALIZED ZONE ---cont'd---

1.37m

31.70 - 33.07 (4.5') Porous kaolinitic quartzite cut by glassy milk white quartz stringers with massive patches of fine granular pyrite
30%+ quartz stringers
10% pyrite in quartz stringers (3% in zone)

33.07 - 34.59 Predominantly tonalite quartzite with thin 5cm+ cross cutting sinuous milk white quartz veinlets with beads of chalcopyrite.

@ 34.29 25cm band of fine Sudbury Breccia fragments with sparse fine bead of chalcopyrite.
1%+ quartz veinlets

34.59 - 35.05 Fragments of Sudbury Breccia and milk white quartz with massive patches of chalcopyrite and pyrite.
3% sulphides.

35.05 - 35.81 Weakly kaolinitic Tonalite Quartzite with random milk white quartz stringers containing specks of chalcopyrite.
12cm intensely limonitic zone at lower contact.

35.05 - 39.32 (3.51m (11.52'))
60%+ vuggy quartz breccia and stringer zone
Large and small vuggs throughout
Massive patches of granular pyrite and minor chalcopyrite in quartz fragments and stringers.
Patchy prominent hematitic staining throughout.
Weakly kaolinitic throughout.

@ 37.64 (1035)
4 pin points of VG
5%+ Sulphides - pyrite, chalcopyrite

39.32 - 40.23 Weakly kaolinitic and hematitic stained Tonalite Quartzite Sharp lower contact @ 35°
2cm quartz stringer with patchy pyrite at upper contact.

2865-49.99

MINERALIZED ZONE — cont'd —

39.32 – 42.67 Hematitic stained porous and vuggy Kaolinitic quartzite with occasional fragment of vuggy quartz.
Broken core 5% quartz

@41.00 Dendritic patches of purple tinted black magnetite? Smears along core surface chalcocite?

42.67 – 43.89 Breccia Zone:
Mixture of glassy white quartz veinlets and fragments intermixed with Kaolinitic and hematitic stained porous quartzite.
70% quartz with massive patches and fragments of granular pyrite – locally strongly vuggy.
10%+ pyrite.

Deep stained limonitic slips at lower contact
Open fractures – rusty – low angle to core.

43.89 – 75.57 Kaolinitic quartzite with veinlets and patches of milk white quartz with minor patches of granular pyrite.
Local vuggy quartz

@43.69 40cm zone with intense limonitic (rusty) stained fractures at low angle to core.
Open fracture

@43.35 3cm black hard cherty veinlet with hematitic threads adjacent to slip with fabric @ 25°

45.57 – 47.09 Mixture of predominantly vuggy quartz veins and Kaolinitic quartzite.
Brecciated.
70%+ vuggy quartz fragments.

WLC901-5

38.65 - 49.99

MINERALIZED ZONE --- cont'd.

45.57 - 48.61	-- cont'd. -- Patches and fragments of granular pyrite in quartz stringers and fragments.
(Sub metallic)	blue grey argentite? (chalcocite?) associated with pyrite - shows smearing on core surface. bright green malachite staining in some vuggy sections and associated with earthy pyrite. 5%+ sulphides.
48.61 - 49.99	Essentially massive porous kaolinitic quartzite. Sharp lower contact @ 25° ±.

49.99 - 70.20
250'

LORRAIN QUARTZITE.

	Generally as above except as noted. Principal fractures from 80-25°, weakly kaolinitic (local, por 75°)
50.44	1.5cm quartz stringer @ with blue-grey mineral - argentite? Hematitic staining adjacent to stringer in kaolinitic quartzite
56.69	35cm kaolinitic, hematitic and limonitic stained quartz stringer zone. Fractured @ 55°.
58.98	3cm black and glassy white quartz stringer @ 80° with large fragments of granular pyrite. Hematitic stained kaolinitic quartzite over 30cm width on both sides of stringer
59.44	Hematitic stained slip @ 30°.
60.20	30cm kaolinitic quartzite zone with quartz veinlets and patches of hematitic staining

49.99 - 76.20.	LORRAIN QUARTZITE - - cont'd - -	
	62.03 - 63.09	Kaolinitic Sudbury brecciated quartzite Very porous Beads of malachite staining throughout. Sharp upper slip contact @ 25° with hematitic gouge @ 25° Lower slip contact with hematitic gouge
	64.92 - 65.84	Porous kaolinitic quartzite
	65.84 - 67.06	Peppery hematitic stained quartzite Fracturing @ 55° ±
	65.84 - 68.58	Broken and fragmented core - mechanical.
	68.58 - 76.20	Random weakly hematitic stained patches throughout. Prominent fracturing @ 50° ±
76.20 (250')	END OF HOLE.	
		Casing in hole.

11 April 1990
Fiona Reines
Sudbury Ontario

~~DDH# WLC90-1~~ WLC901-7

Sampling and Assaying

Sample No.	From	To	Core length m	ft	Au ppb	Cu ppm
WLC901-1	101 30.78	31.24	0.46	1.5'	.654	
-2		104 31.70	0.46	1.5	.020	
-3		33.07	1.37	4.5	.686 ~~.686~~	
-4		34.59	1.52	5'	.004	
-5		115 35.05	0.46	1.5	.504	
-6		117.5 35.81	0.76	2.5	.002	
-7		37.18	1.38	4.5	.234 .332/11'	
-8		129 39.32	2.14	7	.396	
-9		40.23	0.91	3	.012	
-10		132 42.67	2.44	8	.114	.34
-11		144 43.89	1.22	4	.991 Ag	Cu
-12		45.57	1.68	5.5	.049	
-13		47.24	1.67	5.5	.122 Ag	.74 Cu
-14		159.5 48.61	1.37	4.5	.076 Ag	Cu .94
-15		49.99	1.38	4.5	.008	
-16	@ 38.99		.30	1'	.884 .936	
-17	62.03	63.09	1.06	3.5	.028	.130% Cu

Margin notes: 3% py; 3% py; 5% py VG; 10% py; 5% py

.317/43' (circled)

.358/11' ; .351/11' (circled)

From	To	
101	159.5	.227/58.5' ; .255/58.5'
104	115	~~.355~~/11' ; .351/11' (circled)
~~101~~	~~158.5~~ ~~101.0~~ ~~58.5~~	
117.5	129	.332/11.5'
132	159.5	.199/27.5' ; .224/27.5 (circled)

159.5
101.0
58.5

12
11
23
.630/

DDH-WLC90-1

WLC90-I - 8

Valhalla Inn

TORONTO • KITCHENER • THUNDER BAY

Feet

101 - 159.5	.255 / 58.5'	1 - 14	(1)
104 - 115	.351 / 11'	3 - 5	(3)
117.5 - 129	.322 / 11.5'	7 & 8	(4)
132 - 159.5	.224 / 27.5'	10 - 14	(5)
101 - 144	.317 / 43'	1 - 11	(2)

14.8985

.255 / 58.5'

174

.317 / 43'

173'

11'

3.908

.981
.03
3.132 3.087
.02
.756
.005
1.053
2.742
.036 .036
.912
3.304 3.964
.2695
.671
13.3025 .342 13.3025

38.5

.036

14.2826

.227 / 63'

.227 / 58.5'

When in Toronto, dine in the Nordic Room or enjoy Dinner-Dancing in the Mermaid Supper Club.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC 90-2 (Deepened from 250' ~~NQTW~~ 76.2 - 108.2m, June 25-26/90, at request of M.C.H.

76.20 - 86.65m	LORRAIN FORMATION - QUARTZITE +/- SUDBURY-TYPE BRECCIA (+/- WEAKLY KAOLINITIC)
	Light greenish-grey; medium & coarse grained; locally pebbly; some bedding @ about 50° to C.A.; fractures (1-3/30cm) +/- limonitic stain @ 20-25°, 35-45°, 50-60° to C.A.; light greenish, sericitic, anastamosing seams (0.5-2mm) & fine fractures @ 10-15° to 70° are numerous from about 77.72 - 83.21m (some represent slips &/or shears); local light greenish-grey Sudbury Breccia veins
76.20 - 76.66m	Sudbury Breccia vein with contacts @ about 10° & 25° to CA; fractures @ 55° to C.A, (5/30cm) mainly
80.16 - 80.31	Sudbury Breccia @ about 65° to CA.
81.53	3cm Sudbury Breccia vein @ 55° & 70° to CA.
84.86	Bed contact @ 15° to C.A.
85.04 - 85.50	Fractures +/- limonitic stain 5°, 15°, 25-35° to C.A., partly broken core
86.26 - 86.65	Contact between medium grained & coarse grained (lower or down-hole) undulating @ sub-parallel to C.A.
86.65 - 88.16	LORRAIN FORMATION - FELDSPATHIC (?) QUARTZITE (ALTERED)
	Greenish-grey, coarse-grained (3mm +/-), weakly kaolinitic quartzite
87.17 - 87.78	limonitic staining, some pitting & limonitic fractures @ 30°, 40-45° to C.A. (3/30cm)
	- 87.71m - strongly limonitic fracture @ 12° to C.A.
	- 88.09m - foliation @ 25° to C.A.
88.16 - 92.57	LORRAIN QUARTZITE + SUDBURY-TYPE BRECCIA (ALTERED)
	40% (+) greenish-grey Sudbury Breccia veining fine medium & coarse grained light greenish-grey quartzite, both affected by weak to moderate patchy hematization from about 89.92 - 92.58m; some limonitic fractures
88.16	Contacts of 25cm Sudbury Breccia vein @ about 50° & 45° to C.A.
88.42 - 88.73	Weakly hematitic, limonitic, kaolinitic coarse grained quartzite fragment(?) in breccia

GEOLOGICAL ENGINEERING SERVICES
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NORTH BAY, ONTARIO P1A 3N1

88.73 - 89.23m	Sudbury Breccia vein; contacts @ 60° & 40° to CA.
89.23 - 91.13	5-10% Sudbury Breccia veining @ 30° to sub-parallel to C.A in medium & coarse grained quartzite; limonitic stained fractures @ 20-30°, 40-50° to CA. (3 / 30 cm)
91.13 - 92.57	Moderate hematization in 50% Breccia & 50% quartzite (medium grained mainly)
	- 91.96m - 2-3 mm wide vuggy, limonitic quartz veinlet @ 67° to CA.
	- 92.57m - irregular contact @ 50° (+/-) to CA.
92.57 - 99.88m	LORRAIN FORMATION - QUARTZITE +/- HEMATIZATION +/- KAOLINIZATION
	Light to medium greenish-grey medium (+/- coarser) grained with 30% (+/-) zones of weak to moderate patchy hematization +/- pitting from 93.12 - 99.88 m giving rocks a reddish to pinkish hue
93.42 m	Hematite fracture @ 60° to CA.
93.42 - 94.03	Fractures @ 30, 40, 50, 60, 70° to CA. (+/- slips); 5/30cm
95.01 - 95.31	Shearing @ 70 75° & 50° to CA. (greenish)
96.16 - 96.47	Shears @ 40-60° to CA (greenish)
96.68 - 96.93	Sudbury Breccia vein @ about 20-25° to C.A. with Qtz apophysis @ 0-5° to CA. to 97.08m; foliation parallel - sub-parallel contacts
98.91 - 99.67 (324.5 - 327)	Some bleaching in moderately Kaolinized, medium & coarse grained quartzite with some bedding @ 40-45° & 50-60° to CA.; locally weak hematitic stain (locally strong @ 324.8')
	- 99.09m - 3 mm mud seam parallel to bedding @ 50° to CA. - mud slightly reddish
99.88 - 108.2m	LORRAIN FORMATION - QUARTZITE (+/- BEDDING)
	Medium greenish-grey & grey (slight pinkish hue) medium to coarser grained, quartzite
101.47 m	2mm wide quartz veinlet @ 50° to C.A.
103.33 - 103.86	limonitic shears @ 50° & 40° (two)
103.94 - 106.68	Dark grey heavy mineral laminations (2%) mainly 1-5 mm wide @ 40-45, 50-60° to CA. (non-magnetic fracture in quartz veinlet)
	- 106.28m - limonitic quartz veinlet, 5mm wide @ 50° to CA.
108.2m (355')	END OF HOLE

Franck H. Tosso, B.Sc.

WHC902-1

DDH#	WHC90-2
DIP	-70°
Azimuth	360°
Elevation	25'± above Wolf Lake
Coordinates	From WL83-28: 15.5m S, 6m E.
Claim No.	
Core Size	BQ
Started	10 April 1990
Stopped	11 April 1990
Company	FLAG RESOURCES (1985) LIMITED
Property	Wolf Lake Project - Camp Site Zone
Contractor	TRIANGLE DIAMOND DRILLING, Lively Ontario
Logged by	Frank P. Tagliamonte, P.Eng.
Depth	76.20 (250')
Claim No.	
Note:	Drilled and marked off in feet; converted to metric during logging

0 - 1.22 (4') CASING.

1.22 - 76.20 LORRAINE QUARTZITE SBx

Pale green alternating fine and coarse grained vaguely bedded quartzite

Weakly kaolinitic or as otherwise noted

Local areas of faint hematitic or as otherwise noted.

Fractured ~~throughout~~ - 30° + 40° set.

24.69 6cm hematitic and limonitic stained zone cut by 1mm± quartz veinlet @ 75°

31.39± - 50.29± Fractured ~~throughout~~ primarily @ 50°± Approximately 20 fractures /m. Most fractures with limonitic coating

1.22 - 76.20 LORRAIN	QUARTZITE --- contd --
31.39± - 50.29±	--- contd --
	Mechanically broken core
	75%± recovery
	Sudbury Breccia features ~~throughout~~.
49.68± - 64.01±	Random patch areas with hematite
hs	~~staining~~
K	Prominent Sudbury Breccia features.
SBx	Limonitic coated fractures.
(14.33m 47')	Fracture sets @ 50°± and occasionally
	@ 20°±.
	Weakly kaolinitic throughout.
	THE MAY REPRESENT THE HALO ZONE ADJACENT TO THE MINERALIZED ZONE
65.53	Open Fracture. Broken core.
74.07 - 76.20 (250')	END OF HOLE

P.P. Lou... P.Eng.
18 April 1990
Evans Mines Ltd.
Sudbury, Ontario

WLC903 - 1

DDH# WLC90-3

DIP	-90°
Co-ordinates	From #28: 6.5m W, 4m S.
Azimuth	⊖
Elevation	35' + above Wolf Lake
Claim No.	
Core Size	BQ
Started	11 April 1990
Stopped	16 April 1990
Company	FLAG RESOURCES (1985) LIMITED
Property	Wolf Lake Project - Camp Site Zone
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged By	Frank P. Tagliamonte, P.Eng
Depth	76.20 m (250')
Note:	Drilled and marked in feet; converted to metric during logging

0 - ~~1.22~~ 41 CASING

1.22 - 23.17 LORRAIN QUARTZITE. Sudbury Breccia

Pale green alternating coarse and finer grained granular beds
Random bands and seams of Sudbury Breccia = "fine grained aphanitic groundmass peppered with fine spherulitic quartz grains and sizes, frothy appearance."
Fractured ~~throughout~~.
Most prominent fractures @ 35°
Some fracture limonitic coatings.
Approximately 13± fractures per metre
Local variations as noted.

1.02 – 28.19 **LORRAIN QUARTZITE. Sudbury Breccia --contd**

21.03 – 21.34 Fracture Zone
Upper slip contact @ 45°
Limonitic coated fracture @ 45° and 25°
Weak hematitic staining

ls 25.91 91cm zone of "peppery" limonitic staining

SBx 27.13 140cm zone with prominent Sudbury Breccia features

28.19 – 31.70 **ALTERATION HALO (Kaolinite Lorrain Quartzite)**
Intense kaolinitic alteration
Porous and partly decomposed

29.26 4cm zone with pale green amorphous quartzite with black patches of sulphides
Prominent slips @ 20°

30.16 – 31.70 Sudbury Breccia fragment.

30.18 Slip cutting kaolinitic quartzite with black gouge.

31.70 – 54.10 (104' – 177.5') (73.5') **MINERALIZED ZONE. Variable.**
Variable Vuggy and patchy hematitic stained quartz stringy and Breccia zone with patches of pyrite, chalcopyrite and chalcocite.
Kaolinitic throughout.

Local variations as noted.

31.70 61cm zone with mixture of black chalky quartz and black stained kaolinitic quartzite.
Patchy fragments and thin seams of fine granular pyrite in cherty quartz stringers and

3170 - 3

MINERALIZED ZONE · Variable — cont'd —

106 - 118 Chalcopyrite Zone

32.31 - 36.58 (Cpy Zone 5% cpy) (14')

Fragments and stringers of milk white vuggy quartz with massive patches of chalcopyrite intermixed with kaolinitic porous quartzite
Local hematitic staining
50%+ milk white quartz
10%+ chalcopyrite in milk white quartz
(5% chalcopyrite in zone)?
Minor pyrite at upper portion of zone
Minor disseminated chalcocite at lower portion of zone.

36.58 - 37.80 (3.5')

Weak hematitic stained porous kaolinitic quartzite
Upper and lower slip contacts @ 30° ± 25°

124 - 127.5

37.80 - 38.86 (5% py)

60%+ vuggy milk white quartz with patches of fine granular pyrite
Minor disseminated chalcocite for 20cm at upper contact
5%+ pyrite
Sharp lower slip contact @ 30° ±

38.86 - 39.32

Hematitic stained porous kaolinitic quartzite
Lower slip contact @ 25°

129 - 140

39.32 - 42.64 (9%± py) (11')

Large patches and fragments of vuggy milk white quartz with patches and clusters of fine granular pyrite intermixed with porous kaolinitic quartzite
Broken core and hematitic stained slip near upper contact @ 45°.
Minor patch hematitic staining
60%± quartz
15%+ pyrite in quartz

3170 – 54.0 **MINERALIZED ZONE** Variable – – – cont'd

42.67 – 44.04	Weakly kaolinitic Lorraine Quartzite. Fractures @ 35°
~~0~~	Intense limonitic and hematitic stained zone cut by
(1.5') 144.5 – 146	fracture @ 30° at lower contact.
44.04 – 44.50	Milk white vuggy quartz fragment.
(2% py)	2%± patchy fine granular pyrite
44.50 – 46.63	Essentially porous, weathered hematitic stained kaolinitic quartzite
~~0~~	Quartz threads and veinlets near upper portion of horizon as well as intense limonitic stained fractures
(22.5')	Slips @ 30° at lower contact.
144.5 – 167	
46.63 – 50.90	Predominantly vuggy and porous milk white quartz with disseminated
(Py 5% py)	chalcocite and random patches of fine granular pyrite.
	Intermixed hematitic stained porous kaolinitic quartzite fragments.
	10%± quartzite fragments
	5%± pyrite
~~46.94~~	Open cavity – large vugs with fine quartz crystals.
	80 cms zone of broken and fragmented core lost
50.90 – 52.43	Pale green fine granular Lorraine Quartzite
~~0~~	Weakly kaolinitic upper contact

3170- MINERALIZED ZONE. Variable — contd --

52.43 - 54.10 (3% py) 172 - 177.5 (5.5') | Quartz stringer and breccia zone. Milk white quartz with patchy fine granular pyrite intermixed with porous kaolinite quartzite fragments. Black cherty quartz for 50cm at lower end of zone. 60% quartz 3%+ pyrite

54.10 - 76.20 LORRAIN QUARTZITE. - SBx

Pale green variably granular, vaguely, locally bedded, with Sudbury breccia features throughout.

54.10 - 55.47 hc | Series of fractures with hematitic staining. Fractures @ 35°±

Numerous fractures throughout. Most in 30° range, some 45°±

76.20 (250') END OF HOLE

Casing in hole.

[signature], P.Eng.
17-April 1990
[illegible] Mines Limited
Sudbury, Ontario

WLC903-6

DDH# WLC90-3
SAMPLING AND ASSAYING

	Sample No.	From (m)	To (m)	Core length m	Core length ft	ppb Au	ppm Ag	Cu
	WLC903-1	@ 29.26	(4cm)	.30	1	✓ .116		
	-2	@ 30.18	(slip)	.30	1	✓ .004		
104'								
3% py 106'	-3	31.70	32.31	.61	2	✓ .491	✓	at 4200
opy	-4		33.83	1.52	5	✓ .046	✓	28000 Zinc
5% opy zone (14')	-5		35.35	1.52	5	✓ .362	✓	15000
120	-6		36.57	1.22	4	✓ .182	✓	14000
124	-7		37.80	1.22	4	✓ .006		
5% py (3.5') 127.5	-8		38.86	1.06	3.5	✓ 4.981	✓	9600
129	-9		39.32	.45	1.5	✓ .052		
9% py (11')	-10		41.15	1.83	6	✓ 1.713	✓	9400
140	-11		42.67	1.52	5	✓ .502	✓	1900
	-12		44.04	1.37	4.5	✓ .008		
2% py	-13		44.50	.46	1.5	✓ .162		
	-14		46.63	2.13	7	✓ .006		
	-15		47.85	1.25	4	✓ .034		
5% py 22.5'	-16		49.68	1.83	6	✓ .242		
	-17		50.90	1.22	4	✓ .218		
	-18		52.43	1.53	5	✓ .914		
3% py 5.5	-19		54.10 (177.5')	1.67	5.5	✓ .178		

22' Barren

DDH #WLC90-3 -90° 65m W and 4m S of #WL 83-28

GRADE CALCULATIONS

Sample No		oz Au	Core length	%/ppm Cu		
#	1	·116	1'			
#	2	·004	1'			
#3		104' ·490	2'	106' 4200	·093	
#4		·046	5'	28000	·23	14
#5		·326	5'	14' 15000	1·63	7·5
#6		·182	4'	120 14000	·723	5·6 / 27·10
#7		·006	4'		·015	
#8		4·98''' *(3·39 P+M)	3·5'		17·290	(4·98 oz × [illegible]) ←
#9		·052	1·5'	9600	·073	
#10		1·98 *	6'	9400	11·83	(1·98 oz × 6') ←
#11		·502	5'	1900	2·51	
#12		·008	4·5'		·036	
#13		·162	1·5'		·243	
#14		·006	7'		·043	
#15		·034	4'		·136	
#16		·242	6'		1·452	
#17		·218	4'		·872	
#18		·004	5'		·02	
#19		·178	5·5		·979	
		177·5'	73·5'		38·175	

* Unusually high assays.

P+M – Pulp and Metallic check.

''' Selected from 1 of 3 Fire Assays checks (Selection by Client)

AVERAGES

104' – 177·5' 0·267 oz Au / 73·5' assays cut to 1 oz.

104' – 177·5' 0·519 oz AU / 73·5' UNCUT
(includes uncut and unchecked high assays 4·98 oz/3·5'
1·98 oz/6')

106' – 120' 0·18 oz Au, 1·94 % Cu / 14'

[signature] P.Eng
[illegible] April 1990

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT NORTH BAY, ONTARIO CANADA P1A 3N1
TELEPHONE (705) 476-2985

FAX TRANSMISSION **FAX NUMBER: (705) 476-3561**

TO:

Name: Murdo C. McLeod, president
Company: FLAG RESOURCES (1985) LIMITED
Telefax No: 403 262-9105 c/ [redacted]
Date: 20 April 1990

FROM:

Name: Frank P. Tagliamonte, P.Eng
Company: ✓
Number of pages including cover: 2
Respond to Telefax No: 705 476-3561

Subject: DDH# WLC90-3
Message: Preliminary Grade Calculations

Frank P. Tagliamonte P.Eng.

DDH#WLC90-3 -90° 65m W and 4m S of #WL 83-28

GRADE CALCULATIONS

SAMPLE No	OZ Au	Core length	% ppm Cu		
# 1	·116	1'			
# 2	·004	1'			
#3	104' ·490	2'	106' 4200	·093	
#4	·046	5'	28000	·23	14
#5	·326	5'	15000	1·63	7·5
#6	·182	4'	120 14000	·723	5·6 / 27·10
#7	·006	4'		·015	
#8	4·98** *(·39 P+M)	3·5'		17·290	(4·98oz × 3·5') ←
#9	·052	1·5'	9600	·073	
#10	1·98 *	6'	9400	11·83	(1·98oz × 6') ←
#11	·502	5'	1900	2·51	
#12	·008	4·5'		·036	
#13	·162	1·5'		·243	
#14	·006	7'		·043	
#15	·034	4'		·136	
#16	·242	6'		1·452	
#17	·218	4'		·872	
#18	·004	5'		·02	
#19	·178	5·5		·979	
	177·5'	73·5'		38·175	

* Unusually high assays.

P&M – Pulp and Metallic check.

** Selected from 1 of 3 Fire Assays checks (Selection by Client) (initial assay [illegible])

AVERAGES

104' - 177·5' 0·267oz Au/73·5' assays cut to 1oz

104' - 177·5', 0·519oz AU/73·5' UNCUT (includes uncut and unchecked high assays 4·98oz/3·5', 1·98oz/6')

106' - 120' 0·18oz Au, 1·94 %Cu/14'

[signature] P.Eng

DDH* : WLC 90-4
LOCATION : Wolf Lake Area - "Camp Zone" - Mackelcan Tp.
COORDINATES : Approximately 18.5 m S & 12 m W of DDH# WL 83-28
ELEVATION : Approximately 1 metre below DDH* WL 83-28
DIP : -70° N
DIP TESTS: None
LENGTH : 3.05 m (10')
CORE SIZE : BQ
COMPANY : Flag Resources (1985) Ltd.
DRILLED BY : Triangle Drilling Ltd., Lively, Ontario
DATE STARTED : April 17/90
DATE FINISHED: April 17/90
LOGGED BY : Frank H. Toews, B.Sc.

BW Casing removed.
Hole was stopped since collar location was changed.

0 - 1.22 m	CASING	(4' Casing)
~0.91 - 3.05 m (~3' - 10')	GREEN LORRAIN : - Light green; medium to coarse grained; occasional pebble; arkosic (?); possibly kaolinitic blocky ground	
3.05 m (10')	END OF HOLE	

Frank H. Toews
Geologist

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC 905-1

DDH #	WLC90-5
DIP	-68°
Co-ordinates	
Elevation	20' ± above Wolf Lake
Azimuth	360°
Claim No	
Core Size	BQ
Started	17 April 1990
Stopped	18 April 1990
Company	FLAG RESSOURCES (1985) LIMITED
Property	Wolf Lake Project - Camp Site Zone
Contractor	Triangle Diamond Drilling, Hively, Ontario
Logged By	Frank P. Taglianonte, P.Eng
Depth	76.20 m (250')

Note: Drilled in feet converted to metric during logging

0 - 61 (21) CASING.

61 - 232 LORRAIN QUARTZITE.

Grey-green variably granular.
Generally medium grained granular, locally coarse grained - maximum 2mm± grains.
Primarily fractured throughout.
Locally faint hematitic staining and rare occasional pitted core surface.
Principal fractures @ 40°±.
Random low angle fractures @ 30°-

Local variations as noted

WLC905-2

0.61 - 23.32	LORRAIN	QUARTZITE --- cont'd :-
	16.76± - 18.90± &	Limonitic coated fractures. Patchy peppery limonitic staining on core surfaces.
	18.90± - 23.32	Patchy faint pink (hematitic) staining in local areas throughout. Very weakly Kaolinitic.
		Sharp contact @ 40°. Prominent limonitic coating on fracture surface.
76.5' - 95') 23.32 - 28.96 5.64 (18.5')	MINERALIZED	ZONE.
		Breccia and quartz stringer zone. Random mixture of Kaolinitic and weakly altered quartzite fragments cemented by glossy milk white quartz fragments and veinlets. Random dark grey-green frothy fine beaded Sudbury breccia fragments. Patchy clusters and fine chalcopyrite fragments intermixed with fine pyrite fragments hosted by glossy milk white quartz.
		30%+ quartz
		2% local chalcopyrite
		5%+ pyrite
		Small random 3cm hematitic stained patches.
		2%+ vuggy areas throughout.
		Sharp upper and lower slip contacts. Upper @ 40°, Lower @ 42°.

WHC905-3

8896

LORRAIN QUARTZITE. Altered

Grey-green fine subtle granular
Patchy areas of hematitic stained kaolinitic
quartzite.

Local features as noted.

31.55 2cm Sudbury Breccia band along prominent slip @ 15°

30.31 – 36.58 Patchy areas of hematitic and limonitic stained porous kaolinitic quartzite.

32.61 30cm limonitic and hematitic stained kaolinitic quartzite cut by 2 – 3cm± vuggy quartz stringers with spall fragments of fine pyrite.

33.53 – 36.58 1% disem. cpy

80% limonitic and hematitic stained kaolinitic quartzite with 1%+ disseminated fine chalco-pyrite and minor pyrite beads.

Random .5cm quartz stringers @ 60-80°

38.40 35cm patch of deep hematitic and limonitic stained quartzite cut by 5cm quartz veinlets.

38.40+ – 42.98 Stacho and patches of hematitic staining

42.98 – 43.28 Pitted kaolinitic quartzite with peppery hematitic staining.

Fractured throughout from 50-70°.

44.81 20cm zone with veins of glassy milk white quartz stringers @ 45°.

75-11-30.29

MINERALIZED STRINGER ZONE

Random series of 1-1.5 cm quartz veinlets at low angles to core associated with intense hematite stained porous kaolinitic quartzite. Locally vuggy.

Quartz veinlets @ 10° ± to core.

46.79 – 47.70 1 cm ± quartz veinlets @ 10° ± at both ends of zone containing 80% + patchy zone granular pyrite within intensely hematitic and limonitic stained porous kaolinitic quartzite

49.83 1 cm vuggy quartz stringer with patchs of fine pyrite at low angle to core for a length of 20 cm.

47.85 – 49.23 Intensely hematitic stained porous kaolinitic quartzite with a 1 cm ± seam of vuggy pyritic quartz at low angle to core in center of zone

172.5 1835
52.58 – 55.93
3.35
(11')

Intensely hematitic and limonitic stained porous kaolinitic quartzite cut by a series of vuggy low angle 1-2 cm quartz veinlets with minor pyrite and black or green earthy material.

5% or less sulphide stringers @ 10-15°.

50.29 — 165 LORRAIN QUARTZITE

Grey-green granular medium to coarse grained (4-5 mm grains) quartzite.
Local random narrow 20cm± kaolinite patches.
Local patches and peppery areas of hematitic staining.
Occasional Sudbury Breccia band or fragment.
Occasional limonitic stained fracture.
Random quartz stringers and veinlets from 5mm to 7cm @ 60° to 64.62 m.
These stringers are always present adjacent or proximal to mineralized Breccia Zones on this property.
They are indicator features

76.20 / 250' END OF HOLE.

Casing in hole.

[signature] Prof.
24 April 1990
Forana Mines Ltd.
Sudbury, Ont.

DDH# WC90-5 WLC905-7

Sampling & Assaying

Sample No	From	To	Core length m	ft	ppb AU	% Cu
WLC905-1	23.32 (76.5')	24.69	1.37	4.5	.064	1.0%
-2		26.21	1.52	5	.072	.9%
-3		27.58	1.37	4.5	.076	.6%
-4	(18.5')	28.96 (95')	1.38	4.5	.088	.38%
-5	@ 32.61 (107')		0.30	1	.559	
-6	33.53	35.05	1.52	5	.002	.08
-7		36.58	1.53	5	.006	.22
-8	@ 38.40		0.46	1.5	.002	
-9	42.28	43.28	1	3.28	.002	
-10	46.29 (153.5)	47.70	0.91	3	.092	.276
-11		49.07 (161')	1.37	4.5	1.010	.045
				7.5		.321
-12	52.58 (172.5)	54.10	1.52	5	.038	.19
-13		55.93 (183.5)	1.83	6	1.059	6.354
				11		6.544

Margin notes: 590 py. — Fine dissem cpy. — 1cm. Qtz veinlets 80% py — Low angle veinlets .5% sulphides

153.5–161': .04/7.51'

172.5–183.5: .595/11'

*

76.5 – 95

4.5	1.0	X	4.5 X .064	= .283
4.5	.9	X	5 X .072	= .360
2.7	.6	X	4.5 X .076	= .342
1.71	.38	X	4.5 X .088	= .396
13.41			18.5	1.381

.075/18.5' .72% Cu

WKC 90-1

DDH# WKC 90-6

Dip	-70°
Azimuth	360°
Elevation	20' above Wolf Lake.
Claim No.	
Core Size	BQ
Company	Flag Resources (1985) Limited.
Property	Wolf Lake Project - Camp Zone
Contractor	Triangle Diamond Drilling, Kirkland Lake, Ontario
Logged by	Frank P. Taglieri, P.Eng.
Depth	76.20m (250')
Co-ordinates	20mS; 123mW
Started	18 April 1990
Stopped	19 April 1990

NOTE: Drilled in feet converted to metric during logging.

0 - 0.61 CASING

0.61 - LORRAIN QUARTZITE (Locally Altered SPBX)

Pale grey-green
Alternating beds of fine and coarse grained quartzite
Occasional Sudbury Breccia fragmented band.
Local hematitic patches
Local pepper and banded hematitic staining.
Hematitic stained fractures
Fractured throughout.
Principal fractures from 35-55°
Occasional low angle fracture.

Specific mentions as noted:

3.61 – 76.20 **LORRAIN QUARTZITE** (locally altered SBx) – cont'd

061 –	7.62	Series of fractures @ 30° with faint limonitic staining
	9.14	10cm hematitic stained patch
	19.20	60cm zone with peppery limonitic staining
(SBx)	22.25	60cm zone with Sudbury Breccia fragments elongated at low angle to core
	22.71	30cm charcoal grey Sudbury Breccia fragment foliated @ 50°
	24.38	limonitic coated fractures @ 50°
(SBx)	25.91	30cm charcoal grey Sudbury Breccia band
26.37 –	28.96	Series of broad limonitic stained bands in coarse grained quartzite. Angular chert fragment in one band. limonitic stained fractures @ 45°±
38.10± –	42.67±	Intermittent series of hematitic stained patches — some associated with Sudbury Breccia fragments
(hs SBx)	42.67	Serated lath-like fragment of silicified glassy quartz with large angular black chert fragments.
42.67 –	65.53	30%± Sudbury Breccia fragments in coarse grained granular and fractured quartzite at low conical angles to core
SBx	59.44	50 cm fracture zone with limonitic staining. Broken Core.
65.53 –	70.10	Mechanically Broken and Lost Core. Possible fracture zone.
(K)		Weakly kaolinitic, faint hematitic staining, limonitic coated fractures. Random Sudbury Breccia fragment.

WHC906-4

DDA# WHC90-6

Sampling and Assaying

Sample No.	From	To	Core Length m	Core Length ft	ppb Au	ppm Cu
WHC906-1	741 22.56	22.86	.30	1	187	

WLC90-7-1/2

DDH# WLC90-7

Dip	-70°
Co-ordinates	(From # WL 83-3?) 19.6 m S, 1.8 m E.
Elevation	20'± above Wolf Lake
Azimuth	±060°
Core Size	BQ.
Dip Tests	—
Company	Flag Resources (1985) Limited
Property	Wolf Lake Project, Carey Zone
Contractor	Trianglr Diamond Drilling, Lively, Ontario
Logged by	Frank P. Tagliamonte, P.Eng.
Depth	76.20 m (250')
Started	19 April 1990
Stopped	20 April 1990

NOTE. Drilled in feet. Logged in metres.

0-0.61 — 2' — CASING

0.61- LORRAIN QUARTZITE.

	Grey-green pseudogranular locally. Random .5cm quartz grains. Local Variations as noted.
13.11 - 16.15 (FRN)	Limonitic stained coarse granular quartzite. Fractured ~~Stronghood~~. Principal fractures @ 35°.
16.15 - 17.98 SBx	Prominant Sudbury Breccia Zone. Minor hematitic staining.
19.20'	60cm limonitic stained zone. Fracturing @ 40 & 70°.
22.86	40cm Hematitic stained zone. 1cm vuggy quartz veinlet @ 15°± to core axis with beads of pyrite.
34.29	Limonitic stained slip @ 30°.

WL C907-2

061 – 76.20	LORRAIN QUARTZITE – contd –	
	17.98 – 76.20	Random Sudbury Breccia bands and fragments throughout.
	21.36	30 cm zone of fracturing @ 40°
	21.64	Limonitic stained slip @ 30°
	23.16	120 cm zone of Hematitic staining and limonitic staining in Sudbury Breccia fragments and Lorrain Quartzite.
	59.44	Slips with slickensides @ 35°
	59.44 – 61.87	Patches of Hematitic staining and limonitic staining
	65.53± – 71.63	Random thin ribbons of Sudbury Breccia. Weakly kaolinitic – pitted and porous core surfaces. Fractured.
	71.63 – 76.20	Broad zones of Hematitic staining
76.20 250'	END OF HOLE	

Casing in hole.

Frank R. Sorrentino, P.Eng.
Evans Mines Ltd.
25 April 1990
Sudbury.

DDH#WLC90-7

WLC90Z-3

Sampling and Assaying

Sample No	From	To	Core Length m	Core Length ft	ppb Au	ppm Cu
WLC90Z-1	@ 22.8		0.30	1	.052	

WLC 90-7 (Deepened from 250'-350' or 76.2-106.68m on June 27-28/90 at request of M.C.M.

