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FALCONBRIDGE LIMITED

THIRD QUARTER PROGRESS REPORT

JULY - SEPTEMBER, 1988

UMEX/KIDD MATHESON TOWNSHIP AGREEMENT

TIMMINS, ONTARIO

N.T.S.: 42A/11

OM88-5-C-208.

OCTOBER 25, 1988

J.M. DER WEDUWEN



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SUMMARY AND CONCLUSIONS

Four diamond drill holes, M13-13 to M13-16 inclusive totalling 1136.0 metres were completed between August 5 and August 25, 1988.

Several anomalous, but not significant gold values were returned from this diamond drilling, the best being 2.33 grams/tonne over 0.7 metres from 199.0 to 199.7 metres in drill hole M13-15. Most of the anomalous gold values are associated with thin, arsenopyrite-bearing quartz veins or arsenopyrite filled fracture systems. Pyrite and pyrrhotite are common accessory sulphides and locally make up 5-10% of the unit. Gold values do not appear to be associated with the pyrite and pyrrhotite. The sulphide mineralization occurs within strongly carbonatized, sericitized and locally silicified mafic volcanics. These zones of strong alteration occur adjacent to and within a distinct, pillowed variolitic mafic volcanic horizon.

Volcanic units strike east-west and dip at 35-40° to the north. Tops determined primarily from graded bedding in sediments face south.

Local shearing is present along flow contacts and within the graphitic argillite at the mafic volcanic-sediment contact zone. However, a major shear zone that could host a vein system has not been intersected.

RECOMMENDATIONS

No further diamond drilling is recommended for the property at this time.

Property negotiations have been initiated on the half lot immediately to the east of the four unpatented claims. These negotiations should continue and future work is strongly recommended for this half lot, if these negotiations are successful.

Failing to acquire the half lot to the east, there remains the possibility of drilling a deep, vertical drill hole near the northern boundary of the property. This drill hole would test the entire mafic sequence because of the local flat dip and would be approximately 700 metres in length.

INTRODUCTION

During the third quarter of 1988, four diamond drill holes were completed which tested a sequence of altered mafic volcanics. The 1988 diamond drilling was conducted west and east of previously drilled holes which have returned significant but erratic gold values.

Diamond drilling in 1988 was done with the Umex/Kidd Matheson Joint Venture in effect as Umex had earned a 49% interest in the property earlier in the year.

LOCATION AND ACCESS

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The Umex/Kidd Matheson J.V. property is located 24 kilometres east-northeast of Timmins, Ontario in south central Matheson Township. The property consists of a patented half lot in the south half of Lot 8, Concession I and four unpatented mining claims, P585548 to P585551 inclusive, in the north half of Lot 8, Concession I.

Highway 101 East forms the property's northern boundary and an all weather gravel road runs along the Lot 8/9 boundary line forming the property's western boundary. Direct access to the property is via a series muskeg trails, a few of which are passable by pick-up truck during the summer months.

1988 THIRD QUARTER EXPLORATION

Four diamond drill holes, M13-13 to M13-16 inclusive totalling 1136.0 metres were completed between August 5 and August 25, 1988 (Table 1). These drill holes were put down at the western and eastern ends of the property testing gaps in the volcanic stratigraphy.

All diamond drilling was done by Bradley Brothers Ltd. of Timmins Ontario. Core size in all drill holes was BQ. Averaged drill invoiced cost now material and ASC 20 (m)

drill invoiced cost per metre was \$56.29/m.

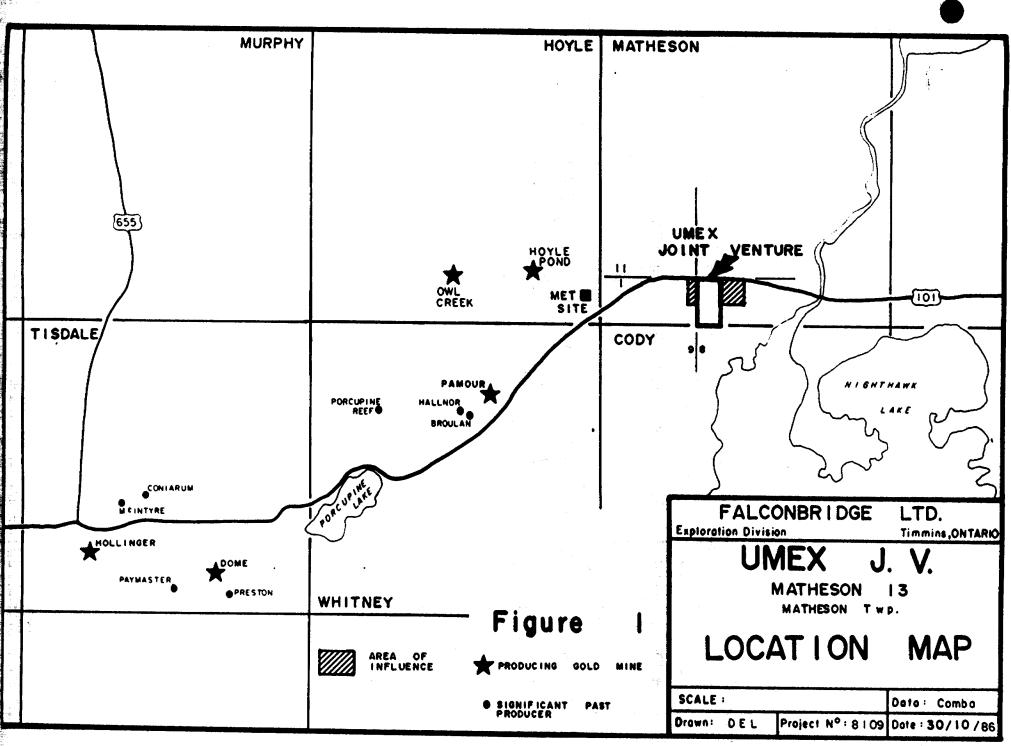


TABLE 1

1988 DIAMOND DRILLING STATISTIC DATA UMEX/KIDD J.V. - MATHESON TOWNSHIP

| Hole No. | Location | Azimuth | Dip | Depth | Start | Finish | Cost |
|--------------------------------------|--|------------------------------|-----------------------|---|--|--------|---|
| H13-13 H13-14 H13-14 H13-16 | L1E,620N L2E,500N L7E,450N L8E,460N | 180° 180° 180° 180° | - 60° -50° -50° | 374.0m 281.0m 236.0m 245.0m 1136.0m | 05/08/88 12/08/88 19/08/88 24/08/88 | | \$21,501.58 \$14,743.80 \$12,861.80 \$14.840.11 \$63.947.29 |

RESULTS 1988 THIRD QUARTER EXPLORATION

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The initial two drill holes, M13-13 and M13-14, were put down in the western portion of the property testing for the western extension of gold mineralization encountered in previous diamond drilling. Drill hole M13-13 intersected a series of pillowed mafic volcanics, massive leucoxene-bearing mafics, a thin basaltic komatiite in the upper portion of the drill hole, graphitic argillite and turbidite type sediments. A thin, grey quartz-feldspar porphyry sill intrudes the graphitic argillite unit. One highly anomalous gold value of 1.96 grams per tonne over 1.1 metres was returned from a distinct, pillowed variolitic mafic volcanic. No zones of arsenopyrite-bearing fractures or arsenopyrite bearing quartz veins were noted in this drill hole.

Drill hole M13-14 intersected a similar mafic volcanic sequence as that in drill hole M13-13. An altered massive mafic horizon was intersected from 162.0 to 165.1 metres. This unit is strongly carbonatized and sericitized and weakly chloritic. The unit carries from 2 to 8% fine pyrite, minor pyrrhotite and 3-5% irregular quartz stringers. One anomalous gold value of 500 ppb was returned from this unit. This altered unit occurs immediately to the south of the distinct pillowed variolitic mafic volcanic.

Drill holes M13-15 and M13-16 were put down in the eastern portion of the property (Figure 2). The stratigraphic sequence consists of pillowed mafic volcanics, massive leucoxene-bearing mafic volcanics, graphitic argillite and sediments. graphitic argillite horizon is strongly sheared and is intruded by several, thin grey quartz-feldspar porphyry sills. A sheared flow contact occurs between massive and pillowed mafic volcanic units at 120.5 metres. This shear zone is surrounded by strongly carbonatized and sericitized mafics extending from 113.0 to 134.6 This altered zone carries 5-15% fine pyrite which locally may reach 25-30%, locally 2-3% pyrrhotite and 1-5% fine arsenopyrite. Both the pyrrhotite and arsenopyrite are concentrated in the massive mafic volcanic north of the sheared flow contact. Only two gold values exceeding 500 ppb were returned from this altered zone, the best being 870 ppb over 1.0 metre from 117.0 to 118.0 metres. A second strongly carbonatized horizon was intersected from 172.7 to 199.7 metres that carries 5-10% fine pyrite, 1-2% fine pyrrhotite and 4.5% thin quartz stringers. Three highly anomalous gold values greater than 500

ppb were returned from this altered horizon with the best being 2.33 grams per tonne over 0.7 metres from 199.0 to 199.7 metres. Drill hole M13-16 intersected stratigraphy almost identical to that noted in drill hole M13-15. Two altered horizons were intersected, the first from 108.6 to 114.4 metres and the second from 194.7 to 217.8 metres. The first altered horizon carried 10-12% fine pyrite and up to 15% quartz veining; the second altered zone carried 3-5% pyrite, 1-3% pyrrhotite, locally up to 2% arsenopyrite and 3-4% quartz veining. Three gold values exceeding 500 ppb were returned from the second altered horizon with the best value being 730 ppb over 0.75 metres from 211.75 to 212.5 metres.

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Anomalous gold values are associated with fine arsenopyrite and arsenopyrite-bearing quartz veins within carbonatized and sericitized mafic volcanics. Pyrite and pyrrhotite are common accessory minerals in the altered zones but do not appear to be directly related to higher gold values. Most of the altered zones occur adjacent to and occasionally within a distinct pillowed variolitic mafic volcanic unit.

Local shearing has been noted along flow contacts and within the graphitic argillite unit. However, a major shear zone that could concentrate mineralizing fluids has not been noted.

A north-south fault has been interpreted to strike across the property just west of drill hole M13-15, based on apparent offsets of the volcanic stratigraphic (Figure 2).

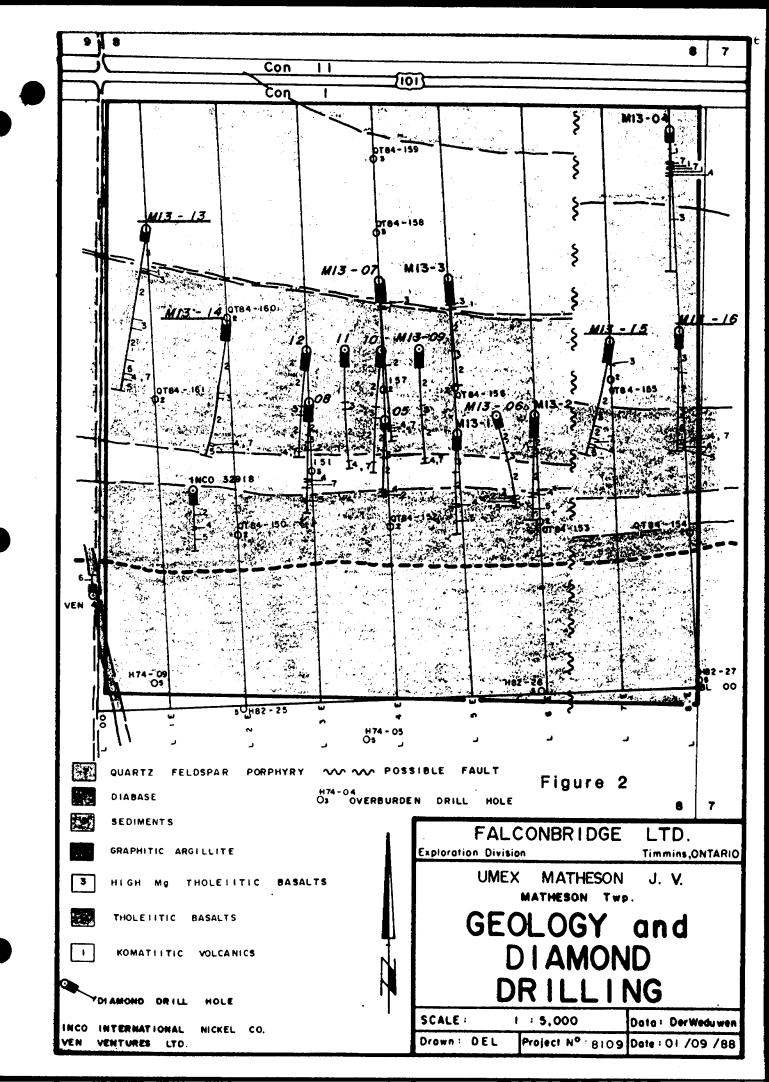
TABLE 2
GOLD ASSAY RESULTS GREATER THAN 500 ppb
FROM 1988 DIAMOND DRILLING

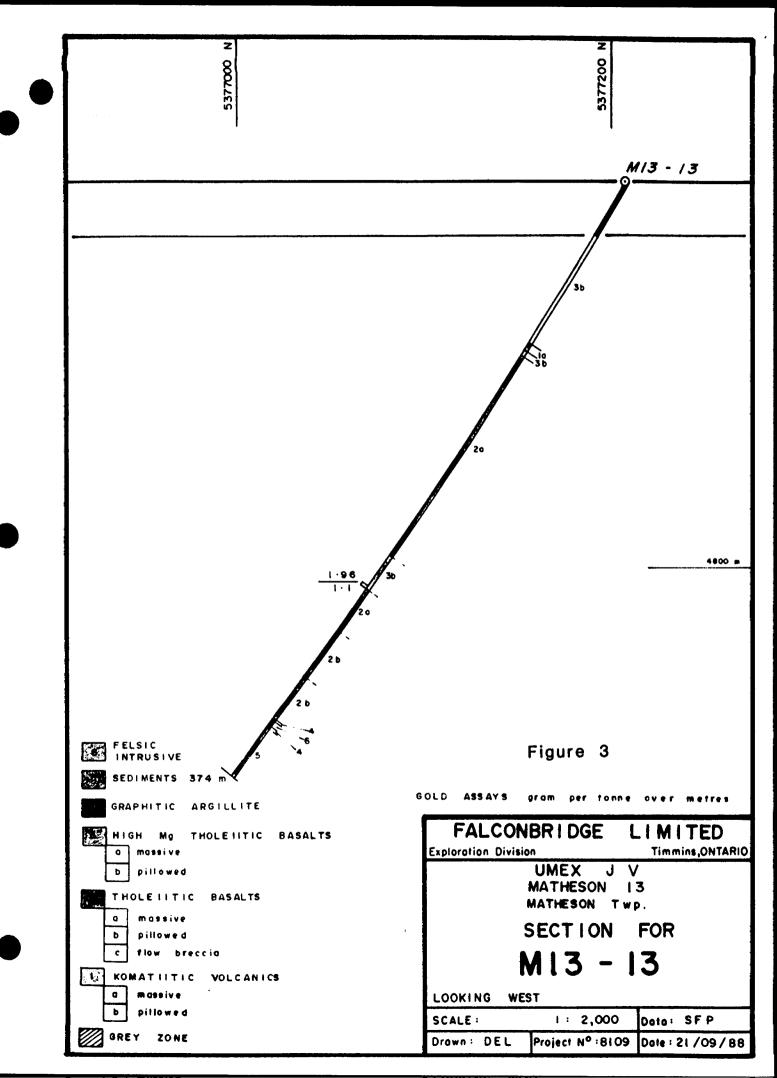
| Drill Hole | Sample No. | From | To | Interval (m) | Au (ppm) |
|------------|---|---|---|--------------------------|--------------------------------------|
| M13-13 | AI03633 | 252.0 | 253.1 | 1.1 | 1.96 |
| M13-14 | AI03708 | 162.0 | 163.5 | 1.5 | 0.50 |
| M13-15 | AI03770 AI03772 AI04955 AI04973 AI04974 | 117.0 119.0 173.0 198.0 199.0 | 118.0 120.5 174.5 199.0 199.7 | 1.0 1.5 1.5 1.0 | 0.87 0.65 0.98 0.59 2.33 |
| M13-16 | AI05061 AI05069 AI05073 | 195.4 206.0 211.75 | 197.0 207.5 212.5 | 1.6 1.5 0.75 | 0.56 0.52 0.73 |

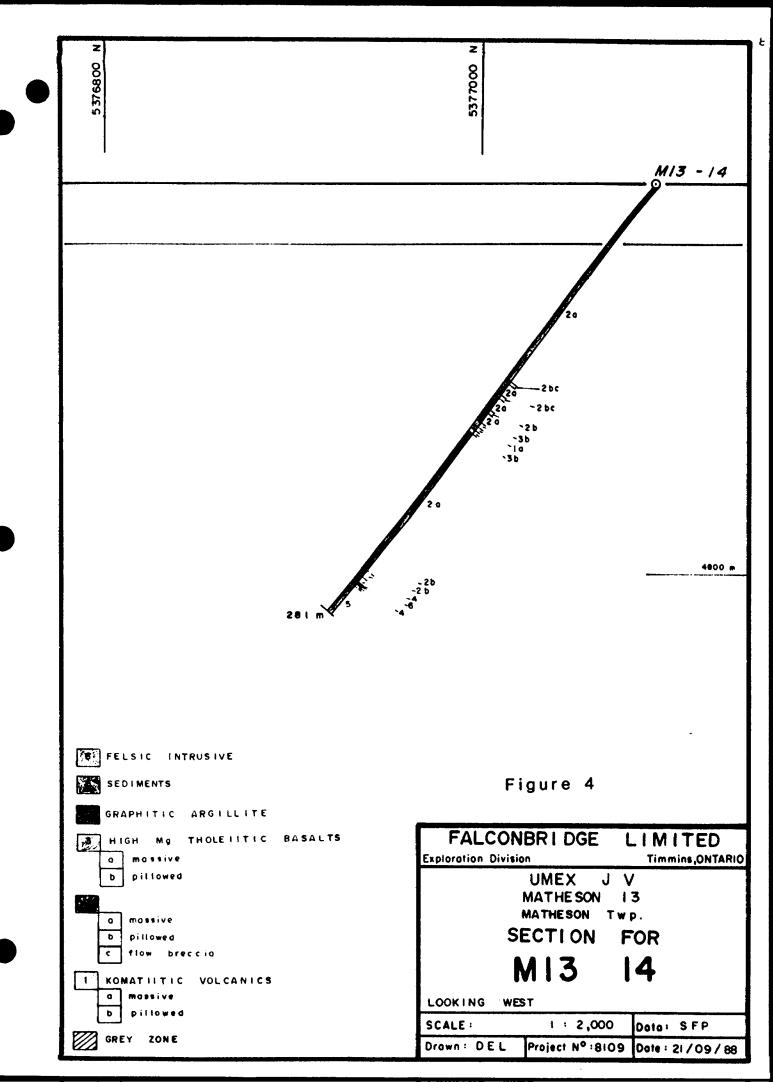
Laboratories in Don Mills Ontario and were analyzed for both major and minor elements, including the rare earth elements. This data is included in Appendix B.

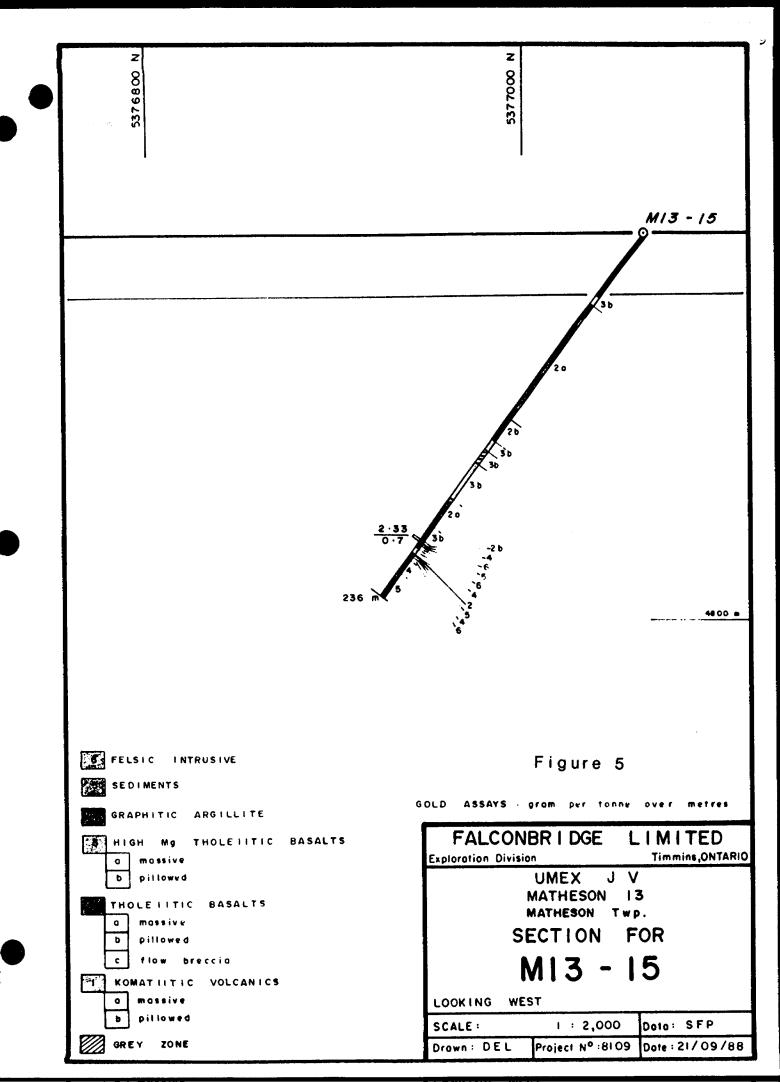
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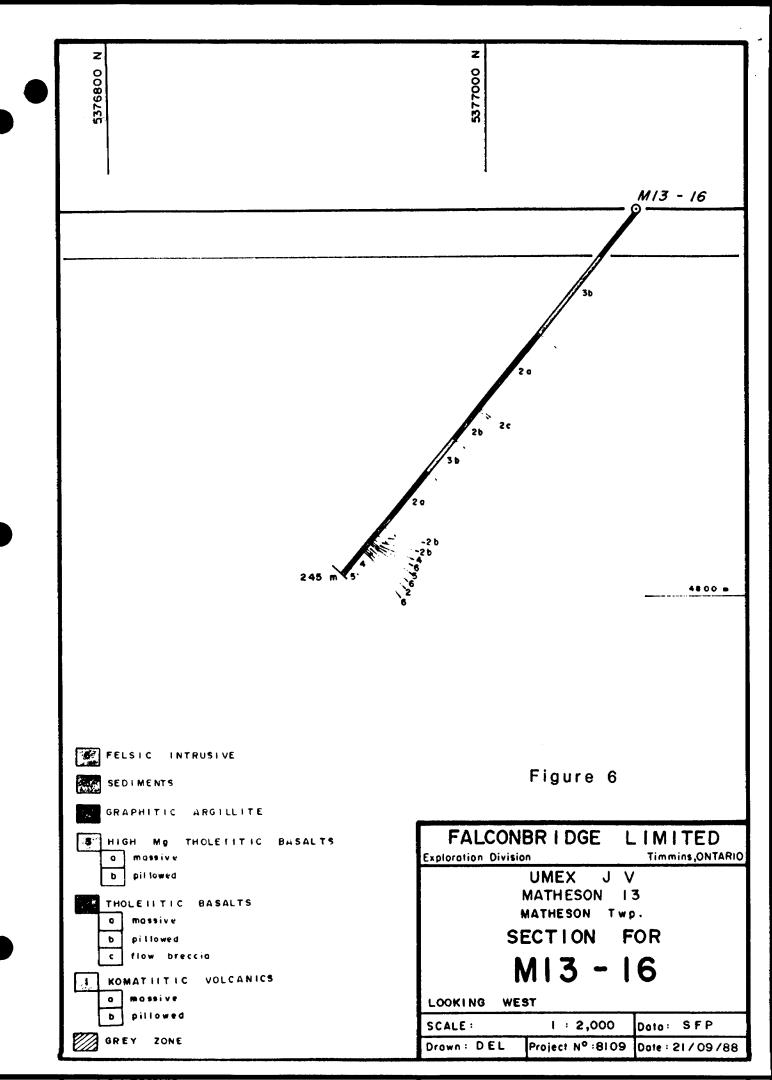
J.M. Der Weduwen











APPENDIX A

1988 DIAMOND DRILL LOGS M13-13 to M13-16

FALCONBRIDGE LTD DIAMOND DRILL LOG

Property: 8109

Hole #: M13-13

Zone #: 42A/11

Contractor : BRADLEY BROS.

