

DIAMOND DRI



32D12SW0089 27 HARKER

010

TOWNSHIP: Harker

REPORT No.: 27

WORK PERFORMED BY: Amax Exploration Ltd.

<u>CLAIM No.</u>	<u>HOLE No.</u>	<u>FOOTAGE</u>	<u>DATE</u>	<u>NOTE</u>
L 586456	839-39-11	70.0m	May/82	(1)
L 586457	839-39-12	100.0m	May/82	(1)
L 529378	839-39-13	164.0m	May/82	(1)
L 529375	839-39-14	159.0m	May/82	(1)
L 586460	010-39-15	167.7m	Sept/82	(1)

460m

NOTES: (1) #416-82

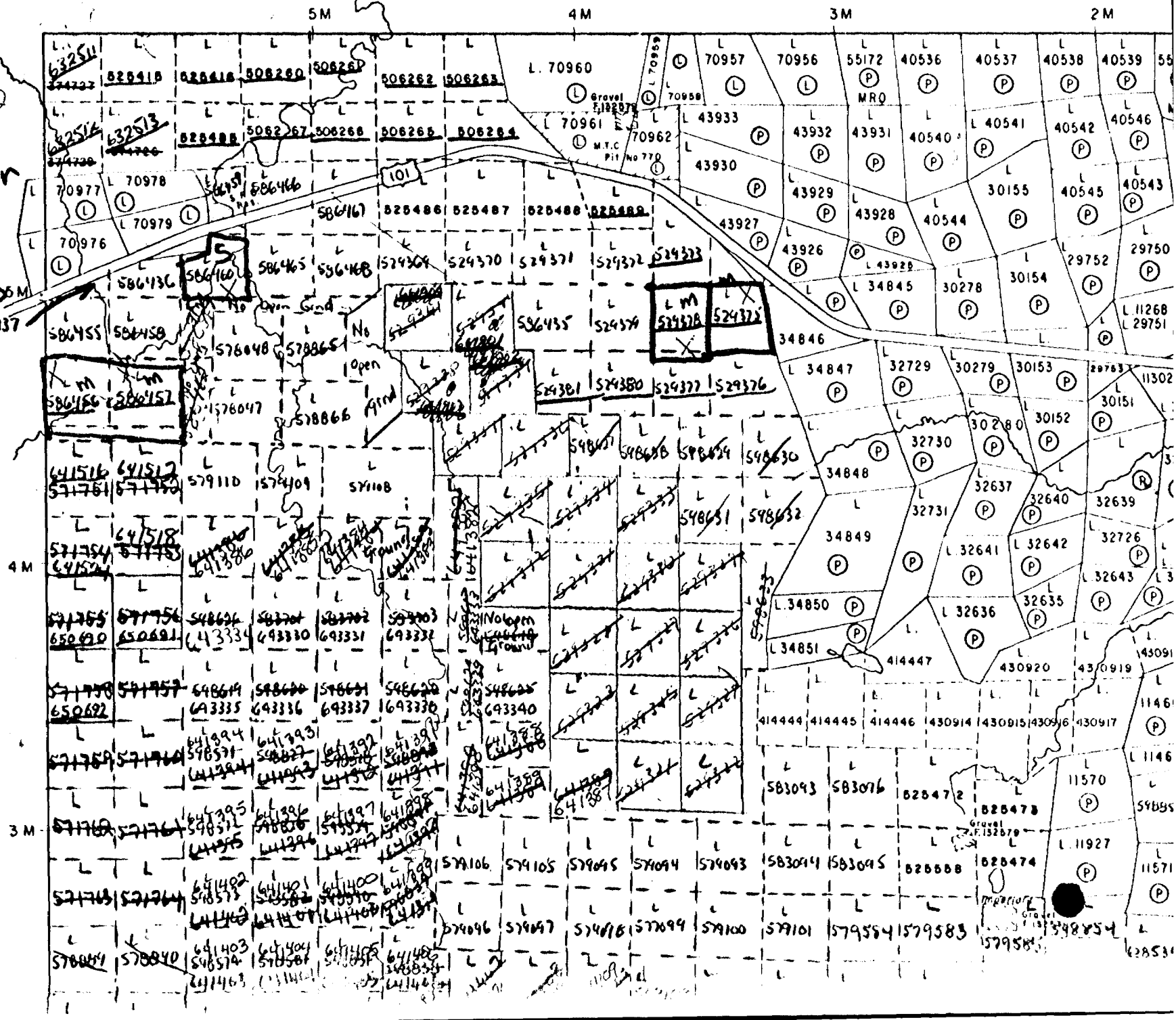
LAMPLUGH TWP. M-358

#416-82

Harker
twp

M353

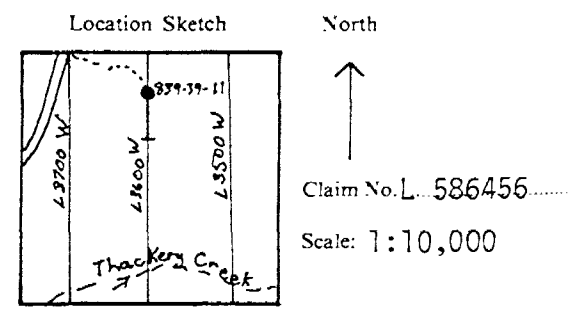
ARRISON TWP. M-349



AMAX MINERALS EXPLORATION
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DIAMOND DRILL RECORD

Hole No. 839-39-11

Hole No. 839-39-11 Sheet 1	Length 70.0 metres	Commenced May 12, 1982	Dip: Collar -45°
Property Harker 4	Bearing Grid South	Completed May 14, 1982	Etch Test Depth Rdg. True
Township Harker	Dip -45°	Drilling Co. St. Lambert	none
Location L 3600W, 1300S	Objective To test a magnetic anomaly (high).	Core Size BQ	
Logged By Gene Kent		Casing Left/ Lost in Hole none	
Core Location Penny Lake			
Remarks Mafic/ultramafic flow rocks were encountered under shallow overburden, the hole was cut short.			



