DIAMOND DRILLING AND GEOCHEMICAL SOIL SURVEY OF THE HIAWATHA PROPERTY, 1980

LIZAR TOWNSHIP

PORCUPINE MINING DIVISION

LATITUDE	48° 51.5'
LONGITUDE	84° 29.5'
NTS	42 C/16

SVEINSON WAY MINERAL SERVICES LTD.

223 Hangar No. 3, Municipal Airport
Edmonton, Alberta T5G 2Z3

B. Way, P. Geol.

March, 1981

RECOMMENDATION

Since the property's discovery in the 1920's, sampling has been a problem. Gold occurs free and has a tendency toward lensoidal character. Sampling on widely spaced grid networks does not appear to be an adequate method.

Background values in the alteration zones and veins are high, commonly greater than 0.01 oz. Au/T. The recorded production in 1939 graded 0.074 oz./T., which is, under some circumstances, ore, if recoverable. It should be kept in mind that the average grade in Canadian gold mines is not much in excess of 0.1 oz./T. Considerable theft is alleged to have occurred and taking into consideration the lensoidal nature of gold deposition, this allegation is entirely possible.

The writer therefore proposed a staged exploration program which will encompass bulk sampling of the entire drift on the 275 level, South Zone, as the first step. The program and the budgeted cost follow below.

The second stage will be hinged on results and interpretations from the above program. One possible approach possibly would be to redrill the West Zone for reserves and grade. If the gold content is in excess of 1 oz./T., preliminary estimates suggest that it could be developed, mined, trucked on a winter road and custom milled at a significant profit. Further exploration of the South Zone by underground development possibly could be partly financed by such an endeavor.

At this time no further work is proposed on the North Zone.

Surface work involving line cutting, geological mapping and sophisticated prospecting methods should be vigorously pursued should the bulk sampling results of Stage 1 be positive.

HIAWATHA PROJECT

DEWATERING SHAFT AND SAMPLING

Purpose

To dewater Hiawatha shaft and bottom level (275 level) so that a two-foot lift can be drilled and blasted to permit the inspection and bulk sampling of the freshly broken vein material for gold.

Procedure

Shaft and bottom level were dewatered by Keltic Mining in 1974 using two 2151 B Flygt pumps in tandem. Keltic was able to dewater the shaft in a week. They were able to determine that seepage into the mine was at a rate of 60 to 70 Imperial gallons per minute.

Sveinson Way Mineral Services intends to dewater the shaft using 158 horsepower, 2201 B Flygt pump rather than two pumps in tandem. A similar dewatering rate will be possible without the problems of tandem pumping. A spare 2201 B Flygt pump will be rented and kept on the dock at Wawa to ensure little delay if the main pump has mechanical or electrical problems.

After dewatering to the 275 level, it will only be necessary to pump for six hours per day to maintain the water at the 275 level.

Power for pumping will be supplied by one 75 kilowatt, 550 volt, three phase generator. The pump and discharge column will be lowered by a 10 horsepower compressed air tugger hoist.

Compressed air will be supplied by two 185 c.f.m. portable compressors.

The lift will be drilled and blasted by three miners on two shifts taking three hole - 12 foot breasts. Ten to twelve breasts will be taken per day.

Ventilation will be supplied by three 12" compressed air fans and 12" flexible ventilation tubing.

Drilling water will be supplied by a compressed air pump in the shaft.

Samples will be taken from the freshly broken rock from the drift floor and from the freshly exposed backs.

HIAWATHA PROJECT

DEWATERING SHAFT AND SAMPLING

SCHEDULE

1.	Blast bulkhead and take water sample.	1 man	April 1 to 3
2.	Organize job in Slocan.	1 man	May 1 to 7
3.	Prospecting gear to Wawa.	2 men	May 8 to 10
4.	Prospecting gear from Wawa to Hiawatha.	3 men	May 11 to 13
5.	Set up camp and construct dock.	3 men	May 11 to 13
6.	Pump shaft to 275 level.		May 14 to 24
7.	Repair manway and install services to 275 level.	3 men	May 14 to 24
8.	Install services on 275 level.	3 men	May 25
9.	Geologist sample underground and hoist.	1 man	May 25 to June 8
10.	Drill and blast 1,500 feet of backs on 275 level.	2-3 men	May 25 to June 8
11.	Remove services on 275 level.	4 men	June 9 to 11
12.	Remove services from shaft.	4 men	June 11 to 12
13.	Fly gear out from Hiawatha to Wawa.		June 12 to 15
14.	Move gear from Wawa to B. C.		June 16 to 19

HIAWATHA PROJECT

APRIL TO JUNE, 1981

BUDGET

1.	Take Water Sample:		
	Flight to Wawa	600	
	Flight to Hiawatha	400	
	Meals and Accommodation	200	
	Drill rental and explosives	100	
	Charge for sample	50	1,350
2.	Transport gear and supplies to Wawa:		
	Two trucks		7,000
3.	Transport gear, etc. from Wawa to Hiawatha:		
	To set up project, one helicopter for two days	11,000	
	One plane for three days	4,800	15,800
	To supply camp, 40 flights at $400		16,000
4.	Transport gear, etc. from Wawa to Hiawatha		15,800
5.	Transport seven men from B. C. to Wawa and return at $600 ea.		4,200
6.	Room and board for seven men at rate for ten days of $50 per day		3,500
7.	Pick up truck rental and gas for two months at $1,400 each		2,800
8.	Camp Gear and Supplies:		

	Purchase Price	Less Salvage	Equals	
Propane stove	400	250	150	
Propane frig.	800	500	300	
Propane			500	
Three tents	900	450	450	
Four wood stoves	100	-	100	
Plumbing and lights	1,000	100	900	
Pots, pans, dishes	700	200	500	
Miscellaneous camp supplies	1,500	-	1,500	
Food for 7 men for 50 days at $30 per day			10,500	14,900

9. Mine Supplies:

Timber:			
12 - 2" x 8" x 12' (dock)		70	
16 - 2" x 6" x 12' (dock)		70	
500' - 2" x 4" x 12" (shaft ladders)		130	
8 - 8" x 8" x 12' (shaft manway)		240	
12 - 4" x 6" x 12'		240	750
Pipes & Fittings:			
Air:	2", 2,300 feet; water - 2", 2,300 feet = 4,600 feet at $1.10	5,060	
Plumbing:	4", 400 feet at $2.50	1,000	
	2" couplings, 500 at $4.80	2,480	
	2" valves, 15 at $40	600	
	2" elbows, 10 at $10	100	
	4" couplings, 40 at $12	480	
	4" check valve, 1 at $250	250	
		9,970	
Less Salvage:		(6,010)	3,960
Drilling & Blasting:			
25 cases 1" x 8" Cilgel at $75		1,875	
500 electric caps at $1.50		750	
3 - 2 ft. collared steel at $24		70	
3 - 8 ft. collared steel at $45		135	
15 - 12 ft. collared steel at $70		1,050	
10 - 14 ft. loading sticks at $10		100	
1 case of lead wire		500	4,480
Drill Holes:			
400 feet of 1" air hose at $2.10		840	
400 feet of 1/2" water hose at $1.40		560	
		1,400	
Less Salvage		(700)	700
Ventilation:			
2,000 feet of 12" vent tubing at $100 per 100			2,000
Total Mine Supplies			11,890

10. Diesel Fuel:

4 Kilowatt generator, 30 days at 12 hours at one gallon per hour =	360 gal.	
75 kilowatt generator, 10 days at 24 hours at 5 gallons per hour =	1,200 gal.	
50 days at six hours at 5 gallons per hour =	1,500 gal.	
One 185 c.f.m. compressor 4561, 16 hours at 2 gallons per hour =	1,440 gal.	
One 185 c.f.m. compressor, 20 days at 24 hours at 2 gallons per hour =	960 gal.	
At $1.75 per gallon:	5,460 gal.	9,550

11.	Tools:		5,000	
	Less Salvage		(3,500)	1,500
12.	Miscellaneous Supplies:			3,000
13:	Assaying:			
	500 - 40 lb. samples at $40		20,000	
	500 Chip samples at $10		5,000	
	Freight		2,000	27,000
14.	Rentals:			
	Two air pumps at $300 for two months		600	
	Three jack legs at $900 x 2 =		1,800	
	One 2201 B Flygt pump at $1,800 x 2		3,600	
	One 2201 B Flygt pump at $900 x 2 (standby)		1,800	
	350 feet of extra cable at $1.10/ft. x 2		770	
	350 feet of extra cable (standby) at 55¢/ft. x 2		380	
	One - 75 Kilowatt generator at $1,900 x 2		3,800	
	One - 4 kilowatt generator at $600 x 2		1,200	
	Two - 185 c.f.m. compressors at $1,600 x 2		3,200	
	One - 10 horsepower tugger at $400 x 2		800	
	900 feet of 1/2" slusher cable		900	
	Three - 12" fans at $675 x 2		1,350	
	One flat car at $100 x 2		200	20,400
15.	Labour:			
	1 Superintendent, 60 days at $140/day	8,400		
	Bonus	2,600	11,000	
	1 Geologist, 60 days at $120		7,200	
	1 Cook, 60 days at $90		5,400	
	1 Miner, 50 days at $120	6,000		
	Bonus	2,000	8,000	
	1 Miner's Helper, 50 days at $90	4,500		
	Bonus	1,200	5,700	
	2 Miners, 20 days at $120 per day	4,800		
	Bonus	4,800	9,600	
	Completion Bonus - 7 men at $1,000		7,000	53,900

Contingencies at 15 percent	31,300
Administration and Engineering at 10 percent	24,000
Total:	263,890
Allow	$265,000

INTRODUCTION

S. W. Exploration Partnership (1980), under the management of Sveinson Way Mineral Services Ltd., negotiated an option agreement with the owners of the Hiawatha Property during early 1980 and subsequently completed a diamond drilling and soil geochemical test program.

In addition, Sveinson Way Mineral Services Ltd. staked a large area (163 mineral claims) for a substantial land position in a favourable Precambrian greenstone belt. Echo Bay Mines Ltd. participated as a joint venture partner in the exploration program earning a 45% interest in any benefits by supplying 45% of the exploration funds.

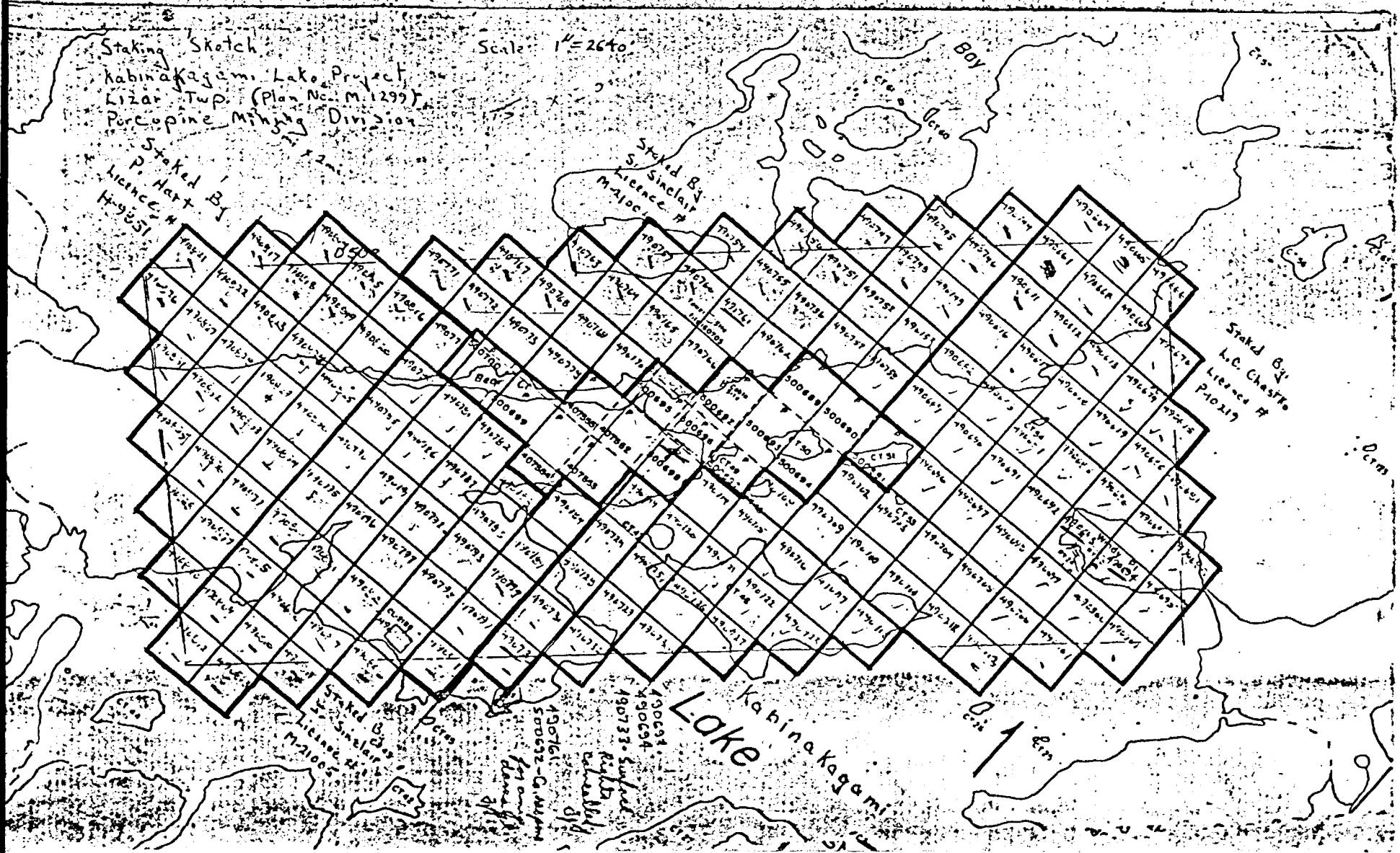
This report is prepared to summarize the Hiawatha data for the 1980 program.

PROPERTY

The Hiawatha Property consists of sixteen unsurveyed claims which are held in joint ownership by M. C. Halstead, L. J. McCarthy, C. W. Carter and L. Othmer. The data concerning these claims follows:

Mining Claim	Recording Date	Registered in Name of	Due Date
P-407552	June 21/76	M. C. Halstead	June 21/81
P-407553	June 21/76	M. C. Halstead	June 21/81
P-407554	June 21/76	M. C. Halstead	June 21/81
P-407555	June 21/76	M. C. Halstead	June 21/81
P-500689	Aug. 19/77	M. C. Halstead	Aug. 19/83
P-500690	Aug. 19/77	M. C. Halstead	Aug. 19/83
P-500691	Aug. 19/77	M. C. Halstead	Aug. 19/83
P-500692	Aug. 19/77	M. C. Halstead	Aug. 19/83
P-500693	Aug. 19/77	M. C. Halstead	Aug. 19/83
P-500694	Aug. 19/77	M. C. Halstead	Aug. 19/83
P-500695	Aug. 19/77	M. C. Halstead	Aug. 19/82
P-500696	Aug. 19/77	M. C. Halstead	Aug. 19/82
P-500697	Aug. 19/77	M. C. Halstead	Aug. 19/82
P-500698	Aug. 19/77	M. C. Halstead	Aug. 19/82
P-500699	Aug. 19/77	M. C. Halstead	Aug. 19/82
P-500700	Aug. 19/77	M. C. Halstead	Aug. 19/82

Sveinson Way Mineral Services Ltd. staked 163 claims surrounding these sixteen and along the favourable strike direction of the greenstone belt. The data follows:

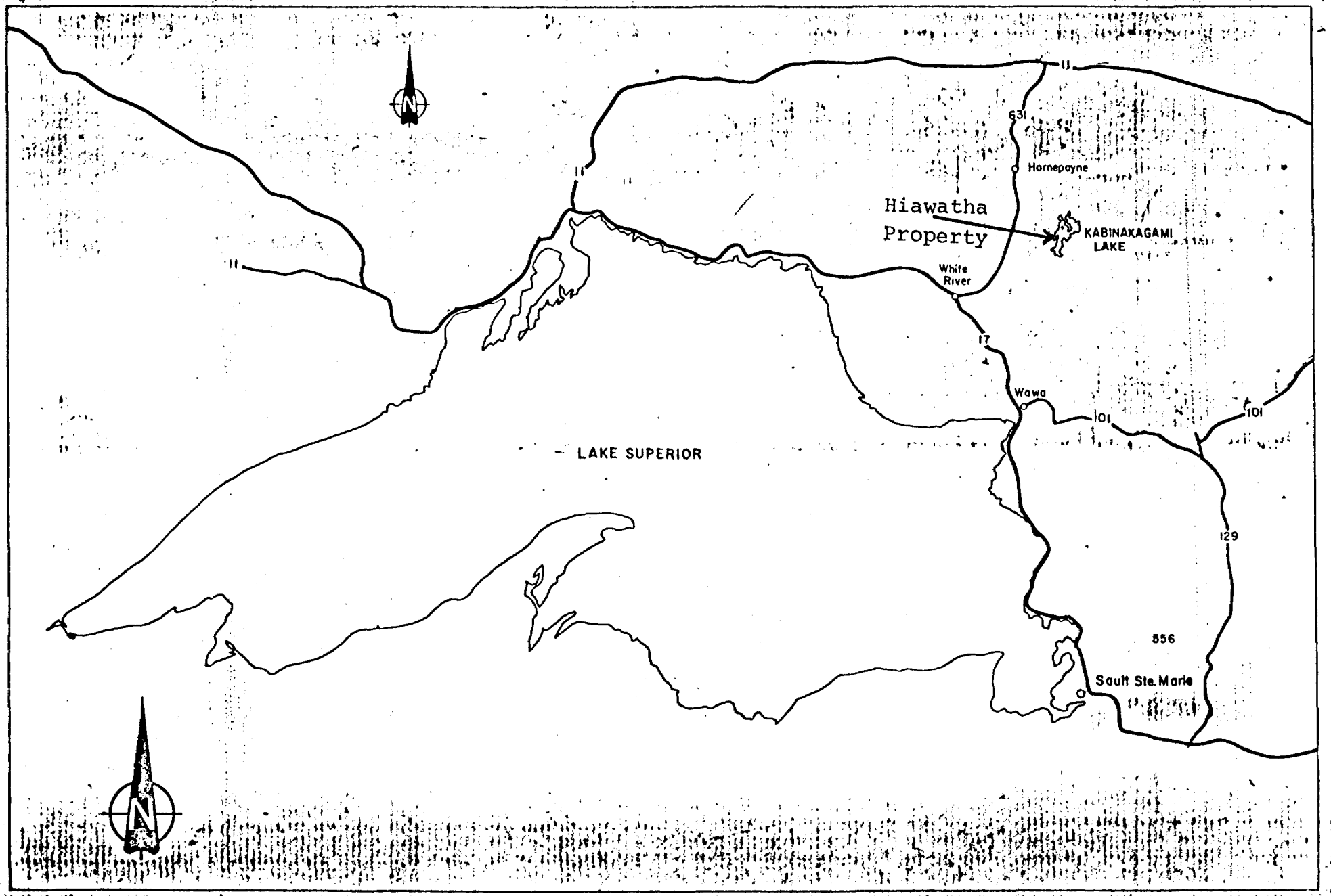

Staking Sketch
Kabinakagami Lake Project
Lizar Twp (Plan No. M.1297)
Porcupine Mining Division
Scale 1" = 2640'
Staked By
P. Hart
Licence #
M-9651
Staked By
S. Sinclair
Licence #
M-9100
Staked By
L.C. Chesire
Licence #
P-10319
Bay
Lake
Kabinakagami
1 km