76.[illegible] - 86.26 m	LORRAIN FORMATION - QUARTZITE, (ALTERED)
	Greenish-grey, medium to coarse grained (locally pebbly) occasional weak bedding @ 25-40° to C.A.; 50%(±) weak to moderate patchy, perpasive to disseminated hematization (often pitted) as well as some hematitic fractures & slips @ 20-30°, 40-45° to C.A.; some limonitic fractures (staining) @ 20-25° to C.A.; Generally fractured, with fractures +/- slips @ 15-20°, 25-30°, 35-40°, 45-50° to C.A. (2-4/30 cm); rock occasionally weakly kaolinitic
76.20 - 76.5 m	Weakly Kaolinitic + limonitic spotting +/- pits, limonitic stained slips @ 15-20° to C.A.
77.42 - 81.69	Moderately hematized
	- 80.25 - 80.5 m - several shears @ 35-45° to C.A., some Broken Core
82.60 - 85.65	Moderately hematized
86.26 - 92.23	LORRAIN FORMATION - QUARTZITE +/- SUDBURY TYPE BRECCIA +/- HEMATITE ALTERATION +/- KAOLINITE ALTERATION
	Greenish-grey, medium to coarse grained quartzite; occasional greenish-grey Sudbury Breccia vein
86.56 - 87.39	Fractures +/- slips (+/- limonitic stain) @ 15-25°, 40°-45°, 50° to C.A. (4-5/30 cm); locally broken core
87.48 - 87.60	Sudbury Breccia vein @ 70°(±) to C.A; minor pitted hematitic dissemination in & near vein
89.31 - 91.01	weakly Kaolinitic (+/-pitting) quartzite; possible local bedding @ 15° to C.A. near 90.22 m
	- 89.43 - 89.73m - Sudbury Breccia vein (fine pits); upper contact @ 75° to C.A. (limonitic fracture) & lower contact @ 70° to C.A; quartzite host rock may be more siliceous, weakly pinkish (hematitic?) near Breccia
	- 91.01 - 91.32 m - weak patchy & disseminated (pitting) hematization
91.44 - 91.74	Light greenish epidotization (?) with sloped upper contact @ 25° to C.A.
	91.59 m - sericitic slip @ 25° to C.A.
	91.59 - 91.74m - Some Broken Core +/- Kaolinization
	91.74 m - Kaolinitic seam @ 50° to C.A.
91.74 - 92.08	Bleaching; Kaolinized quartzite, pitted local weak disseminated hematite
92.08 - 92.23	Bands of limonitic staining @ 35-45° & one limonitic fracture @ 45° to C.A.

GEOLOGICAL ENGINEERING SERVICES
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NORTH BAY, ONTARIO P1A 3N1

[redacted]23 - 106.68m	LORRAIN FORMATION - QUARTZITE Greenish-grey & light-grey (often with feint pinkish hue) medium to coarse grained (local pebbles); some weak bedding @ 40-45°, 60-65° to CA. mainly represented by a few scattered dark grey non-magnetic, heavy mineral laminations in the light grey quartzite
95.58 m	Limonitic slip @ 45° to CA.
96.01	Limonitic fracture @ 30° to C.A.; local bleaching & weak pitting in vicinity; possibly weak kaolinitic alteration
97.23	Limonitic fracture @ 28° to C.A.
97.23 - 97.46	Weak hematitic alteration
97.46	Slip @ 40° to C.A. - limonitic, sericitic? seam
99.36	2 mm wide quartz veinlet @ 78° to CA.
105.15 - 105.75 (?)	Sericitic? or Pyrdote? seams @ 40-50° to C.A., <1-2 mm widths
106.68m (350')	END OF HOLE

Frank H. Tosso, B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC 908-1

DDH # WLC 90-8

DIP	-90°
Coordinates	3mS; 15.5mW
Elevation	25m± above Wolf Lake.
Core Size	BQ
Company	[illegible] Resources (1985) Limited
Property	Wolf Lake Project, Camp Zone
Contractor	Triangle Diamond Drilling, Kirkland, Ontario
Logged by	Frank P. Taglieri ate, P.Eng.
Started	24 April 1990.
Stopped	25 April 1990
Claim No	
Azimuth	
Depth	45.72m (155')

0 - 0.45 CASING

0.44 - 20.57 KORRAIN QUARTZITE. Altered - Kaolinitic

Grey-green generally fine grained granular with alternating coarser grained beds, - grains up to 3mm±.

Random series of milk white quartz veinlets from thread like up to .5cm at steep angle to core 70-85° ±.

Random porous kaolinitic fragment.

Occasional small angular black chert fragment in coarser quartzite beds.

Local specific variations as noted.

18.90 1cm± limonitic stained kaolinitic zone

19.81 7cm fracture zone

WLC 408-2

2.14 - 20.57 **LORRAIN QUARTZITE - Altered, Kaolinitic - cont'd -**

7.01 55cm with 2 kaolinitic bands, one with 2mm black quartz veinlets with pyrite and black earth material.

15.24 2mm quartz veinlet with grains of chalcopyrite at 85° to cae.

67.5' - 79'
20.57-27.08
3.51
(11.5') **QUARTZ VEINLET and Breccia Zone**

Mixture of kaolinitic quartzite, Sudbury Breccia and Lorrain quartzite fragments. Locally laced with 2mm± quartz veinlets, some vuggy, containing chalcopyrite, chalcocite and pyrite grains. Less than .5% sulphides.

Local variations as noted.

20.57 70cm zone with random 1mm± quartz veinlets cutting kaolinitic quartzite. Hematitic stained zone at upper portion of zone.
No visible sulphides.

21.27 130 cm zone with mixture of kaolinitic quartzite and Sudbury Breccia fragments

(VG) (SBx) 22.25 Pin head bead of visible gold in a black and hematitic stained 1mm quartz thread at 85°+ to cae within Sudbury Breccia fragment

22.86 - 23.62 Disseminated beads of chalcopyrite in altered Lorrain Quartzite
(1.5') 1%+ dissem. cpy beads.

23.62 58 cm pink quartzite zone with 1mm quartz threads with minor pyrite, chalcopyrite and chalcocite.

WLC 908 - 3

21.08 - 32.92 **LORRAIN QUARTZITE:**

Generally as above
Vaguely bedded @ 48° ±

28.96 Series of limonitic coated slips @ 28°

30.48 30 cm zone with a series of glassy white quartz veinlets.
Sparse fine pyrite in some veinlets.

(108' - 118')
32.92 - 35.97 **QUARTZ VEIN NET and BRECCIA ZONE.**
3.05
10'

Random 1 cm ± low angle quartz veinlets and some quartz fragments intermixed with dark grey Sudbury Breccia and hematitic stained porous Kaolinitic quartzite fragments.
3% ± quartz
·10% - pyrite

33.22 1 cm quartz veinlet @ 20° with patches of fine granular pyrite at contacts in wall rock.

35.97 - 45.72 **LORRAIN QUARTZITE - Altered**
150'

Grey-green granular fine grained groundmass.
Local patchy hematitic staining
Weakly Kaolinitic - locally porous.
Fractured throughout.

41.15 Vuggy, hematitic stained quartz veinlet @ 20° localized in a 1m zone of hematitic stained Lorrain quartzite and Sudbury Breccia.

45.72 **END OF HOLE** casing in hole.
(150')

[signature] P.Eng. 25 April '90
Ariana Mines Ltd., Sudbury

DDH # WLC90-8 WLC908-1

Sampling and Assaying

Sample No	From	To	Core length mm	Core length ft.	ppb Au	ppm Cu
	62.5'					
WLC908-1	20.54	21.37	.80	2.5	.014	
-2	70	22.56	1.19	4	.10	
-3		29.08	1.52	5	.074	√130
		79'				
-4	@ 7.31		0.30	1	.082	
-5	32.92	34.14	1.22	4	.008	
-6		35.77	1.83	6	.028	

62.5 - 79'

.4 x .10 = .40

5 x .024 = .360

9 .760

.084 / 91

#12 @ 39-41 location
Drilling West @ -70°
150'
MCH 25 Apr. 90
2:00 PM

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO, P1A 3N1

DDH #: WLC 90-9 Deepened from 192'-264' (58.52 m - 80.47m) @ request of M.C.M.
- drilled on June 21/90

58.52 - 64.62m	LORRAIN FORMATION - ALTERED QUARTZITE	
	Greenish-grey; coarse to medium grained (locally pebbly); weakly to sometimes moderately Kaolinitic; parts hematitic, occasional Sudbury-type Breccia veining	
	58.52 - 60.65 m	Moderately Kaolinitic quartzite, often pitted; fractures (often limonitic stained) @ 40-45°, 50-55°, 70° ± 5-15° to C.A. (mainly 50-70°) 4-8/30 cm
	- 58.98 - 59.13 m	- greenish-grey Sudbury Breccia vein; contacts @ 35° & 47° to C.A.
	61.66 - 64.01	30% purplish-red hematitic +/- reddish brown limonitic alteration patches +/- Kaolinite; limonitic stained fractures @ 25-35°, 15-20°, 0-5°, 55-65° (mainly 15-35°) to C.A.; 2-4/30 cm
	- 63.21 m	- 5-8 cm Sudbury Breccia vein with contacts @ 40° & 60° to C.A.
	64.01 - 64.62	Moderately Kaolinitic; limonite stained fractures @ 35°, 50-60° to C.A.
64.62 - 80.16	LORRAIN FORMATION - QUARTZITE + SUDBURY-TYPE BRECCIA	
	Greenish-grey; medium to coarse grained (locally pebbly); average of 10%(+) greenish-grey, Sudbury Breccia veining from about 67.39 - 78.70m	
	65.23 - 65.84	Weak to moderate limonitic alteration; several limonite stained fractures @ 35-40°, 50-55° to C.A.
	67.39 - 68.12	15% Sudbury Breccia veining (irregular); outer contacts @ 5-10° & 15° to C.A.
	68.12 - 70.71	Fracture zone (+/- light greenish ≤ 1mm wide, sericitic? shears); some fractures with Kaolinite &/or limonitic staining; @ 15°, 20-25°, 30-35°, 45-50° to C.A.; 4-6/30 cm
	70.71 - 71.02 +/-	Broken core, fractures @ 0-15°? +/- limonite stain
	71.02 - 71.32	Sudbury Breccia vein; contacts in broken core, lower contact @ about 40°(?) to C.A.
	71.32 - 75.13	Zones of Sudbury Breccia veining in quartzite with numerous anastamosing, light greenish sericitic(?) fracture fillings & shears from hairline to 2 mm widths @ 0-70° to C.A.
	- 72.48 m	- Sudbury Breccia veined @ 40° to C.A.

WLC 90-9 (Deepened) ctd,

–	72.66 - 73.15 m - Sudbury Breccia Veining @ sub-parallel to 10° to C.A.
75.13 - 75.74 m	30% Sudbury Breccia veining with outer contacts @ 35° & 25° to C.A.
75.96	Sudbury Breccia veinlets @ 60-70° over 3 cm.
76.20 - 76.81	Fracture zone; fractures @ 15-20°, 60-70° & 35° to C.A.; 6/30 cm
77.11 +/-	Two pebbles < 1 cm size of red jasper & dark grey chert
77.27 - 77.79	Sudbury Breccia; contacts @ 75° & 25° to C.A.
78.42 - 78.70	Sudbury Breccia veining (15-20%), outer contacts @ 50° & 65° to C.A.
78.94	2-3 cm wide shearing @ 35° to C.A. (Sudbury Breccia?)
80.47 m (264')	END OF HOLE

Frank H. Tocso B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC90 9 - I

DDH #	WLC90-9
DIP	-90°
Co-ordinates	(#28) 5.5 m N; 6.1 m E
Elevation	45' ± above Wolf Lake
Azimuth	–
Dip Test	
Core Size	BQ
Claim No.	
Company	FLAG RESOURCES (1985) LIMITED
Property	Wolf Lake Project - Camp Site Zone
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged By	Frank P. Taglieamonte, P. Eng.
Depth	182'
Started	April 1990
Stopped	April 1990

0 - 0.61	CASING	
0.61 - 19.20	LORRAIN	QUARTZITE
		Gray-Green granular
		Generally medium grained granular.
		Vaguely bedded @ 50°
		Local faint hematitic staining
		Local pitted core and vague kaolinitic alteration
4.27 - 7.62		Random series of milk white quartz veinlets from 1mm - 1cm generally @ 35°.
		(These veinlets usually present adjacent to mineralized zones)).
		Series of limonitic stained fractures @ 10° ±

11.20 - 58.52 LORRAIN	QUARTZITE. Altered. (Sudbury Breccia)
	Grey-green granular quartzite, groundmass.
	Coarse and finer granular beds.
	Sudbury Breccia fragments and bands throughout. - 20%± Sudbury Breccia
	limonitic stained fractures
	Prominent features as noted.
25.91	91 cm zone of broken and lost core. limonitic stained fragments.
32.00 - 41.76±	Weakly kaolinitic ~~throughout~~ Principal fractures @ 45°±
31.62	54 cm zone containing series of 1mm - 5mm quartz veinlets @ 65°. (These veinlets typically occur adjacent to some mineralized zones.)
44.20	limonitic stained slip @ 20°
47.24	160 cm zone with patchy faint limonitic staining
48.77 - 52.43	Large Sudbury Breccia Fragment - limonitic stained fractures throughout. Principal fractures @ 75°± Random fracture @ 25°.
52.43 - 58.52	Weakly kaolinitic fine and coarser grained quartzite limonitic stained fractures.
58.52 END OF	HOLE.

Casing in Hole

Frank P. Santaguida(?), P.Eng.

1 May 1990

Erana Mines Ltd.

DDH WLC90-9

Sampling and Assaying

Sample No	From	To	Core Length m	ft	ppb Au	ppm Cu
WLC909-1	4999.	5151	152	5'	✓	.004

WC90-10 - 1

DDH# WLC90-10
Dip -90
Co-ordinates (from DDH# WL83-23) 5.5mS, 6.3mE.
Elevation 20'± above Wolf lake.
Claim No.
Azimuth -0-
Core Size BQ.
Company FALCONBRIDGE RESOURCES (1985) LIMITED
PROPERTY WOLF LAKE PROJECT. Camp Site Zone
Contractor Triangle Diamond Drilling, Lively, Ontario
Logged by Frank P. Taglieamonte, P.Eng.
Depth 53.54m (175')
Dip tests
Started 27 April 1990
Stopped 28 April 1990

0 - 0.61 CASING.

0.61 - 53.34 LORRAINE QUARTZITE. Altered. Sudbury breccia.
Grey-green generally medium grained granular.
local finer grained bands/beds.
Random Sudbury Breccia fragments.
Fracturing @ 50°± and 20°±.
Weakly foliated ? bedded @ 50° ?

Variations as noted.

34.38 2cm-Unit light pale pink laminated leucocratic fragment.

40.16± - 40.54± 10%+ Sudbury breccia fragments and bands in coarse grained leucocratic (Sericitized) quartzite. ((Feldspar grains take on a faint yellow tinge)).

WC 90-10-2

…41-52.34 LORRAINE QUARTZITE Altered (Sudbury Breccia) - contd.

39.48	1cm non shattered ropolite fragment.
40.59± - 48.77±	Fracture Zone.
	Pitted, weakly kaolinitic, limonitic quartzite fracture zone.
	Principal fractures from 55-75°.
43.89	56cm limonitic stained fracture zone.
45.42	56±cm " " " "
47.40	1m limonitic stained zone.
	Sharp slip contacts @ 55° and 25°
48.46 - 52.43	Kaolinitic and pitted quartzite with at least one Sudbury breccia fragment.
	Fractures coated with deep limonitic staining.
	Fracturing generally @ 25°
51.05	5 mm quartz veinlet @ 30° with deep limonitic staining on slip contact
52.43	44 cm fragment with vuggy 1-2mm quartz stringer along core.
	Weakly kaolinitic.
	Pitted core surfaces.
	Slip contacts with slickensides @ 25 and 35°.
52.34 175'	END OF HOLE

J.P. Vanlamonte, P.Eng.
30 April 1990.
Erana Mines, Sudbury Ontario.

Sampling and Assaying

Sample No	From	To	Core Length m	ft	ppb. Au
WLC9010-1	52.43	52.93	.50	1.64	<.008

WLC 90-10, ctd.

May 10/90 Day Shift:
(Hole deepened from 175' to 225' @ request of M.C.H.)

(225') 53.34 – 68.58 m	GREEN LORRAIN FORMATION Light green – greenish-grey quartzite; medium to coarse grained; locally pebbly; local areas with Kaolinization; local areas with patchy disseminated hematization; local limonitic staining; few quartz veinlets; fractures @ 10-25°; 40-60°, 70-80° to C.A.
53.34 – 53.65 m	3 mm quartz (± chlorite) veinlet @ sub-parallel to C.A.; local disseminated Py in & near veinlet; < 1% Py
54.2 – 54.55	Moderate disseminated hematization; minor disseminated Py
54.10 – 57.10	Weak Kaolinization; fractures 6-9/50cm some with limonitic staining; local patchy limonitic staining also
56.82	Mud seam (< 1 cm wide) @ 40° to CA.
57.06	" " (2 mm wide) @ 30° to C.A.
57.89 – 58.15 m	Four, 3mm-1cm wide, milky quartz veinlets @ 80°, 60-65° to CA; two are hematitic stained; some patchy limonitic staining in vicinity; veinlets barren of sulfide & cross-cut beds @ 35°
61.09 – 61.12	Two intersecting, sub-parallel milky quartz veinlets 2 mm – 1 cm wide @ 50° & 70° to CA.; rocks locally weakly kaolinitic in vicinity
66.3	Some bedding @ 40° to C.A.
68.58m (225')	END OF HOLE

F.D.T.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WC90 11 - I

DDH #	WLC 90-11
DIP	-70°
Co-ordinates	(from # WLC 90-?) 13m S, 65m E
Elevation	40'± above Wolf Lake
Claim No.	
Azimuth	070°
Core Size	EQ
Company	FLAG RESOURCES (1985) LIMITED
Property	Wolf Lake Project, Camp Site Zone
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged By	Frank P. Tagliamonte, P.Eng
Depth	~~466.3m (1534)~~ 59.4 (195 feet)
Dip Tests	
Started	April 1990
Stopped	April 1990

0 - 0.61 (2') CASING

0.61 - 23.47 LORRAINE QUARTZITE

Grey-green alternating fine and coarse grained bed.
Random rounded quartz pebbles up to 2cm.
Rare angular small .5cm± jaspelite or chert fragment.
Vague bedding @ 48°±.

23.47 - 31.70 LORRAIN QUARTZITE: Altered (Sudbury Breccia)

Grey-green fine and coarse granular quartzite.
Random small and large Sudbury breccia fragments and bands.

30.18 - 31.70 Series of prominently bedded? foliated Sudbury Breccia bands — @ 05° and 65°.

[illegible]

31.70 – 40.54	LORRAIN QUARTZITE.
	Grey-green granular.
	Alternating fine and coarser beds.
	Occasional thinly bedded fine granular bed.
	Weakly kaolinitic and faint hematitic stained zones
34.90	2-3mm glassy grey qtz veinlets @ 20° to core.
	liberally mineralized with beads of pyrite.
	see page
37.19	Clean thinly bedded fine granular quartzite bed @ 40°
43.57 – 46.63	LORRAIN QUARTZITE. Variable.
	Fine and coarser grained granular quartzite bed as groundmass
	Random zones of limonitic staining
	Vague hematitic staining and occasional Sudbury Breccia fragment.
	local variations as noted.
40.54 – 46.63	Probable fracture zone.
	Pervasive limonitic staining - @ vertical axis.

WLC90 11 - 3

WLC 90 - 11

34.90 / ~~114.5~~ — 2-3mm Glassy-grey qtz veinlet at 20° to core. Liberally mineralized with beads of pyrite

35.05 - 35.51 / ~~115~~ ~~116.5~~ — Slip @ 45° - contact
Coarse grained sucrosized quartzite
3mm vuggy quartz veinlet @ 10°± to core - liberally mineralized with beads of pyrite
V. Fine dissem. pyrite in pitted coarse grained quartzite
.5%+ disseminated pyrite

35.51 - 35.97 / ~~116.5~~ - 118 — Pitted crs-grnd quartzite
Fine dissem py.

35.97 - 37.19 / ~~118~~ ~~122~~ — Hematitic stained patches in coarse grained weakly kaolinitic quartzite

37.19 / ~~122~~ — Gouge along slip @ 40°.

~~(1)~~	~~113.5 - 114.5~~	~~1~~	~~.022~~	~~.022~~	~~.149~~ / ~~4.5'~~
~~(2)~~	~~114.5 - 116.5~~	~~2~~	~~.304~~	~~.608~~	
~~(3)~~	~~116.5 - 118~~	~~1.5~~	~~.028~~	~~.042~~	
~~(4)~~	~~118 - 122~~	~~4~~	~~TR~~	~~.672~~	
	~~8.5~~				

40.54 - 46.63	LORRAIN	QUARTZITE - Variable ---cont'd --
	40.54 - 46.63	-- cont'd -- Principal fractures @ 50°. Sharp slip contact @ 45°±.
46.63 - 59.44	LORRAIN	QUARTZITE - altered (Sudbury Breccia) Grey-green granular quartzite groundmass. Random series of Sudbury Breccia fragments. 15%+ Sudbury Breccia fragments. Patchy areas of faint and more obvious hematitic staining. 5%+ hematitic staining. Fractured throughout. Principal fractures @ 50°
	46.63	70 cm zone with hematitic stained "swirly" Sudbury Breccia localized between 2 prominently limonitic stained fractures @ 45°
59.44 46.63 (153') (194.76)	END OF HOLE.	Casing in hole.

A Vandermonte, P.Eng
1 May 1990

Frana Mines, Sudbury Ont.

WLC9011-5

DDH WLC90-11
Sampling and assaying

Sample No	From	To	Core Length m	Core Length ft.	ppm Au	ppm Cu
WLC9011-1	34.59	34.90	.31	1	.022	
-2		35.51	.61	2	.368	
-3		35.97	.46	1.5	.024	
-4		37.19	1.22	4	Trace	
-5	46.63	47.33	0.70	2.3'	Trace	
	113.5' - 118		.149	4.52		

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DD[redacted] WLC 90-12 (Deepened from 540' - 700' or 164.59 - 213.36 m on July 3 - 5/90. @ request of M.C.M.)

164.59 - 173.74m (544' - 570')	LORRAIN FORMATION - QUARTZITE (Bedded)
	Mixture of light greenish-grey to light grey (with feint pinkish hue); medium to coarse grained; some bedding @ 70-80° to C.A.; occasional pebble
	23.01 m Two fractures @ 20-25° to C.A. with weak hematitic stain
173.74 - 213.36m (570 - 700')	LORRAIN FORMATION - QUARTZITE (Bedded)
	Light to medium grey with feint to weak pinkish hue mixed with 20%(+/-) light to medium greenish-grey quartzite 6 - 60 cm long; rocks are medium to coarse grained; locally 'pebbly'; scattered dark grey, often magnetic, heavy mineral beds or laminations; 1 - 5 mm wide @ 50 - 85° to C.A., but mainly 65 - 75° to C.A.; other bedding @ 70 - 80° mainly, few quartz +/- hematite veinlets (barren of sulphide)
176.48 - 178.46m	2 - 3% heavy mineral beds in pinkish-grey quartzite
179.53 - 180.29	2 - 3% " " " " " " " "
180.44 - 184.62	Several hematitic +/- carbonate fractures @ 0-10°, 15-20° to C.A.; quartz - hematite veinlet @ 75° +/- @ 184.77 m (B.C.)
186.69 - 188.15	Several hematitic fractures @ 0 - 10° to C.A., one with minor Py disseminations near 187.15 m
188.82 - 189.13	1-2 mm wide reddish quartz veinlet @ 5-10° to C.A.
189.74 - 190.9	Five quartz veinlets 0.2 - 1 cm wide mainly @ 60-65°, 50°, 55° to C.A., most in pinkish-grey quartzite
	- 189.74 - 189.8 m - 10% quartz - hematite veinlets 0.2 - 2 cm wide, brecciating chloritized, soft host rock over 10 cm.
	- 190.74 m - speck of Cp in 2-3 mm quartz veinlets @ 50° to C.A.
191.57 - 191.95	Three quartz - hematite veinlets @ 50° & 55-60° to C.A.; 0.2 - 1 cm wide, in greenish-grey quartzite
194.03 - 194.74	Four, quartz - carbonate - hematite veinlets, 0.5 - 2 cm wide @ 60-70° to C.A. in greenish-grey quartzite
199.34 - 199.95 (+/-)	Fracture with hematitic alteration @ 0-5° to C.A.
200.71	2 mm wide, quartz - hematite veinlet @ 70° to C.A.
208.79 - 210.92	Bedding (+/- heavy mineral laminations) @ 65-75° to C.A. 0.5 - 8 cm thick
	- 208.88 - 209.06 m - Two, 3 mm wide quartz veinlets @ 75° to C.A. sub-parallel to bedding
	- 210.31 - 210.55 m - moderate hematitic alteration @ 65° C.A.

	211.84 - 213.36m	Greenish gray quartzite, bedding @ 65° to C.A - 212.72m - carbonate on fracture @ 25° to C.A. plus some hematite - 212.29m - slip @ 15° to C.A.
213.36m (700')	END OF	HOLE

Frank H. Tocco, B.Sc.

GEOLOGICAL ENGINEERING SERVICES
20 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DDH# WLC90-12
DIP | -90°
Co-ordinates | (28) 46.5m S, 32.5 m E
Elevation | (?) shore Wolf Lake
Claim No |
Core Size | BQ
Azimuth | -0-
Company | Flag Resources (1985) Limited
Property | Wolf Lake Project - Camp Site Zone # 1 Showing
Contractor | Triangle Diamond Drilling, Lively, Ontario
Logged By | Frank P. Eglesmarde, P. Keny
Depth | 45.72 (250') 76.20
Dip Tests |
Started | 28 April 1990
Stopped | 28 April 1990

0 - 1.22 (4') CASING.

1.22 - 3.81 LORRAINE QUARTZITE --- altered (Sudbury breccia)
Gray-Green pseudogranular.
Sudbury breccia fragments.
Fracturing principally @ 35°±

1.52 Pink tinted quartzite fragment @ 15°±.
Sharp lower contact @ 70° along a slip

3.81 - 8.99 MINERALIZED ZONE.
Mixture of porous kaolinitic and vuggy milk white quartz fragments as well as fragments of brick red altered quartzite laced with milk white quartz veinlets.
20%± milk white quartz with blebs of chalcopyrite, minor pyrite and earthy black

81 - 8.99
3.18m
(17')

MINERALIZED ZONE - - - contd - -

chalcocite.
2%± sulphides in quartz.

Mechanically broken and lost core
Approximately 75%± recovery.

Local Variations as noted

3.81 - 5.33	65%± hematite stained porous kaolinitic quartzite
5.33 - 5.94 (3%- sulphides	80%+ vuggy milk white quartz with pitchy chalcopyrite, minor pyrite and earthy chalcocite. 3%± sulphides
5.94 - 7.32 (1%+ sulphides	Altered brecciated quartzite with 1.5cm± quartz stringer stockwork containing minor pyrite patches and lead. Lower portion of zone broken and mechanically fragmented 2 1%± sulphides
7.32	Possible open cavity or fault. 15.24cm of core - cobbles and quartzite.
7.32 - 8.08 (.5%cpy)	Mixture of Purple tinted Cherty fragments and Rubbly Breccia Dendritic patches of chalcopyrite in some Purple Cherty fragments. .5% chalcopyrite
8.08 - 8.99 (.5%py)	Altered brecciated quartzite cut by quartz stringers. 20% quartz stringers 3%+ pyrite patches in quartz stringers.

Sharp slip contact @ 50°

9.99 - 45.72 LORRAIN QUARTZITE. Altered. (Sudbury Breccia) - contd.	
	Grey. greasy granular.
	Random Sudbury Breccia fragments.
	Patchy areas of limonitic staining
	Locally pitted.
	Locally with patchy hematitic alteration
	Principal fractures @ 40°
	Local variations as noted.
13.11	15cm band of limonitic staining associated with slip @ 40°
14.02	61 cm zone of limonitic staining
17.43 - 19.87	Fracture Zone.
	Pitted weakly kaolinitic coarse grained quartzite.
	Fractures @ 40°
	19 fractures ±/m.
20.42	1m quartz veinlet @ 60°.
21.64	1m " " @ 60°
	(These veinlets usually adjacent to mineralized zones)
24.69± - 29.57	Pitted kaolinitic core with faint hematitic staining.
	Limonitic stained fractures.
	Cross-fractured @ 35 and 25°.
26.52	45cm zone of fracturing - open fractures with limonitic staining - fracturing @ 65° ±.
29.57 - 39.78	25% ± patchy hematitic and limonitic staining
	Pitted core surfaces
	Local Kaolinitic patches
39.78 - 40.54	Pitted kaolinitic and hematitic fracture zone
	Fractures @ 70° ±
45.72 150'	END OF HOLE. Casing in hole. 30 April 1990 [signature], P.Eng. Sudbury

WLC90-12 - 4

45.72-76.20 LORRAIN QUARTZITE (Altered) Sudbury Breccia - contd.

NOTE: Hole deepened from 45.72 - 76.20 during 30 April 1990

45.72 - 76.20	Sudbury Breccia feature disappears within this section and variable width thinly bedded fine granular quartzite beds appear. Precise footage not noted - possibly below the fracture zone @ 47.43 m. Certain thin black thread-like bands in local patterns zone @ 70°±. Local variations as noted.
45.72 - 47.24	80% patchy hematitic staining in quartzite
47.24 - 50.29	Pitted kaolinitic quartzite. Low angle fractures @ 10°, high angle fractures @ 70°±
50.44 - 52.73	Bedded Quartzite - fine grained thinly bedded quartzite vaguely bedded @ 85°. Slips @ 40°
52.73 - 56.08	Coarse grained quartzite. Limonitic stained bands @ 54.56 and 56.08.
56.08 - 62.79	Intermittent bands of weakly hematitic stained quartzite.
57.91	65 cm weakly kaolinitic limonitic stained fracture zone - fracturing @ 40 and 60°.
60.66 - 61.86	Pitted, kaolinitic hematitic stained zone.
67.66± - 76.20	Very vaguely granular - typical granular feature of quartzite appears to be replaced by a vaguely granular silicified texture. Peppered throughout with pearly white feldspar? flakes. Random series of black hair-like threads generally @ 60°+. Most slips and weak foliation @ 60°
76.20	END OF HOLE. Casing in hole.

[signature], P.Eng.
1 May 1990. Erana Mines Sudbury

DDH# WLC 90-12

Sampling and Assaying

Sample No.	From	To	Core Length m	Ft	ppb Au	ppm Cu
WLC90-12-1	3.81 (12.5')	5.33	1.52	5'	.012	820
-2		5.94	0.61	2'	.172	4300
-3		7.32	1.38	4.5'	.018	
-4		8.08	0.76	2.5'	.020	
-5		8.99	0.91	3	.286	
-6	26.06	27.58	1.52	5	.002	
-7	39.78	40.54	0.762	1.5	TR	
-8	3.20	3.81	0.61	2'	.002	
-9	8.99	9.60	0.61	2'	Trace	
-10	60.66	61.88	1.22	4'	Trace	

17' .112/17' (samples -1 to -5); 29.5

DDH WLC90-12 deepened 100' 30 April 1990

45.72-76.20 LORRAIN QUARTZITE Altered (Sudbury Breccia) -- contd. (250.00)

29.57 - 76.20 as in 29.57-39.78 above. Intermittent bands of thinly bedded fine grained grey-green quartzite @ 35.24 original

47.27 - 50.29 Pitted kaolinitic core random series of low angle fractures @ 10°±

AVERAGE 12.5' - 29.5'

5 X .012 = .06
2 X .172 = .344
4.5 X .018 = .081
2.5 X .020 = .050
3 X .286 = .853

.112/17'

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

D.DH. # WLC 90-12, ctd.

Note: hole was deepened from 250'-540' (76.20-164.59m) during period from May 17-24/90

76.20-	LORRAIN FORMATION - QUARTZITE Light to medium greenish grey with 50% (+/-) pale pinkish-grey zones (≤ 1.5m long) & patchy gradational areas; quartzite is medium to coarse grained & locally pebbly (≤ 5mm); bedding is vague to more distinctive, thin (≤ 10cm) to medium to thick (≤ 1m); also generally scattered, thin, dark grey laminations (heavy mineral) 1-3 mm thick, sometimes containing Specular Hematite @ 60-70° to C.A.; local hematitic spotting plus some areas with more widespread hematization; occasional milky Quartz veinlets 2mm-2cm wide @ 45-65° to C.A.; fractures &/or slips (Sericitic +/- hematitic +/- carbonate films) @ 15-25°, 30-35°, 40-50° & 60-70° to C.A., often 1-2/0.3-0.6m rocks locally kaolinitic
76.2-76.7m	10 dark grey, Specular hematite (?)-bearing laminations @ 55-60° to C.A. in pale pinkish grey quartzite
79.25	Several slips @ 35-40°, 50° to C.A.; one with quartz gash @ 35° to C.A.
80.16	Minor Py on fracture @ 70° to C.A.
80.77-81.53	Thin beds (2-8cm) @ 60° to C.A. in greenish grey medium to coarse-grained quartzite
82.63-84.12	Slips & fractures @ 20°, 30-35°, 40-45° & 65° to C.A. (2-4/30cm) in greenish to pinkish-grey quartzite; local rusty staining
84.73-85.34	Several dark grey lamations with Specular hematite @ 55-66° to C.A.; minor disseminated Specular hematite
85.92-86.17	Slip @ 50° to C.A. & sericitic threads @ 60° to C.A.
86.56	Dark grey laminations @ 70° to C.A.
89.15	Slip @ 10° to C.A.
89.92-91.9 (+/-)	Greenish grey quartzite with dark reddish to pinkish Hematitic spotting & more pervasive patchy bands; some hematitic spotting on slips & fractures @ 35°, 40°, 45°, 55°, 60° & 65° to C.A. (3-6/30cm)
	- 90.01-90.37m - Kaolinitic & pitted with vuggy 15mm wide Quartz +/- hematite veinlet @ 70-75° to C.A. in broken core @ 90.16m
	- 91.50m (+/-) - broken core; hematitic mud [illegible] 2mm Quartz veinlet @ 65° to C.A.

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

	- 91.68-91.81m - two cross-cutting limonitic slips @ 55° & 30-35° to C.A.
92.20-92.81 m.	Fractures & slips @ 50-55°, 65-70° & 15-25° to C.A. (4/30 cm)
93.18.	Several dark red hematitic fractures @ 50° to C.A. & one hematitic mud slip @ 70° to CA
94.49-94.88	Pink to reddish hematitic alteration spotting & two hematitic slips @ 40-45° to C.A. in pale pinkish-grey Quartzite with minor remnant grey-green band @ 45° to CA.
95.31	Mud slip @ 60° to C.A.
95.40-95.62	Three Quartz veinlets @ 60° (2-3 mm wide) & 45° & 65° (1-2 cm wide) & 55° (2-3 mm wide) to C.A.; larger veinlet is partly vuggy
95.71-96.29	Weak hematitic spotting
96.32	≤ 5 mm wide mud seam @ 60° to C.A.
105.46-106.98	Coarse grained to very coarse grained pale pinkish-grey quartzite; local hematitic spotting in upper 15 cm
108.3-109.12	Hematitic alteration fracture +/- carbonate +/- Py @ 0-2° to C.A. in greenish-grey quartzite
109.15-109.51	Three, 2-5 mm wide Quartz veinlets @ 25°, 20° & 40° to C.A.
110.49	Several dark grey laminations @ 60-65° to CA
111.19-111.40	Weakly hematitic, carbonate +/- Py fracture filling @ 0-2° to C.A. plus intersecting fracture @ 15° to C.A.
113.08-114.15	Pale pinkish-grey, coarse to very coarse grained
114.15-117.50	Pale pinkish-grey & greenish-grey, medium & coarse-grained (+- very coarse grained), thin to medium bedded (1cm-15cm) with scattered (2%) dark grey laminations; bedding @ 70-75° to C.A. (tops up-hole?)
118.11-118.26	Sericite-Epidote veinlets & threads @ 70° to CA
118.26-121.61	Mainly pinkish-grey, medium to coarse grained with a few scattered dark grey laminations @ 65-70° to C.A.
121.61-122.32	Greenish-grey; medium to coarse grained
	- 121.66m - Carbonate fracture filling @ 70° CA.
	- 121.66-121.83m - Epidote shears parallel to bedding @ 70° to C.A.
	- 121.92(+/-)m Contorted (slumped?) bedding laminations
	- 122.07m - Slips @ 70° to C.A.
	- 122.13m - Hematitic beds over 8 cm.
	- 122.28m - Kaolinitic slips @ 70° to CA.
	- 122.32m - ≤ 1.5 cm Quartz veinlet +/- hematite @ 70° to CA.; slip @ lower contact

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC 90-12, ctd.

122.34 - 122.53m (+/-)	Weakly hematitic, reddish, greenish-grey quartzite
122.53 - 128.78m	LORRAIN FORMATION - QUARTZITE . Mainly greenish-grey; medium to coarse grained, locally very coarse grained (< 4mm); thin to medium bedded (2 - 30 cm) @ 65 - 70° to C.A., locally 80° to C.A
126.72 m	Epidote shears + threads @ 80° to C.A. parallel to bedding
127.53 m	2 mm wide dark grey lamination @ 70° to C.A. with minor disseminated Py in + adjacent to it
128.78 - 138.23	LORRAIN FORMATION - QUARTZITE Mixture of pale pinkish to reddish (hematitic) - grey + greenish grey (50% +/-) quartzite; thin to medium bedded (1 - 25 cm); medium to coarse grained + locally very coarse grained; bedding @ 70-75° to C.A.
129.39	Slips (+/- Carbonate +/- sericite) @ 10-15° to C.A
130.03 - 130.21	Five fractures + slips @ 60°, 65°, 70° to C.A.
130.79 - 131.03	Finer grained, light greenish-grey bed @ 70-75° to C.A.
131.37	Kaolinitic fracture @ 70° to C.A.
131.46	Epidote shears + threads parallel to beds; + a 2mm wide Quartz veinlet @ 38° to C.A.
131.60	Kadinitic fracture @ 75° to C.A.
131.60 - 131.67	Hematitic spotting
131.90	Pink, hematized carbonate fracture filling @ 65° to C.A.
132.28 - 133.12	Reddish quartzite; 3-5% hematitic spotting
135.64 - 137.46	Scattered Epidote threads + 2 mm wide seams @ 60-65° to C.A., parallel to thin (< 1cm - 10cm) bedding in greenish-grey quartzite
138.07	2-5 mm wide Quartz veinlet @ 20° to C.A
138.23 - 145.7	LORRAIN FORMATION - QUARTZITE Greyish to pinkish to locally reddish-grey, mainly medium to coarse grained (locally very coarse grained pebbly); occasionally greenish-grey
138.23 - 138.68	Five slips @ 15° + 35° to C.A.
140.05 - 140.21	Slips + fractures @ 30-35° (+/- carbonate) + 60° C.
141.73	Carbonate fracture filling @ 15° to C.A.
142.34 - 145.7 (½)	Scattered, < 1% to locally 3% reddish Hematite spotting in pinkish-grey quartzite

WLC 90-12, ctd.

