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CG-142

1978 SURFACE DIAMOND DRILLING PROGRAM,

DEERHORN PROPERTY

Summary Report for M.E.A.P. Agreement

Submitted by:

R.S. Nichols, B.Sc., P.Eng.

October 5, 1978

Introduction

A total of 8,112' of diamond drilling in 13 holes was completed on the Deerhorn property during the period April 27th to September 6, 1978. This program was intended to test previously unexplored areas for silver mineralization.

Some arsenide mineralization was intersected, but economic silver mineralization was not encountered in this program. The two main areas explored were under Cross Lake west of the shaft and southwest of the mine workings. The latter area has some potential for hosting ore grade silver mineralization in Huronian sediments, however the depth of overburden is such that mining in the Huronian is not feasible.

No further surface drilling is proposed or warranted at this time.

Location and Access

The Deerhorn property is centered about the Cross Lake O'Brien shaft on the east side of Cross Lake, about 2 miles due east of the Town of Cobalt.

It is easily accessible by car on a secondary gravel road which joins with Highway 11B at Mileage 104 (about 1 mile north of Cobalt). See the Index Map on the Composite Plan and Surface Drill Holes map accompanying this report.

Geology

The general geology of the Deerhorn property consists of Keewatin volcanics and sediments occurring below Nipissing diabase. A wedge of Huronian sediments between the Keewatin and Nipissing starts to occur about 700' east of the shaft, strikes N-S and thickens to greater than 200' at the east boundary.

The Keewatin rocks in the mine area strike W-E to N.W-S.E. The stratigraphic sequence of rock types from oldest to youngest appears from surface drilling to be:

- a) MAFIC FLOWS - dark green, usually well pillowed, occasionally incipiently brecciated.
- b) PYROCLASTIC TUFF BRECCIA - light coloured, feldspar crystal tuff with angular fragments of feldspar porphyry, mafic flow and chert.
- c) FELDSPAR PORPHYRY DYKE - light grey, hard, massive with 10%-20% coarse white feldspar phenocrysts. This dyke cuts the mafic flows and pyroclastic breccia but not the overlying sediments.
- d) BLACK ARGILLITE - very fine grained, black, hard, well bedded argillite.
- e) FELSIC/CHERTY TUFF - light grey, very fine to medium grained usually well bedded tuff. Local lapilli tuff beds and chert beds occur in this unit.

Flat lying lamprophyre dykes cut across the Keewatin rocks. The dykes are dark green, massive, coarse grained, sometimes biotitic and sometimes amphibolitic.

Huronian sediments, overlying the Keewatin, occur in the east part of the property starting about 700' east of the shaft and thickening to greater than 200' at the east boundary. The general strike of the Keewatin valley is N-S. The surface drilling has indicated the following five distinct beds from bottom to top:

- a) BASAL CONGLOMERATE - 80% rounded to subrounded pebbles in a (0'-40' Thick) dark green greywacke matrix. The pebble types are predominantly underlying Keewatin rocks. Some chlorite spotting, locally well developed, is evident.
- b) GREYWACKE - fine grained, dark green, well bedded with no (15'- 20' Thick) chlorite spotting.
- c) CONGLOMERATE - 80% rounded pebbles to boulders in a dark green (40' thick) greywacke matrix. The boulders are predominantly granitic. Sparse chlorite spotting occurs.

- d) QUARTZITE
(30'- 40'
Thick)
 - medium to coarse grained, impure quartzite with reddish arkosic sections. Faint chlorite spotting occurs.
- e) GREYWACKE
(40' thick)
 - dark green, fine grained, well bedded grey-wacke with trace fine chlorite spotting.

The Nipissing diabase sill, which intrudes the Keewatin and Huronian, shows some differentiation. Above 100' from the lower contact 1 - 10% coarse, honey brown, hypersthene phenocrysts are evident with local sections containing 10% - 20% hypersthene. The lower contact of the sill strikes N-S and dips from 10° - 25° to the west.

Economic Geology

An estimated 11,600,000 ozs. Ag (Mineral Resources Circular No. 10, 1968, by A.D. Sergiades) has been produced from this property by Cross Lake O'Brien Mines, subsequent leasors and Deer Horn Mines.

Greater than 90% of the silver produced came from steeply dipping veins in Nipissing and Keewatin rock types. Less than 10% of the silver production came from veins in Huronian sediments.

The major veins strike parallel to the strike of the Keewatin except No. 1 vein which cross-cuts the strike at a high angle.

Purpose of the Surface Diamond Drilling Program

This surface diamond drilling program was intended to test for silver veins in previously unexplored areas.

The two areas considered as having the most potential for hosting silver mineralization were:

- a) South and southwest of the mine workings. The occurrence of Huronian sediments in this area and proximity to the Cross Lake fault appeared to be very favourable geological conditions.

b) West of the shaft. This area is bordered by productive silver veins on the north and east, yet had not been adequately tested close to the Nipissing - Keewatin contact.

Results of the Program

Ore grade silver mineralization was not intersected in either area.

The program consisted of 13 holes totalling 8,112' of diamond drilling during the period April 27 to September 6, 1978. A summary of the drill hole numbers, location, azimuth, dip and length are given in Table 1. All holes were drilled by Barron Diamond Drilling Limited, Haileybury. The core recovered was size AQ (1 1/16" diameter) and is presently stored at the Bailey property.

Low grade arsenide veins were intersected in holes DH 14 and DH 16 about 1800' southeast of the shaft. The following assays occurred with the veins:

- a) DH 14 at 612.5' a 1/2" calcite-cobalt vein assayed 0.74 oz.
Ag/ton over 0.6'.
- b) DH 16 at 479.3' a 1/8" calcite-cobalt vein assayed 0.13 oz.
Ag/ton over 0.3'.

No other veins of economic significance were intersected in the program. These veins could be related to potentially high grade silver mineralization in the overlying Huronian sediments. However, there is only 65' of Huronian rock which is directly overlain by overburden under Cross Lake so that mining in this area is not feasible.

There appears to be no other areas south and west of the Deerhorn workings which should be tested for silver veins. No additional surface drilling is warranted or proposed to explore this area.



Respectfully Submitted,

R.S. Nichols

R. S. Nichols, B.Sc., P. Eng.
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TABLE 1

SUMMARY OF DRILL HOLES

HOLE #	CO-ORDINATES	AZIMUTH	DIP	ELEVATION	LENGTH
DH 8	3841.7S, 7135.6E	210°01'	-41°26'	865'	484'
DH 9	3742.9S, 7221.0E	217°43'	-40°16'	880'	454'
DH 10	3365.7S, 7045.7E	300°37'	-42°53'	875'	686'
DH 11	4017.3S, 7300.8E	267°54'	-47°14'	866'	485'
DH 12	3507.3S, 6995.2E	301°21'	-39°42'	871'	848'
DH 13	4150.6S, 7376.8E	273°09'	-37°32'	862'	631'
DH 14	3895.5S, 7397.6E	209°23'	-38°15'	875'	689'
DH 15	4010S, 7274E	201°	-38°	865'	48'
DH 16	4013.4S, 7276.4E	220°23'	-37°57'	863'	659'
DH 17	3830.9S, 7221.3E	30°33'	-37°44'	870'	472'
DH 18	3545.1S, 6893.4E	209°03'	-40°09'	868'	801'
DH 19	2829.5S, 6303.0E	267°13'	-53°44'	888'	800'
DH 20	2653.4S, 6161.1E	207°40'	-52°38'	883'	1055'
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					TOTAL = 8112'

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DRILL LOG

HOLE NO. D.H. 8

PROPERTY DEER HORN	TP OR AREA COLEMAN on clay field S.E.of	AZIMUTH shaft	DATE STARTED April 27, 1978	CORRECTED DIP TESTS	LOCATION SKETCH OF HOLE
PROJECT	LOT & CONC. 1 V	DIP	DATE COMPLETED May 3, 1978	490'	-38° (acid test)
CLAIM NO.	CO-ORDINATES 3841.7S: 7135.6E	LENGTH	DRILLED BY Barron D.D. AQ size		
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. ~865	LOGGED BY R. S. Nichols		R. S. Nichols

FOOTAGE	SECTION	DESCRIPTION	ASSAYS			
			SAMPLE NO.	FROM	TO	LENGTH
0	14	CLAY				
14	150 hd 113.2 vd 98.4	BOULDERS, TILL				
150	166.0hd 125.3 vd 108.9	NIPISSING DIABASE - typical coarse grained diabase. Lower, chilled contact, is ~40° to C.A.	160	170	10'	.03
		VEINS:				
		157.8' - $\frac{1}{2}$ " grey calcite vein with 40% chl, 5% py, at 20° to C.A. $\frac{1}{2}$ " dark chl. alt'n halo.	886	158.5	160.0	0.5' tr
166.0	229 hd 172.8 vd 150.2	HURONIAN GREYWACKE - dark green, well bedded, fine grained greywacke. Lower contact is gradational from 228.7'-229.5'. Bedding is 40° to C.A.	170	180	10'	.03
		Fine 0-5% chl spotting throughout, particularly in the darker beds. Sections of blocky core at 170'-179', 212'-223.5' with very bad cave at 218'- 225'. hd 164.5-169.8	180	190	"	.03
		VENNS:	190	200	"	.04
		193.8' - slip with py, at 30° to C.A.	200	210	"	.03
		206.5'-209.6' - hairline calcite stringers from 30-50° to C.A. and cutting the bedding at steep angles.	210	220	"	.02
229	263 vd 198.7 vd 172.4	HURONIAN QUARTZITE - med. grey, med. to coarse grained, arkosic quartzite (impure), faint bedding occurs at 229'-231' becoming more massive after 231'. Increasing red felds content at 231'-246'. Lower contact is first appearance of pebbles 0-5% fine chlorite spotting throughout. 3-5% fine white spots (not calcareous) throughout.	220	230	"	tr
			230	240	10'	tr
			240	250	"	tr
			250	260	"	.02

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DRILL LOG

HOLE NO. D.H. 8

SHEE'S 2 or —

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							FROM	Ag
		VEINS:						
		231.6' - mostly ground 1/16" white calcite vein at ~60° to C.A.						
		240.0' - hairline white calcite stringer at 50° to C.A.						
		243.2' - hairline white calcite stringer at 60° to C.A.						
		249.7' - 1/16" white calcite vein at 45° to C.A.	888	249.5	249.8	0.3'	tr	
		254.5' - 1/8" pink calcite vein at 40° to C.A.	889	254.3	254.7	0.4'	.02	
		256.7' - series of 3 parallel calcite stringers at 40° to C.A.	890	256.5	256.9	0.4'	.02	
263	311.2	HURONIAN CONGLOMERATE - 80% rounded pebbles to boulders in a dark green, greywacke matrix.	260	270	270	10'	tr	
vd	203.3	Large pink granitic boulders occur at 281'-286'. The other pebble types in approx. order of abundance are white granitic, mafic volcanics and the odd chert & porphyry frag. Very sparse fine chlorite spotting occurs to 290'. 0-5% fine white spots throughout. After 290' - 5-10% good chlorite spotting occurs.	270	280	280	"	tr	
		VEINS:	280	290	290	"	.02	
		290	300	300	300	"	.02	
			300	310	310	"	.02	
		264.3' -1/16"-1/8" white calcite stringer at 30° to C.A.	891	264.2	264.3	0.3'	.02	
		265.0' -1/8" white calcite vein at 45° to C.A.	892	264.9	265.3	0.4'	tr	
		265.6', 266.5' -1/16" pink calcite veins at 30° to C.A.						
		272.7' -1/8" vuggy, grey calcite vein with 5% py as fine to coarse grains at 25° to C.A.	893	272.5	273.0	0.5'	.02	
		274.0' -1/16" pink calcite vein at 50°.						
hd	210.7-	278.7' -3/8" pink calcite vein at 30° to C.A.	894	278.5	278.8	0.3'	.02	
vd	182.4	279.1' -1/16" pink calcite vein at 30°						