Date started: 8/ 5/1988

Township: MATHESON Lot : 8

Claim # :P585549

Date completed: 8/11/1988

Level :

Concession: I

Location : UMEX-MATHESON J.V.

Azimuth: 180° 0' 0"

Section: 100E

Line : 1+00 E

Latitude: 5377207.00 N Departure: 497790.00 E

Dip : -60° 0' 0"

Collar coordinate:

Station: 6+20 N

5000.00

Reference frame : UTM

Elevation:

Length: 374.00 M

Surveyed by: -

| Deviation tests | : | Depth | Dip | Azimuth |
|-----------------|---|---|--|--|
| | | 60.00 H 120.00 M 219.00 H 318.00 H 372.00 H | -57*301 OH -56*301 OH -54*301 OH -52*301 OH -52*301 OH | 191° 0° 0° 191° 0° 0° 189° 0° 0° 189°30° 0° 194° 0° 0° |

Remarks : CASING: 28m of NW left in hole.

UTH COORDINATES: 5377207N, 497790E.

Water flow : -Cemented : NO

Plugged: NO Core size : BQ

Hole # : M13-13

| FROM (M) | TO (M) | DESCRIPTION | Sampi. | FROM | TO | Leng. | Au | Au 1 | Au 2 | T | T |
|-------------|-----------|---|--------|------|----|-------|-----|------|------|---|---|
| 0.00 | 32.00 | CASING | | | | (M) | ppm | ppm | ppm | | ļ |
| 32.00 | 97.85 | PILLOWED MG THOLETITE -light grey-green, fine-grained, moderately soft to soft, locally groundwater leached mafic shows weak foliation oriented 50°/CA. -weakly to moderately carbonatized (reactand/HCl) with local (3-5%) carbonate veinlets, patches and fracture-fillingfine tourmaline needles are present in patches and as a fracture-fillingquartz (-carbonate) veinlets are present locally (1%)pillow selvages are typically hazy, up to 5cm wide, locally hyalociastic, moderately to strongly chloritic, often strongly carbonatized and locally contain fine pyrite and pyrrhotite (up to 5% combined); rims are moderately to strongly bleached with local, fine, bleached varioles (up to 4mm) and carbonate- and chlorite- filled amygdulesbleached, concentric cooling fractures are present locally. | | | | | | | | | |
| | | 32.00- 32.75 -lost core. 32.75- 41.00 -groundwater leached and locally badly broken core. 38.85- 41.00 -lost core. 54.77- 54.86 -7cm wide, dirty quartz (80%), carbonate (13%), chlorite (5%) vein oriented 35°/CA contains 2% combined pyrite, pyrrhotite and chalcopyrite. 97.75- 97.85 -unit becomes softer and talcosecontact at 97.85m marked by increased granularity. | | | | | | | | | |

Hole # : M13-13

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FRON | TO | Leng. | Au ppm | Au 1 | Au 2 | |
|-------------|--------|--|-------------------------------|----------------------------|----------------------------|----------------------|-----------------------|------|------|--|
| 97.85 | 102.45 | BASALTIC KOMATIITE -light to medium blue-green, granular, soft, talcose to serpentinous unit locally shows mini spinifex textureweak foliation oriented 50-60*/CAmoderately carbonatized (reactant/HCl) with 10-15% quartz-carbonate stringers. | A103577 | 99.50 | 101.00 | 1.50 | <0.02 | | | |
| | | -moderately chloritic. 99.71- 99.74 -shear oriented 60°/CA with broken fragments in a clay-type matrix. 100.60- 102.45 -zone contains 15-20% irregular quartz-carbonate veining and associated pyrite and pyrrhotite. -contact at 102.45m marked by irregular, 1cm wide, quartz-carbonate vein. | A103578 | 101.00 | 102.50 | 1.50 | <0.02 | | | |
| 102.45 | 105.90 | PILLOWED MG THOLETITE -texturally similar to 32.00 - 97.85m but this zone contains about 20% quartz-carbonate stringers with associated pyrite and pyrrhotite (1-2%)weak to moderate foliation is oriented 45-55°/CA. | A103579 A103580 A103581 | 102.50 104.00 105.50 | 104.00 105.50 107.00 | 1.50 1.50 1.50 | 0.02 0.09 <0.02 | | | |
| 105.90 | 231.85 | -sharp contact at 105.90m oriented 45-50*/CA. MASSIVE MAFIC -medium to dark green, fine-grained, moderately hard mafic is weakly foliated at 50-55*/CA marked by the alignment of cream, elongate (up to 1mm) leucoxenes (1-2%)clotty pyrite (1-2%) is present locallymoderately carbonatized (reactant/HCL) with a network of fine carbonate veinlets and fracture-fillingepidote fracture-filling is present locallymoderately chloritic with local (up to 2%), black | A103582 A103583 A103584 | 107.00 111.50 113.00 | 108.50 113.00 114.50 | 1.50 1.50 1.50 | <0.02 0.02 0.04 | | | |

Hole # : M13-13

| FROM | TO | DESCRIPTION | Sampl. | FROM | T 70 | 1 | Γ. | | Т | | , |
|------|-----|--|---------|--------|--------|-------|-----------|-------------|-------------|---|---|
| (H) | (H) | | saipt. | PROH | TO | Leng. | Au ppm | Au 1 ppm | Au 2 ppm | ĺ | 4 |
| ļ | : | ferromagnesium minerals. | | | | | | | | | 1 |
| | | 113.07- 113.20 -weakly sheared at 55°/CA with 3% associated clotty pyrite and 10% (quartz-) carbonate. | | | į | | | | | | |
| | | 113.55- 113.70 -as above. | | | | | | | | | |
| | | 114.98- 115.07 -two carbonate (75%), quartz (12%), chlorite (10%) veins oriented 30° and 45°/CA with 3% associated subhedral and clotty pyrite and trace chalcopyrite; veins merge at 115.04m. | A103585 | 114.50 | 116.00 | 1.50 | 0.05 | | | | |
| | | 119.00- 144.00 -unit becomes dark green, progressively more granular and from medium- to coarse- grained. | A103586 | 120.50 | 122.00 | 1.50 | 0.02 | | | | |
| | | 122.00- 122.03 -2.5cm wide, carbonate vein oriented 35°/CA (parallel/foliation) contains 1% pyrite. | A103587 | 122.00 | 123.60 | 1.60 | 0.10 | | | | |
| | | 123.10- 123.60 -10-15% irregular carbonate stringers with 2% combined pyrite and pyrrhotite. | | | | | | | į | | |
| | | 125.50- 125.57 -6cm wide, carbonate vein oriented 55°/CA (subparallel/foliation). | A103588 | 123.60 | 125.00 | 1.40 | 0.03 | | | | |
| | | 127.70- 128.00 -strong foliation is oriented 60°/CA. | | | | | | | | | |
| | | 130.98- 131.04 -carbonate (90%), quartz (10%) vein oriented 55°/CA (subparailel/foliation). | | | | | | | | | |
| | | | A103590 | 134.00 | 135.50 | 1.50 | 0.13 | į | 1 | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au | Au 1 ppm | Au 2 | 4 |
|-------------|-----------|---|-------------------------------|----------------------------|----------------------------|----------------------|----------------------|-------------|------|---|
| | | 134.80- 138.30 -coarse-grained, strongly carbonatized zone with 10% irregular, ribbony, quartz (12%), carbonate (85%) veining between 137.57 and 138.10m with 3% clotty pyrite. | A103591 A103592 | 135.50 137.00 | 137.00 138.50 | 1.50 1.50 | 0.10 0.15 | | | |
| | | 138.30- 140.80 -irregular, ribbony carbonate-quartz veining (5%) with 3% contained pyrite. | A103593 A103594 | 138.50 140.00 | 140.00 141.50 | 1.50 1.50 | 0.06 0.10 | | | |
| | | 144.98- 145.10 | A103595 A103596 A103597 | 141.50 143.00 144.50 | 143.00 144.50 146.00 | 1.50 1.50 1.50 | 0.05 0.10 0.09 | | | |
| | | <pre>-quartz (26%), carbonate (70%) vein oriented 45°/CA (parallel/foliation) contains 3% fine pyrite and 1% fine tourmaline.</pre> | | | | | | | | |
| | : | 155.60- 155.66 -5cm wide, carbonate (95%), quartz (5%) vein oriented 70°/CA. | A103598 A103599 | 146.00 147.50 | 147.50 149.00 | 1.50 1.50 | 0.03 0.03 | | | |
| | | 161.58- 161.63 -irregular carbonate vein contains 5% pyrite. | A103601 | 161.00 | 162.50 | 1.50 | 0.02 | | | |
| | | 161.95- 162.05 -strongly carbonatized with 7-8% fine pyrite. | | | | | | | | |
| | - | 164.14- 164.28 -8cm wide, quartz (80%), carbonate (10%) vein oriented 30-50°/CA contains 10% finely disseminated pyrite. | A103602 A103603 | 162.50 164.00 | 164.00 165.00 | 1.50 | 0.02 | | | |
| | | 167.16- 167.32 -weakly silicified mafic appears brecciated with carbonate fracture- filling; zone contains 8-10% finely | A103604 A103653 | 165.00 166.50 | 166.50 168.00 | 1.50 1.50 | <0.02 0.10 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au | Au 1 | Au 2 | T . | |
|----------|-----------|--|-------------------------------|----------------------------|----------------------------|----------------------|-------------------------|------|------|----------------|---|
| | | | | | | (M) | ppm | ppm | ppm | ł | Ą |
| | | disseminated pyrite. 173.00- 174.10 -zone contains 15-20% tourmaline needles and patches. 186.25- 187.40 -moderately bleached, silicified and carbonatized zone contains 10-15% finely disseminated pyrite and is flooded with 10-15% quartz-carbonate veining oriented 40-55°/CA (subparallel/foliation); mafic between veining is silicified. | A103605 A103606 | 184.50 186.00 | 186.00 187.50 | 1.50 1.50 | <0.02 0.02 | | | | |
| | | 186.51- 186.58 -quartz (40%), carbonate (55%) vein oriented 55°/CA (parallel/foliation) contains 5% fine and clotty pyrite. 187.31- 187.40 -7cm wide, quartz (40%), carbonate (55%) vein oriented 40°/CA (subparallel/foliation) contains 5% fine and clotty pyrite. 195.43- 195.47 -3cm wide, barren, quartz (90%), carbonate (8%), tourmaline (2%) vein oriented 50°/CA. | A103607 A103608 A103609 | 187.50 189.00 190.50 | 189.00 190.50 192.00 | 1.50 1.50 1.50 | <0.02 <0.02 <0.02 | | | | |
| | | 197.66- 197.70 -badly broken fault zone. 198.00- 210.00 -unit is medium-grained and granular with local carbonate needles. 210.00- 211.30 -gradational zone becomes progressively finer-grained. | A103610 A103611 | 208.50 | 210.00 | 1.50 | <0.02 | | | | |

| FROM | 1 10 | | Ţ | · | | | | | | , | PAGE: 7 |
|--------|--------|--|--|--------------------------------------|--------------------------------------|------------------------------|----------------------------------|-------------|------|---|----------|
| (M) | (M) | DESCRIPTION | Sampl. | FRON | TO | Leng. | Au ppm | Au 1 ppm | Au 2 | | # - 4 |
| | | 211.30- 217.03 -light green, fine-grained zone contains 10% irregular, carbonate ± quartz flooding and patches with associated dravite (up to 3%) and 1-2% combined pyrite and pyrrhotite. | A103612 | 211.50 | 213.00 | 1.50 | <0.02 | | | | |
| | | 211.60- 213.10 -20% irregular, carbonate (80%), quartz (20%) flooding. | A103613 | 213.00 | 214.50 | 1.50 | <0.02 | | | | |
| | | 214.48- 215.06 -broad, quartz (33%), carbonate (45%) flooded zone with 2% combined sulphides and 20% mafic inclusions. | A103614 | 214.50 | 216.00 | 1.50 | 0.03 | | | | |
| | | 215.06- 217.03 -carbonate veinlets and fracture- filling comprise 2-4%. | A103615 | 216.00 | 217.50 | 1.50 | <0.02 | | | | |
| | | 225.50- 231.85 -unit becomes lighter green, weakly to moderately sericitic and locally weakly bleached in association with 1-2% quartz-carbonate patches and veinlets; leucoxenes become pinpoint in sizeweak to moderate foliation is oriented 60-65°/CA. | A103616 A103617 A103618 A103619 | 225.50 227.00 228.50 230.00 | 227.00 228.50 230.00 231.50 | 1.50 1.50 1.50 1.50 | <0.02 <0.02 <0.02 <0.02 | | | | |
| | | 231.30- 231.85 -fine, clotty, two-tone pyrite comprises 2% of zone; 10-15% carbonate-filled amygdules are present between 231.75 and 231.85m | A103620 | 231.50 | 232.50 | 1.00 | 0.05 | | | | |
| | | -sharp contact at 231.85m is oriented 60-65*/CA. | İ | | | | | | | | |
| 231.85 | 253.10 | PILLOWED MG THOLETITE -bright to fuchsitic light green, fine-grained, moderately soft to soft, locally sheared unit contains 2-3% quartz (-carbonate) veining with local (up to 3%), associated clotty pyrite. | | | | | | | | | |

| FROM (M) | OT (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au ppm | Au 1 | Au 2 | T | |
|-------------|-----------|--|--------------------|------------------|------------------|-------|--------------|------|------|---|--|
| | | -moderately carbonatized (weakly reactant/HCl) with 5% carbonate veinlets and fracture-fillingweakly to moderately chloriticmoderately sericiticweakly to moderately fractured with localized fuchsite infillingpillow selvages are up to 5cm wide, hazy, strongly chloritic, typically moderately to strongly carbonatized, locally sheared, and may locally contain fine sulphides; rims are weakly to moderately bleached and contain local, elongate, often coalesced varioles (2-15mm in size). 231.85- 232.15 -zone is moderately sheared at 75°/CA and contains 1% pinpoint dravite, 1% arsenopyrite pinpoints to needles (less than 1mm in size), less than 1% two-tone, clotty pyrite, and 5% quartz-carbonate patches and veinlets. | | | | | Phus | ppn | ppm | | |
| | | 232.15- 233.70 -about 5% dravite pinpoints to needles (less than 1mm in size) are present. | A103621 | 232.50 | 234.00 | 1.50 | 0.03 | | | | |
| | | 234.27- 234.32 -4cm wide, carbonate (50%), quartz (38%), dravite (2%) vein oriented 55°/CA contains 10% fuchsitic inclusions and trace pyrite. | A103622 | 234.00 | 235.50 | 1.50 | 0.04 | | , | | |
| | | 236.35- 236.45 -irregular carbonate flooding with 15% host rock inclusions. | A103623 | 235.50 | 237.00 | 1.50 | 0.06 | | | : | |
| | | 239.30- 239.59 -quartz (40%), carbonate (60%) flooding comprises 30% of zone; less than 1% pyrite is present locally. | A103624 A103625 | 237.00 238.50 | 238.50 240.00 | 1.50 | 0.10 0.12 | | | | |
| | | | A103626 | 240.00 | 241.60 | 1.60 | 0.23 | | | | |

| FROM | TO | DESCRIPTION | | T | т | , | 7 | _ | | 106; |
|------|-----|---|-------------------------------|----------------------------|----------------------------|---|----------------------|-------------|-------------|------|
| (M) | (H) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | Au 1 ppm | Au 2 ppm | ě |
| | | 240.70- 241.60 -quartz-carbonate flooding, veining and fracture-filling comprise 20-25% of zone; up to 2% pyrite is present locallyfine dravite often rims the quartz-carbonate. | | | | | | | | |
| | | 240.97- 241.00 -2.5cm wide, quartz (40%), carbonate (50%), dravite (2%) vein oriented 60-65°/CA contains 8% host rock inclusions and less than 1% fine pyrite. | | | | | | | | |
| | | 241.15- 241.60 -zone is weakly to moderately sheared at 65-75'/CA and contains 35% quartz-carbonatefrom 241.24 - 241.38m zone contains 20-25% fuchsitic host rock inclusions. | | | | | | | | |
| | | 249.10- 250.00 -about 1% clotty pyrite becomes evident and increases to 2-3%. | A103627 A103628 A103629 | 241.60 247.00 248.50 | 243.00 248.50 250.00 | 1.40 1.50 1.50 | 0.19 0.13 0.10 | : | | |
| | | 250.00- 251.00 -two-tone clotty pyrite accounts for 3-4% of zone. | A103631 | 250.00 | 251.00 | 1.00 | 0.08 | | ļ | |
| | | 251.00- 253.10 -bright fuchsite green to buff-green, locally bleached, moderately sericitic, moderately silicified (with about 10-15% quartz flooding and patches), weakly sheared (at 70°/CA) throughout and locally moderately to strongly sheared zone contains 3-4% fine and clotty, two-tone pyrite, trace arsenopyrite (less than 1mm) and locally up to 5% fine dravite. | A103632 A103633 | 251.00 252.00 | 252.00 253.10 | 1.00 | 0.08 1.96 | 1.96 | 1.96 | |

| FROM | TO | DESCRIPTION | Τ | T | 1 | | γ | 7 | | | AGE: 10 |
|--------|--------|--|---------|--------|--------|-------------|------|------|-------------|---|-----------------|
| (M) | (M) | | Sampt. | FROM | TO | Leng. | Au | Au 1 | Au 2 ppm | | 2 2 5 |
| | | -fracture-filling fuchsite is common. 252.40- 252.52 -quartz (60%), carbonate (15%) flooding contains 10% dravite, 5% clotty and euhedral pyrite, 1% pyrrhotite and 9% host rock inclusions. | | | | | | | | | |
| | | 252.52- 253.04 -buff-green, moderately to strongly sheared (at 70°/CA) zone contains 3% fine dravite needles, 2-3% fine pyrite, 1% pyrrhotite and 10% quartz- carbonate patches. | | | | | | | | | |
| | | 253.04- 253.10 -5.5cm wide, quartz (30%), carbonate (60%) vein oriented 70-80°/CA (subparallel/shearing) contains 2% pyrrhotite, 1% pyrite and 7% host rock inclusions. | | | | | | | | | |
| | | -aforementioned vein marks contact with succeeding unit. | | | | | | | | | |
| 253.10 | 279.55 | MASSIVE MAFIC -medium green, fine-grained, moderately hard, locally bleached mafic contains buff, pinpoint to elongate (up to 1mm) leucoxenes which define a weak to moderate foliation oriented 70°/CA. | | | | | | | | 3 | |
| | | -weakly to moderately carbonatized (reactant/HCl) with 3-4% quartz-carbonate veining (locally Z-shaped) and fracture-fillinglocally moderately sericitic with associated pyrite and pyrrhotite. | | | | | | | | | |
| | | 253.10- 254.00 -weakly sheared zone oriented 65-70°/CA contains 25% quartz-carbonate veinlets (parallel/shearing) and patches with 1-2% associated clotty pyrrhotite. | A103634 | 253.10 | 254.50 | 1.40 | 0.10 | | | | |



| FROM (M) | (M) | DESCRIPTION | Sampl. | FROM | 70 | Leng. | Au ppm | Au 1 ppm | Au 2 | | |
|-------------|-----|--|---------|--|--------|-------|-----------|-------------|-------|--------------|----|
| | | -veinlets are locally boudinaged. | | | | | 77 | 1 17" | PANII | | +- |
| | | 253.92- 253.99 -quartz (25%), carbonate (60%) vein oriented parallel to shearing contains 2% fine pyrite and 13% angular mafic inclusions. | | | | | | | | | |
| | | 254.84- 255.20 -light green, bleached, sericitic zone contains 4-5% finely disseminated to clotty pyrrhotite and 1-2% clotty pyrite. | A103635 | 254.50 | 256.00 | 1.50 | 0.02 | | | | |
| | | 256.07- 256.14 -7cm wide, quartz (24%), carbonate (75%) vein oriented 60°/CA (subparallel/ foliation) contains 1% combined pyrite and pyrrhotite. | A103636 | 256.00 | 257.50 | 1.50 | 0.04 | | | | |
| | | 257.40- 259.10 -light buff-green, bleached, moderately sericitic zone contains 8% quartz-carbonate flooding/veining and 5% fine, clotty, two-tone pyrite. | A103637 | 257.50 | 259.10 | 1.60 | 0.03 | | | | |
| | | 258.08- 258.34 -quartz (30%), carbonate (7%) flooding contains 8% finely disseminated and clotty pyrite and 55% bleached, silicified, host mafic inclusions. | | | | | | | | | |
| | | 258.50- 259.10 -fractured, granular and weakly sheared (at 65-70°/CA) zone contains 6-8% fine and clotty pyrite. | | | | | | | | | |
| | İ | 259.36- 259.45 -carbonate (90%), quartz (10%) vein oriented 80°/CA contains trace pyrite. | A103638 | 259.10 | 260.50 | 1.40 | 0.09 | | | | ! |
| | | 261.04- 261.12 -quartz (28%), carbonate (50%) vein oriented 65°/CA contains 20% mefic inclusions and 2% pyrite. | A103639 | 260.50 | 262.00 | 1.50 | 0.04 | | | | |