145 - 157.43	LORRAIN FORMATION - QUARTZITE light grey (+/- pale pinkish-grey) ± more locally greenish-grey; medium to coarse grained (locally very coarse + minor pebbles); occasional quartz veinlets, occasional dark grey lamination (+/- magnetite)
148.16 - 148.77	Three, 1-2 mm wide Quartz veinlets @ 50-55° to CA.
149.05	2 mm wide Quartz veinlet @ 60° to CA. ± local hematitic spotting
149.88 - 150.63	Fracture zone - fractures ± clips @ 40°, 55° ± 70° to C.A.; some with mud - 150.14 m - broken core; 3 mm wide Quartz veinlet partly hematitic ± vuggy @ 75° to C.A - 150.27 - 150.63 m - fractures @ sub-parallel to ± @ 35° to C.A.
151.18 - 151.48	Dark grey laminations with some magnetite in thin bedded (< 1cm - 8cm) medium to coarse grained, light grey + greenish grey; bedding @ 65 - 80° to C.A.
152.4 - 155.14	Occasional magnetite-bearing dark grey lamination in mainly light grey quartzite beds @ 65-80° to CA.
155.14 - 157.43	More greenish-grey quartzite with occasional dark grey lamination (+/- magnetit
157.43 - 164.59	LORRAIN FORMATION - QUARTZITE Mixture (50:50) of greenish-grey ± light grey, medium to coarse-grained, thin to medium bedded (1 cm - 30 cm) quartzite with 1-2% scattered dark grey laminations (≤ 3 mm wide, +/- magnetite) @ 55-75° to C.A. which locally appear to outline cross-bedding
162.46 - 162.53	Contorted, dark grey laminations @ 60°-15° to C.A.; cross-cut by fracture with carbonate film @ 15-20° to C.A.
164.59m (540')	END OF HOLE

F.H. Toews .B.Sc.

WHC90-13-1

DDH# WHC90-13
Dip -90°
Co-ordinates from 83-40 -- 24 meters due east
Elevation
Azimuth ~~0~~
Started 2 May 1990
Stopped 3 May 1990
Company PMAC RESOURCES (1985) LIMITED
Property Wolf Lake Project - Camp Site Zone
Contractor Triangle Diamond Drilling, Lively Ontario
Logged By Frank P. Taglieri, P.Eng.
Core Size BQ
Dip Test ~~0~~
Depth 45.72 m (150')
Claim No. S 47 2926

0 - 0.51 OVERBURDEN.
0.51 - LORRAIN QUARTZITE. Altered (Sudbury Breccia)

Grey green variably granular quartzite generally coarse grained with local coarser grained bands or clasts. Random Sudbury breccia bands, zones and fragments throughout. Locally kaolinized.
Fractured throughout.
Principal fractures @ 40° ±
Random small angular quartz fragments
Local and specific variations as noted

3.35 16 cm patch of faint hematitic staining
13.71 15 cm rusty milk white quartz vein @ 70°
16.76 60 cm ± fracture zone - fractures @ 47°.
15 fractures in 60 cm.
17.63 20 cm fine grained GREY bed @ 47° ±

45.72 LORRAIN QUARTZITE. Altered (Sudbury Breccia)

20.12	2.5 m weakly kaolinite zone
22.56	120 cm zone of Sudbury Breccia fragments generally @ 45° to core.
28.55	91 cm core length with thin band of Sudbury Breccia along core at low angle.
32.00	Limonite stained slip @ 20° with gouge. Open seams.
35.66 – 37.80	Pitted, kaolinite, faintly pink stained coarse grained quartzite with random Sudbury Breccia bands — resembling pillow selvedges. Sharp upper contact @ 70° & lower contact @ 30° +/?
38.10 – 42.06	Series of Sudbury Breccia fragments intermixed with pink tinted quartzite.
42.06 – 45.42	Essentially fine grained AAQ @ 80°?
45.42	31 cm faint hematite stained granular quartzite fragment

45.72 (150') END OF HOLE.

Casing in hole

A. Lasleonarte, P.Eng.
7 May 1990
Terra Minerals Limited
Sudbury, Ontario

Sampling and Assaying

Sample No.	From	To	Core length m	Core length ft	ppb. Au
WLC9013-1	117 35.66	37.80 124	2.14	7'	

WLC90-(14)-1

DDH# WLC90-14	
Dip	-90°
Co-ordinates	From #28 — 14.5 m N ; 58 m W
Elevation	-
Azimuth	-0-
Started	4 May 1990
Stopped	4 May 1990
Company	FLAG RESOURCES (1985) LIMITED.
Property	Wolf Lake Project - Camp Site Zone
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged by	Frank P. Tagliamonte, P.Eng.
Core Size	BQ.
Dip Test	-0-
Claim No	S 472926
Depth.	86.56 (284')

0 - 1.46 CASING.

1.46 - 86.56 LORRAIN QUARTZITE. altered, Sudbury Breccia

Predominantly grey-green ^(medium) fine and coarser granular quartzite.
Local areas of kaolinitic alteration.
Patchy areas of hematitic staining.
Random charcoal grey Sudbury Breccia fragments associated with hematitic staining.

Local variations as noted.

1.00± - 7.60± Intermittent narrow patches of hematitic staining - some intermixed with Sudbury breccia fragments.
Principal fractures @ 40°±

1.22 – 86.56 **LORRAIN QUARTZITE. altered (Sudbury Breccia)** —cont'd.

7.32	91cm zone with a 23cm charcoal grey Sudbury Breccia fragment core @ 35° bordered by deep hematitic stained quartzite Moderately pitted end surfaces. Chap slip contacts @ 40°±.
8.53	50cm zone containing a pale green Sudbury Breccia fragment bordered by pink hematitic and limonitic stained quartzite Fracturing @ 70° and 25°.
9.03	6cm hematitic stained patch adjacent to limonitic stained slip.
11.17	96cm limonitic and hematitic stained patch adjacent to slip with @ 5mm quartz veinlet @ 45°.
15.12	30cm Fracture Zone. Limonitic stained slips @ 35°±
28.65	Mead-like quartz filaments associated with a limonitic stained fracture zone. Fracturing @ 45° & 80°
29.11	limonitic stained fracture @ 30° Open fracture?
31.76	15cm quartz vein zone with one 6cm quartz vein @ 30°. Minor vugs in vein.
34.14	1.5cm quartz veinlet @ 50°.
35.05	6'+ GROUND CORE.
41.20	91cm pitted kaolinitic zone followed by 1.2m coarse granular quartzite
46.63± – 70.10±	Vaguely defined alternating fine and coarse grained zones. Random high angle quartz veinlets – some as noted.

122 - 86.56 LORRAIN QUARTZITE - Altered (Sudbury Breccia)

53.04	17 cm zone with quartz filaments @ 60°±
56.02	61 cm pitted kaolinitic zone.
58.83	3.5cm quartz stringer zone @ 70°±.
63.96	46 cm zone with series of quartz veinlets @ 75°±.
64.96	91 cm weakly kaolinitic coarse grained quartzite
68.58	1.22 m zone of mechanically broken core. 50%± recovery.
70.10	33cm Mechanically Broken charcoal black finely pitted, hematitic stained Sudbury Breccia fragment. Sharp contacts @ 45°. Fracturing @ 80°±.
71.02	5cm hematitic stained quartzite
71.93	20 cm zone with hematitic stained fractures from 40-45°
73.15 - 75.13	Intensely kaolinitic, weathered, pitted quartzite, Sudbury Breccia fragment at upper contact @ 10° to core axis containing minor very fine pyrite.
K F Zone 1.98m 6.51	Kaolinitic zone laced with fine quartz filaments. Fractured throughout at 45 and 70° Sharp contacts.
75.13 - 86.56	Fine grained to amorphous quartzite with patchy areas of pitted hematitic staining. 30%± hematitic staining. Principal fracturing @ 13°. Random low angle fractures @ 30°-
82.30	98 cm hematitic stained charcoal black Sudbury Breccia fragment. Sharp contacts @ 40°±. Internal fractures @ 80°.

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122-86.56 LORRAIN QUARTZITE - Altered (Sudbury Breccia)

86.56 END OF HOLE
(284')

Frank P. Lamontagne, P. Eng
8 May 1990
Inco Mines Limited
Sudbury Ontario

WKC90-14-5

DDH# WKC90-14
Sampling and Assaying

Sample No.	From	To	Core length m	Core length ft.	ppb Au
WKC9014-1	7.32	8.23	.91	3	.008
-2		10.06	1.83	6	Tr
-3	@ 71.10		0.30	1'	.004
-4	73.15	75.13	1.98	6.5'	.008
-5	81.99	82.44	0.45	1.5'	.002

NORTH BAY, ONTARIO P1A 3N1

DDH #: WLC 90-14 Deepened from 284' - 345' (86.56 - 105.16m) @ request of M.G. - drilled June 22/90

86.56 - 92.20m	LORRAIN FORMATION - ALTERED QUARTZITE Greenish-grey, medium to coarse grained, locally weakly to moderately Kaolinitic; 2-50% (average 30%) weak to locally strong hematization (purplish to reddish) as spots, patches (some banding) & fracture filling &/or veinlets; minor Sudbury Breccia veinlets
86.56 - 87.02 m	2% hematatic veinlets/fracture fillings @ 25°, 15° to C.A.
87.02 - 88.39	50% moderate to strong patchy to banded pervasive & fracture fillings/veinlets hematite alteration; some bands @ 40-45° to C.A.; some hematite fracture fillings/veinlets @ 40°, 50°, 65° to C.A.; lower contact @ about 35-40° C.A.
88.39 - 89.85	Weakly to moderately Kaolinitic (some pitting); occasional hematitic patch & band (@ 70° to C.A.); fractures (+/- weak limonitic stain) @ 25°, 35-40°, 65° & 75° to C.A. (mainly 35-40° & 75°); 6/30 cm
89.85 - 92.20	Moderate to weak patchy pervasive to disseminated hematization (+/- pitting) & fracture fillings or veinlets @ 25-30°, 35-40°, 50-55° & 60° to C.A.; hematitc alteration decreases down-hole - 90.22 m - 2 mm wide Quartz (hematitic) veinlet @ 70° to C.A. - 90.98 - 91.29 m - 50% irregular Sudbury Breccia veinlets @ 0-30° (+/-) to C.A. - 92.20 m - several white quartz veinlets 1-2 mm wide @ 35°, 70°, one vuggy + hematite coating @ 20° to CA.
92.20 - 105.16	LORRAIN FORMATION - QUARTZITE Greenish-grey becoming mainly grey from about 95.4m medium to coarse grained; local Kaolinitic zone; minor Sudbury Breccia
92.58	Shearing over 3-5cm with contacts @ 35° & 50° C
93.12	Sudbury Breccia veinlets @ 50-10° to C.A. over 8 cm
93.27 - 94.33	Weak to moderate Kaolinization with minor weak Hematization & weak limonitic alteration; fractures (+/- limonite) @ 40-45°, 30° & 65° to C.A. (2-4/30 cm) - 93.87 - 94.2 m - pitted & more strongly Kaolinitic (+/- Limonitic stain) & a seam(?) @ 65° C.A. at 94.12 m

	94.33 - 95.10	Greenish-grey, possible weak bedding @ 65-70°
	95.10 - 105.16	Mainly grey (some greenish-grey) with some weak bedding @ 60-70° C.A.; 1% scattered dark grey, non-magnetic, 1-2 mm wide laminations (heavy minerals?) @ 50-55°, 60-65°, 70° to C.A.; occasional weak limonitic staining; rocks locally have a very faint pinkish hue occasionally
		- 97.84 - 98.15 m - 2% disseminated hematitic alteration
		- 101.68 m - 2 mm wide hematitic Quartz veinlet @ 70° to C.A. with a parallel Epidote seam (3 mm)
		- 103.11 - 103.42 m - Several epidote seams (1-2 mm) @ 55-65° to C.A.
105.16 m (345')	END OF HOLE	

Frank H. Todd B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DDH# WLC 90-15

DIP	
Co-ordinates	from #28 (115m. 61mE.)
Elevation	
Azimuth	
Started	5 May 1990
Stopped	6 May 1990
Company	FLAG RESOURCES (1985) LIMITED
Property	Wolf Lake Project - Camp Site Zone
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged By	Frank P. Tagliamonte, P.Eng
Core Size	BQ
Dip Tests	—
Claim No	S472928
Depth	76.2m (250')

0 - 0.2 CASING

0.2 - 76.2 LORRAIN QUARTZITE Altered (Sudbury Breccia)

Grey-green generally fine granular quartzite
Local coarser grained beds and fragments.
Local and random areas of Sudbury Breccia.
Locally hematitic stained - faint
Locally kaolinitic
Fractured throughout - generally @ 45° but also some low angle fractures with limonitic staining

Local and specific variations as noted

WRC 90-(3)-C

061-76 LORRAIN QUARTZITE. Altered (Sudbury Breccia) - - -

15.24 - 16.76 Quartz Stringer Zone
Milk white quartz threads stringers and one 15 cm vein cutting Sudbury Brecciated quartzite.
Veining from 40-45°.
One 15 cm weakly vuggy vein with a cluster of granular pyrite at one edge.
15% quartz veining.

16.76± - 22.86 Predominantly Sudbury Breccia - large fragments.
25.15 70cm± faint hematitic stained quartzite
25.45 Limonitic stained cross-fractures
Principal fractures @ 75°.
26.82 Limonitic stained fracture @ 10° with minor gouge
28.04 Limonitic stained fracture @ 5°

33.97 - 50.60± Predominantly coarse grained weakly kaolinitic quartzite with random Sudbury Breccia bands and fragments.
Fractures from 45-60°.
47.24 30cm zone with limonitic stained fractures @ 55 and 10°.
50.90 13cm Sudbury Breccia band @ 45°±.

50.90 - 60.60± Weakly kaolinitic quartzite
Fracturing @ 35°±
56.08 70cm zone with pink hematitic tinted fine granular quartzite
58.22 40cm zone with pink hematitic tinted fine granular quartzite

59.44± - 61.57 Random faint hematitic tinting.
61.87 50cm Fracture Zone with limonitic fracting @ 60°±.

--contd-

0.61 - 76.2 LORRAIN QUARTZITE - Altered (Sudbury Breccia)

63.40	48cm Sudbury Breccia fragment @ 40° cut by 2-1mm quartz threads @ 70°. Vuggy quartz veinlet at lower contact @ 55°. One patch of hematitic staining.
64.01± - 76.2	Generally amorphous quartzite with random Sudbury Breccia fragments and bands, local weakly kaolinitic zones and sparse patch of hematitic staining. Fracturing generally @ 40°+ with several low angle fractures.

76.2 (250') END OF HOLE

Casing in hole.
A.P. San Giacomo P.Eng.
Erana Mines Limited
Sudbury Ontario
7 May 1990.

Sampling and Assaying

Sample No	From	To	Core length m	ft	ppb Au
WLC 9015-1	15.24 (50)	16.15 (53)	.91	3	.002 ✓
-2		16.76 (55)	.61	2	Tr ✓

WLC90-16 (1)

DDA# WLC90-16
DIP -45°
Azimuth 070°
Elevation 40' ± above Wolf Lake.
Started 7 May 1990
Stopped 8 May 1990
Company FLAG RESOURCES (1985) LIMITED
Property Wolf Lake Project, Camp Site Zone
Contractor Triangle Diamond Drilling, Lively, Ont.
Logged By Frank P. Taglieramonte, P. Eng.
Core Size BQ.
Dip Test -0
Claim No ~~[illegible]~~ S472926.
Depth 60.96 (200')
Same location as 90-11 just drilled @ 45°.

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0 - 0.61 CASING.
0.61 - 60.96 NORMAN QUARTZITE altered (Sudbury Breccia)
Grey-green variably granular to locally amorphous texture.
Occasional narrow fine grained red
Random kaolinitic zones
Random limonitic stained zones and fractures.
Fractured throughout — generally @ 60° ±
Low angle fractures @ 30° N Sem
Local variations as noted.

17.07 Limonite stained fractures @ 35°

WR 90 (6) - 2

24.1 - 60.96 LORRAIN QUARTZITE altered (Sudbury Breccia) -- contd.

24.38	1.2m zone with faint limonitic staining.
28.96	Open fractures @ 55° ±
35.05 - 38.10	Faint limonitic staining, random Sudbury Breccia fragments. Fracturing @ 40°± and 25° ±
41.15 - 45.72	25% Sudbury Breccia fragments.
49.68 - 53.34	Mechanically Broken core. Fractured, limonitic staining occasional Sudbury Breccia fragment
53.34 - 60.96	Pitted granular quartzite with 15%± patchy hematitic staining
58.21	1.10 m fine grained AGAQ bed @ 45°

60.96 END OF HOLE

(200')

Casing in hole

Frank P. Lanzarotto, P.Eng.
Grana Ltd Limited
Sudbury Ontario
8 May 1990.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

D.D.H.# : WLC 90-17
LOCATION : WOLF LAKE, "CAMP ZONE", MACKELCAN TP.
COORDINATES: Approximately 9.7mN & 13.8mW of WL 83-28
DIP : -70° SE DIP TESTS: NONE
FINAL DEPTH : 300' (91.44 m)
COMPANY : FLAG RESOURCES (1985) LTD.
DRILLED BY : TRIANGLE DRILLING COMPANY LTD., LIVELY, ONTARIO
CORE SIZE : BQ
DATE STARTED : MAY 8/90 DATE FINISHED : MAY 9/90
LOGGED BY : Frank H. Tocws B.Sc.
Casing left in hole.

0 - 1.52 m	CASING	(5' of casing) - partly fill + overburden
1.01 - 21.85+/- (3.3')	GREEN LORRAIN FORMATION	Light to pale green, sericitic, Quartzite; medium to coarse grained; locally with a few quartz pebbles (≤ 1cm size); generally weakly kaolinitic; some patchy oxidized (limonitic) parts; 1-2% milky quartz veinlets (+/- vugs +/- Py +/- Cp +/- Chalcocite-Covellite?) @ 25°, 35-45°, 55-60°, 65-70°, 75-85° to C.A. from about 7.28 m; veinlets 2-8 mm wide & often barren of sulfides & sometimes limonitic; fractures & slips @ 5-80° to C.A., sometimes limonitic, occasionally up to 8/30cm
3.77 - 3.86 m		Milky, locally vuggy & limonitic, quartz vein @ about 70-75° to C.A.; barren of sulfides
4.66		5 mm milky quartz veinlet @ 70° to C.A.; barren of sulfides
7.29 - 7.56		Two, vuggy (+/- oxidation) 3-5 mm quartz veinlets, barren of sulfide, @ 65° & 40° to C.A.
8.2 - 9.4		Weak to moderate, patchy oxidation plus some oxidized fractures @ 5-15°, 45°
		- 9.02 m - partly oxidized, 3-5 mm quartz-chalcocite-covellite(?) - Cp - Py veinlet @ 35° to C.A.; 5% disseminated Cp, Py in veinlet; sulfides partly oxidized; possibly minor V.G.(?) present
		- 9.15 m - reddish hematitic patch
11.2 - 11.7		Hematized & limonitic; 2 veinlets; 1-2% Py/Cp
		- 11.2 m - Quartz - Py - Chalcocite-Covellite(?) - Hem. veinlet, 8 mm wide @ 43° to C.A.; minor disseminated Py in wall rocks
		- 11.7 m - Quartz - Py - Chalcocite (?) - Cp veinlet, 2-3 mm wide @ 65° to C.A.; minor disseminated Py in wall rocks
15.16		Very minor Py (1-2 grains); 1-2 mm quartz veinlet @ 10-15° to C.A. near by

	17.6 - 19.0	Weakly to moderately limonitic &/or hematitic spotting & limonitic fractures @ 25-65° C.A. (2-5/30cm); weakly to moderately Kaolinitic
		18.65 m - quartz veinlet, 5 mm wide @ 65° to C.A.
	19.23	2 mm quartz (+ vugs, Kaolinite) veinlet @ 80° to C.A. several Kaolinitic (+ oxidation) fractures @ 70-75° to C.A. nearby
	19.7	Quartz - Chalcocite(?) - Py veinlet, 2-3 mm wide @ 70-75° to C.A.; some disseminated Py locally in wall-rocks which are Kaolinitic
	20.23	Two quartz - Py veinlets, 2 mm wide @ 70° & 55-60° to C.A. in moderate-weakly Kaolinitic quartzite
	20.4 - 20.9	Four quartz veinlets 2-5 mm wide @ 25°, 65° & 80° to C.A.; barren of Sulfides
	21.45 - 21.85	Fractures @ 15-25°, 50-60° to C.A.; 8/30cm weak limonite staining in lower part
21.85 - 33.85	GREEN LORRAIN FORMATION - STRONGLY KAOLINIZED PARTS	
	Light green to bleached, pitted & strongly Kaolinized, medium to coarse grained quartzite & feldspathic(?) quartzite; local limonitic patches; 1-2% scattered quartz (+/- Py +/- Cp) veinlets @ 10-15° & 50-60° to C.A.; veinlets 2-10 mm wide; vuggy; several vuggy quartz + Py +/- Cp +/- Chalcocite(?) veins 1-8 cm wide @ 5-15°, 25°, 50-60° to C.A. between Breccia 26.82 - 32.92 m.; minor Sudbury-type vein	
	21.85 - 24.50	Generally, strong Kaolinized, bleached & pitted; few 3rd generation quartz + Pyritic veinlets +/- quartz
		22.18 m - Pyritic veinlet @ 20° to C.A.
		22.52 m - Pyritic veinlet @ 10-15° to C.A.
		23.02 m - Pyritic-quartz veinlet @ 10-15° to C.A. plus disseminated Py in wall rocks adjacent to veinlet
		24.06-24.40 m - Four vuggy (+ oxidation) quartz + Py +/- Cp veinlets 5 mm - 1 cm wide @ 55-65° to C.A.; 2-3% Py, Cp
	24.6 - 25.03	Several 5 mm quartz veinlets @ 60° to CA; barren of sulfides; in weakly to moderately Kaolinitic quartzite
	26.5 - 28.65	Generally strongly Kaolinitic, bleached & pitted

		26.8 - 27.48 m - Limonitic patches; 5% vuggy, milky quartz veins 1-2 cm wide @ 70-80° ± 15-20° to CA; 2% Py associated with some veinlets & adjacent wall-rocks
		27.48 — 27.63 m — 8 cm vuggy, partly oxidized quartz vein @ 25° to CA with 10% disseminated (heavily to sparsely) Py
		27.63 - 28.65 m - 2% quartz veinlets, 2-5 mm wide @ 50-60° to C.A.; local hematite @ 28.65 m; 1-2% Py @ 27.88 m
		30.98 - 31.02 - Vuggy, oxidized quartz vein with 10% (±) Py patches, disseminations @ 55-60° to C.A. in kaolinitic quartzite ± oxidation
		31.3 m - 3 mm quartz veinlet @ 80° to CA + disseminated Cp, Py
	32.1 - 32.55	10% Quartz - pyrite veining @ sub-parallel to 60° to C.A.; 2-3% Py, some as 1 mm veinlets @ 10-15° to C.A., some as patches & disseminations in quartz which is partly vuggy
	32.55 - 33.0±	Mixture of silicification & brecciation (dark gray fragments in quartz matrix) at contact between upper quartzite & lower greenish-grey Sudbury Breccia vein @ 5-20° to C.A.; 1-2% disseminated Py in zone
	33.0 - 33.85	Moderately to weakly Kaolinitic; fractures @ 25-35° to C.A. mainly; minor barren quartz veinlets; few quartz pebbles; limonitic adjacent to Sudbury-type breccia vein contact @ 10° to C.A.
33.85 - 39.40	MIXTURE OF KAOLINIZED VEINS	SUDBURY-TYPE BRECCIA VEINS, QUARTZITE & MINERALIZED QUARTZ
	33.85 - 34.9±	Medium grey, Sudbury-type breccia vein with Kaolinitic, grey quartzite fragments; some pitting in all rocks; occasional vug, occasional hematite in breccia; 1% disseminated Py in breccia & occasional blob Cp in breccia; breccia shows flowage(?) lines @ 10-25° to CA; breccia cut by vuggy, milky quartz veinlet, 5 mm wide at lower contact which is about 50-60° to C.A. (also flowage features sub-parallel to contact)
	34.9 - 35.7± (Sub-parallel to contact)	Pitted, Kaolinized, bleached quartzite (feldspathic?) with irregular Sudbury Breccia veinlets ± 50% (±) milky to grey quartz veins & veinlets (irregular) contains fragments of

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

	Kaolinized, bleached quartzite ± 10% (+) Py patches (fragmented), veinlets, disseminations & locally < 1% disseminated rags of Cp
35.7 - 37.15 (+/-)	Pitted; bleached, Kaolinized, grey Lorrain with 60% veinlets & veins of grey Sudbury-type breccia (with flow lines) at 0-25° to CA.; 1-2% rags & fine disseminated Py occurs in the all rocks but mainly in, or at contacts of the breccia; contact with quartz below @ < 5° to CA.
37.15 - 38.35	75% grey to milky quartz with bleached, Kaolinitic quartzite fragments (15%) ± 5% (+) ragged patches, veinlets & disseminated Cp ± blebs ± patches of Py, (2% Py); some hematite patches & vuggy oxidized quartz & broken core (~ 37.3 - 37.6 m); contact with Sudbury-type breccia @ 10° to C.A. beginning @ about 38.15 m
38.35 - 39.40	Sudbury-type breccia @ 5-10° to C.A.; few Kaolinitic Lorrain fragments; 1% fine disseminated Py +/- Cp; fracture @ 2° to CA with disseminated Py 39.4m - contact with quartz vein @ 5-10° to CA. begins
39.40 - 53.14	MINERALIZED QUARTZ VEIN / BRECCIA ZONE IN BLEACHED, PITTED, KAOLINITIC LORRAIN QUARTZITE
	35-45% milky white (locally grey, glassy, 2nd generation? +/- sulfides) quartz veins 1 - 70 (+/-) cm. wide @ 5-60° to C.A. (average 20-25° +/-) in light grey-white (bleached) to light greenish Lorrain quartzite (partly feldspathic?, medium to coarse grained); veins contain < 1% to locally 20% ragged patches (0.5-4 cm), veinlets, blebs ± disseminations of Cp, Py (average 3-5% +/-); 1% scattered Chalcocite? &/or Bornite? (often associated with Cp as rims or small patches which are sometimes veined by late Py); quartz veins are generally locally vuggy (< 0.5 to 3 cm) some with black coating or hematite coating; some hematite in, or near, veins; locally disseminated sulfides in quartzite which appears to be fragments within the larger veins; local patchy limonitic staining & fractures; scattered hematitic veinlets, patches & vug coatings
39.40 - 43.45	35-40% quartz veins/breccia; 2-5% Py, 2-3% Cp, Chalcocite? 40.65 - 40.75 m - Vuggy, hematitic, limonitic patches & fracture 40.75 - 40.95 m - Malachite coatings present
43.45 - 44.20	Quartz vein with 3-5% Cp, ragged, patchy; upper contact @ 20-25° to C.A.; fractures @ 70-75° to C.A.; contact with void @ 70-75° CA.
44.20 - 44.50	VOID IN ROCKS

44.50 - 44.56	Lower (5cm) part of vuggy, limonitic quart vein @ 35° to C.A.
44.56 - 46.09	Bleached, pitted, Kaolinitic quartzite,
	- 44.73 - 44.98m - Quartz + Cpy Chalcocite? + Py vein @ 45° & 60°
	- 45.37 - 45.85m - Limonitic staining, 5 Hematitic Veinlets @ 45° & 60° to C.A. plus weak patchy hematization; minor disseminated Py
	- 45.93 - 46.09 m - several 5 mm quartz veinlets @ 10 & 20° to C.A. with disseminated Py; these are branches of larger vein below with contact @ 55-60° C.A.
	- 46.09 - 47.24 m - 50% quartz vein / breccia with 2-5% Py ± 2-5% Cp, Bornite? - Chalcocite?; locally vuggy with black coating; lower contact @ ~20° C.A., partly broken
47.24 - 49.55	Green Lorrain Quartzite with bleached, Kaolinitic parts
	- 48.30 - 48.60 m - ½ % disseminated Py
	- 48.60 - 49.55 - 15-20% quartz veins & Veinlets @ 15-30° & a few @ 60° to C.A.; 5% Cp, Py, minor Bornite or Chalcocite?; some hematite present; veins in Kaolinized, bleached Quartzite; local hematitic patch; 49.55 m - contact @ 35° to C.A.
49.55 - 50.34	Green Lorrain Quartzite
	- 49.75 m - two, 3-5 mm quartz veinlets (one is offset by slip @ 70° to C.A.) with 10% Bornite + Py @ 15-20°
	- 50.15 - 50.34 m - bleached, pitted, Kaolinized sub-parallel to quartz vein contact below @ 25° to C.A.
50.34 - 51.32	60% quartz vein with inclusions of bleached, pitted, Kaolinitized Lorrain; 5-8% Cp, Bn?, Py; upper contact @ 25° to C.A. lower contact @ 35-40° to C.A.
51.32 - 51.94	Green Lorraine quartzite
51.94 - 52.53	Bleached, Kaolinitic quartzite with patchy hematization ± green quartzite; 50% quartz veins; 3% Cp, Bornite?, Py
	- 51.94 m - Quartz - Cp vein, 1 - 2cm wide @ 35° to C.A.
	- 52.15 - 52.53 - Quartz - sulfide vein with fragments of both Kaolinized, Hematized quartzite & green quartzite 52.53 m - contact @ 35° to C.A.
52.53 - 53.14	Bleached, locally pitted, Kaolinitic with hematitic patches & veinlets, cut by several 1-2 mm quartz veinlets @ 30-35° to C.A. parallel to vein contact @ 52.53 m & sub-parallel to zone contact of Sudbury-type breccia at 53.14 m @ 25° to C.A.; remnant green quartzite in upper part

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53.14 - 56.3	SUDBURY-TYPE BRECCIA IN KAOLINITIC, PARTLY HEMATITIZED LORRAIN QUARTZITE
	53.14 - 55.8 — 50% (+/-) medium grey to greenish-grey Sudbury-type Breccia veins with trace to locally 3% disseminated, rags, veinlets of Py & scattered hematitic alteration veinlets & patches (pitted) which also are found in the bleached, Kaolinitized quartzite; vein contacts vary from sub-parallel to CA. to 25° to CA.; flow(?) lines are present in the breccia matrix parallel to sub-parallel to the vein contacts
	55.14 - 55.24 m - 3% rags, veinlets & disseminated Py in fragments & breccia matrix
	55.26 - 56.30 - 5-10% pitted, hematitic veinlets, patches, bands, irregular to 45-60° to CA., in both breccia & Kaolinitic, bleached quartzite
56.3 - 83.67	GREEN LORRAIN QUARTZITE
	light green to greenish-grey, medium to coarse grained, locally pebbly; local areas of Kaolinization & pitting; local patchy limonitic staining; local areas of patchy hematization; occasional veins of Sudbury-type Breccia
	60.10 - 62.06 — Kaolinitic parts +/- pitting +/- oxidation
	62.5m - Two, 1-2 mm wide quartz veinlets @ 75-80° to CA
	61.10 - 62.03 - limonitic patches & fractures @ 45-65°, 15° to CA., Some broken core, a few quartz veintets < 1 cm wide @ 60-65°; 8-10 fractures/30 cm
	63.59 - 64.20 — Several limonitic patches
	64.7 - 65.1 — Kaolinitic +/- Pits
	67.6 — 1 cm quartz vein @ 47° to C.A; hematitic
	68.85 — 10 cm. Sudbury-type Breccia vein @ 75-80° to CA.
	70.88 - 73.5 — Sudbury-type Breccia veins @ 20-40° to CA.; greenish-grey; 40% (+/-) breccia veining
	79.15 — 5 mm quartz veinlet @ 15° to C.A.
	79.65 - 80.40 — Limonitic fractures @ 65-80° to CA; local pitting & Kaolinization & limonitic staining
	80.8 — Bedding @ 40° to CA
	81.15 - 83.6 — Patchy hematization +/- pitting

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83.67 - 91.44	LORRAIN FORMATION QUARTZITE Green to greenish grey to pale pinkish-grey; fine to coarse grained; medium to locally thick bedded @ 60-75° to C.A.; some pitting in upper portion
85.7 - 86.5	Hematitic spotting + pitting; local Kaolinization 86.5 m - 1cm wide Sudbury-type Breccia Veinlet @ sub-parallel to C.A.
91.44 m (300')	END OF HOLE

Frank H. Tocus B.Sc.

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NORTH BAY, ONTARIO P1A 3N1

(A)

DDH # : WLC 90-17

SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH (Metres)	LENGTH (~feet)	Au (oz/ton) ~~(ppb)~~	Cu (ppm)	REMARKS
WLC 90-17-1	3.63m	4.70m	1.07m	3.5'	Tr		Qz veinlets
-2	7.17	7.62	0.45m	1.5'	Tr		Qz veinlets
-3	7.62	8.86	1.24	4.0'	Tr		Qte, Lim
-4	8.86	9.16	0.30	1.0'	0.09	1820 ppm	Qz veinlets, Spec, Py, Cp, Cc? VG?
-5	9.16	11.15	1.99	6.5'	Tr		Qte
-6	11.15	11.76	0.61	2.0'	0.056		Qz Veinlets, Py, Spec? Hem Cc?
-7	11.76	13.28	1.52	5.0	Tr		Qte
-8	13.28	14.80	1.52	5.0	0.008		
-9	14.80	16.32	1.52	5.0	Tr		Minor Py in Qte
-10	16.32	17.54	1.22	4.0	Tr		Qte
-11	17.54	19.06	1.52	5.0	Tr		Qz veinlets
-12	19.06	19.66	0.60	2.0	Tr		Qz veinlets
-13	19.66	20.26	0.60	2.0	0.002		2% Py, Cp
-14	20.26	20.96	0.70	2.3	Tr		Qz veinlets
-15	20.96	22.18	1.22	4.0	Tr		Qte, Kaol
-16	22.18	23.40	1.22	4.0	0.016		Qz veinlets, 2% Py +/- Cp
-17	23.40	24.00	0.60	2.0	Tr		Qte
-18	24.00	24.46	0.46	1.5	0.008		Qz veinlets +/- Py, Cp
-19	24.46	25.06	0.60	2.0	Tr		Qz veinlets
-20	25.06	26.80	1.74	5.7	Tr		Qte
-21	26.80	27.71	0.91	3.0	0.09		2-3% Py, Cp
-22	27.71	28.62	0.91	3.0	0.002		Qz veinlets, Py
-23	28.62	30.85	2.23	7.3	Tr		Qte
-24	30.85	31.15	0.30	1.0	0.034		2-3% Py
-25	31.15	32.10	0.95	3.1	Tr		Qte
-26	32.10	33.00	0.90	3.0	0.04		SBX, QV, 2-3% Py
-27	33.00	33.85	0.85	2.8	0.002		Kaol, Qz veinlets
-28	33.85	34.90	1.05	3.4	0.028		SBX, 1% Py
-29	34.90	35.73	0.83	2.7	0.502	6200 ppm	QV's, 10% Py, 1% Cp
-30	35.73	37.15	1.42	4.6	0.074	—	SBX, Kaol, 1-2% Py
-31	37.15	38.35	1.20	3.9	0.136	3.20%	QV, Kaol, Hem, 5% Cp, 2% Py
-32	38.35	39.40	1.05	3.4	0.032	0.62	SBX, Kaol, 1% Py +/- Cp
-33	39.40	40.31	0.91	3.0	0.258	0.74	40% QV, 5% Py, <2% Cp, Kaol
-34	40.31	41.02	0.71	2.3	0.032	1.30	40% QV, 2% Py, 2% Cp, Cc?
-35	41.02	41.89	0.87	2.9	0.018	1.40	50% QV, 2% Py, 2% Cp, Cc?
-36	41.89	42.77	0.88	2.9	0.028	1.60	35% QV, 3% Py 2-3% Cp, Cc?
-37	42.77	43.65	0.88	2.9	0.006	1.06	20% QV, 2% Py, 2% Cp, Bn?
-38	43.65	44.20	0.55	1.8	0.044	1.96	100% QV, 5% Cp
	44.20	44.50	0.30	1.0'	VOID IN ROCKS		
-39	44.50	45.00	0.50	1.6	0.240	1.90	50% QV, 3% Cp, Cc?, Py
-40	45.00	45.91	0.91	3.0	Tr	—	Qte - Kaol, Hem, +/- Py, Cc?
-41	45.91	46.82	0.91	3.0	0.014	3.20	50% QV, 5% Py, 5% Cp, Bn?
-42	46.82	47.24	0.42	1.4	0.038	0.70	50% QV, 2% Cp, Bn? Cc?
-43	47.24	48.60	1.36	4.5	Tr	—	Qte, Kaol, <1% Py
-44	48.60	49.55	0.95	3.1	0.032	0.103	20% QV, 5% Py, Cp

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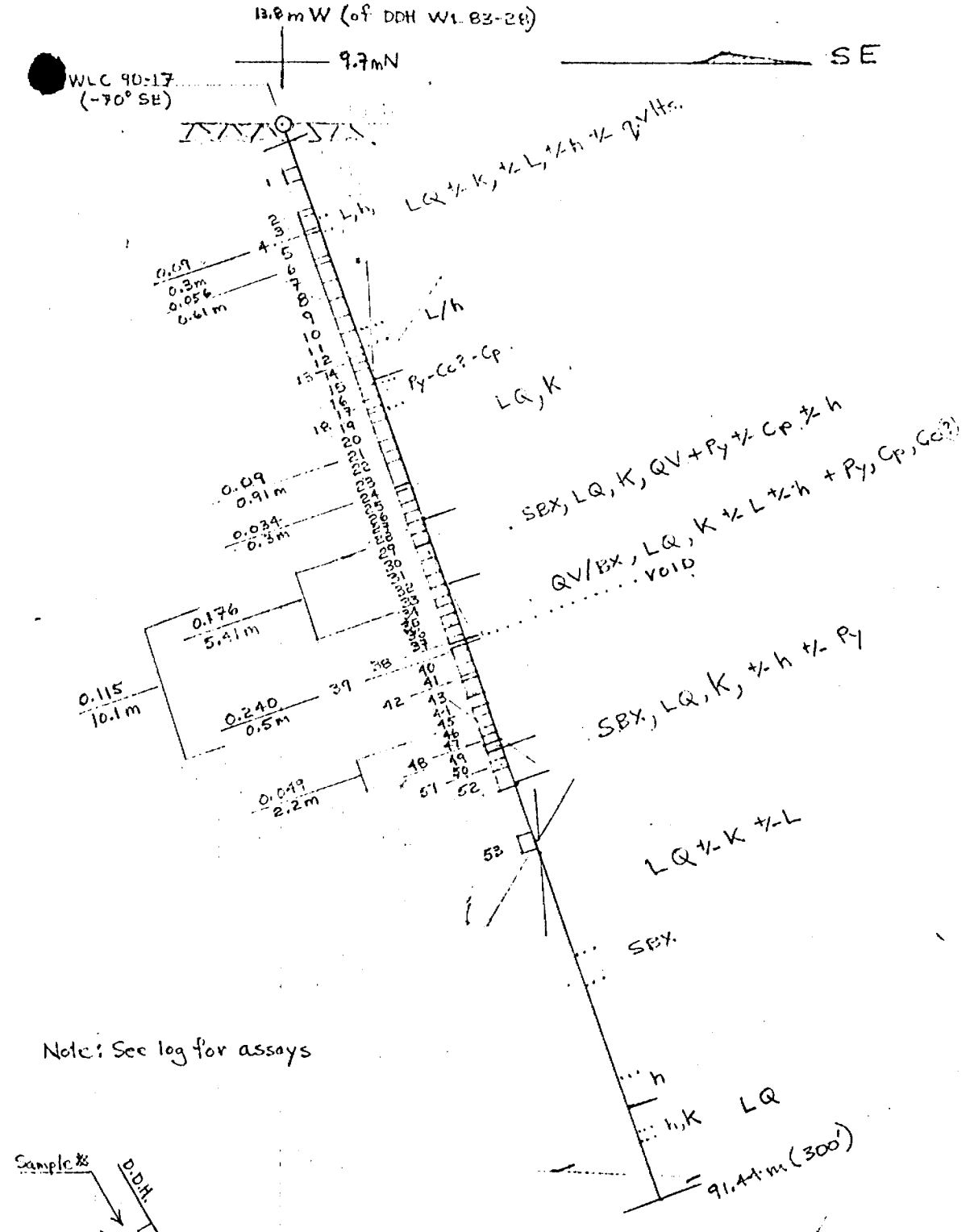
DDH *: WLC 90-17

(B)

SAMPLING & ASSAYS, ctd.