The registration is under Sveinson Way Mineral Services Ltd. and the anniversary date is April 10, 1981 for all of the following:

P-490664	P-490665	P-490666	P-490667	P-490668
P-490669	P-490670	P-490671	P-490672	P-490673
P-490674	P-490675	P-490676	P-490677	P-490678
P-490679	P-490680	P-490681	P-490682	P-490683
P-490684	P-490685	P-490686	P-490687	P-490688
P-490689	P-490690	P-490691	P-490692	P-490693
P-490694	P-490695	P-490696	P-490697	P-490698
P-490699	P-490700	P-490701	P-490702	P-490703
P-490704	P-490705	P-490706	P-490707	P-490708
P-490709	P-490710	P-490711	P-490712	P-490713
P-490714	P-490715	P-490716	P-490717	P-490718
P-490719	P-490720	P-490721	P-490722	P-490723
P-490724	P-490725	P-490726	P-490727	P-490728
P-490729	P-490730	P-490731	P-490732	P-490733
P-490734	P-490735	P-490736	P-490737	P-490738
P-490739	P-490740	P-490741	P-490742	P-490743
P-490744	P-490745	P-490746	P-490747	P-490748
P-490749	P-490750	P-490751	P-490752	P-490753
P-490754	P-490755	P-490756	P-490757	P-490758
P-490759	P-490760	P-490761	P-490762	P-490763
P-490764	P-490765	P-490766	P-490767	P-490768
P-490769	P-490770	P-490771	P-490772	P-490773
P-490774	P-490775	P-490776	P-490777	P-490778
P-490779	P-490780	P-490781	P-490782	P-490783
P-490784	P-490785	P-490786	P-490787	P-490788
P-490789	P-490790	P-490791	P-490792	P-490793
P-490794	P-490795	P-490796	P-490797	P-490798
P-490799	P-490800	P-490801	P-490802	P-490803
P-490804	P-490805	P-490806	P-490807	P-490808
P-490809	P-490810	P-490811	P-490812	P-490813
P-490814	P-490815	P-490816	P-490817	P-490818
P-490819	P-490820	P-490821	P-490822	P-490823
P-490824	P-490825	P-490826	P-490827	P-490828
P-490829	P-490830	P-490831	P-490832	P-490833
P-490834	P-490835	P-490836	P-490837	P-490838
P-490839	P-490840			

LOCATION AND ACCESS

The property is located about 40 miles northeast of White River and about 60 north of Wawa, Ontario. It is most readily accessible via float or ski equipped light aircraft from Wawa, White River or Hornpayne.


Hiawatha
Property
KABINAKAGAMI
LAKE
Hornepayne
White
River
Wawa
LAKE SUPERIOR
Sault Ste. Marie
631
11
17
101
129
556

A winter road, 14 miles in length leads eastward from the south end of Kabinakagami Lake to the station at Prince on the Algoma Central Railway.

A water route about 36 miles in length permits summer access from Oba.

Ontario highway route 631, between White River and Hornpayne, lies 15 miles west of the Hiawatha Property. About 20 miles of road would be required to connect the property to the highway.

The property is located at latitude 48° 51' 40" and 84° 29' 20" longitude, lying on the west shore of Kabinakagami Lake, District of Algoma, Ontario. The area is situated in Lizard Township and the Porcupine Mining Division, NTS 42 C/16.

HISTORY OF PREVIOUS WORK

Surface gold showings were first discovered in the area of the Hiawatha Property during 1926 by an anonymous Indian. Prospectors subsequently attracted attention to their spectacular gold in trenches. Hiawatha Gold Mines Ltd. was formed in 1936. Between 1936 and 1939 the company spent in excess of $1 million in developing the mine, money raised by private subscription and ultimately by bank loan for their 20 ton mill installation. Hiawatha Gold Mines Ltd. completed 16,508 feet of diamond drilling, 325 feet of shaft sinking and 6,361 feet of development in cross-cuts, drifts and raises.

During 1939 a small mill of 20 tons per day capacity was financed and installed. The mill is reported to have processed 2,000 tons, but the operation appears to have been ill-prepared for little gold was recovered. By the end of 1939, the Hiawatha Mine was closed. Considerable theft, poor mill procedures and the outbreak of World War II contributed to the failure.

Various reports respecting theft exist from both the literature and verbal reports of people that in one way or another were involved with the property. One of the most credible stories comes from Mr. R. I. Ferguson who reportedly observed plate gold being stripped from a drift wall and placed in a powder box which he estimated to weigh 100 pounds. Mr. Ferguson was quoted 30 years later as having said, "I have often wondered what became of that box of gold from that day to this." At the time of the underground incident, Mr. Ferguson was a director of Hiawatha; at the time of the statement Mr. Ferguson was an Ontario Supreme Court Judge.

The recorded production from the Hiawatha Mine follows:

Date	Oz. Au	Tons Milled
1937	17.8	3
1939	142	1,928

Obviously from the 1939 figures the powder box gold, if it existed, did not yield revenue to Hiawatha Gold Mines Ltd. Other reports include several drift advances that contained gold: 15 oz. and 17 oz., for example.

In 1966 the property reverted to the Crown following the death of the principals and the cancellation of the company's charter. R. W. McCarthy, one of the original prospectors in the area, subsequently staked the property. After incorporating as Primrock Mining and Exploration Ltd., the property again received some activity during 1969. The shaft was dewatered; sampling and mapping of selected areas was completed. In 1971 surface mapping and geophysical work was done. Keltic Mining Corp. Ltd. optioned the property and in 1974 pumped out the workings and systematically sampled the structures. Their option was dropped and Nickel Rim Mines Ltd., a public company in the Dickenson group, optioned the property. During 1978 their work included four drill holes, surface mapping and a magnetometer survey. Their option agreement terminated and on February 25, 1980, all interests in the 16 claims were transferred to the present owners.

During early April, 1980, Sveinson Way Mineral Services Ltd. staked 163 mineral claims along the strike direction of the property. This company negotiated an option agreement with the owners of the Hiawatha Property and in joint venture with Echo Bay Mines Ltd. conducted an exploration program.

a. Previous Diamond Drilling

Hiawatha Gold Mines Ltd. during the late 1930's conducted 13,034 feet of diamond drilling from surface. The primary target was initially the North Zone, but included the West Zone and the South Zone.

Geological and engineering data for these holes has been lost. It is reported that 7 out of 15 holes intersected values greater than 0.75 oz. Au/T. across 3.5 feet in the North Zone. The remaining 8 holes assayed 0.04 oz. Au/T. or less. This drilling was done over a strike length of 1,500 feet. To the west, a second zone was drilled over a length of 200 feet and returned a grade greater than 1.3 oz. Au/T. (West Zone). To the east beyond the extremity of the mine, one hole is reported to have encountered solid gold which blocked the bit.

Primrock more recently drilled two holes spaced at 100 feet beneath the surface showing of the West Zone. Assay values obtained were 0.27 oz. Au/T. across 2.1 feet and 0.40 oz. Au/T. across 2.2 feet. During 1978, Nickle Rim Mines Ltd. completed 2,702 feet in four holes beneath the South Zone, locating 3 occurences with visible gold and one significant assay of 1.21 oz. Au/T. across a true width of 0.8 feet.

b. Previous Underground Sampling

No assay plans dating from the 1930's are known to exist. Various documents from that time period indicate that gold was irratically distributed. It seems that masses of native metal occur together with non-continuous seams, blotches and disseminated fine particles. Several incidences are reported where 15 ounces or more occurred in a single drift round. Representative sampling of such material is an extremely difficult task. Sampling has been attempted on two occasions.

During 1969, L. J. McCarthy, Vice President, Primrock Mining and Exploration Ltd., collected 109 samples from underground workings. The sampling was not done using a systematic pattern and the spotty locations suggest a selective sampling. Some very significant values were obtained, however. For example, in a length of 1,391 feet, South Zone, 275 level, 40 out of 78 samples yielded grades in excess of 0.3 oz. Au/T. across widths from 1 foot to 5 feet. On the 150 level, 21 samples were taken of which 10 yielded 0.27 oz. Au/T. or more across a minimum width of 2.0 feet. A small volume was chipped from the back, caught on a tarp and the product bagged.

These sample results cannot be averaged in a way to present grade and tonnage; they do, however, demonstrate that gold concentrations occur.

The sampling done by Keltic Mining Corp. Ltd. during 1974 returned dismal results by contrast. The workings were sampled at 10 foot intervals throughout. Only 12 locations were found with grade better than 0.1 oz. Au/T. Sampling was done using a small percussion hammer which cuts a narrow channel and consequently a small sample. This sampling program is also considered selective because it discounts completely the lensoidal nature of gold occurrence.

c. Previous Geological Mapping, Geophysical Surveys

Nickle Rim Mines Ltd., during their 1978 program, completed surface geological mapping at a scale of 1 inch to 100 feet in the immediate mine area. Keltic Mining Corp. Ltd. completed a magnotometer and E.M. survey in the mine area.

GENERAL GEOLOGY

The Hiawatha Property is underlain by Precambrian metamorphosed mafic volcanics and minor metasediments (a greenstone belt). Intrusion and/or granitization has left the greenstone belt with sills of quartz eye porphyry and granodiorite, Later the assemblage was intruded by diabase and lamprophyre dykes.

The geological table of formations follows (Table 1).

The regional trend for the greenstone belt is northeast to east along a fifty mile length. The belt is characterized by vertical to steep dipping schistosity. The Hiawatha Property is located at about the mid-point of this belt.

In the Hiawatha vicinity, gold is known to occur in quartz porphyry sills and also in shear zones within a granodiorite sill. This granodiorite body has been traced along strike for a distance of 2.5 miles and extends beneath Kabinakagami Lake. Quartz porphyry sills occur more frequently in the area but for shorter strike lengths.

The granodinite sill, referred to as the South Zone, has a width of about 400 feet. Located near the southern contact, a silicified shear zone is host to several gold bearing quartz veins and silicated zones scattered across a 120 foot width. The veins and shears parallel the granodiorite sill in strike and dip vertically.

A bluish colored quartz eye porphyry sill, known as the North Zone, occurs immediately to the north. The sill has a width ranging from 2 to 10 feet. Gold occurs in imtermittent shear zones within the porphyry and probably is disseminated as well. A similar occurrence about 0.5 miles to the southwest has been called the West Zone.

Diabase and lamprophyre dykes cut the above mentioned rocks, veins and shears. Locally the diabase trends subparallel and at right angles to the general structure. The dykes vary in width from a few feet to 165 feet. Lamprophyre dykes are more irregular. These dykes appear to follow fractures; offsets are minor.

About 400 feet north of the shaft a pronounced lineament marked by Bear Creek and the connecting bay in Kabinakagami Lake was drill tested in 1938. A strong shear zone was identified and an 8-foot wide quartz vein was reported.

TABLE 1

TABLE OF LITHOLOGIC UNITS FOR THE KABINAKAGAMI LAKE AREA
after Sigugsa, G. M. 1977

CENOZOIC
QUATERNARY
RECENT
Fluvial, lacustrine, and swamp deposits

PLEISTOCENE
Silt and sandy till containing some clay and variable proportions of pebbles and boulders; fluvioglacial deposits of sand and gravel (eskers); stratified clay deposits

UNCONFORMITY

PRECAMBRIAN
MIDDLE TO LATE PRECAMBRIAN
(PROTEROZOIC)
MAFIC INTRUSIVE ROCKS
Diabase dikes, porphyritic diabase dikes, minor amphibolite and lamprophyre dikes[1]

INTRUSIVE CONTACT

EARLY PRECAMBRIAN
(ARCHEAN)
FELSIC INTRUSIVE AND METAMORPHIC ROCKS
Biotite trondhjemite and trondhjemite to granodiorite; associated dioritic rocks derived from contamination; biotite granodiorite, quartz monzonite, minor muscovite-bearing granitic rocks

INTRUSIVE CONTACT

MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS
Metagabbro, metapyroxenite, metaperidotite

INTRUSIVE CONTACT (ASSUMED)

METASEDIMENTS
Sandstone, paragneiss, and lesser mafic schists interpreted as lean sulphide facies iron formation bands

METAVOLCANICS
Felsic Metavolcanics

Mafic to Intermediate Metavolcanics

1 The Middle to Late Precambrian age of amphibolite and lamprophyre dikes is tentative.

MINERALIZATION

a. South Zone

Hiawatha Gold Mines Ltd. concentrated their underground work on the South Zone. Several parallel quartz veins and silicated zones are located in the granodiorite sill. They dip vertically and strike 050°. Underground development has exposed five and possibly six veins or zones within the southern 120 feet of the granodiorite sill.

Each zone consists of narrow quartz veins, most often ranging in width from a fraction of an inch to six inches, but occasionally reaching a width of 3.0 feet. Veins are flanked by an altered wallrock consisting largely of fine grained quartz with minor carbonate and mica. Widths of the alteration envelopes are not accurately known; they appear to range from a few inches to four feet where they quickly grade into granodiorite.

Pyrite is disseminated throughout the zones. Veinlets of pyrite generally paralleling the strike of the veins occur both within the veins and in altered wallrock. Minor chalcopyrite and galena are disseminated in both veins and altered wallrock.

Visible gold in the veins is regularly reported by various authors.

Drifting on the South Zone on two levels appears to follow the same vein. Backs have been taken down but no raises connect the 275 with the 150 level. Mafic dykes cut the veins on both levels.

Chip sampling performed by Primrock Mining and Exploration Ltd. is considered by the writer to have been selective; nevertheless, the data suggests that significant gold mineralization occurs. Channel sampling performed by Keltic Mining Corp. Ltd. is considered by the writer to have been selective also. The sampling procedure involved a light percussion air-driven hammer which cut a shallow, narrow channel. Technically this is usually regarded as a representative sampling method, but since sample size is small and very local and since gold is very erratic, the results may not accurately reflect the presence and frequency of gold mineralization. Gold tends to occur as flecks and/or masses which may not be closely spaced.

Dr. W. F. James recognized the sampling problem in 1938 and recommended bulk samples in conjunction with chip samples. Hiawatha initiated this method and reported more satisfactory sampling results.

A second vein structure was developed, in one instance, rather extensively on the 275 level. Sampling by Primrock during 1969 indicates that significant gold occurs at least sporadically on secondary veins. Various cross-cuts driven off the drift on 275 level indicate by way of Primrock's sampling that other structures carry gold as well.

b. North Zone

Reports from Hiawatha concerning North Zone drilling indicate that gold mineralization was common in the quartz eye porphyry. The sill varies in width from about two to ten feet and commonly shows shearing and silication. Sericite is frequently associated with shearing. Narrow non-continuous quartz veins occur within and at the contacts of the sill. Pyrite, chalcopyrite and pyrohotite occur in quartz veins. Pyrite is disseminated throughout the sill. Gold appears to occur in the quartz vein portion of the sill, the porphyry having a low concentration.

Sampling underground by Primrock on the 150 level located three gold occurrences:

0.17 oz. Au/T. across 3.5 feet
2.78 oz. Au/T. across 3.0 feet
1.87 oz. Au/T. across 2.9 feet

These samples occur in a fifty foot length of the drift. The method of sampling is undoubtedly selective, but gold values were found. No sampling was completed on the 275 level, North Zone by recent groups. The drift is bulkheaded east from the shaft because of water inflow.

c. West Zone

A similar quartz porphyry sill, called the West Zone, occurs about 1/2 mile southwest of the shaft. The West Zone is reported to be 220 feet in length. It has been trenched to a depth of ten feet in the central area. Abundant visible gold reportedly occurred at the surface. Four diamond drill holes beneath the showing during 1937 assayed greater than 1.3 oz. Au/T. over a width of 3.5 feet. The holes were spaced at 50 foot intervals and had intersections as deep as 160 feet. Primrock drilled two locations 105 feet apart to vertical depths of 50 and 85 feet which returned assays of:

0.27 oz. Au/T. over 2.1 feet true width
0.40 oz. Au/T. over 2.2 feet true width

Gold occurs as masses and disseminations in highly silicated porphyry. A trial shipment of one ton is reported to have returned 57 oz. of gold.

About a half mile further west, another mineralized structure is reported to occur. No information, other than an identified length of 150 feet, is available.

d. Bear Creek Zone

A flat diamond drill hole drilled northwest from the shaft area on the 275 level intersected a broad shear zone. Toward the northern contact of shearing an eight foot quartz vein was located within granodiorite. No report on mineralization is available.

1980 PROGRAM DISCUSSION

a. Diamond Drilling

A total of 4,265 feet of coring was completed in 18 holes. Excellent core recovery was attained. Table 2 below shows details of the program.

Coring size was AQ; wireline equipment.

Core logs complete with assay values appears in Appendix A.

Location of holes drilled during 1980 appears on Figure 1.