Metres		DESCRIPTION	Sample No.	From	To	Length						
From	To											
0	23.0	OVERBURDEN										
23.0	70.0	ULTRAMAFIC / MAFIC FLOW ROCK										
	70.0	END OF HOLE										

Gene Kent



L-586456

L-3700W

L-3600W

L-3500W

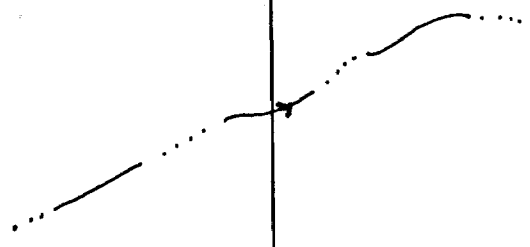
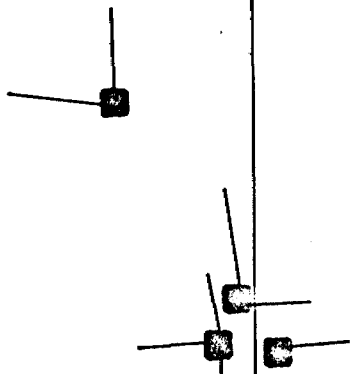
L-3400W

60,000 ⌘

O.B.
25 m

010-39-11
-45°

70.0 m



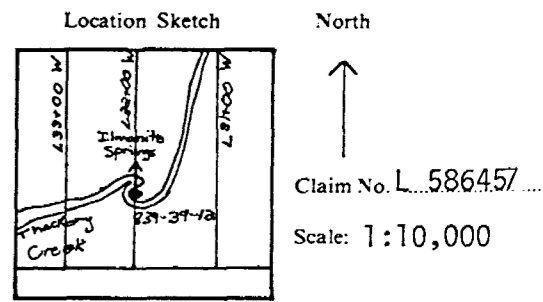
DRILL HOLE LOCATION SKETCH
Harker Township
Scale: 1:2500

D.D.H.: 010-39-11

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DIAMOND DRILL RECORD

Hole No. 839-39-12

Hole No. 839-39-12 Sheet 1	Length 100.0 metres	Commenced May 15, 1982	Dip: Collar -45°
Property Harker 4	Bearing 360° / Grid North	Completed May 17, 1982	Etch Test Depth Rdg. True 1 100.0m 50° 43°
Township Harker	Dip -45°	Drilling Co. St. Lambert	
Location 32+00W, 13+87S	Objective To intersect possible iron formation detected from geophysical surveys.	Core Size BQ	
Logged By John Walmsley		Casing Left/ Lost in Hole 15 metres of NQ; 40 metres of ABS Plastic Pipe.	
Core Location Perry Lake			



Remarks Casing was pulled and an attempt of leaving 57.0 metres of ABS pipe in the hole for geophysical testing was a failure. The magnetic anomaly was due to the presence of ultramafic rocks in a fault-alteration zone.

Metres		DESCRIPTION
From	To	
0	58.59	OVERBURDEN
58.59	60.22	SYENITE INTRUSIVE
60.22	66.18	BASALT
66.18	67.85	SYENITE INTRUSIVE
67.85	69.12	BASALT
69.12	69.48	SYENITE INTRUSIVE
69.48	70.22	TECTONIC FACIES
70.22	77.51	ULTRAMAFICS
77.51	78.13	BIOTITE LAMPROPHYRE
78.13	78.68	SYENITE INTRUSIVE
78.68	79.93	ULTRAMAFICS
79.93	81.92	BIOTITE LAMPROPHYRE

R. J. Passeri

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Hole No. 839-39-12
Sheet No. 3

Metres		DESCRIPTION
From	To	
0	58.59	OVERBURDEN
		- sand and clay + gravel + boulders drilling was done under Thackery Creek
58.59	60.22	SYENITE INTRUSIVE
		- a coarse, pink coloured rock with phenocrysts of potash feldspar making up 25% and biotite mica 15%
		- carbonates are present in the rock and carbonate stringers pass through the core at random
		- toward the down hole contact with the country rock, inclusive of the country rock begin (at 59.5 metres). These inclusions vary in size from 0.5cm to 12.0cm and contain carbonate stringers passing through themselves and the syenite, and some only within the inclusions
		- pyrite is finely to coarsely disseminated throughout the syenite making up 5 - 6%
		- some finely disseminated pyrite is visible in the inclusions making up <1%
		- contact with wall rock is sharp at 90° to the core axis.
		- very hard
60.22	66.18	BASALT
		- fine to medium grained, metamorphic rock with patches of coarser, acicular crystals of chlorite; rock is moderately soft
		- green colour due to high abundance of chlorite
		- the rock is slightly magnetic and fairly soft
		- finely disseminated pyrite exists throughout making up about 1 - 2% of the rock
		- carbonate stringers are about 4 to 0.5mm and are randomly oriented. There is one syenite dykelet at 61.46 metres, 1cm thick
		65.38 - 66.18 - potash feldspar becomes visible turning the rock slightly pink (about 5% of the rock) and carbonates are part of the make-up in this section
		- very slightly magnetic

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Hole No. 839-39-12
Sheet No. 4

Metres		DESCRIPTION
From	To	
66.18	67.85	<p>SYENITE INTRUSIVE</p> <ul style="list-style-type: none"> - as described 58.59 - 60.22 - fine grained, more reddish-brown in colour than previous intrusion - pyrite 3 - 4% and finely disseminated - one large inclusion from 67.12 to 67.66 metres of greenstone - very fractured and one quartz-carbonate vein at 67.18 - some blotches of pyrite between fractures in the carbonate stringers - contact with wall rock runs parallel to core axis from 67.30 to 67.85 - some carbonate veins oriented 45° to core axis
67.85	69.12	<p>BASALT</p> <ul style="list-style-type: none"> - as described 60.22 to 66.18, with less than 1% pyrite, and carbonate - 4 small syenite dyklets pass through core randomly 67.99 - 68.56 - potash feldspar increases from 0 - 30% within 3cm starting at 68.00 metres - potash feldspar decreases from 30% - 0 within 17cm ending at 68.56 metres 68.56 - 68.90 - as described 60.22 to 66.18 68.90 - 69.12 - contact with syenite dyke at about 20° to core axis
69.12	69.48	<p>SYENITE INTRUSIVE</p> <ul style="list-style-type: none"> - as described 66.18 to 67.85 - quite fractured with more pyrite filled fractures and pyrite blotches 5-6%
69.48	70.22	<p>TECTONIC FACIES</p> <ul style="list-style-type: none"> 69.48 - 69.93 - Tectonic Breccia - very broken up syenite with chloritic matrix - fragments quite angular showing little movement - pyrite in both syenite fragments and chlorite matrix - carbonate stringers in matrix