SAMPLE *	FROM	TO	LENGTH (Metres)	LENGTH (~feet)	Au (oz/ton) [ppb]	Cu (ppm)	REMARKS
WLC 90-17-45	49.55	50.34	0.79m	2.6'	0.020	0.10%	1-2% QV, 1% Bn?, Cp
-46	50.34	51.32	0.98	3.2	0.068	3.49%	60% QV, 3% Py, <1% B%, Cp, Bn?
-47	51.32	51.94	0.62	2.0	Tr	—	Qte
-48	51.94	52.54	0.60	2.0	0.070	0.60%	50% QV, 3% Cp, Bn?, Py
-49	52.54	53.14	0.60	2.0	Tr		Qte, Kaol, Hem, Qz Veinlets
-50	53.14	54.05	0.91	3.0	0.016		SBX, Qte, Kaol, Hem, <1% Py
-51	54.05	54.96	0.91	3.0	Tr		SBX, Qte, Kaol, Hem, <1% Py
-52	54.96	56.48	1.52	5.0	0.042		SBX, Qte, Kaol, Hem, <1% Py
-53	60.48	62.00	1.52	5.0	Tr		Qte, Kaol, Lim, Qz Veinlets
AVERAGES							
*29-39	34.90m	45.00m	* 9.80m	* 32.15'	0.1189		* Excludes 0.30m Void
*29-33	34.90m	40.31m	5.41 m	17.75'	0.176		
*34-39	40.31 m	45.00 m	* 4.39 m	* 14.40'	0.048		* Excludes 0.30m Void
*21-46	26.80	51.32	* 24.22m	* 79.46'	0.061		* " 0.30m Void
*21-48	26.80	52.54	* 25.44m	* 83.46'	0.059		* " 0.30m Void
*31-46	37.15	51.32	* 13.87m	* 45.50'	0.045	1.372%	* " 0.30m Void
*29-39	34.90m	45.00	10.10m	33.14'	0.115		Includes 0.30m Void
*21-46	26.80	51.32	24.52m	80.47'	0.060		
*21-48	26.80	52.54	25.74m	84.45'	0.059		
*31-46	37.15	51.32	14.17m	46.49'	0.044	1.343%	
*34-39	40.31	45.00	4.69m	15.39'	0.045		

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



GEOLOGICHL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH DDH. WLC 90-17 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.T.	Scale- 1:500	Date: May/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DDH. #: WLC 90-18
LOCATION: WOLF LAKE, "CAMP ZONE", MACKELCAN TP.
COORDINATES: Approximately 10.7m N & 8.7m W of WL 83-28
DIP: -70° S
DIP TESTS: NONE CORE SIZE: BQ
FINAL DEPTH: 195' (59.44m)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: TRIANGLE DRILLING COMPANY LTD., LIVELY, ONTARIO
DATE STARTED: MAY 14/90
DATE FINISHED: MAY 16/90
LOGGED BY: Frank H. Toews, B.Sc.

Casing left in hole

0 - 0.61m	CASING	(2' of Casing)
0.61(½) - 19.98m	GREEN LORRAIN FORMATION - QUARTZITE	
	Light green to greenish-grey, sericitic, medium to coarse grained (alternating, gradational) locally pebbly with occasional well-defined bedding contacts @ 30-35° to C.A. scattered limonitic stained fractures & slips @ 10-50° to C.A. (average 25-35°); from about 4.25m; occasional quartz (½-1%) veinlet 1-10mm wide @ 50-75° to C.A.; patchy limonitic staining from about 6m	
1.50(½) - 1.10m		Fractures @ 0°, 20-25°, 35-40°; some broken core
3.89		1cm milky quartz veinlet @ 65° to C.A.; minor limonitic vugs
6.2 - 6.45		Fractures (limonitic) @ 15° & 35° to C.A.; one slip @ 35° to C.A.
7.9m - 8.94.		Several slips @ 25-30°, 50-55° to C.A.
10.92 - 11.23		Minor disseminated Py & several quartz-Py +/- Hematite veinlets ≤2mm wide @ 50-55°, 75° to C.A.; one slip @ 40° to C.A.
12.6 - 12.95		Seven fractures & slips @ 15-20° & 30° to C.A. ½ limonitic stain
13.75 - 14.0		Three slips @ 25-30° & 45° to C.A. ½ limoniti
16.0 - 16.5		Eight limonitic fractures (½ slips) @ 0°, 20°, 30-35°, 50-55° to C.A.; patchy limonitic staining
19.69		Milky quartz veinlet, ≤1cm wide @ 75° to C
19.52 - 19.75		Several milky quartz veinlets +/- hematite, 1-10mm wide @ 50° & 35° to C.A.
19.98		Contact with strongly Kaolinized quartzite @ about 35° to C.A. (Fracture)

19.98 - 29.60m	GREEN LORRAIN FORMATION - QUARTZITE - KAOLINITIC SERICITIC SECTIONS	Generally light green to greenish-grey; fine to medium grained, locally coarser grained; 20% zones bands, patches of bleached, often pitted, kaolinitic, limonitic ± hematitic quartzite; quartz ± Py ± Cp ± Ha veinlets, 1-10 mm wide @ 15-65° to C.A. scattered in some sections; local disseminated Py in wall rocks
	19.98 - 21.5 m	Bleached, pitted, limonitic stained, Kaolinized quartzite with remnant green quartzite bands @ 30-40° to C.A.
	-	20.07-20.15 m - several quartz veinlets @ 65°, 25° to C.A.; minor disseminated Py
	-	20.37 - 20.45 m - 20% anastamosing, vuggy quartz veinlets @ 25°, 55° to C.A. with about 5-10% Py rags, dissemination
	-	20.67 - 21.10 m - 10% (+) quartz veinlets ± Py 2-10 mm wide @ 15-80°, 50-65° to C.A. in vuggy, locally strongly limonitic zone; ≤ 5% disseminated, rags & veinlets of Py mainly associated with quartz veining
	-	21.15(±) - 21.30(±) m - friable, broken core; limonitic stained, pitted, Kaolinized quartzite; fractures 60°, 10-15° to C.A.
	-	21.30 - 21.50 m - limonitic stained, pitted Kaolinized quartzite; fractures (slips?) @ 5-10° to C.A. parallel to 5 mm(±) quartz-Py veinlet & cross-cutting two, 5 mm(±) quartz-Py veinlets @ 40° to C.A. (< 5% disseminated Py)
	21.5 - 23.2	Light green, fine to medium grained quartzite
		21.5 - 22.86 m - 2-3% milky to grey quartz veinlets (± Py), 1 - 5 mm wide @ 20-25°, 30-35°, 45°, 55° to C.A.; 1-2% Py
	23.2 - 23.80	40% patchy to bands Kaolinization (pitted)
	23.80 - 24.48(±)	Bleached, pitted, Kaolinized quartzite (contacts @ 30° to C.A.); two Quartz ± Py Veinlets @ 20° ± 5-10° to C.A.; minor disseminated Py in wall-rocks; 1% Py
		24.85 m - 1-2 cm (±) wide Sudbury-type Breccia vein @ 30 & 25° to C.A.; foliated
	24.67	2 mm vuggy quartz veinlet @ 40° to C.A., limonitic staining in wall rocks
	25.30	Limonitic slip @ 30° to C.A.
	25.67	Milky quartz ± Cp veinlet, 1 cm wide @ 65° to C.A.
	26.03	Quartz + Cp + Chalcocite(?) veinlet @ 60-65° to C.A.
	26.42	Quartz veinlet, 1 cm wide @ 60° to C.A.

	26.65 - 27.05	Two slips @ 15° to C.A.
	27.53	Quartz veinlet, 1 mm wide @ 25° to CA with minor Py & 1-2 cm red hematite alteration halo
	27.8 - 28.0	Patch limonite stained, Kaolinitic alteration
	28.25	Fracture @ 15° to C.A. with limonitic halo
	28.6	5 mm milky quartz veinlet @ 60° to CA.
	28.75 - 28.80	Limonitic stained, bleached Kaolinized band @ 55° to CA with 1-2% Py grains
		28.8 m - quartz-hematite-Py veinlets parallel to band
	29.60	Irregular contact @ about 10-15° to C.A. with Kaolinized quartzite
29.60 - 43.2	ALTERED, MINERALIZED LORRHIN QUARTZITE WITH LOCAL SUDBURY-TYPE BRECCIA	
	Pinkish to reddish (hematized +/- limonite staining) to light grey, silicified(?) plus bleached Kaolinized parts, with some fine grained, greenish, sericitic remnants in medium to coarse grained quartzite; quartz veinlets 2-15 mm wide @ 0-5°, 15-20°, 30-40°, 50-70° to CA scattered throughout; several zones with more massive quartz quartz veining can be vuggy (+/- hematite +/- limonite +/- black earthy material) <1% to locally 20% Py +/- Cp +/- Bornite or Chalcocite(?) over 25cm, mainly associated with quartz veining, but also sometimes disseminated in wall rocks (Trace to <1%); local zones & veins of Sudbury-type Breccia (medium to darker grey) 30 cm (+/-) to 2 cm wide with Sulfide mineralization fractures (+/- limonite +/- hematite +/- Kaolinite) @ 25-30° & 40-60° to C.A, mainly	
	29.60 - 32.2	Generally, reddish, hematized (pervasive to spotted) silicified(?) quartzite with local bleached, Kaolinitic parts & remnant light green-grey patches & bands (some @ 30-35° to CA.); Trace to <1% disseminated Py, Cp +/- Chalcocite(?) or Bornite(?);
		- 29.7 - 29.77 m - Vuggy, hematitic, milky, brecciated(?) quartz vein @ 50-45° to CA, with 5% blebs, disseminated, veinlets of Py & 1-2% disseminated & fine irregular veinlets of Cp + Chalcocite(?)
		- 30.2 m - 1-2 cm Sudbury-type Breccia veinlet @ 35° to CA, partly hematized & 5-10% fine disseminated Py, Cp; local Kaolinized wall rocks
		- 30.4 m - quartz & Sudbury-breccia veinlet with Py & slip @ 35° to CA.

	- 31.23 - 31.23m - 50% bands & remnants of green, medium grained quartzite; minor disseminated Py + Cp(?)
	- 32.2 m contact with weakly foliated green quartzite @ about 20° to C.A. sub-parallel to foliation
32.2 - 32.65	Green quartzite, foliated @ about 35° to C.A.; Kaolinitic veinlets < 1 mm wide @ 35°, 0°, 60° to C.A. parallel & cross-cutting foliation
	- 32.5m - 1 cm quartz veinlet @ 15° to C.A. with 10% blebs, rags & disseminated Py + Cp; vein cuts Kaolinite veinlets, but vein is locally offset by fracture @ 60° to C.A.
	32.65m - contact @ about 25° to C.A.
32.65 - 33.15	Reddish Quartzite; several quartz veinlets ≤ 5 mm wide @ 10-20° to C.A. sub-parallel to contact with Sudbury-type Breccia below; ≤ 1% disseminated Py, Cp in veinlets & host rock
	33.15m - contact @ 40-45° to C.A.
33.15 - 33.50%	Grey Sudbury-type Breccia; foliated @ 50° to 20° parallel to contacts; 1% fine disseminated Py, Cp in fragments & matrix; silicification @ lower contact @ about 20° to C.A.
33.50 - 33.85%	Green quartzite; silicification & local quartz veining (+/- Cp) near Sudbury Breccia; Kaolinitic veinlets < 2m
	33.85m - 1 cm quartz vein @ 20° to C.A. near gradational contact; 10% irregular fine veinlets of Chalcocite(?) & disseminated Py & hematite in vein
33.85 - 38.95	Reddish Quartzite, locally slightly greenish in upper part; scattered pits & quartz veinlets < 0.5 - 2 cm wide @ 55-60°, 40-45°, 15° to C.A. with 1% +/- disseminated Py, Cp +/- Hematite +/- vugs
	- 34.43 - 34.56 m - pitted, Kaolinitic, strong limonitic stain
	- 34.9 - 35.2 m - patchy quartz vein @ 0-5° to C.A. with patchy & disseminated Py + Hematite & Chalcocite(?); 2-3 mm branch veinlets @ 30°, 60° to C.A. +/- Py, Cp
	- 35.33 (+/-) m - limonitic fractures @ 10°, 60° to C.A.
	- 36.37 - 36.88m - Quartz breccia vein with 40° & 20° to C.A. contacts; hematitic, kaolinitic pitted Quartzite fragments; ≤ 2% blebs +

	disseminated Py; 2% blueish-black, splashes of Chalcocite(?); small vugs - 36.88 - 37.38m - green to bleached, pitted Kaolinitic quartzite +/- hematite patches & fracture filling 37.38m - contact @ 20° to C.A. along limonitic fracture at quartz contact - 37.38 - 37.67m - Milky to grey quartz Vein with rags, disseminated, veinlets & blebs (fragmented?) of Py (20% +/-), as well as, some patches of Py; 1% Chalcocite (?) disseminations & rags; locally hematitic; several limonitic fractures - 37.67m - contact @ about 35°; broken core below contact - 37.67 - 38.5+/- m - bleached, pitted Kaolinitic with hematitic patches; 5mm wide quartz veinlet in upper 30cm. of core with blebs, disseminations of Cp, Bornite & Py & a few quartz veinlet-patches below this zone - 38.5 - 38.95m - siliceous, pinkish to light grey hematized quartzite with 5mm wide quartz veinlets @ 0-5° & 55-60° to C.A. with disseminations & veinlets of Cp, Bn +/- Py
38.95 - 39.86	Quartzite - siliceous, light greyish (some pale greenish remnants) quartzite with weak hematite spotting; scattered 1-2mm quartz veinlets @ 60° to C.A.; weak disseminations of Py, Bn, Cp; contact @ 39.86m @ about 25° to C.A. with quartz veining
39.86 - 40.5	Quartzite - 25% milky quartz veining, ≤5mm to 10cm wide; irregular to more uniform @ 15-50° to C.A. in bleached, siliceous to Kaolinitic quartzite +/- hematitic patches; ≤5% patches, blebs, veinlets, of Py +/- Cp +/- Chalcocite (?); lower veinlet contact @ about 15° to C.A.
40.5 - 40.95+/-	Kaolinitic, bleached pitted to weakly Kaolinitic green-grey quartzite in lower part; 40.5 - 40.6m - hematitic patch - 40.95 +/- m - contact with quartz veinlets @ 20-25° to C.A.; plus cross-cutting quartz veinlets @ 55° to C.A.
40.95+/- - 42.7 +/-	Quartz vein zone - mainly milkly quartz Vein with mineralization - 40.95 - 41.25m - 40% quartz veins in bleached, pitted, Kaolinized quartzite @ 10-20° to CA; 10% +/- Py patches, blebs & veinlets in quartz; minor hematite.

		- 41.25 - 42.0 m - 2% blebs, patches, rags of Py; parts with hematitic vugs. in milky quartz
		- 42.0 - 42.7 m (½) - 10% patches, blebs of Py, 2% (+) rags, disseminations & fine veinlets of blueish-black Chalcocite (?) which also coats some vugs with charcoal grey coating of hematatite veinlets & patches; 5% (+) remnant quartzite fragments in quartz; @ 40.4 m is a 20 cm zone with numerous beige fracture fillings @ 60-20° to C.A.
		- 42.7 m - contact with quartz-vein & brecciated, Sudbury-breccia @ about 20° to C.A.
	42.7 - 43.2	Sudbury-type Breccia - medium grey to greenish-grey; quartz & sulfide impregnated; parts hematized
		- 42.7 - 42.97 m - 10% (?) irregular veinlets of grey quartz; 5-10% rags, patches, blebs, veinlets of Py
		- 42.97 - 43.2 m - strongly hematized (pervasive); lower contact irregular @ about 10-15° to C.A., with hematized quartzite
13.2 - 46.6 ±	ALTERED LORRAIN QUARTZITE Medium to coarse grained; reddish-purplish (hematized) to light-greenish-grey, Kaolinitic in part	
	43.2 - 44.95	Reddish to purplish patchy hematization in partly bleached, pitted moderately Kaolinized quartzite
		- 43.2 m (½) - several limonitic fractures @ 20-40°
		- 43.5 m - hematitic fractures @ 20-25° to C.A.
		- 43.4 - 43.74 m - several 2-3 mm wide quartz veinlets @ 50°, 70°, 35° to C.A.; some vugs & hematite in veinlets
		- 44.7 m (½) - shears @ 50-60° to C.A.
		- 44.74 - 44.92 m (½) - strong hematization
		- 44.92 m - Kaolinitic slip @ 45° to CA
	44.95 - 46.6	- Scattered hematitic, irregular veinlets & patches @ about 25-45° to C.A.
		- 46.3 m (½) - slip @ 25° to C.A.
		- 46.45 - 46.6 (½) - broken core, lost core

46.[redacted] 59.44	GREEN LORRAIN QUARTZITE Green to greenish-grey, weakly kaolinitic mainly, medium to coarse grained; 5% (+) Sudbury-type Breccia veins, mainly light greenish-grey; local hematization occasionally
47.03 - 47.10	Medium grey - greenish grey Sudbury Breccia vein @ 15° to C.A.; local, minor disseminated Py; limonitic slip(?) on upper contact
48.0 - 49.0	Fractures (+/- limonite) @ 15°, 25°, 50 - 60° to CA.; 8/ 30 cm
54.94 m (195')	END OF HOLE

Frank H. Todd

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

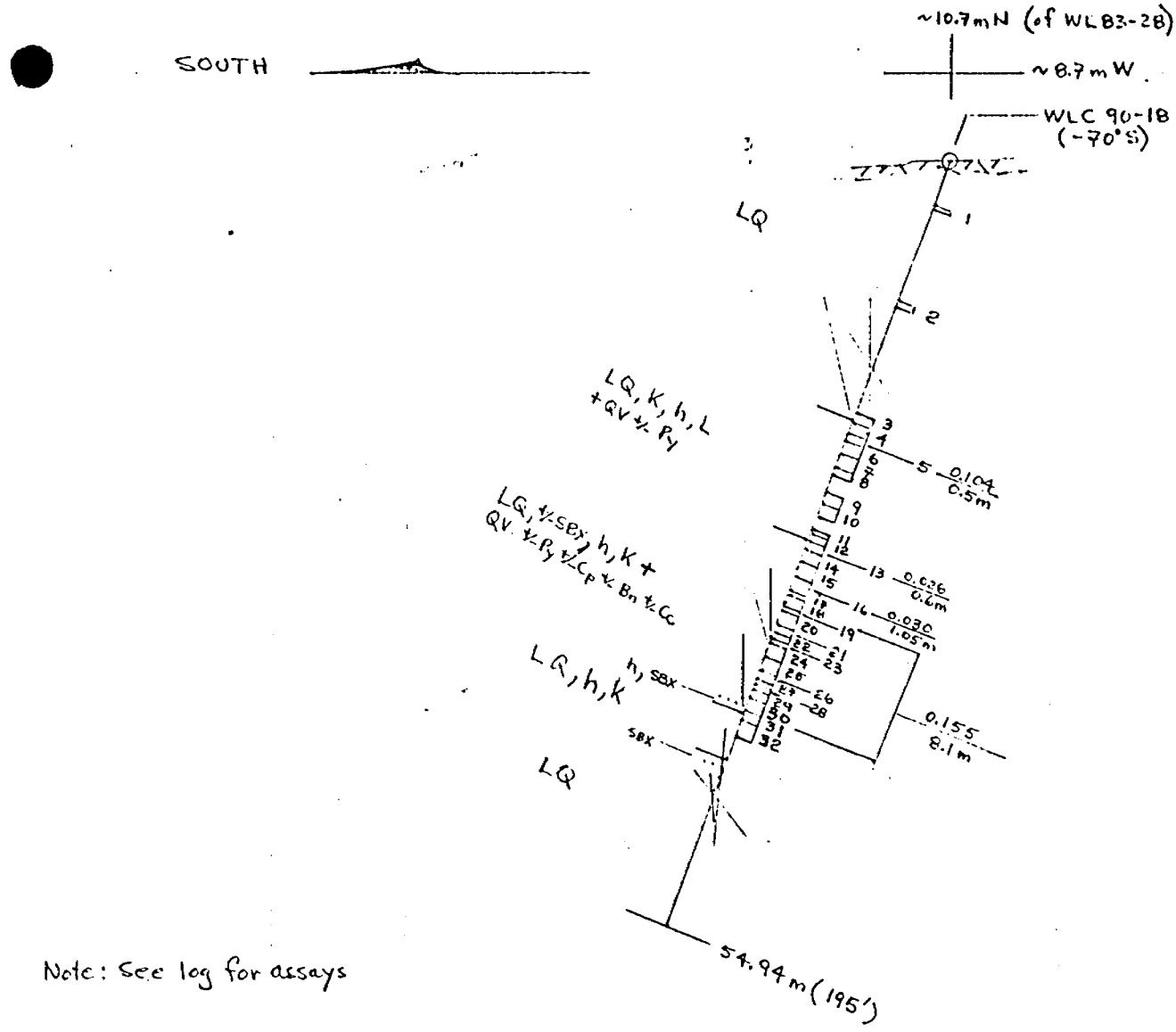
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

(A)

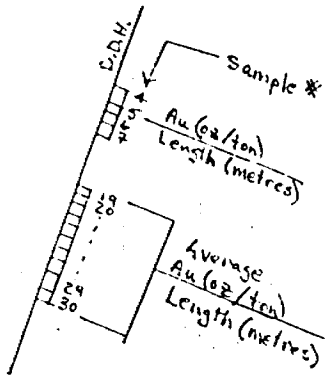
D.D.H # WLC 90-18.

SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH (Metres)	LENGTH (~feet)	Au oz/ton ~~(ppb)~~	Cu (ppm)	
WLC 90-18-1	3.24	3.54	0.30m	~1.0'	0.002		
-2	10.75	11.25	0.50m	1.6	0.004		Qz veinlets, 1-2% Py ½Hem
-3	19.50	20.35	0.85	2.8	0.002		Qz veinlets, ½ Py
-4	20.35	21.15	0.80	2.6	0.004		Qz veinlets, 5% Py
-5	21.15	21.65	0.50	1.6	0.104		Qz veinlets, 3% Py
-6	21.65	22.85	1.20	3.9	0.018		Qz veinlets, 1-2% Py
-7	22.85	23.80	0.95	3.1	Tr		Qtz, Kaol.
-8	23.80	24.40	0.60	2.0	0.014		Qz veinlets, 1% Py, Kaol.
-9	25.6	26.6	1.0	3.3	Tr		Qz veinlets, Tr Cp
-10	26.6	27.6	1.0	3.3	Tr		Qz veinlet, Hem, ½ Py
-11	28.7	29.0	0.30	1.0	Tr		Qz veinlet, Hem; <1% Py
-12	29.0	29.6	0.60	2.0	Tr		Qtz.
-13	29.6	30.3	0.60	2.0	0.028	4,600	QV, Hem, 2% Py, Cp, Cc
-14	30.3	31.3	1.0	1.0	0.018		Qtz, Hem, ½% Py, Cp
-15	31.3	32.5	1.2	3.9	Tr		Qtz, Hem, <½% Py, Cp
-16	32.5	33.55	1.05	3.4	0.030	1,580	Qz veinlets, Qtz, SBX, 1-2% Py, Cp, Cc?
-17	33.55	33.85	0.30	1.0	0.002		Qtz, Kaol
-18	33.85	34.90	1.05	3.4	0.008	1,900	Qz Veinlets, 1-2% Py, Cp
-19	34.90	35.20	0.30	1.0	0.086	1,000	QV, 5% Py, Cp
-20	35.20	36.35	1.15	3.8	0.10	1,140	Qz Veinlets, 1-2% Py, Cp, Cc
-21	36.35	36.95	0.60	2.0	0.158	8,600	Qz Bx, 2% Py, 2% Cp, Cc
-22	36.95	37.35	0.40	1.3	Tr		Qtz, Kaol.
-23	37.35	37.65	0.30	1.0	0.347	6,100	QV, 15-20% Py, Cc?
-24	37.65	38.95	1.30	4.3	0.014	1,760	Qz Veinlets, ≤1% Cp, Bn, Py
-25	38.95	39.85	0.90	3.0	Tr		Qtz, <½% Py, Bn, QV's
-26	39.65	40.50	0.65	2.1	0.070	1,400	QV's Kaol. 3-5% Py, 1% Cc?
-27	40.50	40.90	0.40	1.3	Tr		Qtz, Kaol ½ Hem
-28	40.90	41.25	0.35	1.2	1.03	1,600	QV, 10% Py ½ Cc(?), Vugs
-29	41.25	42.00	0.75	2.5	0.014		QV, ≤2% Py, Hem, Vugs
-30	42.00	43.00	1.0	3.3	0.478	17,600	QV + SBX, ≤10% Py, 2% Cc
-31	43.00	43.75	0.75	2.5	0.04	SBX,	Qtz, hem, Qz Veinlet Vugs, Hem
-32	43.75	45.0	1.25	4.1	Tr		Qtz, Hem
Averages							
#19-22	34.90	37.35	2.45m	—	0.096		
#23-25	37.35	39.85	2.50m	—	0.049		
#26-27	39.85	40.90	1.05m	—	0.043		
#28-30	40.90	43.00	2.10m	—	0.404		
#26-30	39.85	43.00	3.15m	—	0.284		
#23-30	37.35	43.00	5.65m	—	0.180		
#19-30	34.90	43.00	8.10m	—	0.155		



Note: See log for assays



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH D.D.H. WLC 90-18 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.T.	Scale: 1:500	Date: May/90

GEOLOGICAL ENGINEERING SERVICES
28 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DDH# WLC90-20

DIP	-90°
Co-ordinates	12.2 m N, 2 m W from WL88-28
Azimuth	-0-
Elevation	20'± above Wolf Lake
Claim No.	S 472926
Core Size	BQ
Started	4 June 1990
Stopped	5 June 1990
Company	Flag Resources (1985) Limited
Property	Wolf Lake Project, Camp Site Zone
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged by	Frank P. Tagliamonte, P.Eng.
Depth	(76.20 m) 250'

NOTE: Drilled in feet, converted to metric during logging

0-1.22 CASING. (destroyed during move)

1.22-9.75 QUARTZITE. Lorrain

Grey-green coarse grained quartzite with random quartz clasts up to 1cm in local bands.
Fractured ~~throughout~~ - some with limonitic staining.
Most fractures 25°-35°

4.57 75 cm zone with prominant limonitic staining

9.14 65cm zone with patchy faint hematitic staining

WLC2020-2

1.75-22.56 QUARTZITE (Lorrain) Sudbury Breccia

60%+ random Sudbury Breccia fragments in weakly kaolinitic, subtley pitted course granular quartzite
Faint limonitic staining throughout

Principal fractures @ 80° ± with local frequency of 14 per 1m.

16.46± - 21.34, Series of low angle fractures - generally parallel to core with prominent limonitic staining.

22.56 - 23.32± SUDBURY BRECCIA FRAGMENT

Grey, hard, siliceous groundmass with disseminated fine glassy quartz eyes.
Sparse disseminated pyrite.
1%+ pyrite.
Sharp upper and lower contacts.
Upper @ 35°, lower @ 30°.
Limonitic coated fractures @ 80° ±

23.32± - 24.17 (85cm) MINERALIZED ZONE

Brecciated mixture of milk white quartz and porous kaolinitic quartzite.
Vuggy Milk white quartz fragments contain wispy laths of massive chalcopyrite and
minor pyrite. 25% chalcopyrite in quartz fragments.
50%+ quartz fragments.
7%+ chalcopyrite.
Sharp contacts @ 30 and 65°.

24.17 - 74.98 **QUARTZITE · Lorrain**

Grey green granular
Alternating vaguely defined coarse and fine grained beds.
Locally very faintly kaolinitic.
Fractured ~~throughout~~.
Principal fractures @ 45° ±
Occasional low angle fracture @ 30° ±.

[illegible] 3.5 cm quartz stringer @ 60°
[illegible] 1½ cm bigger quartz stringer @ 60°

(Quartz stringers of this type usually indicate proximity to a mineralized zone.)

71.02 - 74.98 Coarse grained, weakly kaolinitic quartzite. Fractured and mechanically broken core.

74.98 - 76.20 **QUARTZITE · Sudbury Brecciated**

Coarse grained, pitted, kaolinitic quartzite intermixed with dark charcoal grey, hematitic stained and locally [illegible] Sudbury Breccia fragments.

Mechanically broken core.
Fracturing @ 45° ±.

76.20 (250') **END OF HOLE** · Casing destroyed leaving more.

Note: This hole should have been deepened beyond alteration area.

[signature], P.Eng.
4 July 1990
Errana Mines Ltd.
Sudbury, Ont.

WLC 9020-4

DDH # WLC 90-20

Sampling and Assaying

Sample No.	From	To	core length	ft	ppb Au	ppm Cu
WLC 90 20-1	22.56	23.32	.76	2.5'	.032	.2000%
20-2		24.17	.85	2.79	.382	.44%
20-3		25.69	1.52	5'	.008	
20-4	74.98	76.20	1.22	4'	.104	

[illegible] hair-like black threads (bracketing 20-2, 20-3, 20-4)

DDH# WLC90-21

DIP	-90°
Co-ordinates	21 m N, 9 m W from: WL83-28
Azimuth	—
Elevation	30'± above Wolf Lake.
Claim No.	S472926
Core Size	BQ
Started	6 June 1990
Stopped	7 June 1990
Company	Bldg Resources (1985) Limited
Contractor	Triangle Diamond Drilling, Lively, Ontario
Logged by	Frank R. Taglieri, P. Eng
Depth	76.20 m (250')
Property	Wolf Lake Project, Comp Site Zone.

Note: Drilled in feet. Converted to metric during logging

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0 - 2 (-6') CASING.

2 - 16.3 QUARTZITE: horizon

Grey-green granular, bedded
Generally medium grained granular with random alternating finer granular beds.
Bedding dip in 35-50° — variable and poorly defined.
Fractured throughout — variable 35-50°±
12.19. Fault with gouge @ 60°

13.96 5cm zone with 1cm wispy stringer @ 45° with fine granular chalcopyrite in wispy slip surface of stringer.
13.72 5 mm angular sphalerite fragments.

16.31 QUARTZITE. Lorrain --- contd ---

16.31 Slip with slickensides @ 45°.
(Appears to be a slip (fault) contact.

16.31 – 30.80 QUARTZITE. (Lorrain) Sudbury Breccia?
Undifferentiated
80%± Sudbury Breccia fragments
zones and patches "intermixed"
with generally coarse grained
Lorrain quartzite.
Fractured throughout at various
angles.
More prominent features as tabulated
below.

27.38 Wedge with a series of fractures
from 35-50°.
28.45 Slip with slickensides @ 50°.
28.43 1.5 cm quartz intrusion @ 45°
29.27 Prominent slip with rusty surfaces @ 20°.
29.76 Slip @ 55°.
29.77 – 30.34 Coarse grained, weakly recrystallized quartzite
fractured throughout.
30.15 1 cm zone with series of 45° fractures.

30.34 – 31.44 Predominantly fine grained, amorphous
Sudbury Breccia with local irregular
coarse grained Lorrain quartzite.

31.44 – 32.30 Predominantly fractured mixture of Sudbury
Breccia fragments and weakly recrystallized
coarse grained Lorrain quartzite.
Approximately 1/2 fractures per metre.

QUARTZITE (domain) Sudbury Brecciated ... cont'd

[illegible] – 65.83 66.90	Multiple series of close spaced 65–70° fractures, 20 cms zone in dark grey Sudbury breccia fragment with thin hematite stained thread like seams and slip platings.
70.10± – 72.[illegible]±	Series of low angle slips 15–25°.
[illegible]	40 cms limonite and hematite stained patch". Appears as a wedge along core.
73.15± – 76.60	Cross fractured weakly limonitic and locally pitted coarse grained quartzite. Random low angle fractures and multiple high angle (75°±) fractures.

[illegible] END OF HOLE.

Casing in hole.

[signature], P.Eng.
3 July 1990

[illegible] Mines Limited
Sudbury Ontario

DDH# WLC90-21

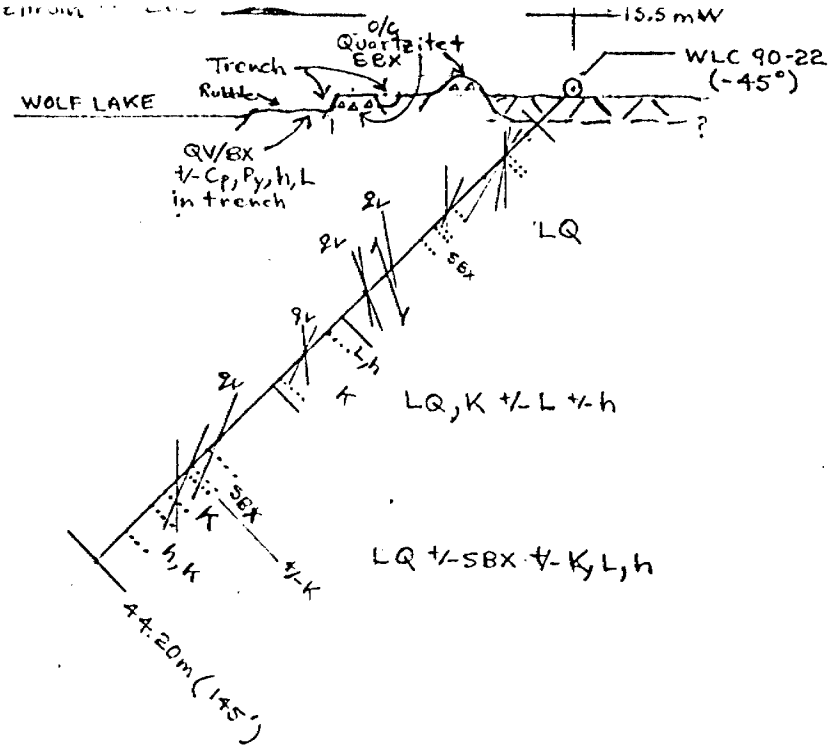
Sampling and Assaying

Sample No.	From	To.	Core Length	ppb. Au	ppm Cu
WLC9021-1	@ 13.12.		25cm	~~TF~~	~~58~~

20 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

D.D.H. #: WLC 90-22
LOCATION: Wolf Lake, "No. 1 Zone", Mackelcan Tp.
COORDINATES: Approximately 54.5m S & 14. mW of 83-28
DIP: -45° @ Azimuth 263°
DIP TESTS: None
FINAL DEPTH: 145' (44.20metres)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: Triangle Drilling Company Ltd., Lively, Ontario
CORE SIZE: BQ
DATE STARTED: June 7/90
DATE FINISHED: June 8/90
LOGGED BY: Frank H. Toews, B.Sc.