FALCONBRIDGE LTD

Hole # : M13-13

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | Au 1 | Au 2 | ; ,1 |
|-------------|-----------|---|-------------------------------|----------------------------|----------------------------|----------------------|----------------------|------|------|---------|
| | | 265.40- 265.85 -bleached and weakly sheared (at 45-50°/ CA) zone contains 1% fine pyrite. | A103640 A103641 A103642 | 262.00 263.50 265.00 | 263.50 265.00 266.00 | 1.50 1.50 1.00 | 0.04 0.03 0.03 | | | |
| | | 269.00- 269.65 -light green, bleached, moderately to strongly carbonatized, weakly sericitic zone contains up to 5% combined pyrite and pyrrhotite associated with fracturing and hazy veining. | A103643 A103644 A103645 | 266.00 267.50 269.00 | 267.50 269.00 270.00 | 1.50 1.50 1.00 | 0.02 0.02 0.03 | | | |
| | | 271.78- 271.90 -barren, quartz-carbonate flooding comprises 60% of zone. | A103646 A103647 | 270.00 271.50 | 271.50 273.00 | 1.50 1.50 | 0.03 0.06 | | | |
| | | 275.81- 275.84 -narrow shear oriented 55°/CAcontact is approximate at 279.55m. | | | | | | | | |
| 279.55 | 309.50 | ALTERED PILLOWED MAFIC -typically medium buff, fine-grained, moderately soft, weakly to moderately fractured mafic contains 3-4% carbonate-filled amygdulesmoderate foliation is oriented 60-70°/CA. | A103648 A103649 | 278.00 279.50 | 279.50 281.00 | 1.50 | 0.04 | | | |
| | | -strongly carbonatized (reactant/HCl) with about 2% (quartz-) carbonate veinletsweakly to moderately sericitic. | | | | | | | | |
| | | -pillow selvages are typically less than 5mm wide, strongly chloritic, typically carbonatized, locally hyaloclastic and locally contain 3-4% combined pyrite, pyrrhotite and chalcopyrite; rims are strongly bleached with rounded to elongate (up to 6mm), carbonate-filled amygdules in adjacent mafic. | | | | | | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | то | Leng. (M) | Au ppm | Au 1 ppm | Au 2 ppm | :: • |
|-------------|-----------|--|--|--|--|--------------------------------------|--|-------------|-------------|---------|
| | | 279.55- 283.66 -light green, weakly chloritic zone is locally sheared at 65°/CA and contains 2% clotty pyrite and local quartz-carbonate veining. 281.64- 281.73 -quartz (60%), carbonate (40%) vein oriented 45-50°/CA contains trace pyrite. 283.23- 283.39 -zone contains 70-80% fine tourmaline and local (2%), combined pyrrhotite and chalcopyrite. 283.39- 283.58 -sheared at 70°/CA with 5% associated sulphides. | A103650 | 281.00 | 282.50 | 1.50 | 0.17 | | | |
| | | 283.58- 283.66 -carbonate flooding with 20% mafic inclusions. 295.14- 295.20 -carbonate (45%), quartz (30%), dravite (3%) vein oriented 65°/CA (parallel/foliation) contains 2% combined pyrite and pyrrhotite, and 20% mafic inclusions. | A103652 | 284.00 | 285.50 | 1.50 | 0.08 | | | |
| | | 302.00 -2-3% fine, clotty pyrite becomes evident. 308.00- 309.50 -buff-grey, moderately sericitic zone with 2-5% clotty, two-tone pyritegradational alteration contact at 309.50m. | A103654 A103655 A103656 A103657 A103658 A103659 | 302.00 303.50 305.00 306.50 308.00 | 303.50 305.00 306.50 308.00 309.50 | 1.50 1.50 1.50 1.50 1.50 | 0.09 0.04 0.25 0.09 0.07 0.17 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au ppm | Au 1 | Au 2 | |
|-------------|-----------|--|--|--|--|--|--|------|------|--|
| 309.50 | 336.40 | WEAK GREY PILLOWED MAFIC -medium grey locally with buff tint, fine-grained, moderately hard, weakly carbonaceous mafic contains 2-4% fine, clotty pyrite and 10-15% quartz veining (predominantly as one broad vein)strongly carbonatized (weakly to non-reactant/ HCl) with local (2-3%), carbonate veinlets and fracture-fillingweak to moderate fracturing is often carbonaceously-filled 2 local pyrite. | A103660 A103661 A103662 A103663 A103664 A103665 A103667 A103668 A103669 A103670 | 309.50 311.00 312.50 314.00 315.50 317.00 318.50 320.00 321.50 323.00 324.00 | 311.00 312.50 314.00 315.50 317.00 318.50 320.00 321.50 323.00 324.00 325.00 | 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 | 0.10 0.04 0.04 0.06 0.09 0.03 0.10 0.12 0.13 0.12 | | | |
| | | -pillow selvages are typically narrow (up to 5mm wide) but locally can reach 7cm wide, chloritic, carbonaceous, carbonatized, often hyaloclastic and may contain up to 5% fine, clotty sulphides; rims are bleached with up to 5mm carbonate-filled amygdules (2-3%) present. | | | | | | | | |
| | | 324.45- 325.22 -mafic contains 5% irregular quartz- carbonate veining with about 3% associated fine, clotty pyrite. | A103671 | 325.00 | 326.00 | 1.00 | 0.08 | | | |
| | | 325.22- 325.42 -wedge-shaped, quartz (80%), carbonate (5%) vein with irregular contacts contains 15% carbonaceous mafic inclusions and trace pyrite. | : | | | | | | | |
| | | 325.55- 328.78 -broad, blocky, white quartz (90%), carbonate (2%) vein contains 8% carbonaceous mafic inclusions and less than 1% fracture-controlled, clotty pyrite; both contacts are badly broken or ground. | A103672 A103673 | 326.00 327.50 | 327.50 329.00 | 1.50 1.50 | 0.10 0.11 | | | |
| | | 329.25- 329.52 -white quartz (90%), carbonate (10%) vein oriented subparallel to core axis contains less than 1% fine pyrite. | A103674 | 329.00 | 330.50 | 1.50 | 0.08 | | | |
| | | | A103675 | 330.50 | 332.00 | 1.50 | 0.07 | i | J | |

| FROM | TO | DESCRIPTION | T | 7 | | Ţ | · | | | PAGE: 13 |
|--------|--------|--|-------------------------------|----------------------------|----------------------------|----------------------|----------------------|-------------|-------------|----------|
| (M) | (H) | 755000777000 | Sampl. | FROM | TO | Leng. | Au ppm | Au 1 ppm | Au 2 ppm | 4 |
| : | | 333.50- 335.20 -carbonaceous fracture-filling becomes moderate and clotty pyrite content reaches 5-7%. | A103676 A103678 A103679 | 332.00 333.50 335.00 | 333.50 335.00 336.50 | 1.50 1.50 1.50 | 0.04 0.08 0.22 | | | |
| | | 335.20- 336.40 -mafic shows moderate to strong, pervasive, carbonaceous alteration with pyrite content at 10%. | | | | | | | | |
| | | <pre>-contact is obscure due to str carbonaceous alteration.</pre> | | | | | | | | |
| 336.40 | 337.60 | GRAPHITIC ARGILLITE -black, fine-grained, soft to moderately hard (depending upon alteration), well-bedded (at 70- 75°/CA) graphitic argillite contains about 15% clotty, fractured-controlled and bedded pyrite and local (1-2%), light brown sphalerite. | A103680 | 336.50 | 338.00 | 1.50 | 0.20 | | | |
| | | -5% carbonate stringers are typically oriented parallel to bedding; quartz-carbonate strain shadows are present locally. | | | | | | | | |
| | | 337.56- 337.60 -sheared contact marked by muddy gouge. | | | | | | | | |
| 337.60 | 340.95 | FELDSPAR PORPHYRY -dark grey, fine-grained, hard, moderately carbonaceous groundmass contains 30-35% subhedral to euhedral, locally zoned, feldspar and local anhedral quartz phenocrysts (1-5mm in size)unit contains 5-7% clotty, euhedral and finely disseminated pyrite. | | | | | | | | |
| | | <pre>-carbonate fracture-filling and veining (weakly to non-reactant/HCl) comprises 3-4% of unit.</pre> | | | | | | | | |
| | | 337.60- 337.82 -pinkish quartz-carbonate flooded zone with 40% host rock inclusions. | | | | | | | | |
| | | | A103681 A103682 | 338.00 339.50 | 339.50 341.00 | 1.50 1.50 | 0.07 0.11 | | | |

| FROM | то | DESCRIPTION | T | T | 7 | 7 | , | · | | 10E: 10 |
|--------|--------|---|--|--|--|--|--|------|-------------|-------------|
| (M) | (H) | PESSKIFTION | Sampl. | FROM | ТО | Leng. | Au ppm | Au 1 | Au 2 ppm | d d |
| | | 340.40- 340.90 -weak to moderate foliation is oriented 60-70°/CA. 340.90- 340.95 -sheared contact marked by zone of muddy, graphitic gouge. | | | | | | | | |
| 340.95 | 342.55 | GRAPHITIC ARGILLITE -texturally similar to 336.40 - 337.60m but locally badly broken. 340.95- 341.00 -barren, quartz-carbonate vein with ground contacts. -contact at 342.55m is badly broken. | | | | | | | | |
| 342.55 | 374.00 | SEDIMENTS -medium to dark grey to locally black, fine- grained, argillaceous beds (up to 1.9m) comprise 55-60% of a fining to the south (down the hole) sequence interbedded with light grey, fine- to medium-grained, greywacke horizons comprising 40-45% of the sequencebedding is oriented 70-75°/CA; graded bedding and load structures indicate fining down the hole but sediments are locally disturbed with intermixed argillite and greywacke phasesunit contains about 5% clotty and fracture- controlled pyrite. | A103683 A103684 A103685 A103686 A103687 A103688 | 341.00 342.50 344.00 345.50 347.00 348.50 | 342.50 344.00 345.50 347.00 348.50 350.00 | 1.50 1.50 1.50 1.50 1.50 1.50 | 0.08 0.13 0.17 0.06 0.08 0.02 | | | |
| | | -1-2% quartz-carbonate stringers show variable orientations. 349.55- 351.45 -carbonaceous argillite bed with about 8% fine and clotty pyritebedding is oriented 75*/CA. | A103689 | 350.00 | 351.50 | 1.50 | 0.03 | | | |
| | | | A103690 A103691 A103692 A103693 A103694 | 351.50 353.00 354.50 356.00 357.50 | 353.00 354.50 356.00 357.50 359.00 | 1.50 1.50 1.50 1.50 1.50 | 0.02 0.03 0.02 0.02 0.03 | | | |

FALCONBRIDGE LTD

Hole # : M13-13

| FROM | TO | | | , | T | | note# : | | | , | AGE: 17 |
|--------|-----|---|---------|--------------|--------|--------------|---------|-------------|------|---|---------|
| (M) | (H) | DESCRIPTION | Sampl. | FROM | 10 | Leng. (M) | Au | Au 1 ppm | Au 2 | | 3 |
| 374.00 | | -pyrite content decreases to about 2%. 369.85 -bedding is oriented 70°/CA and fining direction is down the hole. 372.50- 374.00 -intermixed argillite and greywacke phases indicating turbulent depositional environment. End of hole Total amount of samples= 115 Total length sampled = 167.50M | A103695 | 359.00 | 360.50 | 1.50 | 0.03 | | Pyra | | |

FALCONBRIDGE LTD DIAMOND DRILL LOG

Property: 8109

Hole #: M13-14

Zone #: 42A/11

Contractor : BRADLEY BROS.

Date started: 8/12/1988

Township: MATHESON Lot : 8

Concession: 1

Claim # :P585549

Date completed: 8/16/1988

Level :

Section: 200E

Location : UMEX-MATHESON J.V.

Collar coordinate:

Line : 2+00 E Station: 5+00 N

Latitude: 5377092.00 N Departure: 497903.00 E Azimuth: 180° 0' 0" Dip : -50° 0' 0"

Reference frame : UTM

Elevation: 5000.00

Length : 281.00 M

Surveyed by: -

Deviation tests

| Depth | Dip | Azimuth | |
|--|--|--|--|
| 48.00 M 90.00 M 150.00 M 252.00 M | -52° 0' 0" -52° 0' 0" -52° 0' 0" -49°30' 0" | 189° 0' 0" 191° 0' 0" 187° 0' 0" 193° 0' 0" | |
| | | | |

Remarks : CASING: 40m BW casing left in hole.

UTH COORDINATES: 5377092N, 497903E.

Water flow: -

Cemented : NO

Plugged: NO Core size : BQ

| | TO | DESCRIPTION | Sampl. | FROM | TO | Long | 1 | <u> </u> | Т | | |
|----------|-------|---|--------|-------|----|-------|-----------|----------|---|--------------|-------------|
| | (H) | | | T NOT | 10 | Leng. | Au ppm | l | Ì | | |
| 0.00 | 40.00 | CASING | | | | | | 1 | | | + |
| 40.00 12 | 27.80 | MASSIVE MAFIC -medium to dark green, typically fine-grained (though locally medium- to coarser-grained), moderately soft to moderately hard, moderately chloritic maficfine (up to 0.2cm), tourmaline needles comprise 1-2% of unit occurring as individual needles, patches and fracture-fillingcreem, pinpoint leucoxenes are present locally to 72.96m (less than 1%) and then comprise 1-2% of unit (pinpoint to elongate). -weakly carbonatized (strongly reactant/HCl) with 2-3% (quartz-) carbonate stringers and fracture- filling. 40.00- 47.50 -dark green, medium- to coarse-grained (granular) zone is moderately to strongly chloritic. 56.38- 56.40 -1.5cm wide, quartz (40%), carbonate (55%) vein oriented 35-40*/CA contains 1% tourmaline, 3% chlorite and 1% pyrite. 56.60- 56.65 -3cm wide, hazy, quartz (55%), carbonate (30%), chlorite (12%) vein oriented 30*/ CA contains 2% fine tourmaline and 1% clotty pyrite. 69.99- 72.96 -amygdaloidal (3%), pillowed mafic horizon. -pillow selvages are up to 1.5cm wide, strongly chloritic, carbonatized, hyaloclastic and may contain 2-3% fine sulphides; rims are moderately to strongly bleached with carbonate-filled amygdules (up to 5mm) nearby. | | | | | | | | | |

| FROM | TO | DESCRIPTION | Sampl. | FROM | TO | 1000 | T | T | | т | , |
|------|-----|---|--------------------|-------------------|----------------|--------------|----------------|---|---|---|---|
| (M) | (H) | | | 1,000 | " | Leng. | Au ppm | | | | |
| | | 71.75- 72.85 -abundant carbonate fracture-filling results in insitu brecciated texture. 81.84- 81.92 -possible shear oriented 35*/CA contains | A103696 A103697 | 80.00 81.50 | 81.50 82.50 | 1.50 1.00 | 0.32 0.20 | | | | |
| | | 20% quartz, 40% chlorite and 40% carbonate (zone is barren). 96.25- 96.30 | A103698 A103699 | 82.50 95.00 | 84.00 96.50 | 1.50 1.50 | <0.02 <0.02 | | | | |
| | | -5cm wide, quartz (90%), carbonate (5%) vein oriented 60°/CA (subparallel/weak foliation) contains 4% host mafic inclusions and 1% pyrrhotite. | A103700 | 96 .50 | 97.50 | 1.00 | -0.00 | | | | |
| | | 96.59- 97.49 -"dirty", quartz (70%), carbonate (10%), tourmaline (2%) vein oriented 45°/CA at 96.59m and 55°/CA at 97.49m contains about 3% fracture-controlled and greyish quartz associated, finely disseminated pyrite, trace chalcopyrite, and 15% mafic inclusionsdown the hole of 97.49m, epidote fracture-filling and patches are present. | | | 97.30 | 1.00 | <0.02 | | | | |
| | | 99.00- 114.50 -unit appears more granular and contains up to 5% epidote alteration. 105.33- 105.38 -2.5cm wide, carbonate (60%), quartz (12%), epidote (25%) vein oriented 30-35°/CA contains about 3% clotty pyrite. | A103701 | 97.50 | 99.00 | 1.50 | <0.02 | | | | |
| | | 108.84- 108.97 -10.5cm wide, carbonate flooded zone oriented 40°/CA contains 20% mafic inclusions (which contain 2% combined pyrite and pyrrhotite). | | | | | | | 1 | | |

| FROM | TO | DESCRIPTION | Carrel | FAGU | | Т. | f - | | | | - 1 |
|--------|--------|---|--------|------|----|-------|-----------|-------------|-------------|-------------|-----|
| (H) | (H) | | Sampl. | FROM | 10 | Leng. | Au ppm | | | | 4 |
| : | | 117.00- 117.15 -1cm wide, ribbony quartz, carbonate, chlorite vein oriented 10-15°/CA. 125.70- 127.80 -rounded, carbonate-filled amygdules | | | | | | | | | |
| 127.80 | 129.65 | comprise 2-3% of zone. PILLOW BRECCIA -medium to dark green, fine-grained, moderately soft to moderately hard, weakly bleached (along rims), moderately carbonatized, chloritic, elongate to angular, pillow fragments contain 3-4% round to elongate, carbonate-filled amygdulesmatrix is composed of granulated mafic, ferromagnesium minerals, tourmaline, and 2-3% combined clotty pyrite and pyrrhotiteweak foliation is oriented 55°/CA. -unit contains 5-7% carbonate veinlets and | | | | | | | | | |
| 129.65 | 136.27 | fracture-filling. MASSIVE MAFIC -medium green locally with bluish tint, moderately hard, fine-grained to granular-textured unit contains 1% fine, pinpoint, white leucoxenes. -moderately carbonatized (strongly reactant/HCl) with about 3% irregular, fracture-filling carbonatemoderately chloritic. | | | | | | | | | |
| | | 133.00- 136.07 -unit is granular in texture. 136.07- 136.27 -contact zone is weakly sheared at 55-60°/CA. | | | | | | | | | |

| FROM | τo | 0500010310 | | r | | ····· | | | AUE: 5 |
|--------|--------|--|--------------------|------------------|------------------|--------------|---------------|--|------------|
| (M) | (M) | DESCRIPTION | Sampl. | FROM | 70 | Leng. (M) | Au ppm | | |
| 136.27 | 138.24 | PILLOW BRECCIA -medium to dark green, fine-grained, moderately soft to moderately hard, locally weakly bleached (along rims), chloritic, elongate pillow fragments contain 1-2% carbonate-filled amygdules and up to 1% buff, pinpoint leucoxenesmatrix is composed of granulated mafic with 5% fine, tourmaline needlesup to 1% clotty pyrite is presentweak foliation is oriented 55-60°/CA. | A103702 A103703 | 136.50 138.00 | 138.00 139.50 | 1.50 1.50 | 0.02 <0.02 | | |
| | | -moderately carbonatized (strongly reactant/HCl) with 2-3% fracture-filling carbonate. 138.20- 138.24 -4cm wide, carbonate (75%), quartz (15%), chlorite (5%) vein oriented 70-75*/CA (subparallel/foliation) contains 5% finely disseminated pyrite. | | | | | | | |
| 138.24 | 139.52 | -sharp contact marked by aforementioned vein. MASSIVE MAFIC | | | | | | | |
| | | -light medium green, fine-grained, moderately hard, locally weakly bleached mafic contains up to 1% buff, pinpoint leucoxenes and 2-3% clotty pyrite and pyrrhotite (often replacing the pyrite)weak foliation is oriented 55-60°/CAmoderately carbonatized (stongly reactant/HCl) with 3-4% carbonate veinlets and fracture- | | | | | | | |
| | | fillingmeakly to moderately chloritic. 138.60- 139.12 -meakly bleached zone contains 5% clotty/ euhedral pyrite and fine to coarse pyrrhotite; fine pyrrhotite clots (2%) define foliation. | | | | | | | |
| | | | | | | | | | |