TABLE 2

Hole No.	Azimuth	Location (old grid in ft.)	Dip	Target	Total Depth
80-1	323°	2 + 00 E, 3 + 00 N	-45°	N Zone	81.8 m
80-2	323°	3 + 00 E, 3 + 39 N	-50°	N Zone	69.5 m
80-3	323°	4 + 00 E, 2 + 50 N	-40°	N Zone	55.4 m
80-4	143°	5 + 00 E, 4 + 10 N	-55°	N Zone	45.1 m
80-5	143°	5 + 00 E, 4 + 10 N	-31°	N Zone	26.5 m
80-6	323°	5 + 00 E, 4 + 10 N	-40°	Bear Creek Zone	9.4 m
80-7	323°	6 + 00 E, 2 + 25 N	-48°	N Zone	57.3 m
80-8	323°	7 + 00 E, 2 + 50 N	-60°	N Zone	30.02 m
80-9	323°	9 + 00 E, 2 + 00 N	-55°	N Zone	42 m
80-10	323°	10 + 00 E, 2 + 50 N	-40°	N Zone and Bear Creek Zone	174.6 m
80-11	323°	11 + 00 E, 1 + 75 N	-63°	N Zone and Bear Creek Zone	199 m
80-12	323°	12 + 00 E, 2 + 10 N	-60°	N Zone	42 m
80-13	143°	11 + 50 E, 0 + 00 N	-35°	S Zone	51.2 m
80-14	143°	11 + 50 E, 0 + 50 N	-55°	S Zone	100 m
80-15	143°	10 + 50 E, 0 + 00 N	-40°	S Zone	51.2 m
80-16	143°	10 + 50 E, 0 + 50 N	-58°	S Zone	103 m
80-17	143°	9 + 50 E, 0 + 00 N	-34°	S Zone	54.2 m
80-18	143°	9 + 50 E, 0 + 50 N	-45°	S Zone	103 m

b. North Zone Drilling

Hiawatha Gold Mines Ltd. reported finding gold with erratic distribution following a 15-hole program in 1937. During the 1980 program, 12 holes intersected the porphyry, one of which yielded a significant assay: ddh 80-12, 0.8 m, 0.12 oz. Au/T. A surface grab sample nearby assayed 0.19 oz. Au/T. These results do not correspond with those obtained by Hiawatha, although the drifting done on 150 and 275 levels would indicate that they met with discouraging grades as well.

Evidence, guesses and speculation suggest that the North Zone contains erratically distributed gold. The writer cannot explain the discrepancy in the 1980 results as compared to the 1937 drilling program which had a success rate of 47%. Only bulk sampling at several locations will yield an indication on whether or not gold ore occurs within the North Zone.

c. Bear Creek Zone

Two holes drilled into the North Zone porphyry were continued beneath Kabinakagami Lake to test the Bear Creek Zone. The shear zone is broad, contains infrequent veins and minor amounts of sulfides. Both holes located a granodiorite body at the northwestern edge of the shear zone. The contact area in the granodiorite is itself sheared and intensely silicated. These holes probably located the "vein" that Hiawatha reported in this same contact area, the difference being that the writer prefers to call it an alteration zone. No gold mineralization was located in either hole. The appearance and structural location of this zone are, however, encouraging. Their silicated nature and sheared appearance are similar to the South Zone.

d. South Zone

A total of six holes were completed through the South Zone. The area selected was above an area on the 275 level where backs were taken down in preparation for stoping. The holes were also located above holes that Nickle Rim Mines Ltd. completed. Although Nickle Rim was able to find three out of four holes containing visible gold, the 1980 drilling failed to intersect visible gold. One significant assay occurred: ddh 80-15, 0.08 oz. Au/T., 0.7 m. Other assays are regarded by the author as anomalous; in fact, 33% of samples submitted had gold contents of 0.01 oz. Au/T., or greater. This may be highly significant in view of the tendency for gold to occur in masses and clusters which become statistically almost impossible to intersect with small diameter core.

e. Surface Sampling and Prospecting

During 1980, detailed prospecting of known areas of mineralization was carried out. Most exposures do not lend themselves to accurate sampling methods.

A tabulation of results follows:

Sample No.	Width	Location	Au oz/T.
38709	Selected sample	3 + 00 E, 4 + 00 N	0.03
38710	Grab, sheared greenstone	4 + 75 E, 3 + 60 N	0.002
38711	Grab, Quartz Porphyry	4 + 75 E, 3 + 60 N	0.005
38712	1.5 m	4 + 20 E, 3 + 50 N	0.005
38713	Grab, Quartz Porphyry Contact Area	4 + 50 E, 3 + 50 N	0.002
38714	Grab, Quartz Porphyry Contact	4 + 50 E, 3 + 50 N	0.002
38715	0.22 m	19 + 00 W, 3 + 10 N	18.060
38716	Chip in trench, silicious Breccia - 10 m	10 + 00 E, 1 + 70 S	Nil
38717	Chip in trench, silicious breccia - 10 m	10 + 00 E, 2 + 00 S	Nil
38718	Grab in silicious breccia	18 + 00 W, 3 + 00 N	Nil
38719	1.83 m, North Zone	32 m E of Headframe	0.19
38720	1.8 m, North Zone	50.3 m E of Headframe	0.002
38721	1.2 m, North Zone	61 m E of Headframe	0.02
38722	1.07 m, West Zone	W end of Trench	Nil
38723	1.8 m, North Zone	39.6 m E of Shaft	Nil
38724	0.25 m West Zone	E end of Trench	Nil
38725	Grab, South Zone	Trenches across south zone shears	0.60

Several significant assays occur in the above tabulation. The highest assay, 18.060 oz. Au/T. across 0.22 m, occurred at the eastern end of the West Zone. A mass of gold about 20 mm in diameter was surrounded by flakes of 2 to 3 mm. Despite the brilliance of this hand specimen, a sample cut immediately adjacent returned a Nil value. The problem of representative sampling is evidenced very clearly in this surface outcrop.

A trenched area on the South Zone returned an assay of 0.60 oz. Au/T. No visible gold was noted at this location despite the high assay.

f. Geochemical Soil Sampling Programs

A baseline has been established through the mine area which parallels the structural trend. A total of 15,000 feet of control line was cut during the 1980 season. A second baseline was initiated to the northwest with point of origin at the local fire tower. Of the 15,000 feet, 10,000 feet were cut here.

In the immediate mine area, soil samples were collected on lines spaced at 100 feet. Samples were taken from the B soil horizon at 20 m intervals using a grub hoe. Depths ranged from 3 inches to 18 inches. These samples were analyzed for gold, arsenic, copper and lead. West of the mine area samples were collected at 20 m intervals on lines spaced at 575 feet. Control on these lines was maintained by pace and compass technique. Analyses were done for copper and lead.

Soil geochemistry was chosen as a prospecting technique since earlier geophysical surveys were not definitive. The purpose was to test the method over a known area of mineralization near the headframe and to expand away in an effort directed toward defining mineralized areas.

The laboratory work with the soil samples was performed by Swastika Laboratories Ltd. of Swastika, Ontario and Bondar-Clegg & Company Ltd. of Vancouver, British Columbia.

A total of 15,000 feet of baseline was cut for control of which 5,000 feet was utilized during the 1980 program. Distance traversed on cross lines totalled 9.1 miles.

The intent of the survey test was in large part successful. Gold values have an apparent background level of less than 5 ppb, but over the North Zone and the South Zone in the area of the headframe, values ranging up to 85 ppb were encountered.

Copper values show a wide spread ranging up to 725 ppm. Lead values were more uniform and showed little differentiation.

Since the total area of the survey has not been surficially geologically mapped, a statistical test has not been performed on the results to determine background, threshold and anomalous levels. Areas of shallow outcrop and muskeg should be segregated before picking anomalous zones or applying statistical analyses.

One zone of interest is, however, apparent. It lies between lines 27 + 75 W and 45 + 00 W and trends eastward. Both copper and lead values appear to be moderately anomalous.

Utilization of geochemical soil sampling appears to have merit in defining areas of mineralization at the Hiawatha Property. Surficial mapping and detailed soil description in future programs will be invaluable with this prospecting method.

STATEMENT OF QUALIFICATION

I, Barry Way of Turner Valley, Province of Alberta, do hereby certify:

THAT I am a practicing Geologist residing at 115 Frontenac Avenue, Turner Valley, Alberta T0L 2A0.

THAT I am a registered Professional Geologist in good standing in the Province of Alberta.

THAT I received the Degree of B.Sc. in geology from the University of Alberta in 1973 and have practiced my profession continuously since graduation.

DATED at Edmonton, Alberta
this 23rd day of March, 1981.

B. Way, P. Geol.

REFERENCES

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Holbrooke, G. L. 1937. Report on Hiawatha Mines Ltd., private report for Ernie Canadian Mines Ltd.

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GOVERNMENT RECORDS

Ontario Department of Mines, 1938, Annual Report, Vol. 47, part 1, table facing page 10.

Ontario Department of Mines, 1940, Annual Report, Vol. 49, part 1, page 18 and 125-126.

Ontario Department of Mines, 1941, Annual Report, Vol. 50, part 1, table facing page 8.

NEWS RELEASES

Articles in Northern Miner, February 1937 to November, 1939.

CORRESPONDENCE

Letter from R. I. Ferguson to I.W.C. Solloway, October 24, 1938, concerning developments at Hiawatha Gold Mines Ltd.

SHAREHOLDER REPORT 1938 F. A. Enders, President

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 2 E - 3+00 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N37°W(grid north) @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-1 SHEET NO. 1 of 4
REMARKS Dip-collar - 45°
-81 M - 35°
(corrected)
Depth - 81.8 M

LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON	
0	1.8m	Casing										
1.8	8.53	Greenstone Dark greenish grey. Very fine to fine grained. Few scattered narrow (1-2 mm) quartz sutures at all angles to c/a. Weakly chloritic bands. 6.5 m - Lost water briefly. No visible shear. 7.1-7.3 - Biotite enriched zone. Moderate shearing. Foliated. Trace very fine PY. 7.62 - .15 M brecciated quartz vein. Trace PY.										
8.53	8.7	Shear Zone Strong shear. Sericitic. In part argillic. Trace PY biotite.										
8.7	9.1	Vein Massive white quartz contact @ 40° to c/a. Trace PY rust coloured on contact.	38608		8.5	9.0	0.5M			Nil		
9.1	23.5	Greenstone As above - minor quartz stringers - barren - at long angles to c/a. Biotite. Trace chl. enriched bands. Indistinct.										
23.5	23.9	Shear Zone Biotitic, sericite, minor quartz well sheared @ 60° to c/a. Trace argillaceous material - silicified.										
23.9	26.2	Greenstone As above - with increasing biotite enrichment zone. Minor sericite - chl. content low - biotite appears as randomly oriented laths. Medium grained - gradational to biotite schist.										

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-1 SHEET NO. 2 of 4

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON	
26.2	26.8	Biotite Schist Well sheared biotite oriented on shear plane. Sericitic - trace only PY.										
26.8	29.6	Greenstone As above - biotite rich. Fine to medium grained. Minor sericite. Increase in mafic content.										
29.6	30.72	Biotite Schist Medium to coarse grained. 45% biotite. Sheared. Trace residual quartz. Sharp contacts.										
30.72	30.81	Diabase Light grey. Very fine grained. Sharp contacts @ 45° c/a. Chilled margins.										
30.81	46.7	Greenstone Dark greenish grey. Uniform fine grain, granular. Moderate chl. content - uniform throughout. In part speckled with very fine white feldspars. No apparent shearing. 37.5-38 - Concentration of white speckles, as above. 38 - Increasing chloride content patchy. 41.1 - Weak brecciated vein - quartz. Trace PYRR, trace PY. Increasingly sericitic.										
46.[illegible]	50.0	Massive Tuff Light to medium grey. Very fine grained. Extremely silicious, minor pink cherty sections. No disconcernable banding. 46.7-46.8 - Weak quartz vein. Brecciated contacts. Some shearing - trace PY and PYRR. Ground extremely hard and blocky.	38609		49.9	51.2	1.3M			Nil		

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-1 SHEET NO. 3 of 4

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON
50.0	51.4	Shear Zone Strongly sheared argillaceous zone. Some clay in shear. Some brecciation - siliceous - bleached.									
51.4	61.4	Greenstone As above - greenish grey, fine to medium grain. In part chloritic, numerous quartz stringers < .06 m cutting core at all angles. Trace PY., very fine trace sericite. Biotite very fine grained and well disseminated.	38610		58.6	59.4	0.8M			Nil	
61.4	61.8	Diabase As above - very fine grained. Sharp contacts @ 75° c/a.									
61.8	63.2	Greenstone As above.									
63.2	63.5	Shear Zone Silicified argillic material, well sheared. Trace hematite stain, quartz infilling of fractures.									
63.5	65.98	Greenstone As above.									
65.98	66.35	Biotite - Rich Sheared Zone South contact sharp; north, gradational to greenstone - minor occurrence of feldspar porphyblasts, sericitic, trace Py.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-1 SHEET NO. 4 of 4

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON	
66.35	81.8	Greenstone As above - very low biotite content. Minor shearing. Generally uniform fine grain - low biotite content. 69.1 - 69.9, 73.9 - 74.25 - biotite rich zones. As above - feldspar phyroblasts, biotite, trace sericite - some shearing.										
81.8		End of hole.										

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 3E. 3 & 39 N.
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-2 SHEET NO. 1 of 3
REMARKS Dip -50° -44° @ 70M
Depth 69.5 M
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SULPHIDES %	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TOTAL	ASSAYS %	%	oz/TON Au	oz/TON	
0	3.35M	Casing										
3.35	5.2	Silicified Shear Zone (Vein) Well bleached, silicified, arcillaceous and felsic material, remnant feldspars visible, vuggy near contacts with traces of PT, PYRR & CPY. north contact and very long angle to c/a (10%).	38623		3.3	5.2	1.9M			Nil		
5.2	9.4	Greenstone Dark greenish grey-black - in part chloritic patchy zones of biotite-rich, sheared material. Trace sericite - few irregular quartz stringers cutting core at all angles.										
9.4	9.65	Vein Weak brecciated & bleached interval of quartz and feldspars. Trace only PY contacts weak.	38624		9.4	10.6	1.2M			Nil		
9.65	10.06	Greenstone As above.										
10.06	10.8	Sericitic Shear Zone Biotite and sericite rich greenstone, sheared @ 45° to c/a. White quartz stringers in shear plane. Trace PY. CPY.										
10.8		Greenstone As above. Moderate chloride and biotite. Few biotite rich sections. In places speckled with white flecs of feldspars - some stretched with shearing.										

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-2 SHEET NO. 2 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON
	28.9	Greenstone (continued) 20.7 M. Broken core, narrow quartz shear. Chloritic. Trace sericite. 21.9 M. Chloritic shear. Two .05 M quartz veinlets brecciated. Trace PY. CPY.									
28.9	32.6	Schistose Basaltic Dyke Medium grey, sheared tending to purple hues in centre of unit. Apparent .6 m chilled zone on both sides (uniform grey, less sheared). Mafics generally biotite. Pink feldspar phenocrysts on N. contact of dyke.									
32.6	33.5	Greenstone Dark green-grey, chloritic, sheared. Few very narrow quartz stringers. Trace PY.									
33.5	34.6	Silicious Vein Zone Light buff to grey. Silicious, remnant argillic material, extremely fine PY. scattered throughout. Few quartz stringers on shear planes (45° c/a)	38625 38626		33.8 34.7	34.7 35.9	0.9M 1.2M			0.002 Nil	
34.6	37.9	Chloritic/Sericitic Sheared Zone Primarily chloritic greenstone with inclusions of sheared sericite, hematite stained quartz, epidote. Traces fine PY. throughout. PYRR. Tr. CPY. Gradational to argillic/chloritic breccia (36.6-37.9)									
37.[illegible]	38.6	Shear Zone 37.9 - 38.3 - Argillic shear with clay seam (.1 M). Gradational to silicified vein zone.									
38.6	38.8	Vein Silicious argillic vein. Tr. Hem. stain. Tr. epidote. Tr. PY. PYRR & CPY. All very fine grained.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-2 SHEET NO. 3 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SULPHIDES %	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON	
38.8	53.8	Greenstone (Mafic Volcanics) As above. Green-grey, fine grained, chloritic in part few scattered quartz stringers. 40.9 - Narrow silicified shear with remnant argillic material. Trace only PY. 49.3 - 49.8 - Shear zone, silicified, remnant argillics, PY. trace Epidote.	38627		38	39	1.0M			Nil		
			38628		49.3	49.9	0.6M			Nil		
53.8	55.1	Dyke Light grey. Fine grained, silicious throughout. Porphyritic textured with small rounded phenocrysts of apparently light grey quartz. Matrix silicious, grey, no visible mafics. No shearing, very hard ground.	38629		53.8	55.3	1.5M			Nil		
55.1	55.3	Silicious Shear Well silicified shear zone on dyke contact. Trace Epidote, some remnant argillic material.										
55.3	69.5	Greenstone (Mafic Volcanics) As above. Grey-green. Generally massive & unsheared. Numerous irregular narrow quartz stringers. Few weak silicious shears.										
69.5		End of Hole.										

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha

HOLE NO. _____ LENGTH _____

LOCATION 4 E. 2 & 50 N.

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH N 37° W DIP @ collar

STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-3 SHEET NO. 1 of 3

REMARKS Dip -40° (Collar)
-28° @ 55 M
Depth 55.4 M

LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON	
Hole	80-3											
0	5.1	Casing										
5.1	6.4	Trondhjemite Light mottled grey, fine grained, silicious throughout, sheared @ 75° to c/a. Tr. PY.										
6.4	7.0	Lamprophyre Dyke Black, grey, fine - medium grained, biotitic sheared @ 75° to c/a.										
7.0	10.2	Greenstone (Mafic) Green-grey, fine grained. Few narrow silicious dykes (remnant trond.). All less than 5 cm width.										
10.2	11.2	Trondhjemite Dyke Narrow dyke of typical sheared trondhjemite.										
11.2	12.5	Greenstone As above.										
12.5	13.1	Shear Sheared silicious zone with silicified remnant argillic material. Trace epidote.										
13.1	34.4	Greenstone As above, few narrow, barren stringers, fine grained throughout.										
34.	34.8	Basaltic Dyke Black/grey fine grained, very little shearing.										
34.8	36	Greenstone As above.										

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-3 SHEET NO. 2 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON
36	36.1	Quartz Shear Sheared quartz veinlet with PY, CPY, trace epidote, chloritic contacts.									
36.1	37.3	Greenstone As above.									
37.3	37.4	Veinlet Quartz carb vein, sharp contacts @ 80° to c/a. PY. trace calcite.									
37.4	41.7	Greenstone Increasingly massive, fine grained, slightly chloritic, but hard.									
41.7	42.3	Shear Zone Massive banded sericite (to .1 M) with chloritic greenstone bands and sheared quartz stringers. All contacts sharp. @ 50° to c/a.									
42.3	45.6	Quartz Porphyry Sharp contact sheared, extremely silicious, grey to purple-grey. Very fine PY. scattered throughout. 43.2-43.5 80% quartz - white-grey, sheared. Tr. PY. Porphyry generally sheared. Quartz eyes very indistinct and scattered. 45.3-45.6 80% quartz with PY. CPY. PYRR. Sheared contact with greenstone. No apparent mafics or biotite remaining in quartz porphyry.	38647 38648 38649		42.3 43.5 44.5	43.5 44.5 45.7	1.2M 1.0M 1.2M			Nil Nil 0.06	
45.6	46.7	Greenstone Massive, chl. as above.	38650		46.6	47.2	0.6M			0.04	

LANGRIDGES – TORONTO – 366-1168

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-3 SHEET NO. 3 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON
46.7	47.2	Quartz Porphyry Shear Sheared bands of quartz, sericite and quartz porphyry. Silicified throughout. Tr. Pyrite.									
47.2	51.1	Greenstone As above.									
51.1	51.7	Aplite Dyke Grey/buff. Fine grained, sheared, original fabric completely destroyed. Remnant feldspars only.									
51.7	53.4	Greenstone As above.									
53.4	55.4	Aplite Dyke As above. Sharp contact @ 70° to c/a.									
55.4		End of hole.									