0 - 3.35m	CASING	(11' of Casing)
3.35 - 21.34 m	LORRAIN FORMATION - QUARTZITE	
	Light greenish-grey, medium to coarse grained (locally pebbly) quartzite with weakly Kaolinitic parts; <3% greenish-grey Sudbury Breccia veining, mainly	
4.27 - 8.23 m		Fractured @ 25-35°, 40-50°, some @ 10-15° to C.A (3-5/30
-		6.4 - 6.70m - Broken core; Fractures/slips @ 35°, 45°, 15° C
11.12 - 12.65 m		Fractures/slips @ 15-25°, 40-50° to C.A.
12.65 - 15.85 m		Numerous anastamosing sericitic veinlets/shears @ 25-60° C
-		12.95 - 14.02m - Sudbury Breccia
16.73		2 mm wide quartz veinlet @ 55° to C.A.
17.37		Some bedding @ 65° to C.A.
19.11		2 mm wide quartz veinlets @ 65° & 55° to C.A
21.34 - 27.74	LORRAIN FORMATION - QUARTZITE (ALTERED)	
	Light greenish-grey, coarse grained to very coarse grained quartzite; weakly to moderately Kaolinitic generally;	fractures 25-30°, 50-65° to C.A. (2-4/30cm)
21.34 - 22.86		Limonitic +/- Hematitic patches & fractures
22.55 - 27.43		Often very coarse grained; moderately (often) Kaolinitic +/- pitting +/- Kaolinitic fractures
24.99		2 mm wide quartz veinlet @ 50° to C.A.
25.30		3 mm wide quartz veinlet @ 20° to C.A, vuggy + limonitic stain; broken core
27.74 - 44.20	LORRAIN FORMATION - QUARTZITE (+/- ALTERATION) +/- SUDBURY-TYPE BRECCIA	
	Light greenish-grey, medium to coarse grained quartzite +/- weakly Kaolinitic alteration generally; local hematitic alteration; local Sudbury Breccia veining	
29.56 - 33.83 m		Fractures +/- slips @ 40-50°, 60-70°, 15-25° to C.A.; 2-6/30 cm
32.55 - 32.92		Two quartz veinlets, 0.3 - 1 cm wide @ 0-5° & 20° to C.A.
33.83 - 35.51		15% greenish-grey Sudbury Breccia veins



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH D.D.H. # WLC 90-22 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.T.	Scale = 1:500	Date: June/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

	35.51 - 35.97m	Broken core; fractures @ 20-25° to C.A., some with Kaolinitic alteration & pitting
	35.97 - 37.95	Pitting, Kaolinization; fractures 0-10°, 40-50° C.A.
	39.01 - 41.60	Moderately hematitic patches, pitting & Kaolinization (moderate)
	41.60 - 44.20	Few hematitic patches & veinlets; weakly Kaolinitic (locally moderate)
44.20m (145')	END OF HOLE	

Frank H. Todd B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

29 BEAVER CRESCENT
NORTH BAY, ONTARIO, P1A 3N1

DDH.# : WLC 90-23
LOCATION: Wolf Lake, "No. 1 Zone", Mackelcan Tp.
COORDINATES: Approximately 43 m.S & 29.2 m.W of 83-28
DIP : -65° @ Azimuth ~123°
DIP TESTS: NONE
FINAL DEPTH: 235' (71.63 m)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: TRIANGLE DRILLING COMPANY LTD., LIVELY, ONTARIO
CORE SIZE: BQ
DATE STARTED: June 8/90
DATE FINISHED: June 11/90
LOGGED BY: Frank H. Toews, B.Sc.

0 - 1.22 m	CASING	(4' of Casing)
1.22 - 3.05 m ±	LORRAIN FORMATION - QUARTZITE Lost or ground core approximately 1 m. Very light grey (with faint pinkish hue & reddish hematitic patch in upper part); light greenish-grey in lower part becoming reddish-pink & kaolinitic near contact with unit below; some broken core in lower part	
3.05 - 5.94 ±	MINERALIZED QUARTZ VEIN/BRECCIA ZONE IN ALTERED QUARTZITE 15-20% often vuggy (+ limonite +/- hematite) quartz vein/breccia with 1-2% disseminated, blebs, semi-veinlets of Py +/- Cp +/- Chalcocite (?) in moderately to often strongly kaolinized, bleached, pitted, medium to coarse grained quartzite; quartzite varies from off-white to pinkish-reddish (hematitic) colour with remnant light greenish-grey parts; limonitic staining & some hematitic staining is often present; quartz vein contacts & veinlets are @ 15, 20-25°, 60-75° to C.A.; zone is fractured (+/- limonite) mainly @ 60-75° to C.A.; core is broken in parts of unit	
3.12 m		Vein contact @ 22° to C.A.
5.94		Vein contact @ 23° to C.A.
5.94 - 9.75 ±	LORRAIN FORMATION - QUARTZITE (ALTERED) +/- SUDBURY-TYPE BRECCIA Light greenish-grey, coarse to medium grained, moderately to weakly Kaolinitic (+/- pitting)	
5.94 - 9.14 m (±)		Fractured (+/- limonite) @ 60-65°, 40-55° to C.A. with some @ 15-20° to C.A.; 6/30 cm
5.97 - 7.01 m		Sudbury Breccia veining @ 25-30°, 40°, 15°, 65° to C.A. in Kaolinitic quartzite; locally vuggy & pitted with 1-2 mm wide quartz veinlet @ 25-30° near 5.97 m

9.75 - 26.21m (+/-)	LORRAIN FORMATION - QUARTZITE + SUDBURY BRECCIA (ALTERATION)
	Light greenish-grey, coarse to medium grained quartzite weakly to locally moderately Kaolinitic; 15% (+/-) greenish grey Sudbury Breccia veining @ 25-65° to C.A.; local weak limonitic staining;
17.37 - 18.3m +/-	Weak to moderate limonitic patches
19.2 - 23.8 +/-	Fracture zone: fractures @ 45-60° to CA, mainly; +/- limonitic staining
24.7 - 25.9 +/-	Similar to 19.2-23.8m interval
26.21	Sheared Sudbury Breccia @ 30° (+/-) to C.A.
26.21 - 33.83 (+/-)	LORRAIN FORMATION - QUARTZITE (ALTERATION)
	Light greenish-grey, coarse to medium grained quartzite weakly to moderately Kaolinitic (+/- pitting); fractured throughout @ 25-70° to C.A.
26.21 - 27.13 m	Fracture zone: fractures @ 25-35°, 50-65° to C.A. +/- limonite
27.28	< 1 cm wide, vuggy quartz veinlet @ 75° to CA.
28.8 - 28.96	Two quartz veinlets @ 70° & 50-60° to C.A.
31.55 - 32.0	Weak hematitic spotting
33.83 - 55.17 (+/-)	LORRAIN FORMATION - QUARTZITE (HEMATITIC ALTERATION)
	Mainly greenish-grey, medium & coarse grained alternating bands (< 2cm to < 0.6m, some narrow bands @ 70-80° to C.A.) quartzite, with 50% (+/-) weak to strong reddish hematitic patches, veinlets & spotting (+/- pitting) to about 51.51 m; local weak Kaolinitic alteration; local limonitic alteration
35.97 - 42.67 m	Stronger hematization
46.48 - 49.99	Stronger hematization
	- 49.07 - 49.25m - pitting, bleaching, strong to moderate Kaolinization @ 70° to C.A.
50.38	1 cm wide, Sudbury Breccia veinlet @ 80-85° to C.A.
50.38 - 51.51	3-5% hematitic spotting; dark grey heavy mineral laminations, 1-5 mm wide @ 75-85° to C.A. in upper 45 cm
51.51 - 53.03	Light greenish-grey, medium to coarse grained, more feldspathic(?) quartzite
53.03 - 53.49	Medium grey, more siliceous quartzite with limonitic staining @ 35° to C.A. at 53.03 m
53.49 - 53.74	Six dark grey heavy mineral laminations @ 70-85° to C.A.
54.47	Limonitic stain halo about fracture @ 80° to C.A.

55.17 - 60.96 m

LORRAIN FORMATION - QUARTZITES

Mixed faint pinkish-grey to a light grey, more siliceous(?), medium to coarse grained quartzite with some light to medium greenish-grey quartzite; hematitic & limonitic stained parts (weak to moderate); some scattered dark grey heavy mineral laminations @ 70-75° to C.A.

55.17 - 56.69 m	Several limonitic stained fractures & haloes @ 5-15° & 40° to C.A.
58.12 - 58.49	Several fractures/slips with Py +/- Quartz +/- limonite @ 50°, 55°, 60° & 70° to C.A.
59.34	Fracture @ 55° to C.A. with pitting & Kaolinization in vicinity, in light green-grey quartzite
59.59 - 60.87	Reddish alteration & pitted hematitic spotting

60.96 - 65.53

LORRAIN FORMATION - QUARTZITE

Light to medium greenish-grey, medium to coarse grained quartzite with scattered weak patchy hematitic alteration; local Kaolinization

61.11 - 61.20 m	Light greenish-grey quartzite; fine grained; @ 80-85° to C.A.; pitting & weak Kaolinitic alteration on outer sides of contacts
61.57 - 62.09	Kaolinitic, pitted
62.09 - 62.25	Broken core; several quartz (+/- hematite) veinlets 2 mm to 2cm wide @ 80° & 60°(?) to C.A.
62.25 - 62.48	Pitting, Kaolinitic coarse grained quartzite
62.64	2 mm wide quartz veinlet @ 75° to C.A.
62.7 - 63.09	Kaolinitic fractures @ 30°, 35°, 40°, 60° to C.A. in Kaolinitic Quartzite
63.61	Shearing @ 50° to C.A., local broken core
64.0 - 64.31 (½)	Broken core in part; Fractures/slips @ 60-65°, 20° to C.A. in quartzite +/- Kaolinitic alteration

65.53 - 71.63

LORRAIN FORMATION - QUARTZITES (+/- BEDDING)

Light grey to faint pinkish-grey & light greenish-grey, medium grained quartzites with some bedding @ 60° (+/-) to C.A. & some dark grey, heavy mineral laminations @ about 40°, 60°, 70°, 80° to C.A.

67.36 m	Limonitic fracture @ 20° to C.A.
67.36 - 68.58	Some limonitic staining & fracture @ 80° C.A.
68.82 - 69.13	Limonitic fracture @ 0-5° to C.A.
70.56	Slips @ 75-80° to C.A.

	70.8 m 71.02-71.63	Slip @ 35° to C.A. Minor hematitic spotting in grey quartzite with dark grey, heavy mineral laminations @ 70-80° to CA; several limonitic fractures @ 80° to CA.
71.63m (235')	END OF HOLE	

Frank H. Tocco, B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

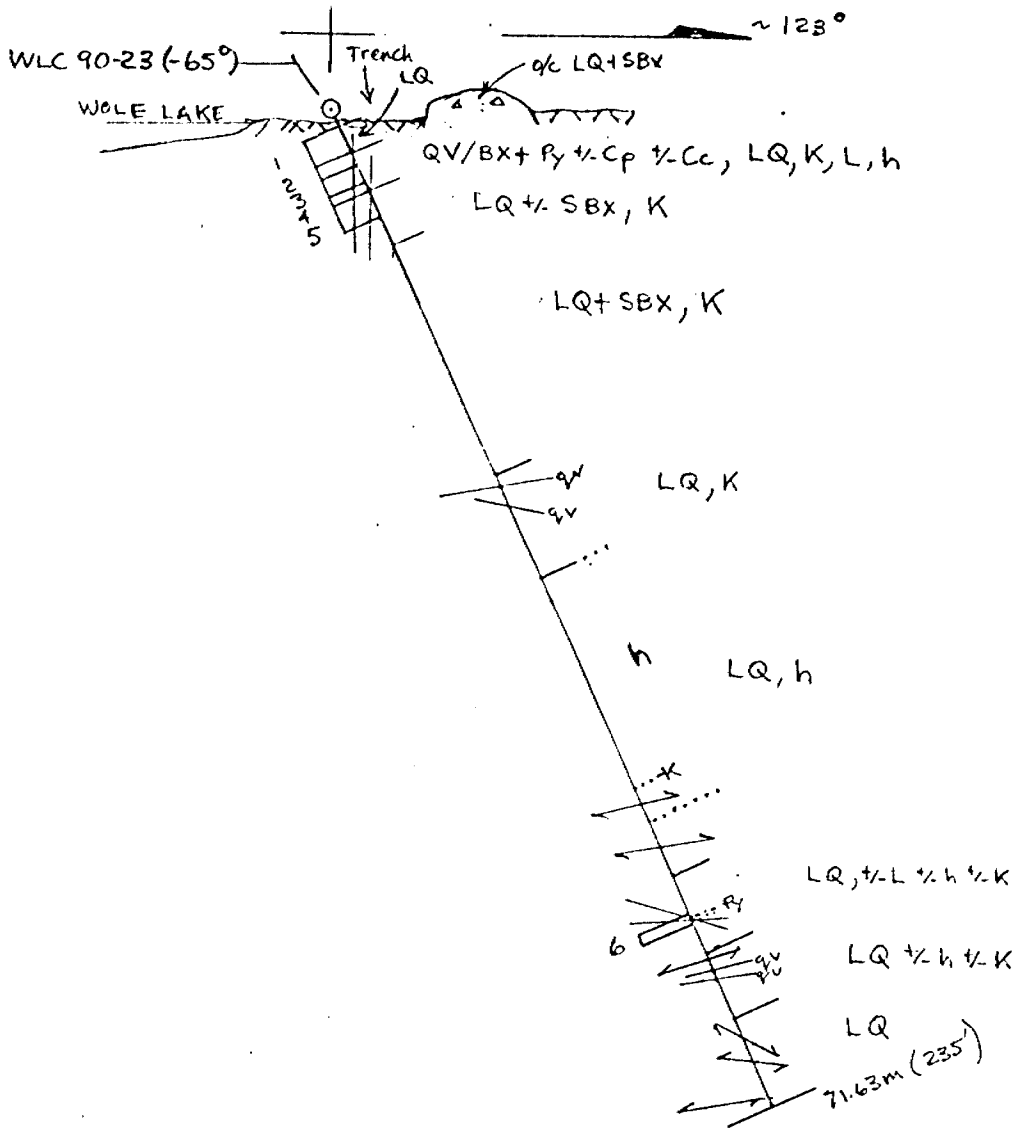
WLC 90-23

(A)

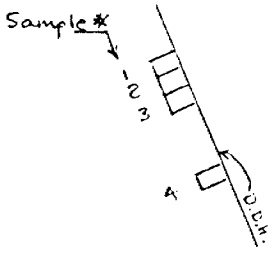
SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH		oz/ton Au (ppb)	Cu (ppm)	REMARKS
			Metres	Feet			
WLC 90-23-1	1.22 m	3.05m	1.83m	6.0'	0.008		Qte, Lost Core ~3.5'
-2	3.05	3.96	0.91	3.0'	0.034	1800	QV's + Py +/- Cc
-3	3.96	5.18	1.22	4.0'	0.038	1900	QV's + Py, Cp, Cc
-4	5.18	5.94	0.76	2.5'	0.004		QV's
-5	5.94	7.62	1.68	5.5'	0.004		Qte + SBX +/- Qz veinlet
-6	58.06	58.67	0.61	2.0'	Tr		Fractures/Slip + Py +/-
Average	3.05 m	5.18m	2.13m	7.0'	0.036		

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



Note: See log for assays



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH DD.H.# WLC 90-23 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.T.	Scale- 1:500	Date: June/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

D.D.H.# : WLC 90-24
LOCATION : Wolf Lake, "Camp Zone", Mackelcan Tp.
COORDINATES : Approximately 15.7m S & 6.5m W of WL83-28
DIP : -90°
DIP TESTS : None
FINAL DEPTH : 135' (41.15 m)
COMPANY : FLAG RESOURCES (1985) LTD
DRILLED BY : Triangle Drilling Company Ltd., Lively, Ontario
CORE SIZE : BQ
DATE STARTED : June 11/90
DATE FINISHED : June 12/90
LOGGED BY : Frank H. Tocws, B.Sc.

0 - 0.61 m	CASING	(2' of Casing)
0.61 - 21.34 m	LORRAIN FORMATION - QUARTZITE	Light greenish-grey; medium to coarse grained quartzite with weak to locally moderate Kaolinization; fracture
	0.61 - 4.57 m	Fracture zone : fractures (+/- Kaolinite) +/- slip @ 25°, 30°, 35° & 50° C.A. ; 4-8/30 cm - some broken core; 30 cm lost core
	4.57 - 9.14	Fractures +/- slips @ 25°, 35°, 45°, 60-65° & 75° to C.A. ; 1-5/30 cm
	10.67 - 12.19	Slips + fractures @ 30-35°, 45-50° to C.A.; 3-5/30 cm
	16.18	2 mm wide, vuggy hematitic quartz veinlet @ 55° to C.A. plus parallel limonitic fracture
	16.46 - 21.34	Fractures (+/- Kaolinite) +/- slips, often wil limonitic staining @ 15°, 20°, 25°, 35°, 40°, 55°, 63°, 70° to C.A. ; 2-5/30 cm
		- 16.85 - 16.98 m - very coarse grained, pebbly quartzite with gradational upper contact & a shear @ 20° to C.A. on lower contac
21.34 - 23.85	LORRAIN FORMATION - QUARTZITE	Light greenish-grey, medium to coarse grained quartzite often with zones of numerous pale greenish, sericitic (?), anastamosing fracture fillings (some slips) & shears, (+/- 5-15°) fractures 0.5 - 2 mm wide @ 75°, 65°, 50-55°, 45, 35° to C.A.; also some limonitic stained fractures mainly @ 0-15°, 20-25°, 35° & 50° to C.A.
	21.55 - 21.94 (+/-)	Very coarse grained pebbly quartzite
	21.88 - 22.10	Broken core; limonitic fractures @ 5-15°, 65° C.A
	22.10 - 22.34	Greenish-grey Sudbury Breccia veining @ 0-25° to C.A.

NORTH BAY, ONTARIO P1A 3N1

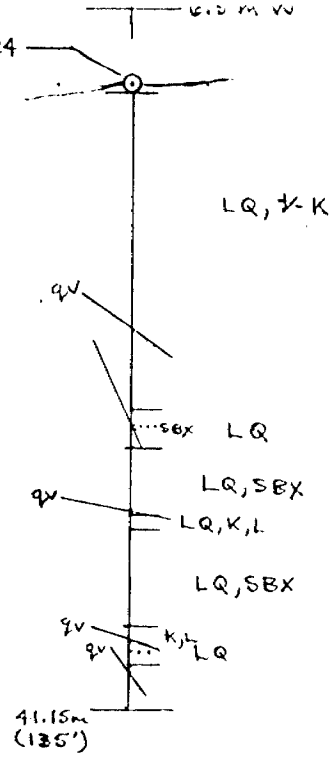
23.85 - 28.34m	LORRAIN FORMATION - QUARTZITE + SUDBURY-TYPE BRECCIA	
	40% (+/-) greenish-grey Sudbury Breccia veins (@ 80°-5° to C.A.) in medium to coarse grained greenish-grey quartzite some limonitic staining & fractures	
	23.85 m	Contact of quartzite with Sudbury Breccia @ 80° to C.A.
	25.15 (+/-)	Several hematitic veinlets @ 15° to C.A. in Sudbury Breccia
	25.30 - 26.21	Mainly quartzite with numerous, pale greenish, sericitic(?), anastamosing fracture fillings & shears @ 5-10°, 25°, 50-55°, 35°, 60-70° to C.A.
	26.27 - 28.34	Limonitic staining & fractures in Sudbury Breccia/quartzite; fractures @ 10°, 15-20°, 30-35°, 55°, 80° to C.A.; 3-5/30cm
	28.04	2-3 mm wide, vuggy, limonitic quartz veinlet parallel to Sudbury Breccia vein contact @ 80° to C.A.
	28.34	Contact of Sudbury Breccia with quartzite @ 25° to CA
28.34 - 29.26	LORRAIN FORMATION - QUARTZITE (ALTERED)	
	Greenish-grey, coarse grained to medium grained, Kaolinitic quartzite (+/- pitting) with limonitic patches & fractures @ 0-10°, 25° to C.A.	
29.26 - 35.63	LORRAIN FORMATION - QUARTZITE + SUDBURY-TYPE BRECCIA	
	Greenish-grey, medium to coarse grained quartzite with 30% (+/-) Sudbury Breccia	
	29.35 - 29.87	Medium grained quartzite, foliated @ 0-15° to C.A.
	29.87 +/-	3 cm Sudbury Breccia + limonitic stain @ 25° to C.A.
	29.87½ - 30.63	Numerous sericitic(?) anastamosing fracture fillings @ 10-65° C.A.
	30.63 - 31.09	Limonitic staining patches
	31.09 +/-	8 cm greenish-grey Sudbury Breccia vein @ 20° to C.A., foliated
	31.17 - 31.94	Epidote(?) shears in quartzite @ 40-60° C.A.
	31.94 - 32.43	Grey Sudbury Breccia @ 35° to C.A.
	32.43 - 34.20	Coarse grained to medium grained quartzite with numerous anastamosing sericitic(?) shears (+/- limonite) @ 30-35°, 45-50°, 65-70° to C.A.
	34.20 - 35.63	Greenish-grey Sudbury Breccia; upper contact @ 10-15° to C.A (foliation @ 15-0° C.A), lower contact sheared @ 47° to C.A.
		- 35.60 m - 3mm wide Quartz - Hematite Veinlet @ 25° to C.A., truncated by sheared contact at 35.63 m

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

37.63 - 38.22m	LORRAIN FORMATION - QUARTZITE (ALTERED) Greenish-grey, coarse grained + medium grained, weakly to moderately Kaolinitic; patchy limonitic staining + limonitic fractures + slips @ 35°, 55°, 70-75°, 65° (3-8/30cm) to 37.03m; (also similarly fractured without limonite below 37.03m)
36.57m (+/-)	Two, 1-2 mm wide quartz veinlets @ 70-75° to C.A.
36.88	Several pearly chert pebbles < 2 X 1 cm in size
38.22 - 41.15	LORRAIN FORMATION - QUARTZITE
38.22 - 38.65	Light green Sudbury Breccia(?); lower contact at 2 mm wide quartz veinlet @ 35° to C.A.; fractures @ 80°, 50° to C.A.
38.65 - 41.15	Coarse to medium grained, greenish-grey quartzite - 38.65 - 39.93m - Fractures @ 65°, 20-25° & 35-40° to C.A.; 6/30cm.
41.15 (135')	END OF HOLE

Frank H. Joens B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH D.D.H.# WLC 90-24 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.J	Scale - 1:500	Date: June/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

D.D.H.# : WLC 90-25
LOCATION: Wolf Lake, "Camp Zone", Mackelcan Tp.
COORDINATES: Approximately 7.7 m N & 16.3 m W of 83-28
DIP: -90°
DIP TESTS: NONE
FINAL DEPTH: 155' (47.24 m)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: TRIANGLE DRILLING COMPANY LTD., LIVELY, ONTARIO
CORE SIZE: BQ
DATE STARTED: JUNE 12/90
DATE FINISHED: JUNE 13/90
LOGGED BY: FRANK H. TOEWS, B.Sc.

0 - 2.44 m	CASING	(8' of Casing)
2.44 - 22.65 m	LORRAIN FORMATION - QUARTZITE	
	Light to medium greenish-grey; medium to coarse grained (very locally pebbly) quartzite; locally weakly Kaolinitic scattered weak limonitic staining on fractures +/- slips @ 10-15°, 25-30°, 45-55°, 60-70° to C.A.; some scattered milky quartz veinlets (+/- vugs +/- hematite) mainly 1-10 mm wide @ 45°, 55°, 60-70° to C.A.	
	2.44 - 3.66 m	Parts with broken core
	- 3.05 - 3.66 m -	Some foliation @ 20-25° to C.A.
	4.50	Two quartz veinlets < 5 mm wide @ 45° to C.A.
	4.65	≤ 10 cm quartz vein + hematite @ 70° to CA
	5.64 - 5.82	Two, 2 mm quartz veinlets @ 55° & 75° to C.A.
	7.01 - 7.31	Seven fractures +/- limonitic stain @ 30°, 55-60°, 70° to C.A.
	8.17 - 8.53	Some foliation @ 20-25° to C.A.
	9.36	Two quartz veinlets < 1 cm wide @ 60-70° C.A.
	12.50 - 13.11	Seven fractures +/- Limonite @ 60°, 75° to C.A.
	13.41 - 13.56	Two, quartz veinlets, 2 mm wide & two parallel limonitic fractures @ 70° to C.A.
	13.75	Quartz veinlet + hematite @ 45° to C.A.
	17.37	Some bedding @ 20° to C.A.
	20.42	Quartz veinlet, 5 mm wide @ 20° to CA. + 5% Py +Cp +/- dull, black mineral (Chalcocite?); 8 cm zone of hematization below veinlet up to a Limonitic fracture @ 33° to C.A.
	22.25	Vuggy quartz veinlet with hematitic stain (pinkish), 1 cm wide @ 60° to CA
	22.40 - 22.65	Four, Limonitic fractures @ 50°, 75-80° to C.A.

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

22.5 - 27.43m	**LORRAIN FORMATION - QUARTZITE +/- KAOLINITE**	
	Mainly coarser grained (≤ 2mm) quartzite +/- pebbles (≤ 5mm) +/- moderately Kaolinitic parts; few quartz veinlets;	local Limonitic fractures
	23.07 - 23.47m	Eight limonitic stained fractures @ 70-80°, 60° & 35° to C.A.
		- 23.32m - quartz veinlet @ 75° to C.A.; quartzite is Kaolinitic in vicinity.
	23.86 - 24.60	Fracture zone; Kaolinitic fractures + Limonite @ 80-85°, 50-55° to C.A. + 45° to CA 2-8/15cm; also a 2 mm quartz veinlet @ 50° to C.A. & 15cm of pitted, Kaolinized quartzite
	25.21	Quartz veinlet, 2 mm wide @ 75° to CA.
	25.91	Vuggy quartz veinlet, 1 cm wide @ 60° to C.A.
	26.40	Hematitic, quartz veinlet, 3 mm wide @ 60° CA
	27.13 - 27.43	Broken core, fractures @ 45°, 60°, 5° to CA
27.43 - 33.13	**LORRAIN FORMATION - QUARTZITE**	
	Medium to coarse grained, mainly:	greenish-grey quartzite with scattered milky quartz veinlets, 2mm - 2cm wide
	27.52	Quartz vein, 2 cm wide @ 50° to CA.
	27.74 - 28.04	Several limonitic - Kaolinitic fractures @ 25-30° to C.A.
	28.96 - 29.11	Limonitic fractures @ 50-60° to C.A.
	30.17	Two vuggy quartz veinlets, 2 & 5 mm wide @ 75° & 80° to C.A.
	30.94	Milky quartz vein, 3-4 cm wide @ 85-90° CA
	31.70 - 31.92	Three, quartz veinlets, 2 mm wide @ 55-60°, 45° & 70° C.A.
	32.70	Quartz vein, 2 cm wide @ 50° to C.A.
	33.07	Quartz veinlet, 1 cm wide @ 30° to C.A.
	33.12	Light grey, 2 cm chert pebble cut by 2-3 mm wide quartz veinlet @ 55° to C.A.
33.13 - 36.73	**LORRAIN FORMATION - QUARTZITE +/- LIMONITIC ALTERATION**	
	Greenish-grey, medium to coarse grained quartzite; 15-20% scattered alteration	weak to moderate patchy limonitic & also on fractures @ 40-55°, 20-30°, 60-75°, 80° to C.A.; several milky quartz veinlets
	33.13 - 33.37	Moderately strong limonitic alteration + six limonitic fractures @ 80°, 65-70°, 30° to C.A. over 10 cm
		- 33.37m - quartz veinlet, 5mm wide @ 70-75° to CA.
	34.44	Quartz veinlet, 2 mm wide @ 15° to C.A.

	35.97m	2mm - 2cm wide quartz veinlet @ 40° to C.A cut by limonitic fracture @ 60° to C.A.
	36.12	2mm wide quartz veinlet @ 20° to C.A.
36.73 - 47.24m	LORRAIN FORMATION - QUARTZITE	
	Similar to section from 27.43 - 33.13 m; few scattered milky quartz veinlets between 37.49 - 44.12 m	
	37.49 - 37.72 m	Two quartz veinlets @ 65-70°, 5mm & 2cm wide
	38.50	1 cm wide quartz veinlets @ 25° to C.A.
	39.93 - 40.08	Two quartz veinlets ≤ 1cm wide @ 70° & 60° (gash) to C.A.
	40.54	3mm wide quartz veinlet @ 60° to C.A.
	41.54	< 10cm limonitic patch + fracture @ 35°
	42.37 - 42.98	Coarse grained quartzite, Kaolinitic +/- pits; fractures +/- limonite @ 40-45°, 80° to C.A. (6/30cm)
	44.12	Two quartz veinlets, 2-5mm wide @ 75° & 70° to C.A.
	44.65 - 45.41	Fractures +/- limonite @ 20°, 30°, 55-60° to C.A. (2-4/30cm)
		45.11m - several jasper pebbles, sub-angular to sub-rounded, < 1cm siz
47.24m (155')	END OF HOLE	

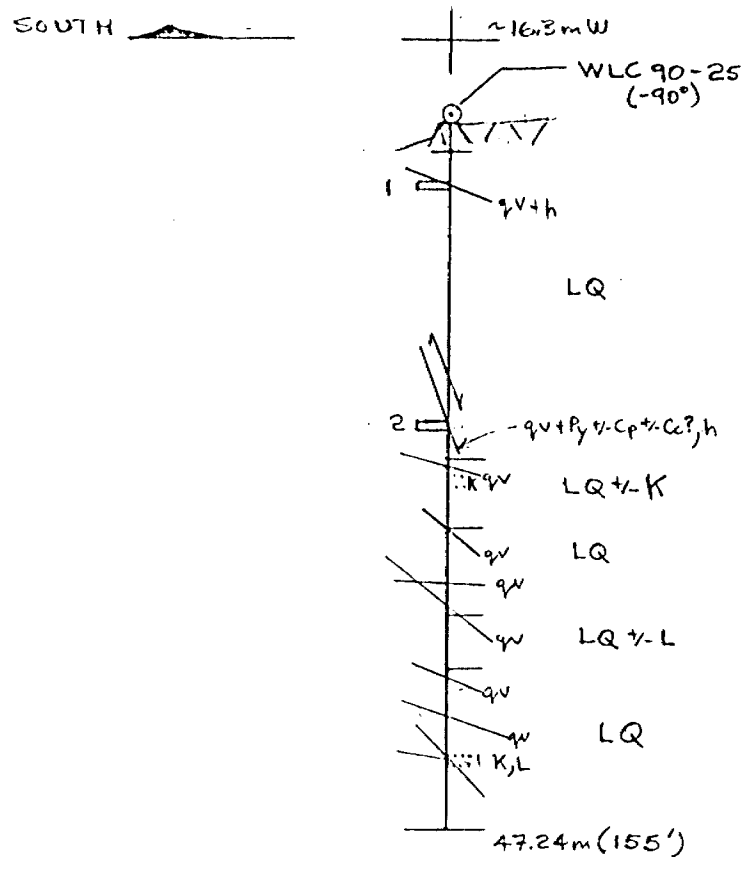
Frank H. Tocus, B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

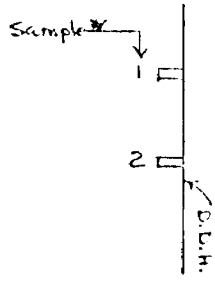
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH		Au (oz/ton) (ppb)	Cu (ppm)	REMARKS
			Metres	Feet			
WLC 90-25-1	4.57 m	4.87 m	0.30m	1.0'	Tr		QV + Hem.
-2	20.27	20.57	0.30 m	1.0'	0.070	?	QV + Py ½Cp ½Cc(?) + Hem



Note: See log for assays



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH D.D.H. # WLC 90-25 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.T.	Scale - 1:500	Date: June/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

20 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DDH #: WLC 90-26
LOCATION: Wolf Lake, "Camp Zone", Mackelcan Tp.
COORDINATES: Approximately 10.1m N & 9.2m W of WL 83-25
DIP: -90°
DIP TESTS: NONE
FINAL DEPTH: 309' (94.18m)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: TRIANGLE DRILLING COMPANY LTD., LIVELY, ONTARIO
CORE SIZE: BQ
DATE STARTED: JUNE 18/90
DATE FINISHED: JUNE 20/90
LOGGED BY: FRANK H. TOEWS, B.Sc.