| FROM | TO | DESCRIPTION | | | γ | | | | AUE: O |
|--------|--------|---|---------|--------|--------|-------|-----------|--------|--------|
| (M) | (H) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au ppm | | : • |
| | | 139.50- 139.52 -Weakly sheared contact zone oriented 55°/CA. | A103704 | 139.50 | 141.00 | 1.50 | 0.02 | | |
| 139.52 | 146.32 | MASSIVE MAFIC -light bluish green, fine-grained and typically granular, moderately hard unit locally contains buff, pinpoint leucoxenes (less than 1%). | | | | : | | | |
| | | -moderately carbonatized (reactant/HCl) with 4-5% (quartz-) carbonate stringers and fracture-fillingweakly to moderately chloritic. | | | | | | | |
| | | 145.48- 146.00 -weakly bleached, carbonate flooded (40%) zone with light green mafic inclusions. | | | | | | | |
| 146.32 | 148.05 | -contact at 146.32m is sheared at 65°/CA. SHEARED PILLOWED MAFIC | | | | | | | |
| | 140.03 | -medium green, fine-grained to typically granular, soft to moderately hard, sheared (at 55-65°/CA) unit contains local, soft, dark green (chloritic?) inclusions and about 1% tourmeline needles. | | | | | | | |
| | | -moderately carbonatized (reactant/HCl) with about 15% (quartz-) carbonate stringers and fracture-fillingmoderately to locally strongly chloriticlocally bleached (possible pillow margins). | | | | | | | |
| | | -gradational contact at approximately 148.05m. | | | | 1 | 1 | | |
| 148.05 | 154.48 | MASSIVE MAFIC -medium green, fine-grained, moderately hard, locally weakly bleached (fracture-controlled) mafic contains about 1% typically fracture- controlled, tourmaline needles. | | | | | | | |
| | | -weakly to moderately carbonatized (reactant/HCl) with 3-5% (quartz-) carbonate stringers and | | | | | | , , | |

| FROM | TO | 0.000.00.00 | <u> </u> | | 7 | · · | | | | 'AGE: / |
|--------|--------|--|----------|-------------|--------|-------|-----------|----------|---|---------|
| (M) | (M) | DESCRIPTION | Sampl. | FROM | ТО | Leng. | Au ppm | | | ÷ |
| | | fracture-fillingweakly to moderately chloritic. | | | | 1 | | <u> </u> | + | |
| | | 154.46- 154.48 -contact marked by an irregular carbonate- quartz veinlet. | | | | | | | | |
| 154.48 | 157.10 | PILLOWED MAFIC (MG THOLEIITE ?) -medium green to olive-green, fine-grained, moderately hard, locally bleached unit is moderately fractured. | | | | | | : | | |
| | | -weakly to moderately carbonatized (reactant to non-reactant/HCl) with 5% (quartz-) carbonate stringers and fracture-fillingweakly to moderately chloriticpillow selvages are very hazy, up to 2cm wide, strongly chloritic, carbonatized and contain 5-7% tourmaline needles; rims are bleached with local, up to 3mm varioles (?). | | | | | | | | |
| | | 154.48- 155.00 -carbonate is reactant/HCL. | | | | | | | | |
| | | 155.00- 155.20 -zone contains 30% carbonate (reactant to non-reactant/HCl)after this carbonate is all non-reactant/HCl, unit appears more granular, and selvages become even less discernible. | | | | | | | | |
| | | -gradational contact at approximately 157.10m. | | | | | | | | |
| 157.10 | 159.60 | BASALTIC KOMATIITE (?) -medium blue-green, fine-grained to granular, soft, moderately to strongly chloritic unit is weakly to moderately sheared at 65-70°/CA. | A103705 | 159.30 | 160.70 | 1.40 | 0.06 | | | |
| | | -20-30% (quartz-) carbonate patches, stringers and fracture-filling locally contain chloritic inclusions. | | | | | | | | |
| | | -contact is approximate at 159.60m (marked by gradational change in hardness). | | | | | | i | | |

| FROM | то | DESCRIPTION | Compl | T | | T | | | _ | AGE: 8 |
|---------------|---------------|--|---------|--------|--------|--------------|-----------|-------------|---|------------|
| (H) | (H) | | Sampl. | FROM | 70 | Leng. (M) | Au ppm | | ļ | 1 |
| (M) 159.60 | (H) 162.00 | PILLOWED MG THOLEIITE -light to medium green to light bright (fuchsitic) green, fine-grained, moderately hard, typically sheared (at 55-60°/CA) unit contains 5% quartz-carbonate veining and locally up to 4% fine and clotty pyrite. -moderately to strongly carbonatized (non-reactant/HCl)moderately to strongly sericiticweakly to moderately fuchsitic. -pillow selvages (where visible) are hazy, up to 2cm wide, chloritic and carbonatized; rims contain small, bleached, locally coalesced varioles (up to 3mm). 160.75- 162.00 -typically strongly sheared with 10% quartz-carbonate veining and fracture-filling, 2-4% fine pyrite and 2-3% fine to massive dravite. 161.15- 161.16 -1.0 - 1.5cm wide, quartz (90%), carbonate (3%), dravite (5%) vein oriented 75°/CA (subparallel/shearing) contains 1% fine pyrite and | A103707 | 160.70 | 162.00 | | | | | |
| | | 1% fuchsite along contacts. 161.17- 161.28 -quartz-carbonate flooding comprises 50-60% of zone with 3-4% associated fine and clotty pyrite. 161.45- 161.55 -carbonate-quartz veining/flooding comprises 40% of zone with associated 3-4% fine and clotty pyrite. | | | | | | | | |

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| FROM | to | DECCOLORS OF | <u> </u> | | | - | | | - | AGE: 9 |
|--------|--------|---|--------------------|------------------|------------------|--------------|--------------|--|---|--------|
| (M) | ά | DESCRIPTION | Sampl. | FROM | to | Leng. | Au | | | Ą |
| 162.00 | 165.10 | -shearing becomes moderate to 162.00m. 161.70- 161.73 -hazy, weakly silicified, 1-2cm wide, carbonate vein oriented 45°/CA (crossing shearing). -sharp contact at 162.00m sheared at 60°/CA. ALTERED MASSIVE MAFIC -light greyish green typically with weak yellow tint, fine-grained, moderately hard to hard, weakly silicified mafic contains up to 6-8% fine, clotty, two-tone pyrite and 3-5% irregular, light grey to white quartz stringers and fracture-filling. -weak foliation is oriented at about 60°/CA and marked by alignment of fine pyrite and pyrrhotite clots; feathery, mauve leucoxenes (up to 1.5mm) comprise about 1% of unit. -moderately to strongly carbonatized (non-reactant/HCl)moderately to strongly sericiticlocal, weak fuchsite alterationmoderately fractured. 162.00- 163.40 -strongest alteration with about 6-8% pyrite and 5% quartz. 163.03- 163.08 -4cm wide, quartz (80%), carbonate (5%), dravite (3%) vein oriented 55°/CA (subparallel/foliation) contains 4% mafic inclusions and 8% fine, two-tone and clotty pyrite. | | 162.00 | 163.50 | 1.50 | 0.50 | | | |
| | | 163.40- 165.10 -alteration gradually reduces with local (10-15%) patches of medium greyish green, relatively unaltered, massive mafic with | A103709 A103710 | 163.50 165.00 | 165.00 166.50 | 1.50 1.50 | 0.15 0.04 | | | |

| FROM | TO | DESCRIPTION | | | | , | | | • |
|--------|--------|--|--------------------|------------------|------------------|--------------|----------------|---|---|
| (M) | (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | | ķ |
| | | 1-2% fine, pyrite clots and 2% quartz- carbonate veinlets. -gradational alteration contact at approximately 165.10m. | | | | | | | |
| 165.10 | 251.58 | MASSIVE MAFIC -medium green, fine-grained to locally granular, moderately hard to hard, locally bleached mafic -contains 1-2%, buff to mauve, feathery leucoxenes (up to 2mm). | A103711 | 166.50 | 168.00 | 1.50 | <0.02 | | |
| | | -weakly carbonatized (weakly to non-reactant/HCl) with 1-2% quartz-carbonate stringers and fracture-fillingweakly to locally moderately sericiticweakly chloritic. | | | | | | | |
| | | 166.94- 167.08 -bleached, sericitic zone contains up to 1% pyrite. | | | | | | | |
| | | 168.68- 168.74 -5cm wide, quartz (50%), carbonate (40%), chlorite (8%) vein oriented 50°/CA contains 2% typically euhedral pyrite. | A103712 | 168.00 | 169.50 | 1.50 | <0.02 | | |
| | | 171.78- 171.95 -weakly bleached, moderately sericitic | A103713 A103714 | 169.50 171.00 | 171.00 172.00 | 1.50 1.00 | <0.02 <0.02 | | |
| | | zone with 1% fine tourmaline. 172.80- 172.95 -similar to above. | A103715 | 172.00 | 173.00 | 1.00 | <0.02 | · | |
| | | 175.25- 175.40 -moderately silicified with up to 1% pyrite. | A103716 | 173.00 | 174.50 | 1.50 | 0.03 | | |
| | | 177.95- 180.05 -variably bleached, sericitic zone with 1-2% pyrite and 2% fine tourmaline. | A103717 | 177.50 | 179.00 | 1.50 | 0.03 | | |

| FROM | TO | DESCRIPTION | - | | | | | : MI3-14 | | PAGE: 11 | |
|------|-----|--|--|--------------------------------------|--------------------------------------|------------------------------|--------------------------------|----------|---|----------|--|
| (M) | (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au | | | Ą | |
| | | 178.60- 178.95 -moderately to strongly bleached, moderately silicified, sericitic zone contains 3% tourmaline, 2% pyrite and 6-8% irregular stringers. | | | | | | | | | |
| | | 179.36- 180.00 -as above but with 3-4% fine and clotty pyrite and 3% quartz-carbonate stringers. | A103718 | 179.00 | 180.40 | 1.40 | 0.10 | | | | |
| | | 180.41- 181.15 -as above. | A103719 | 180.40 | 182.00 | 1.60 | 0.04 | | | | |
| | | 185.65- 187.05 -bleached, sericitic, weakly silicified zone. | A103720 A103721 A103722 A103723 | 182.00 183.50 185.00 186.50 | 183.50 185.00 186.50 188.00 | 1.50 1.50 1.50 1.50 | 0.07 0.05 <0.02 <0.02 | | | | |
| | | 186.85- 186.91 -5cm wide, quartz (80%), carbonate (7%), sericite (10%) vein oriented 40°/CA contains 2% hydromuscovite, 1% fine, clotty pyrite. | | | | | | | | | |
| | | 191.80- 198.35 -moderately sericitic, weakly bleached, patchy to pervasive alteration with 2-3% quartz-carbonate veining and 2% fine tourmaline. | A103724 | 190.50 | 192.00 | 1.50 | <0.02 | | | | |
| | | 192.00- 192.20 -weakly to moderately silicified zone. | A103725 | 192.00 | 193.50 | 1.50 | <0.02 | | : | | |
| | | 192.71- 192.75 -2-2.5cm wide, quartz (85%), carbonate (13%), tourmaline (1%) vein oriented 50°/CA contains 1% clotty pyrite. | | | | | | | | | |
| | | 192.84- 192.93 -patch of above. | | | | | | | | | |
| | | | A103726 A103727 A103728 | 193.50 195.00 196.50 | 195.00 196.50 198.00 | 1.50 1.50 1.50 | 0.02 0.04 0.02 | | | | |

| FROM | TO | DESCRIPTION | Sampt. | FROM | 1 | | | 1 | | |
|------|-----|--|--------------------|------------------|------------------|--------------|----------------|---|---|---|
| (M) | (M) | | salpt. | PKUM | 10 | Leng. (M) | PPM Au | | | 4 |
| | | 198.35- 203.00 -bleaching and sericitization are patchy and appear fracture-controlled. | A103729 A103730 | 198.00 199.50 | 199.50 201.00 | 1.50 1.50 | <0.02 <0.02 | | | |
| | | 200.95- 201.50 -bleached zone with 2% fine, clotty pyrite. | A103731 | 201.00 | 202.50 | 1.50 | <0.02 | | | |
| | | 209.82- 209.87 -4cm wide, bleached and silicified carbonate vein oriented 55-60°/CA contains 2% chlorite and 10% quartz. | A103732 | 202.50 | 204.00 | 1.50 | <0.02 | | | |
| | | 210.93- 210.97 -4.5cm wide, barren carbonate vein oriented 50°/CA. | | | | | | | | |
| | | 213.15- 213.27 -multiphase, quartz (70%), carbonate (20%), chlorite (5%) vein oriented 60°/CA contains 5% finely disseminate pyrite. | A103733 A103734 | 211.00 212.50 | 212.50 213.50 | 1.50 1.00 | 0.02 0.04 | | | |
| | | 217.50- 218.80 -1% carbonate-filled amygdules are present locally. | A103735 A103736 | 213.50 218.60 | 215.00 220.10 | 1.50 1.50 | 0.02 0.04 | | į | |
| | | 218.80- 220.05 -weak (pillow) breccia zone is moderately soft, chloritic, weakly carbonatized and contains about 3% combined pyrite and pyrhotitefragments have bleached rims and locally contain carbonate-filled amygdulesmatrix is comprised of intermixed granulated mefic with carbonate and fine, clotty sulphides10% (quartz-) carbonate veining, patches and fracture-filling are present. | | | | | | | | |
| | | 219.02- 219.10 -6cm wide, barren, quartz (60%), carbonate (40%) vein oriented 40°/CA. | | | | | | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | | |
|-------------|-----------|---|--------------------|------------------|------------------|--------------|--------------|--|--|
| | | 222.00- 224.00 -weakly bleached mafic. 226.60- 226.67 -patch of barren carbonate. | A103737 A103738 | 225.00 226.50 | 226.50 228.00 | 1.50 1.50 | 0.02 0.02 | | |
| | | 227.20- 227.25 -irregular, 3.5cm wide, quartz (20%), carbonate (75%) vein contains 3% pyrrhotite and 2% pyrite. 227.50- 228.15 -irregular (quartz-) carbonate patches and stringers comprise 30% of zone. 233.60- 234.50 -carbonate-filled amygdules comprise 5% of zone and increase in size (from 1-4mm) down the hole. | A103739 | 228.00 | 229,50 | 1.50 | <0.02 | | |
| | | 234.50- 236.90 -narrow, pillowed horizon contains 6-8% quartz-carbonate patches, stringers and fracture-fillingpillow selvages are narrow (up to 5mm), chloritic and typically carbonatized; rims are weakly bleached with 1-2% carbonate-filled amygdules present in adjacent mafic. | | | | | | | |
| | | 240.41- 240.48 -somewhat irregular, carbonate (80%), quartz (9%) vein oriented 50°/CA contains 10% chloritic mafic inclusions and 1% clotty pyrite. 248.55- 251.06 | A103745 | 248.00 | 249.50 | 1.50 | 0.05 | | |
| | | -unit becomes greenish buff due to moderate carbonatization and moderate sericitizationclotty pyrite comprises less than 1% overall, though locally reaches 2-3% of zone. | A103741 | 249.50 | 251.00 | 1.50 | 0.03 | | |

PAGE: 14

| FROM | 70 | A5000000 | | · · · · · · · · · · · · · · · · · · · | 7 | | | | • |
|--------|-----------|--|---------|---------------------------------------|--------|-------|-----------|------|---|
| (M) | TO (M) | DESCRIPTION | Sampi. | FROM | 10 | Leng. | Au ppm | | |
| | | 249.94- 250.03 -7-7.5cm wide, quartz (85%), carbonate (2%) vein oriented 65°/CA at 249.94m and 50°/CA at 250.03m contains 5% mafic inclusions, 1% dravite, 3% pyrite, 4% pyrrhotite and trace sphalerite. 251.06- 251.52 -light buff-green, fine-grained, well foliated (at 55°/CA) zone is strongly sericitic and contains about 5% clotty and locally two-tone pyrite, and 5% quartz-carbonate veining. | A103742 | 251.00 | 252.50 | 1.50 | 0.13 | | |
| | | 251.38- 251.45 -hazy, quartz (50%), carbonate (8-9%), sericite (25%), tourmaline (15%) vein oriented 50-55°/CA (parallel to foliation) contains 1-2% clotty pyrite associated with the sericite. 251.53- 251.58 | | | | | | | |
| | ł | -sharp, sheared contact oriented 50-55*/CA. | | | | | | | |
| 251.58 | 255.58 | ALTERED PILLOWED MAFIC -buff, fine-grained, moderately hard mafic contains about 3% clotty pyrite and 3% quartz- carbonate stringers and patchesweak to moderate foliation is oriented 50°/CA. -moderately to typically strongly carbonatized (non-reactant/HCL), -moderately sericiticpillow selvages are hazy, up to 2cm wide, chloritic, carbonatized and contain up to 8% clotty pyrite; rims are strongly bleached with 2-3% carbonate-filled amygdules (up to 3mm) present in adjacent mafic. | | | | | | | |
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Hole #: M13-14

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | то | Leng. | Au ppm | | | 3 |
|-------------|-----------|--|-------------------------------|----------------------------|----------------------------|----------------------|------------------------|---|--|---|
| | | 251.58- 252.17 -moderately foliated at 50°/CA. 254.80- 255.58 -gradational alteration zone with fracture-filling carbon. | A103743 A103744 A103746 | 252.50 254.00 255.50 | 254.00 255.50 257.00 | 1.50 1.50 1.50 | <0.02 <0.02 0.06 | | | |
| | | -sharp, irregular contact at 255.58m where carbonaceous alteration becomes pervasive. | | | | | | | | |
| 255.58 | 258.70 | GREY PILLOWED MAFIC -medium grey locally with buff tint, fine-grained, moderately hard to hard, weakly to moderately (pervasive) carbonaceous mafic contains 6-8% clotty pyrite and about 2% quartz-carbonate stringersmoderately foliated at 60-70°/CA marked by alignment of pyrite clots. | A103747 A103748 | 257.00 258.50 | 258.50 260.00 | 1.50 1.50 | 0.02 0.24 | | | |
| | | -strongly carbonatized (variable reaction/HCl) with 2-3% carbonate fracture-filling and patches, locally with associated red-brown sphalerite (trace)fracture-filling is often carbonaceous with associated clotty pyritepillow selvages are vaguely discernable (hazy), locally sheared, up to 2cm wide, chloritic, graphitic and carbonatized with associated clotty pyrite reaching 6-8%; rims are weakly bleached with local, fine (1-3mm), carbonate-filled | | | | | | | | |
| ! | | amygdules present adjacent to rims. -contact at 258.70m is approximate (due to ground and badly broken nature of succeeding core). | | | | | | | | |
| 258.70 | 259.40 | GRAPHITIC ARGILLITE -black, fine-grained, soft, graphtic argillite is badly broken and contains about 5% clotty pyrite and about 8% quartz-carbonate veining and fracture-fillingbedding is oriented 75-80°/CA. | | | | | | | | |
| | | -contact at 259.40m is approximate. | | ĺ | | | | j | | ļ |

Hole # : M13-14

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au | <u> </u> | T | T | T |
|-------------|-----------|---|---------|--------|--------|-------|-------|----------|---|---|----------|
| (11) | (") | | | | | (H) | ppm | | 1 | | . A. |
| 259.40 | 259.93 | FELDSPAR PORPHYRY -dark grey, fine-grained, hard, weakly carbonaceous groundmass contains 30-35% subhedral to euhedral, locally zoned, feldspar and very local, anhedral to euhedral quartz phenocrysts (1-10mm)clotty pyrite accounts for about 3% of unit1-2% carbonate fracture-filling is presentcontact at 259.93m is oriented 75-80°/CA. | | | | | | | · | | |
| 259.93 | 261.48 | GRAPHITIC ARGILLITE -black, fine-grained, soft to moderately hard, (depending upon alteration), well-bedded (at 75- 80°/CA), graphitic argillite contains about 5-8% clotty, fracture-controlled and bedded pyrite1-2% carbonate veinlets and fracture-filling are typically oriented parallel to beddingsharp contact at 261.48m is oriented 70°/CA. | A103749 | 260.00 | 261.50 | 1.50 | 0.07 | | | | |
| 261.48 | 281.00 | SEDIMENTS -medium to dark grey to locally black, fine- grained, argillaceous beds (up to 20cm) comprise about 30% of a fining down the hole (to the south) sequence interbedded with light grey, fine- to medium-grained, greywacke horizons comprising about 70% of the sequencebedding is oriented 60-75°/CAgraded bedding and load structures (i.e. flames) indicate a fining down the hole (to the south) sequence; locally greywackes and argillites show interfingering texturesclotty and subhedral pyrite typically comprise 1-2% of unit although it locally reaches 5%carbonate fracture-filling and stringers comprise 1-2% of unit. 261.48- 263.00 -zone contains 5% subhedral to clotty pyrite. | A103750 | 261.50 | 263.00 | 1.50 | <0.02 | | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au | | T | 3 |
|-------------|-----------|---|-------------------------------|----------------------------|----------------------------|----------------------|-----------------------|--|---|---|
| | | 262.06- 262.32 -black, weakly carbonaceous argillite. | | | | (11) | ppm | | | - |
| ļ | | 262.45 -bedding is oriented 75°/CA. | | | | | | | | |
| | | | A103751 A103752 A103753 | 263.00 264.50 266.00 | 264.50 266.00 267.50 | 1.50 1.50 1.50 | <0.02 0.03 0.06 | | | |
| | | 267.90 -graded bedding indicates fining down the hole. | A103754 | 267.50 | 269.00 | 1.50 | 0.04 | | | |
| | | 268.26 -bedding is oriented 72°/CA. | | | | | | | | |
| | | 271.60 -graded bedding indicates fining down the | A103755 A103756 | 269.00 270.50 | 270.50 272.00 | 1.50 1.50 | 0.04 | | | |
| | | 271.70 | | | | | | | | |
| | | -bedding is oriented 60°/CA. 272.26 -1-2mm wide, quartz-carbonate veinlet oriented 40°/CA (crossing bedding) contains 30% fine pyrite along contacts; immediately adjacent to vein (up to 1cm away) 40-50% fine pyrite is present. | A103757 | 272.00 | 273.50 | 1.50 | 0.02 | | | |
| | | 272.27- 273.05 -weakly sheared zone oriented 60°/CA. | | | | | | | | |
| | | 275.92- 275.94 -2-3.5cm wide, quartz (75%), carbonate (15%) vein oriented 60°/CA (subparallel/bedding) contains 10% host sediment inclusions and trace pyrite. | A103758 | 273.50 | 275.00 | 1.50 | 0.04 | | | |
| | | 279.65 -bedding is oriented 65°/CA. | | | | | | | | |
| .00 | 1 | End of hole | ļ | Ī | 1 | | ļ | | | |

Hole # : M13-14

| | | | | | | | посе ж | : M13-14 | : | PAGE: 18 |
|-------------|-----------|--|--------|------|----|-------|-----------|----------|---|-------------|
| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au ppm | | T | T .; |
| | | Total amount of samples= 61 Total length sampled = 88.70M | | | | | | | | |
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FALCONBRIDGE LTD DIAMOND DRILL LOG

Property: 8109

Hole #: M13-15 Township: MATHESON

Zone # : 42A/11

Contractor : BRADLEY BROS.

