



31C12NE0034 52 MADOC

010

DIAMOND DRILLING

TOWNSHIP: MADOC TWP.

REPORT NO: 52

WORK PERFORMED FOR: Harwin Exploration & Development

RECORDED HOLDER: Same as Above [xx]
: Other []

<u>Claim No.</u>	<u>Hole No.</u>	<u>Footage</u>	<u>Date</u>	<u>Note</u>
781913	HDS-87-1	376'	Nov/87	(1)
781914	HDS-87-2	398'	Dec/87	(1)
781913	HDS-87-3	241.9'	Dec/87	(1)
	HDS-87-4	82'	Dec/87	(1)
781912	HDS-87-5	425'	Dec/87	(1)
	HDS-87-6	396'	Dec/87	(1)
	HDS-87-7	334'	Dec/87	(1)
781911	HDS-87-8	347'	Dec/87	(1)

NOTES: (1) #W8909.007, filed Mar/89

Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:	HOLE SURVEY		
	METHOD: <u>Transit</u>		
<u>65+45N</u>	FOOTAGE	AZIMUTH	DIP
<u>34+40E</u>			
ELEVATION <u>896.3'</u>	<u>0</u>	<u>334° 30'</u>	<u>-45°</u>
CORE SIZE <u>BQ</u>			
LOGGED BY <u>Roy Wares</u>			
DATE LOGGED <u>30 Nov. 1987</u>			
MAP REFERENCE No. <u>31C/12</u>			

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of coincident magnetic, VLF and geochemical anomaly

HOLE No.	<u>HDS-87-1</u>
CLAIM NAME/No.	<u>781913</u>
COMMENCED	<u>26 Nov. 1987</u>
FINISHED	<u>29 Nov. 1987</u>
FINAL DEPTH	<u>376.0'</u>
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.	Au					
0'	15.0'		Casing.					oz/ton					
15.0'	59.5'		Marble, grey to cream, fine to medium grained, with prominent banding at 35° to core axis, irregular zones of secondary recrystallization at 17.5' to 21.5' and 38.0' to 41.5'.										
59.5'	60.0'		Mottled, recrystallized zone with ovoids of secondary calcite, and irregular stringers of pyrite.	59.5'	60.5'	1.0'	58526						
				60.5'	65.5'	5.0'	58527						
60.0'	99.1'		Quartz-pyrrhotite schist, with cataclasite from 60.0' to 64.1'; cleavage at 35° to core axis; fine 0.1" scale cleavage; 25% pyrrhotite with minor pyrite from 60.0' to 64.1'; secondary amphibole present; from 64.0' to 79.0', low pyrrhotite content, unit becomes quartz-chlorite schist; some 0.1" secondary pyrite stringers occasionally present; from 79.0' to 99.0', banding										

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SOUTHERN ONTARIO MINING DIV.
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 AM 7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6 PM

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 30 Nov. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-1

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS							
				FROM	TO	WIDTH	No.	Au							
60.0'	99.1'	(cont.)	becomes more prominent; scattered secondary pyrite stringers (0.1") over 88.0'-89.0'; irregular blotchy pyrite at 92.0' to 92.5'.					oz/ton							
99.1'	129.2'		Quartz-chlorite + hornblende schist, with cleavage at 35° to core axis; 1-3% pyrite and pyrrhotite, in fine stringers + sparse secondary pyrite in cross cutting stringers.	110.0'	112.0'	2.0'	58615								
129.2'	141.0'		Quartz-pyrrhotite schist, with cleavage at 10° to 30° to core axis; some secondary pyrite stringers present; sulphide content increases in zone 135.0' to 141.0' with 30% sulphide, pyrrhotite + pyrite 1:2; strongly laminated appearance 135.0'-141.0'; traces graphite along fractures.	136.0'	141.0'	5.0'	58529								
141.0'	143.5'		Irregular silicified zone, with quartz, pyrite and traces sphalerite, one speck of visible gold.	141.0'	143.5'	2.5'	58530								
				143.5'	148.5'	5.0'	58531								
				148.5'	153.5'	5.0'	58532								
153.5'	160.5'		Quartz-hornblende-biotite schist, with 20% pyrrhotite, 2" pyrite stringer at 148.1'; 1" at 149.5'; some evidence of folding;	153.5'	158.5'	5.0'	58533								
				158.5'	163.0'	4.5'	58534								

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 30 Nov. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. <u>HDS-87-1</u>

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS							
				FROM	TO	WIDTH	No.	Au							
143.5'	160.5'	(cont.)	cleavage at 10° to 30° to core axis; (30° predominates), traces chalcopryrite present; minor sericite present; cross cutting pyrite stringer at 30° to core axis at 158.0'; sericite prominent from 157.0' to 160.5'; blotches of pyrite and pyrrhotite over 6" at 160.0'.					oz/ton							
160.5'	164.0'		Cataclasite, with secondary quartz present, fine scale cleavage present, sparse stringers of pyrite at 163.0'-164.0'.												
164.0'	172.0'		Broad, irregular zone of chlorite-biotite schist, minor garnet present, traces talc.												
172.0'	376.0'		Basaltic andesite, dark grey/black; slightly paler and marginally coarser grained to 270.0'; then irregular, bleached, chloritic alteration septae at 30° to core axis, with garnet/biotite selvages; ptygmatic quartz stringer 2" wide at 234.5'; quartz- calcite vein, with minor talc at 282.0'; 8" quartz-calcite vein at 306.8'-307.8'; traces pyrite appear at 332.0', with blotchy	282.0'	283.25'	1.25'	58535								
				307.0'	307.75'	0.75'	58613								
				333.0'	334.75'	1.75'	58536								