0 - 0.61 m	CASING	(2' of Casing)
0.61 - 60.75	LORRAIN FORMATION - QUARTZITE Light to medium greenish grey; medium & coarse grained, local quartz pebbles; locally bedded @ 15-25° to C.A. occasionally Kaolinitic; occasional limonitic staining; scattered light greenish, anastamosing, 0.5-2 mm wide shears/fracture fillings @ 40-70° to C.A.; fractures +/- slips, occasionally limonitic stained @ 10-15°, 20°, 30-35°, 40-45° & 55° to C.A. (1-2/30 cm mainly); 1% scattered, milky Quartz veinlets 1-5mm wide occasionally vuggy @ 50-85° to C.A. mainly. (barren of sulfides)	
	0.61 - 1.52 m	Broken core; slips & fractures mainly @ 10-15° C.A.
	1.68	Bedding @ 25° to C.A.
	2.74 - 3.05	Three, 2-5 mm wide Quartz veinlets @ 80-85° & 75° to C.A.
	6.10 +/-	Bedding @ 20° to C.A. with parallel fractures @ 15-20° to C.A.
	8.84 +/-	Bedding @ 20° to C.A.
	9.45	Two quartz veinlets, ≤2mm wide @ 75°, 70° to C.A.
	10.97 +/-	Epidotized bedding @ 20° to C.A. with fracture & slips in vicinity (over 30 cm) @ 20°, 35°, 50-55° to C.A.
	14.17	Dark brownish, limonitic, Pyritic(?) fracture @ 55° & 0° over 5 cm
	14.66 - 14.72	Two, 3-5 mm quartz veinlets @ 65° to C.A.
	16.52	Vuggy, 5 mm quartz veinlet @ 60° to C.A.
	17.22	1 cm wide quartz veinlet @ 55° to C.A.
	17.45	2 mm wide quartz veinlet @ 60° to C.A.
	24.54 - 29.41	Fracture zone (often limonitic stained fractures @ 30-35°, 45-55°, 60°, 15-25° to C.A.; 2-10/30c
	-	24.69 m - 2 mm quartz veinlet @ 55° to C.A.
	-	25.60 - 26.61 m - limonitic staining & dissemination & as haloes on a few fractures @ 15-25° to C.A.
	-	26.12 m - 1 cm quartz veinlet @ 65° to C.A with 2% disseminated Py

28 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

-	27.25 - 27.34 m - Three, 1-4 mm wide quartz veinlets @ 70° to C.A.
29.49 m	1 cm wide quartz veinlet @ 50° to C A
31.06 - 31.45	Two, 2-3 cm wide quartz veinlets with contacts @ 75° & 50° & @ 60° to CA; minor VG
31.70	2 mm wide quartz veinlet @ 80° to C.A.
33.53 - 34.20	Fractured (+/- slips) @ 50-55°, 60-65°, 30-40° to CA; 6+/ 30 cm
-	33.83m - 25 cm of broken core
-	34.07m - 34.20m - Light green, epidotized(?) finer grained quartzite with several irregular 1-3 mm wide quartz veinlets @ 60-65° to CA.; upper contact in broken core @ 25°(?) to C.A., lower contact @ 60° to C.A.
35.51	1 cm wide quartz veinlet @ 65° to C.A., minor vugs + hematite
35.97 - 38.10	Scattered light green, sericitic(?) shears & veinlets < 1 to 3mm wide @ 50-70° to C.A.
-	37.03 - 37.49m - Nine fractures/slips/shears @ 30°, 50-55°, 15° to C.A.
39.01	Two, 2-5 mm wide quartz veinlet @ 50° C.
40.08 - 40.21	Pitted, bleached, Kaolinized band with contacts @ 67° & 57° to C.A. with 1% disseminated Py (most concentrated at fracture @ 70° C.A. near 40.1 m
40.23 - 40.84	Weakly Kaolinitic; fractures @ 30°, 55-65°, 10° C.A
42.21 - 43.65	Patchy limonitic staining
-	42.67 - 42.98m - weakly Kaolinitic +/- pitting
43.89	Sheared, 5 mm wide quartz veinlet @ 60° C.A
44.53	Strongly limonitic shear + Quartz + Py @ 55° to C.A.; limonitic halo over 8 cm
46.02 - 47.24	Slips, fractures @ 0-10°, 40, 45°, 50° & 30° to C.A.; some broken core
48.62 - 49.01	Five, 2-5 mm wide quartz veinlets @ 55°, 60°, 65° to C.A.
49.68 - 50.6 +/-	Light greenish, sericitic(?) shears/slips @ 20°, 50-55°, 70° to C.A; occasional limonitic slip
50.72	2 mm wide, vuggy quartz veinlet @ 80° to C.A
50.75	5 cm, bleached Kaolinized patch
50.96	2 mm quartz veinlet @ 20° to C.A.
52.79	Bedding @ 30° to C.A.
55.24	Strongly limonitic fracture (+ Py?) @ 70° to C.A
55.32	3cm wide Quartz Vein +/- vugs-limonite @ 70-75° to C.A.
55.35 - 56.08	Fracture zone (≤ 10/ 30 cm); limonitic fracture @ 0-5°, 15°, 70-75°, 55°, 35° to C.A. (mainly 70-7 ; rocks often Kaolinitic, pitted +/- bleaching

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

	56.78 m	1-2 mm wide Quartz veinlet @ 75° to C.A. cut by Limonitic fracture @ 30° to C.A.
	57.15 - 57.45	Fractures +/- slips & light greenish sericitic shears @ 55°, 65°, 70° & 20° to C.A.
	57.76	Fractures @ 20°, 15°; local broken core
	57.9 (or less)	Driller reports that water was lost near 190'
	57.91	3cm wide Quartz Vein (minor pits +/- hemati with contacts @ 75° & 60° to C.A.
	58.22 - 60.75	Fractures +/- limonitic staining @ 10-15°, 25°, 35-40° & 50-55° to C.A.; 2-4/30cm
	-	59.65 - 59.89 m - patchy Kaolinization +/- pits & limonitic stain
60.75 - 71.02 m	LORRAIN FORMATION - ALTERED QUARTZITE +/- SUDBURY BRECC	
	Greenish-grey with zones +/or Kaolinization breccia; bands (some (some earthy, 60-65°, hematite strong	, medium to coarse grained quartzite of dark red to pinkish hematization & bleaching; local Sudbury-type 40% (+/-) hematization zones as patchy pervasive, @ 15-25°, 40° to C.A.) plus fractures/slips red +/- limonite) @ 25°, 35°, 40-45°, 50-55°, 70-80° to C.A. (2-4/30cm), and as spotting; 30% (+/-) moderate to Kaolinization zones, often hemati-zo
	60.75 - 61.72 m	10% (+) spotted to blotchy hematization
	-	61.42m - 2 mm wide quartz veinlet @ 75° C.A
	61.72 - 62.18	Moderate hematization & Kaolinization; pink, bleached & reddish patchy hemat-ization; outer contacts @ about 25° to C.A.; one hematized band (1cm) @ about 25° to C.A.
	62.18 - 64.0 +/-	Patchy bleaching, patchy Kaolinization & patchy disseminated hematization plus one 1-2cm hematized band @ 40° to C.A gradational lower contact into pink to creamy bleached quartzite
	-	62.94 m - Two light greenish shears, <5mm wide @ 50° & 45° to C.A. over 4 cm.
	64.0 - 65.23	Bleached pinkish to creamy quartzite with remnant green-grey patches & patchy to banded dark reddish hematizatio
	-	64.08 m - 5mm wide quartz veinlet @ 65° to C.A. in bleached beige to pinkish quartzite
	-	64.16 - 64.46 m - 15% narrow (2-5mm) bands of hematization @ 0-10° to C.A. (curved in part)

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NORTH BAY, ONTARIO P1A 3N1

	- 64.53 - 65.23 m - 50% dark red hematized bands @ 15-25° & 5° to C.A. in pink to beige medium & coarse grained quartzite; also, hematite slips & fractures @ 45°, 70° & 80° to C.A.
	- 65.23 m - lower contact of pinkish quartzite irregular @ about 30°(?) to C.A.
65.23 - 65.59	Greenish-grey quartzite +/- patchy bleaching (pinkish) - medium grained
	- 65.59 m - contact @ about 15-20° to C.A.
65.59 - 67.15	Medium to coarse grained pinkish to white to pale greenish quartzite, moderately Kaolinitic to strongly kaolinized & pitted
	- 65.74 m - 1-2 mm wide quartz veinlet @ 80° to C.A. in coarse grained pink quartzite
	- 65.93 m - 7 mm wide quartz veinlet @ 45° to C.A. cross-cutting greenish-grey medium grained remnant quartzite band @ 10-15° to C.A.
	- 65.99 - 66.45 m - medium to coarse grained, bleached, very pale green to white (with pink hematitic patches) moderated to strongly Kaolinized quartzite +/- pits
	- 66.45 - 67.15 m - Strongly Kaolinized, bleached, pitted, hematized pinkish-reddish medium to coarse grained quartzite, with a 5 mm wide vuggy, quartz veinlet @ 18° to C.A. at 66.75 m
	- 67.15 m - contact @ 70° to C.A. with Sudbury Breccia veinlet below
67.15 - 67.89	20% foliated, grey, irregular hematitic Sudbury Breccia veining in grey to greenish-grey hematized medium grained quartzite; some pitting in all rocks; black slips & fracture cross-cut rocks @ 35, 60-80° to C.A.
	- 67.51 - 67.76 m - Dark grey-black earthy material present & 1% (?) fine disseminated Py visible on some slips
	- 67.89 m - lower Sudbury Breccia contact @ 35° to C.A.
67.89 - 68.55	Pitted, bleached, Kaolinized medium (+/- coarse) grained light greenish-grey quartzite +/- hematization with limonitic stain in upper 13 cm & limonitic fracture @ 40° to CA at 68.03 m
	- 68.03 - 68.50 m - broken core, Kaolinized

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	68.55 - 68.64 m	Hematitic, pitted greenish-grey Sudbury Breccia vein @ 55° (+/-) to C.A.
	68.64 - 69.04	Moderately to weakly Kaolinized quartzite with hematitic spotting & pitting; fractures (+/- hematite) @ 45°, 55°, 35° to C.A.
	69.04 - 69.62	Hematized, pitted strongly Kaolinized quartzite with some irregular Sudbury Breccia veining @ 10-20° to C.A. near quartz veinlet below
	-	69.31 - 69.62 m - 5 mm to 2 cm wide quartz vein (+/- vugs, hematite) @ sub-parallel to C.A.
	69.62 - 69.8	Same as 68.64 - 69.04 m interval
Sample Hackenstaff	69.8 - 70.41 +/-	50% Sudbury Breccia veins in greenish-grey quartzite +/- Kaolinite +/- hematitic patches & spots
	-	70.26 m - vuggy, 5 mm wide quartz veinlet with black earthy material @ 45° to C.A. (cross-cuts Sudbury Breccia)
	70.41 - 71.02	Patchy Hematization in medium to coarse grained, greenish-grey quartzite +/- Kaolinization & Kaolinitic fractures @ 35° & 50-60° to C.A.
71.02 - 90.74 m	LORRAIN FORMATION - QUARTZITE (HEMATITIC IN PART)	

Greenish-grey, medium to coarse grained quartzite, often with numerous 1-5 mm +/- wide light greenish shears @ 20-65° to C.A.; patchy hematization +/- pitting from about 78.64 m; local Kaolinization occasional Sudbury Breccia vein

	71.63 - 74.68 m	Fracture zone; fractures +/- Limonitic stain @ 25-35°, 40-45°, 50-55° to C.A.; 2-5/30 cm; (includes some slips & shears)
	-	73.15 - 73.46 m - light green epidotized? quartzite
	-	74.52 - 74.86 m - 40% Limonitic staining, minor disseminated Py
	78.64 - 82.90	20% weak to moderate patchy Hematization +/- pitting; some Limonitic patches near 78.94 m
	-	82.60 m (+/-) - 2 cm shear @ 35° to C.A.
	-	82.60 - 82.90 m - Slips @ 25°, 35-40°, 45° to C.A.
	83.21 - 84.73	Moderate to strong patchy Hematization +/- pits
	85.04 - 86.87	Weak to moderate patchy Hematization
	-	85.65 m - 3 cm Sudbury Breccia @ 55° to C.A.
	-	85.65 - 87.48 m - Fractures +/- slips +/- Limonitic stain @ 35-45°, 50-60°, 70°, 20° to C.A. (3-8 / 30 cm)

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	87.48 m	3-4 cm Sudbury Breccia vein @ 35° to C.A.
	88.09	13 cm Sudbury Breccia vein @ 50° (+/-) to CA
	88.09 - 89.0	40% patchy, moderate Hematization +/- pits
	89.0 - 90.37	Weak to moderate patchy limonitic staining & Hematization
	90.40	1-2 cm pitted, hematitic quartz veinlet @ 30-35° to C.A.
	90.43	limonitic fracture @ 60° to C.A.; broken core
	90.43 - 90.74	Partly Kaolinitic & Limonite stained medium to coarse grained, greenish-grey quartzite with some bedding @ 70-75° to C.A. Lower limonitic contact @ 65° to CA
90.74 - 94.18m	LORRAIN FORMATION - QUARTZITE	
	Greenish-grey to grey; medium grained; some bedding @ 65-70° to C.A.	
94.18 (309')	END OF HOLE	

Frank H. Tocco, B.Sc.

WLC 90-26.

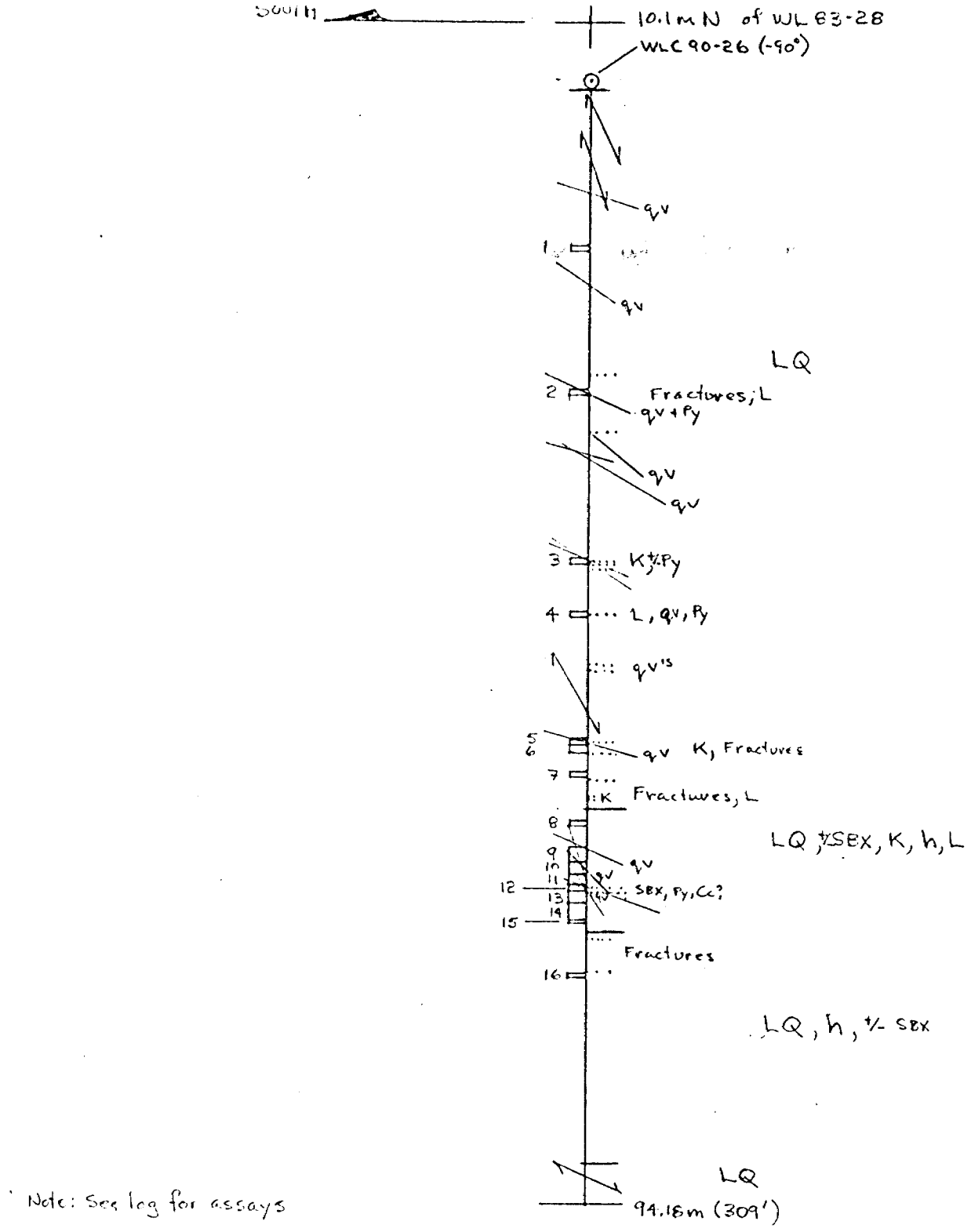
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WJ

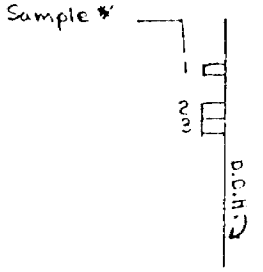
SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH		Au (oz/ton) (ppb)	REMARKS
			Metres	Feet		
WLC 90-26-1	13.72m	14.32m	0.60m	2.0'	0.004	Limonitic Fracture + Py
-2	25.91	26.21	0.30	1.0	0.004	QV + Py
-3	39.93	40.23	0.30	1.0	Tr	Kaol + Py
-4	44.35	44.65	0.30	1.0	0.004	Limonitic Shear + Qz + F
-5	55.17	55.47	0.30	1.0	Tr	QV + Fracture + Py-Li
-6	55.47	56.08	0.61	2.0	Tr	Kaol + Lim. Fracture
-7	57.76	58.06	0.30	1.0	0.002	QV + Hem. vugs
-8	61.72	62.22	0.50	1.6	0.002	Kaol, Hem + Fracture + F
-9	64.01	65.23	1.22	4.0	0.006	Kaol, Hem + Hem (Py?) Fract
-10	65.23	66.29	1.06	3.5	Tr	Kaol, + QV +/- Hem
-11	66.29	67.36	1.07	3.5	0.008	Kaol, Hem + QV
-12	67.36	67.97	0.61	2.0	0.036	SEX + Kaol + Hem. Qtz +/- Fractures +/- Py +/- Earthy Black material
-13	67.97	68.73	0.76	2.5	0.002	Kaol, Hem, Fractured + SE
-14	68.73	70.10	1.37	4.5	0.002	Kaol, Hem, QV
-15	70.10	70.40	0.30	1.0'	Tr	QV + Earthy Black mat.
-16	74.52	74.98	0.46m	1.5'	Tr	Lim. Stain + minor Py

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



Note: See log for assays



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1986) LTD.		
Title: SECTION THROUGH D.D.H. # WLC 90-26 Wolf Lake Project Mackelcan Tp.		
Drawn: FHT.	Scale- 1:500	Date: June/90

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29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

GEOLOGICAL ENGINEERING SERVICES
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HOLE #: WLC 90-27
LOCATION: Wolf Lake, "Camp Zone", Mackelcan Tp.
COORDINATES: Approximately 11.5m N & 1m E of 83-28
DIP: -90°
DIP TESTS: None
FINAL DEPTH: 99.06m (325'?)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: Triangle Drilling Company Ltd., Lively, Ontario
CORE SIZE: BQ
DATE STARTED: July 5/90
DATE FINISHED: ?
LOGGED BY: Frank H. Toews, B.Sc. (July 6/90) &

0 - 0.61m	CASING	(2' of casing)
	LORRAIN FORMATION - QUARTZITE	
0.61 - 12.16m (2 - 39.9')		Light greenish grey, medium to coarse, locally very coarse grained; local pebbles; weakly kaolinitic parts some vague bedding contacts @ 25-45° to C.A. (approximate)
(2-16')	0.61 - 4.88m	Fractures +/- limonitic staining, 3-5/30cm fractures @ 20°, 30°, 35°, 45° to C.A.
(19.7' +/-) (21')		Limonitic fracture with minor quartz @ 35° to C.A. Few jasper & purplish chert pebbles in very coarse grained quartzite
(25-32')		Fractures @ 25-35° to C.A.; 2-4/30cm.
(24')	- 8.23m -	pink carbonate fracture filling @ 50° to C.A.
(28.5')	- 8.69m -	Kaolinitic fracture @
(29')	- 8.84m -	pink carbonate fracture filling @ 45° to CA
(32-39.9')	9.75 - 12.16m	Weakly to locally moderately Kaolinitic +/- pitting, fractures +/- limonite +/- kaolinite @ 15°, 25-35°, 40-45°, 50°, 60°; 2-6/30cm.
(34.5')	- 10.52m -	Kaolinitic mud on fracture @ 25° to CA.
(35.8')	- 10.61m -	pink carbonate fracture filling @ 60° to C.A.
(36')	- 10.97m -	pink carbonate fracture filling @ 70°
(37.75')	- 11.51m -	limonitic fracture @ 45° to CA. with some pink carbonate
(39.9')	- 12.16m -	contact with foliated Sudbury-type Breccia vein @ 45° to CA. (slip + limonitic stain)
12.16 - 17.45m (39.9 - 57.25')	LORRAIN FORMATION - QUARTZITE + SUDBURY-TYPE BRECCIA	Light greenish-grey, medium to coarse grained quartzite with 50-60% light greenish-grey, foliated Sudbury Breccia veining @ 15-65° to C.A. with foliations @ 0-65° to C.A.; local, minor hematitic alteration

GEOLOGICAL ENGINEERING SERVICES
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(14'-48')	14.32 - 14.63 m	Moderate hematitic-limonitic staining, patches & spotting in Sudbury Breccia; limonitic fracture @ 15° to C.A.
(51.4')	15.67 m	Vuggy quartz - carbonate(?) veinlet 3 mm wide @ 50° to C.A.
(55.3')	16.85 m	Hematitic spotting (alteration)
(56.5-56.75')	17.22 - 17.30 m	Four, 1-2 mm wide quartz veinlets @ 55-60° to CA.
(57.25')	17.45 m	Contact @ 45-50° to CA.
17.45 - 22.86m (57.25' - 75+/-)	LORRAIN FORMATION - QUARTZITE (+MINOR SUDBURY BRECCIA)	Light greenish-gray, medium to coarse grained, local pebble with numerous anastamosing light greenish fracture-fillings/shears, hairline to several mm. wide @ 5-10°, 15-20°, 25-30°, 40-45°, 50-55°, 60-65° to C.A.; few scattered veinlets of Sudbury Breccia, <1-2cm wide @ 50-65° to C.A.; locally weakly Kaolinitic
(59.25')	18.06 m	1 cm wide Quartz veinlet @ 50° to C.A.; hematite vug
(61')	18.59 m	Patch of weak hematitic alteration
(63.5')	19.35 m	" " " " "
(67.5-68.5')	20.57 - 20.88 m	Weak limonitic staining plus limonitic stained fractures
(70-75')	21.34 - 22.86 m	Limonitic stained fractures @ 55, 70, 80, 10°, 2-15°, 25°
22.86 - 24.38m (75-80' +/-)	LORRAIN FORMATION - QUARTZITE + SUDBURY BRECCIA	light greenish-grey, medium to coarser grained quartzite weakly Kaolinitic +/- pitting; 25% Sudbury Breccia veining @ 15° to sub-parallel to C.A.
(71.8-72.1')	21.88 - 21.98 m	5%(+) 1-5 mm wide quartz veinlets/gashes @ 65-80° CA. limonitic slip @ 25° below veinlets
24.38 - 27.28m (80-89.5')	LORRAIN FORMATION - QUARTZITE	Similar to 22.86-24.38m; weakly Kaolinitic parts, local anastamosing fractures/shears; no Sudbury Breccia
	27.26 m	Kaolinitic mud slip @ 30° to CA, 2 cm above & sub-parallel to lower contact with Sudbury Breccia vein @ 35° to CA.
27.28 - 30.18? m (89.5 - 100'?)	LORRAIN FORMATION - QUARTZITE + SUDBURY BRECCIA (ALTERE	Light greenish-grey, medium to coarse grained quartz with patchy limonitic staining & fractures; some pitting; Sudbury Breccia is light greenish-gray foliated with limonitic-hematitic patchy alteration from 96.3' - 100'?
(89.5 - 90.2' +/-)	27.28 - 27.49 m +/-	Sudbury Breccia vein @ 35° & 25° Contacts, the lower truncated by 35-40° limonitic slip

(90.2-96.3'+/-)	27.49-29.35m+/-	Limonitic stained, pitted (weakly Kaolinitic?) quartzite with limonitic fractures @ 30-40, 50-60°, 5-10°, 20° to C.A.; 4-6/30cm
	(95.9') -	29.23m - 2-3 cm. wide Sudbury Breccia vein @ 45° to C.A. + limonitic staining
(96.3-100'?)	29.35-30.48m? ↑ to continue	65% alterated Sudbury Breccia veins limonite staining ± reddish-purplish hematitic patches, some parallel to foliations which vary from 15-75° (most 15-30°+/-) to CA.; fractures +/- limonite @ 15-25°, 75-85°
	(96.3') -	29.35m - contact @ 45° to CA.
	(97-97.3') -	29.56-29.66m - limonitic fractures @ 25° + 75° to C.A.
	(98') -	29.87m - 1 mm wide quartz veinlet @ 45°
	(99.1') -	30.2m " " " " @ 85° (vuggy)

Log continued by F.P. Tagliamonte, P.Eng 11 July '90

27.43+ - 91.44 LORRAIN QUARTZITE. Sudbury Brecciated.

27.43+/- - 70.10+/-	Variable features as noted: Sudbury breccia, hematitic staining, variably kaolinitic. 25%+ seams and patches of bright red hematitic staining.
43.89+/- - 51.82	Random charcoal grey hard siliceous Sudbury Breccia fragments and bands with sharp contacts. Streaks of hematitic staining within the fragments. Prominent fractures (tight) @ 85°±.
27.43+/- - 31.09+/-	80%+ mixture of limonitic and hematitic stained Sudbury Brecciated Lorrain Quartzite. Fractured throughout from 35-45°.
34.75+/- - 38.10+/-	Peppery hematitic staining. Fracturing @ 30 + 55°
43.89	70cm+ Charcoal grey, hard, siliceous Sudbury Breccia fragment. Rare, sparse fine sulphide nodule? Fractured @ 85° ± Hematitic stained patches and seams on margins.

27.43± - 91.44 LORRAIN QUARTZITE. Sudbury Brecciated. --contd.

41.15± - 71.63	Patchy kaolinitic alteration throughout. Pitted core surfaces.
45.72	15cm charcoal grey Sudbury Breccia fragment. Hematitic stained seams in adjacent quartzite.
46.79	40cm Charcoal Grey Sudbury breccia fragment with extremely fine disseminated pyrite and chalcopyrite 2%± Sulphides. Sharp upper contact @ 15°. Internal fractures @ 85°±. Poorly defined lower contact. Hematitic stained streak and seams.
49.07	8cm Sudbury breccia band @ 55° with Charcoal Grey Border bands. - sparse very fine pyrite.
49.68± - 51.66	Charcoal Grey Sudbury Breccia fragment. Random hematitic bands. Sparse disseminated very fine pyrite/chalcopyrite - .5%± sulphides. Random thin lath chalcopyrite.
56.84	20cm± Charcoal Grey Sudbury Breccia fragment.
57.91± - 69.49±	30%+ mixture of mainly charcoal grey Sudbury breccia fragments and patchy hematitic staining in kaolinitic Lorrain Quartzite. Principal fractures from 75-85° ±.
69.19± - 80.47	Weakly kaolinitic mainly unaltered Sudbury brecciated Lorrain Quartzite with rare hematitic and limonitic patch. Random fractures @ 45° ±.
80.47± - 83.31±	Random hematitic stained patches. 20%± hematitic staining
85.34	90cm mechanically broken core. - kaolinitic
86.56	GGGQ fragment. - 70cm. Subtle bedding @ 55°
87.17± - 91.44	Sudbury Breccia with patchy hematitic staining 10%+ hematitic staining. Random fractures @ 55°± with intense limonitic gouge and staining.
91.13	30 cm porous kaolinitic band.

91.44 END OF HOLE.

Casing in hole.

A. Van Chemonte, P.Eng.
11 July 1990.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

D.D.H. # WLC 90-27, cont'd. (Deepened from 300' to 325' or 91.44 - 99.06 m. on July 11/90)

91.44 - 92.35m	LORRAIN FORMATION - QUARTZITE (+/- ALTERATION)
	Light to medium greenish grey, medium to coarse grained; some thin bedding @ 65-70° (+/-) to C.A.
91.59 - 91.77m	Moderate to strong Kaolinization & bleaching +/- pitting (pale greenish); several sericitic +/- kaolinite slips @ 68° & 45° to C.A.
92.14 - 92.35	Moderate Kaolinization & bleaching, local pitting near sericitic slip @ 75° to CA.; Kaolinitic fracture @ 45° to CA
92.35 - 99.06m	LORRAIN FORMATION - QUARTZITE
	Light to medium greenish-grey with 30-40% faint pinkish light grey sections; medium to coarse grained; weak to moderate bedding @ 60-75° to C.A.; (+/- magnetite) 2% scattered, dark grey heavy mineral laminations 1-5 mm thick @ 60-75° to C.A. from 94.70 - 96.77 m
92.02 - 94.79m	Two slips @ 60° to CA.
95.25	1 mm wide quartz veinlet @ 60°
99.06m (325')	END OF HOLE

Frank H. Todd, B.Sc.

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DDH# WAC90-27

Sampling and Assaying.

Sample No.	From	To	Core Length m	Core Length ft	ppb Au . ppm Cu
WAC9027-1	29.00	31.50	1.5	5'	.008
-2	43.89	44.89	1	3.28	.004
-3	46.79	47.29	.50	1.64	.020
sh -4	49.68	50.68	1	3.28	.006
sh -5		51.48	.80	2.62	.032
hs -6	59.00	60.50	1.5	5'	.002
hs -7	64.00	65.00	1	3.28	.004
-8	67.50	69.00	1.5	5'	Tr
-9	82.50	83.50	1	3.28	Tr
-10	89.00	89.50	.50	1.64	Tr

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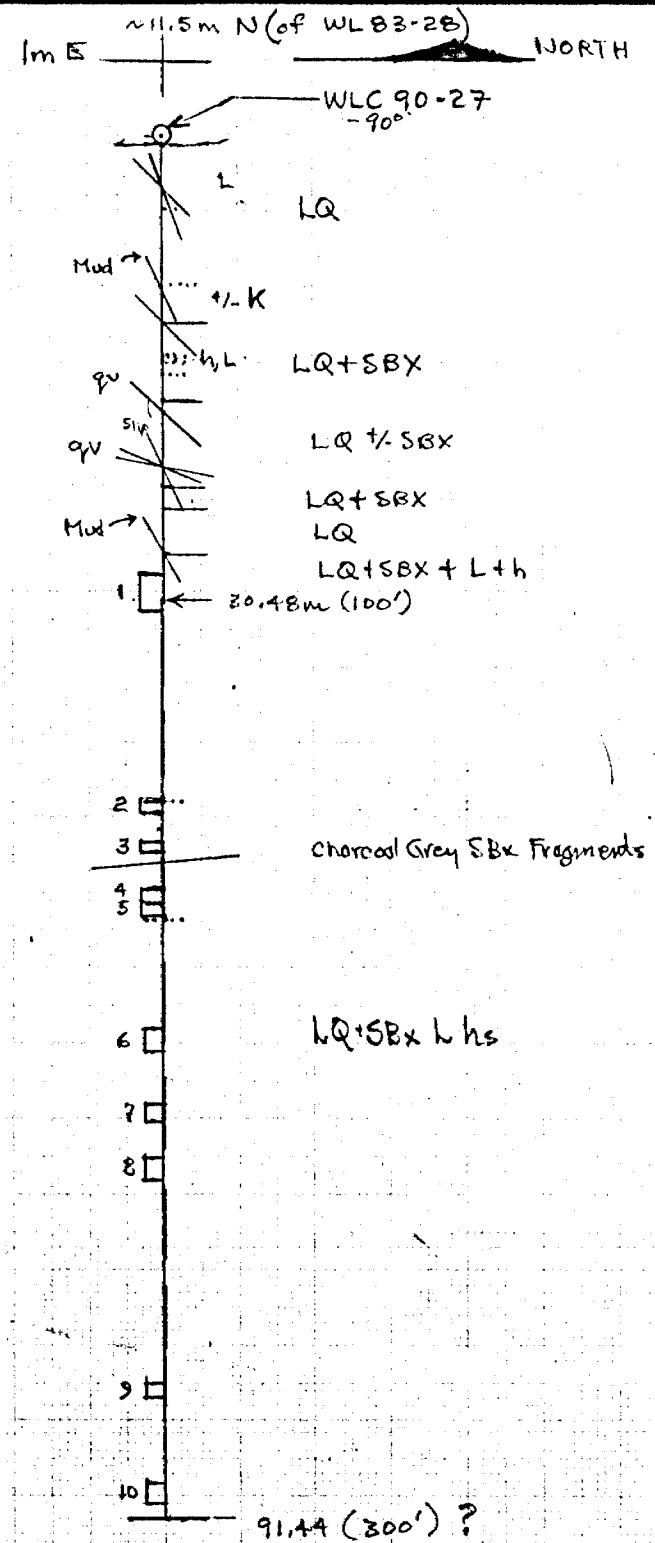

WLC 90-27
1:500'

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NORTH BAY, ONTARIO P1A 3N1

27.43± - 91.44 LORRAIN QUARTZITE. Sudbury Brecciated ---contd--

Redundant

41.15± - 71.63	Patchy kaolinitic alteration throughout. Pitted core surfaces.
45.72	15cm charcoal grey Sudbury Breccia fragment. Hematitic stained seams in adjacent quartzite.
46.79	40cm Charcoal Grey Sudbury breccia fragment with extremely fine disseminated pyrite and chalcopyrite 2%± Sulphides. Sharp upper contact @ 15°. Internal fractures @ 85°±. Poorly defined lower contact. Hematitic stained streak and seams.
49.07	0cm Sudbury Breccia Band @ 55° with Charcoal Grey Boorder Bands. - sparse very fine pyrite.
49.68± - 51.66	Charcoal Grey Sudbury Breccia fragment. Random hematitic bands. Sparse disseminated very fine pyrite/chalcopyrite - .5%± sulphides. Random thin lath chalcopyrite.
56.84	20cm± Charcoal Grey Sudbury Breccia fragment.
57.91± - 69.49±	30%+ mixture of mainly charcoal grey Sudbury Breccia fragments and patchy hematitic staining in kaolinitic Lorrain Quartzite. Principal fractures from 75-85°±.
69.19± - 80.47	Weakly kaolinitic mainly unaltered Sudbury Brecciated Lorrain Quartzite with rare hematitic and limonitic patch. Random fractures @ 45°±.
80.47± - 83.01±	Random Hematitic stained patches. 20%± hematitic staining
85.34	90cm mechanically broken core. -kaolinitic
86.56	GGGQ fragment. -70cm. Subtle bedding @ 55°
87.17± - 91.44	Sudbury Breccia with patchy hematitic staining. 10%+ hematitic staining. Random fractures @ 55°±± with intense limonitic gouge and staining.
91.13	30 cm porous kaolinitic band.

91.44 END OF HOLE.

Casing in hole.

[signature], P.Eng.
11 July 1990.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

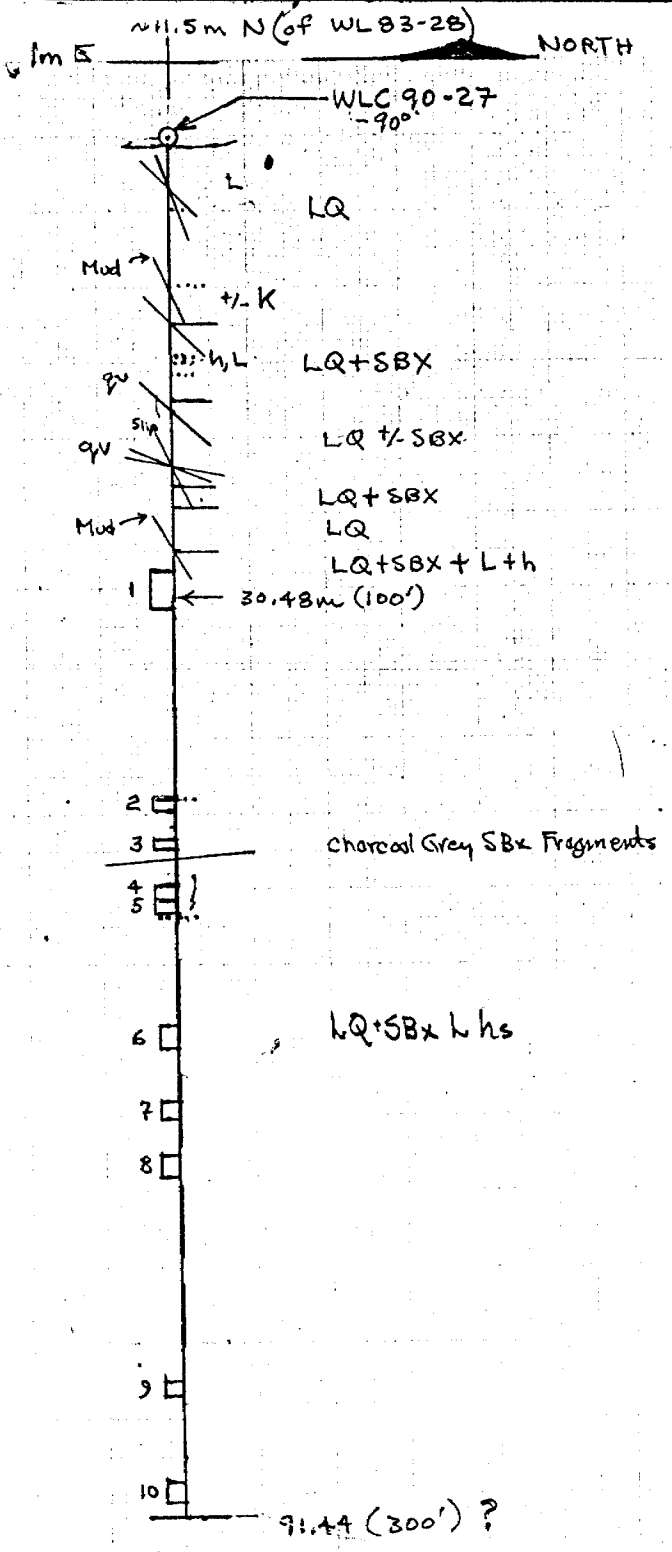
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DDH# WAC90-27

Sampling and Assaying.

Sample No.	From	To	Core Length m	Core Length ft	ppb Au	ppm Cu
WAC9027-1	29.00	31.50	1.5	5'	.008	
-2	43.89	44.89	1	3.28	.004	
-3	46.79	47.29	.50	1.64	.020	
SBx -4	49.68	50.68	1	3.28	.006	
SBx -5		51.48	.80	2.62	.032	
hs. -6	59.00	60.50	1.5	5'	.002	
hs -7	64.00	65.00	1	3.28	.004	
-8	67.50	69.00	1.5	5'	Tr	
-9	82.50	83.50	1	3.28	Tr	
-10	89.00	89.50	.50	1.64	Tr	

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



WLC 90-27
1:500'

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N8

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29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

DRILL # : WLC 90-28
LOCATION: Wolf Lake, "Camp Zone", Mackelcan Tp.
COORDINATES: Approximately 9.8m W & 19.6m N of 83-28 (Spotted Location)
DIP : -70° W
DIP TESTS : None
FINAL DEPTH : 185' (56.39 m)
CORE SIZE : BQ
COMPANY : FLAG RESOURCES (1985) LTD.
DRILLED BY : Triangle Drilling Company Ltd., Lively, Ontario
DATE STARTED: July 11/90
DATE FINISHED : July 16/90
LOGGED BY : Frank H. Toews, B.Sc.

Casing left in hole

0 - 1.22m	CASING	(4' of Casing)
1.22 - 27.43m	LORRAIN FORMATION - QUARTZITE	
	Light greenish-grey, medium to coarse grained (locally pebbly); some bedding @ 60° to C.A. (thin to medium - 1cm to 20cm) from 2.74 - 12.19m (½) (9'-40½')	
	1.22 - 9.16m	Fractures & slips @ 10-20°, 35-40°, 50-60°, 0° to C.A.; occasionally with limonitic stain 1/60cm to 4/30cm
	9.94 - 10.24	Four slips @ 50° to C.A.
	10.67	Two slips + limonitic stain @ 50° to CA.
	12.04	2 mm wide, quartz veinlet @ 30° to C.A.
	11.58 (½) - 22.86 (¾)	Often, numerous hairline to 5 mm wide sericitic, light green-grey, anastamosing fractures / shears @ 15-25°, 30-35°, 40-45°, 60-65° to C.A.; occasionally stained with limonite
	-	15.33 - 15.64m - greenish-grey Sudbury-type Breccia veining; ½% Py cubes, 2 mm in size locally; outer contacts of breccia @ 45° & 20° to CA.
	-	18.17 - 18.59m - weak limonitic staining; Sudbury Breccia @ 60° & 10-15° to CA. from 18.17 - 18.38m (59.6 - 60.3')
	-	21.58 - 21.7m - Sudbury Breccia veining @ 35 - 45° to CA.
	-	23.07 - 23.38m - Irregular Sudbury Breccia veining @ 5-35° to C.A.
	-	22.86m - limonitic fracture @ 47°
	24.38 - 27.43	Often numerous anastamosing hairline to 2mm wide, light greenish-grey, sericitic fractures / shears @ 10-70° to C.A.; rocks locally weakly Kaolinitic in part;

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

10% weak patchy limonitic staining (1% hematite) scattered limonitic stained fractures/slips @ 15-25°, 35°-40°, 60-65°, 70°-80°

- 26.76m - 4cm wide Sudbury Breccia vein @ 50° to C.A. (with parallel foliation
- 27.89 - 28.35m - locally foliated @ 30° ± 25-50° C.A.

27.43 - 32.00m (±) LORRAIN FORMATION - QUARTZITE + SUDBURY-TYPE BRECCIA (ALTERED)

Light greenish grey, coarse to medium grained, moderate kaolinitic (+/- pitting) ± locally hematitic quartzite with 10 to 50% greenish-grey to locally medium gray Sudbury Breccia veining with hematitic parts, ± locally disseminated Py, Cp (near 101.9'); sections with limonitic fractures & weak limonitic staining

27.43 - 28.80 m Limonitic stained fractures @ 0-10°, 30-45° to C.A.

- 27.89 - 28.35 m - quartzite locally foliated @ 30°, 25-50° C
- 27.95 - 28.28 m - 30% Sudbury Breccia veins @ 25-6 to C.A.; hematitic near 28.25 m

29.66 - 30.39 (+/-) Light to medium greenish grey Sudbury Breccia, outer contacts @ 35° ± ~30° to C.A., foliated @ 35° to 10° to C.A.

- 29.87 m - 1cm wide, vuggy, hematitic quartz veinlet @ 40° to C.A. (cross-cuts foliation.
- 30.02 - 30.39 m - several strongly limonitic vuggy (+/- quartz) fractures @ 40°, 10-15°, 25° to C.A.