Date started : 8/19/1988

Lot : 8

Concession: I

Claim # :P585548

Date completed: 8/22/1988

Level : -

Section: 700E

Location : UMEX-MATHESON J.V.

Collar coordinate:

Reference frame : UTM

Line : 7+00 E Station: 4+50 N

Latitude: 5377065.00 N

Departure: 498412.00 E Elevation: 5000.00

Azimuth: 180° 0' 0" Dip : -50* 01 04

Length : 236.00 M

Surveyed by: -

Deviation tests

| D | epth | Dip |) | Azim | uth |
|----|---------|-------------------------------|----|----------------------------|------|
| 13 | 55.00 M | -52° 01 -52°301 -53° 01 | 0* | 193° (193° (194° (|) 0" |
| | | | | | |
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Remarks : CASING: 40m of NW casing left in hole. UTH COORDINATES: 5377065N, 498412E.

> Water flow : -Cemented : NO

Plugged: NO Core size : 80

| FROM | TO | 000000000000000000000000000000000000000 | | | | | | | | |
|-------|--------|--|--------|------|----|-------|-----------|------|-------------|---|
| (M) | (H) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au ppm | | | |
| 0.00 | 40.00 | CASING | | | | | *** | | | |
| 40.00 | 45.95 | PILLOWED MG THOLEIITE -light green, fine-grained, moderately hard to hard, weakly bleached mafic is weakly fracturedpillow selvages are up to 2.5cm wide, hazy, | | | | | | | | : |
| | | strongly chloritic, weakly carbonatized and contain about 5% dravite needles; rims are moderately to strongly bleached with local carbonate- and chlorite-filled amygdules and fine dravite needles. -concentric cooling fractures are present locally. | | | | | | | | |
| | | 45.74- 45.95 -weakly sheared (at 75°/CA), sericitic contact zone. | | | | | | | | |
| 45.95 | 113.00 | MASSIVE MAFIC -medium to light green, fine-grained, moderately hard mafic contains 1-2% cream to buff, pinpoint to feathery (up to 2mm) leucoxenes. | | | | | | | | |
| | | -typically weakly carbonatized (reactant/HCl)weakly to moderately fractured with carbonate, epidote, and tourmaline infillingquartz-carbonate ± chlorlite ± epidote ± tourmaline stringers comprise 2-4% of unit. | | | | | | | | |
| | | 68.51- 68.53 -faulted, 1cm wide, quartz (80%), carbonate (10%) vein oriented 55-60°/CA (off-faulted at 25°/CA almost perpendicular to vein) contains 5% finely disseminated and clotty pyrite and 5% chalcopyrite. | | | | | | | | |
| | ļ | 80.20 -weak foliation oriented 65°/CA marked by alignment of feathery leucoxenes. | | | | | | | | |
| | | 87.40- 93.50 -medium-grained, granular, weakly to moderately carbonatized zone with typically buff leucoxenes. | | | | | | | | |

| FROM | 70 | | | | | | | | PAGE: 3 |
|------|-----------|---|---------|--------|-------------------|-------|-------|---|---------|
| (M) | TO (M) | DESCRIPTION | Sampl. | FROM | to | Leng. | Au | | |
| | | 93.38- 93.45 -4cm wide, quartz (27%), carbonate (45%) veining oriented 40°/CA (crossing foliation at a low angle) contains 20% mefic inclusions, 5% subhedral to euhedral pyrite and 3% tourmaline. | A103759 | 93.40 | 95.00 | 1.60 | <0.02 | | |
| | | 95.60- 96.13 -series of carbonate veins comprising 20-25% of zone are at various orientations (45-75°/CA) with 1% associated euhedral pyrite in the mafics. | A103760 | 95.00 | 96 .50 | 1.50 | 0.04 | | |
| | | 96.13- 97.00 -1-3% subhedral pyrite (up to 3mm) is present. | A103761 | 96.50 | 98.00 | 1.50 | 0.05 | | |
| | | 100.23- 100.30 -2cm wide, hazy, irregular, quartz (30%), carbonate (60%) vein oriented 20°/CA (crossing foliation) contains 5% chlorite and 5% finely disseminated pyrite. | A103762 | 100.00 | 101.00 | 1.00 | 0.05 | | |
| | | 103.30- 110.10 -medium-grained, granular, moderately carbonatized (reactant/HCl) zone with fine (less than 1mm) leucoxenes. | A103763 | 109.50 | 111.00 | 1.50 | 0.05 | | |
| | | 110.10- 113.00 -gradual increase in carbonatization (to a non-reactant/HCl phase) and sericitization accompanied by increasing fine, clotty to disseminated pyrite content up to 4%; 2-3% quartz-carbonate stringers are often associated with fine pyrite in the host mafic. | | | | | | | |
| | | 111.00- 111.15 -bleached, weakly to moderately silicified zone contains about 8% finely disseminated pyrite, 2% chalcopyrite and 20% quartz-carbonate stringers and fracture-filling. | A103764 | 111.00 | 112.50 | 1.50 | 0.13 | | |
| | | | A103765 | 112.50 | 113.75 | 1.25 | 0.11 | J | |

| FROM | TO | DESCRIPTION | | 7 | | | | | AGE: 4 |
|--------|--------|---|--|----------------------------|----------------------------|--------------|----------------------|--|------------|
| (H) | (H) | DESCRIPTION | Sampi. | FROM | то | Leng. (M) | Au ppm | | |
| 113.00 | 120.50 | ALTERED MASSIVE MAFIC -light grey with weak buff to light green tint, moderately hard, fine-grained phase of aforementioned mafic contains about 5% quartz-carbonate veining/stringers, 6-8% (average, but locally up to 25-30%), fine, clotty, locally two-tone pyrite, up to 5% clotty pyrrhotite and locally up to 5% needle-like to clotty arsenopyrite. -foliation is typically moderate and oriented 55-60*/CA (marked by alignment of elongate pyrite and pyrrhotite clots). -strongly carbonatized (non-reactant/HCl)strongly sericiticlocally weakly to moderately fractured. 113.89- 114.54 -greyish, strongly silicified zone contains 10% whitish grey, quartz-carbonate stringers (some are oriented 60-65*/CA, parallel to foliation) and typically 10-15% (locally 25-30%), finely disseminated pyrite. 114.33- 114.41 -zone with 25-30% fine pyrite. 117.29- 117.66 -silicified zone contains 50% quartz veining and about 10% finely disseminated pyrite. 117.30- 117.43 -greyish white, quartz (90%), carbonate (5%) vein oriented 65*/CA contains 5% finely disseminated pyrite and trace hydromuscovite. | A103766 A103768 A103769 A103770 | 114.75 116.00 117.00 | 116.00 117.00 118.00 | 1.25 | 0.18 0.13 0.87 | | |

Hole # : M13-15

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au | T | | T | T - |
|-------------|-----------|--|---------|--------|--------|-------|------|----------|---|---|----------------|
| | , | 117.43- 117.66 | | | | (H) | ppm | <u> </u> | | | |
| 1 | | -zone contains 25-30% irregular, quartz patches and stringers. | | | | | | | | | |
| | | 118.40- 118.50 -fine needles and clots of arsenopyrite | A103771 | 118.00 | 119.00 | 1.00 | 0.30 | | | | |
| | | comprise about 5% of zone; 8% pyrite and 2-3% pyrrhotite are also present. | | | | | | | | | |
| | İ | 119.14- 119.34 | A103772 | 119.00 | 120.50 | 1.50 | 0.65 | | ļ | | |
| | | <pre>-zone of irregular quartz veining/flooding with 20% sericitic, pyritiferous mefic inclusions; about 10% finely disseminated pyrite is present.</pre> | | | | | | | | | |
| | | 119.34- 120.00 | | | | | | | | | l |
| | | -zone has a bluish tint due to presence of fine needles and clots of arsenopyrite (about 5% average, but up to 8%); 15% fine and clotty pyrite and 1-2% clotty pyrrhotite are also present. | | | | | | | | | |
| | | 120.00- 120.50 | | | | | | | | | |
| | | *zone is weakly silicified and contains about 10-15% quartz stringers (oriented 45-60*/CA), 7-8% finely disseminated to fine clotty pyrite, trace arsenopyrite and trace chalcopyrite; zone is locally ground or badly broken. | | | | | | | | | |
| | | 120.00- 120.02 -0.5-2cm wide, quartz (95%), carbonate (5%) vein oriented 45°/CA is barren; mafic adjacent to contacts contains 8-10% pyrite and up to 1% arsenopyrite. | | | | | | | | | |
| | 7. | -sharp contact at 120.50m oriented approximately 40°/CA (in zone of broken and ground core). | | | | | | | | | |
| | | | | j | | | | | | | |

| FROM | TO | DESCRIPTION | Sampl. | tow | T | T. | | | | AGE: 6 |
|--------|--------|---|---------|--------|--------|-------|-------------|-----------------|----------|--------|
| (M) | (H) | | sampt, | FRON | 10 | Leng. | Au ppm | | | |
| 120.50 | 134.58 | ALTERED PILLOWED MAFIC -buff to greyish buff, fine-grained, moderately hard to hard mafic contains up to 5%, fine, two-tone, clotty pyrite and about 3% quartz-carbonate stringers. -strongly carbonatized (non-reactant/HCl) with carbonate fracture-fillingweakly to moderately sericiticweakly fractured locally with quartz-fillingpillow selvages are distinct to hazy, up to 2cm wide, strongly chloritic, typically carbonatized, often contain fine tourmaline needles and locally contain up to 7% pyrite ± pyrrhotite typically associated with quartz veining; rims are weakly to moderately bleached with about 2% carbonate-filled amygdules adjacent to rims. | | | | | | | | |
| | | 120.50- 125.00 -buff to grey-buff, moderately sericitic zone contains 4-5% clotty, two-tone to locally subhedral pyrite and about 4% quartz-carbonate, typically selvage-controlled, veining and patches. | | | | | | | | |
| | | 120.50- 122.00 -locally weakly silicified and weakly sheared (at 60°/CA) zone; amygdules are locally pyrite alteredat 121.66 - 121.78m - 3cm wide, quartz (85%), carbonate (5%) vein oriented 20-30°/CA (crossing shearing) contains 10% finely disseminated to clotty pyrite. | A103773 | 120.50 | 122.00 | 1.50 | 0.27 | | | |
| | | 122.00- 122.13 -1cm wide, ribbony, quartz-carbonate stringer contains 2% fine pyrite; stringer shows several 2 shapes in its outline with the predominant vein orientation being 30-35*/CA. | A103774 | 122.00 | 123.50 | 1.50 | 0.19 | | | |
| | | | A103775 | 123.50 | 125.00 | 1.50 | 0.32 | | <u>:</u> | |

| FROM | 70 | | | | | | | : 413-13 | | Р | AGE: 7 |
|--------|-----------|--|--|--|--|--|--|----------|---|---|--------|
| (H) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au ppm | | | | T |
| | | 125.00- 127.50 -clotty two-tone pyrite content decreases to about 2%. | A103776 | 125.00 | 126.60 | 1.60 | 0.04 | | | | |
| | | 126.38- 126.59 -silicified zone with 40% quartz- carbonate veining (oriented 55°/CA) and fracture-filling, and 6-8% finely disseminated and clotty pyrite. | 1 | | | | | | | | |
| | | 133.00- 134.58 -zone is light grey and moderately | A103777 A103778 A103779 A103780 A103781 A103782 | 126.60 128.00 129.50 131.00 132.50 133.50 | 128.00 129.50 131.00 132.50 133.50 134.60 | 1.40 1.50 1.50 1.50 1.00 1.10 | 0.07 0.08 0.06 0.06 0.05 0.05 | | | | |
| | | sericiticsharp contact at 134.58m oriented 75°/CA. | | | | | | | | | |
| 134.58 | 141.00 | PILLOWED MG THOLEIITE -light green to light bright (fuchsitic) green, fine-grained, moderately soft to moderately hard, variolitic mafic is weakly to moderately sheared at 65-70°/CA. | | | | | | | | | |
| | | -меakly to locally moderately carbonatized (reactant to non-reactant/MCl) with 15-20% (quartz-) carbonate patches and stringers. -меakly sericitic. -меakly fuchsitic. -pillow selvages are hazy, typically 5-6cm wide, strongly chloritic, moderately carbonatized with | | | | | | | | | |
| | | local dravite ribbons; selvages are weakly to moderately bleached with up to 3mm, elongate, often coalesced varioles. | | | | | | | | | |
| | | 134.58- 134.80 -contact zone is sheared at 70°/CA and contains 15% quartz-carbonate veining (typically oriented parallel/shearing), 3-4% dravite ribbons and 4-5% clotty pyrite. | A103783 | 134.60 | 136.00 | 1.40 | 0.03 | | | | |
| | | | A103784 A103785 | 136.00 137.40 | 137.40 139.00 | 1.40 | 0.02 | | İ | | |

| FROM | 10 | DESCRIPTION | Т. | | | | | : HI3-13 | | PAGE: 8 |
|--------|--------|---|--|--------------------------------------|--------------------------------------|------------------------------|------------------------------|----------|------|---------|
| (M) | (M) | or court LIOM | Sampl. | FROM | ТО | Leng. | . Au ppm | | | |
| | | 137.43- 137.69 -carbonate flooding comprises 35-40% of zone. | | | | | | | | + |
| | | 138.45- 139.00 -carbonate flooding comprises 50-55% of zone. | | | | | | | | |
| | | 140.00- 141.00 -moderately sericitic, strongly carbonatized zone is locally badly broken. | A103786 A103787 | 139.00 140.50 | 140.50 142.00 | 1.50 1.50 | 0.03 0.02 | 3 | | |
| | | <pre>-sharp alteration contact at 141.00m is oriented 55°/CA.</pre> | | | | | | | | |
| 141.00 | 149.70 | GREY PILLOWED MG THOLEIITE -unit is texturally similar to 134.58 - 141.00m but weakly to locally moderately carbonaceous with about 10% quartz-carbonate veining and 1% pyrite; pillow selvages are vaguely discerniblemoderately sheared at 55-65*/CAunit is locally badly broken. | A103788 A103789 A103790 | 142.00 143.50 145.00 | 143.50 145.00 146.50 | 1.50 1.50 1.50 | 0.02 0.03 0.05 | | | |
| | | 146.45- 146.49 -3cm wide, barren, quartz (25%), carbonate (60%) vein oriented 60°/CA (parallel/shearing) contains 15% carbonaceous mafic inclusions. | | | | | | | | |
| | | 147.37- 147.54 -quartz-carbonate flooding comprise 30% of zone. | A103791 | 146.50 | 148.00 | 1.50 | 0.02 | | | |
| | | 148.20- 149.70 -gradational decrease in carbonaceous alteration. | A103792 A103793 | 148.00 149.50 | 149.50 151.00 | 1.50 1.50 | 0.04 0.04 | | | |
| İ | | -contact at 149.70m is sheared at 45°/CA. | İ | | | | | | | |
| 149.70 | 172.75 | PILLOWED MG THOLEIITE -texturally similar to 134.58 - 141.00m but locally with yellowish tint due to moderate sericite, and locally carbonate, alteration. | A103794 A103795 A103796 A103797 | 151.00 152.50 154.00 155.50 | 152.50 154.00 155.50 156.50 | 1.50 1.50 1.50 1.00 | 0.02 0.03 0.05 0.05 | | | |

| FROM | TO | DESCRIPTION | | | , | | | | _ | PAGE: 9 |
|--------|--------|---|--------------------|------------------|---|--------------|--------------|--|---|---------|
| (H) | (M) | | Sampi. | FROM | 10 | Leng. (M) | Au | | | |
| | | -varioles are often coalesced and can reach 8-9mm in size. | A103799 A103800 | | 157.70 159.20 | 1.20 1.50 | 0.04 0.31 | | | |
| | | 157.75- 158.90 -zone is moderately to strongly sheared at 30-35°CA with 20% quartz-carbonate veining (typically oriented parallel/ shearing). | | | | | | | | |
| | | 158.60- 158.70 -fault zone oriented perallel to shearing is very brittle and muddy. | | | | | | | | |
| | | 163.45- 163.46 -zone is strongly sheared (at 45°/CA) and muddy. | A104951 A104952 | 159.20 163.00 | 160.50 164.00 | 1.30 1.00 | 0.09 0.02 | | | |
| | | 163.55- 163.56 -as above. | | | | | | | | |
| | | 172.25- 172.70 -moderately sheared at 35°/CA (at 172.35m) to 55°/CA (at 172.50m) with local cross- structures oriented 30°/CA (sharply crossing both shear orientations). | A104953 A104954 | 170.20 171.50 | 171.50 173.00 | 1.30 1.50 | 0.02 0.04 | | | |
| | | 172.55- 172.70 -bedly broken core. | | | | | | | | |
| | | 172.70- 172.75 -fault zone oriented 25-30°/CA marks contact with succeeding unit. | | | | | | | | |
| 172.75 | 190.60 | ALTERED MASSIVE MAFIC -buff-grey to light grey, fine-grained, moderately hard to hard, locally silicified mafic contains 3-5% clotty, two-tone pyrite (on average, but locally reaches 40-50%), 1-2%, fine clotty pyrrhotite, 5% quartz-carbonate verining and about 1% fine dravite needles (less than 1mm)moderate foliation oriented 60°/CA marked by the alignment of pyrite and pyrrhotite clots and | | | | | | | | |

Hole # : M13-15

| FROM | TO | DESCRIPTION | T : | γ . | | | | • MI3-13 | | PAGE: 10 |
|------|-----|--|-------------------------------|----------------------------|----------------------------|----------------------|----------------------|----------|--|----------|
| (M) | (H) | | Sampt. | FROM | TO | Leng (H) | | | | |
| | | dravite needles. -strongly carbonatized (weakly to non-reactant/HCl) with local (1-2%) fracture-filling carbonatemoderately to strongly sericiticlocal, fracture-controlled fuchsite (less than 1%)weak fracturing is typically filled with greyish quartz. 172.75- 173.54 -light greyish green, strongly sericitic zone with 2% fine pyrrhotite and 3% clotty pyrite. 173.54- 173.95 -weakly to moderately silicified zone contains 5-7% clotty pyrite and 30% quartz z carbonate veining. 173.55- 173.56 -1cm wide, quartz (90%), carbonate (3%) vein oriented 60-65°/CA (parallel/foliation) contains 2% dravite (along contacts) and 5% fine, clotty pyrite. | A104955 | 173.00 | 174.50 | 1.50 | 0.98 | | | |
| | | 173.66- 173.75 -7cm wide, barren, quartz (60%), carbonate (40%) vein oriented 65°/CA (parallel/foliation). 173.75- 173.90 -greyish silicification with 7-8% associated pyrite. 174.80- 175.20 -siliceous, fractured zone with less than 1% associated pyrite. | A104956 A104957 A104958 | 174.50 176.00 177.50 | 176.00 177.50 179.00 | 1.50 1.50 1.50 | 0.12 0.05 0.06 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au | T T | | ` |
|-------------|-----------|--|--|------------------|--------------------------------------|------------------------------|------------------------------|-----|---|---------------|
| | | 178.83- 178.95 -3-4cm wide, greyish quartz (92%) vein oriented 47°/CA (subperallel/foliation) contains 5% carbonate and about 3% finely | | | | (H) | ppm | | - | |
| | | disseminated to clotty pyrite. 183.50- 188.50 -zone is typically moderately silicified with 5-7% clotty and finely disseminated pyrite; quartz-carbonate flooding/veining comprises 10% of zone and is typically accompanied by strong silicification and increased pyrite (locally reaching 50%). | A104959 A104960 A104961 A104962 | | 180.50 182.00 183.50 185.00 | 1.50 1.50 1.50 1.50 | 0.08 0.12 0.09 0.16 | | | |
| | | 183.80- 184.66 -strongly silicified zone appears insitu brecciated due to fracture-filling quartz 1 carbonate and contains about 20% (183.80 - 184.39m) to 50% (184.39 - 184.66m) finely disseminated and fine, clotty pyrite. 185.00- 187.75 -quartz (40%), carbonate (60%) flooded zone accounts for 40% of this weakly silicified zone: clots of fine member | A104963 A104964 | 185.00 186.50 | 186.50 188.00 | 1.50 1.50 | 0.05 0.09 | | | |
| | | comprise 7-8% of zone. 187.20- 187.36 -finely disseminated to massive pyrite accounts for 50-55% of zone. 187.36- 187.74 -quartz-carbonate flooded zone (80-85%) is oriented about 40°/CA and contains 3-5% pyrite. | | | | | | | | |
| | | 187.74- 187.85 -fine to massive pyrite accounts for 55-60% of zone. | A104965 | | | | | | | |
| | 1 | | VICANOS | 188.00 | 189.50 | 1.50 | 0.06 | | | 1 |

| FROM | 10 | DESCRIPTION | | | , | | | | PAGE: 1 |
|--------|--------|--|--------------------|------------------|------------------|--------------|--------------|------|---------|
| (H) | (H) | | Sampl. | FROM | 70 | Leng. | Au | | T |
| | | 189.26- 189.32 -partially ground, quartz (80%), carbonate (19%) vein oriented 55°/CA contains 1% fine pyrite. 190.56- 190.60 -3-3.5cm wide, quartz (20%), carbonate (58%) vein oriented 30°/CA contains 20% mafic inclusions and 2% fracture-controlled pyrite. | A104966 | 189.50 | 190.60 | 1.10 | 0.06 | | |
| 190.60 | 199.70 | -lower contact of vein marks contact zone with succeeding unit. ALTERED PILLOWED MAFIC -buff-grey, fine-grained, moderately hard to hard, moderately to strongly sericitic mafic contains 4-5% clotty, two-tone pyrite and about 3% quartz ± carbonate veining and patchesweak foliation to locally weak shearing are oriented 60°/CA. | A104967 A104968 | 190.60 192.00 | 192.00 193.50 | 1.40 1.50 | 0.02 0.04 | | |
| | | -strongly carbonatized (weakly to non-reactant/HCl)weakly to locally moderately fractured with quartz, sericite and locally dravite and carbonate infillingpillow selvages are hazy (due to alteration), up to 1cm wide, chloritic, often carbonatized, and contain fine dravite; rims are weakly bleached with local (1%), hazy, carbonate-filled, amygdules in adjacent mafic. | | | | | | | |
| | | 193.00- 193.90 -zone is weakly silicified with 1-2% clotty pyrite. 193.64- 193.74 -irregular, quartz (60%), carbonate c (10%) flooding with 26-27% mafic inclusions, 1% fine (less than 1mm) to clotty arsenopyrite, and 2-3% | A104970 | 193.50 | 195.00 | 1.50 | 0.06 | | |