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 30 Nov. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-1

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS						
				FROM	TO	WIDTH	No.							
172.0'	376.0'	(cont.)	weak pyritic zone at 333.5'-335.0'; traces pyrite from 340.0' onwards.											
	376.0'		End of hole.											

Gordon D. House



Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:		HOLE SURVEY		
64+60N		METHOD: Transit		
36+30E		FOOTAGE	AZIMUTH	DIP
ELEVATION 902.6'		0	335°00'	-45°
CORE SIZE BQ				
LOGGED BY Roy Wares				
DATE LOGGED 1 Dec. 1987				
MAP REFERENCE No. 31C/12				

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of coincident, magnetic, VLF and geochemical anomaly

HOLE No.	<u>HDS-87-2</u>
CLAIM NAME/No.	<u>EO 781914</u>
COMMENCED	<u>29 Nov. 1987</u>
FINISHED	<u>1 Dec. 1987</u>
FINAL DEPTH	<u>398.0'</u>
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.						
0'	5.0'		Casing.										
5.0'	265.0'		Carbonate unit, with 5.0'-47.0', cream, medium grained recrystallized calcitic marble, with low colour index, and sparse bedding/cleavage traces at 35° to core axis; from 47.0' to 92.0', becomes finer grained with thin septae of graphite/ biotite, cleavage at 30° to core axis; sub unit becomes grey/cream in colour and shows an incipient secondary fabric, with minor ptygmatic folds; from 92.0' to 207.0', becomes darker grey, laminated limestone/marble, with strong 1/4" to 1/2" banding, with sparse dolomitic horizons, partially altered to biotite and/or talc assemblages; fabric present with cleavage at 40° to core axis; thin quartz (1/4") septae present; from 207.0' to 265.0', grades into grey, banded marble with darker dolomitic bands; irregular weak zones of secondary recrystallized calcite,										

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Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 1 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-2

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS							
				FROM	TO	WIDTH	No.	Au							
5.0'	265.0'	(cont.)	cross cutting the fabric; minor folds at 197.5' and 220.0'-222.0'; 2" calcite vein at 202.2'. Recrystallized section from 225.0' - 228.0'; from 258.0'-265.0', interbanded limestone and fine grained dark silicified zones, with 1% pyrite in the silicified rocks.												
				267.75'	269.75'	2.0'	58537								
265.0'	345.0'		Quartz-pyrrhotite-schist (sulphide zone), finely laminated with silicification from 270.0'-272.0'; from 278.0'-292.0', the unit is a fine laminated cataclasite with secondary quartz augen; scattered 1/4" secondary pyrite stringers which cross cut cleavage; pyrrhotite content generally 10-15% but rising to 25% from 313.0'-345.0'; smear of chalcopyrite along cleavage at 284.3'; 1" quartz stringer at 289.5', with isolated grains of sphalerite.												
				285.0'	290.0'	5.0'	58538								
				290.0'	295.0'	5.0'	58544								
				295.0'	300.0'	5.0'	58539								
				300.0'	305.0'	5.0'	58545								
				305.0'	310.0'	5.0'	58540								
				310.0'	315.5'	5.5'	58546								
				315.5'	320.5'	5.0'	58547								
345.0'	347.5'		Altered zone, blotchy pattern with irregular calcite veining.	320.5'	323.0'	2.5'	58548								
				323.0'	328.0'	5.0'	58541								
347.5'	398.0'		Basaltic andesite; dark grey/black, fine grained, with irregular calcite veins and secondary weak bleaching along fractures.	328.0'	333.0'	5.0'	58542								
				333.0'	338.0'	5.0'	58543								
	398.0'		End of hole.	338.0'	342.0'	4.0'	58549								



Harwin Exploration & Development Inc.

Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:		HOLE SURVEY		
65+35N		METHOD: Transit, Dip		
38+25E		FOOTAGE	AZIMUTH	DIP
ELEVATION 912.2'		0		-45°
CORE SIZE BQ		242'		-44°
LOGGED BY Roy Wares				
DATE LOGGED 7 Dec. 1987				
MAP REFERENCE No. 31C/12				

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of coincident magnetic, VLF and geochemical anomaly