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DRILL LOG

HOLE NO. D.H. 8

SHEET 3 OF

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DRILL LOG

HOLE NO. D.H. 8

SHEET 4 OF

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS			
							Aa	Cu	Pb	Zn
403.6	431.4	ANDESITE - dark green, fine grained massive andesite. Possible indistinct brecciation occurs locally.								
		ALTERATION: 5-20% chl spotting throughout. Some locally intense alteration results in bleached & blotchy sections.								
		VEINS:								
		408.7' - 1/8" banded calcite - py vein at 30° to C.A. Some py in wall rock next to vein.	912	408.5	408.9	0.4'	.22			
431.4	434.5	CHERT - light grey, very fine grained, bedded chert. Bedding is 25° to C.A. ~1% sph - ga occurs throughout.	913	431.4	434.2	2.8'	.08	.017	.18	0.47
434.5	451	ANDESITE - CHERT INTERMIXED - fine grained, dark green andesite with inclusions of 1"-8" grey chert.								
		VEINS:								
		434.5' - 1/4" vuggy calcite vein parallel to C.A. 1%-3% py occurs as fine to coarse grains.	914	434.2	435.0	0.8'	.17	.029	.52	1.99 (whole core samples)
		443-444 - blocky core.								
451	484	ANDESITE BRECCIA - dark green, fine grained andesite with incipient brecciation (no dark matrix as before).								
		ALTERATION: 5-10% rectangular chl alt'n occurs at 451'-460'.								
		MINERALIZATION: generally <1% py occurs along chl slips.								
		VEINS:								
		454.6' - 1/8" band calcite - py vein at 30°	915	454.4	454.9	0.5'	.04			
		476.3' - 3/8" slightly pink calcite vein with 5% sph, 1% py, at 60° to C.A.	916	476.0	476.5	0.5'	.05			

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DRILL LOG

HOLE NO. D.H. 8

SHEET 6 OF

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DRILL LOG

HOLE NO.D.H. 9

PROPERTY DEER HORN	TP OR AREA COLEMAN on clay field S.E. of shaft	AZIMUTH 217° 43'	DATE STARTED May 4, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE <i>R.S. Nichols</i>
				300°	218°	-40°	
PROJECT	LOT & CONC. 1 V	DIP -40° 16'	DATE COMPLETED May 9, 1978				
CLAIM NO.	CO-ORDINATES. 3742.9S, 7221.0E	LENGTH 454	DRILLED BY Barron D.D. AQ SIZE				
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. ~880'	LOGGED BY R.S. Nichols				

FOOTAGE	SECTION 1" =	DESCRIPTION	ASSAYS				
			SAMPLE NO.	FROM	TO	LENGTH	
0	12'	CLAY					
12	126	1d 965. vd 81.0	BOULDERS, TILL				
126	177.7	1d 136.1 vd 114.2	NIPISSING DIABASE - typical coarse grained, massive, dark green diabase. Contact is 40° to C.A. & well chilled.	130	140	10'	tr
				140	150	"	tr
				150	160	"	tr
				160	170	"	tr
				170	180	"	tr
		VEINS:					
		137.0' - $\frac{1}{4}$ " grey calcite vein with 1" alt'n halo, at 50° to C.A.	918	136.9	137.4	0.5'	tr
		150.5' - 1/8" white calcite vein with 1" alt'n halo, at 50° to C.A.	919	150.3	150.8	0.5'	tr
		172.4' - $\frac{1}{4}$ " pink calcite along slip with 1 $\frac{1}{2}$ " alt'n halo.	920	172.1	172.6	0.5'	tr
177.7	243.0	1d 186.1 vd 156.2	HURONIAN GREYWACKE - fine grained, dark green, well bedded greywacke. Bedding is 40° to C.A. Very, very fine chl. spotting.	180	190	10'	tr
				190	200	"	tr
				200	210	"	tr
				210	220	"	tr
				220	230	"	tr
				230	240	"	tr
						LOST WATER.	
243.0	288.0	1d 220.6 vd 185.1	Thin py occurs along hairline fractures. Blocky core at 239'-241'. HURONIAN QUARTZITE - arkosic, coarse grained with felds and odd pebble to 259.5'. After, medium grained, grey, fairly massive quartzite. No chl. spotting. 0-5% fine white spots throughout. Granitic pebble at 281.5'.				

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DRILL LOG **HOLE NO.** D.H. 9

SHEET 1 3

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DRILL LOG

HOLE NO. D.H. 10

PROPERTY DEER HORN	TP OR AREA COLEMAN on NW edge of field	AZIMUTH 300° 37'	DATE STARTED May 11, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE
				200'	-42°	306°	
PROJECT	LOT & CONC. 1&2 V	DIP -42° 53'	DATE COMPLETED May 24, 1978	300'	-41°	306°	
CLAIM NO.	CO-ORDINATES. 3365.1S, 7045.7E	LENGTH 686'	DRILLED BY Barron D.D. - AQ SIZE	400'	-39°	(acid test)	
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. ~875'	LOGGED BY R. S. Nichols	650'	-37°	305°	R. S. Nichols
FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS
FROM	TO	1" =					Ag
0	36	hd 26.3	CASING, BOULDERS				
		vd 24.6					
36	280.4	hd 208.1	NIPISSING DIABASE - typical coarse grained diabase (no hypersthene).	40	50	10'	.02
		vd 187.8	Contact is well chilled, at 45° to C.A.	50	60	"	.03
				60	70	"	.03
				70	80	"	.03
				80	90	"	.02
				90	100	"	tr
				100	110	"	.02
				110	120	"	tr
				120	130	"	.02
				130	140	"	tr
				140	150	"	tr
				150	160	"	tr
				160	170	"	.02
				170	180	"	.02
				180	190	"	.02
hd 69.0	94.3'	vd 64.3	56.9' - ½" vein of calcite-gtz. epidote - feldspar at ~30° to C.A. No alt'n halo.	929	94.2	94.5	0.3'
			68.9' - 1/8" grey quartz vein with ½" alt'n halo, at 35° to C.A.				.18
			94.3' - ½" grey-white calcite vein with 1 ½" very strong, bleached alt'n halo at 45° to C.A.				
				190	200	10'	.02
				200	210	"	tr
			126' - 1/8" white green calcite stringer and no alt'n halo, parallel to C.A.	210	220	"	.02
				220	230	"	.02
				230	240	"	.02
				240	250	"	.05
				250	260	"	.04
280.4	326.0	hd 243.1	HURONIAN CONGLOMERATE - possible greywacke at 280.4 & 281.9' followed by conglomerate with 20%-40% rounded pebbles to boulders of red granite, sparse andesite.	260	270	"	.02
		vd 217.1	Extremely blocky ground at 293'-306'. Had to cement hole. No apparent veining in this sec- tion. Also blocky ground at 321-326'-hd 234.2	270	280	"	.06
				280	290	"	.06
				290	300	"	.07
				300	310	"	.09
				310	320	"	.05
				320	330	"	.06

FOOTAGE	SECTION 1' =	DESCRIPTION					ASSAYS		
			SAMPLE NO.	FROM	TO	LENGTH	Ag	Pb	Zn
		Bottom contact is obscured by blocky & broken core.							
		325.0' - $\frac{1}{4}$ " piece of pink calcite vein, ground at both ends.	930	325.0	325.1	0.1"	.09		
326.0	550.3'hd	KEEWATIN ANDESITE BRECCIA - dark green, fairly massive fine grained andesite with incipient brecciation. Somewhat blocky core at 485'-492'	330	340	340	10'	tr		
vd	354.0		340	350	350	"	tr		
			350	360	360	"	tr		
			360	370	370	"	.02		
			370	380	380	"	.02		
		Pillow selvages become apparent after 400'	380	390	390	"	.02		
			390	400	400	"	.02		
			400	410	410	"	.03		
			410	420	420	"	.02		
		ALTERATION: some chl alt'n is developed along the breccia fractures. Dark brown, hard, siliceous (?) alteration is prominent within the breccia fragments to 375':	420	430	430	"	.02		
			430	440	440	"	.02		
			440	450	450	"	.02		
			450	460	460	"	tr		
			460	470	470	"	tr		
			470	480	480	"	tr		
		MINERALIZATION: generally less than $\frac{1}{2}\%$ Po throughout as fine grains.	480	490	490	"	.02		
			490	500	500	"	tr		
			500	510	510	"	tr		
			510	520	520	"	tr		
			520	530	530	"	tr		
			530	540	540	"	.02		
		VEINS:	540	550	550	"	.02		
		243.5' - $\frac{1}{4}$ " creamy pink calcite quartz vein parallel to C.A.							
		365.8' - $\frac{1}{4}$ " creamy pink calcite vein at 40° to C.A.	931	365.6	366.0	0.4'	.20		
hd	286.3	381.6'-385'- broken and blocky ground with minor calcite vein and local patches of sph. ga.	932	381.6	385.0	4.4'	.05	.26	.29
vd	278.6	386.2' - $\frac{1}{4}$ " discontinuous, creamy calcite vein at 45° to C.A.	933	386.1	386.5	0.4'	.04		
hd	320.6	425'-427'- FAULT ZONE, very blocky core, had to cement hole.							

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DRILL LOG

HOLE NO. D.H. 10

ANSWER

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	ASSAYS			
				FROM	TO	LENGTH	Ag
		430.0' - $\frac{1}{4}$ " white calcite vein at 35° to C.A.	934	429.8	430.2	0.4'	.06
		437.0' - $\frac{1}{8}$ " creamy calcite vein at 50° to C.A.	935	436.9	437.3	0.4'	.03
hd 330.9		438.0-439.6' - silicified zone with 1% cpy, $\frac{1}{2}$ % arseno.	936	438.0	439.6	1.6'	.07
vd 286.5		No definite vein.					
		441.9' - $\frac{1}{4}$ " grey calcite vein at 45° to C.A.	937	441.8	442.1	0.3'	.05
		444.7' - $\frac{1}{2}$ " white-green discontinuous calcite vein at 30° to C.A.					
hd 342.0*		451.9' - $\frac{1}{8}$ " white calcite vein with 10% sph, possible fine arsenides, at 25° to C.A.	938	451.8	452.1	0.3	.10
vd 294.8		- 1% - 3% sph occurs in wall rock for 1' on each side.					
		463' - $\frac{1}{8}$ " white-green calcite vein at 10° to C.A.					
		475.5' - $\frac{1}{8}$ " white calcite vein with blebs sph, ga, at 70° to C.A.	939	475.2	475.6	0.4	.08
hd 410.2*		497.0'- $\frac{1}{8}$ " white calcite vein lined with thin py, parallel to C.A.					
vd 346.2		537.2' - 2" white calcite vein with 15% banded, sph, tr ga, cpy (whole core sampled) (No arsenides), at 35° to C.A.	940	537.0	537.4	0.4'	.48
		544.8' - $\frac{1}{4}$ " white calcite- chl vein with 5% Po tr sph, cpy, at 50° to C.A.	941	544.5	545.0	0.5'	.05
550.3' 607.7	hd 466.5	PYROCLASTIC TUFF BRECCIA - angular to rounded pebble to boulder sized volcanic fragments in a dark green very fine grained matrix. The frags. are predominantly andesite with some red felds porphyry, some grey felds porph. Banding at 373' is 15° to C.A.					
vd 388.6			550	560	10'	.07	
			560	570	"	.03	
			570	580	"	.07	
			580	590	"	.06	
			590	600	"	.05	
			600	610	"	.05	
		MINERALIZATION: 1% - 3% Po, tr cpy as massive blebs (?frags?). Some of these blebs are rimmed with sph. or finer grained po.					