DIAMOND DRILL RECORD

NAME OF PROPERTY: Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION: 5 + 00 E, 4 + 10 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH: N 37° W DIP: @ collar
STARTED _____ FINISHED: June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80 - 4 SHEET NO. 1 of 3
REMARKS: Dip -55° (collar)
-49° (45 m)
Depth 45.1 m
LOGGED BY: A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton
0	0.9M	Casing									
0.9	3.3	Greenstone (Mafics) Green-grey, fine grained, locally biotite-rich, no shearing or stringers.									
3.3	4.4M	Lamprophyre Grey-black, medium grained, mod. quartz content, weakly sheared @ 50° to c/a.									
4.4	7.16M	Aplite Dyke Light grey, highly silicious, sheared @ 50° to c/a. Remnant mafics only. Aligned on shearing. Pyrite & traces of CPY scattered throughout. Contacts sharp @ 50° to c/a, minor sericitic shearing on south contact.									
7.16	15.1	Greenstone (Mafics) Green-grey, massive, fine grained, weakly chloritic in patches, very few stringers.	059		15.0	16.0	1 m			Nil	
			060		16.0	17.6	1.6 m			Nil	
			061		17.6	18.4	0.8 m			Nil	
15.1	18.3	Vein Zone Series of massive white quartz veins in sheared, sericitic greenstones. Contacts generally sharp, irregular & brecciated. Volcanics highly sericitic with bands of gold-brown sericite (<1 cm) Quartz veins 15.1-15.3, 15.46-15.8, 16.05-16.75, 17.05-17.15, 17.5-17.65, 18.05-18.30 Minor pyrite scattered throughout, trace CPY.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80 - 4 SHEET NO. 2 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
18.3	20.02	Dyke As above, silicified, partially destroyed aplite dyke, medium grey, biotite sheared @ 50° to c/a. Minor pyrites scattered throughout.									
20.02	22.7	Greenstone As above.	062		22.7	23.7	1 m			Nil	
			063		23.7	24.7	1 m			.002	
22.7	24.7	Vein Zone Massive crystalline white to grey quartz. Minor sericitic greenstone, sheared (80% vein material). Trace PY in volcanics, quartz barren. Sharp contacts, irregular angles.									
24.7	25.27	Greenstone Sheared, sericitic, pyrite, shearing @ 35° to c/a	064		25.2	25.9	0.7 m			.002	.03
			065		25.9	26.8	0.9 m			.01	.01
25.27	26.36	Vein Zone As above, massive white quartz, trace PY., trace sericite, barren.	066		26.8	28.0	1.2 m			Nil	.01
26.36	26.8	Greenstone As above, chloritic, biotite rich.									
26.8	28.0	Vein Zone Quartz vein, as above.									
28	37.5	Greenstone Green-grey, fine grained, massive, slightly chloritic, very uniform colour & texture, sericitic shear @ 29.1 m with blebs of quartz near sericite (<2 cm) 29.8 - 30.0 m - Patches of white quartz in volcanics - rounded blebs - sharp contacts (2-8 cm). No mineralization.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80 - 4 SHEET NO. 3 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag	
37.5	37.9	Sericitic Shear Zone Zone of banded sericite and quartz. Some chloritic material, sheared @ 45° to c/a.										
37.9	38.1	Vein On contact of quartz porphyry White quartz with trace PY. CPY.	067		37.4	38.7	1.3 m			Nil	.01	
			068		38.7	39.6	0.9 m			.002		
38.1	43.2	Quartz Porphyry Silicious, light grey to purplish grey Quartz eyes partially obscured. Bands of sericitic, sheared material on both contacts of porphyry. Trace PY. CPY. & PYRR throughout.	069		39.6	40.5	0.9 m			.002		
			070		40.5	41.9	1.4 m			Nil		
			071		41.9	43.3	1.4 m			.002		
43.2	45.1	Greenstone As above - massive, slightly chloritic.										
45.1		*End of hole.*										

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 5E, 4 & 10 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80 - 5 SHEET NO. 1 of 2
REMARKS Dip -31°
Depth 26.5 m

LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag	ASSAYS
0	1.8	Casing										
1.8	3.9	Trondhjemite Medium grey, fine grained, silicious in part, weakly sheared @ 50° to c/a. Weak pyrite scattered throughout. Sharp contact @ 3.96 m. Sheared, sericitic.										
3.9	7.13	Greenstone Green-grey, fine to very fine, weakly to moderate chloritic in patches. Scattered fine pyrite.										
7.13	7.50	Shear Zone Sheared @ 45° to c/a, alternate bands of white quartz & brown sericites, pyritic, tr. CPY,	003		7.0	7.5	0.5 m			.002		
7.50	10.5	Greenstone As above - slightly less chloritic - tr. PY. 9.9 m - 0.1 m quartz veinlet, brecciated contacts, barren.										
10.5	11.5	Dyke - Shistosic, Biotite-Rich Closely resembles trondhjemite, more mafic, weakly felsic sections, contacts very sharp @ 50° to c/a. Minor sericite on south contact.										
11.5	15.1	Greenstone As above, chloritic in patches, very fine grain, weak PY. and sericite throughout.										
15.1	15.28	Sericitic Shear 40% Gold-brown sericite, sheared @ 45° to core axis, .05 m quartz in centre of zone. Traces PY. PYRR & CPY. contacts sharp on shear plane.	004		15.0	15.4	0.4 m			.002	.03	

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-5 SHEET NO. 2 of 2

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
15.28	21.2	Greenstone As above.									
21.2	22.15	Silicious Shear Zone Light grey to purple-grey, porphyritic, silicious, no quartz eyes visible, weak sericitic patches. Contact with greenstone @ 45° - sericitic traces PY and CPY.	005		21.1	22.1	1.0 m			.005	.01
22.15	22.6	Shear Zone Alternating bands of sericite-rich & quartz. PY. CPY. PYRR. Quartz stringers Aur. <.02 m. Traces of silicified greenstone between quartz stringers.	006		22.1	22.6	.5 m			.005	.01
22.6	25.2	Quartz Porphyry Grey to purplish-grey, well silicified and sheared few scattered, partially destroyed quartz eyes. North contact on sericite shear, south contact @ 45° to c/a - contact on sericitic greenstone. Traces very fine pyrite throughout. Porphyry .3 m Quartz @ 24.07 - CPY, PY.	007 008 009		22.6 23.7 25.2	23.7 25.2 26.5	1.1 m 1.5 1.3			.005 .002 Nil	.02 .01 Nil
25.2	26.5	Greenstone Sericitic at contact - gradational to slightly chloritic, weakly sheared.									
26.5		End of hole.									

DIAMOND DRILL RECORD

NAME OF PROPERTY: Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION: 5 E, 4 & 10 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH: N 27° W DIP: @ collar
STARTED _____ FINISHED: June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-6 SHEET NO. 1 of 1
REMARKS: DIP: -40°
DEPTH: 9.4 m
LOGGED BY: A. Green and B. W.

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE & SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
0	2.5	Casing									
2.5	9.4	Greenstone Greenish-grey, fine grained, minor shearing with trace pyrite & sericite, few irregular quartz stringers, <.02 m. .01 m sericite shear band @ 3.05 m. Weak chloritic zones scattered throughout.									
	9.4	End of hole.									
		Rods broke into sand shear, no water returns. Casing broke and hole abandoned.									

LANGRIDGES — TORONTO — 366-1168

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 6 E. 2 & 25 N.
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-7 SHEET NO. 1 of 3
REMARKS Dip -48°
Depth 57.3 m
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag	
0	6.7 m	Casing										
6.7	10.9	Quartz Porphyry - type Trondhjemite Black with white & grey, well sheared throughout showing some silification. Medium grained with concentrations of quartz-eye like features. Traces of hematite. Biotitic. 7.0 m - shear showing oxidation & weathering, vuggy, soft, trace PY & CPY.	010 011		6.0 7.1	7.1 8.1	1.1 m 1.0 m			Nil .002		
10.9	11.9	Greenstone Gradational, sheared, contact to fine grained. Green-grey, greenstone contact zone 0.2 m long.	012		11.5	12.9	1.4 m			.002		
11.9	12.8	Trondhjemite - Silicified Gradational from greenstone - sheared. Silicified, very few remnant quartz eyes. Contacts & shears @ 50° to c/a.										
12.8	14.8	Greenstone As above. Sharp contact with Trond. @ 50° to c/a.	013		14.7	15.9	1.2 m			Nil		
14.8	15.0	Relic Trondhjemite, Silicified As above. Completely silicified. Low biotite content. No visible eyes, grey-purple colour.										
15.0	15.6	Greenstone As above - contact @ 50° to c/a.										
15.	15.85	Shear - Trondhjemite As above - contacts @ 50°.	014		15.9	16.6	0.7 m			.002		

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-7 SHEET NO. 2 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
15.85	16.0	Greenstone As above - contact @ 50° - sheared, sericitic.									
16.0	16.45	Shear - Trondhjemite As above - grey, purplish, well silicified. Sheared contact with .05 m quartz stringer. Trace, fine pyrite.	015		25.1	25.6	0.5 m			Nil	
16.45	26.9	Greenstone As above, few narrow barren quartz stringers. 20.8 - 0.2 m silicious zone, remnant argillic material, trace PY. 25.2 - weak sericitic shear, no min.	016 017 018		26.2 26.8 27.8	26.8 27.8 28.5	0.6 m 1.0 m 0.7 m			.002 .002 Nil	.01 .06
26.9	28.2	Quartz Porphyry Purplish grey, fine grained silicious remnant quartz eyes, sheared @ 80° to c/a. Traces fine pyrite & CPY scattered throughout. 27.1 - 27.3 - sheared biotite rich, mafic 'dyke' with contact @ 35° to c/a schistose.									
28.2	50.6	Greenstone As above. Few scattered barren stringers. Weak sericitic shearing in places. Chloritic in patches. 49.3 - weak shear zone with remnant arcillic material.	019		32.7	33.0	0.3			Nil	.01
50.[illegible]	50.7	Basaltic Dyke Dark grey-black, fine to medium grained. Remnant biotite, schistosic, trace silicification, contacts sharp @ 45° to c/a.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-7 SHEET NO. 3 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag	ASSAYS
50.7	51.0	Greenstone As above.										
51.0	51.5	Basaltic Dyke As above.										
51.5	57.3	Greenstone As above - few narrow quartz sutures, barren.										
	57.3	End of hole.										

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 7 E 2 + 50 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-8 SHEET NO. 1 of 1
REMARKS Dip -60
Depth ~~30.02~~ m
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE & SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
0	2.1	Casing									
2.1	19.05	Greenstone Green-grey to black, fine grained, minor chloritic sections. Zones of weak shearing with traces of argillaceous material. Traces of very fine pyrite scattered throughout. 2.7-3.2 m - chloritic shear @ 45° to c/a. No min. 10.05 - Brecciated quartz stringer, trace pyrite & CPY. 12.5 - Weak sericitic shear @ 90° to c/a with quartz stringers & remnant argillic material. Trace Pyrite CPY, PYRR.									
19.05	21.0	Quartz Porphyry Grey to purplish-grey, fine grained, very silicious, few scattered eyes of blue quartz. Entire zone shows shearing @ 50° to c/a. South contact on weak sericitic shear. North contact zone very silicious and sharp.	001 002		19.0 20.0	20.0 21.0	1 m 1 m			.002 .002	
21.0	23.3	Greenstone As above.									
23.3	23.8	Lamporphyre Dyke Contacts sharp @ 45° to c/a - Basaltic groundmass with biotite & minor quartz, medium grained, trace only PY.									
23.8	30.02	Greenstone Green-grey, as above, weak chloritic zones with minor shearing. Trace very fine pyrite scattered throughout.									
		End of hole.									

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 9E 2 + 00 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-9 SHEET NO. 1 of 2
REMARKS Dip -55°
Depth 42 m
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag	
0	1.5	Casing										
1.5	3.59	Trondhjemite Grey, white, fine grained, well silicified. Sheared @ 45° to c/a. Remnant biotite, fine pyrite scattered throughout.										
3.59	4.2	Lamprophyre Dyke Dark grey to black, medium grained, mafic, remnant quartz grains, weakly sheared.										
4.2	5.3	Trondhjemite As above, silicious, contacts sharp @ 40° to c/a. Fine pyrite throughout.										
5.3	6.7	Greenstone Green-grey, fine grained, 0.2 m altered @ contact. Silicified with sericite, massive, weakly chloritic, sheared @ 40° to c/a. Trace pyrite, few narrow (< 1 cm) stringers on shears.										
6.7	7.0	Trondhjemite (Dyke) As above, 3 cm quartz on south contact, trace pyrite, contacts sharp @ 45° to c/a.										
7.0	7.86	Greenstone As above.										
7.86	8.15	Trondhjemite (Dyke) Narrow silicified and sheared dyke as above - contacts sharp @ 40° to c/a.										
8.15	[illegible]	Greenstone (Mafic Volcanics) As above, massive, green-grey, slightly chloritic, zones of sericitic alteration and banding - 8.15 - 8.35 m and 14.3 - 14.6 m.	075		14.1	14.9	0.8 m			Nil		

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-9 SHEET NO. 2 of 2

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
24.0	24.1	Fault Zone Oxidized broken core, fractured, silicious.	076		24.8	26.2	1.4 m			.005	
24.1	24.25	Dyke Silicious dyke - possibly destroyed trondhjemite, trace pyrite, no mafics visible, contacts sharp @ 45° to c/a.									
24.25	24.9	Greenstone As above.									
24.9	26.2	Lamprophyre Dyke Dark grey-black, medium grained, with narrow brecciated quartz veinlets @ 25° to c/a. Trace remnant feldspars.									
26.2	32.5	Greenstone As above. Weakly chloritic sections with minor sericitic bands.	077		32.3	33.5	1.3 m			.002	
			078		33.5	34.9	1.4 m			Nil	
			079		34.9	35.5	0.6 m			.002	
32.5	34.9	Quartz Porphyry 32.5 - 32.6 - contacts with silicious (quartz) vein well sheared @ 45° to c/a. PY. PYRR. Fine grained, light grey with purplish hue, well silicified, remnant mafics only remaining. Quartz eyes indistinct and few in number. South contact with narrow sericite bands (< 1 cm). Lost water at 34.1 m.									
34.9	42	Greenstone As above.									
		End of hole.									

DIAMOND DRILL RECORD

NAME OF PROPERTY: Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION: 10 E, 2 + 50 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH: N 37° E DIP: @ collar
STARTED _____ FINISHED: June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-10 SHEET NO. 1 of 5

REMARKS

Depth	Tube	Dip (True
Collar	--	-40
63 m	-30	-23
Depth: 124 m	-20	-16
174.6 m	174 m	-23	-18

LOGGED BY: A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
0	1.8	Casing									
1.8	7.8	Greenstone Greenish grey, fine grained, chloritic in part; few narrow, quartz stringers, traces fine pyrite scattered throughout.	020 021 022		7.8 8.5 9.2	8.5 9.2 10.05	0.7 m 0.7 m 0.85m			.002 .005 .002	.01 .01 .01
7.8	10.7	Quartz Porphyry Light grey to grey-buff, very fine grained, well silicified throughout, very few indistinct quartz eyes. Trace PY, CPY & PYRR. Rusty shear @ 10.05 - (< .10 m) 10.05 - Lost water circulation.	023		10.05	10.9	0.85m			.02	.07
10.7	33.4	Greenstone As above - uniform green-grey, fine grained, weak chloritic sections, very few narrow (< .05 m) quartz stringers - barren.									
33.4	33.9	Aplite Dyke Light grey to whitish, sharp contacts @ 80° to c/a. Strongly silicified 33.4-33.8 - biotite rich, weak shearing, weakly brecciated, north contact.	024		33.4	34	0.6 m			.002	
33.9	42.5	Greenstone As above, few weak silicious sections - very little shearing.									
42.5	42.8	Shear Zone Soft, oxidized, broken zone, remnant argillic material trace hematite staining, few very narrow quartz sutures (< .01 m) - biotite remnants.	025		42.5	42.9	0.4 m			Nil	
42.8	53.0	Greenstone As above, few scattered weak shears @ 80-90° to c/a. No min. trace sericite on shears.									