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DIAMOND DRILL RECORD

Hole No. 839-39-12
Sheet No. 5

Metres		DESCRIPTION
From	To	
69.48	70.22	TECTONIC FACIES (continued)
		Fault: 69.93 - 70.22 - chloritic mud
		- very soft
		- easily broken apart
		- high carbonation - strong reaction to hydrochloric acid
		- slightly magnetic
		- down hole contact is 15 - 20° to core axis
70.22	77.51	ULTRAMAFICS
		- a fine grained, dark grey rock that scratches fairly easily with a knife. This rock is composed of serpentine and talc
		- carbonates throughout make-up
		- carbonate stringers run randomly but most at 15 - 20° to core axis
		- areas altered by carbonate veins show light green alteration
		- these areas contain disseminated pyrite and pyrite stringers which run along the contacts between the veins and the wall rock
		- the core is moderately magnetic
77.51	78.13	BIOTITE LAMPROPHYRE
		- 77.51 - 71.56 - chilled margin
		- small phenocrysts of biotite in mafics, and feldspar phenocrysts
		- a dark, brownish coloured, fairly soft rock that is non-magnetic
		- a zone of finely disseminated pyrite ranges from 77.67 to 78.13m (about 1% average) with a zone of 2% between 70.70 to 70.72 metres
78.13	78.68	SYENITE INTRUSIVE
		- as described 66.18 to 67.85
		- very fractured with fractures remaining unfilled by carbonates as in previously described syenite intrusions
		- most fractures at 20° to core axis
		- pyrite more coarsely disseminated, 3 - 4%, with recognizable cubes up to 3mm wide
		- up hole and down hole contacts at 20° to core axis

AMAX MINERALS EXPLORATION
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DIAMOND DRILL RECORD

Hole No. 839-39-12
Sheet No. 6

Metres		DESCRIPTION
From	To	
78.68	79.93	ULTRAMAFICS
		- as described from 70.22 to 77.51
		- as described 78.13 to 78.68
79.93	81.92	BIOTITE LAMPROPHYRE
		79.93 - 80.1 - chilled margin
		- as described from 77.51 to 78.13
		- 80.21 a syenite dykelet runs 20° to core axis and 1cm thick with offsets due to microfaults at about 80° to core axis
		- another syenite dykelet occurs at 80.32 metres and is 1.5 to 2cm thick running 20° to the core axis with similar offsets
		- this dykelet has a greater percentage of biotite; up to 25%
		- 81.90 to 81.92 - chilled margin
81.92	82.5	ULTRAMAFICS
		- as described from 70.27 to 77.51
		- feldspar phenocrysts from contact to 82.52 make up about 5% of core
		- 81.92 and 82.03 are two syenite dykelets as described at 80.21 running 20° to core axis
		- finely disseminated pyrite make up <1% of rock
		- carbonate stringers have inclusions of wall rock
82.5	83.35	BIOTITE LAMPROPHYRE
		- as described from 77.51 to 78.13
		- contacts 20° to core axis
		- at 83.14 and 83.31 are two zones of more fractured rock than exists in the rest of this section
83.35	85.29	BASALT
		- as described 60.22 to 66.18
		- at 83.83 a carbonate vein containing many fragments of highly altered, wall-rock meanders more or less parallel to the core axis, containing less than 1% disseminated pyrite and stretches to 85.45 metres, being at the most 1cm thick

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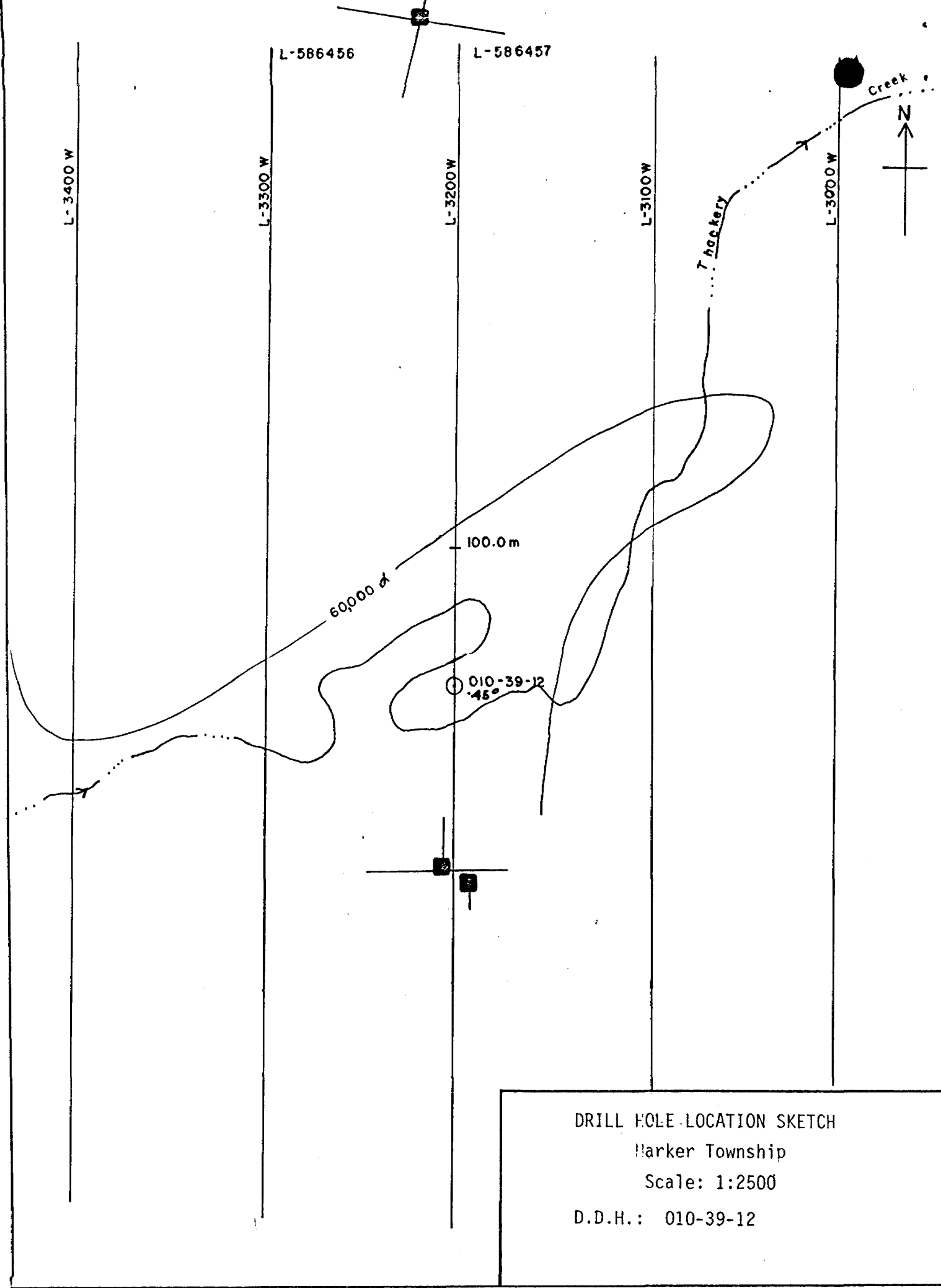
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Sheet No. 7