| FROM | TO | | | | | | 11V(E # | : M13-15 | | PAGE: 13 |
|--------|--------|--|---------|--------|--------|-------|---------|----------|-------------|----------|
| (M) | (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. | Au | | | T |
| | | 195.24- 195.50 | A104971 | 195.00 | 196.50 | 1.50 | 0.11 | | | |
| | | -weakly silicified with 1% clotty pyrite. 196.70 -fine (less than 1mm) arsenopyrite (trace) is present. | A104972 | 196.50 | 198.00 | 1.50 | 0.26 | | | |
| | | 196.83- 197.00 -quartz (40%), carbonate (20%) flooding with 40% mafic inclusions (with 3% finely disseminated pyrite). | | | | | | | | |
| | | 197.00- 199.00 -weakly to moderately sheared (at 60°/CA) sericitic zone contains about 1%, fine needles to clots to locally fracture- filling arsenopyrite, 5-6% clotty, two- tone pyrite and 1-2% quartz ± carbonate stringers. | A104973 | 198.00 | 199.00 | 1.00 | 0.59 | | | |
| | | 199.00- 199.70 -light grey, moderately to strongly sheared (at 60°/CA), strongly sericitic zone contains 5% quartz ± carbonate stringers, 4-5% subhedral to locally clotty pyrite and 5-6% typically fine masses to locally needles (up to 1mm) of arsenopyrite. | A104974 | 199.00 | 199.70 | 0.70 | 2.33 | | | |
| | | -alteration contact is approximately at 199.70m due to locally ground core. | | | | | | | | |
| 199.70 | 200.60 | GREY PILLOWED MAFIC -medium grey, fine-grained, moderately hard, moderately carbonaceous mafic contains 3-4% typically fracture-controlled to locally clotty pyrite and 4-5% quartz-carbonate fracture-filling and patchesmoderate foliation oriented 65-70°/CA. | | | | | | | | |
| | | -strongly carbonatized (non-reactant/HCl). | | | | | | j | | |

| FROM | 70 | | | | | | | | , | AGE: 14 |
|--------|--------|---|--------------------|------------------|------------------|--------------|--------------|---|---|-------------|
| (M) | (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | | | |
| | | -pillow selvages are hazy, up to 1cm wide, carbonaceous and chloritic; rims are weakly bleached with local amygdules present is adjacent mafic. | | | | | | | | - |
| | | 199.70- 200.00 -lost core. | | | | | | | | |
| | | -contact at 200.60m is approximate due to ground core. | | | Ì | | | Ī | | |
| 200.60 | 201.31 | GRAPHITIC ARGILLITE -black, fine-grained, moderately hard (due to weak silicification), graphitic argillite contains 8-10% finely disseminated, clotty, fracture-controlled and bedded pyrite and 10% fracture-controlled to patchy carbonate; carbonate and pyrite strain shadows are also presentwell bedded at 70°/CA. | A104975 A104976 | 200.00 200.60 | 200.60 202.00 | 0.60 1.40 | 0.03 0.03 | | | |
| | | 200.73- 200.77 -inclusion or dykelet of light grey, sheared feldspar porphyry. | | | | | | | | |
| 201.31 | 202.10 | -sharp contact at 201.31m oriented 70°/CA. SHEARED FELDSPAR PORPHYRY -medium grey, fine-grained, moderately soft to moderately hard, weakly sericitic groundmass contains about 35-40%, typically sericitized, feldspar subhedra (up to 7mm) and 1-2% clotty pyriteunit is moderately sheared at 70°/CAfracturing and locally shear planes are carbonate and carbonaceously altered. | A104977 | 202.00 | 203.50 | 1.50 | 0.02 | | | |
| | | 202.03- 202.06 -1.5-2.5cm wide, barren, quartz (60%), carbonate (38%) vein oriented 55°/CA (subperallel/shearing) contains 2% fracture-filling carbon. | | | | | | | | |
| | | -contact at 202.10m is approximate due to | | | | | | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | то | Leng. | Au | T | |
|-------------|-----------|---|--------------------|------------------|------------------|--------------|-------|---|-------------|
| 202.10 | 204.40 | ground core. SEDIMENTS (?) -light to medium grey, medium-grained, greywacke horizon with 10-15% often angular, rip up clasts, 5-7% locally two-tone, clotty to ewhedral pyrite and 4-5% irregular (up to 1cm) carbonate clotsweakly sheared at 60-70°/CA. 203.18- 203.42 -weakly carbonaceous zone contains 10% carbonate patches and fracture-filling, 10% clotty to subhedral pyrite and 1% light brown sphalerite. | | | | | P | | |
| | | 204.35- 204.40 -narrow graphitic argillite marks contact oriented 75°/CA. | A104978 | 203.50 | 205.00 | 1.50 | <0.02 | | |
| 204.40 | 208.01 | FELDSPAR PORPHYRY -light grey, fine-grained, moderately hard, weakly carbonatized matrix contains 40-45%, typically carbonatized and sericitized feldspar phenocrysts (up to 6mm) and 3-4% clotty to euhedral pyriteweak to moderate foliation is oriented 70°/CA. | | | | | | | |
| | | -weakly fractured with 1-2% carbonate fracture- filling. 204.86- 204.89 | | | | | | | |
| | | -graphitic argillite. 206.73- 206.74 -as above. | A104979 A104980 | 205.00 206.50 | 206.50 208.00 | 1.50 1.50 | 0.02 | | |
| | | 207.30- 208.01 -fracturing is carbonaceously infilledsharp contact at 208.01m oriented 70-75*/CA. | A104981 | 208.00 | 209.50 | 1.50 | 0.02 | | |
| | | | | | | | | | |

Hole # : M13-15

| FROM | TO | 2500000 | Ţ | | | | | : M13-15 | | ۲ | AGE: 16 |
|--------|--------|---|--|--------------------------------------|--------------------------------------|------------------------------|------------------------------|----------|---|---|----------|
| (M) | (H) | DESCRIPTION | Sampl. | FRON | 70 | Leng. | Au ppm | | | | T |
| 208.01 | 208.29 | GRAPHITIC ARGILLITE -black, fine-grained, moderately hard to hard (due to weak silicification), graphitic argillite contains 3% fine and clotty pyrite and about 3% carbonate veinlets and clotslocal greywacke clasts are rimmed with pyriteweakly bedded at 80°/CA. | | | | | | | | | |
| | | -sharp contact at 208.29m oriented 80°/CA. | | | | | | | | | |
| 208.29 | 208.58 | SERICITIC MAFIC (?) -light greyish green, fine-grained, moderately hard, strongly sericitic, moderately to strongly carbonatized (reactant/HCl) unit contains 5% clotty to subhedral, locally two-tone pyrite. | | | | | | | | | |
| | | -irregular greyish carbonate patches and stringers account for 10% of zone. | | | | | | | | | |
| ~~ l | | -sharp contact at 208.58m is oriented 70-75°/CA. | | | | | | | i | |] |
| 208.58 | 209.62 | SEDIMENTS -texturally similar to 202.10 - 204.40m but carbonate clots are smaller (up to 3mm). | A104982 | 209.50 | 211.00 | 1.50 | 0.15 | | | | |
| | | -sharp contact at 209.62m oriented 80°/CA. | | | | | | | | | |
| 209.62 | 209.71 | GRAPHITIC ARGILLITE -texturally similar to 208.01 - 208.29m but with about 1% light brown sphalerite. | | | | | | | | | |
| 1 | | -sharp contact at 209.71m oriented 80°/CA. | | | | | | | İ | | |
| 209.71 | 212.00 | FELDSPAR PORPHYRY -texturally similar to 204.40 - 208.01m. | A104983 | 211.00 | 212.50 | 1.50 | 0.09 | | | : | |
| | | -contact at 212.00m is ground. | | ľ | l | | | | ĺ | | |
| 12.00 | 220.74 | GRAPHITIC ARGILLITE -black, fine-grained, moderately hard to moderately soft (depending upon alteration), graphitic argillite contains 5-7% fine to clotty, locally banded pyrite and local (less than 1%) | A104984 A104985 A104986 A104987 | 212.50 214.00 215.50 217.00 | 214.00 215.50 217.00 218.50 | 1.50 1.50 1.50 1.50 | 0.37 0.21 0.16 0.18 | | | | |

Hole # : H13-15

| FROM | TO | DESCRIPTION | | - | | | _ | : H13-15 | | PAGE: 17 |
|--------|--------|---|--------------------|------------------|------------------|--------------|--------------|----------|--|----------|
| (M) | (H) | DESCRIPTION | Sampl. | FROM | TO | Leng | | | | — |
| 220.74 | 236.00 | Light brown sphalerite often associated with carbonateweakly to moderately defined bedding is oriented 75-80°/CA. -carbonate fracture-filling and strain shadows comprise about 3% of unitlocal greywacke to argillaceous clasts (up to 4cm) are locally rimmed with pyrite or pyrite altered. 217.68- 217.94 -fault zone with graphitic gouge. -sharp but irregular contact at 220.74m. SEDIMENTS -medium to dark grey, fine-grained, argillites comprise about 25% of a fining down the hole (to the south) sequence with light to locally medium grey, fine- to medium-grained greywackes (75%)graded bedding and load structures (i.e. flames) indicate tops down the holebedding is oriented at 70-80°/CApyrite content is variable from 3-7%; unit typically contains 3% pyrite as fine, often irregular clots and locally as a fracture-fillingup to 1% (quartz-) carbonate stringers show variable orientation. | A104968 A104990 | 218.50 220.00 | 220.00 221.50 | | 0.17 0.04 | | | |
| | | 220.74- 223.50 -large (up to 1.5cm) ewhedra to locally "snowflake" pyrite comprises 5-7% of zone. 223.40 | A104991 A104992 | 221.50 223.00 | 223.00 224.50 | 1.50 1.50 | 0.02 0.02 | | | |
| | | -bedding is oriented 75°/CA. 224.60 -graded bedding indicates fining down the hole (to the south). | A104993 | 224.50 | 226.00 | 1.50 | <0.02 | | | |
| | | | A104994 A104995 | 226.00 227.50 | 227.50 229.00 | 1.50 | <0.02 | ĺ | | |

Hole # : M13-15

| OM TO (M) | DESCRIPTION | | | | | note # | | PAGE: 18 |
|--|--|------------|-------------|-------------|--------------|--------|--|----------|
| | | Sampl. | FROM | 10 | Leng. | | | T |
| 228.40 -grade the i 229.25 -flame hole 230.70 -beddi 235.00 -grade hole. 235.90 -beddi End of hole Total amo | led bedding with fining indicate. e structures indicate tops of (to the south). ing is oriented 70°/CA. ed bedding indicates tops down as oriented 80°/CA. ount of samples= 83 angth sampled = 116.10M | cated down | PROM | 10 | Leng. (H) | Au | | |

FALCONBRIDGE LTD DIAMOND DRILL LOG

Property: 8109

Hole #: M13-16

Zone #: 42A/11

Contractor : BRADLEY BROS.

Date started: 8/24/1988

Township: MATHESON

Lot : 8

Concession: 1

Claim # :P585548

Date completed: 8/25/1988

Level :

Section: 800E

Location : UMEX-MATHESON J.V.

Collar coordinate:

Line : 8+00 E Station: 4+60 N

Latitude: 5377080.00 N Departure: 498505.00 E

Azimuth: 180° 0' 0"

Reference frame : UTM

5000.00 Elevation:

Dip: -50° 0' 0" Length: 245.00 M

Surveyed by: -

Deviation tests :

| Depth | Dip | Azimuth |
|----------|------------|------------|
| 40.00 M | -50°30° 0° | 180° 0' 0" |
| 127.00 M | -50° 0° 0° | 180° 0' 0" |
| 225.00 M | -49°30° 0° | 181° 0' 0" |

Remarks : CASING: 31m of NW casing left in hole.

Water flow: -

Cemented : NO

Plugged: NO Core size : BQ

| FROM | τo | DESCRIPTION | Sampl. | FROM | ΤO | 1000 | A | T 4 | | r | T: |
|------|-------|---|--------|------|----|-------|-----------|-------------|------|--------------|-----|
| (H) | (H) | | sampt. | PROH | 10 | Leng. | Au ppm | Au 1 ppm | Au 2 | | . F |
| 0.00 | 31.00 | CASING | | | | | | | | | |
| 0.00 | 31.00 | PILLOWED MG THOLEIITE -light to locally medium grey-green, fine-grained, moderately soft to moderately hard, locally groundwater leached, locally bleached mafic. -weakly to moderately carbonatized (reactant/HCl) with about 5% (quartz-) carbonate stringers, patches and fracture-fillingfine tourmaline/dravite needles (1-2%) are present in patches and as a fracture-fillingpillow selvages are hazy, up to 5cm wide, locally hyaloclastic, moderately to strongly chloritic, typically carbonatized, typically contain fine tourmaline/dravite needles and only locally contain fine pyrite and pyrrhotite (up to 5%); rims are moderately to strongly bleached with only local carbonate- and chlorite-filled amygdules (less than 1%)bleached, concentric cooling fractures are present locally. 31.12- 31.14 -3-3.5cm wide, quartz (85%), carbonate (12%), tourmaline (3%) vein oriented 70°/CA. 36.20- 36.24 -1-2cm wide, quartz (5%), carbonate (90%) vein oriented 30°/CA contains 5% clotty pyrite along rims. 36.72- 36.89 -2-2.5cm wide, berren, carbonate vein oriented 25°/CA. 44.65- 44.70 -fault zone marked by crumbly fault gouge. 51.24- 51.68 -2cm wide, carbonate vein oriented 10°/CA contains 1% clotty pyrite. | | | | | | | | | |
| | | | | | | | | | | | |

| FROM (H) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. (M) | Au Au | Au 1 ppm | Au 2 ppm | |
|-------------|-----------|--|--------------------|----------------|----------------|--------------|--------------|-------------|-------------|--|
| | | 80.00- 83.00 -zone contains 0.25m of mixed pillowed and massive mafics; remaining 2.75m is lost corecontact is in zone of lost core. | | | | | | | | |
| 83.00 | 108.58 | MASSIVE MAFIC -light to medium green to grey-green, fine- to medium-grained to locally granular, moderately hard to hard mafic is weakly foliated at 60-65°/CA marked by the alignment of cream to buff, elongate to feathery (up to 1.5mm) leucoxenes (comprising 1-2% of unit)clotty pyrit is present locally (up to 3%). -weakly to moderately carbonatized (strongly reactant/HCl) with 3-4% quartz-carbonate veining and fracture-fillingweakly chloritic. | | | | | | | | |
| | | 83.00- 92.00 -light grey-green, medium- to coarse- grained, granular zone contains 2% fine dravite needles. 87.07- 87.12 -5cm wide, quartz (70%), carbonate | A104996 | 86.00 | 87.50 | 1.50 | 0.05 | | | |
| | | (17%) vein oriented 60°/CA (parallel/ foliation) contains 5% mafic inclusions, 2% pyrite, 3% pyrrhotite, 1% brown sphalerite and 2% dravite. | A104997 A104998 | 87.50 89.00 | 89.00 90.50 | 1.50 1.50 | 0.02 0.02 | | | |
| | | 90.06- 90.11 -4.5cm wide, quartz (55%), carbonate (30%) vein oriented 55°/CA (subparallel/foliation) contains 5% dravite, 4% chlorite, 1% arsenopyrite and 5% clotty pyrite. | | | | | | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 70 | Leng. (M) | Au ppm | Au 1 ppm | Au 2 | T | |
|-------------|-----------|--|---|---|--|--------------------------------------|--------------------------------------|-------------|------|---|--|
| | | 90.13- 90.14 -irregular, greyish quartz-carbonate vein merges into vein at 90.06m. 92.57- 92.61 -2cm wide, quartz (30%), carbonate (60%) vein oriented 45°/CA contains 5% chlorite, 3% pyrite, 1% arsenopyrite and 1% red-brown sphalerite. | A104999 A105000 | 90.50 92.00 | 92.00 93.50 | 1,50 1,50 | 0.02 0.02 | | | | |
| | | 96.69- 96.73 -2.5-3cm wide, quartz (70%), carbonate (8%), chlorite (20%) vein oriented 50°/CA (subparallel/foliation) contains 2% clotty pyrite. | A105001 A105002 A105003 | 93.50 95.00 96.50 | 95.00 96.50 98.00 | 1.50 1.50 1.50 | 0.05 0.02 0.03 | | | | |
| | | 98.13- 98.50 -weakly sheared (at 70°/CA) zone contains 5-7% clotty, two-tone to subhedral pyrite and 15% quartz-carbonate veining/ flooding. | A105004 | 98.00 | 99.00 | 1.00 | 0.17 | | | | |
| | | 98.23- 98.32 -greyish, quartz (60%), carbonate (17%) veining oriented 65-70°/CA contains 10% dravite, 5% chlorite, 1% arsenopyrite needles (less than 1mm) and 7% clotty pyrite. | | | | | | | | | |
| | | 98.50- 101.00 -unit is locally more granular. 105.20- 108.58 -weakly to moderately altered zone | A105005 A105006 A105007 A105008 A105009 | 99.00 100.50 102.00 103.50 105.00 | 100.50 102.00 103.50 105.00 106.00 | 1.50 1.50 1.50 1.50 1.00 | 0.05 0.02 0.03 0.03 0.02 | | | | |
| | | contains 5% quartz-carbonate veining (oriented 45-60°/CA), about 2-3% clotty pyrite, local pyrrhotite and 1-2% buff to mauve leucoxenes. | | | | | | | | | |

Hole # : M13-16

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. (H) | Au ppm | Au 1 ppm | Au 2 | ł. |
|-------------|-----------|---|-------------------------------|----------------------------|----------------------------|----------------------|----------------------|-------------|------|----|
| 108,58 | 114.35 | 105.77- 105.85 -weakly silicified, carbonatized (reactant/HCl) zone contains 10% quartz-carbonate veinlets (oriented 25°/CA), 15-20% fine to coarse, clotty pyrrhotite and 10% coarse, clotty pyrite. -sharp change in alteration at 108.58m. INTENSELY ALTERED MASSIVE MAFIC light grey to bluish-grey, fine-grained, hard, strongly to typically intensely silicified mafic contains 10-12% finely disseminated pyrite and 15% quartz veiningbuff to typically mauve, feathery leucoxenes comprise 1-2% of unit. -locally weakly, typically fracture-controlled carbonatization (reactant/HCl)moderately sericitic. | A105010 A105011 A105012 | 106.00 107.50 108.50 | 107.50 108.50 110.00 | 1.50 1.00 1.50 | 0.03 0.09 0.17 | | | |
| | | -strongly to intensely altered zone with 2-3% carbonate fracture-filling. 108.80- 108.93 -5cm wide, quartz (50%), carbonate (35%) vein oriented 25-30°/CA contains 15% fine pyrite and trace pyrrhotite. 109.10- 111.03 -intensely silicified zone. 109.55- 109.57 -2-3cm wide, quartz (50%), carbonate (40%) vein oriented 45°/CA contains 5% pyrrhotite along contacts and 5% finely disseminated pyrite. | A105013 | 110.00 | 111.00 | 1.00 | 0.23 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | Au 1 ppm | Au 2 | 1 | |
|-------------|--------|--|--|--------------------------------------|--------------------------------------|------------------------------|------------------------------|-------------|------|---|--|
| | | 111.03- 111.93 -quartz (80%), carbonate (15%) vein oriented 45-50°/CA is weakly to moderately fractured with carbonate and fine pyrite (3%) infilling; finely disseminated pyrite comprises 2% of vein. | A105014 | 111.00 | 112.00 | 1.00 | 0.19 | | | | |
| | | 111.93- 112.36 -intensely silicified and moderately sericitic zone. 112.36- 114.35 -strongly silicified with local intensely | A105015 | 112.00 | 113.50 | 1.50 | 0.11 | | | | |
| | | altered patches. 113.40- 113.70 -intensely altered zone. 113.95- 114.35 | A105016 | 113.50 | 114.50 | 1.00 | 0.20 | | | | |
| | | -intensely altered zone.-sharp alteration contact at 114.35m. | | | | | | | | | |
| 114.35 | 113.10 | WEAKLY ALTERED MASSIVE MAFIC -light greenish grey to locally buff, fine- grained, moderately hard to locally moderately soft, weakly fractured mafic contains local, buff to mauve, fine leucoxenes, locally up to 4% fine to clotty, locally fracture-filling pyrite, locally up to 1% clotty pyrrhotite and 3% quartz- carbonate stringersweak foliation is oriented 60°/CA. -moderately to strongly carbonatized (weakly to non-reactant/HCl)moderately sericitic. | | | | | | | | | |
| | | moderately sericities | A105017 A105018 A105019 A105020 | 114.50 116.00 117.50 118.50 | 116.00 117.50 118.50 119.50 | 1.50 1.50 1.00 1.00 | 0.08 0.13 0.14 0.33 | | | | |