LANGRIDGES — TORONTO — 366-1166

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-10 SHEET NO. 2 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
53.0	55.7	Lamporphyre Dyke Medium - dark grey. Fine grained, biotitic, few irregular quartz grains, no evident shearing. 53.6 - 0.1 m - quartz with sericitic contacts - no min. grain size increasing toward north contact.	026		52.8	53.6	0.8 m			Nil	
			027		53.6	54.5	0.9 m			Nil	
			028		54.5	55.5	1.0 m			Nil	
55.7	72.9 (198)	Greenstone As above, weakly chloritic in patches. 56.9 - weak shear, rusty, remnant argillic material, no min. @ 90° to c/a. 69.5 - 69.8 - Zone of more silicious, pyrite - rich greenstone - also considerable increase in feldspar content - possible aplite dyke, but no distinct contacts or grain differentiation. Minor sericitic and chloritic shearing @ 66.4 and 69 m.									
72.9	73.4	Aplite Dyke Dark grey, feldspar rich, sharp contacts @ 85° to c/a. Mafics partially destroyed. Weakly silicious.									
73.4	73.6	Greenstone As above, few narrow quartz stringers - no min. Weakly to moderately chloritic, trace pyrite.									
73.6	75.1	Aplite Dyke As above, fine to medium grained, remnant feldspars, grey.									
75.1	80.6	Greenstone As above, minor chloritic sections only, few irregular, narrow (< .05 m) quartz stringers, few weakly bleached sections (argillic alteration).									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-10 SHEET NO. 3 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
80.6	81.1	Silicified (Argillic) Dyke Remnant argillite, well silicified with quartz grains and fragments, uniform very light grey colour, fine grained, trace of remnant biotite, contacts sharp @ 85° to c/a.	029		81.0	82.3	1.3 m			Nil	
			030		82.3	83.3	1.0 m			Nil	.01
			031		83.3	84.7	1.4 m			Nil	.01
81.1	82.7	Greenstone Green-grey to light grey, fine grained, chloritic to taccose in places, sheared and altered throughout, soft, trace epidote and hematite, innumerable narrow irregular sutures (1-2 mm).									
82.7	82.9	Vein Barren white quartz brecciated contact with hematite staining.									
82.9	83.3	Greenstone Massive. Dark green-grey, unaltered.									
83.3	83.5	Vein As above, white quartz, barren, contacts hematitic and brecciated.									
83.5	89.9	Greenstone Altered, chloritic to taccose, sheared, broken core @ 87.7 m. Trace pyrite, numerous narrow sutures (1-3 mm).									
89.9	90.06	Diabase Fine to medium grained, sharp contacts, no visible chill-margin.									
90.06	9	Greenstone As above									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-10 SHEET NO. 4 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
90.7	90.9	Diabase As above, contacts not distinct.	032		90.9	92	1.1 m			Nil	
90.9	151.9	Greenstone 90.1-100 m - Extremely soft and talcy, argillaceous chloritic, slightly bleached, inclusions (breccia) of soft talcy material. 100 -117.9 - Greenstone - uniform dark green-grey, minor chloritic patches, few barren quartz stringers. 117.9-118.3 - Talc/chloritic shear @ 30° to c/a, broken and fractured core. (113-119) - local sections of greenstone speckled with small (1 mm) flecs of white alterating zones of fine grained, chlorite rich, massive greenstone with traces of pyrite scattered throughout. No stringers or biotite visible - to zones of biotite-rich, foliated fine to medium grained pyritic material. (126.1 to 128.6 m, 131.6 to 135.2 m) Talc/chlorite shears with minor sericite @ 121.9 - 122.2, 127.1 - 127.5, and 134.8 - 135.1.	033		92	93.1	1.1 m			Nil	
151.9	152.1	Dyke (Silicious Aplite) Silicious, grey-buff quartz with traces of hematite staining, remnant feldspars, possibly silicified aplite, contacts sharp @ 80° to core axis.	034		151.4	152	0.6			Nil	
152.1	166.5	Greenstone As above, slightly less chloritic, uniform colour and texture. 154.6 - weakly talcy zone, minor shearing. 165.8 - fine grained, chloritic, broken core.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-10 SHEET NO. 5 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag	
166.5	167	Vein Zone Silicious shear with quartz vein strongly sheared - trace chloritic trace hematite, .1 m quartz fractured - trace pyrite, core blocky.	035		166.4	167.1	0.7 m			Nil		
			036		167.1	167.9	0.8 m			Nil		
167	169.6	Granodiorite Grey-white, silicious, remnant quartz. Quartz blebs, mafics partially destroyed, very silicious and hard. 168.1 - 0.1 m vein, pyrite, CPY, PYRR, well mineralized, gradational contact with granodiorite.	037		167.9	168.5	0.6 m			Nil		
			038		168.5	169.6	1.1 m			.002		
169.6	171.5	Greenstone Chloritic, green-grey, sharp contact @ 85° to c/a. Massive, slightly bleached appearance - no stringers.										
171.5	174.6	Granodiorite As above, sharp contact, less alteration and shearing with depth.										
	174.6	End of hole.										

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 11 E 1 + 75 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 1 of 8

REMARKS

DEPTH:	DIPS	TUBE	TRUE
199 m	Collar	-63°	-55°
	72.5	-53°	-44°
	121.3	-26°	-21°

LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES %	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
0	1.8	Casing									
1.8	7.9	Diabase Very fine grained uniform steel grey - scattered inclusions of massive yellow-green feldspars 1 cm - 2.5 cm in diameter. Also few scattered white quartz blebs with hematite staining on margins. Contacts of all inclusions are sharp and generally units appear rounded and smooth. 7.01-7.31 - Brecciated white quartz stringers @ 40° to core axis. Hematite stain on contacts. Some wall-rock fragments within vein. Long narrow (lath) chlorite crystals within vein (1 mm x .5 to 1 cm). Trace pyrite.	039		6.7	7.4	0.7 m			.002	
7.9	8.07	Fault Zone Apparently faulted contact; oxidized. Fractured and broken ground. Weakly chloritic. (Some caving at this depth).									
8.07	9.3	Greenstone Green-grey, chloritic, fine grained, few scattered narrow sutures (< 1 mm).									
9.3	9.4	Diabase As above - concentration of phenoblasts - (20% of core), contacts sharp, chilled, @ 50° to c/a.									
9.4	18.3	Greenstone As above, generally massive, few shears or stringers. Slightly chloritic. 12.3 - 12.4, quartz, carb vein, disseminated contacts, chloritic fragments in vein, trace pyrite, trace mafics in quartz (1 cm to 1.5 cm carb. in centre of vein).	040		12.1	12.8	0.7 m			Nil	

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 2 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SULPHIDES %	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
18.3	18.4	Diabase As above with feldspar inclusions.									
18.4	19.9	Greenstone As above.									
19.9	20.2	Diabase As above, contacts sharp @ 45° to c/a.									
20.2	35.9	Greenstone As above, minor local shearing.									
35.9	36.1	Shear Zone Chloritic, sericitic shear, fine pyrite scattered throughout, reworked. Quartz and trace carb. in shear zone, trace pyrite & CPY., sericite.	041		35.9	36.5	0.6m			Nil	
36.1	40.8	Greenstone As above. 40.08 - weak chloritic shear with trace carb. & pyrite.	042		39.6	40.8	1.4m			Nil	.01
40.8	44.0	Quartz Porphyry Light grey to blue-grey, sheared @ 60° to c/a. Very silicious, numerous blue quartz eyes. South contact sericitic and sharp @ 60° to c/a. Trace to fair pyrite scattered throughout. 42.2 - 0.5 m quartz - PY. PYRR, CPY. No distinct contacts. 42.8-43.2 Fault zone, oxidized. Quartz porphyry (drillers lost water at this depth), fractured core. 43.5-43.6 - fault zone - as above.	043 044 045		40.8 42.0 43.2	42.0 43.2 44.2	1.2m 1.2m 1.0m			.002 .002 .002	.01 .02

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 3 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag	
44.0	44.1	Quartz Vein (In Porphyry) .15 m white quartz, well mineralized, gradational contact with porphyry, sharp contact with chloritic greenstone.										
44.1	48.6	Greenstone As above 150.2-150.4 - quartz veinlet - sheared Trace pyrite, sharp, brecciated contacts.	046 047		45.7 48.6	46.1 49.3	0.4m 0.7m			Nil Nil		
48.6	49.3	Quartz Vein Massive crystalline white quartz with brecciated contacts. Fragments of apparently partially destroyed granodiorite in vein (2-4 cm).										
49.3	51.2	Chloritic Shear Zone Well sheared, soft, with numerous irregular quartz sutures, well mineralized, pyrite, CPY.	048		51.2	51.9	0.7m			Nil		
51.2	59.4	Greenstone Green-grey, fine grained, local chloritic shearing, few irregular quartz stringers (< 1 cm), sericitic in part, increasingly massive with depth.										
59.4	60.8	Dyke (Silicified Aplite) Light to medium grey, silicious, sheared, remnant biotite, oriented along shearing @ 45° to core axis, weak pinkish colour (remnant feldspars), sharp contacts @ 80° to c/a.										
60.8	70.3	Greenstone Soft, grey-green to dark green-grey, chloritic, few narrow stringers (< .01 m), Trace fine PY scattered throughout.										

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 4 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
70.3	70.9	Alteration Zone Pyrite-rich, silicious, light to medium grey - tuffaceous, gradational contact with chloritic greenstone (above).	049		70.3	71.3	1.0m			Nil	.01
			050		71.3	72.2	0.9m			.002	.03
			051		72.2	73.0	0.8m			Nil	.02
70.9	73.0	Granite Pegmatite Dyke Faulted contact @ 70.9 m. Ground very broken and blocky. Very silicious, feldspars predominate only toward edges of dyke - centre predominantly quartz with remnant mafics. Milky to buff colour (71.3 to 72.5). Contact @ 73.0 m sharp, sheared @ 25° to c/a.									
73.0	79.5	Greenstone Dark green-grey to black, fine grained, massive, very little pyrite. Few weak chloritic shears. Includes short sections of more biotite-rich pyritic material.									
79.5	79.8	Vein Zone Brecciated quartz veinlets with sharp angular contacts with CPY. PY and trace PYRR. (Total Quartz - .15m)	052		79.5	80.1	0.6m			Nil	
79.8	80.7	Greenstone - Biotite - Sericite-rich, Altered Greenstone with fine pyrite (79.8-80.1). 80.1-80.7 - Massive, trace only biotite.									
80.7	81.7	Shear Zone Strongly sheared with considerable sericite/chlorite. Numerous quartz stringers. PY. CPY. trace PYRR well mineralized throughout.	053		80.7	81.7	1.0m			.002	.03
			054		82.6	83.2	0.6m			Nil	.01
81.7	83	Greenstone As above									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 5 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag
83	83.3	Brecciated Quartz Veinlet As above.									
83.3	96.5	Greenstone As above - massive fine grained, with inclusions (or alterations) of biotite-rich, sheared zones with pyrite scattered throughout zones (dykes) @ 86.1 to 86.9 and 89.9 to 90.1 m.									
92.2	-	92.2 - 15 cm. White carbonate veinlet - sucrosic feldspars on contacts, trace pyrite, contacts sharp @ 70° to c/a.	055		92.2	93.6	1.4m			Nil	.01
93.5	-	93.5 - 8 cm of white quartz - contacts sharp @ 70°, CPY, PY.									
96.5	96.9	Fault Zone Remnant argillic material, well silicified, 2 cm quartz/carb., trace pyrite.									
96.9	97.9	Shear Zone Possibly partially destroyed aplite dyke, highly silicious, contacts sharp @ 85° to c/a. Remnant biotite sheared @ 85° - well mineralized, epidote, hematite, CPY, PY, trace Sericite, quartz.	56 57 58		96.5 97.5 98.1	97.5 98.1 99.0	1.0m 0.6m 0.9m			.002 .01 Nil	.02 .03 .01
97.9	100.8	Greenstone Generally massive, green-grey, fine grained, pyrite scattered throughout. 98.1 - silicious, sheared patches, pyrite, sericite 98.6-98.9 - chloritic, brecciated quartz, trace argillic material, trace pyrite. 98.9 - massive, trace pyrite, minor biotite.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 6 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag.
100.8	101.1	Dyke Light grey, silicious, sheared, sharp contacts, (Lamporphyre).									
101.1	102.9	Greenstone As above.									
102.9	103.3	Dyke As above.									
103.3	110.3	Greenstone Soft, chloritic, taccy, numerous taccy shears.									
110.3	110.6	Fault Argillic mud seam with some mud and some silicified argillic remnants.									
110.6	122.6	Greenstone (Mafic Volc.) Soft, taccy and chloritic, as above. Innumerable shears and sutures at all angles to core axis. Pyrite scattered throughout. Green-grey/black, massive, fine grain, chloritic, very few narrow stringers at all angles to core axis. Talc shear @ 122.3-122.6 - core broken and soft, trace only pyrite.									
122.6	123.3	Breccia Zone Sheared, brecciated, quartz carb. in greenstone. Trace pyrite. Numerous chloritic wall-rock fragments in net of stringers. Total 25% vein material - grey-buff colour.	072 073 074		122.5 123.5 124.6	123.5 124.6 126.5	1.0m 1.1m 1.9m			Nil Nil .002	

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 7 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE & SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag	
123.3	126.5	Silicia Breccia Unit 123.3-124.2 - extremely silicious, light grey, fine grained, with complete pattern of rounded 1-3 mm blebs (phenoblasts) of cream to white quartz, few remnant feldspar blebs, no visible quartz eyes or mafics. No shearing. 124.2-126.5 - highly silicious, brecciated and fractured, apparent remnant mafics. Contacts sharp - south contact @ 30° to c/a. North contact @ 85° to core axis.										
126.5	146.7	Greenstone (Mafics) Grey-black, greenish, moderately to strongly chloritic throughout, pyroxenitic in part, massive, very few stringers, talcose in part, weak shears (taccy) @ 127.4, 127.8, 128.8. 131-146 - increasingly uniform, massive texture, moderate chlorite content.										
146.7	147.1	Lamporphyre Dyke Biotite-rich, chloritic, medium grey. Irregular (1-5 cm). Quartz blebs, also very indistinct cream coloured blebs (grains). Trace pyrite infilling in fractures.										
147.1	193.1	Greenstone (Mafic Volcanics) As above, fine grained, massive, chloritic, very uniform, few stringers or shears.										
151.0	151.7	- Ground Core - tube not locked. Weak taccy shear @ 159 m - generally homogeneous texture. Trace only pyrite.										

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-11 SHEET NO. 8 of 8

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
		Greenstone - Continued Increasingly frequency of talc shears with depth, extremely chloritic with shearing @ 45° gradational to talc/chlorite schist (184.1 to 193.1). Strong talc shears @ 184.1, 189.5, 190.1, 191.1	38576		192.9	194.1	1.2m			Nil	
			38577		194.1	195.0	0.9m			.002	
			38578		195.0	196.3	0.8m			Nil	
			38579		196.3	197.5	1.2m			Nil	
193.1	197.3	Granodiorite Sharp angular contact @ 35° to core axis. Grey/white, extremely silicious, sheared & altered granodiorite, remnant grains only, mafics destroyed.									
197.3	199.0	Greenstone (Mafics) As above, chloritic, broken.									
	199.0	End of hole.									
		(1.0 m drilled in very hard ground (granodiorite)? past 199 m but core lost.)									

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 12 E
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH N 37° W DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-12 SHEET NO. 1 of 2
REMARKS Dip: -60°
Depth: 42 M
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
		No Casing.									
0	0.91	Greenstone Dark grey-green, fine grained, massive, trace pyrite.									
0.91	2.3	Diabase Very fine grained, medium grey, brecciated, contact with strong chill-margin, north contact @ 30° to c/a.									
2.3	2.65	Greenstone As above.									
2.65	2.74	Diabase As above.									
2.74	25.1	Greenstone As above. 14.3-14.8 - zone of biotite-rich, sericitic mafics. Fine pyrite scattered throughout. Generally, weakly chloritic, massive.									
25.1	29.2	Quartz Porphyry Sharp contact @ 70° to core axis, PY, CPY, very sharp quartz eyes - uniform purplish-grey colour, silicious, sheared @ 70° to c/a. 28.7-29.2 - Massive grey quartz - gradational contact with Q.P. Sharp contact @ 70° with greenstone.	38581 38582 38583 38584		24.9 26.2 27.4 28.6	26.2 27.4 28.6 29.4	1.3m 1.2m 1.2m 0.8m			Nil Nil Nil .12	

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-12 SHEET NO. 2 of 2

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag	ASSAYS
29.2	41.7	Greenstone As above with numerous quartz/carb. stringers. 29.8 - vein pyrite sheared (0.1m). 30.48 - quartz vein, massive, sheared, brecciated, irregular contacts (.09m). 30.8 - quartz vein, faulted, ground broken, some oxidation (.3m). 31.1-41.7 - massive greenstone, as above.	38585		29.8	31.1	1.3m			Nil		
41.7	42	Aplite Light grey-buff, silicious, remnant granite textures only. Sheared, sharp contacts @ 50° to c/a.										
	42.0	End of hole.										

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha

HOLE NO. _____ LENGTH _____

LOCATION 11 + 50 E 0 + 0 N (Baseline)

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH S37° E DIP @ collar

STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-13 SHEET NO. 1 of 2

REMARKS DIP -35° -26 @ 51m
DEPTH 51.2 m

LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
0	3.6	Casing									
3.6	5.0	Quartz Porphyry Grey to purple-grey, fine grained, very silicious, sheared @ 50° to core axis - 1-2% pyrite scattered throughout. 4.1-4.4 - Silicious shear.	38603		3.6	5.0	1.4			.002	
5.0	8.3	Quartz Porphyry Type Trondjhemite Mottled grey to light grey, with highly silicious, sheared grains, few indistinct and faded quartz eyes, trace only pyrite.									
8.3	10.0	Lamprophyre Dyke Dark grey to black, fine to medium grained. Few short sections of sheared trond. included.									
10.0	10.8	Greenstone Sheared, green-grey, chloritic in part. Weak silicious sections, trace pyrite.									
10.8	12.2	Quartz Porphyry Trondjhemite As above.									
12.2	19.0	Trondjhemite Grey, fine grained, highly silicious - original character totally destroyed. Shear @ 56.3 with hematite, epidote, few quartz eyes.									
19.0	25.6	Diabase Grey-black, very fine grained, sharp chilled contacts. Contains numerous primary floaters of yellow-green feldspar (.5 to 3 cm). Margins sharp but generally sub-round to sub-angular. Not brecciated.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-13 SHEET NO. 2 of 2

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
25.6	27.9	Trondjhemite (Silicious) Fabric destroyed with silicification, sheared, remnant mafics only, trace pyrite.									
27.9	28.1	Lamprophyre As above, weak shearing.									
28.1	31.0	Quartz Porphyry Grey to purplish-grey, fine grained, sheared, sericitic in part, silicious 1-2% pyrite.	38604 38605 38606		28 29 30	29 30 31	1 m 1 m 1 m			.005 .002 .005	
31.0	32.0	Lamprophyre As above - sharp contacts.									
32.0	36.1	Quartz Porphyry Type Trondjhemite As above, gradational to quartz por. (35.0 to 36.1) Few indistinct quartz eyes.									
36.1	36.9	Shear Zone Zone of weathered, broken, trondjhemite with sheared white quartz veins (.1 to .2m). Minor sericite and pyrite scattered throughout. Well silicified - very few quartz eyes.	38607		36	37	1 m			.002	
36.9	51.2	Trondjhemite Grey/grey-buff, fine grained, silicious, short sections with remnant feldspars (pink), trace epidote, on fracture lines, increasingly silicious with depth. 39.3-40.5 - Sheared silicated, PYl, minor PR, CP.	38607		39.3	40.5	1.2m			Nil	
	51.2	End of hole.									