Metres		DESCRIPTION
From	To	
83.35	85.29	BASALT (continued)
		- some carbonate stringers contain finely disseminated pyrite but very little
		- pyrite makes up much less than 1% of the total rock
85.29	87.60	ULTRAMAFICS
		- contact with basalt 20° to core axis
		- as described from 70.22 to 77.51
		- some carbonate veins running 45° to core axis and some brecciated veins exist
87.60	90.95	BIOTITE LAMPROPHYRE
		- as described from 77.51 to 78.13
		- up hole contact shows movement as the lamprophyre is quite fractured for the first 3cm
		- no visible pyrite
		89.80 - 90.00 - fault zone
		- very fractured rock and broken core
		90.32 - 91.22 - fault zone
		- very fractured rock and broken core
90.95	93.84	ULTRAMAFICS
		- as described from 70.22 to 77.51
		- from 90.95 to 91.55, fault breccia with carbonate matrix
		- 91.78 to 92.42, fractured and brecciated ultramafics with pyrite cubes less than 1% in carbonate matrix
		93.37 to 93.64 - fractured rock with carbonate matrix
		- carbonate stringers 20° to core axis
		- pyrite stringers in fractures make up less than 1% of rock
93.84	100.00	BASALT
		- 93.84 - 94.16 - brecciated greenstone with carbonate matrix
		- none magnetic, fine grained fragments

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Hole No. 839-39-12
Sheet No. 8

Metres		DESCRIPTION
From	To	
93.84	100.00	BASALT (continued)
		94.16 - 94.40 - broken up core through fault zone
		- non magnetic, fine grained
		- fault boundary marked by 3cm thick calcite vein having some inclusions of wall fragments
		94.40 - 95.25 - highly fractured rock with most fractures filled with carbonates
		- fine grained and slightly harder than greenstone described from 60.22 to 66.18
		- non-magnetic
		- disseminated pyrite <1%, most pyrite occurring in carbonate stringers
		- at 95.16 a calcite vein, 3cm thick has been stained orange in parts probably due to hematite. Pyrite dissemination increases to about 1% within this vein, and pyrite in stringers around this vein also increases. The vein is 20° to core axis
		95.25 - - greenstone more like that described from 60.22 to 66.18 however this rock is non-magnetic
		- it is fairly fractured with most fractures being filled with carbonates
		- pyrite is less than 1% and mostly in stringers though some small blotches are present
		- at 97.00 metres the calcite stringers become rust stained probably due to increased hematite content or potash feldspar
		- also at 97.00m, a barely discernable clast, highly altered and fractured contains about 1% disseminated pyrite. This clast measures, 29.0cm along the core axis.
		- at 97.29, right next to the above clast is another clast
		- much more easily discernable and with much less pyrite. This clast is highly carbonatized and lineations are about 30° to the core axis.
		- at 97.35, another clast is visible, less so than the above clast but more so than the first. The down hole boundary of this clast is not visible. Lineations formed by the carbonates and host rock within the clast as in the second clast are 30° to the core axis.



DRILL HOLE LOCATION SKETCH
Harker Township
Scale: 1:2500
D.D.H.: 010-39-12

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Hole No. 839-39-13

Hole No. 839-39-13 Sheet 1	Length 164.0 metres	Commenced May 18, 1982	Dip: Collar -50°												
Property Harker-4	Bearing Grid South	Completed May 25, 1982	<table border="1"> <thead> <tr> <th>Etch Test</th> <th>Depth</th> <th>Rdg.</th> <th>True</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>75.0m</td> <td>58°</td> <td>51°</td> </tr> <tr> <td>2</td> <td>164.0m</td> <td>57°</td> <td>50°</td> </tr> </tbody> </table>	Etch Test	Depth	Rdg.	True	1	75.0m	58°	51°	2	164.0m	57°	50°
Etch Test	Depth	Rdg.		True											
1	75.0m	58°	51°												
2	164.0m	57°	50°												
Township Harker	Dip -50°	Drilling Co. St. Lambert	<p>Location Sketch</p>												
Location L 400E, 865S	Objective To test a coincident magnetic - electromagnetic anomaly	Core Size BQ		<p>North ↑</p> <p>Claim No. L-529378</p> <p>Scale: 1:10,000</p>											
Logged By G. Kent	Casing Left/ Lost in Hole 10.0 metres														
Core Location Perry Lake															

Remarks ABS. pipe was left in the hole.

Metres		DESCRIPTION
From	To	
0	29.35	OVERBURDEN
29.35	55.70	CHERT / CHERT BRECCIA
55.70	56.45	IRON FORMATION
56.45	56.87	CHERT BRECCIA
56.87	56.93	SHEAR
56.93	58.31	WACKE
58.31	59.66	BRECCIA
59.66	62.79	WACKE
62.79	64.30	CHERT
64.30	72.11	TALC - CHLORITE SCHIST
72.11	88.30	CHERT / CHERT BRECCIA / JASPERLITE
88.30	107.10	IRON FORMATION

R. J. Fawcett

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Hole No. 839-39-13
Sheet No. 5

Metres		DESCRIPTION
From	To	
0	29.35	OVERBURDEN
		sand
29.35	55.70	CHERT / CHERT BRECCIA
		A massive, siliceous rock without any apparent bedding or lamination. The rock consists of 80%(+) microcrystalline quartz and varies from light pink to light grey in colour. The rock has been brecciated with most of the core showing break-up clasts of chert separated by narrow veins of quartz or chlorite. Fractured and veined surfaces may show some specularite, i.e. 31.80 - 31.81 metres. 32.16 - 32.30 metres.
		Pyrite occurs as finely disseminated crystals and ranges up to 1% by volume. Increasing brecciation and pyrite content.
		Sharp contact at 55.7 metres, orientated 70° to core axis.
55.70	56.45	IRON FORMATION
		Banded magnetite - chert iron formation. A black lustrous rock with a sharp upper contact of 70° to the core axis and an abrupt lower contact at 50° to core axis. Whitish coloured chert bands make up approximately 20% of the unit. These laminae are orientated at 70° to core axis, but show a high degree of shattering and small scale offsets. This unit is highly magnetic and contrasts with the non-magnetic rock overlying it. No conductivity is noted.
56.45	56.87	CHERT BRECCIA
		As described 29.35 - 55.70 but with a higher degree of brecciation and with 3-4% disseminated pyrite.
56.87	56.93	SHEAR
		Green - white foliated, carbonate - chlorite schist.