HOLE No.	HDS-87-3
CLAIM NAME/No.	EO 781913
COMMENCED	1 Dec. 1987
FINISHED	2 Dec. 1987
FINAL DEPTH	241.9'
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.	Au					
0'	5.0'		Casing.					oz/ton					
5.0'	54.5'		Grey, laminated calcitic marble, with lamination at 45° to core axis; occasional thin siliceous septae, occasional graphitic slips present; recrystallization increases from 41.0' onwards; scattered thin (1/4") dolomite lenses present.										
54.5'	66.5'		Interbanded dolomite/minor limestone, darker grey/brown in colour, increasingly silicified; fine laminae of pyrrhotite and minor pyrite present; cleavage/banding at 42° to core axis; minor talcose slips present with some minor folds at 58.0'-60.0'.										
66.5'	108.1'		Quartz-pyrrhotite-schist, dark grey, with fine 1/8" laminae at 45° to core axis; 15% sulphide content, chiefly 70.0'-83.0', then becoming coarser grained and increasing in content; cross	73.0'	78.0'	5.0'	58606						
				78.0'	83.0'	5.0'	58607						
				83.0'	88.0'	5.0'	58608						

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Diamond Drill Record

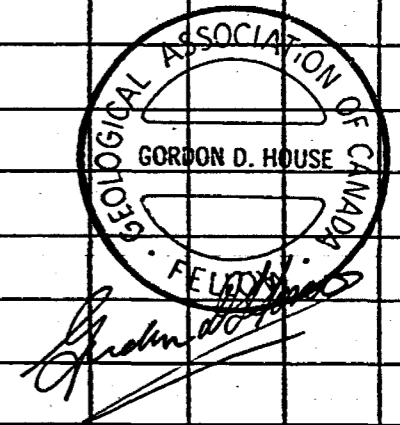
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DATE LOGGED 7 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-3

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS									
				FROM	TO	WIDTH	No.	Au									
66.5	108.1	(cont.)	cutting pyrite veinlet at 40° to core axis across cleavage,	88.0'	93.0'	5.0'	58609	oz/ton									
			at 83.5'; 30% pyrrhotite in finely laminated zone from 89.0'-97.0',	93.0'	98.0'	5.0'	58610										
			then becoming coarser grained from 97.0' onwards; crenulated	98.0'	103.0'	5.0'	58611										
			structure from 97.0'-103.0', with cleavage at 10° to core axis	103.0'	108.0'	5.0'	58612										
			at 102.0'-107.0'; from 104.0'-108.0', pyrrhotite content from														
			35-40%.														
108.1	123.0		Laminated section, quartz-garnet schist, with secondary feldspar,														
			amphibole; 20% pyrrhotite, with traces pyrite present.														
123.0	241.9		Basaltic andesite, dark grey/green with occasional secondary,														
			paler, chloritized, sections; from 149.0'-156.0', quartz-calcite														
			veining with chloritic envelope; some feldspathization from														
			190.0'-198.0'; cleavage at 50° to core axis; 3" cross cutting														
			calcite vein at 176.3', with anastomosing fine network of calcite														
			stringers; irregular calcite stringers at 188.0'-189.5'.														
	241.9		End of hole.														



Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:		HOLE SURVEY		
65+35N		METHOD:		
38+25E		FOOTAGE	AZIMUTH	DIP
ELEVATION	912.2'	0	025°	-60°
CORE SIZE	BQ			
LOGGED BY	Roy Wares			
DATE LOGGED	7 Dec. 1987			
MAP REFERENCE No.	31C/12			

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of east limb of fold structure

HOLE No.	HDS-87-4
CLAIM NAME/No.	EO 781913
COMMENCED	2 Dec. 1987
FINISHED	2 Dec. 1987
FINAL DEPTH	82.0'
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.						
0'	5.0'		Casing.										
5.0'	41.0'		Dark grey, partly recrystallized limestone, strongly laminated, with septae of secondary recrystallization; some minor cross cutting 1/4" secondary calcite stringers.										
41.0'	44.0'		Recrystallized white/cream limestone, with primary structure almost obliterated.										
44.0'	71.0'		Darker grey, finely laminated limestone, with occasional thin, boudinaged dolomitic sections; traces pyrite in slips at 20° to core axis.										
71.0'	82.0'		Recrystallized limestone, white/cream with traces graphite present.										
	82.0'		End of hole.										

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GEOLOGICAL ASSOCIATION OF CANADA
 GORDON D. HOUSE
 FELLOW

Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:	68+30N	HOLE SURVEY		
	122+40E	METHOD: Transit, dip		
ELEVATION	880.3'	FOOTAGE	AZIMUTH	DIP
CORE SIZE	BQ	0	316°	-50°
LOGGED BY	Roy Wares	392'		-51°
DATE LOGGED	8 Dec. 1987			
MAP REFERENCE No.	31C/12			

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of magnetic low on limb of VLF conductor

HOLE No.	HDS-87-5
CLAIM NAME/No.	EO 781912
COMMENCED	4 Dec. 1987
FINISHED	5 Dec. 1987
FINAL DEPTH	425.0'
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.	Au					
0'	28.0'		Casing.					oz/ton					
28.0'	46.2'		Quartz-chlorite + sericite schist, grey, with 3-5% pyrite; cleavage at 15° to core axis.										
46.2'	50.3'		Sheared, silicified section, with cleavage at 15° to core axis, disseminated pyrite and thin pyrite laminae present.	46.0'	51.0'	5.0'	58555						
50.3'	65.2'		Quartz-sericite-chlorite schist with 2% disseminated pyrite and scattered blebs (1/2") of pyrite.										
65.2'	68.5'		Sheared silicified section with disseminated pyrite; talcose in aspect; goethite along cross cutting fracture at 68.4'.	65.0'	69.0'	4.0'	58556						
68.5'	85.0'		Quartz-sericite schist, cleavage at 10°-15° to core axis with										