30.39 - 31.01 m Kaolinitic quartzite with two grey Sudbury Breccia veins ≤ 4cm wide @ 52-75°, 50-70° to C.A.; hematization near veins mainly

- 30.63 - 30.78 m - quartzite dark grey (silicified?) up hole from lower Sudbury Breccia vein contact @ 30.7

31.01 - 31.39 m Grey & greenish-grey Sudbury Breccia vein, with contacts @ 65° ± 45° to C.A. vein is foliated @ 35°-15°-45° to C.A.; patchy hematite alteration

- 31.03 - 31.09 m - 1-2% fine disseminated Py, Cp in grey Sudbury Breccia

31.39 - 31.97 m Moderately to weakly kaolinitic quartzite

31.97 Greenish-grey Sudbury Breccia vein @ 50° to C.A., 2-3 cm wide

32.00 - 56.39 m LORRAIN FORMATION - QUARTZITE

Light greenish-grey, medium to coarse grained (locally pebbly); few scattered quartz veinlets barren of sulphide

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

34.52 - 34.62m	Hematitic alteration in, & between two quartz veinlets 3mm & 2cm wide @ 55° & 35° to C.A.; the larger veinlet has minor specks of py
35.14	2 mm wide quartz veinlet @ 60° to C.A.
35.97 (+/-)	1 cm wide quartz veinlet @ 20° to C.A.
37.80 - 41.15	Fractured; fractures +/- slips @ 30-40°, 45-50°, 55-60°, 25-30° (2-9/30 cm); some are sericitic, some kaolinitic
38.10 - 38.71m	limonitic stained fractures @ 35-40°, 45-50°, 20° to C.A. (7-8/30 cm)
39.78 - 40.23m	Fractures +/- kaolinite @ 70-80° 45-50°, 15° to C.A. 8-10/30cm
41.39	5 mm wide quartz veinlet @ 45° to C.A.
42.21 - 42.52	Fractures +/- limonitic stain @ 15-20°, 35-4 45-50° to C.A. (9/30 cm)
44.20 - 44.35	Light greenish, fine grained, foliated? or laminated quartzite? @ 35° to C.A.; rock is soft, sericitic; limonitic fractures @ 35°-40° to C.A.
45.41	5 mm wide quartz veinlet @ 60° to C.A.
45.93	5 mm wide quartz veinlet @ 55-60° to C.A.
46.63	5 mm wide quartz veinlet @ 35° to C.A.
46.85	1 cm wide quartz veinlet @ 50° to C.A.
49.32	1 cm wide quartz veinlet @ 55 & 40° to C.A
49.47	5 mm wide quartz veinlet @ 50° to C.A.
51.36 - 51.91	Moderately kaolinitic + pitting; limonitic stained fractures @ 45-50°, 30° to C.A. (3-5/30 cm)
52.96	< 2 cm wide quartz veinlet @ 55° to C.A.
56.39m (185')	END OF HOLE

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC 90-28

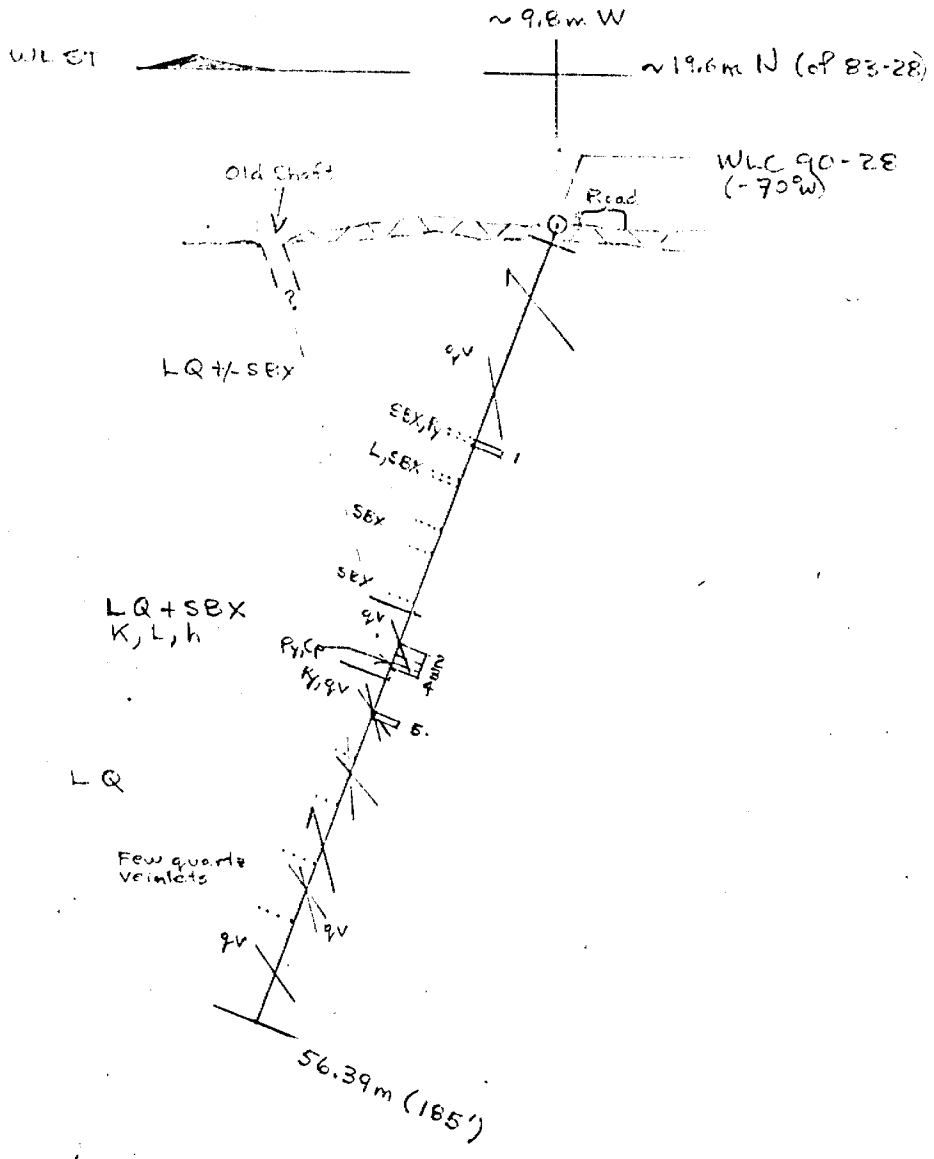
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

(A)

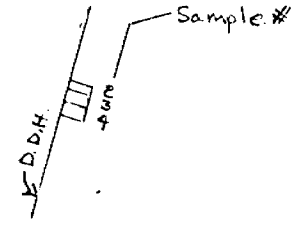
SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH		(oz/Ton) Au (~~gm/t~~)	
			Metres	Feet		
WLC 90-28-1	15.32m	15.62m	0.30m	1.0'	Trace	SBX + ½% Py Cubes
-2	29.64	30.40	0.76	2.5'	0.010	SBX + QV + Elm. Fract.
-3	30.40	31.01	0.61	2.0'	0.004	Kaol'c ½ Hem" Qtz + SBX
-4	31.01	31.39	0.38	1.25'	0.016	SBX ½ Hem ½ Py, Cp
-5	34.44	34.74	0.30	1.0'	Trace	Qtz + Hem + QV's ½ P

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



Note: See log for assays



0 5 10m

GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH D.D.H. # WLC 90-2B Wolf Lake Project Markelcau Tp.		
Drawn: F.H.J.	Scale - 1:500	Date: July/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

NORTH BAY, ONTARIO P1A 3N1

LOCATION: Wolf Lake, "No. 1 Zone, Mackelcan Tp.
COORDINATES: Approximately 46.5mS & 31.5mW of 83-28
[redacted]: -60° @ Azimuth ~ 254°
DIP TESTS: None
FINAL DEPTH: 200' (60.96m)
COMPANY: FLAG RESOURCES (1985) LTD.
DRILLED BY: Triangle Drilling Company Ltd., Lively, Ontario
CORE SIZE: BQ
DATE STARTED: June 3/90
DATE FINISHED: June 4/90
LOGGED BY: Frank H. Toews, B.Sc.

0 - 1.52m	CASING	(5' of Casing)
1.52 - 3.58m	MINERALIZED QUARTZITE	QUARTZ VEINS/BRECCIA IN LORRAIN FORMATION (ALTERED)

Reddish to pink to locally light grey, medium to coarse grained quartzite (+/- pitting) with 20% (+/-) quartz veining/breccia (+/- hematite +/- limonite) 5mm - 10 cm wide @ 20-25°, 50-65°, 0-5° to C.A.; quartz contains <1-2% Py (disseminated, blebs), <1-2% Cp +/- Chalcocite(?) +/- Bornite (disseminated, splashes)

1.52 - 1.68 m (A/L)	Light grey quartzite, barren of sulphide
1.68	Possible fracture contact of vein zone @ 50° to C.A.
2.32 - 3.17 (A/L)	Broken core
3.20	Contact of vein zone @ 85° to C.A.

3.58 - 27.43m	LORRAIN FORMATION - QUARTZITES

Light grey to greenish-grey, medium to coarse grained (locally pebbly) quartzite; locally reddish (hematitic) locally Kaolinitic +/- pitting; moderate to numerous, light-greenish, anastamosing shears/veinlets from 9.69 - 19.81 m (+/-)

3.90 - 4.27 m	Broken core; +/- limonitic fractures @ 50-60°, 25-25° C.A.
	- 4.11 - 4.57m - fractures & slips @ 15-25°, 45-50° to C.A.
7.62	4cm wide quartz vein +/- Cp @ 30° to C.A.
9.20 - 9.69	Hematized, Kaolinized, pitted quartzite
13.72 - 16.76	Zones of broken core; fractures & slips @ 20-25°, 45-60° to C.A.
16.76 - 17.37	Anastamosing shears (light greenish) @ 15-30°, 40-65° C.A. & one narrow Sudbury Breccia vein @ about 35° to C.A. 1-2 cm wide, at 17.07 m strongest in zone from 9.69 - 20.73 m
19.05	Shearing @ 25-30° to C.A., cross-cuts a vuggy, 5mm wide vuggy quartz veinlet @ 45° to C.A.
19.81 - 19.87	Three quartz veinlets, 0.2 - 1 cm wide @ 45° to C.A.
12.19 - 12.80	Sericitic shearing @ 10-25° to C.A.

27.43 - 44.81m (90-147')	LORRAIN FORMATION - QUARTZITES (HEMATITIC)	
	Similar to weakly to zones up alteration	unit from 3.20 - 27.43 m, but with 50% strongly, patchy to spotted hematitic to 1.5m in length; +/- pitting +/- Kaolinitic (moderate to weak)
44.81 - 60.96m	LORRAIN FORMATION - QUARTZITES	
	Similar to unit from 3.20 - 27.43 m; minor Sudbury Breccia veining	
	44.81 - 47.24 m	Moderately Kaolinitic + pitting; fractures 15-40°, 60-75°
	47.24 - 47.70m	Hematitic, pitted Quartzite
	50.23	Sheared, 5mm wide quartz veinlet with contacts @ 30° + 65° to C.A.
	50.29 - 50.90	Several Sudbury Breccia veinlets @ 10° & 65° to C.A.
	51.82 +/-	From here, rocks generally more greyish (more siliceous?) with scattered, dark grey heavy mineral laminations, 1 - 3 mm wide @ 60 - 70° to C.A.
	52.58	Sudbury Breccia veinlet @ 25° to C.A.
	57.91 - 60.65	Weak to moderate hematization +/- pitting
	60.65	Broken core; some Sudbury Breccia veinlets (+/- Kaolinitic)
60.96 m (200')	END OF HOLE	

Frank H. Toews B.Sc.

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

WLC 90-19

29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

(A)

SAMPLING & ASSAYS

SAMPLE #	FROM	TO	LENGTH		oz/ton Au (ppt)	Cu (ppm)	REMARKS
			Metres	Feet			
WLC90-19-1	1.68m	2.13m	0.45m	1.5'	0.208	3400	QV's 1-2% Py, Cp, Cc
-2	2.13	2.74	0.61	2.0'	0.006	660	QV's < ½% Py, Cp
-3	2.74	3.57	0.83	2.7'	0.028	4000	QV's 1-2% Py, Cp, Sph
-4	3.57	4.78	1.21	4.0'			Qtz ± Lim. Fractures
-5	7.47m	7.77m	0.30m	1.0'	0.002	42	QV ± Cp, Py

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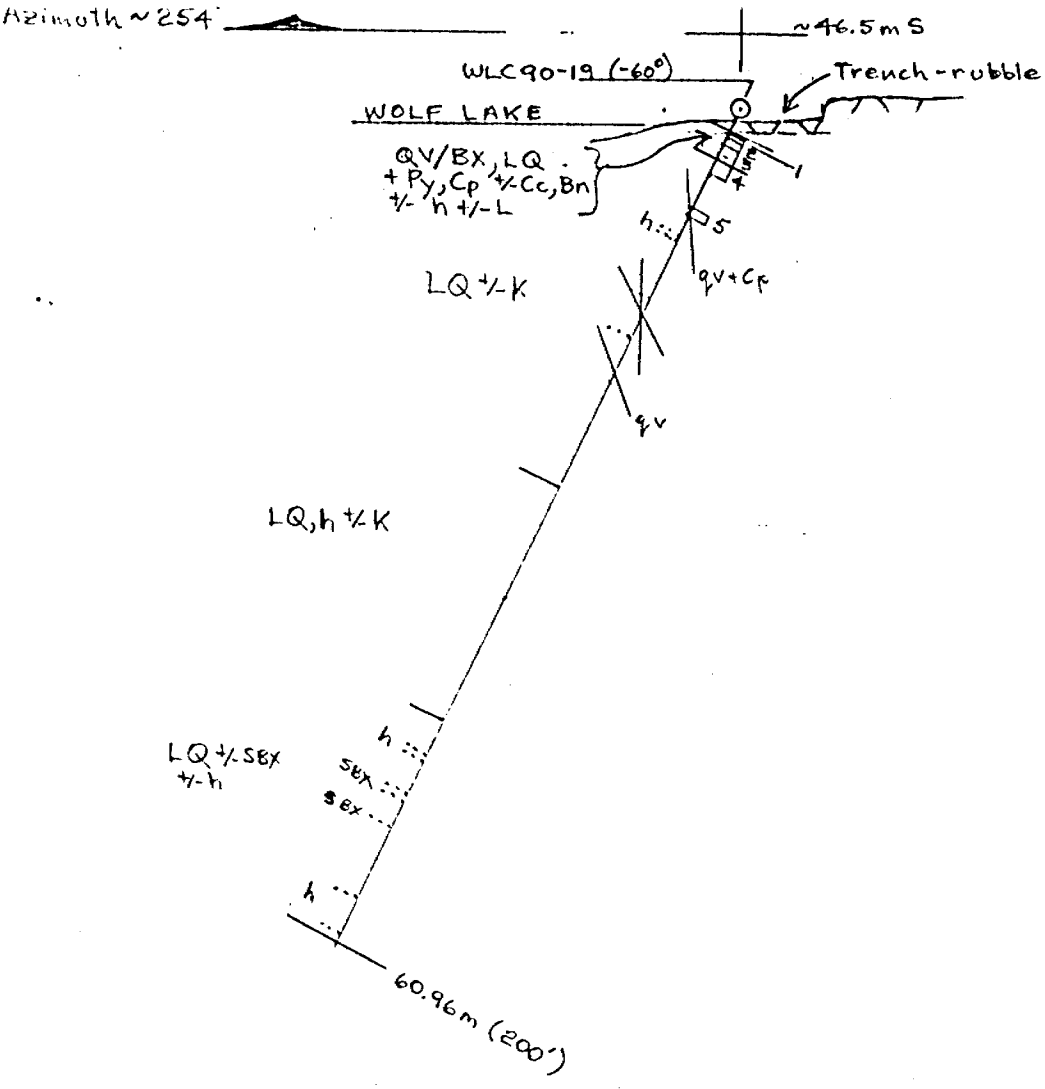
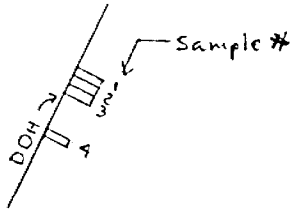
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



Note: See log for assays



GEOLOGICAL ENGINEERING SERVICES		
For: FLAG RESOURCES (1985) LTD.		
Title: SECTION THROUGH D.D.H. # WLC 90-19 Wolf Lake Project Mackelcan Tp.		
Drawn: F.H.T.	Scale - 1:500	Date: June/90

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29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

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29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

0+25W(82') BLO 0+25E(82') 0+50E(164') 0+75E(246') 1+00E(328') 1+25E(410') 0+50N(164')

0+25N(82') 0+25N(82')

0+00

CAMP SITE ZONE

NO 1 ZONE

WLC 90-21 90° (250')
WLC 90-28 70°W (185')
WLC 90-14 90° (345')
WLC 90-18 90° (111')
WLC 90-20 90° (250')
WLC 90-27 90° (305')
WLC 90-15 90° (251')
WLC 90-17 90° (300')
WLC 90-26 90° (304')
WLC 90-25 90° (155')
WLC 90-9 90° (264')
WLC 90-8 90°
WLC 90-3 90° (250')
WLC 90-10 90° (225')
WLC 90-16 90° (200')
WLC 90-5 280°
WLC 90-24 90° (135')
WLC 90-1 70° (250')
WLC 90-11 70° (115')
WLC 90-2 70° (355')
WLC 90-7 70° (350')
WLC 90-4 70° (10')
WLC 90-6 70° (250')
WLC 90-23 70° (235')
WLC 90-12 90° (700')
WLC 90-19 60° (200')
WLC 90-22 45° (145')
WLC 90-13 90° (150')

Revisions	GEOLOGICAL ENGINEERING SERVICES
July/90 F.H.T.	For: FLAG RESOURCES (1985) LTD.
	Title: WOLF LAKE PROJECT MACKELCAN TP. DIAMOND DRILL HOLE PLAN "CAMP ZONE" AREA
	Drawn: Scale-1:250 Date: May/90

63.6032

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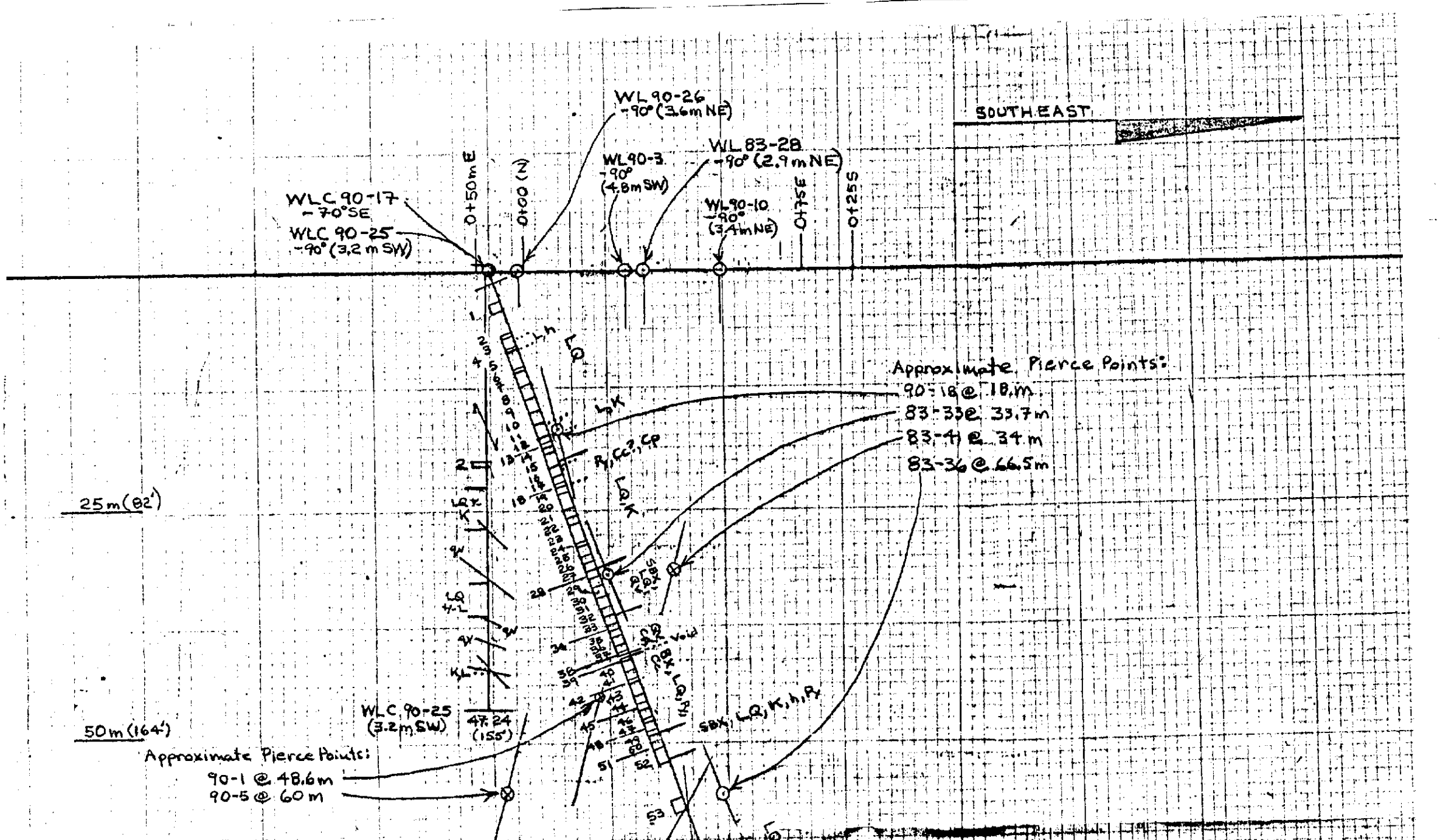

SAMPLE NO.	INTERVAL (m)	LENGTH (m)	Oz Au	%Cu
WLC 90-17				
4	8.86 - 9.16	0.30	.090	0.18
6	11.15 - 11.76	0.61	.056	—
16	22.18 - 23.40	1.22	.016	—
21	26.80 - 27.71	0.91	.090	—
24	30.85 - 31.15	0.30	.034	—
26	32.10 - 33.00	0.90	.040	—
28	33.85 - 34.90	1.05	.028	—
29	34.90 - 35.73	0.83	.502	0.62
30	35.73 - 37.15	1.42	.074	—
31	37.15 - 38.35	1.20	.136	3.20
32	38.35 - 39.40	1.05	.052	0.62
33	39.40 - 40.31	0.91	.258	0.74
34	40.31 - 41.02	0.71	.032	1.30
35	41.02 - 41.89	0.87	.018	1.40
36	41.89 - 42.77	0.88	.028	1.60
37	42.77 - 43.65	0.88	.006	1.06
38	43.65 - 44.20	0.55	.044	1.96
VOID	44.20 - 44.50	0.30		
39	44.50 - 45.00	0.50	.240	1.90
40	45.00 - 45.91	0.91	Tr	—
41	45.91 - 46.82	0.91	.014	3.20
42	46.82 - 47.24	0.42	.038	0.70
43	47.24 - 48.60	1.36	Tr	—
44	48.60 - 49.55	0.95	.032	0.68
45	49.55 - 50.34	0.79	.020	0.10
46	50.34 - 51.32	0.98	.068	3.49
47	51.32 - 51.94	0.62	Tr	—
48	51.94 - 52.54	0.60	.070	0.60
50	53.14 - 54.05	0.91	.016	—
52	54.96 - 56.48	1.52	.042	
WLC 90-25				
2	20.27 - 20.57	0.30	.070	

63.6032

Revisions:	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION THROUGH D.D.H.# WLC 90-17 WLC 90-25
	Drawn: F.H.T. | Scale-1:500 | Date: July/90

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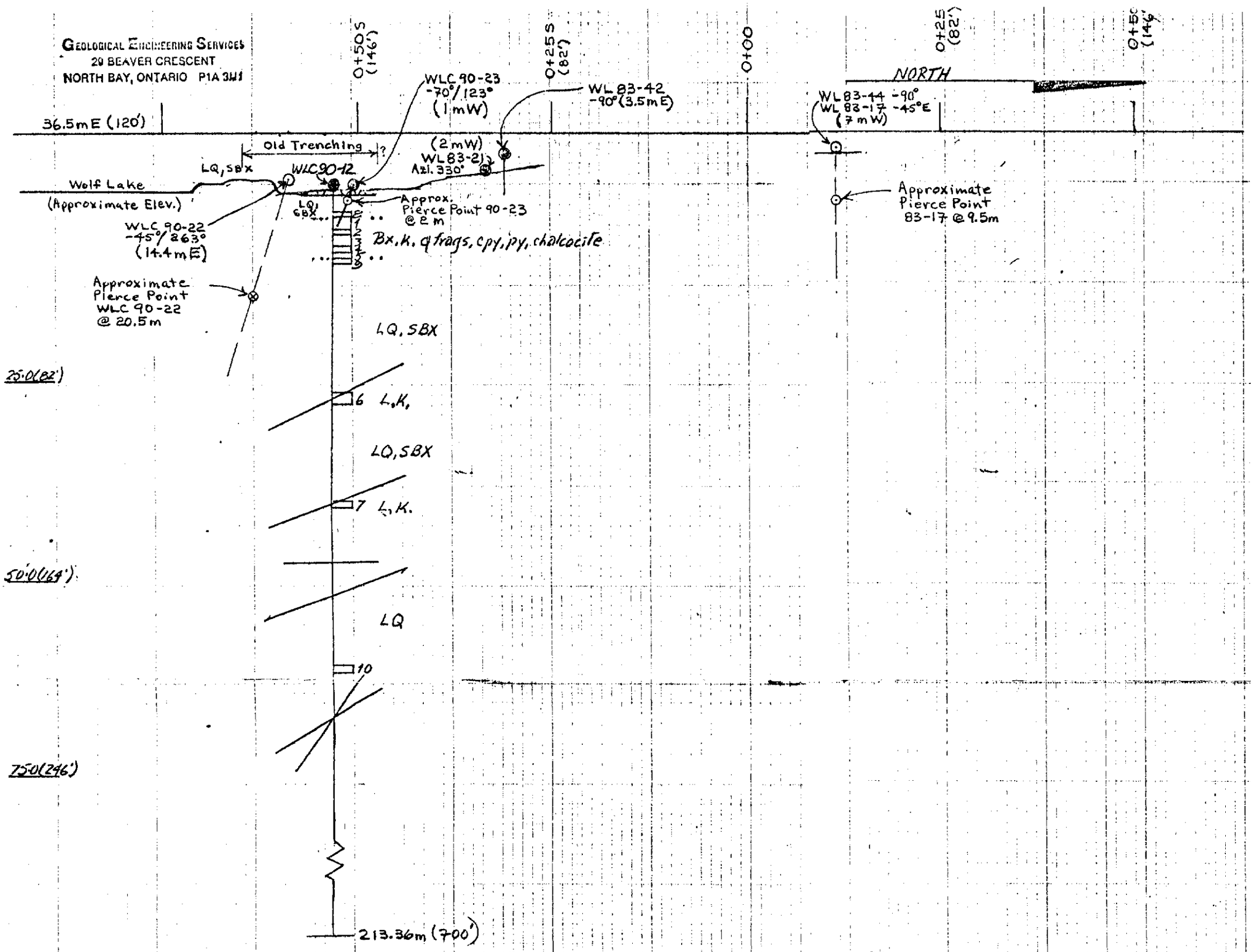
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3W1



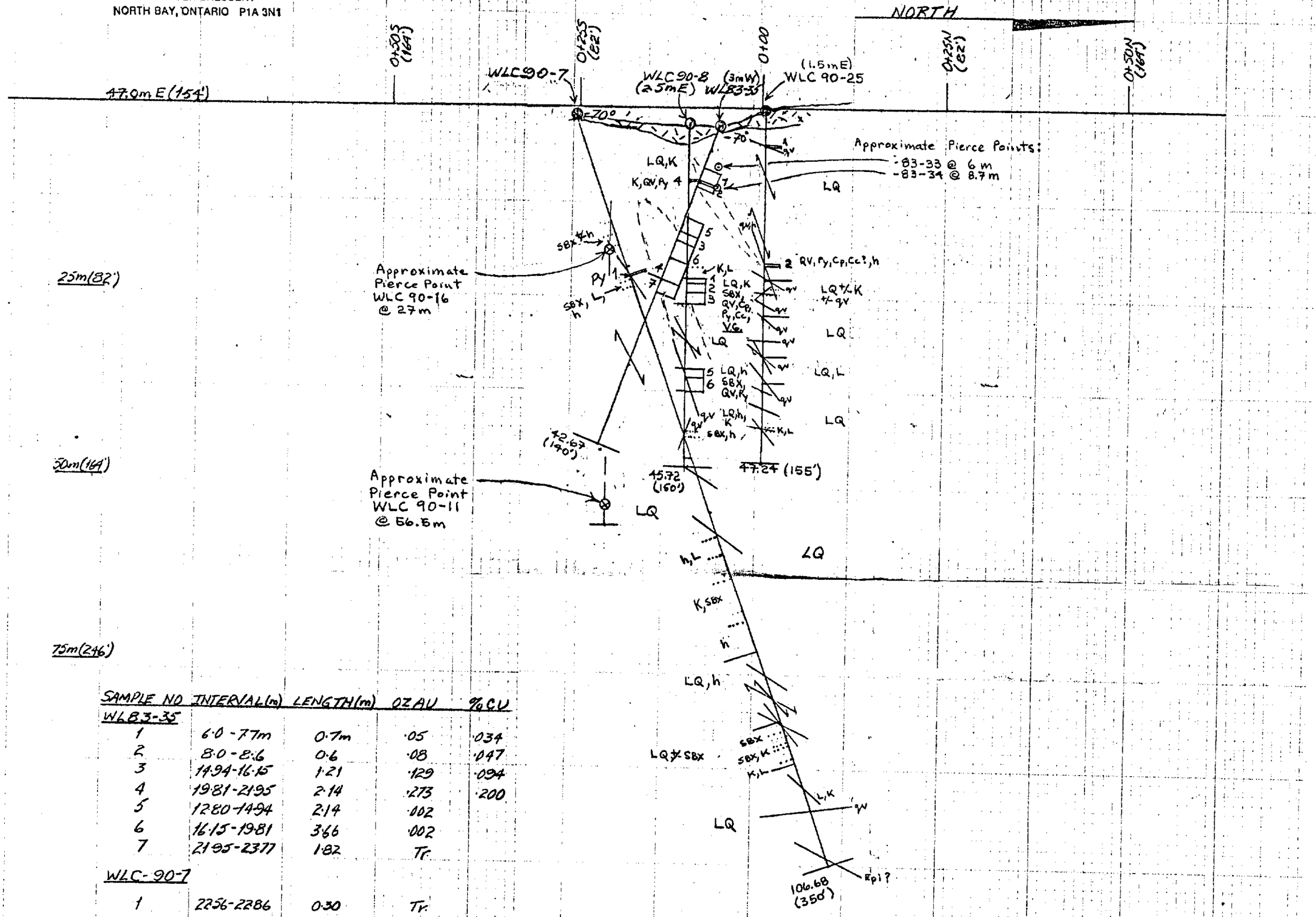
SAMPLE NO	INTERVAL(m)	LENGTH(m)	OZAU	PPMCU	
WLC90-12					
1	3.81 - 5.33	1.52	.012	820	
2	5.33 - 5.94	0.61	.172	4800	.112AU/5.18m(17.0)
3	5.94 - 7.32	1.38	.018		
4	7.32 - 8.08	0.76	.020		
5	8.08 - 8.99	0.91	.286		
6	26.06 - 27.58	1.52	.002		
7	39.78 - 40.54	0.76	Tr.		
8	3.20 - 3.81	0.61			
9	8.99 - 9.60	0.61			
10	60.66 - 61.88	1.22			

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICES
July/90 F.H.T	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 36.5 m E
	D.D.H.# WL 83-42, WL 83-44, WLC 90-12
	Drawn: H.D.McL. | Scale-1:500 | Date: May/90

41115SE0003 63.6032 MACKELCAN

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



75m(246')

SAMPLE NO	INTERVAL(m)	LENGTH(m)	OZ/AU	%CU
WL83-35				
1	6.0 - 7.7m	0.7m	.05	.034
2	8.0 - 8.6	0.6	.08	.047
3	14.94 - 16.15	1.21	.129	.094
4	19.81 - 21.95	2.14	.273	.200
5	12.80 - 14.94	2.14	.002	
6	16.15 - 19.81	3.66	.002	
7	21.95 - 23.77	1.82	Tr.	
WLC-90-7				
1	22.56 - 22.86	0.30	Tr.	
WLC-90-8				
1	20.57 - 21.37	0.80	.014	.084/3.51m (91')
2	21.37 - 22.56	1.19	.010	
3	22.56 - 24.08	1.52	.074	
4	7.31 - 7.61	0.30	.002	
5	32.92 - 34.14	1.22	.008	
6	34.14 - 35.97	1.83	.028	
WLC 90-25				
2	20.27 - 20.57	0.30	.070	

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICES
July/90 F.H.T.	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 47.0mE
	D.D.H.# WL 83-35, WLC 90-7, WLC 90-8, WLC 90-25

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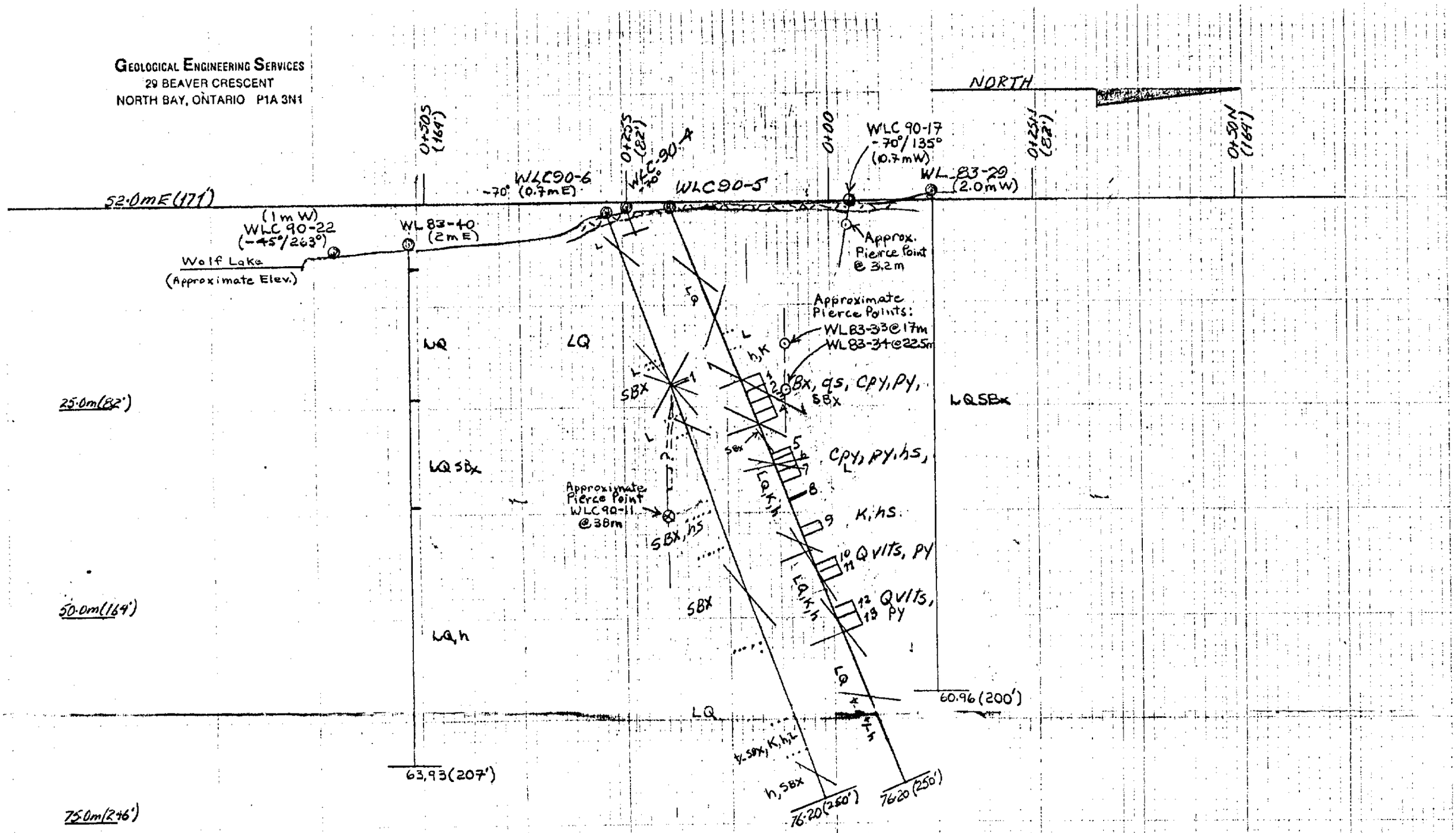
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



SAMPLE NO	INTERVAL(m)	LENGTH(m)	OZ/AU	%CU	
WLC90-5					
1	23.32-24.69	1.37	.064	1.00	.075Au, 0.72%Cu/5.64m(18.5')
2	24.69-26.21	1.52	.072	0.90	
3	26.21-27.58	1.37	.076	0.60	
4	27.58-28.96	1.38	.088	0.38	
5	32.61-32.91	0.30	.559		
6	33.53-35.05	1.52	.002	0.08	
7	35.05-36.58	1.53	.006	0.22	
8	38.40-38.86	0.46	.002		
9	42.28-43.28	1.00	.002		
10	46.79-47.70	0.91	.092		.04Au/2.28m(7.5')
11	47.70-49.07	1.37	.010		
12	52.58-54.10	1.52	.038		.595Au/3.35m(11.0')
13	54.10-55.93	1.83	1.059		
WLC90-6					
1	22.56-22.86	0.30	.187		

63.6032

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1

Revisions	GEOLOGICAL ENGINEERING SERVICES
July/90 F.H.T.	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 52.0mE
	DDH* WL 83-29, WL 83-40, WLC90-4, WLC90-5, WLC90-6
	Drawn: H.D.McL. | Scale-1:500 | Date: May/90