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS		
							Ag		
607.7	621.3	DYKE - fine to med. grained, dark green, massive, amphibolitic dyke. The upper and lower contacts are not chilled and are irregular at ~50°-70° to C.A.		610	620	10'	.04		
vd	396.8								
621.3	645.0	PYROCLASTIC TUFF BRECCIA - as before		620	630	"	.04		
vd	411.0			630	640	"	.02		
		VEINS:							
		637.8' - $\frac{1}{4}$ " grey calcite vein at 35° to C.A.							
		640.4' - $\frac{1}{4}$ " pink calcite chl. vein with tr cpy, at 45° to C.A.	942	640.0	640.4	0.4'	.04		
645.0	686	LAMPROPHYRE - dark green, coarse grained, massive biotitic dyke.		640	650	10'	.04		
vd	529.0			650	660	"	.07		
	435.7			660	670	"	.04		
		VEINS:		670	680	"	.05		
		*good looking.	646.6' - $\frac{1}{2}$ " pink calcite with tr cpy, at 20° to C.A.	943	646.4	646.9	0.5'	.15	
			650.4' - $\frac{1}{4}$ " pink calcite vein at 20° to C.A.	944	650.2	650.7	0.5'	.23	
			678.1' - $\frac{1}{2}$ " white calcite vein with tr cpy, at 20° to C.A.	954	678.0	678.3	0.3'	.03	
686		END OF HOLE - CASING LEFT IN.							

PROPERTY Deer Horn		TP OR AREA COLEMAN In Field	AZIMUTH 267° 54'	DATE STARTED May 25, 1978	CORRECTED DIP TESTS 200 - 46° 320 - 44° 267°	LOCATION SKETCH OF HOLE <i>K.S. Reckels</i>		
PROJECT		LOT & CONC. I V	DIP -47° 14'	DATE COMPLETED June 2, 1978				
CLAIM NO.		CO-ORDINATES. 4017.3S, 7300.8E	LENGTH 485'	DRILLED BY Barron D.D.				
GRID NO.		CORE AT BAILEY PROPERTY	COLLAR ELEV. ~866	LOGGED BY R.S. Nichols				
FOOTAGE	SECTION	DESCRIPTION		SAMPLE NO.	FROM	TO	LENGTH	ASSAYS
FROM	TO	1" =						Ag
0	125	hd 85.6	CASING					
		vd 91.1						
125	144.5	hd 99.1	NIPISSING DIABASE - coarse grained, typical diabase.	sludge	122	130	8'	.03
		vd 105.	Becomes fine grained at 142'. Contact is obscured by blocky core, but appears to be 40° to C.A.		130	140	10'	.03
		hd 87.0	*good looking 127.0'-½" grey calcite vein lined with fine grained magnetite, at 45° to C.A. 2" alt'n halo on both sides of vein.	971	126.8	127.1	0.3	tr
		vd 92.5						
144.5	193.8	hd 133.4	HURONIAN GREYWACKE - dark grey - green, fine grained,		140	150	10'	.02
		vd 140.6	well bedded greywacke.		150	160	"	.02
			Bedding is 50° to C.A.		160	170	"	.02
			0-5% Fine chl. spotting occurs along local beds.		170	180	"	.02
			Blocky core at 144'-194'.		180	190	"	.03
193.8	207.6	hd 142.9	HURONIAN QUARTZITE - ARKOSE-fine to med. grained, red feldspathic arkose with some quartz. Local fine pebble bands occur. Bedding is locally apparent at 50° to C.A.		190	200	10'	tr
		vd 150.6	Possible tr, fine chl. spotting throughout.		200	210	"	tr
207.6	223.4	hd 153.9	HURONIAN QUARTZITE - med. grained, massive, med. green quartzite. Sparse very rounded pebbles occur.		210	220	10'	.02
		vd 161.9	No chl. spotting.					
			221.1' - discontinuous ¼" quartz-pink calcite vein at 50° to 70° to C.A.					

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	ASSAYS			
				FROM	TO	LENGTH	
223.4	277.1	hd 191.2 HURONIAN CONGLOMERATE - 80% angular to sub-rounded vd 200.5 pebbles to boulders in a dark green, fine grained greywacke matrix. The rounded pebbles are mostly pink & white granitic and quartz. The angular pebbles are mafic volcanic, feldspar porphyry and minor chert. ALTERATION: 0-5% undeveloped chl. spotting.		220	230	10'	.02
				230	240	"	.02
			LOST WATER				
277.1	298.0	hd 205.7 HURONIAN GREYWACKE - CONGLOMERATE - interbedded, vd 215.5 fine grained, well-bedded greywacke with pebble conglomerate bands. Bedding is 35°-50° to C.A. Well developed chl. spotting occurs in conglomerate sections.					
298.0	328.6	hd 227.7 HURONIAN CONGLOMERATE - basal conglomerate with vd 236.9 angular frags. of mafic volcanics, feldspar porphyry and chert. Bottom contact is taken as the appearance of chert bedding, suggesting K. seds. ALTERATION: intense chlorite spotting and bleaching has altered the conglomerate.					
		VETNS:					
hd 217.9	315.0'-3/8"	creamy calcite vein at 70° to C.A.	972	314.8	315.2	0.4'	.07
vd 227.4							

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H. 11

2

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							FROM	TO
328.6	472.0	nd 330.8 KEEWATIN ANDESITE BRECCIA - intensely bleached and yd 336.5 chloritic spotted to 356'. Has a conglomeratic appearance in places. After 356', becomes more uniform andesite breccia. Chert for 328.6-328.8' is bedded at 40° to C.A.						
		MINERALIZATION:						
		338.5'-340.4' - <.5% very fine sph diss. throughout.						
		VETNS:						
		337.3'-6" white qtz. with tr sph, ga, cpy.						
		358.6'-1" white qtz. with tr sph, cpy, at 5° to C.A.						
		368.0'-6" white qtz-chl. with tr py, po, cpy and 2 grains arseno.						
nd	275.9	395.6'-2" qtz. calcite vein 3% combined blebs of ga,	973	395.2	395.9	0.7'	.11	
nd	283.4	sph, py, at 25° to C.A.						
		407.0'-1/4" calcite - chl. along gouge at 45° to C.A.	974	406.9	407.2	0.3'	tr	
nd	299.0	427.8'-1/2" white calcite vein with 10% py (mostly along edges) at 30° to C.A.	975	427.6	428.0	0.4'	.07	
nd	305.8							
nd	297.4	425.5'-1/4" gouge with chl. 50% py, po, sph, at 70° to C.A.	976	425.4	425.8	0.4'	.23	
nd	304.2	450.2'-1/8" gouge, at 40° to C.A.						
		461.7'-4" white quartz vein with tr cpy, py at 35° to C.A.						
		471.8'-4" white quartz vein at 30° to C.A. Seems to coincide with dyke contact.						
472.0	485.0	340.2 IAMPROPHYRE (?) DYKE - dark green, massive, med. grained vd 345.5 dyke with 10% red felds in an amphibolitic rock.						
485		END OF HOLE - CASING LEFT IN.....						

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DRILL LOG

HOLE NO. D.H. 12

PROPERTY Deer Horn	TP OR AREA COLEMAN on West Edge of field	AZIMUTH 301° 21'	DATE STARTED June 5, 1978	CORRECTED DIP TESTS	LOCATION SKETCH OF HOLE
PROJECT LOT & CONC. 1&2 V	DIP -39° 42'		DATE COMPLETED June 16, 1978	300° 37° 400° 36° 500° 35° 600° 34° 700° 33° 800° 32°	303° 304° 303°
CLAIM NO. 3507.3S.6995.2E	CO-ORDINATES. 848'	LENGTH	DRILLED BY Barron D.D. - AQ size		
GRID NO. CORE AT BAILEY PROPERTY	COLLAR ELEV. 871'	LOGGED BY R.S. Nichols			

R.S. Nichols

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							FROM	TO
FROM	TO	1" =						
0	99	hd 75.8						
		yd 63.6						
99	340.4	hd 266.9						
		yd 211.1						
		NIPISSING DIABASE - typical dark green, coarse grained massive.		99	110	11'	.03	
		No hypersthene seen.		110	120	10'	.03	
		Becomes fine grained at 331'. Contact is obscured by blocky core.		120	130	"	.03	
		Blocky core at 109'-112', 231'-235'		130	140	"	.04	
		hd 83.7 86.0 179.8 183.0		140	150	"	.03	
				150	160	"	.02	
				160	170	"	.03	
				170	180	"	.02	
				180	190	"	tr	
				190	200	"	.02	
				200	210	"	.02	
		VEINS:		210	220	"	.02	
		155.9' - 1/8" gouge at 70° to C.A. No alt'n halo.		220	230	"	tr	
				230	240	"	.02	
				240	250	"	.02	
		178.8' - 1/8" green calcite vein with 1/2" alt'n halo, at 35° to C.A.	987	178.6	179.1	0.5'	.04	
		282.6' - 3" serpentine. Core is bleached for 2 1/2" on each side.		250	260	10'	tr	
				260	270	"	tr	
				270	280	"	tr	
		308.5' - 3/8" green serp. chl. at 30° to C.A.		280	290	"	.02	
				290	300	"	.02	
		316.0' - 1/4" serp. at 20° to C.A.		300	310	"	.02	
				310	320	"	.02	
		317.3' - 1/4" serp. chl. at 35° to C.A.		320	330	"	.04	
				330	340	"	.02	
		322.7' - 1/4" serp. chl. at 40° to C.A.						

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							AG	
340.4	345.6	hd 271.1 vd 214.2	HURONIAN CONGLOMERATE - 0-20% rounded mostly granitic pebbles in a dark grey quartzite matrix. No chlorite spotting. Lower contact is 45° to C.A.	340	350	10'	.03	
345.6	562.7	hd 448.0 vd	KEEWATIN ANDESITE BRECCIA - dark green, fine grained, pillowded andesite with incipient brecciation. The frags are often bleached around the rims. Blocky core at 439'-438', 447'-448' at Increasing breccia and alteration at 450-504.6' Bx frags. are $\frac{1}{2}$ "-1" diam., rounded to sub-rounded. After 504.6' rock is quite massive, dark green, minor bx. ALTERATION: local chlorite spotting. Also chlorite occurs as fine stringers (5% of rocks). Chlorite alt'n. is evident in the matrix and as fine stringers in the frags. -450'-504.6' the frags become very bleached.	350	360	10'	.03	
				360	370	"	.03	
				370	380	"	.02	
				380	390	"	.02	
				390	400	"	.02	
				400	410	"	.04	
				410	420	"	.03	
				420	430	"	.03	
				430	440	"	.03	
				440	450	"	.05	
				450	460	"	.03	
				460	470	"	.04	
				470	480	"	.02	
				480	490	"	.04	
				490	500	"	.02	
		VEINS:		500	510	"	.03	
				510	520	"	.03	
				520	530	"	.03	
				530	540	"	.04	
				540	550	"	.02	
				550	560	"	.03	
			989	386.2	386.5	0.3'	.02	
hd	353.1	447.0' - 3" breccia with calcite filling (possibly a	990	446.9	447.3	0.4'	.11	
vd	273.8	vein), 17. blebs of ga-sph.						
hd	425.8	535.8' - 1" white calcite, red felds, chlorite vein	991	535.7	535.9	0.2'	.35	
vd	325.0	with tr ga, at 40° to C.A.						
562.7	729.2	hd 586.6 vd 432.3	LAMPROPHYRE DYKE - fine to med. grained, massive, dark green amphibolitic with possible biotite.	560	570	10'	.03	
				570	580	"	.03	
				580	590	"	.03	
				590	600	"	.04	