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Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 8 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-5

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS							
				FROM	TO	WIDTH	No.	Au							
68.5'	85.0'	(cont)	fine laminae of pyrite, 3-5% total; scattered quartz blebs along cleavage; quartz lenses prominent from 73.2' to 74.1'.					oz/ton							
85.0'	113.0'		Gradation into sericite schist, minor chlorite, with increasing pyrite content to 15%; from 95.0' to 97.0', occasional 1/2" bands of pyrite at 20° to core axis; 40% pyrite in zone 110.5' to 112.0'.												
113.0'	115.0'		Sericite schist with calcite present.												
115.0'	149.1'		Quartz-pyrite-sericite schist, medium grey in colour; sericitic shear from 125.0' to 126.5'; pyrite content generally 20%, with 30% from 123.0'-125.0', 126.0'-127.0', 130.0'-132.0' (45%); from 140.0'-141.0', 50% pyrite zone; minor fold at 129.0'-129.5'; minor secondary amphibole present throughout; traces sphalerite from 140.0'-142.0'.	124.5'	129.5'	5.0'	58557								
				129.5'	134.5'	5.0'	58558								
				134.5'	139.5'	5.0'	58559								
				149.0'	154.0'	5.0'	58560								
149.1'	235.0'		Pyrite-sericite schist, gradational from above, with 50% pyrite at 149.0'-155.0', 162.0'-164.0', 166.0'-180.0'; alternating	154.0'	155.6'	1.6'	58561								
				155.6'	157.5'	1.9'	58562								

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 8 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-5

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS							
				FROM	TO	WIDTH	No.	Au							
149.1'	235.0'	(cont)	coarse bands of pyrite up to 4" wide, with 1/2" to 1/2" bands in heavy pyrite sections; some recrystallization in coarser bands;	161.5'	163.0'	1.5'	58563	oz/ton							
			secondary quartz at 167.0', at 20° to core axis; more sericitic section from 170.0'-172.0'.	168.0'	173.0'	5.0'	58564								
				173.0'	178.0'	5.0'	58565								
235.0'	280.0'		Medium grey, sericite-pyrite schist, with fine laminae of pyrite, up to 1/2" bands at 25° to core axis, at 245.0', 251.0', 4 bands over 18" zone to 254.0'; 1" quartz stringer at 258.0', 4" stringer at 262.5'; heavier pyrite zones are recrystallized.	178.0'	183.0'	5.0'	58566								
				183.0'	188.0'	5.0'	58567								
				188.0'	193.0'	5.0'	58568								
				193.0'	198.0'	5.0'	58569								
280.0'	319.0'		Gradation into more deformed sericite-pyrite schist, with secondary quartz augen; unit merges into semi-cataclasite; 2" quartz-pyrite stringer at 290.5' that cross cuts cleavage, at 40° to core axis; some alternation of deformed and less deformed sections; pyrite content diminished to 15% with predominantly disseminated pyrite.												
319.0'	354.0'		Gradation into higher pyrite zone with disseminated and laminar												

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 8 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-5

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.						
319.0'	354.0'	(cont)	pyrite; 2" quartz vein at 334.5' at 20° to core axis; some recrystallized pyrite present in 1/4" pyrite bands.										
354.0'	425.0'		Gradation into paler grey, more sericitic, talcose section with high pyrite content (25-30%); zones with secondary chlorite at 360.0'-364.0', 371.0'-374.0'; from 408.0'-410.0', laminar high pyrite zone with 1/4" recrystallized bands; also 420.0'-423.0'.										
425.0'			End of hole.										

GEOLOGICAL ASSOCIATION OF CANADA
 GORDON D. HOUSE
 FELLOW
Gordon D. House

Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:	HOLE SURVEY		
66+60N	METHOD: Transit, dip		
125+05E	FOOTAGE	AZIMUTH	DIP
ELEVATION 887.4'	0	315°	-50°
CORE SIZE BQ	396'		-47°
LOGGED BY Roy Wares			
DATE LOGGED 7 Dec. 1987			
MAP REFERENCE No. 31C/12			

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of weak magnetic anomaly on limb of fold structure

HOLE No.	<u>HDS-87-6</u>
CLAIM NAME/No.	<u>EO 781912</u>
COMMENCED	<u>5 Dec. 1987</u>
FINISHED	<u>6 Dec. 1987</u>
FINAL DEPTH	<u>396.0'</u>
PROJECT No.	_____

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS									
				FROM	TO	WIDTH	No.										
0'	15.0'		Casing.														
15.0'	34.0'		Medium grained, grey, recrystallized limestone/marble with cleavage at 38° to core axis; thin dolomitic septae at 23.5'-26.0', altered to biotite/tremolite; occasional fine 1/8" graphite septae in the marble; fine pin heads of pyrite present (about 1/8") in dolomitic sections.														
34.0'	35.3'		Dark dolomite.														
35.3'	35.7'		Quartz-calcite vein with irregular blebs and masses of pyrrhotite from 35.3'-35.7', with pale grey chlorite/actinolite alteration envelope, trace sphalerite present.														
35.7'	47.0'		Predominantly dolomitic section with biotite tremolite.														