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Hole No. 839-39-13

Sheet No. 6

Metres		DESCRIPTION
From	To	
56.93	58.31	WACKE
		A massive, unsorted clastic rock with hematized contacts. The rock is fault bounded with sharp upper and lower contacts. The matrix is fine grained with 1-2mm clasts of feldspar and or lithic fragments. This unit shows moderate to weak magnetism indicating possible magnetite mineralization or magnetite derived from the underlying iron formation.
58.31	59.66	BRECCIA
		A brecciated rock with shearing/lamination variable from 10-80° to the core axis. Highly altered clasts of chert are set in a chloritic matrix. Chert clasts make up 10-15% of the rock.
59.66	62.79	WACKE
		As described 56.93 to 58.31. Sharp contact with breccia unit above at 65° to the core axis. Pyrite is finely disseminated about 1%.
		59.76 - 59.81, 60.35 - 60.38 and 60.72 - 60.76, pyrite is 1-2% moderately magnetic.
		62.28 - 62.79, brecciated and sheared rock, highly carbonatized and chloritized. The segment starts relatively soft and non-magnetic and becomes more siliceous and moderately weakly magnetized towards the down hole contact which is 35° to core axis.
62.79	64.30	CHERT
		As described 29.35 - 55.70 but less brecciation. Carbonation makes up 25% - 40% of the rock. Quartz veins are about 2 in 0.5 m. Magnetization is moderate and pyrite <1%.

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Hole No. 839-39-13
Sheet No. 7

Metres		DESCRIPTION
From	To	
64.30	72.11	TALC - CHLORITE SCHIST
		64.30 - 64.63 - Fault zone - core is broken up and has been 90% altered to chlorite. Uphole contact is 70° to core axis. Dark grey-green.
		64.63 - 65.28 - Breccia - very soft, brecciated rock with moderate magnetite content. The rock can be scratched with a fingernail and is greasy feeling. Chloritic clasts show flattening 70° to core axis.
		65.28 - 69.73 - as described from 64.63 - 65.28 but no brecciation. Finely disseminated pyrite is <1%. From 66.00 the rock becomes less schistose and more like a siltstone matrix with chloritic clasts of up to 3mm. From 68.59 - 68.66 is a zone of consol dated powdered rock. From 69.07 - 69.12 is a zone of slightly pinkish-brown rock, very soft, hosting disseminated specular hematite, 1%.
72.11	88.30	CHERT / CHERT BRECCIA / JASPERLITE
		As described from 29.35 - 55.70. Carbonate-chlorite stringers fill most of the fractures. Carbonates make up about 30% of the massive, less cherty zones. Pyrite is finely disseminated though not evenly distributed making up about 2% over short zones but less than 1%-2% on the average. The rock is weakly magnetic with a few zones of moderate magnetization. Iron content grades into higher proportions turning the rock a deep red colour, almost a jasperlite, in some zones and grades into less proportions in other zones turning the rock a pale green. The rock is very hard.
		Interbedded with the chert is a wacke. This rock is hard but can be scratched with a knife and beds are at 45° to the core axis. Interbedding becomes more constant at about 84.90 metres and by 86.30, chert beds are up to 1cm thick and alternating with the wacke which are up to 0.5cm thick. There is some slumping of the chert into the wacke. Pyrite is less than 1%. Very little carbonates in the wacke. Some specular hematite stringers (less than 1% of all stringers).

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DIAMOND DRILL RECORD

Hole No. 839-39-13
Sheet No. 8

Metres		DESCRIPTION
From	To	
88.30	107.10	IRON FORMATION
		Interbedded chert-wacke rock persists but magnetite bands begin. The bands start out few in number and from 0.5cm to 3.5cm thick. They are oriented 45° to the core axis. The chert-wacke beds are more magnetic than in the previous segment. Pyrite is less than 1%. Moving further down hole, magnetite bands become more numerous. By 92.23 metres, magnetite laminations begin in greater numbers.
		92.23 - 100.07, Interbedded Chert / Magnetite Iron Formation The beds are thinly laminated and show sediment slumping and folding. They are orientated 45° to the core axis. Pyrite is less than 1% and occurs mainly in patches in and around carbonate stringers. A few pyrite stringers exist. The rock is strongly magnetic.
		100.07 - 101.73, Interbedded Chert / Wacke - as described from 72.11 to 88.30 with some magnetite laminations close to each boundary. No sharp contacts. Moderately magnetic.
		101.73 - 104.23, Iron Formation - as described 92.23 - 100.07. Laminations show more off-setting (ie. micro faulting) - and carbonate stringers along plane of offset orientated mostly at 30° to the core axis. Pyrite less than 1%.
		104.23 - 106.20, Chert Jasperlite - as described 29.35 - 55.70. At 105.23 a quartz vein 0.5cm thick runs 45° to the core axis. Magnetite, laminations extend for about 5cm on either side of this, where magnetization is strong. Deeper red colour. Pyrite is less than 1% and magnetization is moderate.
		106.20 - 107.10, Brecciated Iron Formation - laminations not visible. Fragments in chert-carbonate-magnetic matrix. Finely disseminated pyrite is less than 1% and only within 20cm of upper boundary. A quartz vein runs 20° to the core axis as do the quartz-carbonate stringers. Finely disseminated pyrite of 1% occurs near the down hole boundary. No sharp contacts.

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Hole No. 839-39-13
Sheet No. 9

Metres		DESCRIPTION
From	To	
107.10	109.30	JASPERLITE
		As described under chert from 29.35 - 55.70 but more massive and deeper red colour. Pyrite less than 1% and found in quartz-carbonate stringers. Weakly magnetic.
109.30	110.36	IRON FORMATION
		As described 92.23 - 100.07. Pyrite less than 1% in quartz-carbonate veins.
110.36	111.00	CHERT BRECCIA
		As described from 29.35 - 55.70. Very hard. More pale green in colour, little red. Some magnetite laminations, also broken up. Pyrite finely disseminated, less than 1%. From 110.84 - 110.92 pyrite about 2% alot of which is coarsely disseminated in magnetite laminations. Moderately magnetic.
111.00	111.52	FAULT ZONE
		Moderately hard, consolidated rock with fragments of chert. Broken core.
111.52	112.62	CHERT BRECCIA
		As described 110.36 - 111.00. No magnetite bands. Moderately to weak magnetism. Pyrite finely disseminated less than 1%.
112.62	113.40	GREYWACKE
		A grey-green massive rock. A sharp up hole contact at 20° to the core axis. Can be scratched with a knife. A circular chlorite crystal up to 2mm long randomly orientated. At 113.67 to 113.83 a zone of chert breccia. Below this breccia the rock becomes reddish-green and a little harder - moderately magnetic.
		113.19 - 113.41 - lost core