Hole # : M13-16

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | то | Leng. | Au ppm | Au 1 | Au 2 | |
|-------------|-----------|--|--|--------------------------------------|--------------------------------------|------------------------------|------------------------------|------|------|--|
| | | 118.72- 119.45 неакly to moderately silicified, moderately sheared (at 55-60°/СА) zone contains 3% dravite and 3% clotty pyrite (typically in bends). 119.45- 121.40 | A105021 | 119.50 | 121.00 | 1.50 | 0.10 | | | |
| | | <pre>-moderately altered zone contains about 2% clotty to fracture-controlled pyrite, locally up to 2% fine, clotty pyrrhotite, and 2% quartz-carbonate veining and patches.</pre> | A105023 | 121.00 | 122.50 | 1.50 | 0.24 | | | |
| | : | 121.01- 121.08 -4cm wide, quartz (24%), carbonate (35%) vein with contacts oriented 50 and 25°/CA respectively; vein contains 1% pyrite and 40% mafic inclusions. | | | | | | | | |
| | | | A105024 A105025 A105026 | 122.50 124.00 125.50 | 124.00 125.50 127.00 | 1.50 1.50 1.50 | 0.11 0.17 0.07 | | i | |
| | | 125.63- 125.71 -irregular, quartz (19%), carbonate (80%) patch with 1% fine pyrite. | | | | | | | | |
| | | 126.00- 129.00 -zone is buff, locally bleached and locally contains 2% pyrite. | A105027 | 127.00 | 128.50 | 1.50 | 0.12 | | | |
| | | 127.44- 127.50 -2cm wide, carbonate vein oriented 20°/CA contains 15% dravite; mefic adjacent to vein contains 2-3% fine pyrite. | | | | | | | | |
| | | 129.00- 133.10 -unit becomes very fine-grained and contains 2% euhedral to clotty pyrite and 3-4% carbonate-filled amygdules increasing in quantity (1-4%) and size (1-4mm) towards 133.10m. | A105028 A105029 A105030 A105031 | 128.50 130.00 131.50 133.00 | 130.00 131.50 133.00 134.50 | 1.50 1.50 1.50 1.50 | 0.05 0.07 0.03 0.04 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. (M) | Au | Au 1 ppm | Au 2 ppm | er |
|-------------|-----------|---|---|--|--|--|--|-------------|-------------|----|
| 133.10 | 134.30 | WEAK FLOW BRECCIA -light green, fine-grained, moderately soft to moderately hard, locally weakly bleached, weakly to moderately sericitic, mafic fragments (85%) in a grey carbonate ± chlorite matrix (15%)weak shearing is oriented 60°/CAunit contains 2-3% carbonate-filled amygdules, 1% fine, clotty pyrrhotite, 1-2% clotty, locally two-tone pyrite and about 3% dravite fracture- filling and ribbonsweakly to moderately carbonatized (reactant/HCl)contact at 134.30m oriented 60°/CA. | | | | | | | | |
| 134.30 | 153.95 | ALTERED PILLOWED MAFIC -buff to greyish buff, fine-grained, moderately hard to hard, typically weakly bleached mafic contains 2-3%, fine, two-tone, clotty pyrite and about 4-5% quartz-carbonate stringers. -strongly carbonatized (non-reactant/HCl) with carbonate fracture-fillingweakly to moderately sericiticpillow selvages are typically hazy, up to 2.5cm wide, strongly chloritic, typically carbonatized, locally contain fine, tourmaline needles and locally 4% combined pyrite and pyrrhotite; rims are moderately bleached with about 2% carbonate- filled amygdules (up to 3mm) adjacent to rims. 139.77- 139.87 -quartz (70%), carbonate (12%) vein with irregular contacts contains 15% mafic inclusions and 3% clotty to disseminated pyrite. | A105032 A105033 A105034 A105035 | 134.50 136.00 137.50 139.00 | 136.00 137.50 139.00 140.50 | 1.50 1.50 1.50 1.50 | 0.08 0.05 0.14 0.16 | | | |
| | | ργιττε. | A105036 A105037 A105038 A105039 A105040 A105041 A105042 | 140.50 142.00 143.50 145.00 146.50 148.00 149.50 | 142.00 143.50 145.00 146.50 148.00 149.50 151.00 | 1.50 1.50 1.50 1.50 1.50 1.50 | 0.12 0.13 0.11 0.06 0.10 0.05 0.16 | | | |



| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | то | Leng. (M) | Au | Au 1 ppm | Au 2 ppm | 3 |
|-------------|-----------|--|--------------------|------------------|------------------|--------------|--------------|-------------|-------------|---|
| 153.95 | 176.22 | 150.92- 150.96 -2.5cm wide, barren, quartz (95%), carbonate (5%) vein oriented 75°/CA. 153.00- 153.95 -buff-grey zone contains 4-5% clotty, locally two-tone pyrite, 2% clotty pyrrhotite and 3% dravite needlessharp contact at 153.95m is irregularly oriented. PILLOWED MG THOLEIITE | A105043 A105044 | 151.00 152.50 | 152.50 154.00 | 1.50 1.50 | 0.08 | | | |
| | | -light grey-green to bright (fuchsitic) green, fine-grained, moderately soft to moderately hard (where bleached), weakly fractured, variolitic mafic. -weakly to moderately carbonatized (non-reactant/HCl) with 15-20% (quartz-) carbonate patches, stringers and fracture-fillingweakly sericiticlocally weakly fuchsiticpillow selvages are hazy to distinct, typically 5-6cm wide (but vary from 1 to 9cm wide), strongly chloritic, moderately carbonatized with local (less than 1%) dravite needles; rims are strongly bleached with up to 4mm long, elongate, often coalesced varioles. | | | | | | | | |
| | | 153.95- 155.70 -zone contains 3-4% clotty, typically two- tone pyrite and blue-green chlorite or fuchsite fracture-filling. 155.46- 155.54 -4-5cm wide, barren, quartz (25%), grey carbonate (75%) vein oriented 25°/CA. | A105045 A105046 | 154.00 155.00 | 155.00 156.50 | 1.00 1.50 | 0.12 0.10 | | | |
| | | | A105047 A105049 | 156.50 158.00 | 158.00 159.50 | 1.50 1.50 | 0.18 0.19 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au ppm | Au 1 ppm | Au 2 ppm | • |
|-------------|-----------|--|--------------------|------------------|------------------|-------|--------------|-------------|-------------|---|
| | | 159.95- 160.04 -irregular, quartz-carbonate flooding associated with a broad selvage. 163.30- 163.44 -as above but also contains 1% clotty pyrite. 167.13- 167.40 -moderate foliation is oriented 65°/CA; zone contains 5% dravite ribbons/ fracture-filling oriented parallel to foliation. 170.56- 170.62 -barren, quartz-carbonate vein associated with a pillow selvage. 175.90- 176.22 -blue-green, strongly sericitic zone is weakly sheared at 70-75°/CA and contains 2% clotty, two-tone pyrite and 1-2% fine (less than 0.5mm), pinpoint dravite. 176.16- 176.20 -4cm wide, barren, quartz (80%), carbonate (10%), dravite (3%) vein oriented 65°/CA (subparallel/ shearing) contains 5% mefic inclusions and 2% sericitesharp contact at 176.22m is sheared at 65-70°/CA. | A105050 A105051 | 174.00 175.50 | 175.50 176.50 | 1.50 | 0.11 0.05 | | | |
| 176.22 | 194.66 | MASSIVE MAFIC -light to locally medium grey-green, typically fine-grained to locally medium-grained or granular, locally bleached, locally silicified mafic contains 1-3%, fine, clotty, locally two- tone pyrite, 1-2% quartz-carbonate stringers and 1-2%, mauve to buff, feathery leucoxenes (up to 1.5mm long)local weak foliation is oriented 65°/CA. | A105052 | 176.50 | 178.00 | 1.50 | 0.07 | | | |

Hole # : M13-16

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. (H) | Au ppm | Au 1 ppra | Au 2 ppm | · A |
|-------------|-----------|---|--|--------------------------------------|--------------------------------------|------------------------------|--------------------------------|--------------|-------------|--------|
| | | <pre>-moderately carbonatized (weakly to non-reactant/ HCl) with local (1-2%), fracture-filling carbonate. -weakly to moderately sericitic. -weakly to moderately chloritic.</pre> | | | | | | | | |
| | | 178.00- 179.00 -3% fine, clotty pyrite is associated with moderate sericite alteration. | A105053 | 178.00 | 179.50 | 1.50 | 0.03 | | | |
| | | 184.15- 184.33 -silicified zone oriented 65°/CA contains 30-40% carbonate rhombs, 1% clotty pyrrhotite and 2% fine to clotty pyrite. | A105054 A105055 A105056 A105057 | 179.50 181.00 182.50 184.00 | 181.00 182.50 184.00 185.00 | 1.50 1.50 1.50 1.00 | 0.02 <0.02 0.02 <0.02 | | | |
| | | 191.00- 194.66 -zone is medium-grained, granular and moderately choritic with about 1% clotty to subhedral pyriteweak to moderate foliation is oriented 60-65°/CA. | A105058 A105059 A105060 | 185.00 192.50 193.80 | 186.50 193.80 195.40 | 1.50 1.30 1.60 | 0.02 0.07 0.19 | | | |
| | | 193.97- 194.08 -4.5-5cm wide, grey quartz (90%), carbonate (5%) vein oriented 35°/CA contains 5% finely disseminated pyritealteration contact at 194.66m. | | | | | | | | |
| 194.66 | 212.30 | ALTERED MASSIVE MAFIC -buff-grey to light grey locally with bluish tint, fine-grained, moderately hard to hard, typically bleached mafic contains 3-5% clotty, typically two-tone pyrite, 2-3% fine, clotty pyrrhotite, locally up to 2% arsenopyrite clots, needles and fracture-filling, 2-3% quantz-carbonate veining and 1% fine dravite needlesmoderate foliation to weak shearing is oriented | | | | | | | | |

| FROM (M) | TO DESCRIPTION | Sampl. | FROM | ТО | Leng. | Au ppm | Au 1 | Au 2 | <i>i</i> - |
|-------------|---|---------|--------|--------|-------|-----------|------|------|------------|
| | 65°/CA and marked by the alignment pyrite and pyrrhotite clots. -strongly carbonatized (weakly to non-reactant/HCl)moderately to typically strongly sericiticweakly fractured with carbonate and greyish quartz infilling. 194.66- 195.45 -fine- to medium-grained, sericitic, weakly chloritic, locally weakly bleach zone contains 2-3% clotty pyrite and 1% clotty pyrrhotite. 195.45- 197.15 -light grey, fine-grained, weakly silicified, bleached zone contains 3-4% two-tone, pyrite clots, 1-2% fine, pyrrhotite clots and 1-2% arsenopyrite clots, needles and fracture-filling (locally reaches 4%). | A105061 | 195.40 | 197.00 | 1.60 | 0.56 | | | |
| | 195.87- 195.91 -3cm wide, quartz (80%), carbonate (7%) vein oriented 75°/CA contains 10% mafic inclusions and 3% arsenopyrite along contacts. 195.96- 195.97 -0.5-1cm wide, quartz veinlet orient 50°/CA; about 5% clotty pyrite is present in mafic adjacent to vein. 197.00- 197.15 -less than 1% arsenopyrite is presen 197.15- 203.60 -medium-grained, granular, moderately to strongly sericitic, locally bleached zo locally shows weak shearing along chlorite slips between phenocrysts; 2-3 pyrite and 2-3% pyrrhotite are typical. | A105062 | 197.00 | 198.50 | 1.50 | 0.11 | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. (M) | Au | Au 1 ppm | Au 2 ppm | | |
|-------------|-----------|---|--------------------|------------------|------------------|--------------|--------------|-------------|-------------|---|--|
| | | 197.15- 198.60 -zone is bluish grey-green. | A105063 | 198.50 | 200.00 | 1.50 | 0.06 | | | | |
| | | 199.95- 200.50 -bleached and sericitic zoneat 200.21 - 200.22m - 0.5-1.5cm wide, quartz (80%), carbonate (5%) veinlet oriented 60°/CA contains 15% pyrite along fractures and rimming the vein. | A105064 | 200.00 | 201.50 | 1.50 | 0.07 | | | | |
| | | 201.40- 202.20 -strongly granular, sheared zone. | A105065 | 201.50 | 203.00 | 1.50 | 0.20 | | | | |
| | | 202.55- 202.59 -irregular quartz ± carbonate stringers with 10% associated clotty pyrite. | | | | | | | : | j | |
| | | 203.60- 211.75 -grey to buff-grey, fine-grained, weakly silicified, moderately sericitic zone contains 2-4% clotty pyrite, 1-2% pyrrhotite, 2% fine pinpoint to elongate (1mm) dravite. | A105066 A105067 | 203.00 204.50 | 204.50 206.00 | 1.50 1.50 | 0.24 | | | | |
| | | 204.65- 204.80 -blue-grey silicification (40%) with 15-20% associated clotty, two-tone pyrite. | | | | | | | : | | |
| | | 206.84- 207.16 -zone contains 5% fine dravite. | A105069 | 206.00 | 207.50 | 1.50 | 0.52 | | | | |
| | | 209.59- 209.66 -irregular, quartz (40%), grey carbonate (60%) vein oriented 75°/CA. | A105070 A105071 | 207.50 209.00 | 209.00 210.50 | 1.50 1.50 | 0.05 0.19 | | | | |
| | | 209.91- 209.94 -2-2.5cm wide vein as above. | | | | | | | | | |
| | | | | | | | | | | | |

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. (M) | Au ppm | Au 1 ppm | Au 2 ppm | j. |
|-------------|---|--|---------|--------|--------|--------------|-----------|-------------|-------------|----|
| | | 210.38- 210.46 -irregular, quartz-grey carbonate flooding comprises 45% of zone. 210.54- 210.64 -as above. | A105072 | 210.50 | 211.75 | 1.25 | 0.17 | | | |
| | | 211.05- 211.13 -as above. 211.47- 211.54 -as above. | | | | | | | | |
| | | 211.75- 212.00 -silicified zone contains 35-40% quartz, 58-63% carbonate and 2% pyrite. 212.00- 212.10 | A105073 | 211.75 | 212.50 | 0.75 | 0.73 | 0.73 | 0.73 | |
| | - - - - - - - - - - - - - - - - - - - | -ground and broken quartz (75%), vuggy carbonate (25%) vein with ground contacts contains less than 1% pyrite. | | | | | | | | |
| | | -18cm wide, quartz (85%), grey carbonate (4%) vein oriented 70°/CA contains 5% clotty and fracture-controlled arsenopyrite, 1% fine pyrite and 5% mafic inclusions vein. | | | | | | | | |
| 212.30 | 217.80 | -sharp contact at 212.30m marked by aforementioned quartz-carbonate vein. ALTERED PILLOWED MAFIC -buff-grey, fine-grained, moderately hard to hard, locally bleached mafic contains 4-7% clotty, two-tone pyrite, 1-2% clotty pyrrhotite, and local (1-2%) quartz-carbonate stringersweak foliation to locally weak shearing are oriented 60°/CA. | | | | | | | | |
| ; | | -strongly carbonatized (weakly to non-reactant/ HCl). -strongly sericitic. -locally silicified. -weakly to locally moderately fractured with | | | | | | | | |

| FROM | TO | DESCRIPTION | Sampl. | FROM | TO | Leng. | Au | AU 1 | Au 2 | T | T |
|-------|--------|---|-------------------------------|----------------------------|----------------------------|----------------------|----------------------|------|------|---|---|
| (H) | (M) | | | | ,,, | (H) | ppn | ppm | ppm | | |
| | | quartz, carbonate and locally dravite infillingpillow selvages are hazy (due to strong alteration), up to 1cm wide, chloritic, often carbonatized and may contain fine dravite; rims are weakly bleached with local (1%), hazy, carbonate-filled amygdules (up to 3mm) in adjacent mafic. | | | | | | | | | |
| | | 212.30- 213.80 -weakly silicified zone contains 6-7% pyrite and 1-2% pyrrhotite. | A105074 | 212.50 | 214.00 | 1.50 | 0.14 | | | | |
| | ! | 213.67- 213.77 -moderately silicified with 7% pyrite and 3-4% clotty pyrrhotite. | | | | | | | | | |
| | | -sharp, sheared, alteration contact at 217.80m oriented 60°/CA. | | | | | | | | | |
| | | | A105075 A105076 A105077 | 214.00 215.50 217.00 | 215.50 217.00 218.00 | 1.50 1.50 1.00 | 0.10 0.22 0.12 | | | | |
| 17.80 | 220.87 | GREY PILLOWED MAFIC -medium grey, fine-grained, moderately hard, moderately carbonaceous mafic contains 5-7% clotty pyrite, 1-2% red-brown sphalerite and 3-4% quartz-carbonate patches and fracture-fillingweakly to moderately sheared at 70°/CA. | A105078 A105079 | 218.00 219.50 | 219.50 221.00 | 1.50 1.50 | 0.13 0.15 | : | | | |
| | | -strongly carbonatized (non-reactant/HCl)pillow selvages are very hazy, less than 1cm wide, chloritic and carbonaceous; rims are weakly bleached with local (1%), carbonate-filled amygdules in adjacent mafic. | | | | | | | | | |
| | | 220.82- 220.87 -barren, coarse carbonate vein oriented 40-45°/CA. | | : | | | | | | | |
| | ı | -sharp contact at 220.87m marked by aforementioned carbonate vein. | | | | | | | | | |
| | | | | | | | | | | | |

Hole # : M13-16

| FRON (M) | OT (M) | DESCRIPTION | Sampl. | FROM | ТО | Leng. | Au ppm | Au 1 | Au 2 ppm | ٠, |
|-------------|-----------|--|---------|--------|--------|-------|-----------|------|-------------|----|
| 220.87 | 222.21 | GRAPHITIC ARGILLITE -black, fine-grained, moderately hard to hard (due to weak silicification), graphitic argillite contains 8-10% fracture-controlled, clotty and bedded pyrite, up to 1% red-brown sphalerite and 5% patchy to fracture-controlled carbonatecarbonate and pyrite strain shadows are present; local (2-3%) greywacke rip up clasts are weakly pyrite alteredmoderately bedded at 75°/CAsharp contact at 222.21m oriented 65°/CA. | A105080 | 221.00 | 222.50 | 1.50 | 0.16 | | | |
| 222.21 | 222.89 | GREY QUARTZ FELDSPAR PORPHYRY -medium bluish grey, fine-grained, moderately hard to hard, moderately sericitic groundmass contains 30-35% predominantly rounded to subhedral, up to 3mm quartz phenocrysts and lesser, sericite and carbonate altered, feldspar subhedra to locally euhedra; 2% clotty to subhedral pyrite and 5% quartz-carbonate veining and fracture-filling are also presentunit is weakly to moderately sheared at 70-75°/CA. | A105081 | 222.50 | 224.00 | 1.50 | 0.23 | | | |
| 222.89 | 223.89 | 222.60- 222.67 -typically 1cm wide, irregular, quartz (35%), carbonate (65%) vein oriented 35°/CA (crossing shearing) contains less than 1% pyritesharp contact at 222.89m oriented 60°/CA. SEDIMENTS (?) -medium to light grey, fine- to medium-grained, possible greywacke horizon with 2% typically | | | | | | | | |
| | | black, angular to elongate argillite rip-up clasts, 3% subhedral to clotty pyrite, 6-8% quartz-carbonate stringers and fracture-filling with local sphalerite (trace), and 2-3% irregularly-shaped, carbonate clots (up to 3mm). -sharp contact at 223.89m oriented 70°CA. | | | | | | | | |

| FRON (M) | TO (M) | DESCRIPTION | Sampl. | FROM | то | Leng. (M) | Au ppm | Au 1 ppm | Au 2 ppm | ,÷ |
|-------------|-----------|--|---------|--------|--------|--------------|-----------|-------------|-------------|----|
| 223.89 | 226.95 | QUARTZ FELDSPAR PORPHYRY -light to medium grey, fine-grained, moderately hard to hard matrix contains 40-45% phenocrysts of predominantly dark grey to cream, locally zoned, up to 7mm, ewhedral to subhedral feldspar and lesser, clear to light grey, up to 3mm, fractured, anhedral to subhedral quartz; 2-3% typically subhedral to ewhedral (up to 6mm) and 3% patchy and fracture-filling (quartz-) carbonate are also presentporphyry is locally weakly to moderately sheared at 60-65°/CA. | | | | | | | | |
| | | 223.89- 225.30 -zone contains predominantly quartz and lesser feldspar phenocrysts. | A105082 | 224.00 | 225.50 | 1.50 | 0.17 | | : | |
| | | 225.30- 226.95 -zone contains predominantly feldspar and minor quartz phenocrysts. | A105083 | 225.50 | 227.00 | 1.50 | 0.10 | | : | |
| 226.95 | 227.87 | -sharp but irregular contact at 226.95m. GREY MAFIC (?) -medium grey, fine-grained, moderately hard, locally sericitic, locally moderately fractured unit contains 3-4% coarse, clotty to subhedral to fracture-filling pyrite and 1-2% quartz-carbonate stringers and patchesweakly to moderately sheared at 65-70°/CA. | A105084 | 227.00 | 228.50 | 1.50 | 0.10 | | | |
| 227.87 | 228.86 | 227.60- 227.87 -moderately sheared to locally granulated, weakly to moderately sericitic zonecontact at 227.87m is sheared at 65°/CA. (QUARTZ) FELDSPAR PORPHYRY -similar to 223.89 - 226.95m but moderate shearing | A105085 | 228.50 | 230.00 | 1.50 | 0.04 | | | |
| | | at 65°/CA has extended feldspar phenocrysts parallel to shearing. -minor (less than 1%) sphalerite is present locally. -contact at 228.86m is ground. | | | | | | | | |

| FROM (N) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. (N) | Au ppm | Au 1 ppm | Au 2 | <u> </u> |
|-------------|-----------|---|---------|--------|--------|--------------|-----------|-------------|------|----------|
| 228.86 | 239.58 | GRAPHITIC ARGILLITE -black, fine-grained, moderately soft to moderately hard (depending upon alteration), graphitic argillite contains about 10% locally pyrite altered, greywacke clasts and beds, 6-8% finely disseminated, clotty, bedded and local fracture-filling pyrite, 1-2% (quartz-) carbonate veining and typically fracture-fillingweakly to moderately bedded at 65-80°/CA. 228.95 -bedding is oriented 65°/CA. | | | | | | | | |
| | | 229.24- 229.34 -9cm wide, barren, quartz (50%), vuggy to needle carbonate (50%) vein has irregular contacts. 230.35 -bedding defined by pyrite and carbonate is oriented 70°/CA. | A105086 | 230.00 | 231.50 | 1.50 | 0.15 | | | |
| | | 230.65- 231.30 -bedly broken and ground core. | | | | | | | | |
| | | 235.50- 236.00 -lost core. | | | | | | | | |
| | | 236.20 -bedding is oriented 80°/CA. | | | | | | | | |
| | | 237.32- 237.35 -fault gouge. | | | | | | | | |
| | | 238.10 -нell-bedded at 73°/СА. | | | | | | | | |
| | | 239.30- 239.58 -gradational contact zone comprised of alternating graphitic argillite and medium grey argillite and greywacke horizons. | | | | | | | | |