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 7 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-6

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS							
				FROM	TO	WIDTH	No.	Au							
35.7'	47.0'	(cont)	traces fine pyrite; minor calcitic sections where recrystallization present; tremolite section from 45.0'-47.0', at 32° to core axis.					oz/ton							
				38.0'	39.75'	1.75'	58551								
				39.75'	42.0'	2.25'	58552								
47.0'	71.0'		Predominantly calcitic limestone with thin dolomitic sections.												
71.0'	96.1'		Rapid alteration of calcitic and dolomitic sections; evidence of secondary recrystallization and secondary calcite in shears; minor shear at 81.5' with thin ptymatic folds; deformation more evident down hole.												
96.1'	107.0'		Predominantly dolomitic section.												
107.0'	153.2'		Predominantly medium grey, recrystallized limestone, thin dolomitic interbeds; from 135.0'-146.0'; strongly folded section; occasional fine pin heads of pyrite in the dolomitic sections, diminishes after 121.0'.												
153.2'	221.0'		Dark grey/brown, calcitic dolomite, little evidence of deformation												

Diamond Drill Record

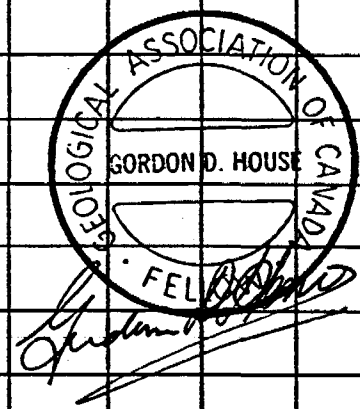
SAWYER CONSULTANTS INC.



DATE LOGGED 7 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-6

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS										
				FROM	TO	WIDTH	No.	Au										
153.2	221.0	(cont)	to 190.0', then thin calcitic lenses at 195.5'-197.0', 199.5'-201.5'; 1/2" pyrrhotite stringer at 217.0'.					Au										
221.0	232.1		Intermixed dolomite and limestone, predominantly dark grey/brown fine grained dolomite.															
232.1	281.0		Uniform, dolomitic section with few bedding and/or cleavage traces.															
281.0	340.0		Banded section with cleavage/bedding at 25° to core axis; alternating sequence with some recrystallization of limestone; traces pyrite appear.															
340.0	396.0		Increasingly recrystallized section, with minor silicified dolomite carrying fine grained pyrite; fold structures at 372.0'-374.0'; 2" quartz-pyrrhotite vein at 342.1'.	361.0	365.5	4.5	58553											
	396.0		End of hole.	381.5	384.0	2.5	58554											



Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:		HOLE SURVEY		
64+59N		METHOD: Transit, dip		
127+90E		FOOTAGE	AZIMUTH	DIP
ELEVATION	901.3'	0	315°	-50°
CORE SIZE	BQ	314'		-48°
LOGGED BY	Roy Wares			
DATE LOGGED	10 Dec. 1987			
MAP REFERENCE No.	31C/12			

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of weak geochemical anomaly

HOLE No.	HDS-87-7
CLAIM NAME/No.	EO 781912
COMMENCED	6 Dec. 1987
FINISHED	7 Dec. 1987
FINAL DEPTH	334.0'
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.	Au					
0'	5.0'		Casing.					oz/ton					
5.0'	114.0'		Dark grey, fine grained, calcareous siltstone with thin inter-bands of sericitic zones; cleavage at 20° to core axis; hematite - calcite stringer at 17.0'-18.0', at 20° to core axis; occasional fine cross cutting shears; sericite schist from 57.5'-62.2'; fine silty interbands from 84.0' onwards; traces pyrite in coarser zones; sericite/clay shear from 77.0'-78.5', at 20° to core axis; 4" quartz stringer at 30° to core axis at 91.5'.										
114.0'	144.0'		Interbedded calcareous siltstone and sericitic zones, markedly sericitic from 128.5'-132.0' (6" core loss); increasingly deformed with recrystallized sections from 137.0'-139.0'; 3% pyrite in silty fractions.	137.25'	139.25'	2.0'	58576						

ONTARIO GEOLOGICAL SURVEY
 ASSESSMENT FILES
 OFFICE
 JAN 19 1989
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Diamond Drill Record

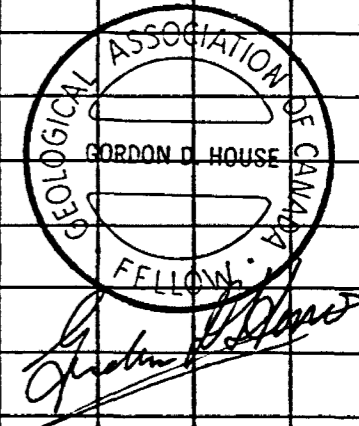
SAWYER CONSULTANTS INC.