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Hole No. 839-39-13

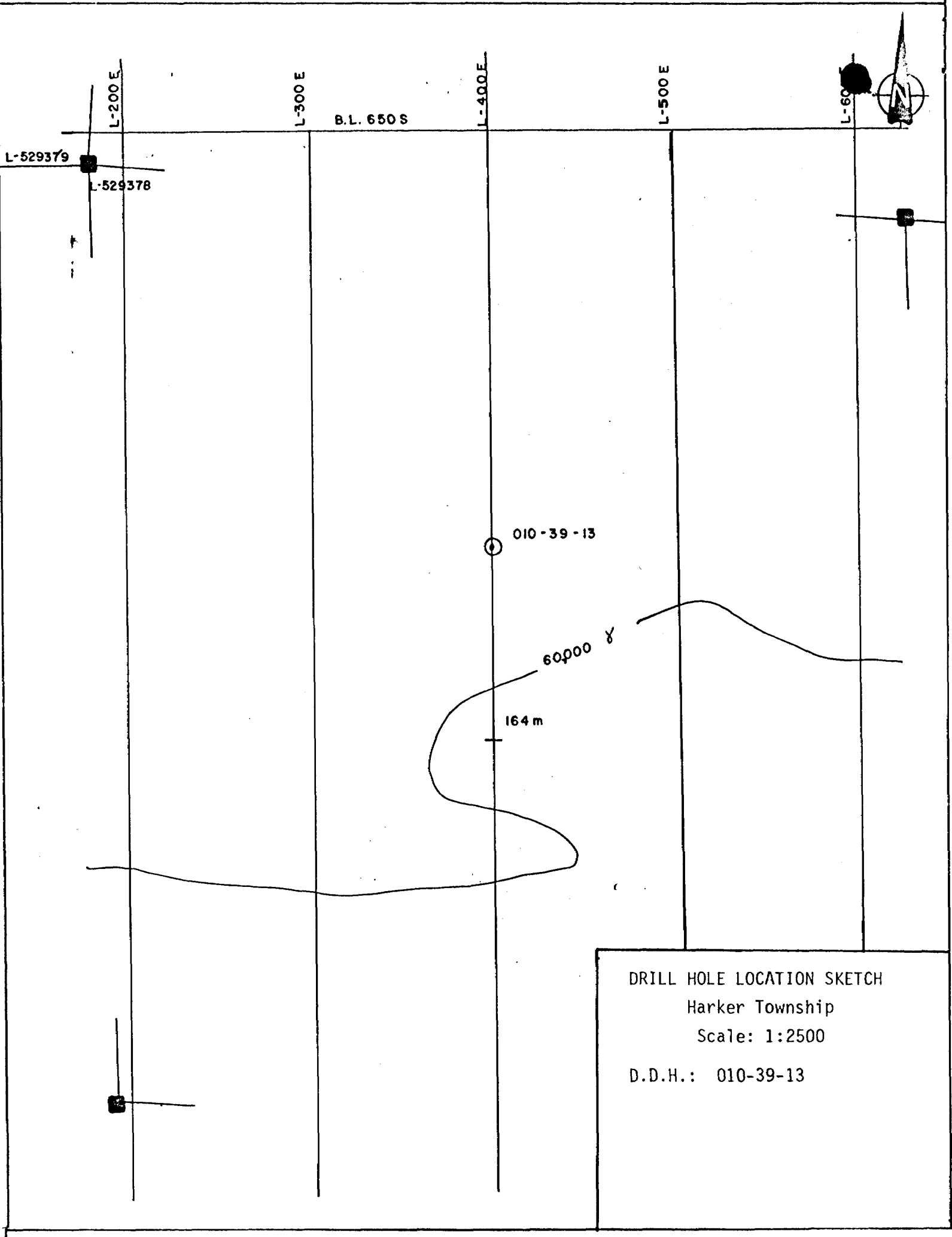
Sheet No. 10

Metres		DESCRIPTION
From	To	
113.40	137.15	JASPERLITE / CHERT BRECCIA
		As described from 29.35 to 55.70. Finely disseminated pyrite less than 1%. Some magnetite laminations and zones of wacke. Moderately magnetic. 114.06 quartz vein at 25° to core axis, 3.5cm thick with disseminated pyrite along contacts.
		120.32 - 120.79, Fault zone - sheared and chloritized crushed rock. Non-magnetic.
		120.78 - 122.78, Consolidated, silicified crushed rock with chloritic matrix. Finely disseminated pyrite, less than 1%.
		Reddish colour gives way to more green bands below fault. At 123.14, less fracturing. Very weakly magnetic. No longer jasperlite. Quartz-carbonate filled fractures introducing pyrite and hematite staining into surrounding rock.
		125.19 - 126.88, Pyrite occurs in blotches in zones in concentrations 3%.
		126.87 - 127.60, Iron Formation - quite fractured with magnetite lamination running almost parallel to the core axis. Coarsely disseminated pyrite up to 3%.
		128.02 - 129.28, Chert / Jasperlite - more massive, less fracturing. Weakly magnetic - disseminated pyrite less than 1%.
		129.52 - 130.34, Massive Iron Formation - What laminations are present are 45° to the core axis. Disseminated pyrite less than 1%.
		Iron content is leaning out. Chert is more greenish in colour. Coarser grained bands and bands of greener chert more numerous. Pyrite is finely disseminated and less than 1%. Weakly magnetic.
		136.00 - 136.43, Zone of disseminated pyrite up to 3%.

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DIAMOND DRILL RECORD

Hole No. 839-31-13
 Sheet No. 11

Metres		DESCRIPTION
From	To	
137.15	161.40	GREYWACKE
		Hard, siliceous, grey-green rock, weakly to non-magnetic with bands of reddish brown chert. Iron content is very low. Disseminated pyrite less than 1%. Bands of siliceous siltstone interbedded at 45° to core axis.
		140.09 - 140.18, disseminated pyrite up to 2%.
		Some zones of brecciated pale green + red chert still interbedded. Pyrite is finely disseminated and less than 1% on average but zones of 1% to 2% do occur (ie. 146.05, 146.43 - 146.57, 147.74, 147.89). Possible graded bedding puts tops in up hole direction.
		150.68 - 151.02, quartz vein runs almost parallel to core axis containing less than 1% disseminated sulphides.
		154.79 - 161.46, brecciated greywacke and chert. Weakly magnetic. Disseminated pyrite less than 1%.
161.46	164.00	CHERT / CHERT BRECCIA
		As described from 29.35 - 55.70. Weakly magnetic. Disseminated pyrite less than 1%.
		163.60 - 164.00, magnetite laminate interbedded with chert. Less disturbed than previous. As described 92.23 - 100.07. Laminations 35° to core axis. 163.91 to 164.00, magnetite laminations brecciated. Pyrite finely disseminated less than 1%.
	164.00	END OF HOLE



DRILL HOLE LOCATION SKETCH
Harker Township
Scale: 1:2500
D.D.H.: 010-39-13

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DIAMOND DRILL RECORD

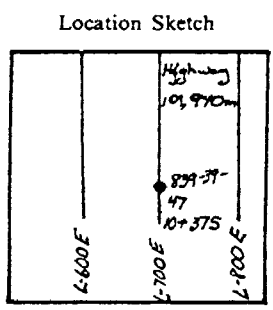
Hole No. 839-39-14

Hole No. 839-39-14 Sheet 1
Property Harker-4
Township Harker
Location L 700E
1037S
Logged By John Walmsley
Core Location Perry Lake

Length 159.0 metres
Bearing 180°
Dip -45°
Objective

Commenced May 28, 1982
Completed May 31, 1982
Drilling Co. St. Lambert
Core Size BQ
Casing Left/ Lost in Hole none

Dip: Collar -45°
Etch Test Depth Rdg. True
1 150.0m 48° 41°



North ↑
Claim No. 529375
Scale:

Remarks Drilling southern contact of iron formation.
ABS casing put into hole.