DIAMOND DRILL RECORD

NAME OF PROPERTY: Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION: 11 + 50 E, 50 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH: S 37° E DIP: @ collar
STARTED _____ FINISHED: June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-14 SHEET NO. 1 of 5
REMARKS: DIP: -55°, 41° @ 100 m
DEPTH: 100 M
LOGGED BY: A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
0	3.9	Casing									
3.9	5.8	Trondhjemite Sheared, silicious, mafics partially destroyed, oxidized fault @ 5.2 m, grey/white mottled.									
5.8	6.5	Lamprophyre Dyke Grey/black, fine to medium grained, free quartz grains, foliated biotite, sheared 45° to c/a.									
6.5	18.8	Trondhjemite Grey/white, sheared, silicious grains partially destroyed, very hard, trace pyrite, short sections showing remnant feldspars, generally uniform colour and texture.									
18.8	20.1	Lamprophyre Dyke Dark grey/black, biotitic, weak shearing. 19.2-19.6 - Granitic dyke remains - remnant feldspars, contacts sharp and sheared @ 45°.									
20.1	22.7	Quartz Porphyry Grey to purplish grey, silicious, well sheared @ 45° to c/a, numerous quartz eyes - some indistinct, pyrite and CPY scattered throughout. 22.3 - oxidized fault - broken core Gradational contact @ 22.7 with trond.	38586 38587 38588		20.1 21.3 22.5	21.3 22.5 23.1	1.2m 1.2m 0.6m			.01 .002 Nil	
22.7	29.5	Trondhjemite As above, weak fault @ 26.6 - pyrite and CPY scattered throughout.									
29.5	29.65	Aplite Dyke Silicified with remnant feldspars - pink with quartz veinlet.									

LANGRIDGES — TORONTO — 366-1166
FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-14 SHEET NO. 2 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE & SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
29.65	31.4	Trondhjemite As above, increasingly well sheared and silicious, quartz stringers cutting core on shear planes. Well mineralized with pyrite and CPY.									
31.4	33.3	Quartz Porphyry As above. 32.0 m - oxidized fault. Lost water. 32.9-33.2 - very silicious (.1 m quartz vein) with pyrite, CPY.	38589 38590 38591		31.2 32 33.6	32.0 33.6 34.7	0.8m 1.6m 1.1m			.002 .002 Nil	
33.3	37.6	Trondhjemite As above - sheared @ 40° to c/a. Mafics destroyed, silicious. 37.1-37.6 - shear, silicious, chloritic.									
37.6	45.2	Diabase Grey, very fine grained diabase with chilled contacts, contains frequent primary feldspar floaters, yellow-green (1-5 cm diameter). 44.6 - .1m quartz/carb. brecciated stringer with epidote, diabase fragments.									
45.2	49.8	Trondhjemite Sharp contact with diabase @ 25° to c/a. Grey/white sheared sections, trace pyrite & CPY. Few narrow (1 cm) quartz stringers. Short sections with weak remnant feldspars. 48.1 - silicious pink shear (feld) PY, CPY 47.1-47.4 - vein - white massive quartz vein, sharp contacts.	38592 38593 38594		47.2 48.4 49.8	48.4 49.8 51.0	1.2m 1.4m 1.2m			Nil Nil .002	

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-14 SHEET NO. 3 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
49.8	50.8	Quartz Porphyry Sharp, sheared, contact with trond. @ 45°, 1% PY., quartz eyes not numerous and indistinct. 50.6 - .3 m silicious vein - quartz and sil. quartz porphyry - PY. CPY. PYRR.									
50.8	55.4	Trondhjemite 50.8 - 51.05 - altered trond. - dark grey. Massive, gradational contact to more typical trond. 51.05-52.4 - Trondhjemite 52.4-55.4 - quartz porphyry type trond. with infrequent quartz eyes - weak shearing @ 50° to c/a.									
55.4	59.3	Quartz Porphyry Grey to medium dark grey, sheared, silicious, quartz eyes numerous but indistinct. Trace pyrite.	38595 38596		55.4 57	57.0 58.2	1.6m 1.2m			.005 .01	
59.3	60.1	Lamprophyre Dyke Dark grey/black, massive, contacts sharp @ 50° to c/a.									
60.1	63.5	Quartz Porphyry As above, highly silicious, quartz eyes indistinct. 1-2% pyrite.	38597 38598		61.2 62.2	62.2 63.5	1.0m 1.3m			.03 .002	
63.5	72.0	Trondhjemite Medium to light grey silicious, fine grained, well sheared, no visible feldspar, few isolated, indistinct quartz eyes.	38599 38600		71.9 72.5	72.5 73.7	0.6m 1.2m			Nil .005	
72.0	72.5	Silicious Shear Zone Light grey to buff, silicious, fine grained, PY, CPY, sheared @ 50° to c/a, epidote, pink feldspar.									
72.5	74.5	Trondhjemite As above, dark grey, altered. (73.4-73.7) Silicious shear, remnant pink feldspar.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-14 SHEET NO. 4 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag	
74.5	75.7	Quartz Porphyry Indistinct fabric, silicious, fine grained, sheared.										
75.7	78.0	Trondhjemite Grey, white, well silicified, sheared. Original crystal forms destroyed. Alt. zones of completely sheared material & identifiable granitics.										
78.0	78.2	Lamprophyre Sharp contacts @ 45° to c/a.										
78.2	79.2	Trondhjemite As above.										
79.2	79.4	Lamprophyre As above.										
79.4	91.7	Trondhjemite (continued) Increasingly felsic with depth, generally less sheared, minor identifiable feldspars - weak pinkish colour. 90.2-90.4 - extremely silicious shear zone with .1 m quartz/carb. vein - trace hematite, epidote, PY, CPY, few isolated narrow (2 cm) quartz stringers - on shear planes - usually with pyrite and CPY.										
91.7	96.5	Quartz Porphyry Type Trondhjemite Alternating sections of trond. and quartz por. type trond. - sheared, gradational contacts, no distinct boundaries.										
96.5	97.8	Lamprophyre Dyke Fine to medium grained sheared - dark grey/black, Sharp contact.										

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-14 SHEET NO. 5 of 5

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
97.8	100	Quartz Porphyry Grey to purple-grey, sheared, sericitic, numerous distinct quartz eyes bands of sericite (on shear planes @ 50° to c/a).	38601		97.8	99.0	1.2m			.01	
			38602		99	100	1.0m			.002	
	100	End of hole.									

LANGRIDGES — TORONTO — 366-1168

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY: Hiawatha
HOLE NO.: _____ LENGTH: _____
LOCATION: 10 + 50 E, on baseline
LATITUDE: _____ DEPARTURE: _____
ELEVATION: _____ AZIMUTH: S 37° E DIP: @ collar
STARTED: _____ FINISHED: June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-15 SHEET NO. 1 of 2
REMARKS: DIP: ~~-40°~~ -29° @ 51.2 m
DEPTH: 51.2 m
LOGGED BY: A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag
0	3.9	Casing									
3.9	5.1	Trondhjemite Grey, sheared, silicious, very hard.									
5.1	7.8	Quartz Porphyry Gradational contact with trondhjemite - 1% pyrite, quartz eyes distinct but very scattered and few in number. Sheared, silicious.	38611 38612		5.1 6.4	6.4 7.8	1.3m 1.4m			Nil Nil	
7.8	9.1	Diabase Dyke Uniform dark grey, fine grained, contacts broken, sheared.									
9.1	12.0	Quartz Porphyry Silicious, sheared, distinct blue quartz eyes, 1-2% pyrite.	38613 38614		9.1 10.0	10.0 11.2	0.9m 1.2m			.002 .005	
12	12.8	Lamprophyre Dyke Dark grey-black, weakly sheared, minor quartz grains.	38615		11.2	12.0	0.8m			Nil	
12.8	16.2	Trondhjemite As above, sheared and silicious.									
16.2	16.4	Basaltic Dyke Grey-black, very hard, mafic, vuggy quartz stringer @ 16.2.									
16	23.1	Trondhjemite As above.									
23.1	23.6	Quartz Shear Massive white/grey quartz, sericitic patches, PY, CPY.	38616 38617		23.0 23.7	23.7 25.3	0.7m 1.6m			.08 .002	

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-15 SHEET NO. 2 of 2

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
										Au	Ag
23.6	26.3	Quartz Porphyry Very numerous and distinct blue quartz eyes.	38618		25.3	26.3	1.0m			.005	
26.3	27.1	Trondhjemite As above.									
27.1	32.6	Quartz Porphyry Silicious fault zone @ 27.4 - 27.6, quartz vein broken oxidized core, gradually less distinct eyes sheared & highly silicious throughout.	38619 38620 28621		27.1 28.0 29.2	28.0 29.2 30.4	0.9m 1.2m 1.2m			Nil .005 .005	
32.6	33.2	Lamprophyre Dark grey/black, fine grained, remnant quartz, mafics foliated.									
33.2	39.6	Quartz Porphyry Type Trondhjemite Trond. as above with few irregular and indistinct quartz eyes. 34.3-34.5 - silicious shear, PY, epidote.	38622		34.1	34.7	0.6m			Nil	
39.6	46.4	Mafic Volcanics Gradational contact with quartz por. trond. above. Original texture of trond. completely destroyed. Sheared, silicious in part.									
46.4	51.2	Trondhjemite As above, silicious, sheared, trace pyrite.									
	51.2	End of hole.									

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 10 + 50 E, 50 N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH S 37° E DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-16 SHEET NO. 1 of 4
REMARKS DIP: -58 (collar)
~~-34~~ @ 103 m
DEPTH: 103 m
LOGGED BY A.Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
0	3.9	Casing									
3.9	10.2	Trondhjemite Grey, light grey, fine grained, silicious, uniform shearing @ 45° to c/a, very hard.									
10.2	10.6	Fault Zone (In Trond.) As above but core soft and broken - mafic (biotites) grains destroyed (weathered), oxidized, crumbly, hematitic staining.									
10.6	27.4	Trondhjemite As above. 10.6-12.2 - weak silicious/hematitic shear, trace pyrite, CPY. Generally less silicious with depth, also better preserved, sharper fabric & texture with depth.									
27.4	34.6	Quartz Porphyry Type Trondhjemite Gradational contact with above - infrequent, indistinct eyes, sheared, silicious with sericitic bands. Fine grained. 31.8-32.0 - fault, oxidized, broken core, lost water while drilling.									
34.6	35.1	Lamprophyre Dyke Fine to medium grey, sheared, grey-black, mafic, sharp contacts @ 45° to c/a.									
35.1	35.3	Fault Lamp. contact crumbled, oxidized granitics, trace pyrite, hematite staining.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-16 SHEET NO. 2 of 4

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
35.3	39.9	Quartz Porphyry Type Trondhjemite As above - mottled grey, few scattered, indistinct eyes, silicious, fine grained.	38651		39.9	41.0	1.1m			.01	
			38652		41	42.6	1.6m			.01	
39.9	40.2	Quartz Vein Massive milk-white quartz, slightly fractured, trace pyrite, sharp contacts.	38653		45.7	46.6	0.9m			.002	
40.2	46.6	Quartz Porphyry Type Trondhjemite Extremely silicious, highly altered, pyrite scattered throughout. Sheared narrow quartz stringers @ 41.4-41.7. Also silicious/quartz shear @ 45.8 - sericitic. PY, trace PYRR.									
46.6	47.8	Lamprophyre Dyke Grey/black, fine to medium grained mafic, weak blebs (remnant eyes) of light grey silicious material, weakly sheared.	38654		47.7	49.3	1.6m			.01	
47.8	48.6	Silicious Shear Zone Trace only remnant granitic texture - grey, mottled, silicious, with considerable hematite staining and fragments - epidote rich with some carbonate material.									
48.6	48.8	Lamprophyre Dyke As above - medium to coarse grain.									
48.8	50.8	Alteration Zone (Trondhjemite) Silicious with considerable hematite and epidote pyrite, sericitic in part.	38655		50.5	51.3	0.8m			Nil	
50.8	50.95	Diabase Fine grained, medium grey, uniform, sharp contacts.	38656		51.3	52.8	1.5m			.01	

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-16 SHEET NO. 3 of 4

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES %	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
50.95	51.2	Sheared Alteration Zone As above - epidote, hematite.									
51.2	51.6	Diabase As above.									
51.6	53.9	Silicious Alteration Zone Strongly silicious, sheared, PY, CPY, trace Cal., Moly, Hematite, strong epidote, minor sericite. 53.7-53.9 - quartz veinlet, barren, sharp contacts, fractured.	38657		52.8	53.9	1.1m			Nil	
53.9	58.2	Trondhjemite Grey mottled, silicified, some shearing, trace only pyrite, very hard.									
58.2	60.8	Quartz Porphyry Type Trondhjemite Grey to purple-grey, fine grained, silicious, completely sheared, eyes very scattered & indistinct. Quartz shears (veins) @ 58.2-58.3, 59.8-60, 60.5-60.7	38658 38659		58.2 59.7	59.7 60.9	1.5m 1.2m			.002 .002	
60.8	65.8	Trondhjemite As above, grey mottled, silicious and weakly sheared.	38660 38661 38662		64.6 66.1 67.9	66.1 67.9 69.5	1.5m 1.8m 1.6m			.005 .02 .03	
65.8	74.5	Sheared Quartz Porphyry Type Trondhjemite Grey mottled with purple hue in part. Minor fine grain pyrite scattered throughout. 72.1-72.3 - quartz shear, well banded with sericite, weak shearing & indistinct blue quartz eyes scattered throughout.	38663		73.7	74.9	1.2m			Nil	
74.5	75.1	Fault Breccia Light green, pink, bluff, brecciated, silicious matrix. Extremely quartz-rich with considerable epidote - hematite staining & pink quartz fine brecciation.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-16 SHEET NO. 4 of 4

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
75.1	76.5	Greenstone Schist Sheared. Grey-green, schistose, trace chloritic material.									
76.5	85.1	Trondhjemite Black, grey, mottled, moderate to well silicified, sheared in part. 84.1-84.3 - chloritic alteration. (ross. greenstone) soft, sheared. 84.3-84.4 - quartz vein, sharp contacts, trace pyrite, fractured.	38664		83.2	84.7	1.5m			Nil	
85.1	86.2	Greenstone (mafics) Silicious in part, chloritic, trace only pyrite, generally dark green-grey, fine grained.									
86.2	87.8	Quartz Porphyry Type Trondhjemite As above.									
87.8	90.5	Trondhjemite As above-sheared.									
90.5	103	Greenstone Chloritic, schistose in part, massive, very few stringers. 95.8-103 - as above with strong shearing.	38665 38666		99.5 101.5	101.5 103	2 m 1.5m			Nil .02	
	103	End of hole.									

LANGMUIRS — TORONTO — 366-1168

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 9 + 50 E, 0 + 00 N (Baseline)
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH S 37° E DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-17 SHEET NO. 1 of 3
REMARKS DIP: -34°Collar
-27° @ 51.2 M
DEPTH: 54.2 M
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag
0	3.3	Casing									
3.3	5.4	Trondhjemite Grey mottled, fine grained, silicified, weak to moderate shearing.									
5.4	5.6	Fault (In Lamprophyre) Dark grey, granular, some oxidization, soft, broken, remnant argillic material.									
5.6	5.8	Lamprophyre Black, grey, fine grained, sharp contact with trondhjemite.									
5.8	6.8	Trondhjemite As above.									
6.8	7.6	Shear - Quartz 85% white/grey quartz, fractured, sericitic on shear planes, trace pyrite, CPY, Gal. or Moly?	38668 38669 38670		6.8 7.9 9.1	7.9 9.1 10.5	1.1m 1.2 1.4			.01 Nil Nil	
7.6	10.3	Quartz Porphyry Type Trondhjemite Eyes scattered and indistinct - faint purple hue. 7.7-8.0 - fault crumbled, broken core oxidized.									
10.3	10.8	Shear 80% white/grey quartz, sharp contact with quartz porphyry trondhjemite.									
10.8	13.5	Trondhjemite As above - weak to moderate shearing, few narrow barren quartz stringers @ 90° to c/a.									
13.5	13.8	Lamprophyre Dyke As above. 13.8 - sand seam on contact -/generally black/grey, fine grain to medium grained, foliated.									

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-17 SHEET NO. 2 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
13.8	17.0	Trondhjemite As above - silicious, well mineralized, trace only pyrite.	38671		17.0	18.9	1.9			Nil	
17	18.9	Quartz Porphyry Type Trondhjemite Alternate zones of porphyry type trond. & trondhjemite all highly silicious.	38672		19.5	20.1	0.6			.03	
18.9	19.5	Diabase Dyke Grey black fine grained, no pyrite.	38673		21.6	22.2	0.8			Nil	
19.5	20.1	Shear 60% white/grey quartz, sheared with some sericite, trace PY, CPY, Galena.									
20.1	20.3	Diabase As above.									
20.3	25	Quartz Porphyry Type Trondhjemite Sheared, silicious, pyritic - some sericite. 21.7-21.9 - quartz vein, PY, CPY.									
25	25.2	Quartz Vein Brecciated, fractured, trace pyrite.	38674		24.0	25.3	1.3m			.002	
25.2	27	Mafic - Volcanics Grey green, fine grained, residual mottled (granitic) type textures - chloritic in part.									
27	39.2	Trondhjemite As above - silicious, sheared mottled (with quartz) in part. Trace only Pyrite. Few irregular quartz veinlets - barren.									

LANGRIDGES – TORONTO – 366-1168

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-17 SHEET NO. 3 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES %	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/TON Au	ASSAYS oz/TON Ag
39.2	46.5	Mafic Volcanics As above, chloritic in part, very few quartz stringers - barren.									
46.5	47.3	Lamprophyre As above - fine to medium grained. Fractured contacts, slightly sheared.									
47.3	54.2	Trondhjemite As above - few sheared, quartz-rich, sections, trace pyrite only.									
	54.2	End of hole.									

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY Hiawatha
HOLE NO. _____ LENGTH _____
LOCATION 9 + 50 E, 50' N
LATITUDE _____ DEPARTURE _____
ELEVATION _____ AZIMUTH S 37° E DIP @ collar
STARTED _____ FINISHED June 1980

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-18 SHEET NO. 1 of 3
REMARKS DIP: -60° -45° @ 103 m
DEPTH: 103 m
LOGGED BY A. Green and B. Way

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS oz/ton Au	ASSAYS oz/ton Ag
0	1.5	Casing									
1.5	5.6	Trondhjemite Generally sheared and silicious with some relatively unaltered sections. White/grey/black.									
5.6	10.8	Quartz Porphyry Type Throndhjemite Alternate zones of distinct quartz eyes in trond. and typical throng. Sheared and silicious, grey mottled colour, faint purple hue in places.									
10.8	11.2	Lamprophyre Dyke Black, mafic, sheared, sharp contacts @ 75° to c/a.									
11.2	13.8	Quartz Porphyry Grey-purple, silicious, fairly distinct eyes, pyrite scattered throughout.	38630 38631 38632		11.2 12.4 13.5	12.4 13.5 14.6	1.2m 1.1m 1.1m			.002 .005 .01	
13.8	16.9	Vein in Silicious Shear 13.8-14.7 - Massive white quartz with sericitic bands, sheared @ 40° to c/a. 14.7-16.9 - Extremely silicious, 50% grey quartz, sheared and banded with sericite & remnant porphyry.	38633 38634 38635		14.6 15.8 17.0	15.8 17.0 17.7	1.2m 1.2m 0.7m			.005 .01 .002	
16.9	21.6	Quartz Porphyry-Type Trondhjemite As above.									
21.6	22.3	Trondhjemite Very little shearing, well preserved rock fabric.									
22.3	23.1	Biotitic Mafic Dyke Soft, sheared, chloritic in part, schistose, sheared @ 45° to c/a soft.									