DATE LOGGED 10 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-7

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	No.	Au					
144.0'	203.5'		Chlorite-sericite schist, deformed zone, with minor graphite					oz/ton					
			from 146.2'-149.0'; 5% pyrrhotite from 154.0'-156.0', with secondary										
			quartz/K-spar; 2" pyrrhotite stringer at 159.5'; 4" vuggy quartz	156.0'	161.0'	5.0'	58577						
			vein at 171.5', carrying traces sphalerite and a chloritic	161.0'	166.0'	5.0'	58578						
			envelope; 165.5'-166.5', silicified zone. Silicified zone at	166.0'	168.0'	2.0'	58579						
			190.75'-191.5', 192.0'-196.5', 197.0'-197.5', and quartz vein at	168.0'	172.5'	4.5'	58580						
			198.0'-199.5'; chlorite-sericite envelope around silicified zones.	172.5'	177.5'	5.0'	58581						
				177.5'	182.5'	5.0'	58582						
203.5'	254.0'		Gradation into less deformed zone, finely laminated siltstone/										
			quartz schist with sericitic lenses; limestone lenses are partly	189.0'	191.0'	2.0'	58583						
			recrystallized, and are at 25° to core axis.	191.0'	193.0'	2.0'	58584						
				193.0'	196.25'	3.25'	58585						
254.0'	334.0'		Gradational change to grey/brown calcareous siltstone, with	196.25'	202.0'	5.75'	58586						
			secondary carbonate porphyroblasts occasionally present, minor										
			folding of limestone lenses.										
	334.0'		End of hole.										



Diamond Drill Record

SAWYER CONSULTANTS INC.



COLLAR:		HOLE SURVEY		
74+10N		METHOD: Transit		
123+78E		FOOTAGE	AZIMUTH	DIP
ELEVATION	883.5'	0	135°	-50°
CORE SIZE	BQ	327'		-47°
LOGGED BY	Roy Wares			
DATE LOGGED	10 Dec. 1987			
MAP REFERENCE No.	31C/12			

COMPANY NAME HARWIN EXPLORATION & DEVELOPMENT INC.
 PROPERTY NAME ST. JOE PROPERTY
 DRILLING CONTRACTOR McKnight Drilling Company Limited
 ASSAYER Bondar-Clegg & Company Ltd.
 PURPOSE OF HOLE Drill test of strong VLF conductor on west limb of fold structure

HOLE No.	HDS-87-8
CLAIM NAME/No.	EO 781911
COMMENCED	7 Dec. 1987
FINISHED	9 Dec. 1987
FINAL DEPTH	347.0'
PROJECT No.	

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS								
				FROM	TO	WIDTH	No.	Au								
0'	17.0'		Casing.					oz/ton								
17.0'	48.75'		Grey/green, laminated talc-chlorite-sericite schist with cleavage at 80° to core axis; 25% pyrite, with 0.1" to 0.3" pyrite laminae, occasionally 1/2" to 1", with 1" pyrite at 29.0'; 60% pyrite from 45.5'-47.5'.	24.5'	29.5'	5.0'	58587									
				29.5'	34.5'	5.0'	58588									
				34.5'	39.0'	4.5'	58589									
				39.0'	44.0'	5.0'	58590									
48.75'	74.5'		Sharp transition to black chert-pyrite unit with cleavage/lamination at 75° to core axis; 40-35% disseminated and laminated pyrite; 3" quartz stringer at 65.5', 1" pyrite at 65.75'; quartz-calcite vein at 54.5'-55.0'.	44.0'	49.0'	5.0'	58591									
				49.0'	54.0'	5.0'	58592									
				54.0'	59.0'	5.0'	58593									
				59.0'	64.0'	5.0'	58594									
				64.0'	69.0'	5.0'	58595									
74.5'	75.0'		Quartz vein.	69.0'	74.0'	5.0'	58596									
75.0'	147.0'		Grey/cream, chlorite-sericite-quartz schist with sparse pyrite													

Diamond Drill Record

SAWYER CONSULTANTS INC.