FALCONBRIDGE LTD

Hole # : M13-16

| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | TO | Leng. (M) | Au ppm | Au 1 ppm | Au 2 | | 3 |
|-------------|-----------|--|--------|------|----|--------------|-----------|-------------|------|---|---|
| 239.58 | 245.00 | SEDIMENTS -medium to dark grey, fine-grained argillites comprise 15-60% of a fining down the hole (to the south) sequence with light to medium grey, fine-to medium-grained, typically gritty greywackesgraded bedding and local load structures indicate tops down the hole (to the south)bedding is typically oriented 70°/CApyrite content varies from 3-7% and is typically clotty and fracture-controlled except near the graphitic argillite contact where large (up to 1cm), ewhedral pyrite is present1-2% quartz-carbonate fracture-filling and locally veining are variably oriented. 239.58- 242.00 -zone is predominantly grey argillite (55-60%) with 5-7% large pyrite ewhedra. 241.60 -graded bedding indicates fining down the hole. 241.73 -bedding is oriented 70°/CA. 242.00- 242.04 -4cm wide, quartz (75%), carbonate (22%) vein oriented 65-70°/CA (perallel/bedding) contains 3% coarse, clotty pyrite. 242.04- 245.00 -zone contains predominantly greywacke with 15-20% argillite beds. 244.33 -load structures and fining sequence indicate tops down the hole. 244.60 -bedding is oriented 80°/CA. | | | | | | | | | |
| 245.00 | | End of hole | | | | 1 1 | | i i | | : | |

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FALCONBRIDGE LTD

Hole # : M13-16

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| FROM (M) | TO (M) | DESCRIPTION | Sampl. | FROM | 10 | Leng. (M) | Au ppm | Au 1 ppm | Au 2 | S |
|-------------|----------|--|--------|------|----|--------------|-----------|-------------|------|---|
| | | Total amount of samples= 88 Total length sampled = 125.00M | | | | | | | | |
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APPENDIX B

LITHOGEOCHEMICAL RESULTS FROM 1988 DIAMOND DRILL CORE

DIAMOND DRILL CORE

| SAMPLE NUMBER | FROM | 10 | INTERVAL | - | | | Ţ | - | | 7 | -1 | <u> </u> | <u> </u> | γ | T | | ROCK T | YPE AND REMARKS |
|------------------|---------------|--------------|----------|-------------------|--------------|---|--------------|----------------|--|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--|--|
| 102611 | 83.0 | 86.0 | 3.0m | | | | 1 | 1 | | 1 | | | | + | - | + | - | |
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DIAMOND DRILL CORE

| SAMPLE NUMBER | FROM | το | INTERVAL | - | \top | <u> </u> | ! | | | | 7 | <u> </u> | | | | | ROCK T | YPE AND REMARKS |
|------------------|-------|-------|----------|---|--|--|--------------|--|--|--|--|--|--------------|--------------|--------------|--------------|---------------|-----------------|
| AI02601 | 132.0 | 135.0 | 3.0m | 1 | | | 1 | 1- | _ | 1 | + | | 1 | - | | - | | |
| AI02602 | 141.0 | 144.0 | 3.0m | | | | 1 | 1 | | 1- | _ | + | + | + | | | - | |
| AI02603 | 146.5 | 148.0 | 1.5m | | | 1 | | | 1- | | +- | | + | | - | | | |
| Ai02604 | 151.0 | 154.0 | 3.0m | | | 7- | | 1 | | 1 | 1- | | | | | + | | |
| A102605 | 155.0 | 157.0 | 2.0m | | | | | | 1 | | | | ┪ | + | | | | |
| A102606 | 157.5 | 159.5 | 2.0m | | | | | 1 | 1- | | 1 | + | | | - | | + | |
| AI02607 | 159.6 | 162.0 | 2.4m | | | † | 1 | 1 | | | | - - | + | | | | | |
| AI02608 | 162.0 | 165.0 | 3.0m | | 1 | 1 | | 1 | 1 | | 1 | | - | ┼ | | | | |
| AI02609 | 221.0 | 224.0 | 3.0m | | | 1 | | 1 | - | | ┼── | + | ┼── | | - | | | |
| AI02610 | 252.0 | 255.0 | 3.0m | | | † | | | _ | - | | 1 | | | | | | |
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|------------------|--|-------|----------|----------|--------------|--------------|--|--------------|----------------|--|--|--|--------------|---------------|---------------|----------------|---------------|------------------|
| AI02612 | 41.0 | 44.0 | 3.0m | | | 1 | 1 | - | + | + | | - | - | - | | - | | |
| Ai02613 | 86.0 | 89.0 | 3.0m | | | | | | | _ | _ | 1- | | + | - | | | |
| AI02614 | 146.0 | 149.0 | 3.0m | | | | | | 1- | | + | | + | + | - | - | - | |
| AI02615 | 128.0 | 131.0 | 3.0m | | | | 1 | 7 | 1 | + | | | | + | | + | | |
| AI02616 | 161.0 | 164.0 | 3.0m | | 1 | | |] | - | | | | + | + | | + | | |
| AI02617 | 176.0 | 179.0 | 3.0m | | 1 | | | 1- | 1 | | - | + | - | | | | | |
| AI02618 | 194.0 | 197.0 | 3.0m | | 1 | 1 | | - | | | + | + | - | + | | + | | |
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DIAMOND DRILL CORE

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| A102619 | 132.0 | 135.0 | 3.0m | | | 1 | | 7- | - | _ | | | - | | | + | | |
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| Hole No | M13-16 | | |
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CERTIFICATE OF ANALYSIS

REPORT 6472

TO: FALCONBRIDGE LIMITED

ATTN: STELLA POVODEN

P.O. BOX 1140

571 MONETA AVENUE

TIMMINS, ONTARIO P4N 7H9

CUSTOMER No. 1256

DATE SUBMITTED

12-Sep-88

REF. FILE 2731-D5

Total Pages 6

19 WHOLE CORES Proj. 8109

| | METHOD | DETECTION LIMIT | | METHOD | DETECTION LIMIT |
|-----------|--------|-----------------|--------|--------|-----------------|
| AU PPB | FADCP | 1. | IN PPM | I CPMS | 1. |
| LI PPM | AA | 10. | SB PPM | FAA | 0.2 |
| BE PPM | DCP | 5. | CS PPM | ICPMS | 1. |
| B PPM | DCP | 10. | LA PPH | ICPMS | 2. |
| CO2 % | WET | 0.01 | CE PPM | 1CPMS | 1. |
| WRMAJ % | WR | 0.01 | ND PPM | ! CPMS | 0.5 |
| V PPM | DCP | 10. | SM PPM | I CPMS | 0.5 |
| CR PPM | DCP | 2. | EU PPM | ICPMS | 0.1 |
| CO PPM | ICPMS | 1. | GD PPM | ICPMS | 0.5 |
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| CD PPM | DCP | 1. | U PPM | ICPMS | 0.5 |

X-RAY ASSAY LABORATORIES LIMITED

CERTIFIED BY

DATE 07-OCT-88



07-OCT-88

REPORT 6472

REF.FILE 2731-05

PAGE 1 OF 6

| SAMPLE | AU PPB | LI PPM | BE PPM | 8 PPM | co2 X | S PPM | V PPM | CR PPM | CO PPM | NI PPM |
|---------|--------|--------|-----------------|-------------|-------|-------|-------|--------|--------|--------|
| A102601 | 21 | 20 | | 40 | 4.37 | 100 | 280 | 260 | 40 | 110 |
| A102602 | 28 | 50 | < 5 | 60 | 6.21 | 760 | 330 | 260 | 47 | 100 |
| A102603 | 13 | 60 | <5 | 130 | 8.37 | 180 | 150 | •• | 42 | 250 |
| A102604 | 14 | 90 | < 5 | 90 | 8.27 | 180 | 150 | | 54 | 280 |
| A102605 | 35 | 100 | <5 | 30 | 2.47 | 80 | 170 | •• | 49 | 270 |
| A102606 | 32 | 130 | <5 | 40 | 6.22 | 80 | 170 | •• | 60 | 310 |
| A102607 | 24 | 50 | <5 | 770 | 13.7 | 1000 | 150 | | 56 | 260 |
| A102608 | 96 | 30 | <5 | 90 | 12.8 | 800 | 330 | 150 | 28 | 120 |
| A102609 | 3 | 100 | <5 | <i>7</i> 50 | 9.06 | 300 | 270 | 300 | 35 | 100 |
| A102610 | 1 | 50 | <5 | 90 | 15.8 | 900 | 270 | 78 | 30 | 56 |
| A102611 | 5 | 20 | <5 | 20 | 2.42 | 480 | 210 | 150 | 51 | 140 |
| A102612 | 1 | 20 | ' < 5 | 230 | 2.44 | 260 | 200 | 170 | 37 | 130 |
| A102613 | 3 | 40 | <5 | 60 | 4.14 | 120 | 360 | 180 | 38 | 160 |
| A102614 | 160 | 30 | <5 | 190 | 13.4 | 4600 | 440 | 26 | 27 | 44 |
| A102615 | 110 | 80 | <5 | <10 | 12.2 | 400 | 260 | 44 | 42 | 46 |
| A102616 | 30 | 150 | < 5 | 10 | 7.99 | 160 | 150 | • • | 58 | 290 |
| A102617 | 35 | <10 | <5 | 530 | 14.5 | 3900 | 300 | 80 | 33 | 63 |
| A102618 | 34 | <10 | 5 | 80 | 27.7 | 900 | 170 | 52 | 29 | 42 |
| AI02619 | 6 | 20 | <5 | 20 | 1.37 | 360 | 240 | 130 | 58 | 110 |



REPORT 6472

REF.FILE 2731-D5 PAGE 2 OF 6

| SAMPLE | CU PPM | ZN PPH | GA PPM | GE PPM | AS PPM | SE PPM | HO PPH | AG PPM | CD PPH | IN PPM |
|----------|--------|--------|--------|--------|--------|--------------|----------|--------|----------|--------------|
| A102601 | 120. | 98.0 | 12 | <10 | 3 | <3 | <2 <2 | <0.5 | <1 | <1 |
| A102602 | 110. | 88.0 | 15 | <10 | 90 | <3 | <2 | <0.5 | <1 | <1 |
| A102603 | 34.0 | 62.0 | 7 | <10 | 90 | 3 | <2 | <0.5 | ₹1 | <1 |
| A102604 | 59.0 | 69.0 | 9 | 10 | 180 | <3 | <2 | <0.5 | <1 | <1 |
| A102605 | 64.0 | 70.0 | 9 | <10 | 68 | <3 | <2 | <0.5 | <1 | ব |
| 303S01A | 40.0 | 73.0 | 8 | <10 | 100 | <3 | <2 | <0.5 | <1 | <1 |
| A102607 | 41.0 | 93.0 | 8 | <10 | 250 | <3 | <2 | <0.5 | <1 | <1 |
| 809201A | 130. | 78.0 | 14 | 20 | 290 | <3 | <2 | <0.5 | <1 | ব |
| A102609 | 92.0 | 88.0 | 12 | 10 | 49 | <3 | <2 | <0.5 | <1 | <1 |
| A102610 | 57.0 | 77.0 | 12 | <10 | 70 | <3 | <2 | <0.5 | <1 | <1 |
| A102611 | 59.0 | 80.0 | 11 | 10 | 29 | <3 | <2 | <0.5 | <1 | <1 |
| A102612 | 32.0 | 80.0 | 8 | <10 | 7 | <3 | 20 | <0.5 | <1 | <1 |
| A102613 | 34.0 | 85.0 | 16 | <10 | 56 | <3 | <2 | <0.5 | <1 | <1 |
| N102614 | 81.0 | 68.0 | 17 | <10 | 85 | <3 | <2 | <0.5 | <1 | <1 |
| A102615 | 100. | 76.0 | 13 | 10 | 270 | <3 | <2 | <0.5 | <1 | <1 |
| NI 02616 | 48.0 | 57.0 | 9 | 10 | 100 | <3 | <2 | <0.5 | <1 | <1 |
| 1102617 | 75.0 | 74.0 | 18 | 40 | 92 | 3 | <2 | <0.5 | ব | <1 |
| 1102618 | 70.0 | 51.0 | 10 | 30 | 95 | હ | 3 | <0.5 | 4 | <1 |
| 102619 | 56.0 | 83.0 | 16 | <10 | 11 | <3 | ą. | <0.5 | <u> </u> | <1 |



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| SAMPLE | SN PPN | SB PPM | CS PPM | LA PPM | CE PPH | ND PPH | SH PPH | EU PPM | GD PPM | DY PPM |
|---------|--------|--------|---------------|---------------|--------|--------|--------|--------|--------|---------|
| A102601 | <10 | 3.2 | <1 | < 2 | 5 | 4.2 | 1.1 | 0.4 | 1.4 | 2.1 |
| A102602 | <10 | 92.0 | 2 | <2 | 4 | 3.2 | 0.9 | 0.3 | 1.1 | 1.3 |
| A102603 | <10 | 11.0 | <1 | <2 | 2 | 1.3 | <0.5 | <0.1 | <0.5 | 0.6 |
| A102604 | <10 | 48.0 | <1 | <2 | 2 | 1.7 | <0.5 | <0.1 | <0.5 | 0.6 |
| A102605 | <10 | 23.0 | <1 | <2 | 2 | 1.4 | <0.5 | <0.1 | <0.5 | <0.5 |
| A102606 | <10 | 32.0 | <1 | <2 | 1 | 0.6 | <0.5 | 0.1 | <0.5 | 0.5 |
| A102607 | <10 | 28.0 | 2 | <2 | 2 | 1.5 | <0.5 | 0.2 | 0.5 | 0.8 |
| A102608 | <10 | 140. | 3 | 3 | 6 | 4.9 | 1.3 | 0.4 | 1.3 | 1.4 |
| A102609 | <10 | 3.2 | 4 | <2 | 3 | 3.0 | 0.9 | 0.3 | 1.0 | 1.0 |
| A102610 | <10 | 25.0 | 3 | <2 | 4 | 3.6 | 1.1 | 0.4 | 1.1 | 1.1 |
| AI02611 | <10 | 2.4 | <1 | <2 | 4 | 3.2 | 0.9 | 0.3 | 1.2 | 2.3 |
| A102612 | <10 | 3.6 | <1 | 2 | 5 | 4.0 | 1.1 | 0.3 | 1.6 | 2.6 |
| A102613 | <10 | 48.0 | 2 | <2 | 6 | 4.7 | 1.6 | 0.6 | 2.3 | 3.7 |
| A102614 | <10 | 26.0 | 4 | 2 | 7 | 5.6 | 1.4 | 0.4 | 1.4 | 1.3 |
| A102615 | <10 | 76.0 | <1 | <2 | 4 | 3.8 | 1.1 | 0.3 | 0.9 | 0.8 |
| A102616 | <10 | 56.0 | < 1 | <2 | 2 | 1.4 | <0.5 | <0.1 | <0.5 | <0.5 |
| A102617 | <10 | 23.0 | 7 | 3 | 8 | 6.4 | 1.7 | 0.5 | 1.4 | 1.2 |
| A102618 | <10 | 26.0 | 3 | <2 | 4 | 3.7 | 1.0 | 0.5 | 1.2 | 1.2 |
| A102619 | <10 | 2.4 | 2 | <2 | 5 | 3.6 | 0.9 | 0.2 | 1.2 | 2.1 |



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| SAMPLE | ER PPM | LU PPM | HF PPM | TA PPM | W PPM | TL PPH | PB PPM | BI PPM | TH PPM | U PPM |
|---------|--------|--------|--------|--------|-------|--------|--------------|--------|--------|-------|
| A102601 | 1.2 | 0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102602 | 0.7 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102603 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102604 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102605 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <\$ | <0.5 | <1 | <0.5 |
| A102606 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102607 | <0.5 | <0.1 | <1 | <1 | 3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102608 | 8.0 | 0.1 | <1 | <1 | 14 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102609 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102610 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102611 | 1.7 | 0.3 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102612 | 2.1 | 0.3 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102613 | 2.3 | 0.3 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102614 | 0.8 | 0.1 | 2 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102615 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | 10 | <0.5 | <1 | <0.5 |
| A102616 | <0.5 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102617 | 0.7 | 0.1 | 2 | <1 | 8 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102618 | 0.6 | <0.1 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |
| A102619 | 1.6 | 0.3 | <1 | <1 | <3 | <1 | <2 | <0.5 | <1 | <0.5 |



A102617

A102618

AI02619

44.4

26.7

48.8

12.1

6.42

17.4

9.92

19.1

4.90

| SAMPLE \ X | \$102 | AL203 | CAO | MGO | NA20 | K20 | FE203 | MNO | T102 | P205 | CR203 | F01 | SUM |
|----------------|-------|-------|------|------|------|------|-------|------|------|------|-------|------|-------|
| A102601 | 51.3 | 14.5 | 6.33 | 6.59 | 4.12 | 0.22 | 8.10 | 0.20 | 0.71 | 0.06 | | 7.77 | 99.9 |
| A102602 | 49.5 | 15.0 | 7.58 | 6.02 | 2.41 | 1.66 | 6.81 | 0.17 | 0.72 | 0.06 | ••• | 9.47 | 99.5 |
| A102603 | 44.0 | 13.9 | 10.5 | 7.75 | 2.37 | 0.42 | 8.90 | 0.19 | 0.25 | 0.03 | 0.09 | 12.0 | 100.4 |
| A102604 | 41.6 | 14.2 | 10.3 | 8.17 | 2.04 | 0.41 | 10.0 | 0.20 | 0.25 | 0.03 | 0.09 | 12.8 | 100.1 |
| A102605 | 46.4 | 16.2 | 2.12 | 12.6 | 2.03 | 0.11 | 10.7 | 0.12 | 0.31 | 0.03 | 0.10 | 8.77 | 99.5 |
| A102606 | 41.0 | 15.2 | 6.42 | 12.3 | 0.10 | 0.92 | 10.8 | 0.13 | 0.29 | 0.03 | 0.11 | 12.8 | 100.2 |
| A102607 | 38.8 | 13.7 | 9.41 | 9.31 | 0.21 | 2.28 | 9.21 | 0.20 | 0.25 | 0.03 | 0.09 | 16.5 | 100.1 |
| A102608 | 44.9 | 13.2 | 8.99 | 4.74 | 1.14 | 2.84 | 9.11 | 0.17 | 0.91 | 0.06 | ••• | 14.2 | 100.3 |
| A102609 | 44.6 | 13.9 | 6.44 | 8.05 | 0.95 | 1.99 | 11.0 | 0.16 | 0.64 | 0.05 | ••• | 12.3 | 100.2 |
| A102610 | 42.3 | 10.6 | 13.9 | 4.06 | 0.53 | 1.84 | 9.14 | 0.23 | 0.69 | 0.06 | ••• | 16.8 | 100.2 |
| A102611 | 47.9 | 17.6 | 5.26 | 8.21 | 2,91 | 0.63 | 9.96 | 0.21 | 0.45 | 0.05 | ••• | 6.77 | 100.0 |
| A102612 | 49.1 | 15.6 | 6.88 | 7.97 | 2.91 | 0.07 | 9.56 | 0.24 | 0.49 | 0.05 | ••• | 6.70 | 99.6 |
| A102613 | 50.3 | 14.9 | 6.58 | 5.59 | 2.60 | 1.06 | 10.1 | 0.19 | 1.00 | 0.08 | ••• | 7.47 | 99.9 |
| A102614 | 44.8 | 10.7 | 9.32 | 4.66 | 0.86 | 1.79 | 11.1 | 0.30 | 1.20 | 0.10 | ••• | 14.0 | 98.9 |
| AI02615 | 42.0 | 12.0 | 9.59 | 5.73 | 3.39 | 0.05 | 12.2 | 0.35 | 0.71 | 0.06 | ••• | 14.3 | 100.4 |
| A102616 | 43.6 | 14.1 | 7.80 | 10.4 | 1.89 | 0.13 | 9.43 | 0.18 | 0.26 | 0.03 | 0.10 | 12.4 | 100 T |
| 4100/47 | | 40.4 | | | | | | | 4.50 | v.vJ | V. 10 | 16.4 | 100.3 |

2.67

1.27

0.60

9.72

9.28

9.96

0.16

0.28

0.24

1.06

0.41

0.53

0.10

0.04

0.06

15.1

27.8

99.8

100.5

6.62 99.8

XRF W.R.A. SUMS INCLUDE ALL ELEMENTS DETERMINED. FOR SUMMATION, ELEMENTS ARE CALCULATED AS OXIDES

0.54

0.35

2.10

3.99

8.84

8.52



| SAMPLE \ PPH | RB | SR | Y | ZR | NB | BA |
|--------------|-----|-----|-----|-----|-----|-----|
| AI02601 | 11 | 86 | 19 | <10 | <10 | 112 |
| A102602 | 42 | 25 | 13 | 15 | 15 | 698 |
| A102603 | <10 | 63 | <10 | <10 | 17 | 197 |
| A102604 | 10 | 84 | <10 | <10 | <10 | 222 |
| A102605 | <10 | 16 | <10 | <10 | 13 | 79 |
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| A102607 | 59 | 27 | 14 | <10 | <10 | 506 |
| A102608 | 92 | 82 | <10 | 42 | <10 | 461 |
| A102609 | 61 | 53 | <10 | <10 | 15 | 565 |
| A102610 | 55 | 76 | 17 | 11 | 12 | 263 |
| A102611 | 25 | 45 | <10 | <10 | <10 | 290 |
| A102612 | 15 | 35 | 22 | 17 | 20 | -84 |
| A102613 | 32 | 42 | 24 | 31 | <10 | 507 |
| A102614 | 53 | 93 | 16 | 49 | 20 | 217 |
| A102615 | 12 | 52 | 12 | 19 | 15 | 38 |
| A102616 | 30 | 66 | 14 | <10 | <10 | 59 |
| A102617 | 77 | 107 | 16 | 47 | <10 | 210 |
| A102618 | 34 | 167 | <10 | <10 | 15 | 116 |
| A102619 | 29 | 36 | 13 | 18 | 13 | 103 |