LANGHIOGES — TORONTO — 366-1168
FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-18 SHEET NO. 2 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE % SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
23.1	33.1	Quartz Porphyry Type Trondhjemite As above, silicious, grey/black/white, mottled, few indistinct scattered quartz eyes, 1% fine pyrite scattered throughout.									
33.1	34.7	Basaltic Dyke Very fine grained, black, classy, fading to light grey @ 34 m - sharp contacts with trond.									
34.7	43.5	Trondhjemite As above. 37.9 - oxidized fault, broken, rusty core 38.1-38.8 - silicious shear, 2% fine pyrite. Few indistinct quartz eyes.	38636 38637		36.5 38.1	38.1 38.9	1.6m 0.8m			.002 .01	
43.5	48.1	Greenstone (Mafic Volcanics) Traces of mottled (granitic) textures. Green-grey/black, silicious in part, chloritic in part.									
48.1	61.4	Quartz Porphyry Type Trond. As above, short sections showing porphyritic type eyes weak purplish hue. Highly silicious.									
61.4	63	Silicious Shear With Vein 40% white, massive quartz, some shearing with sericite and 1% pyrite.	38638 38639 38640		61.2 62.4 63.3	62.4 63.3 64.5	1.2m 0.9m 1.2m			.05 .01 .002	
63	64.5	Quartz Porphyry As above.									

LANGRIDGES — TORONTO — 366-1168

FORM 1

DIAMOND DRILL RECORD

NAME OF PROPERTY _____

HOLE NO. _____ LENGTH _____

LOCATION _____

LATITUDE _____ DEPARTURE _____

ELEVATION _____ AZIMUTH _____ DIP _____

STARTED _____ FINISHED _____

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH

HOLE NO. 80-18 SHEET NO. 3 of 3

REMARKS _____

LOGGED BY _____

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	SAMPLE SULPHIDES	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE FOOTAGE TOTAL	ASSAYS %	ASSAYS %	ASSAYS OZ/TON Au	ASSAYS OZ/TON Ag
64.5	65	Lamprophyre Dyke As above, dark grey-black, sheared.	38641		64.9	66.1	1.2m			.002	
			38642		66.1	67.0	0.9m			.01	
65	68.6	Quartz Porphyry Very silicious, purplish hue, few indistinct eyes. 65.6-66 Quartz Vein Massive white quartz with pyrite and sericite. Sharp contacts with quartz porphyry.	38643		67.0	68.5	1.5m			.03	
68.6	73.9	Trondhjemite As above, sheared, highly silicious.									
73.9	85.3	Mafic Volcanics (Greenstone) Alternate zones of slightly chloritic mafic volcanics and completely destroyed remnants of granitic material. No unaltered quartz or feldspars remaining. Few narrow quartz stringers @ 78.9 and 79.2 (< 5 cm.py) granitic sections strongly sheared with trace sericite and pyrite.	38644		78.6	79.5	0.9m			Nil	
85.3	99.6	Trondhjemite Grey/black, mottled, fine grained and silicious. Some sections more silicious and sheared than others - few narrow quartz stringers - barren. 98.1 - shear with .1 m white & pink quartz, PY, sericite	38645		86.5	87.0	0.5m			Nil	
			38646		97.9	98.7	0.8m			.002	
99.6	100.1	Lamprophyre Dyke As above - sharp contacts @ 55° c/a.									
100.1	103	Trondhjemite As above.									
	103	End of hole.									

LANGRIDGES — TORONTO — 366-1168

FORM 1

A P P E N D I X B

			Address
OWNERS:	a)	M. C. Halstead	P. O. Box 63 Cobalt, Ontario P0J 1C0
	b)	L. Othmer	Cobalt, Ontario P0J 1C0
	c)	C. Carter	P. O. Box 5 Echo Bay, Ontario P0S 1C0
	d)	L. J. McCarthy	150 Leo Avenue Sault Ste. Marie, Ontario P6A 3V7

OPERATOR:

Sveinson Way Mineral Services Ltd.
#223 Hangar #3
Municipal Airport
Edmonton, Alberta
T5G 2Z3

in Joint Venture with:

Echo Bay Mines Ltd.
500 Pacific Plaza
10909 Jasper Avenue
Edmonton, Alberta
T5J 3L9

A P P E N D I X C

DATES OF EXPLORATION PROGRAM:

May 21 to June 24, 1980

A P P E N D I X 1

SUMMARY

MAN DAYS ASSESSMENT WORK DETAILS

Diamond Drilling	4,265 Days
Geochemical Field	203
Assaying	364.9
Draughting	35
Typing	14
Report Writing	42
Line Cutting	14 Days
TOTAL	4,937.9

A P P E N D I X 2

DIAMOND DRILLING SPECS.

Owner/Contractor:	Wallace Drilling Co.
Address:	5 Langley Avenue St. Albert, Alberta
Type of Diamond Drill:	BBS1
Core Size:	AQ (wireline) 1 1/16"
Dates of Operation:	May 25 to June 24, 1980 2 men per 12-hour shift, continuous operation = 4 men.
Operators:	M. Sadoway, Box 46, Slocan , B. C. P. Wasylucha, Box 46, Slocan, B. C. F. Cherniawsky, Box 46, Slocan, B. C. A. Brassard, Uranium City, Sask.
Claim Numbers Upon Which Coring Occurred:	407552, 500696, 500698
Total Footage:	4,265 feet
Number of Holes:	18
Azimuths and Inclination of each hole is in body of report, page 10.	
Figure 1 shows location of each hole with respect to topograph and claim boundaries.	
Core Logs with Assays appear in Appendix 1.	
Assessment Credits:	4,265 Days

A P P E N D I X 3

MAN DAYS ASSESSMENT WORK DETAILS

1.	Type of Survey	Geochemical Soil
2.	Township of Area	Lizar Township, Kabinakagami Lake, Hiawatha Property
3.	Numbers of Mining Claims traversed by Survey	500696, 500698, 500695, 407552, 407553, 490784, 407555, 407554, 490783, 490782, 490787, 490781, 490786, 490791, 490796, 490780, 490785, 490790, 490795, 490825, 490830, 490834 , 490837, 490829, 490833.
4.	Number of miles traversed to collect soils	9.1 miles
5.	Control	Cut baseline, pace and compass cross lines
6.	Total number of Geochemical Soil Samples Taken	793

The dates listed herein represent working time spent entirely within the limits of the above listed claims.

	Man Days	
June 3, 1980	2	Soil Sampling
June 4	2	Soil Sampling
June 5	2	Soil Sampling
June 6	2	Soil Sampling
June 7	2	Soil Sampling
June 8	1	Soil Sampling
June 10	2	Soil Sampling
June 11	2	Soil Sampling
June 12	2	Soil Sampling
June 13	2	Soil Sampling
June 14	2	Soil Sampling
June 15	2	Soil Sampling
June 16	2	Soil Sampling
June 17	2	Soil Sampling
June 18	2	Soil Sampling

Total 29 Man Days @ 8 hours

Assessment Credits 203 Days

A P P E N D I X 4

GEOCHEMICAL SURVEY - PROCEDURE RECORD AND STATEMENT FOR SPECIAL PROVISION CREDITS - ASSAYING

Numbers of Claims from which samples taken:	500696, 500698, 500695, 407552, 407553, 490784, 407555, 407554, 490783, 490782, 490781, 490786, 490791, 490796, 490780, 490790, 490795, 490825, 490830, 490834, 490837, 490829, 490833.
Total Number of Samples:	793
Type of Sample:	B Soil Horizon
Depth:	3 to 18 inches
Average Sample Weight:	200 g.
Horizon Development	Excellent to poor
Terrain	Suboutcrop to muskeg
Drainage Development:	Poor, swamps to intermittent streams.
Estimated Range of Overburden Thickness:	0 to 40 feet

SAMPLE PREPARATION

Mesh Size of Fraction Used:	- 80 mesh
General:	Sample dried, screened to -80 mesh; aqua regia digest for Pb and Cu. For As, decomposed by Fusion or acid decomposed. For Au fused by fire assay.
Analytical Methods: Values expressed in: Cu, Pb, As, Au p.p.m. p/p.b.	For Pb and Cu: weighed into test tube, placed in water bath one hour at 100° C, made, to volume and processed by A.A. unit. For As: 1 g sample decomposed. Process: D.D.C. colormetric For Au: fused by fire assay and processed by A.A. All elements matched against standards.

Commercial Laboratory:

Swastika Laboratories Ltd.
Box 10, Swastika, Ontario P0K 1T0
Bondar-Clegg and Co. Ltd.
130 Pemberton Avenue,
North Vancouver, B. C.

Special Provision Credits includes rock assays and soil geochemical analyses. Invoices and cancelled cheque copies attached.

Assay Sheets also attached.

$	136.00 ✓
	1,558.35 ✓
	743.40 ✓
	677.25 ✓
	765.00 ✓
	1,276.35 ✓
	307.40 ✓
	9.75 ✓
	$5,473.50

Special Provision Credits: $\frac{\$5,473.50}{\$15}$ = 364.9 Days ✓

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49422 Date: June 19,1980

Received June 12, 1980 67 Samples of Split Core

Submitted by Sveinson Way Mineral Resources, Edmonton Alberta Per: A. Green

SAMPLE NO.	GOLD Oz/ton	SILVER Oz/ton
001	0.002	Nil
002	0.002	Nil
003	0.002	Nil
004	0.002	0.03
005	0.005	0.01
006	0.005	0.01
007	0.005	0.02
008	0.002	0.01
009	Nil	Nil
010	Nil	Nil
011	0.002	Nil
012	0.002	Nil
013	Nil	Nil
014	0.002	Nil
015	Nil	Nil
016	0.002	0.01
017	0.002	Nil
018	Nil	0.06
019	Nil	0.01
020	0.002	0.01
021	0.005	0.01
022	0.002	0.01
023	0.02	0.07
024	0.002	Nil
025	Nil	Nil
026	Nil	Nil
027	Nil	Nil
028	Nil	Nil
029	Nil	Nil
030	Nil	0.01
031	Nil	0.01
032	Nil	Nil
033	Nil	NIl
034	Nil	NIl
035	Nil	Nil
036	Nil	Nil
037	Nil	Nil

RECEIVED
JUN 25 1980

Per

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49422 Date: June 19, 1980

Received June 12, 1980 67 Samples of Split Core

Submitted by Sveinson Way Mineral Resources, Edmonton, Alberta Per: A. Green

SAMPLE NO.	GOLD Oz/ton	SILVER Oz/ton
038	0.002	Nil
039	0.002	Nil
040	Nil	Nil
041	Nil	Nil
042	Nil	0.01
043	0.002	0.01
044	0.002	Nil
045	0.002	0.02
046	Nil	Nil
047	Nil	Nil
048	Nil	Nil
049	Nil	0.01
050	0.002	0.03
051	Nil	0.02
052	Nil	Nil
053	0.002	0.03
054	Nil	0.01
055	Nil	0.01
056	0.002	0.02
057	0.01	0.03
058	Nil	0.01
059	Nil	Nil
060	Nil	Nil
061	Nil	Nil
062	Nil	Nil
063	0.002	Nil
064	0.002	0.03
065	0.01	0.01
066	Nil	0.01
067	Nil	0.01

entered

Per _____
G. Lebel - Manager

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49438 Date: June 19, 1980

Received June 16, 1980 21 Samples of Split Core

Submitted by Sveinson Way Mineral Services, Edmonton, Alberta

SAMPLE NO.	GOLD Oz/ton
38576	Nil
38577	0.002
38578	Nil
38579	Nil
38581	Nil
38582	Nil
38583	Nil
38584	0.12
38585	Nil
068	0.002
069	0.002
070	Nil
071	0.002
072	Nil
073	Nil
074	0.002
075	Nil
076	0.005
077	0.002
078	Nil
079	0.002

RECEIVED
JUN 25 1980

Entered

Per _____
J. Van Engelen M.C.I.C.

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49572 Date: July 8 1980

Received July 3 1980 90 Samples of Split Core

Submitted by Sveinson Way Mineral Services, Edmonton, Alberta Per: A. Green

SAMPLE NO.	GOLD Oz./ton	SAMPLE NO.	GOLD Oz./ton	SAMPLE NO.	GOLD Oz./ton
38586	0.01	38616	0.08	38646	0.002
38587	0.002	38617	0.002	38647	Nil
38588	Nil	38618	0.005	38648	Nil
38589	0.002	38619	Nil	38649	0.06
38590	0.002	38620	0.005	38650	0.04
38591	Nil	38621	0.005	38651	0.01
38592	Nil	38622	Nil	38652	0.01
38593	Nil	38623	Nil	38653	0.002
38594	0.002	38624	Nil	38654	0.01
38595	0.005	38625	0.002	38655	Nil
38596	0.01	38626	Nil	38656	0.01
38597	0.03	38627	Nil	38657	Nil
38598	0.002	38628	Nil	38658	0.002
38599	Nil	38629	Nil	38659	0.002
38600	0.005	38630	0.002	38660	0.005
38601	0.01	38631	0.005	38661	0.02
38602	0.002	38632	0.01	38662	0.03
38603	0.002	38633	0.005	38663	Nil
38604	0.005	38634	0.01	38664	Nil
38605	0.002	38635	0.002	38665	Nil
38606	0.005	38636	0.002	38666	0.02
38607	0.002	38637	0.01	38667	Nil
38608	Nil	38638	0.05	38668	0.01
38609	Nil	38639	0.01	38669	Nil
38610	Nil	38640	0.002	38670	Nil
38611	Nil	38641	0.002	38671	Nil
38612	Nil	38642	0.01	38672	0.03
38613	0.002	38643	0.03	38673	Nil
38614	0.005	38644	Nil	38674	0.002
38615	Nil	38645	Nil	No number	Nil

entered

RECEIVED
JUL 15 1980

Per G. Lebel
G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49399 Date: June 11, 1980

Received June 6, 1980 16 Samples of Ore

Submitted by Sveinson Way Mineral Resources, Edmonton, Alberta Per: Barry Way

SAMPLE NO.	GOLD Oz/ton
38709	0.03
38710	0.002
38711	0.005
38712	0.005
38713	0.002
38714	0.002
38716	Nil
38717	Nil
38718	Nil
38719	0.19
38720	0.002
38721	0.02
38722	Nil
38723	Nil
38724	Nil
38725	0.60

Per G. Lebel
G. Lebel - Manager

ESTABLISHED 1928

Member Canadian Testing Association

To: Sveinson Way Mineral Services Limited
223 No. [redacted] Municipal Airport
ED[redacted]TON, Alberta T5G 2Z3
ATTN: BARRY WAY

File No. 19439
Date June 25th, 1980
Samples Rock

Certificate of ASSAY

LORING LABORATORIES LTD.

RECEIVED
JUL 16 1980

COPY

SAMPLE No.	OZ./TON GOLD
"Rock Sample" 38715	18.060

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

Licensed Assayer of British Columbia

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49470 Date: June 23 1980

Received June 18 1980 60 Samples of Soils

Submitted by Sveinson Way Mineral Resources, Edmonton Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
0993	11	14	1023	54	15
0994	8	10	1024	36	11
0995	9	10	1025	12	9
0996	11	11	1026	13	9
0997	10	10	1027	7	6
0998	14	15	1028	29	8
0999	20	14	1029	14	20
1000	74	20	1030	13	14
1001	29	15	1031	47	14
1002	65	16	1032	17	10
1003	20	11	1033	19	17
1004	11	9	1034	6	13
1005	9	8	1035	19	15
1006	17	10	1036	8	11
1007	12	11	1037	6	8
1008	10	9	1038	3	7
1009	8	8	1039	7	12
1010	12	7	1040	7	11
1011	20	14	1041	13	10
1012	17	7	1042	5	9
1013	19	11	1043	6	9
1014	28	11	1044	25	10
1015	24	9	1045	7	11
1016	9	6	1046	5	7
1017	21	14	1047	7	10
1018	8	5	1048	5	9
1019	9	9	1049	7	7
1020	12	11	1050	9	8
1021	7	5	1051	8	10
1022	9	9	1052	4	6

Per _____
J. Van Engelen MCIC

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49471 Date: June 23 1980

Received June 18 1980 59 Samples of Soils

Submitted by Sveinson Way Mineral Resources Ltd., Edmonton, Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1053	12	16	1083	14	19
1054	10	11	1084	29	15
1055	54	12	1085	16	16
1056	20	15	1086	4	8
1057	11	12	1087	12	9
1058	8	10	1088	13	11
1059	5	7	1089	4	10
1060	6	8	1090	7	9
1061	6	10	1091	30	76
1062	27	12	1092	9	15
1063	7	13	1093	12	16
1064	10	14	1094	10	10
1065	15	9	1095	9	9
1066	9	10	1096	26	15
1067	26	13	1097	14	10
1068	33	20	1098	7	9
1069	8	10	1099	6	11
1070	27	11	1100	7	9
1071	9	9	1101	6	9
1072	9	9	1103	14	10
1073	19	14	1104	8	10
1074	55	9	1105	15	15
1075	50	12	1106	19	11
1076	7	10	1107	64	12
1077	11	10	1108	9	14
1078	7	7	1109	4	9
1079	6	8	1110	6	10
1080	8	10	1111	16	30
1081	12	11	1112	12	21
1082	9	14			

Per _____
J. Van Engelen MCIC

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49472 Date: June 23 1980

Received June 18 1980 59 Samples of Soils

Submitted by Sveinson Way Mineral Resources, Edmonton Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1113	6	13	1143	3	7
1114	5	10	1144	16	11
1115	7	14	1145	10	10
1116	5	9	1146	14	14
1117	6	11	1147	46	8
1118	3	8	1148	9	9
1119	80	10	1149	5	8
1120	5	11	1150	13	10
1121	11	9	1151	13	9
1122	5	9	1152	49	11
1123	9	14	1153	17	10
1124	5	10	1155	6	8
1125	3	7	(1154) 1156	12	10
1126	4	6	1157	14	6
1127	4	18	1158	22	7
1128	8	10	1159	9	6
1129	10	8	1160	8	7
1130	59	10	1161	170	11
1131	12	6	1162	41	9
1132	6	8	1163	39	5
1133	31	10	1164	4	6
1134	9	10	1165	23	6
1135	10	9	1166	10	9
1136	7	8	1167	33	10
1137	7	11	1168	5	7
1138	12	9	1169	22	10
1139	6	12	1170	10	11
1140	8	9	1171	7	10
1141	8	8	1172	6	9
1142	5	9			