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H. 12

2

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS			
							Ac	Cu	Pb	Zn
		Upper contact is 15° to C.A.		600	610	10"	.04			
		Lower contact is irregular 15° to C.A.		610	620	"	.03			
hd 482.2	488.9	604'-612'-FAULT ZONE-very blocky core with gouge & chl. slips. Had to cement hole.		620	630	"	.03			
vd 363.2				630	640	"	.02			
				640	650	"	.04			
				650	660	"	.04			
				660	670	"	.02			
		635-649 - sections of very blocky core.		670	680	"	.02			
				680	690	"	.02			
		VEINS:		690	700	"	.02			
				700	710	"	.03			
		601.1' - 3/8" pink quartz calcite vein at 20° to C.A.		710	720	"	.02			
				720	730	"	.02			
		603.2' - 2" discontinuous irregular pink calcite-chl. vein with tr sph. at ? to c.a.	992	603.1	603.6	0.5'	tr			
hd 484.8	484.8	607.1' - pieces of pink calcite & chl. in gouge.	993	607.0	607.5	0.5'	.10			
vd 364.9	364.9			(whole core sampled)						
		623.0' - $\frac{1}{4}$ " banded pink calcite-chl. vein at 60°.	254	622.9	623.3	0.4'	.04			
		631.3' - 1/8" white calcite vein at 50°.								
729.2	825.7	hd 668.4	FELDSPAR PORPHYRY - med. grey, hard, fine grained, groundmass with 10% - 30% coarse white feldspar phenocrysts.	sludge	730	740	10"	.05		
		vd 488.4			740	750	"	.04		
					750	760	"	.07		
					760	770	"	.07		
					770	780	"	.06		
					780	790	"	.15		
					790	800	"	.30		
					800	810	"	.08		
					810	820	"	.05		
		MINERALIZATION: 737'-824' - 0-2% sph. occurs as stringers and fine disseminated grains (and most common mineralization).	255	737	742	5.0'	.06	.06	.15	.22
			256	742	747	"	.06	---	.066	.092
			257	747	752	"	.03	---	.022	.038
			258	752	757	"	.07	---	.026	.022
			259	757	762	"	.07	---	.086	.17
			260	762	767	"	.05	---	.049	.43
			261	767	772	"	.05	---	.070	.32
			262	772	777	5.0'	.04	---	.035	.078

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DRILL LOG ~~DRILL LOG~~ HOLE NO. D.H. 12

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ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO.D.H. 13

PROPERTY DEER HORN	TP OR AREA <i>COLEMAN</i>	AZIMUTH 273° 09'	DATE STARTED June 19, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE <i>R.S. Nichols</i>
				200'	-38°		
PROJECT	LOT & CONC. 1 V	DIP -37° 32'	DATE COMPLETED June 27, 1978	300'	-36°	281°	
CLAIM NO.	CO-ORDINATES. 4150.6S, 7376.8E	LENGTH 631'	DRILLED BY Bartron D.D.-AQ SIZE	400'	-32°		
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. 862'	LOGGED BY R. S. Nichols	600	-270		

FOOTAGE	SECTION 1":	DESCRIPTION					Ag	ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH		
0	91	CASING						
	vd 56.0							
91	183.5	NIPISSING DIABASE - typical, coarse grained, massive diabase. No coarse grained hypersthene.	90	100	10'			
	hd 144.6		100	110	"	.04		
	vd 113.0		110	120	"	.04		
		Blocky core, chlorite clips, at 146'-149'.	120	130	"	.02		
		Becomes fine grained at 172'.	130	140	"	.02		
		Bottom, chilled contact is 60° to C.A.	140	150	"	.02		
			150	160	"	.03		
			160	170	"	.03		
			170	180	"	.02		
183.5	223.8	HURONIAN GREYWACKE - fine grained, dark green well bedded greywacke.	180	190	10'	.02		
	hd 178.9		190	200	"	.03		
	vd 137.1		200	210	"	.02		
		Bedding is: 40° to C.A. at 187' 40° to C.A. at 215'	210	220	"	.02		
		Blocky core occurs at 193'-195', 202'-204'. Lower Contact is gradational from 222' on and is taken as the last appearance of bedding.						
		ALTERATION: Some fine chl. spotting along certain beds.						
		VEINS:						
		222.0'-chl. seen with coarse py cubes, at 60° to C.A. and 90° to bedding.	284	222.9	223.2	0.3'	.05	
223.8	258.3	HURONIAN QUARTZITE - med. grained, med. grey, massive quartzite. Hairline calcite stringers occur about 1 per foot throughout, mostly at 30'-40' to C.A. Arkosic looking material with granitic pebble occurs at 234.5'-240.0'. No chlorite spotting.	220	230	10'	tr		
	hd 188.5		230	240	"	tr		
	vd 157.4		240	250	"	tr		
		Local bedding at 241' is 35° to C.A.	250	260	"	.03		

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
		VEINS:					Ag
		254.2' - 1/8" pink calcite vein at 45° to C.A. Some yellow rust along edges.	285	254.0	254.3	0.3'	.04
258.3	270.7	HURONIAN CONGLOMERATE - gradual increase in pebble content from 5%-80% from 257'-259'.	260	270	10'	.03	
vd 164.7		The pebbles are generally less than 1" & are mostly white granitic and some porphyritic.					
		ALTERATION: 0-2% fine distinct chlorite spotting throughout.					
		Blockly core (no chl. slips) at 263'-265' (doesn't look like a fault).					
270.7'	372.1	HURONIAN GREYWACKE (?) - medium to light green, fine grained greywacke.	270	280	10'	.05	
vd 220.4			280	290	"	.06	
			290	300	"	.03	
			300	310	"	.05	
		ALTERATION: 10-20% intense, coarse (1/8"-3/8" diam) chlorite spotting. It seems to follow mini fractures & bedding. The rock has lost most of its original texture and appears to be bleached around the spots tr fine white (not calcite) spotting.	310	320	"	.05	
			320	330	"	.05	
			330	340	"	.05	
			340	350	"	.06	
			350	360	"	.05 (lost water at 359')	
		STRUCTURE - bedding has been obliterated but alignment of chlorite spots, presumably along bedding, is 60° to C.A. at 292', 40° at 320', 40° at 348'. - bedding at 363' is 50° to C.A.					
		MINERALIZATION: these spots occasionally contain specs. of cpy, sph or py.					
		VEINS:					
		338.5, 338.7' - 3/8" grey quartz veins with tr cpy, at 50° to C.A.					
372.1	382.5	HURONIAN (?KEEWATIN?) CONGLOMERATE - partly bedded, some boulders, although original texture seems to be obliterated. It is med. grey, in colour.					
vd 225.5		After 375.4' conglomerate is hard to distinguish					

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H. 13

SHEET 3 OF

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DRILL LOG

HOLE NO. D.H. 13

SHEET 4 OF 1

ST. JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H. 14

PROPERTY DEER HORN	TP OR AREA COLEMAN	AZIMUTH 209° 23'	DATE STARTED June 28, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE
				200'	---	-37°	
PROJECT	LOT & CONC. I V	DIP -38° 15'	DATE COMPLETED July 12, 1978	300'	212°	-37°	
CLAIM NO.	CO-ORDINATES. 3895.5S.7397.6E	LENGTH 689'	DRILLED BY Barron D.D. - Q SIZE	400'	---	31°	
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. ~875'	LOGGED BY R.S. Nichols	500'	217°	-30°	
				600'	---	-29°	

R.S. Nichols

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
0	86'	hd 67.8 Casing					Ag
		yd 52.9					
86	238'	hd 189.9 NIPISSING DIABASE - "varied texture" type diabase from 86' - 131'. After 131' becomes massive, uniform, coarse grained. Local fine grained sections of the varied texture diabase are magnetic.	100	110	10'	tr	
		yd 144.7	110	120	"	.02	
			120	130	"	.02	
			130	140	"	.02	
			140	150	"	.02	
			150	160	"	.02	
			160	170	"	.02	
			170	180	"	.02	
		Becomes fine grained at 231'. Contact is obscured by very blocky and some ground core.	180	190	"	.02	
			190	200	"	.03	
			200	210	"	.04	
			210	220	"	.02	
			220	230	"	tr	
			230	240	"	.02	
			240	250	"	tr	
238	254.3	hd 202.0 HURONIAN GREYWACKE - fine grained, dark green, well-bedded greywacke. Bedding is 40° to C.A.					
		yd 154.5 Had to cement at 239' - 240'. Very blocky core from 237.5' - 251'. No chlorite spotting occurs....					
254.3	284.7	hd 226.3 HURONIAN QUARTZITE - med. grey, med. grained, massive quartzite. Some arkosic rock with small pebbles occurs at 264' - 268.4'. No chlorite spotting..	250	260	10'	tr	
			260	270	"	tr	
			270	280	"	tr	
		VEINS:					
		256'-267' - series of 1/16" - 1/8" parallel pink & white calcite veins with tr cpy, at 60° - 70° to C.A. About 1 per 8"-12" occurs.	312	256	259	3.0'	.04
			313	259	262	3.0'	.06
			314	262	265	3.0'	.03
			315	265	268	3.0'	.03
			316	268	271	3.0'	tr

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. C.H. 14

SHEET 2 OF 1

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.					ASSAYS
				FROM	TO	1"	LENGTH	
284.7	309.9	hd 246.8 HURONIAN CONGLOMERATE - 20% pebbles to boulders in a vd 187.1 grey qtzite. matrix. Increasing pebble content down the hole. The rounded pebbles are mostly granitic, some white qtz., a few andesitic. Minor local chlorite spotting. The contact is very sharp, but irregular at 40° to C.A. The underlaying cherty-tuff bedding is ~60° to the Huronian-Keewatin contact. Assuming the Huronian contact as being flat, the Keewatin seds. are striking S. and dipping W. (i.e. perpendicular to the hole and dipping away from the hole).	317	281.9	282.3	0.4'	.03	
				280	290	10'	tr	
				290	300	"	tr	
				300	310	"	tr	
		VEINS:						
		386.7' - 296.2' - 1/16" - 1/8" pink & white calcite veins at 50°-60° to C.A. About 2-3 per foot occurs.						
309.0	287.8	hd 312.1 KEEWATIN-CHEART-ARGILLITE - light grey to black, fine vd 229.8 grained, well bedded chert. Bedding is generally 30°-40° to C.A. although locally is 11½ to C.A. as at 315'.		310	320	10'	tr	
				LOST WATER				
		Light grey, coarse grained X-tal tuff at 337.7 - 339.7', 365.4'-366.3'.						
		ALTERATION: local bleaching and minor spotting occurs sporadically throughout (usually along fractures).						
		Mafic dyke at 373.0' - 377.0'.						
		MINERALIZATION: fine sphalerite occurs in coarser blebs (½"-1" thick, up to 1% sph. within a bed). Best min. in the x-tal tuff beds. - general increase in sph, ga, cpy, down the hole.						