Metres		DESCRIPTION
From	To	
0	16.5	OVERBURDEN
16.50	24.89	MAGNETITE IRON FORMATION
24.89	25.56	QUARTZITE
25.56	72.88	MAGNETITE IRON FORMATION
72.88	74.39	BRECCIATED CHERT / GRYEWACKE
74.39	75.83	MASSIVE IRON FORMATION
75.83	80.01	MAGNETITE - HEMATITE IRON FORMATION / GREYWACKE
80.01	151.05	GREYWACKE
151.05	159.00	MAFIC VOLCANICS
	159.00	END OF HOLE

R. J. Ransom

AMAX MINERALS EXPLORATION
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DIAMOND DRILL RECORD

Hole No. 839-38-14
Sheet No. 4

Metres		D E S C R I P T I O N
From	To	
0	16.50	OVERBURDEN sand
16.50	24.89	MAGNETITE IRON FORMATION A hard, highly magnetic, laminated, fine grained rock with laminations of 45° to the core axis and averaging 2mm in thickness. Laminations show very little disturbance (ie no slumping) with some bands being offset slightly along small fractures. Very few carbonate-quartz stringers exist. No visible sulphides. Iron begins to lean out at about 24.0 metres to 24.89 where magnetization is weak.
24.89	25.56	QUARTZITE A massive, medium grained rock of about 40% quartz with a carbonate matrix. No visible sulphides. Pinkish alteration around quartz veins. Feldspars make up about 25%. Non-magnetic. Grades back into magnetite iron formation.
25.56	72.88	MAGNETITE IRON FORMATION 25.56 - 25.68, as described from 16.50 - 24.89. 25.68 - 26.13, brecciated magnetite iron formation. Rock very fractured with some laminations running almost parallel to core axis. 26.13 - 27.18, Fault zone. Consolidated fragments of siliceous rock with chloritic matrix. Non-magnetic. 27.18 - 28.30, as described from 16.50 - 24.89. Coarsely disseminated pyrite <1% occurring mainly in magnetite laminations. 28.30 - 28.65, Hematite-magnetite-carbonate iron formation. Red hematite laminations alternating with magnetite laminations. Grades into and out of magnetite iron formation. 28.65 - 32.48, Magnetite iron formation. As described from 16.50 - 24.89. Hematite content slightly higher. No visible pyrite.

AMAX MINERALS EXPLORATION
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DIAMOND DRILL RECORD

Hole No. 839-39-14

Sheet No. 5

Metres		DESCRIPTION
From	To	
25.56	72.88	MAGNETITE IRON FORMATION (continued)
		32.48 - 33.18, Hematite-magnetite iron formation. As described
		28.30 - 28.65. More quartz-carbonate veining running both parallel to and cross-cutting laminations. Laminations more disturbed as a result.
		33.18 - 44.46, Magnetite-hematite iron formation. As described
		16.50 - 24.89. Hematite content about 25%. Laminations more disturbed and more carbonate-quartz veins. Specular hematite occurs in chlorite-carbonate veins. No visible pyrite.
		44.46 - 49.26, Hematite content leans out. As described 16.50 - 24.89. Hematite grades in again from 46.23 to 47.73. Quartzite bands up to 0.5 metres thick.
		49.26 - 51.11, Magnetite-hematite, iron formation. As described
		33.18 - 44.46. Brecciated and fractured with many quartz-carbonate veins and stringers. Patches of pyrite around veins and stringers make up <1%. Mafic dyke from 51.11 - 51.62, sharp contacts, inclusions of wall rock and chilled edges.
		51.11 - 53.07, Fault zone - brecciated magnetite-hematite iron formation with two zone of siliceous, chloritized fragments at 51.11 - 51.61 and 52.61 - 53.05.
		53.07 - 72.88, Magnetite-hematite iron formation. As described
		33.18 - 44.46. Hematite grades in and out. Patches of pyrite in quartz-carbonate stringers. Zones of brecciation occur throughout. Iron content (both magnetite and hematite) lean in and out. Some zones of <1% disseminated specular hematite. Some jasperite bands <1% (ie 64.49m). Specular hematite mostly in brecciated zones (ie. 68.59 - 68.62)
		72.55 - 72.58 - massive pyrite around edges of quartz-carbonate veins.
		At 69.83, a quartz vein runs 35° to core axis and is 7cm thick with brecciated contacts. Patches of pyrite and specular hematite occur close to contacts.

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Hole No. 839-39-14
Sheet No. 6

Metres		DESCRIPTION
From	To	
72.88	74.39	BRECCIATED CHERT / GREYWACKE Massive, siliceous sediment. Varying in colour from green to yellowish. Disseminated pyrite <1%. Moderately magnetic. 73.86 - 74.00, Fault zone. Consolidated angular fragments up to 1cm in chlorite matrix. Quartz-carbonate veins near either edge.
74.39	75.83	MASSIVE IRON FORMATION Very little banding. Rock is fractured and fractures filled with quartz-carbonate veins. Coarsely disseminated pyrite <%. Strongly magnetic.
75.83	80.01	MAGNETITE - HEMATITE IRON FORMATION/ GREYWACKE As described from 33.18 - 44.46. Less iron rich. Hematite leans out before magnetite. Bands of greywacke get thicker. Disseminated pyrite occurs in quartz-carbonate veins and in magnetite bands.
80.01	151.05	GREYWACKE Coarse to fine grained (siltstone), siliceous rock, grey-green in colour with magnetite bands running at 35° to the core axis. Disseminated pyrite <1%. Graded bedding indicates tops towards the up hole. Magnetite/hematite content grades higher and lower throughout. Zones of specular hematite around magnetite bands <1%. Moderately magnetic. Brecciated zones with carbonate-sulphide vugs. 97.10 - 106.71, Bands of hematite rich greywacke start. Very slightly red and barely discernable. Weakly magnetic. Disseminated pyrite <1%. Occurs in coarse grained zones. Less siliceous (can be scratched with a knife). Fine grained zone highly altered to chlorite. Very little disturbance. Some cherty / jasperite zones.