Per _____
J. Van Engelen MCIC

ESTABLISHED 1928

Member Canadian Testing Association

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49473 Date: June 23 1980

Received June 18 1980 60 Samples of Soils

Submitted by Sveinson Way Mineral Resources, Edmonton Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1173	10	10	1211	40	11
1174	9	9	1212	7	7
1175	13	12	1213	4	6
1176	4	9	1214	8	9
1177	3	7	1215	5	9
1178	6	10	1216	6	10
1179	14	8	1217	5	7
1180	13	14	1218	230	11
1181	8	10	1219	5	6
1182	21	7	1220	11	10
1183	26	12	1221	12	9
1184	21	9	1222	74	9
1185	5	6	1223	6	6
1186	2	5	1224	10	8
1187	11	10	1225	3	6
1188	2	5	1226	5	7
1189	4	6	1227	2	4
1190	2	5	1228	4	6
1191	2	3	1229	2	5
1200	10	9	1230	1	5
1201	6	9	1231	5	10
1202	4	10	1232	2	6
1203	6	8	1233	3	7
1204	6	8	1234	7	8
1205	4	9	1235	5	9
1206	10	10	1236	9	5
1207	12	10	1237	7	8
1208	17	10	1238	3	5
1209	12	8	1239	2	6
1210	65	11	1240	2	7

Per _____
J. Van Engelen MCIC

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SWASTIKA LABORATORIES LIMITED

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TELEPHONE: (705) 642-3244
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Certificate of Analysis

Certificate No. 49474 Date: June 25, 1980

Received June 18, 1980 60 Samples of Soils

Submitted by Sveinson Way Mineral Services, Edmonton, Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1241	2	6	1271	2	6
1242	2	9	1272	3	6
1243	3	8	1273	270	14
1244	8	10	1274	5	9
1245	10	12	1275	3	5
1246	6	10	1276	12	9
1247	9	11	1277	5	8
1248	7	8	1278	2	5
1249	3	9	1279	5	10
1250	2	6	1280	19	10
1251	2	10	1281	10	11
1252	7	13	1282	3	9
1253	2	6	1283	26	9
1254	4	9	1284	9	14
1255	4	10	1285	4	8
1256	3	7	1286	2	7
1257	2	9	1287	2	9
1258	2	5	1288	2	8
1259	3	7	1289	3	6
1260	4	6	1290	4	8
1261	3	8	1291	1	5
1262	6	9	1292	10	12
1263	1	5	1293	49	15
1264	14	10	1294	6	9
1265	22	11	1295	9	10
1266	4	8	1296	2	9
1267	5	9	1297	14	10
1268	2	7	1298	2	6
1269	6	9	1299	4	5
1270	4	6	1300	6	7

Per _____
J. Van Engelen M.C.I.C.

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

COPY

Certificate No. 49475 Date: June 25, 1980

Received June 18, 1980 57 Samples of Soils

Submitted by Sveinson Way Mineral Services Ltd., Edmonton, Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1301	15	9	1331	2	6
1302	13	11	1332	3	8
1303	3	8	1333	7	10
1304	3	7	1334	2	6
1305	5	9	1335	3	5
1306	4	6	1336	9	9
1307	7	9	1337	7	7
1308	96	13	1338	3	6
1309	65	8	1339	5	9
1310	44	7	1340	6	6
1311	53	9	1341	12	7
1312	26	8	1342	5	6
1313	10	7	1343	18	10
1314	45	10	1344	2	6
1315	4	5	1345	2	5
1316	3	6	1346	2	5
1317	10	10	1347	4	7
1318	28	9	1348	2	4
1319	19	15	1349	2	8
1320	12	19	1350	3	8
1323	20	16	1351	1	6
1324	13	7	1352	7	10
1325	7	7	1353	4	7
1326	25	15	1354	21	20
1327	6	8	1355	3	8
1328	19	10	1356	2	7
1329	3	5	1358	7	11
1330	12	11	1359	6	12
			1360	19	11

Per _____
J. Van Engelen M.C.I.C.

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SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
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Certificate of Analysis

COPY

Certificate No. 49476 Date: June 25 1980

Received June 18 1980 61 Samples of Soils

Submitted by Sveinson Way Mineral Services, Edmonton, Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1361	5	7	1391	9	11
1362	2	6	1392	725	17
1363	5	8	1393	32	7
1364	9	8	1394	6	10
1365	12	9	1395	1	13
1366	20	10	1396	14	17
1368	7	6	1397	5	12
1369	3	5	1400	15	9
1370	2	4	1401	27	29
1371	5	9	1500	5	8
1372	1	5	1501	210	9
1373	1	3	1502	6	10
1374	4	5	1503	54	9
1375	3	6	1504	105	10
1376	2	7	1505	10	10
1377	3	5	1506	8	11
1378	1	4	1507	6	11
1379	3	6	1508	6	7
1380	28	20	1509	4	10
1381	7	7	1510	5	12
1382	4	6	1511	7	9
1383	2	7	1512	3	9
1384	13	10	1513	7	10
1385	56	45	1514	55	12
1386	12	11	1515	56	11
1387	21	9	1516	99	15
1388	19	9	1517	19	12
1389	6	8	1518	14	16
1390	11	5	1519	360	13
			1520	260	11
			1521	5	9
			1522	5	14

Per _____
J. Van Engelen MCIC

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SWASTIKA LABORATORIES LIMITED

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Certificate of Analysis

Certificate No. 49477 Date: June 25 1980

Received June 18 1980 60 Samples of Soils

Submitted by Sveinson Way Mineral Services, Edmonton Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1523	8	10	1553	7	10
1524	26	17	1554	5	9
1525	18	10	1555	18	15
1526	25	11	1556	45	10
1527	7	10	1557	28	9
1528	3	8	1558	21	11
1529	4	6	1559	9	10
1530	3	7	1560	6	6
1531	6	9	1561	5	6
1532	120	15	1562	7	7
1533	90	13	1563	19	12
1534	10	9	1564	14	11
1535	5	10	1565	17	14
1536	6	14	1566	12	12
1537	4	8	1567	18	10
1538	4	10	1568	16	15
1539	3	9	1569	19	16
1540	16	13	1570	10	8
1541	8	8	1571	13	11
1542	9	10	1572	10	10
1543	15	11	1573	23	9
1544	4	9	1574	4	7
1545	6	11	1575	9	10
1546	6	10	1576	5	8
1547	4	10	1577	8	9
1548	5	9	1578	7	11
1549	6	14	1579	3	10
1550	6	14	1580	7	7
1551	9	16	1581	8	10
1552	3	8	1582	6	9

Per _____
J. Van Engelen MCIC

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SWASTIKA LABORATORIES LIMITED

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TELEPHONE: (705) 642-3244
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Certificate of Analysis

Certificate No. 49478 Date: June 25 1980

Received June 18 1980 60 Samples of Soils

Submitted by Sveinson Way Mineral Services, Edmonton Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM	SAMPLE NO.	COPPER PPM	LEAD PPM
1583	13	10	1614	12	12
1584	18	9	1615	6	11
1585	8	14	1616	8	10
1586	7	10	1617	21	14
1587	2	11	1618	7	9
1588	11	10	1619	9	10
1589	299	16	1620	12	15
1590	6	9	1621	15	14
1591	21	11	1622	9	12
1592	10	10	1623	8	11
1593	31	11	1624	17	9
1594	10	8	1625	6	9
1595	4	8	1626	8	10
1596	3	6	1627	10	9
1597	6	12	1628	7	10
1598	10	10	1629	6	6
1599	4	8	1630	10	8
1600	24	15	1631	2	5
1601	24	16	1632	11	6
1602	5	7	1633	50	9
1603	6	10	1634	40	7
1604	9	12	1635	23	6
1605	19	15	1636	46	10
1606	13	11	1637	10	5
1607	6	9	1638	10	9
1608	18	11	1639	4	8
1609	17	14	1640	15	9
1610	11	10	1641	19	7
1611	9	6	1642	17	10
1612	5	9			
1613	6	10			

Per J. Van Engelen MCIC

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 49479 Date: June 25 1980

Received June 18 1980 34 Samples of Soils

Submitted by Sveinson Way Mineral Services, Edmonton Alberta

SAMPLE NO.	COPPER PPM	LEAD PPM
1643	3	5
1644	3	8
1645	30	13
1646	8	8
1647	4	7
1648	15	11
1649	48	17
1650	9	10
1651	15	10
1652	7	7
1653	29	8
1654	6	9
1655	30	9
1656	37	11
1657	6	7
1658	10	10
1659	6	6
1660	82	10
1661	12	11
1662	6	11
1663	3	9
1664	50	9
1665	12	11
1666	79	8
1667	49	11
1668	13	7
1669	90	12
1670	6	10
1671	4	9
1672	3	10
1673	13	15
1674	4	9
1675	17	12
1676	5	8

Per J. Van Engelen MCIC

ESTABLISHED 1928

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-352667

Geochemical Lab Report

Extraction _____ Report No. 20 - 1516

Method _____ From S.W. Exploration Partnership

Fraction Used _____ Date August 6 19 80

SAMPLE NO.	Cu ppm	Pb ppm			SAMPLE NO.	Cu ppm	Pb ppm		
1192	30	122			1431	2	4		
1261	6	6			1432	3	5		
1357	27	12			1433	3	4		
1365	23	6			1434	4	5		
1366	23	5			1435	9	7		
1367	25	8			1436	6	6		
1398	9	6			1437	6	4		
1399	1	4			1438	11	5		
1400	22	6			1439	29	36		
1402	16	6			1440	10	25		
1403	8	6			1441	5	5		
1412	63	10			1442	8	5		
1413	57	6			1443	33	4		
1414	47	8			1444	2	4		
1415	45	10			1445	6	5		
1416	41	10			1446	22	6		
I417	36	14			1447	14	5		
1418	43	8			1448	13	3		
1419	40	12			1449	27	4		
1420	31	11			1450	7	2		
1421	31	6			1451	2	4		
1422	33	14			1452	20	3		
1423	32	12			1453	22	3		
1424	29	12			1454	4	2		
1425	30	17			1455	3	3		
1426	17	15			1456	13	4		
1427	16	29			1457	3	3		
1428	13	12			1458	1	2		
1429	13	15			1459	2	2		
1430	2	2			1677	4	3		

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-352667

Geochemical Lab Report

Extraction _____ Report No. 20 - 1121

Method _____ From S.W. Mineral Services Ltd,

Fraction Used _____ Date July 11, 19 80

SAMPLE NO.	Cu ppm	Pb ppm	Au ppb	As ppm	SAMPLE NO.	Cu ppm	Pb ppm	Au ppb	As ppm
1193	11	6	< 5	3	1483	12	8	< 5	2
1194	7	10	< 5	5	1484	6	4	< 5	< 2
1195	3	3	< 5	3	1485	3	3	< 5	2
1196	3	3	< 5	2	1486	6	3	< 5	< 2
1197	4	6	< 5	2	1487	3	7	< 5	3
1198	18	10	< 5	3	1488	4	7	< 5	< 2
1199	5	4	< 5	2	1489	12	6	< 5	2
1460	8	5	< 5	2	1490	8	6	< 5	2
1461	2	4	< 5	2	1491	1	3	< 5	< 2
1462	4	4	< 5	2	1492	13	4	< 5	< 2
1463	12	6	< 5	2	1493	9	6	< 5	< 2
1464	13	5	< 5	2	1494	3	4	< 5	< 2
1465	5	5	< 5	2	1495	6	4	< 5	2
1466	8	5	< 5	2	1496	9	6	< 5	< 2
1467	< 1	3	< 5	2	1497	36	4	50	< 2
1468	1	4	< 5	2	1498	121	7	< 5	2
1469	7	6	< 5	2	1499	67	4	< 5	2
1470	4	5	< 5	2	1724	11	5	< 5	< 2
1471	7	6	< 5	2	1725	3	3	< 5	< 2
1472	12	6	< 5	2	1726	5	2	< 5	< 2
1473	4	5	< 5	2	1727	5	3	< 5	< 2
1474	4	5	< 5	2	1728	26	4	< 5	< 2
1475	< 1	4	< 5	2	1729	7	4	< 5	< 2
1476	10	5	< 5	2	1730	3	4	< 5	< 2
1477	14	9	< 5	3	1731	6	6	< 5	< 2
1478	16	7	< 5	2	1732	7	2	< 5	< 2
1479	10	6	< 5	2	1733	18	6	< 5	< 2
1480	3	2	< 5	2	1734	9	4	< 5	< 2
1481	10	4	< 5	2	1735	28	6	< 5	< 2
1482	5	5	< 5	2	1736	21	5	< 5	< 2

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 20 - 1516 Page No. 2

SAMPLE NO.	Cu ppm	Pb ppm			SAMPLE NO.	Cu ppm	Pb ppm		
1678	12	6			1713	8	5		
1679	5	6			1714	2	4		
1680	5	4			1715	6	4		
1681	30	6			1716	14	4		
1682	12	4			1717	8	3		
1683	7	4			1718	6	4		
1684	4	3			1719	3	4		
1685	4	3			1720	4	6		
1686	58	6			1721	4	5		
1687	25	6			1722	5	5		
1688	4	4			1723	8	4		
1689	4	4							
1690	3	4							
1691	4	4							
1692	6	4							
1693	5	6							
1694	14	3							
1695	11	5							
1696	7	6							
1697	14	4							
1698	7	8							
1699	14	5							
1700	4	6							
1701	4	8							
1702	7	6							
1703	5	3							
1704	5	4							
1705	1	4							
1706	5	6							
1707	5	4							
1708	12	4							
1709	11	5							
1710	7	3							
1711	6	2							
1712	8	7							

BONDAR CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 20 - 1121 Page No 2

SAMPLE NO.	Cu ppm	Pb ppm	Au ppb	As ppm	SAMPLE NO.	Cu ppm	Pb ppm	Au ppb	Ag ppm
1737	102	5	< 5	< 2	1772	12	6	< 5	< 2
1738	5	4	< 5	< 2	1773	4	5	< 5	< 2
1739	3	6	< 5	< 2	1774	5	8	< 5	< 2
1740	4	4	< 5	< 2	1775	9	6	< 5	2
1741	2	4	< 5	< 2	1776	24	6	< 5	< 2
1742	4	5	< 5	< 2	1777	5	2	< 5	< 2
1743	6	4	< 5	< 2	1778	12	6	< 5	< 2
1744	9	4	< 5	< 2	1779	12	9	< 5	3
1745	8	5	30	< 2	1780	18	8	85	2
1746	9	4	< 5	< 2	1781	14	4	< 5	< 2
1747	2	3	< 5	< 2	1782	17	8	< 5	< 2
1748	14	11	< 5	5	1783	13	7	15	< 2
1749	16	9	< 5	2	1784	33	10	< 5	< 2
1750	10	8	< 5	< 2	1785	9	4	< 5	< 2
1751	17	8	< 5	7	1786	14	3	< 5	< 2
1752	11	9	< 5	3	1787	32	12	25	2
1753	9	5	< 5	3	1788	36	20	10	10
1754	11	12	< 5	2	1789	37	14	< 5	2
1755	7	4	< 5	< 2	1790	12	10	< 5	6
1756	18	8	< 5	5	1791	7	4	< 5	3
1757	17	5	< 5	3	1792	4	6	5	< 2
1758	17	3	< 5	2	1793	4	3	< 5	2
1759	7	3	< 5	2	1794	8	5	< 5	2
1760	20	6	< 5	3	1795	13	7	< 5	2
1761	29	5	< 5	2	1796	12	3	< 5	2
1762	18	6	< 5	2	1797	1	3	< 5	2
1763	15	10	25	2	1798	7	3	< 5	2
1764	5	6	< 5	< 2	1799	4	3	< 5	< 2
1765	9	6	< 5	< 2	1800	8	5	< 5	2
1766	4	5	< 5	< 2	1801	50	4	<15*	2
1767	15	13	30	2	1802	8	8	<10*	3
1768	9	3	25	< 2	1803	19	6	< 5	2
1769	68	8	5	2					
1770	50	10	< 5	3					
1771	26	12	< 5	< 2					
					* detection limit on a small sample				

Lipton Twp (M-1298)

Derry Twp. (M-1243)

Breckenridge Twp. (M-1225)

Ermine Twp. (M-1249)

Mosambik Twp. (M-1319)

Kabinakagami Lake

Boot Bay

Windy Pt.

Lipton Cr.

Breckenridge Cr.

Beck Cr.

Kabinakagami River

THE TOWNSHIP OF

LIZAR

DISTRICT OF ALGOMA

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	● or (P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES CANCELLED	C.
PATENTED S.R.O.	◒

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

23947

PLAN NO. M.1299

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

S.W. EXPLORATION PARTNERSHIP (1980)
HIAWATHA PROJECT

1980 Drill Locations

SCALE 1:1250

DATE: FEB. 1981

FIG 1

2.3947 Dwg

210

LEGEND
SAMPLE LOCATION
Au (PPB) / Cu - COPPER (PPM) / Pb - LEAD (PPM)

S.W. EXPLORATION PARTNERSHIP (1980)
HIAWATHA PROJECT

Soil Geochemical Survey

Mar 81

1:1250
1"=100'

FIG 2

220

23947 Orig

79+50W

73+75W

68+00W

62+25W

56+50W

50+75W

45+00W

39+25W

33+50W

490829

490825

490780

490781

490830

490834

490785

49790

490784

490787

490837

490836

49795

49796

49791

49792

N

BASE LINE

LEGEND

GOLD (PPB) — SAMPLE LOCATION — COPPER (PPM) — LEAD (PPM)

S.W. EXPLORATION PARTNERSHIP (1980)
HIAWATHA PROJECT

Soil Geochemical Survey

1:1250
1" = 100'

JULY 1980

FIG 3

S.W. EXPLORATION PARTNERSHIP (1980)
HIAWATHA PROJECT
Soil Geochemical Survey

1" = 250'
1" = 200'

Fig 4

LEGEND
SAMPLE LOCATION
Cu (ppm) - COPPER (PPM)
Au (ppb) - LEAD (PPM)

BASE LINE

490829
490833
490836
490834
490837

85 #25W

N