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H. 14

SHEET 3 OF 1

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							FROM	Ag
		STRUCTURE - graded bedding at 312' tops up the hole. " " " " at 333' tops up the hole. lode cast & flames at 340' tops up the hole.						
387.8	471.0	hd 383.9 CHERT-TUFF - light grey, hard, fine grained, massive vd 272.0 rock. Some angular fragments (same composition) can be distinguished. Bedding angles are: 40° at 395' 35° at 448.5'						
		ALTERATION: 5-10% fine white spotting throughout.						
		MINERALIZATION: sparse py as stringers.						
		VEINS:						
		465.3' - ½" white qtz.-chl. vein at 35° to C.A.						
		471.0' - 1" pink calcite - Qtz. vein at 15° to C.A.	327	470.5	471.3	0.8'	0.14	
471.0	482.6	nd 393.9 DYKE - dark green, fine grained, massive, mafic. vd 277.8 (possibly lamp.)dyke. Upper Contact seems to be the calcite-qtz. vein. Lower contact is chilled, at 25° to C.A..						
482.6	488.0	nd 398.4 CHERT-TUFF - as before, grades in to black arg. vd 280.5						
488.0	528.0	hd 433.5 BLACK ARGILLITE - & LAPILLI TUFF - very fine grained vd 300.0 black (possibly graphitic) cherty, well-bedded argillite interbedded with lapilli tuff. The lapilli tuff is grey matrix with black frags. aligned 11° to bedding. Bedding is 45° to C.A. at 492' 40° to C.A. at 497' 30° to C.A. at 519' Tops are: up the hole at 502' - graded bedding.						
		MINERALIZATION: 1%-3% po occurs in the lapilli tuff matrix as fine grains & stringers. 1% sph occurs as stringers in the argillite associated with "grid" alt'n.						

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							Ac	
		ALTERATION: light "grid" alteration occurs in the argillite beds after 513'.						
528.0	hd 507.0 vd 340.8	CHERTY TUFF - med. grey, massive cherty tuff (similar to previous section of cherty-tuff). Blocky ground at 542' - 584'. Gradational change to dark grey at 572'.						
		ALTERATION: some "grid" alteration throughout. Also some local white spotting developed.						
		Bedding is 20° at 552' 60° at 574' 40° at 591' 25° at 601' 25° at 617' at 600' tops indicated by flames & graded beddings are up the hole.						
		VEINS:						
		586.1' - $\frac{1}{4}$ " pink calcite vein, some qtz., at 45° to C.A.	328	586.9	587.4	0.5'	0.10	
hd 507.4 vd 341.0		* 612.5' - broken up core with piece of $\frac{1}{2}$ " calcite-mass. cobalt vein at ~60° to C.A. Some arseno. in wall rock. Several pieces of pink calcite indicate vein was greater than 1" wide.	329	612.2	612.8	0.6'	0.74 (whole core sampled)	
		Discontinuous random calcite veins with sph, cpy, ga, occur at 605' - 619'.						
612'	689' hd 574. vd 378.	BLACK ARGILLITE - LAPILLI TUFF - as before only lapilli tuff frags become larger ($\frac{1}{2}$ "-1" diam.), and varied (i.e. chert andesite & porphyry) with increasing mafic frags. down the hole.						
		MINERALIZATION: $\frac{1}{2}\%$ - 1% po occurs as fine grains and coarse blebs (possibly frags). tr sph occurs as fine stringers.						
		STRUCTURE: possible bedding is 50°-60° to C.A. The frags seem to be sorted & aligned at 50 - 60° to C.A.						

ST. JOSEPH EXPLORATIONS LIMITED

DRILL LOG **HOLE NO.D.H. 14**

HOLE NO. D.H. 14

FOOTAGE		SECTION I" =	DESCRIPTION					ASSAYS
FROM	TO			SAMPLE NO.	FROM	TO	LENGTH	
			VEINS:					
			619.6' - irregular cream calcite and qtz. veining with tr cpv, py, sph at 50° (11° to bedding).					
			645.5' - 6" zone of qtz.-chl. some bleaching of the wall rock.	331	645.1	645.9	0.8'	.07
			666.1' - 1/8" grey calcite vein at 20° to C.A.					
			667.7' - 3/8" grey-green calcite vein with tr ga, at 30° to C.A.	332	667.5	667.8	03.'	.25
			688.6' - 1/8" calcite vein at 30° to C.A.					
689			END OF HOLE - CASING LEFT IN.....					

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DRILL LOG

HOLE NO. D.H. 15

SHEET 1 OF 1

PROPERTY DEER HORN	TP OR AREA COLEMAN	AZIMUTH 210°	DATE STARTED July 13, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE
PROJECT	LOT & CONC. 1 V	DIP -38°	DATE COMPLETED July 13, 1978				
CLAIM NO.	CO-ORDINATES, 4010S, 7274E	LENGTH 48'	DRILLED BY Barron D.D.				
GRID NO.	(not surveyed)	COLLAR ELEV. 865'	LOGGED BY R.S.Nichols				

K.S. Nickel

FOOTAGE	SECTION	DESCRIPTION	ASSAYS			
			SAMPLE NO.	FROM	TO	LENGTH
0	48'	1" = CASING - decided to stop hole and drill at $\pm 220^\circ$ instead of 210° .				

S. JOSEPH EXPLORATIONS LIMITED

DRILL LOG HOLE NO. D.H. 16

PROPERTY DEERHORN	TP OR AREA COLEMAN	AZIMUTH $220^{\circ} 23'$	DATE STARTED July 13, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE <i>R.S. Nichols</i>	
				200'	40'			
PROJECT	LOT & CONC. I V	DIP $-37^{\circ} 57'$	DATE COMPLETED July 27, 1978	300'	38'	227'		
CLAIM NO.	CO-ORDINATES 4013.4S, 7276.4E	LENGTH 659'	DRILLED BY Barron D.D. - AQ size	400'	36'			
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. ~863	LOGGED BY R. S. Nichols	500'	35'	227'		
FOOTAGE	SECTION	DESCRIPTION		SAMPLE NO.	FROM	TO	LENGTH	ASSAYS
		1" =						Ag
0	150	bd 117.1 CASING						
		vd 93.7						
150	160.6	bd 125.2 NIPISSING DIABASE - fine grained, but typical diabase.		150	160	10'	.03	
		vd 100.6	Contact is 40° to C.A. (Had to cement at 162')					
160.6	217.0	bd 168.8 HURONIAN GREYWACKE - fine grained, dark green, well bedded greywacke. The core is generally blocky to 195'. Bedding is 40° to C.A.		160	170	10'	.02	
		vd 136.4	Fine chlorite spotting throughout.	170	180	"	.02	
			Trace fine cpy and py along cracks at 174' - 200'	180	190	"	tr	
				190	200	"	tr	
				200	210	"	.02	
				210	220	"	tr	
217.0	246.5	bd 192.0 HURONIAN QUARTZITE - feldspathic, coarse grained arkose to 234.3' with the odd granitic pebble. After the arkose is med. grained, med grey massive quartzite.		220	230	10'	.02	
		vd 154.5	Occassional bed is 45° - 50° to C.A.	230	240	"	tr	
			No chlorite spotting is evident. Local 2" - 6" sections are calcified at 225' - 231'.	240	250	"	.03	
		VEINS:						
		227.4' - $\frac{1}{4}$ " white vuggy calcite vein at 60° to C.A. Some py and calcite occurs in wall rock.		335	226.8	227.6	0.8'	.07
		232' - 6" - 8" broken core with some calcite filling.		336	231.6	232.6	1.0'	.07

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			FROM	TO	1" =	SAMPLE NO.	
246.5	256.2	HURONIAN CONGLOMERATE - variable concentrations of rounded granitic pebbles in a quartzite-arkosic matrix. No chlorite spotting.					
	vd 160.5						
256.2	375'	HURONIAN (?) GREYWACKE - med. to light green intensely bleached and chlorite spotted greywacke (?). (Same as D.H. 13). The alignment of spotting, possibly representing bedding, is 30° to C.A. The core becomes blocky at 290'-335'. Drillers lost 5' from 297 - 307' (marked incorrectly?). ALTERATION: - 10 - 15% coarse ($\frac{1}{4}$ " - $\frac{1}{2}$ " diam.) rounded chlorite spots often aligned (along bedding?) and some along micro-fractures. Spotting is much smaller at 312'-327' (similar amount as before, only no coarse spots). Gradual decrease in spotting after 327'. MINERALIZATION: tr specs py, cpy, sph, occur within the spots and along micro-fractures. - arsenide (not arseno) grains occur in the spots at 276', 285' vd 215.3 222.4 STRUCTURE: bedding at 362' is 30° to C.A. - The bottom contact is gradational and arbitrary and is taken as the last appearance of consistent definite spotting and the first appearance of massive cherty tuff.					
	vd 231.6						
375'	445.4	CHERTY - TUFF - med. grey-green, fairly massive, fine grained tuff. ALTERATIONS - 0 - 2% chl. as fine stringers and local blebs. - local breccia zones with dark matrix occur (usually 2"-12" long) increasing in size & occurrence down the hole.					
	vd 272.3						

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							Ag	
		MINERALIZATION: - sph, cpy, ga often occurs along the chlorite stringers.						
		STRUCTURE: Bedding angles are 40° at 417' 10° at 422' - tops indeterminate 10° at 433' 45° at 438' 20° at 445'						
		VENNS:						
		387.6' - 1/8" pink calcite vein with 1% ga, tr cpy, at 30° to C.A.	337	387.4	387.8	0.8'	0.15	
		391.7' - 1/16" pink calcite vein with cpy, py along edge at 30° to C.A.						
		393.7' - 1/16" - 1/8" pink calcite vein with tr sph, ga along edge, at 30° to C.A.						
hd 311.5 vd 243.6		395.5' - 1/8" white calcite vein with tr cpy along edges, at 60° to C.A.	338	395.3	395.8	0.5'	0.19	
445.4' 432.0' d 382.3 vd 293.3		ARGILLITE - black, siliceous, very fine grained fairly massive argillite. Mafic looking dyke at 468.0'-469.2'.						
		ALTERATION: - "grid" alteration (not intense) throughout. - local beds and/or sections are altered to medium green with 10% - 15% black chl. spotting.						
		MINERALIZATION: sparse po, cpy, sph occurs as fine stringers and disseminations particularly along "grid" alt'n.						
		STRUCTURE: generally the bedding is contorted.						

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO.D.H. 16

SHEET 4 OF

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H.16

SHEET 5 OF

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			FROM	TO	SAMPLE NO.	FROM	
512.5	654.7 ^{hd} 608.2 vd 446.1	PYROCLASTIC TUFF BRECCIA - as before, only no stringers of sph. Frags. are black and grey-green cht., porphyry, andesite. Quartz grains are evident throughout. Lapilli tuff sections occur intermittently after 550'.					Ag
		STRUCTURE: local bedding of fine grained tuff is: 35° at 552' 40° at 5611					
		ALTERATION: some "grid" alt'n. throughout. The frag. rims become bleached after 565'.					
		MINERALIZATION: local frags? of po-cpy-sph sparsely scattered throughout. A slight increase occurs down the hole.					
		VEINS:					
		519.0' - 1/4" pink calcite vein at 60° to C.A. (whole core sampled)	343	518.8	519.2	0.4'	0.03
		533.2' - 1" qtz-pink calcite-felds. vein at 30° to C.A.	344	532.9	533.5	0.6'	0.04
		544.5' - 1/8" grey calcite vein with py at 50° to C.A.	345	544.3	544.8	0.5'	0.03
		549.1' - 1/8" white calcite vein at 60°					
		555.3' - 1/4" pink calcite vein with 3% sph-ga, at 30° to C.A.	346	555.1	555.6	0.5'	0.04
		585.6' - 1/4" calcite vein with wall rock frags. at 70° to C.A.	347	585.4	586.0	0.6'	0.03
		Blocky ground 590' - 627'.					
654.7	659 ^{hd} 610.9 vd 448.0	CHERTY TUFF- fine grained, hard, well bedded, medium grey-green tuff. Contact is ~50° to C.A. & 10° to bedding. The bedding is cut off by breccia indicating tops up the hole. Bedding is 40° to C.A. Some Grid alteration is apparent.					
659'		END OF HOLE - CASING PULLED.					