DATE LOGGED 10 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe

HOLE No. HDS-87-8

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS								
				FROM	TO	WIDTH	No.	Au								
75.0'	147.0'	(cont)	from 92.0'-97.0', elsewhere 3-5% pyrite; 15% pyrite from					oz/ton								
			104.0'-105.0', 3" quartz vein at 85.0', calcite stringers at													
			83.0'-84.0'; secondary carbonate porphyroblasts present;													
			quartz-calcite stringers at 138.0'-139.0'.	138.0'	139.0'	1.0'	58605									
147.0'	207.0'		Gradational change to more greenish/grey sericite-chlorite schist													
			with cleavage at 50° to core axis; 1.5" pyrite stringer at	189.0'	189.25'	0.25'	58597									
			189.3'; pyrite content trace, but increasing down hole.													
				208.0'	213.0'	5.0'	58598									
207.0'	312.5'		Gradation into high pyrite zone, sericite-pyrite schist;	213.0'	218.0'	5.0'	58599									
			disseminated pyrite and pyrite laminae from ¼"-½"; where larger,	218.0'	223.0'	5.0'	58600									
			secondary recrystallization appears, laminae at 55° to core axis;	223.0'	228.0'	5.0'	58601									
			1" quartz vein at 225.3'; quartz-calcite vein, 1", at 244.5';													
			quartz-calcite stringer (1") at 263.5', 277.0', quartz-calcite	243.75'	244.75'	1.0'	58602									
			vein at 277.75'-278.75'; 30% pyrite zone from 282.0'-285.0';													
			pyrite content becoming variable from 297.0' onwards, general	278.0'	279.25'	1.25'	58603									
			pyrite content 20%; secondary carbonate porphyroblasts present.													
				297.25'	302.25'	5.0'	58604									

Diamond Drill Record

SAWYER CONSULTANTS INC.

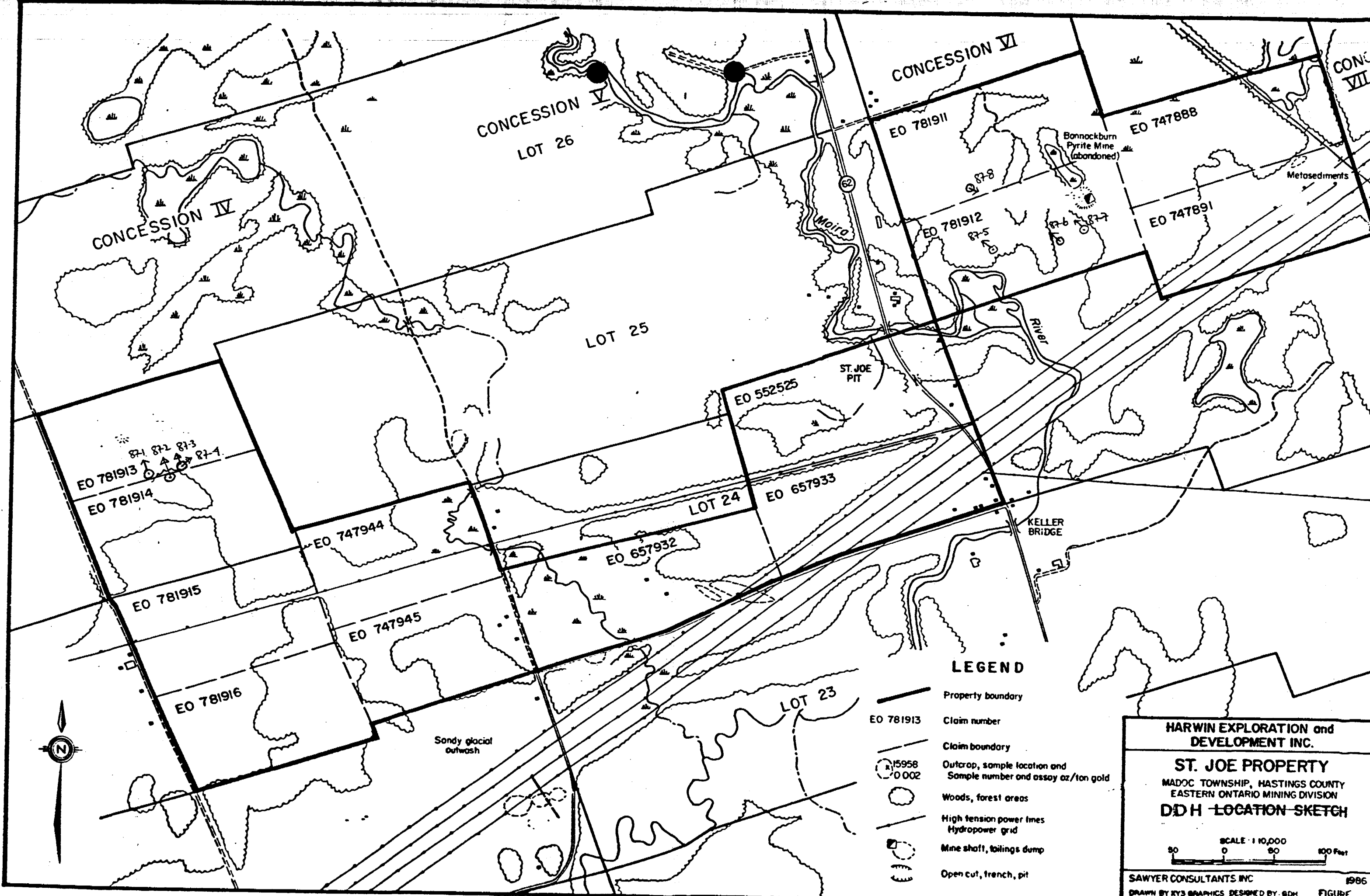


DATE LOGGED 10 Dec. 1987
 COMPANY NAME Harwin Exploration & Development Inc.
 PROPERTY NAME St. Joe



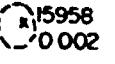





HOLE No. HD-87-8

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS											
				FROM	TO	WIDTH	No.												
312.5'	347.0'		Becomes paler grey, sericite schist, with 2-3% pyrite over 5.0', then recrystallized limestone with dark argillaceous component; cleavage at 40° to core axis; minor small scale folding present.																
	347.0'		End of hole.																