AMAX MINERALS EXPLORATION
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DIAMOND DRILL RECORD

Hole No. 839-39-14

Sheet No. 7

Metres		DESCRIPTION
From	To	
80.01	151.05	GREYWACKE (continued)
		97.10 - 106.71 (continued) - brecciated zones have massive chlorite matrix (ie. 102.43). Also in brecciated zones, coarsely disseminated pyrite up to 2%.
		106.71 - 118.56, hematite leans out and magnetite bands are fewer. Still some zones of cherty breccia. Disseminated pyrite <1%. Non-magnetic other than bands of magnetite. Magnetite bands run 40° to core axis. Few quartz veins.
		118.56 - 132.91, iron content (mostly hematite) increases. As described 97.10 - 106.71. Slightly magnetic. Finely disseminated pyrite less than 1%.
		124.39 - 218.29 - Fault zone. Chert breccia extends about 25m either side.
		139.91 - 145.67, iron leans out. At 135.32, a quartz vein contains large patches of sulphides. Graded bedding indicates tops up hole. Non-magnetic. Coarsely disseminated pyrite less than 1%. Bedding 45° to core axis. Beginning at 144.5 metres chloritized clasts, elongated parallel to bedding are present. Pyrite content finely disseminated less than 1%. Weakly to non-magnetic.
		145.67 - 151.05, As described 118.56 - 132.91. Finely disseminated pyrite less than 1%.
151.05	159.00	MAFIC VOLCANICS
		A moderately soft (can be scratched with a knife) green rock, fine grained, with epidote stringers, chlorite stringers and quartz carbonate stringers. Disseminated pyrite, mostly in stringers less than 1%.
		153.06 - 153.25, Fault zone - Consolidated, rounded chloritized fragments. Reddish-brown discoloured carbonates from potash feldspars or hematite.
		Moderately weak magnetization. Fractured mostly throughout

RI 650 S

L-500 E

L-600 E

L-700 E

L-800 E

L-900 E

L-529378

L-529375

010-39-14
-45°

159 m



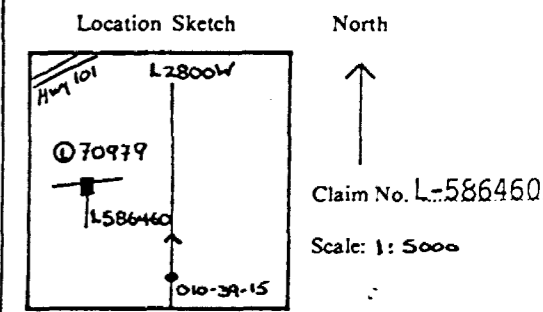
DRILL HOLE LOCATION SKETCH
Harker Township
Scale: 1:2500

D.D.H.: 010-39-14

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 010-39-15

Hole No. 010-39-15. Sheet 1	Length 167.70 metres	Commenced September 27, 1982	Dip: Collar -50°
Property Harker-4	Bearing Grid North	Completed October 1, 1982	Etch Test Depth Rdg. True
Township Harker	Dip -50	Drilling Co. St. Lambert	1 167.70m 46° 39°
Location L 2800 W, 525 S	Objective	Core Size BQ	Casing Left/ Lost in Hole
Logged By G. Kent			
Core Location Perry Lake			



Remarks Younging is indicated to the south due to the presence of Jasper-Pebble conglomerate

Metres		DESCRIPTION
From	To	
0	42.07	OVERBURDEN
42.07	79.31	BANDED CHERT
79.31	83.24	JASPER PEBBLE CONGLOMERATE
83.24	105.12	FERRUGINOUS CHERT
105.12	149.74	OXIDE IRON FORMATION
149.74	153.09	CARBONATIZED SEDIMENT
153.09	167.70	GREYWACKE
	167.70	END OF HOLE

R. G. Ponsari

AMAX MINERALS EXPLORATION
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DIAMOND DRILL RECORD

Hole No. 010-39-15
 Sheet No. 2

Metres		D E S C R I P T I O N
From	To	
0	42.07	OVERBURDEN Clay, sand
42.07	79.31	BANDED CHERT A laminated, cherty sediment, light grey to reddish brown in colour. This rock is very hard and non-magnetic. It is fine grained to microcrystalline with lamination at 30-40° to core axis. Steep northerly dips are indicated. Minor disseminated pyrite occurs throughout, and some pyrite veins up to 1 mm wide are noted. Reddish stained, ferruginous sections contain a higher sulphide content.
79.31	83.24	JASPER PEBBLE CONGLOMERATE Brick red to grey-red in colour. This unit is apparently derived from a nearby source of jasper and magnetite iron formation. Clasts are rounded to subrounded and are up to 5 cm in diameter. The upper contact is quartz veined and gradational. The lower contact is sharp and is at 40° to core axis. This unit is weakly to strongly magnetic due to the presence of pebbles and cobbles of iron formation. Pyrite occurs as disseminations, less than 1/2 % overall.
83.24	105.12	FERRUGINOUS CHERT Grey to red in colour, weakly magnetic and very hard. This unit is similar to that described from 42.07 to 79.31 metres. Brick red sections contain up to 1% banded pyrite: 96.83 - 97.45 metres Lamination is at 35° to core axis. The lower contact is sharp and conformable.

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DIAMOND DRILL RECORD

Hole No. 010-39-15
Sheet No. 3

Metres		DESCRIPTION
From	To	
105.12	149.74	OXIDE IRON FORMATION
		A jasperlite/magnetite banded iron with significant amounts of interbedded chert and greywacke.
105.12	109.46	Jasper-hematite iron formation, brick red to cherry red in colour and strongly magnetic. Narrow magnetite laminae are visible and show signs of extreme folding or soft sediment slumping.
109.46	128.60	Ironstone-greywacke. An iron-rich clastic sediment containing magnetite and pyrite laminae, but with an iron content of less than 15%. Minor gash veins filled with calcite cut the core at all angles.
128.60	139.89	Lean banded Iron Formation. Magnetite/clastic bands with an average orientation of 35° to core axis. Some folding is apparent.
		134.60 - 135.85 Fault Zone - 1 metre of lost core
139.89	142.49	Jasper-hematite iron formation, strongly magnetic, with magnetite laminae showing strong folding and faulting.
142.49	149.74	Lean banded Iron Formation as described at 128.60 to 139.89. Becomes increasingly clastic-rich towards the base.