ST JOSEPH EXPLORATIONS LIMITED DRILL LOG HOLE NO. DH 17

PROPERTY DEERHORN		TP OR AREA To Test S.E. of #25	AZIMUTH 30° 33'	DATE STARTED July 28, 1978	CORRECTED DIP TESTS	LOCATION SKETCH OF HOLE	
PROJECT		LOT & CONC. 1 V	DIP -37° 44'	DATE COMPLETED August 3, 1978	200' 39°	300' 43°	A2 26½°
CLAIM NO.		CO-ORDINATES 3830.88S 7221.28E	LENGTH 472'	DRILLED BY Barron D.D. - AQ size	400' 44°		
GRID NO.		CORE AT. BAILEY PROPERTY	COLLAR ELEV. .870'	LOGGED BY D. Robinson			

D.R. Robinson

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	ASSAYS			
				FROM	TO	LENGTH	
0	76	CASING					
	vd 46.8						
76.0	183.0	NIPISSING DIABASE Normal Diabase Coarse Grained 1/32 to 1/16" Med. grey, mottled due to pyroxene Feldspar xls.	SLUDGE	76	80	4	0.43
	vd 113.8			80	90	10	0.47
				90	100	10	0.19
				100	110	10	0.21
				110	120	10	0.15
				120	130	10	0.08
		Chilled contact parallel to greywacke bedding at 183.0		130	140	10	0.06
				140	150	10	0.03
				150	160	10	0.05
				160	170	10	0.04
				170	180	10	0.05
				180	190	10	0.04
84.5	112.0	Broken Core Numerous Chloritic slips 20 - 40° to C.A. Several healed (fault zones ?) marked by pale green banded zones to 1".					
86.1	87.8	1/8" Serp., Chlorite and pale green silicates in slip at 38° to C.A. Wall rock alt. to chlorite 1" from slip.					
87.8	90.9	¼ Healed Shears, 40° t C.A. Pale green silicates. Slickenslides 75° to C.A.					
91.2	91.2	¼ healed Shear, 80% Quartz, 20% pale green silicates.					

FOOTAGE	SECTION 1" =	DESCRIPTION					Ag	ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH		
		94.5 1/8 Ca grey, $\frac{1}{4}$ cleavages 55° t C.A. Chloritic walls, one grain Cp	385	94.3	94.7	0.4	.02	
		100.2 1" Shear, banded, 40° to C.A. Pale Green silicates - Epidote.						
		NOTE: Block at 107 incorrectly labelled 117' and so on to block at labelled.						
		104.0 1/8 1/8 Calcite vein, $\frac{1}{2}$ cleavages 40° t C.A. two coarse Cp grains, Chloritic walls, vein parallel dominant slips.	386	103.9	104.2	0.3	.02	
		122.6 & 123.9 Parallel $\frac{1}{4}$ " healed shears, 30° t C.A. Slickenslides 50° to C.A.						
		129.9 Healed shear 20° t C.A. Feathered appearance. Strong slip 20° t C.A. \perp to healed shear.						
		132.0 1" healed shear 30° t C.A. Trace Cp, Qtz. & pale green silicates.						
		136.0, 138.0, 138.9 Healed shears, 30° t C.A. Qtz. & pale green silicates.						
		155.5 Rusty slip in broken core at point $\approx 10^\circ$ t C.A. bit blocked. Also slips at 40° & 30° t C.A.						
		156.0 1/8 healed shear 1/8" chloritic alt. along slip walls, 1 grain Cp.						
		158.0, 163.6, 165.2 Healed shears, 40° to C.A. as before to $\frac{1}{2}$ chloritic alt. along walls.						
		168.5 $\frac{1}{4}$ healed shear 40° t C.A. Quartz and pale green silicates.						
		168.5 Strong Chloritic Slip 20° t C.A.						
		173.5 1/8" Qtz. with parallel 1/32 - 1/4" white Ca 50° t C.A. well developed chlorite & carbonate wall rock alt. to 1" from vein.	387	173.3	173.8	0.5	.02	

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							Ag	
		183.0 1/8" Pink Ca along bedding of greywacke at dia-base contact.						
193.0	238.2	HURONIAN GREYWACKE	SLUDGE	190	200	10	0.06	
vd 148.6		Med. grey, Soft < nail (except for sandy beds) Fine laminated sediment (silt) 1/100 - 1/8" beds, undisturbed 40° to C.A.	"	200	210	10	0.04	
			"	210	220	10	0.02	
			"	220	230	10	.04	
			"	230	240	10	.06	
		237.0 - 238.2 1/8" Sandy beds and silt beds inter-layered. Prominent slip ⊥ to bedding axes 30-35° t C.A. and 50° t C.A.						
		No veins except at 236.0						
		236.0 Several 1/32" red quartz. veinlets 90° t Bedding 30° to C.A.						
238.2	266.0	HURONIAN QUARTZITE (Massive)		240	250	10	.03	
vd 166.9		Med. grey Fine sand, <1/64 to (silt size ?) No bedding observed Very Hard » nail.		250	260	10	.02	
				260	270	10	.02	
		239.2 - 245.5 8 hairline fractures with films of calcite 20 t 45° t C.A.						
		248.5 hairline fracture, film Ca 45° to C.A.						
		250.6 Slip, film Ca 45° to C.A.						
		262.7 Slip film Ca 55° to C.A.						
266.0	301.5	HURONIAN BEDDED, QUARTZITE		270	280	10	.02	
vd 191.1		Medium grey - well bedded 1" to 24" beds of fine 1/64" to coarse 1/16 Sand separate by 1/8 to 1" thick silt beds, bedding 40 - 45° to C.A.		280	290	10	.02	
				290	300	10	.04	
		266.0 - 268.0 Gravel Bed 10%, 2" - 2" Pebbles in coarse sand 1/32" - 1/16"						

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			FROM	TO	SAMPLE NO.	FROM	
		1" =					
hd 230.9		298.5 - 301.5 Darker Grey, No texture observed very	388	297.0	298.5	1.5	.02
vd 189.1		strongly carbonated (Strongly Chloritic ?) Probably alteration zone (possibly sedimentary carbonate)	389	298.5	301.5	3.0	.02
		270.1 Slip film Ca 40° to C.A.	390	301.5	305.0	3.5	.02
		273.9 2 slips \ bedding 20° to C.A. Films of Ca					
		278.8 Slip 45° to C.A.					
		280.6, 281.5 Slips, film Ca, 50° to C.A.					
		280.6 \ bedding					
		281.5 \ bedding					
		289.4 Film Ca t Bedding 60° to C.A.					
		294.0, 294.5, 296.0 Films Ca 30 to 45° to C.A.					
		299.0 Calcite crystals in slip 50° to C.A.					
301.5	385.7	hd 294.3 HURONIAN CONGLOMERATE 2%	300	310	10	.06	
		Medium Grey	310	320	"	.06	
		Very Hard	320	330	"	.05	
		2% mixed pebbles to 2" in sandy matrix	330	340	"	.05	
		Quartz grains to 1/16" noted. Not bedded.	340	350	"	.05	
			350	360	"	.05	
			360	370	"	.02	
			370	380	"	tr	
			380	390	"	tr	
		301.9 - 303.9 Films pink Ca to 1/32" along right fractures weakly carbonated wall rock.					
		304.4 1/16" Pink Ca (Dolomite) 50 to C.A. along slip					
		307 Weak carbonate alteration.					
hd 238.7		309.2 1/4 Pink Ca (dolomite) 35° to C.A.	391	309.0	309.5	0.5'	.02
vd 196.4		Slip face is vuggy with clear calcite crystals.					
		Films of Ca at 312.6 @ 50°, 315.0 @ 55° t C.A.					
		317.8 @ 45° t C.A. 321.5 1/16 Ca @ 50° t C.A.					
		322.0 @ 50° t C.A. 339.0 75° to C.A.					

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. DH 17

SHEET 5 OF

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			FROM	TO	SAMPLE NO.	FROM	
		339.8 series of films over 0.5' at 30° to C.A. 340.0 @ 77° to C.A. 342.0 film Py 30° to C.A. 362.0 - 385.7 numerous films Ca, and silicate 40° t C.A.					
335.7	419.8	HURONIAN CONGLOMERATE	318.7		390	400	10 .03
vd	265.7	Med. grey - very hard - 80% mixed pebbles to 2" average $\frac{1}{2}$ ". Many Keewatin Argillite, and siltstone pebbles, (416.5 2" feldspar porphyry pebbles).			400	410	" .03
		412.0 - 414.0 Bedding ? (block of Keewatin ?) 50 - 60° to C.A.			410	420	" .03
		films and fine stringers Ca throughout.					
		386.5 1/32" Ca 45° t C.A.					
		392.2 0 - 1/8" Pink Ca with Cp on slip face, and to 6" from slips					
		395.2 1/32" Ca, 35° to C.A.			6281	391.6	395.5 3.9 0.08
		400.0 1/32 Ca minor Cp 30° to C.A.					
		402.2, 402.6, 403.0, 404.2, 1/32 "Pink Ca, 30-40° t C.A.					
		406.7, 408.5 1/32" Ca 35° to C.A.					
419.8	472	KEEWATIN SEDIMENTS	hd	356.3	420	430	10' .02
vd	308.9				LOST WATER		
		419.8 Sharp contact, Irregular, at 80° to bedding to Keewatin Sediments.					

FOOTAGE FROM	SECTION " =	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
		Medium Grey, to Greenish Grey, locally poorly defined to well defined bedding very fine grains $\leq 1/64"$ to silt size.					
		Beds range from very fine dark argillitic beds to $1/64"$ to coarser fine sand beds to 1".					
		(453.0 - 470.0 - Bedding not observed)					
		422.0 Bedding 40° to C.A.					
		433.7 Bedding 35° to C.A.					
		443.0 Bedding 50° to C.A.					
		446.5 Bedding 45° to C.A.					
		453.0 Bedding 45° to C.A.					
		Soft < nail except for fine sand beds which ~ nail. Chlorite spotting along fractures $1/64"$ white spotting in med. grey matrix in silty soft sediment. Also similar $1/64"$ dark green spotting in some soft silty matrix.					
		VEINS:					
		420.3 $1/8"$ Pink Ca trace Qtz. (Dolomite) trace Pb, 30° to C.A. 90° to bedding trace Py in nearby slips.	6282	420.2	420.9	0.7	0.10
		428 - $1\frac{1}{2}"$ Chert ll to bedding 25° to C.A. Grey $\approx 5\%$ Cp.					
		428.7 $1/16"$ Pk. Ca. 45° to C.A. (Dolomite).					
hd 325.8 vd 279.5		429.6 $3/16"$ Pink Ca., trace Cp. 40° to C.A. (Sub-parallel to bedding ?)					
		430.0 $1/16"$ Pk. Ca. $\approx 30^\circ$ to C.A.					
		430.3 - 430.6 Grey Chert - Sub parallel or parallel to bedding, (Both 15° to C.A.)					
		427.3 - 430.9 Disseminated Cp $\approx 0.2\%$	6283	427.0	430.9	3.9	0.50