Gordon D. House
 GEOLOGICAL ASSOCIATION OF CANADA
 GORDON D. HOUSE
 FELLOW



LEGEND

-  Property boundary
-  Claim boundary
-  Outcrop, sample location and Sample number and assay oz/ton gold
-  Woods, forest areas
-  High tension power lines
-  Hydropower grid
-  Mine shaft, tailings dump
-  Open cut, trench, pit

HARWIN EXPLORATION and DEVELOPMENT INC.

ST. JOE PROPERTY
 MADOC TOWNSHIP, HASTINGS COUNTY
 EASTERN ONTARIO MINING DIVISION
DDH LOCATION SKETCH

SCALE 1:10,000
 0 50 100 Feet

SAWYER CONSULTANTS INC 1986
 DRAWN BY KYS GRAPHICS DESIGNED BY GDM FIGURE



Ministry of Northern Development and Mines
Ontario

Report of Work

DOCUMENT NO.

W8909-7

Min

MADOC Twp. G-1269



31C12NE0034 52 MADOC

900

Name and Postal Address of Recorded Holder

HARWIN EXPLORATION & DEVELOPMENT INC.

Suite #790, 885 Dunsmuir Street, Vancouver, B.C., V6C 1N8

Summary of Work Performance and Distribution of Credits

Total Work Days Cr. claimed 2450 Days ✓	Mining Claim			Work Days Cr.	Mining Claim			Work Days Cr.
	Prefix	Number			Prefix	Number		
for Performance of the following work. (Check one only)	EO	552525	✓	50	EO	781912	✓	200
	<input type="checkbox"/> Manual Work							
	<input type="checkbox"/> Shaft Sinking Drifting or other Lateral Work.							
	<input type="checkbox"/> Compressed Air, other Power driven or mechanical equip.							
	<input type="checkbox"/> Power Stripping							
	<input checked="" type="checkbox"/> Diamond or other Core drilling							
	<input type="checkbox"/> Land Survey							
		657932	✓	200		781913	✓	200
		657933	✓	200		781914	✓	200
		747888	✓	200		781915	✓	200
		747891	✓	200		781916	✓	200
		747944	✓	200				
		747945	✓	200				
		781911	✓	200				

WORK ASSIGNMENT
EO 781911
4,000 - 147 = 3853 days
EO 781912
4,000 - 955 = 3045 days
EO 781913
4,000 - 748 = 3252 days

All the work was performed on Mining Claim(s): EO 781911, EO 781912, EO 781913, ~~EO 781914~~
(347 days) (1155 days) (948 days)

Required Information eg: type of equipment, Names, Addresses, etc. (See Table Below)

DIAMOND DRILLING, BQ CORE, ✓
2,599 feet in 8 drill holes,
of which 2,517 feet of geological survey
applied for Assessment ASSESSMENT FILES OFFICE

McKNIGHT DRILLING COMPANY LIMITED
P.O. Box 906
Haileybury, Ontario
K0J 1K0

during the period:
25th November 1987 to 13th December 1987.

EO 781913
HDS-87-1 376'
HDS-87-2 398'
HDS-87-3 241'
HDS-87-4 82'

EO 781912
HDS-87-5 425'
HDS-87-6 396'
HDS-87-7 334'

EO 781911
HDS-87-8 347'

JAN 19 1989 RECEIVED

SOUTHERN ONTARIO MINING DIV.
RECEIVED

JAN - 8 1988 AM 7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6 PM

RECORDED
JAN 18 1989
Receipt # [Signature]

Date of Report: 6th January 1988
Recorded Holder or Agent (Signature): [Signature]

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
GORDON D. HOUSE, SAWYER CONSULTANTS INC.

Suite #701, 525 Seymour St., Vancouver, B.C. V6B 3H7
Date Certified: 6th January 1988
Certified by (Signature): [Signature]

Table of Information/Attachments Required by the Mining Recorder

Type of Work	Specific information per type	Other information (Common to 2 or more types)	Attachments
Manual Work	Nil	Names and addresses of men who performed manual work/operated equipment, together with dates and hours of employment.	Work Sketch: these are required to show the location and extent of work in relation to the nearest claim post.
Shaft Sinking, Drifting or other Lateral Work			
Compressed air, other power driven or mechanical equip.	Type of equipment	Names and addresses of owner or operator together with dates when drilling/stripping done.	Work Sketch (as above) in duplicate ✓
Power Stripping	Type of equipment and amount expended. Note: Proof of actual cost must be submitted within 30 days of recording.		
Diamond or other core drilling	Signed core log showing; footage, diameter of core, number and angles of holes.	Nil	Nil
Land Survey	Name and address of Ontario land surveyor.		

MADOC Twp.
G-1269

Tudor Twp.

III IV V VI VII