NS 6

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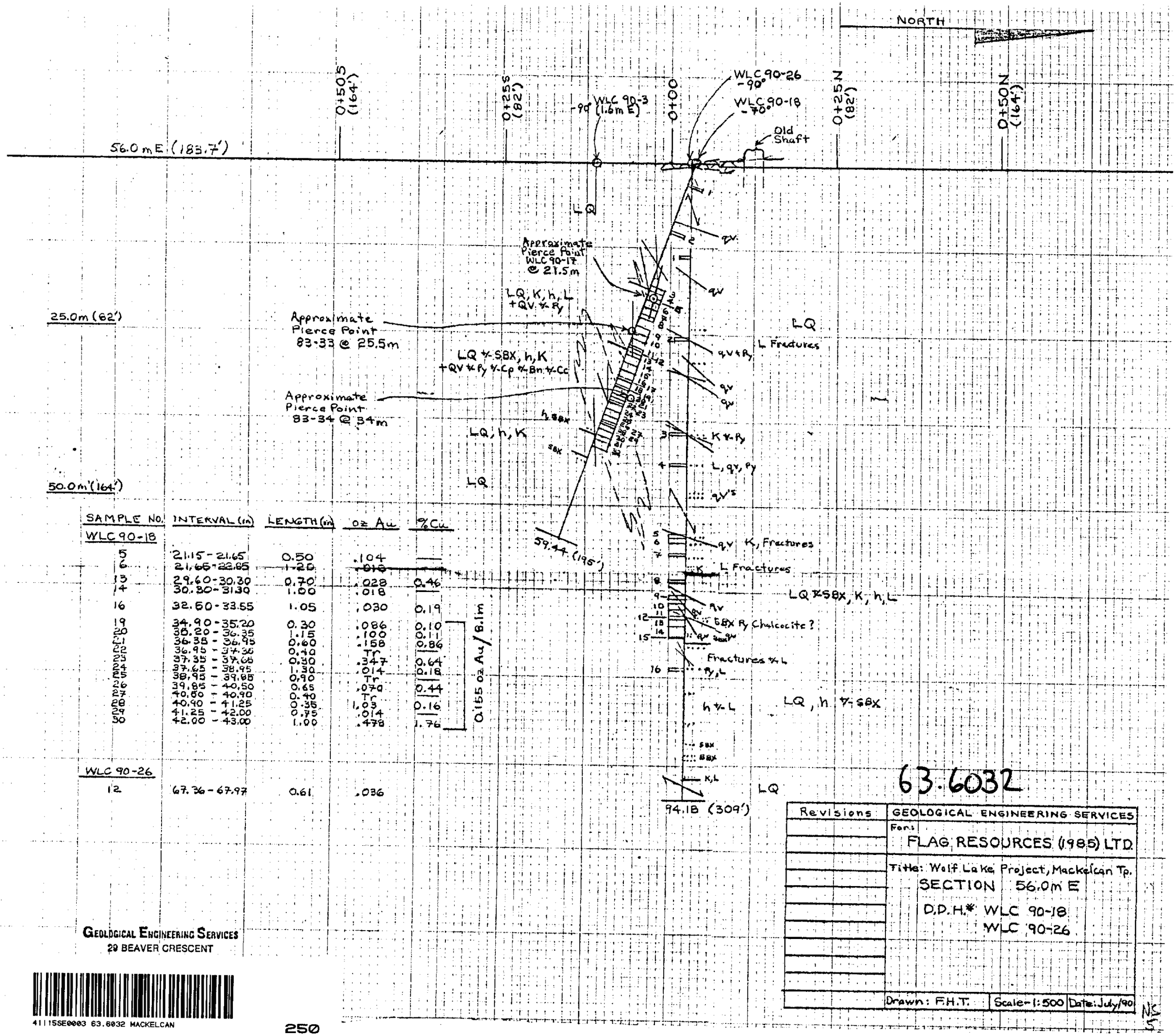

SAMPLE NO.	INTERVAL (m)	LENGTH (m)	oz Au	%Cu
WLC 90-18				
5	21.15 - 21.65	0.50	.104	
6	21.65 - 22.85	1.20	.018	
13	29.60 - 30.30	0.70	.028	0.46
14	30.30 - 31.30	1.00	.018	
16	32.60 - 33.55	1.05	.030	0.19
19	34.90 - 35.20	0.30	.086	0.10
20	35.20 - 36.35	1.15	.100	0.11
21	36.38 - 36.95	0.60	.158	0.86
22	36.95 - 37.36	0.40	Tr	
23	37.35 - 37.65	0.30	.347	0.64
24	37.65 - 38.95	1.30	.014	0.18
25	38.95 - 39.85	0.90	Tr	
26	39.85 - 40.50	0.65	.070	0.44
27	40.60 - 40.90	0.40	Tr	
28	40.90 - 41.25	0.35	1.03	0.16
29	41.25 - 42.00	0.75	.014	
30	42.00 - 43.00	1.00	.478	1.76
WLC 90-26				
12	67.36 - 67.97	0.61	.036	

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 56.0m E
	D.D.H.# WLC 90-18, WLC 90-26
	Drawn: F.H.T. | Scale-1:500 | Date: July/90

GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT

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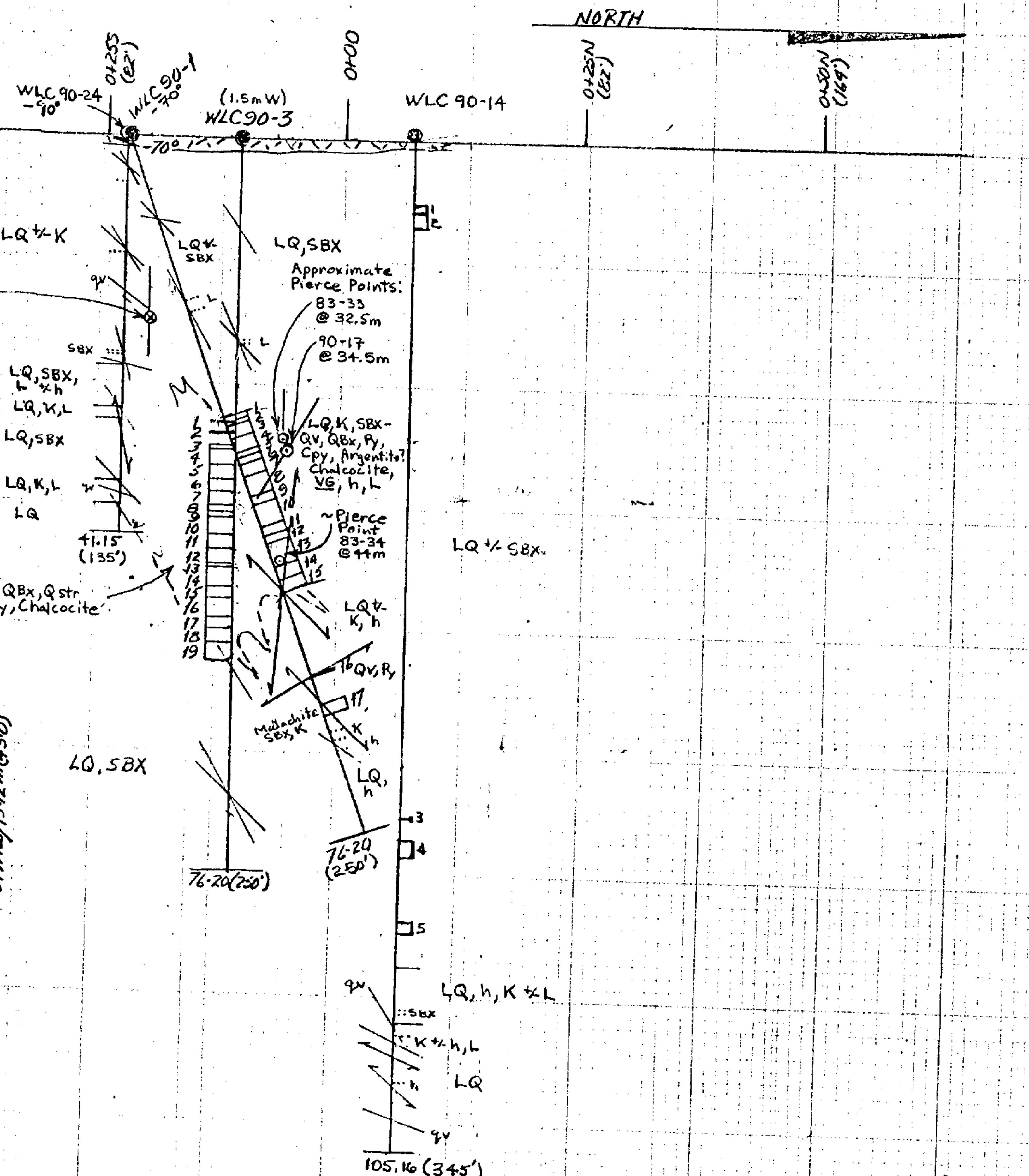
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



HOLE NO	INTERVAL(m)	LENGTH(m)	OZ AU	%CU
90-1				
	30.78 - 31.42	0.46	.654	
	31.42 - 31.70	0.46	.020	
	31.70 - 33.07	1.37	.686	
	33.07 - 34.59	1.52	.004	
	34.59 - 35.05	0.46	.504	
	35.05 - 35.81	0.76	.002	
	35.81 - 37.18	1.38	.234	
	37.18 - 39.32	2.14	.396	
	39.32 - 40.23	0.91	.012	
	40.23 - 42.67	2.44	.114	0.34
	42.67 - 43.89	1.22	.991	
	43.89 - 45.57	1.68	.049	
	45.57 - 47.24	1.67	.122	0.74
	47.24 - 48.61	1.37	.076	0.94
	48.61 - 49.99	1.38	.008	
	58.99 - 59.29	0.30	.936	
	62.03 - 63.09	1.06	.028	
90-3				
	29.26 - 29.56	0.30	.116	
	30.18 - 30.48	0.30	.004	
	31.70 - 32.31	0.61	.490	0.42
	32.31 - 33.83	1.52	.046	2.80
	33.83 - 35.35	1.52	.326	1.50
	35.35 - 36.57	1.22	.182	1.40
	36.57 - 37.80	1.22	.006	
	37.80 - 38.86	1.06	4.98	
	38.86 - 39.32	0.45	.052	0.96
	39.32 - 41.15	1.83	1.98	0.94
	41.15 - 42.67	1.52	.502	0.19
	42.67 - 44.04	1.37	.008	
	44.04 - 44.50	0.46	.162	
	44.50 - 46.63	2.13	.006	
	46.63 - 47.85	1.25	.034	
	47.85 - 49.68	1.83	.242	
	49.68 - 50.90	1.22	.218	
	50.90 - 52.43	1.53	.004	
	52.43 - 54.10	1.67	.178	

90-1 composites:
- 31.70 - 35.05: .351AU/3.35m(11')
- 35.81 - 39.32: .332AU/3.42m(11.2')
- 30.78 - 48.61: .255AU/17.84m(58.5')
- 30.78 - 43.89: .317AU/13.12m(43.0')
- 40.23 - 48.61: .224AU/8.38m(27.5')

90-3 composites:
- 32.31 - 36.57: 0.184AU/1.94 4.26m(14')
- 31.70 - 54.10: 0.267AU/22.4m(72.5') Cut to 1OZ
- 31.70 - 54.10: 0.519AU/22.4m(72.5') UNCUT

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Revisions		GEOLOGICAL ENGINEERING SERVICES
July/90	F.H.T.	For: FLAG RESOURCES (1985) LTD.
		Title: Wolf Lake Project, Mackelcan Tp. SECTION 59.5 m E
		D.D.H's: WLC 90-1, WLC 90-3, WLC 90-14, WLC 90-24
		Drawn: H.D. McL. | Scale - 1:500 | Date: May/90

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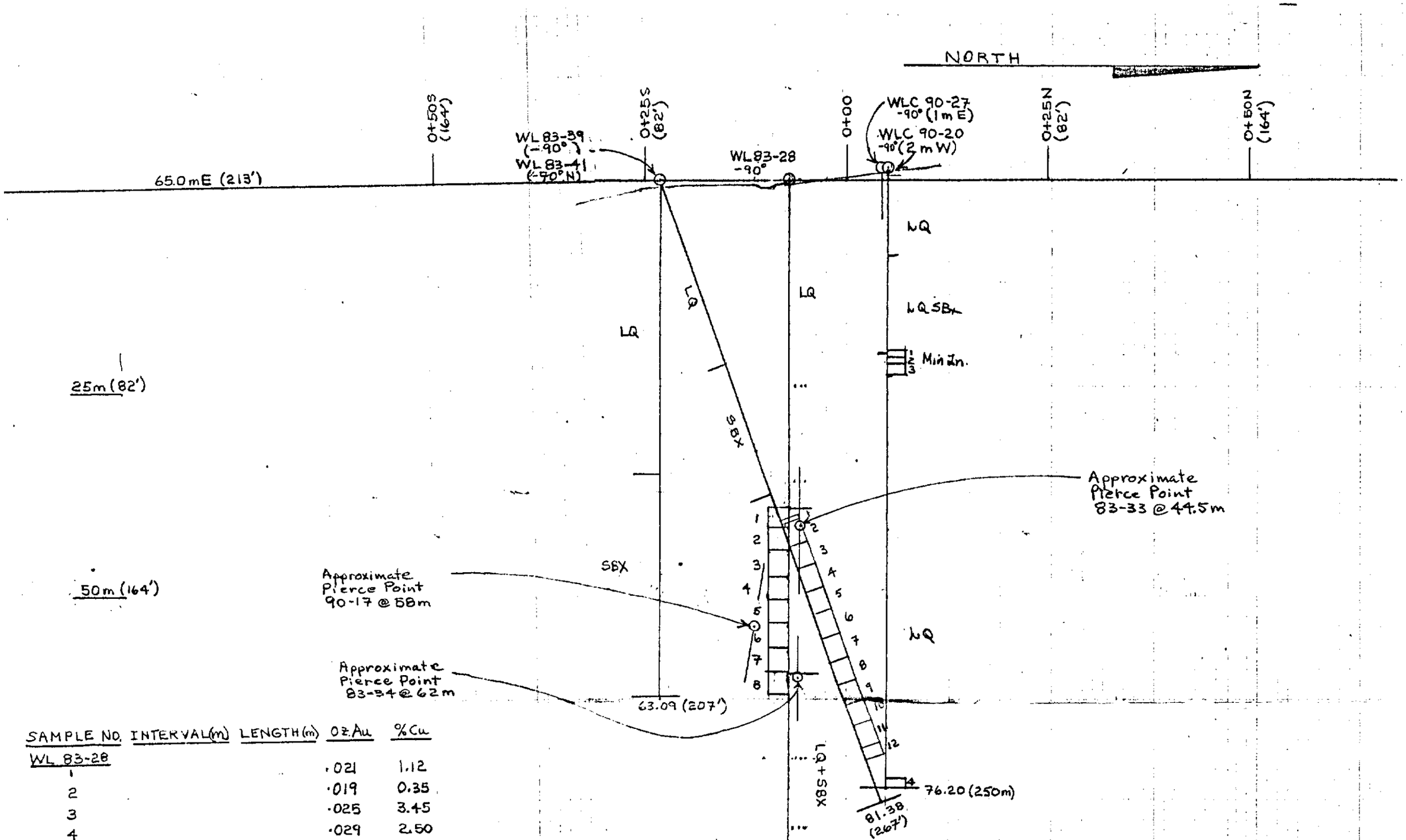

SAMPLE NO.	INTERVAL(m)	LENGTH(m)	Oz Au	%Cu
WL 83-28				
1			.021	1.12
2			.019	0.35
3			.025	3.45
4			.029	2.50
5			.070	3.80
6			.041	5.50
7			.049	2.75
8			.006	0.144
WL 83-41				
1			.006	0.070
2			.016	1.80
3			.032	1.38
4			.119	1.95
5			.042	4.40
6			.006	0.28
7			.010	0.195
8			.058	1.00
9			.046	0.42
10			.42	—
11			.056	—
12			.123	—

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 65.0 m E
	D.D.H.* WL 83-28, WL 83-39, WL 83-41, WLC 90-20, WLC 90-27
	Drawn:

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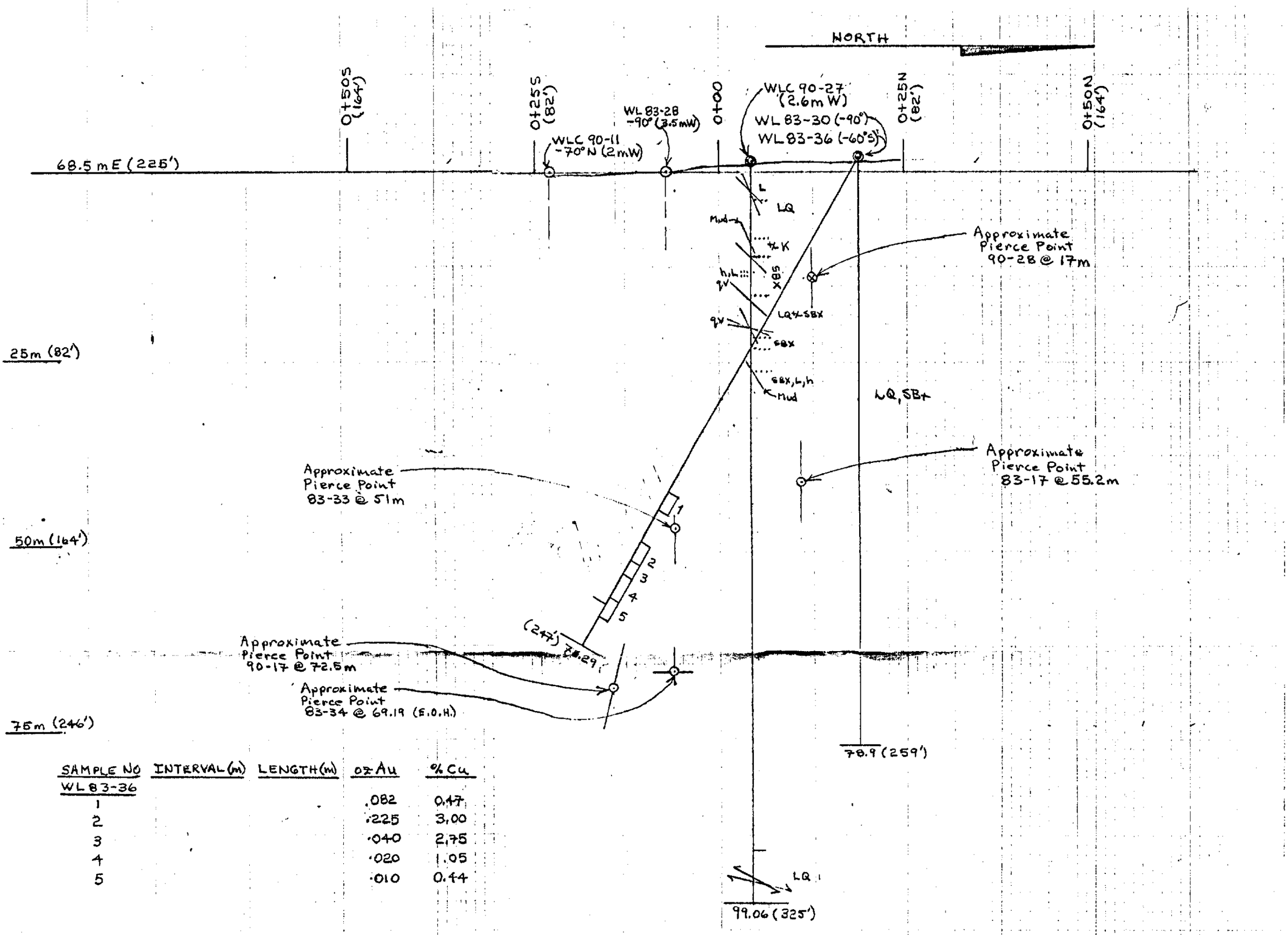

SAMPLE NO	INTERVAL (m)	LENGTH (m)	oz Au	% Cu
WL 83-36				
1			.082	0.17
2			.225	3.00
3			.040	2.75
4			.020	1.05
5			.010	0.44

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 68.5m E
	D.D.H.# WL 83-30, WL 83-36, WLC 90-27
	Drawn: F.H.T. | Scale: 1:500 | Date: July/90

NS 3

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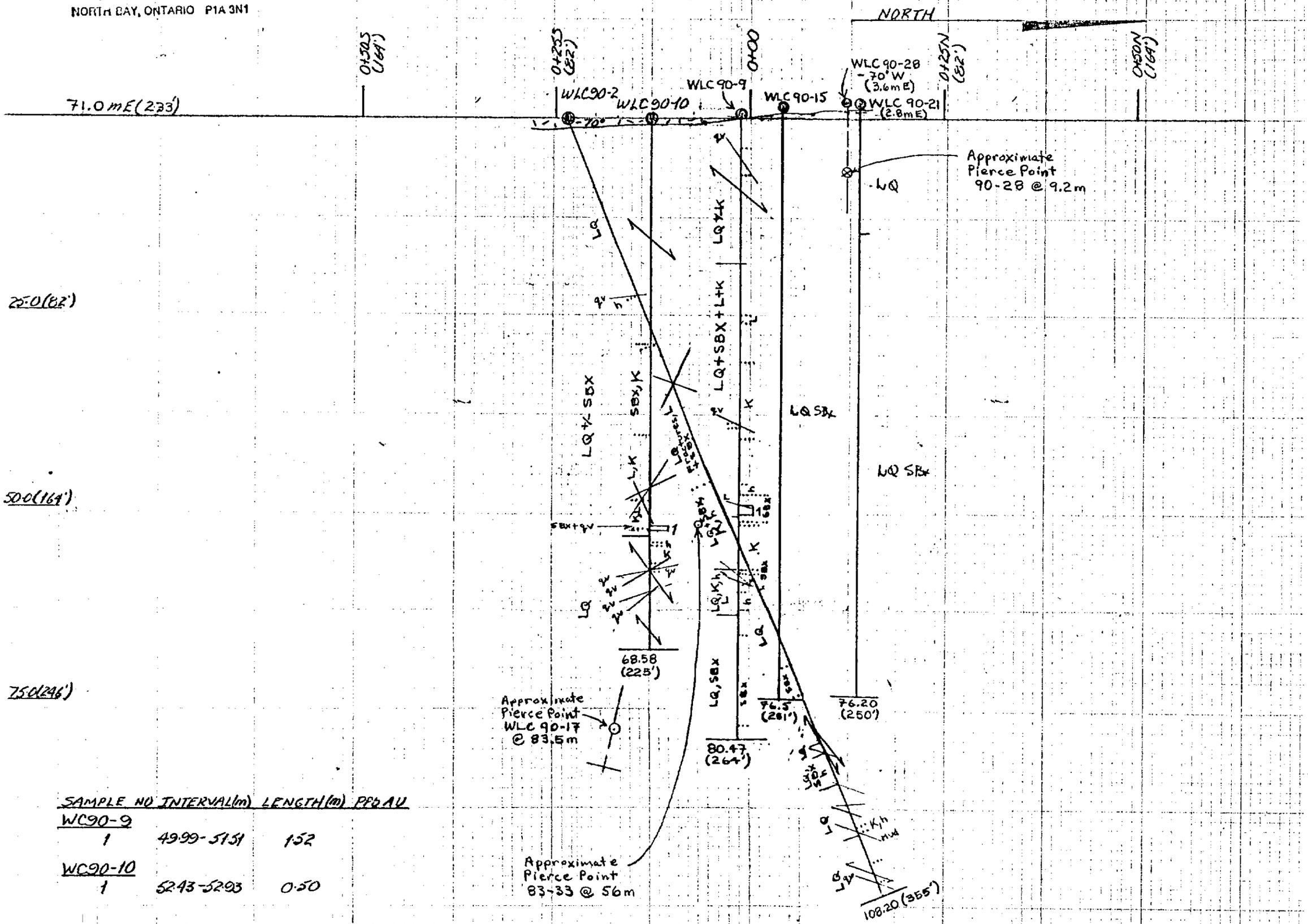
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



SAMPLE NO	INTERVAL(m)	LENGTH(m)	PROAU
WC90-9			
1	49.99-51.51	1.52	
WC90-10			
1	52.43-52.93	0.50	

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Revisions	GEOLOGICAL ENGINEERING SERVICES
July/90 F.H.T.	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 71 mE
	D.D.H* WLC 90-2, WLC 90-9, WLC 90-10, WLC 90-15, WLC 90-21
	Drawn: H.D.McL. | Scale-1:500 Date: May/90

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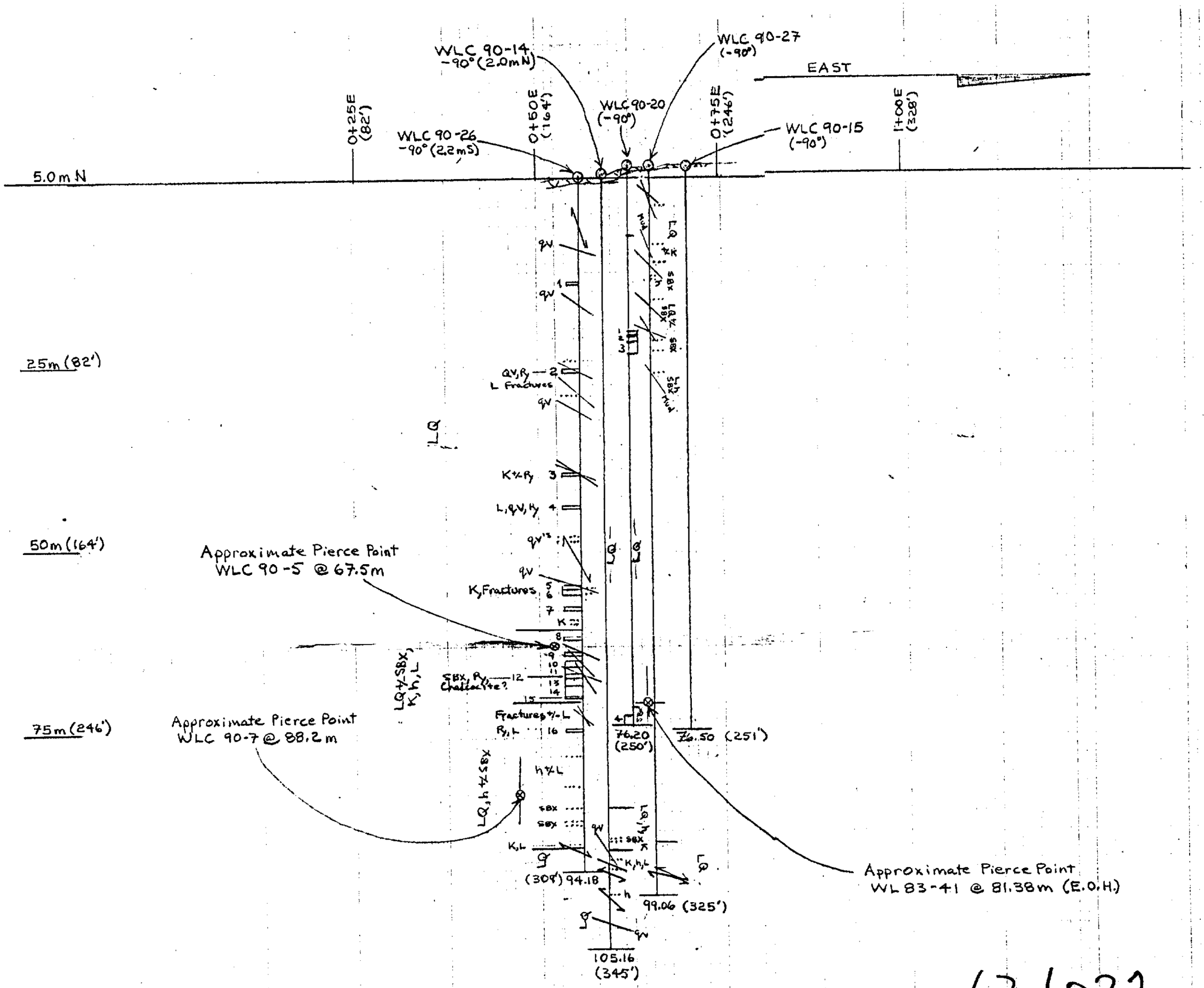

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Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 5.0 m N
	D.D.H # WLC 90-14 WLC 90-15 WLC 90-20 WLC 90-26 WLC 90-27

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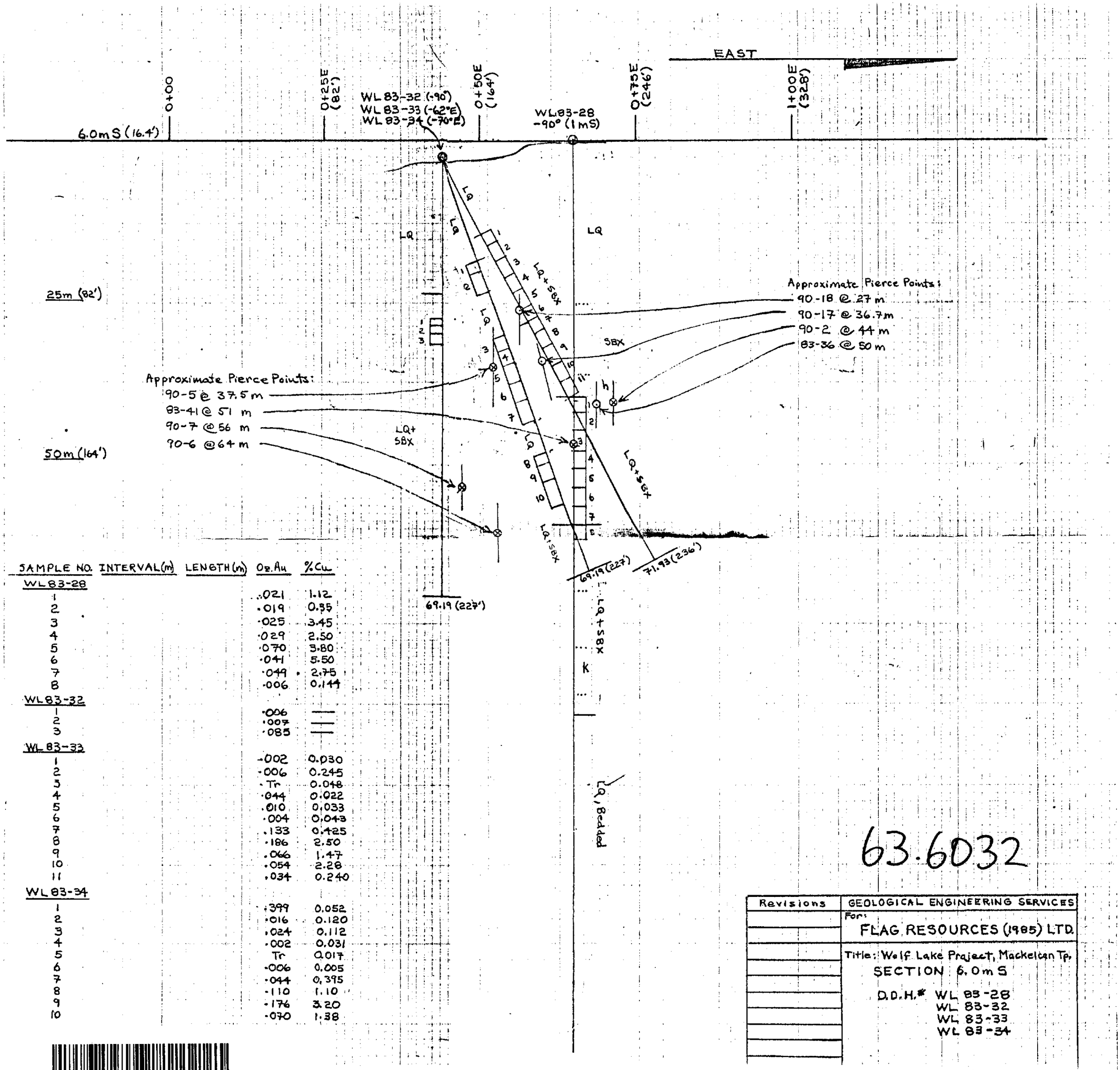

SAMPLE NO.	INTERVAL(m)	LENGTH(m)	Oz. Au	%Cu
WL 83-28				
1			.021	1.12
2			.019	0.35
3			.025	3.45
4			.029	2.50
5			.070	3.80
6			.041	5.50
7			.049	2.75
8			.006	0.144
WL 83-32				
1			.006	—
2			.007	—
3			.085	—
WL 83-33				
1			.002	0.030
2			.006	0.245
3			Tr	0.048
4			.044	0.022
5			.010	0.033
6			.004	0.043
7			.133	0.425
8			.186	2.50
9			.066	1.47
10			.054	2.28
11			.034	0.240
WL 83-34				
1			.399	0.052
2			.016	0.120
3			.024	0.112
4			.002	0.031
5			Tr	0.017
6			.006	0.005
7			.044	0.395
8			.110	1.10
9			.176	3.20
10			.070	1.38

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICES
	For: FLAG RESOURCES (1985) LTD.
	Title: Wolf Lake Project, Mackelcan Tp. SECTION 6.0m S
	D.D.H.# WL 83-28, WL 83-32, WL 83-33, WL 83-34

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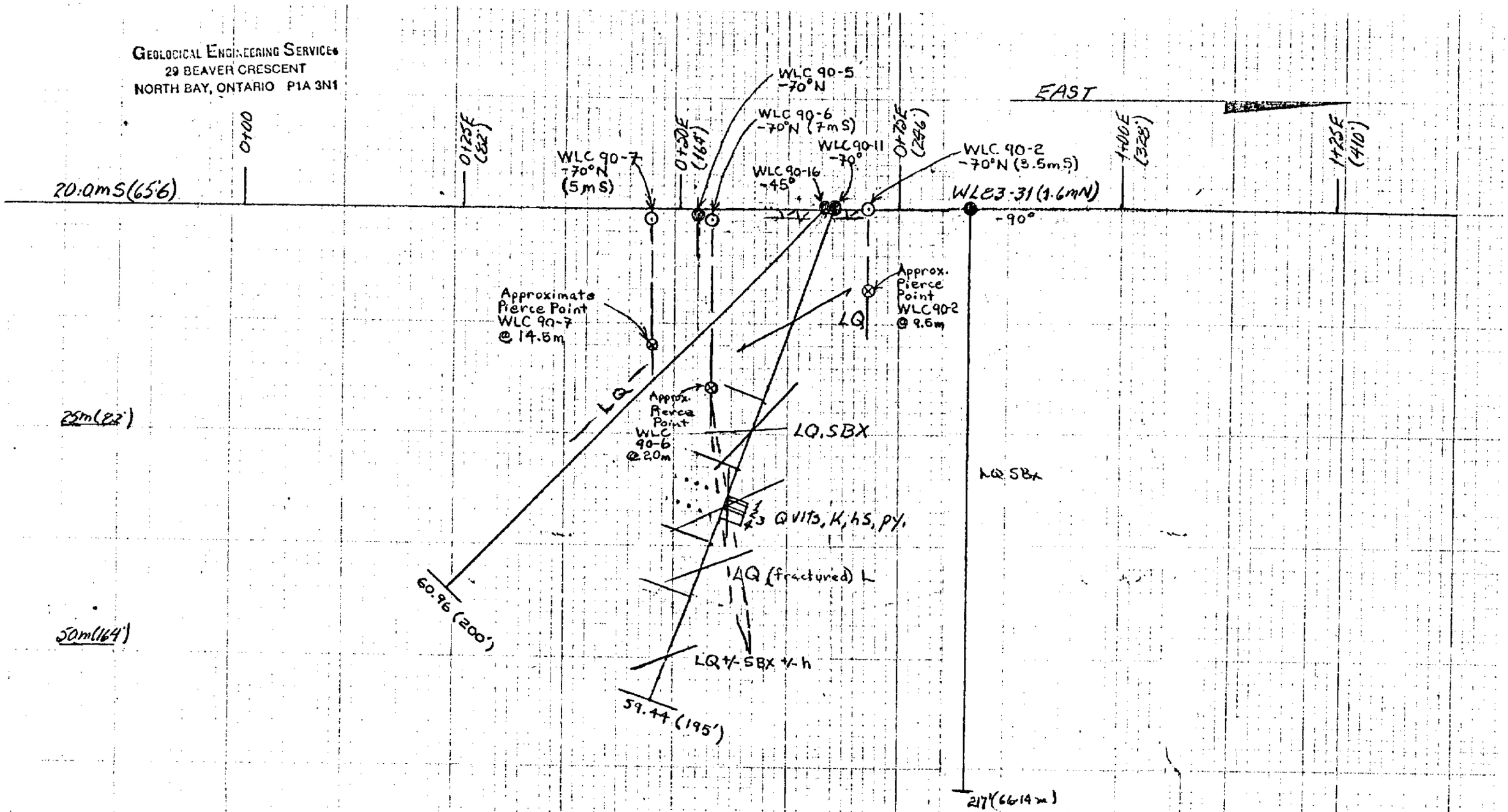
GEOLOGICAL ENGINEERING SERVICES
29 BEAVER CRESCENT
NORTH BAY, ONTARIO P1A 3N1



SAMPLE NO	INTERVAL(m)	LENGTH(m)	OZ/AU	
1	34.59-34.90	0.31	.022	.149 AU/1.38m(4.5')
2	34.90-35.51	0.61	.304	
3	35.51-35.97	1.22	.028	
4	35.97-37.19	0.70	Tr	

63.6032

Revisions	GEOLOGICAL ENGINEERING SERVICE
July/90 F.H.T.	For: FLAG RESOURCES (1985) LTD
	Title: Wolf Lake Project, Mackelcan Tp
	SECTION 20.0m S
	D.D.H.* WL 83-31 WLC 90-11 WLC 90-16
	Drawn: H.D. McL. | Scale-1:500 | Date: May/

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