FOOTAGE FROM	SECTION TO " =	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
438.1		1/16" Pink Ca, Dolomite 40° to C.A. ($\approx 70^\circ$ to bedding ?) 2 , 1/32" films of Pk. Ca along discontinuous healed fractures.	6284	437.9	441.0	3.1	Ag 0.13
439.1		1/8" Pink Ca (Dolomite) 60° t C.A. 5% Sph, Pb., ($\approx 70^\circ$ to bedding ?)					
439.7		1/16" Ca, 2% Pb, Sph, parallel to vein at 439.1 $\approx 20^\circ$ to Vein at 438.1".					
440.4		3/4 Grey Chert 5% Sph, trunkating, bedding at $\approx 30^\circ$ also parallel to bedding.					
		3/4 Chert band.					
441.0 - 443.3		Broken Core, average $1\frac{1}{2}$ " length.					
444.7 - 446.5		Broken Core, Rusty Slips 15° t C.A.					
450.0 - 460.0		Rusty slips 15° t C.A.					
455.0		Film Ca on slip 20° t C.A. slickenslides 40° to C.A. trace Py					
455.2, 456.1		Film Ca, 55° t C.A.					
462.3		1/4 Quartz button (Round) Ground on all sides, trace Pb 1% Py, Chloritic. Possible cove from up hole.					
463.6 - 470.0		Broken Ground $\frac{1}{2}$ - 1" lengths.					
472		END OF HOLE - CASING PULLED					

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. D.H. 18

PROPERTY Deer Horn	TP OR AREA COLEMAN	AZIMUTH 209° 03'	DATE STARTED August 4, 1978	CORRECTED DIP TESTS	LOCATION SKETCH OF HOLE
PROJECT	LOT & CONC. 2 V	DIP -40° 09'	DATE COMPLETED August 17, 1978	400' -41°	<i>R.S. Nichols</i>
CLAIM NO.	CO-ORDINATES 3545.1S, 6893.36E	LENGTH 801	DRILLED BY Barron D.D. - AQ SIZE	600' -38°	
GRID NO.	CORE AT BAILEY PROPERTY	COLLAR ELEV. ~868	LOGGED BY R. S. Nichols	700' -37° 213°	

FOOTAGE	SECTION	DESCRIPTION					Ag	ASSAYS		
			FROM	TO	1" =	SAMPLE NO.	FROM	TO	LENGTH	
0	127	1d 96.7	CASING							
		vd 82.4								
127	349.6	2d 262.6	NIPISSING DIABASE - typical, coarse grained, massive, diabase.	130	140	10'	.02			
		vd 230.6	The core is generally blocky.	140	150	"	.02			
			The bottom contact is obscured by blocky core.	150	160	"	.02			
				160	170	"	.03			
				170	180	"	.03			
				180	190	"	.03			
				190	200	"	.03			
				200	210	"	.03			
				210	220	"	.03			
				220	230	"	.02			
				230	240	"	.03			
				240	250	"	.03			
		VEINS:								
			135.2' - $\frac{1}{4}$ " grey calcite quartz vein with tr cpy, at 30° to C.A. 1" alt'n. halo around vein.	355	130.0	130.5	0.5'	.03		
			169.5'-174' - sections of fine grained diabase and serp. slips. some red hem. along slips.	250	260	10'	.02			
				260	270	"	.02			
				270	280	"	.02			
				280	290	"	.02			
				290	300	"	.02			
				300	310	"	.02			
				310	320	"	.19			
				320	330	"	.08			
				330	340	"	.05			
				340	350	"	.03			
			291.8' - $\frac{1}{4}$ " green serp - calcite vein at 50° to C.A. No alt'n. halo.							
			306'-329' - FAULT ZONE - bery blocky core with lots of chlorite slips. Had to cement 3 times to get through.							
			vd 202.0							
			1d 229.7							

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HOLE NO.D.H. 18

SHEET 2 OF

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							Ag	
		The diabase is slightly finer grained in this section. No calcite veins or carbonation is apparent. - Lost water at 354'						
349.5	350.7	286.1	HURONIAN CONGLOMERATE - 10-20% rounded pebbles (mostly granitic) in a fine grained, dark green, greywacke. (dirty quartzite)matrix.	350	360	10'	.02	
		251.0					LOST WATER	
			The core is generally blocky					
			Sparse chlorite spotting. Some hairline calcite stringers occur sporadically at random angles. Bottom contact is 55° to C.A.					
330.7	412.5	310.1	KEEWATIN MAFIC (LAMP?) DYKE - dark green, med. to coarse grained, massive amphibolitic dyke. A red, 1" diam. granitic xenolith occurs at 387'. Some banding next to the granite at 20° to C.A.					
		271.9						
412.5	801	615.4	KEEWATIN PILLOWED ANDESITE - dark green, well pillowled (small 3"-12" pillows) andesite.					
		511.9						
			ALTERATION: some bleaching around pillow edges. Some secondary brecciation with "grid" type alteration occurring along it. (some felds. locally with the "grid").					
			447-449' - strange type of chlorite & lappilli sized frags. (looks like a sed.).					
			740.7' - 801 - 5% fine white amygdules (?) or spotting throughout..					
			MINERALIZATION: tr sph, po, cpy occurs as fine grains and sporadic clusters from 421' - 428'. - 1 - 3% blebs of po py occur in and along pillow edges at 580'.					

FOOTAGE		SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
FROM	TO							Ag	
			VEINS:						
			492 - 497 - blocky core, some chlorite along slips.						
			617 - 659 - hairline white calcite stringers (about 1 per 18") with sph, ga, at random angles.						
hd 491.7	646.1'		646.1' - $\frac{1}{4}$ " - 3/8" white calcite vein lined with sph-	401	645.9	646.4	0.5'	0.11	
vd 418.6			ga, at 45° to C.A.						
	702.8'		702.8' - 1/8" white calcite vein at 50° to C.A.	402	702.5	702.9	0.4'	.02	
	704.5'		704.5' - 1/8" white calcite vein at 60° to C.A.	403	704.2	704.6	0.4'	.03	
	704.8'		704.8' - $\frac{1}{4}$ " white calcite vein with tr hemitite.	404	704.6	705.0	0.4'	.03	
801			END OF HOLE - CASING PULLED.						

ST JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. DH 19

SHEET 1 OF 1

PROPERTY DEERHORN	TP OR AREA 140' S.E. of Shaft	AZIMUTH 267° 13'	DATE STARTED Aug. 18, 1978	CORRECTED DIP TESTS			LOCATION SKETCH OF HOLE
				0	53° 44'	267° 13'	
PROJECT	LOT & CONC. 2 V	DIP -53° 44'	DATE COMPLETED Aug. 25/78	200'	50°		and
X X X X X CORE AT BAILEY PROPERTY	CO-ORDINATES. 2829.49 South	LENGTH 800'	DRILLED BY AQ SIZE Barron D.D.	300'	53°	273°	10'
GRID NO.	6302.99 East	COLLAR ELEV. 888'	LOGGED BY D. R. Robinson	400'	52°		and
				600'	53°		and
				600'	54°	272°	50'

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	ASSAYS			
				FROM	TO	LENGTH	
0	19	CASING , PIECE OF CASING LEFT IN HOLE	SLUDGE	20	30	10	0.03
19	800	NIPISSING DIABASE		30	40	"	0.02
		0 - 288 Dark grey, mottled by white feldspar, coarse grained 1/16 locally fine hyper- sthene noted \leq 1/16" Prominent to black pyroxene grains.		40	50	"	0.02
				50	60	"	0.03
				60	70	"	0.02
				70	80	"	0.03
				80	90	"	0.02
				90	100	"	0.02
				100	110	"	tr
				110	120	"	0.03
				120	130	"	0.02
		288 - 762 Hypersthene diabase as above but with 1/8 prominent amber hypersthene cleavages		130	140	"	0.02
		1 - 10% Hypersthene		140	150	"	0.02
				150	160	"	tr
				160	170	"	0.02
				170	180	"	0.02
				180	190	"	0.02
				190	200	"	tr
		762 - 778 Grades into Normal Diabase hypersthene grains become smaller 1/16"		200	210	"	0.02
				210	220	"	tr
				230	240	"	tr
				240	250	"	tr
		778 - 800.3' Dark Grey, Mottled by white feldspar, 1/16" crystalline		250	260	"	tr
				260	270	"	tr
				270	280	"	tr
				280	290	"	0.02
				290	300	"	0.02
				300	310	"	tr
				310	320	"	0.02
				320	330	"	0.02
				330	340	"	tr
				340	350	"	tr
				350	360	"	0.02
				360	370	"	tr

D.R. Robinson

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
FROM	TO	1" =					Ag oz/t
		27.2 - 28.5 Bleaching associated with a series of slips at 50° to C.A. and a healed shear at 28.1' (50° to C.A.)					
		81.1 1/4 Bleaching along slip 55° to C.A.					
		97.0 1/8 Healed shear, (Cp grain noted) fine banding 65° to C.A.					
		115.0 1/16 Ca Serp. slip ≈ 10° to C.A.					
		117.6 2" bleached Diabase					
		136.6 6" Bleached along 1/16 healed shear, 60° to C.A.					
		139.0 6" Bleached along 1/8" healed shear, 60° to C.A.					
		144.7 1/4" Ca very fine calcite 40° to C.A. Grey to white, Banded, 1/4" weak chlorite alt.	367	144.6	145.0	0.4	0.02
		172.6 1/16 healed shear, 60° to C.A.					
		176.7 3/8 Healed shear, banded silicates 60° to C.A. weak bleaching of wall rock.					
		179.6 1/8" Banded silicate (healed shear ?) 2" bleached Diabase 60° t C.A.					
		184.0 - 184.6 Bleached minor healed shearing 50° t C.A.					
		187.7 1/16" Qtz., 1/2 Chl. Alt.					
		199.4-200.0 Bleached Pale Grey, Minor healed shearing 55° to C.A.					
		201.6 1/16 Qtz. 60° t C.A.					
		212.4 1/8" Grey calcite 40° to C.A.	366	212.0	213.0	1.0	0.03
		212.0 - 212.6 Carbonated. 1" Chlorite zone along vein.					

FOOTAGE	SECTION	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
FROM	TO	1" =					Ag
		213.4 1/8" grey Ca 40° to C.A. carbonated 213.1-213.8	365	213.0	213.8	0.8	0.03
		213.6 1/4" grey Ca, 40° to C.A.					
		225.3 1/16" fine chloritic Ca, vein 50° to C.A.	364	225.1	226.0	0.9	tr
		225.7 1" Ca vein Aphanitic to 1/16 grey calcite & pink Dolomite Chloritic 50° to C.A.					
		225.1-226.0 Carbonated, minor Ca veining.					
		229.5 - 233.8 Medium Grey, fine grained strongly carbonated.	363	229.5	232.4	2.9	0.03
		232.4 - 232.9 4" Pink Dolomite 5% Chloritic inclusions walls at 40° & 45° to C.A. Walls ≈ 45° to each other.	362	232.4	232.9	0.5	0.02
		232.9 - 234.0	361	232.9	234.0	1.1	0.03
		238.5 1/16 Ca Grey 35° to C.A.					
		268.6 2" bleached diabase ≈ 40° to C.A.					
		284.0 - 289.0 Generally bleached light to medium grey.					
		287.7 1" Calcite Dolomite vein 40° to C.A. Carbonated walls 287.4 - 288.2 Pale Pink to white Opaque. Silicate inclusions.	360	287.4	288.3	0.9	0.02
		293.5 - 300' Core broken by numerous serp slips 20 - 50° to C.A.					
		296.4 1/8" silicate carbonate vein, 40° to C.A. 1/4 Chloritic wall rock alt. Tight walls.	359	296.2	296.7	0.5	0.04
		311.7-311.9 Bleached pale grey, along slip 60° to C.A. not carbonated	358	311.6	312.1	0.5	0.03
		316.0 2" bleached pale grey along 3 slips at 60° to C.A.					
		318.8 1/8" banded pale grey silicate along slip 65° to C.A. (healed shear?)					

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FOOTAGE	SECTION 1" =	DESCRIPTION					ASSAYS
			SAMPLE NO.	FROM	TO	LENGTH	
322.7		Minor bleaching of Diabase minor banded silicate 60° t C.A.					
341.0 - 341.5		Bleached pale grey along slip at 45° t C.A.					
342.2		Slip 1/8" Ca and serp. 30° t C.A. 1/4" Bleached wall.					
343.2		1/16 Serp along slip 25° t C.A. ≈45° t Slip at 342.2					
348.0		1/8" Ca in Broken Core were bit blocked.					
352.2		Serp. Slip 25° to C.A.					
352.5		Serp. Slip 60° t C.A.					
358.9		3/8" Ca Qtz. vein 48° to C.A. (white)					
359.2		1/2" Chloritic Grey Ca vein 45° to C.A.					
358.6-359.3		Carbonated wall rock chloritic near veins.	357	358.4	359.6	1.2	0.02
361.0-361.8		Carbonated weakly, Minor Ca veining 60° to C.A.	356	361.0	362.6	1.6	0.03
362.1		1/16 vuggy Ca.					
362.4		Slip 1/2 bleached walls 60° t C.A.					
		Serp. slips at 62.8, 63.2, 63.7, 64.8 at 55° t C.A.					
368.8		Film Ca 65° t C.A.					
377.0		1" Bleached along slip 60° to C.A.					
400.0-400.6		Carbonated	368	399.7	400.7	1.0	0.02
399.9, 400.3, 400.5		1/16 white & Pink Dolomite veins 50 - 60° to C.A.					
402.9		½ Banded grey calcite 60° to C.A. Chloritic	369	402.7	403.4	0.7	tr

FOOTAGE	SECTION 1" =	DESCRIPTION	SAMPLE NO.	ASSAYS			
				FROM	TO	LENGTH	
403.7		1/2 Pink Ca, with chlorite bands, 50° to C.A.	370	403.4	404.2	0.8	tr
404.0		1/8 Pink & white banded Ca vein 50° to C.A.					
402.7 - 404.1		Carbonated wall rock					
440.8 - 460.0		Zone of Serpentine slips spaced $\frac{1}{2}$ - 4 ft. apart \approx 25 t C.A.					
458.2	$\frac{1}{4}$	Serpentine 40° t C.A.					
458.5	$\frac{1}{4}$	Serpentine 50° t C.A.					
458.7	$\frac{1}{4}$	Serpentine 50° t C.A.					
490.0		Serp slip 0° t C.A.					
492.2		1" healed shear banded pale green silicates 30° to C.A. tr Cp, carbonated	383	492.0	492.4	0.4	0.04
493.0 - 400.0	1/16	Serp. ll to C.A.					
506.6	1/4	healed shear 35° to C.A.					
507.3	1/4	Dark green silicate 25° to C.A. (Chlorite ?)					
516.4 - 518.0		Slips at 50° to C.A. (spacing 1"-4")					
520.0	1/8"	Calcite in Serp. Slip 35° to C.A.					
523.8		Chloritic Slips 50° to C.A.					
553.0		Strong Serp. Slip 60° to C.A.					
557.5	1/16	Serp in slip 70° to C.A.					
558.0	1/32	serp Ca in Slip 55° to C.A.					
559.3 - 560.0		Series of slips spaced 1" 45° to C.A.					
613.8 - 614.9		Many serp. slips 60° to C.A.					

FOOTAGE	SECTION 1" =	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							Ag	
614.9		1/4" silicates including serp. 60° to C.A. well developed slickenslides.						
618.0-623.8		Bleached pale green, numerous random slips, trace Py on slip faces.						
647.2		1/8 healed shear 90° to C.A. Core broken by slips 60° to C.A. (647.0-647.6)	SLUDGE	370	380	10"	tr	
				380	390	"	tr	
				390	400	"	tr	
				400	410	"	0.02	
				410	420	"	0.02	
656.0 - 656.6		Core broken by slips 65° to C.A. spacing 1/2".		420	430	"	tr	
				430	440	"	tr	
				440	450	"	tr	
				450	460	"	0.02	
				460	470	"	0.02	
663.3		1/8 dark green chlorite variable angle 55° t C.A.		470	480	"	0.02	
685.0-686.0		Core broken by slips spaced 1/2 - 2".		480	490	"	0.02	
				490	500	"	0.02	
				500	510	"	0.02	
				510	520	"	0.02	
685.2		1/8 Calcite vein 70° to C.A. Fine white crystalline no alteration of wall rock.		520	530	"	0.02	
				530	540	"	tr	
				540	550	"	0.02	
				550	560	"	0.02	
				560	570	"	0.02	
688.3-672.0		Several slips 0 - 10° to C.A.		570	580	"	0.02	
				580	590	"	0.02	
				590	600	"	0.02	
				600	610	"	0.02	
716.2		1/16 Calcite minor silicate 60° to C.A. Not altered.		610	620	"	0.02	
				620	630	"	0.02	
				630	640	"	0.02	
724.3		3/8" calcite vein 2" carbonate alteration of wall rock.	384	724.0	724.6	0.6	0.03	
749.0-749.6		Broken Core Serp. slips 50° t C.A.						
778.6-780.5		Broken Core slips 45° & 0° to C.A.						
794.5		Slip 11 to C.A. causing Broken Core for 12"						

PROJECT		TP OR AREA 100' N. of Shaft	AZIMUTH 207° 40'	DATE STARTED Aug. 28, 1978	CORRECTED DIP TESTS	LOCATION SKETCH OF HOLE	
CLAIM NO.		LOT & CONC. 2 V	DIP -52° 38'	DATE COMPLETED Sept. 7, 1978	400 -56°		
GRID NO.		CO-ORDINATES. 2653.4S, 6161.1E	LENGTH 1055'	DRILLED BY Barron D.D. AQ SIZE	600 -57°		
FOOTAGE		SECTION	DESCRIPTION	LOGGED BY R. S. Nichols	800 -58°		
FROM	TO	I"	SAMPLE NO.	FROM	TO	LENGTH	Ag
0	23	13.8	CASING				
	vd	18.4					
23	765.5	430.5	NIPISSING DIABASE - very coarse grained, dark green, massive diabase with 10% - 20% brown hypersthene. Coarser and more abundant hypersthene occurs at 399' - 509' with gradational contacts over 10'. The diabase is weakly magnetic. Hypersthene content decreases markedly after 660'. Blocky core at 734' - 741'. Contact obscured by blocky core.	23	30	7'	.02
	vd	632.8		30	40	10'	.02
				40	50	"	.02
				50	60	"	.02
				60	70	"	.03
				70	80	"	.02
				80	90	"	.03
				90	100	"	.02
				100	110	"	240
				110	120	"	250
				120	130	"	260
				130	140	"	270
				140	150	"	280
				150	160	"	290
							300
							310
							320
							330
							340
							350
							360
							370
							380
							390
							400
							410
							420
							430
							440
							450
							460
							470
							480
							490
							500

R. S. Nichols

ST. JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. DH 20

SHEET 2 OF 1

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	FROM	TO	LENGTH	ASSAYS	
							Ag	
		hd 82.6 vd 111.9	411	138.7	139.4	0.7'	.04	
		*good looking 139.1' - 2" (true width) slightly pink calcite-chlorite vein at 40° to C.A. Very strong (greater than 6") alt'n. halo.	500	510	510	10"	.02	
			510	520	520	"	.03	
			520	530	530	"	.02	
		145.2' - hairline calcite vein with 1½" alt'n. halo, at 30° to C.A.	530	540	540	"	.02	
			540	550	550	"	.03	
		208.7 - 209.3' - series of parallel ¼"-½" pink calcite veins at 40° - 50° to C.A. Strong alt'n. halo.	412	208.6	209.4	0.8'	.02	
hd 130.9 vd 180.8		*223.2' - 1" slightly pink calcite vein at 30° to C.A.	413	223.0	223.6	0.6'	.02	
		298 - 317' - blocky core, some chl. and serp.						
		- dropped 5' in box 304' - 333', made up in boxes 550 - 571 & 571 - 593						
		368.4 - 369.4' - altered and carbonated diabase. ¼" white calcite vein at 30° to C.A. at 368.5'.	550	560	560	10"	.02	
			560	570	570	"	.03	
			570	580	580	"	.02	
			580	590	590	"	.02	
		393.0' - 395.7' - carbonated and altered diabase. Several stringers of calcite at low core angles but no definite vein.	590	600	600	"	.02	
			600	610	610	"	.02	
			610	620	620	"	.03	
			620	630	630	"	.04	
hd 290.9 vd 415.8		507.5' - ½" white calcite vein with 3"-4" alt'n. halo, at 25° to C.A.	414	507.3	507.9	0.6'	tr	
			630	640	640	10"	.04	
			640	650	650	"	.03	
		554 - 569 - blocky core with local fine grained, light green altered sections.	650	660	660	"	.03	
			660	670	670	"	.02	
			670	680	680	"	.02	
			680	690	690	"	.02	
			690	700	700	"	.02	
			700	710	710	"	.03	
			710	720	720	"	.02	
			720	730	730	"	.02	
			730	740	740	"	tr	

FOOTAGE	SECTION	DESCRIPTION	SAMPLE NO.	ASSAYS			
				FROM	TO	LENGTH	Ag
			740	750	10'	.02	
			750	760	"	.02	
765.5	900.7	hd 502.2 KEEWATIN ANDESITE - fine grained, dark green, fairly well pillowed andesite.	760	770	"	.04	
vd 747.5		Extremely blocky ground at 787.3' - 790'	770	780	"	.03	
			780	790	"	.07	
			790	800	"	.09	
			800	810	"	.05	
		ALTERATION: "grid" type alteration is prevalent throughout. Secondary brecciation (as at Conisil E) occurs after 837'.	810	820	"	.10	
		MINERALIZATION: 0 - 5% py - po occurs as grain clusters along grid alt'n. and within pillows.	820	830	"	.06	
		VEINS:	830	840	"	.08	
hd 444.6	792.1'	- $\frac{1}{4}$ " Pink calcite vein at 40° to C.A.	426	791.8	792.2	0.4'	0.17
vd 655.4			880	890	10'	.04	
			890	900	"	.05	
900.7	1001.6	hd 558.5 DYKE (LAMPROPHYRE) - dark green massive, fine to coarse grained, biotitic (locally) and some local orange feldspathic sections.	900	910	10'	.06	
vd 831.1		Local py clusters occur in about $\frac{1}{2}\%$ of rock. Upper contact is 40° to C.A. Bottom contact is 50° to C.A.	910	920	"	.03	
			920	930	"	.04	
		VEINS:	930	940	"	LOST WATER	
		925.0' - 926.5' - carbonated rock with several $1/8"$ white calcite stringers.					
		933.2' - $3/4"$ grey, coarsely X-taline calcite vein with some orange felds. at 60° to C.A.	427	933.0	933.4	0.4'	.09
hd 524.2	940.0'	- 1" grey calcite - chlorite vein with 1% cpy at 428 35° to C.A.	939.0	940.3	0.5'	.18	
vd 780.1							
1001.6	1005hd	588.5 ANDESITE - fine to med. grained dark green, fairly massive andesite.					
vd 875.4		ALTERATION: Local carbonation over 3"-10" sections.					

ST. JOSEPH EXPLORATIONS LIMITED

DRILL LOG

HOLE NO. DH 20

SHEET 4 OF

