010

Diamond Drilling

Area Molson Lake Report Nº 22

Work performed by: Caulfield Resources Ltd.

Claim Nº	Hole Nº	Footage	Date	Note
TB 393050	427-83-1	514.8	July/83	(1)
TB 393050				
393049	427-83-2	848.5	July/83	(1)
	427-83-3	583.1	July/83	(1)
TB 393038	427-83-4	454.2	July/83	(1)
TB 393048	427-83-5	618.2	July/83	(1)
TB 393047-8	427-83-6	800.3	July/83	(1)
TB 393047	427-83-6A	301.2	July/83	(1)

Notes: (1) #500-83

SUMMARY REPORT
OF THE
DIAMOND DRILLING PROGRAM
VULCAN-CAULFIELD JOINT VENTURE
HEMLO AREA
DISTRICT OF THUNDER BAY, ONTARIO

October 5, 1983
Timmins, Ontario

By: Stephen Conquer
Per: David R. Bell Geological Services Inc.

TABLE

I INTRODUCTION

During June and July of 1983 a diamond drilling program was carried out on the Hemlo area claim group of Caulfield Resources Ltd., for Vulcan Resources Ltd. This program was initiated to test four of six anomalous zones, delineated by an Induced Polarization (IP) survey (see Figures 1, 2 and 3).

II DIAMOND DRILLING PROGRAM

The diamond drilling program was conducted from June 21, 1983 to July 20, 1983. A total of 4107.8' was cored in seven holes, (see Table 1). The core was BQ, 1 7/16" in diameter, with core recovery being 100%.

The purpose of the drilling program was to test four of six anomalous IP zones. Hole 427-83-1 intersected anomaly 1, which was a reflection of graphitic and pyritic metasediments. Hole 427-83-2 intersected anomaly 1, coring through the same graphitic and pyritic metasediments as hole 427-83-1, as well as a pyritic tuff horizon representing anomaly 2 (Sutherland, 1983). Hole 427-83-3, was drilled through the same pyritic tuff horizon (as in 427-83-2) again being the cause of anomaly 2.

The fourth drill hole, 427-83-4, was drilled to intersect the western portion of anomaly 5. This segment of anomaly 5 is partially isolated from the remainder of the zone, with lower overall chargeability values. Due to the lack of graphite in the core, along with only minor amounts of pyrite, it is suggested that the highly magnetic diabase dyke (observed in hole 427-83-1), is the probable cause of this portion of anomaly 5.

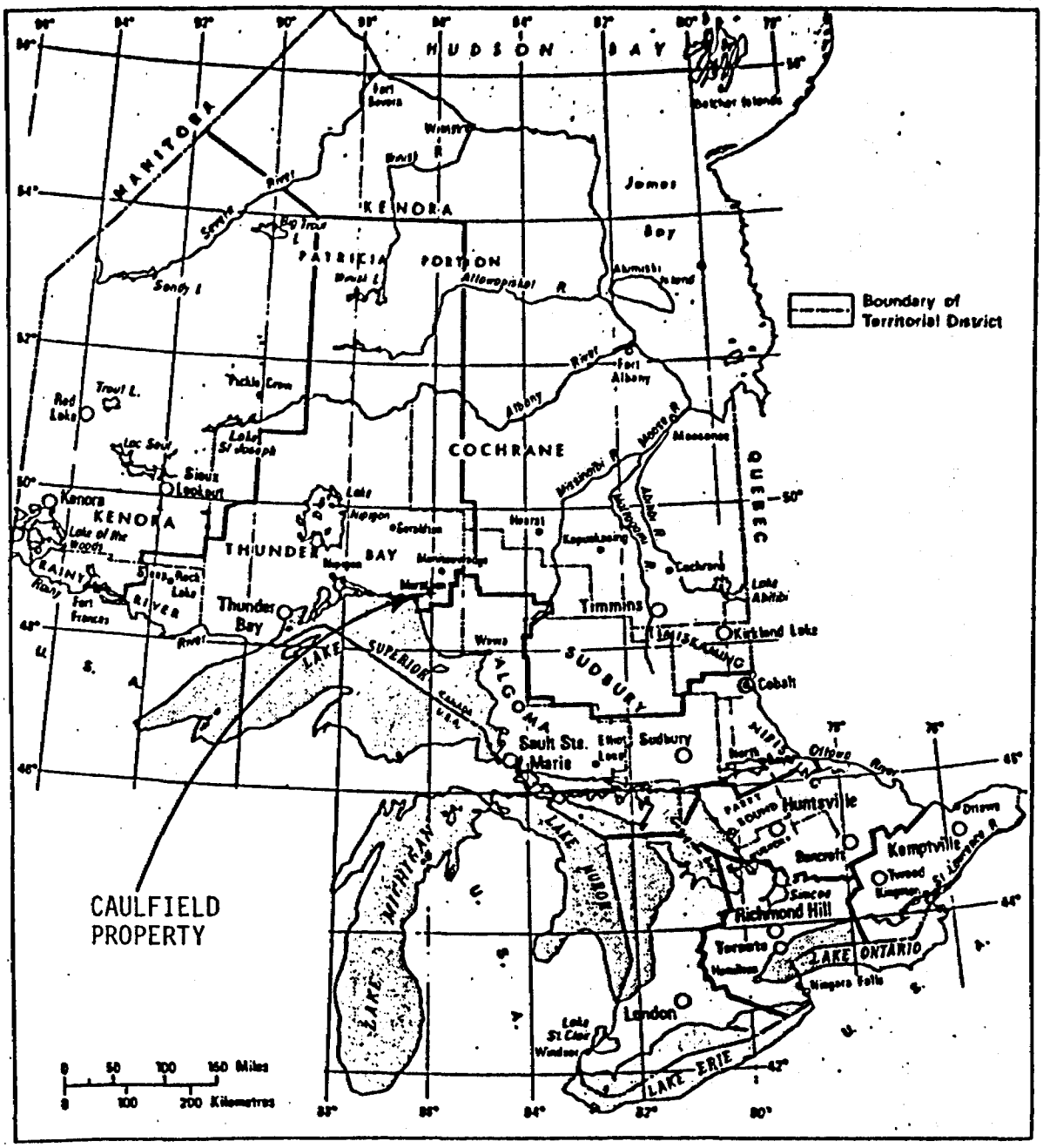


Figure 1: Approximate location of Caulfield Claim group

David R. Bell Geological Services Inc.	
VULCAN-CAULFIELD	
Location Map District of Thunder Bay, Ontario	

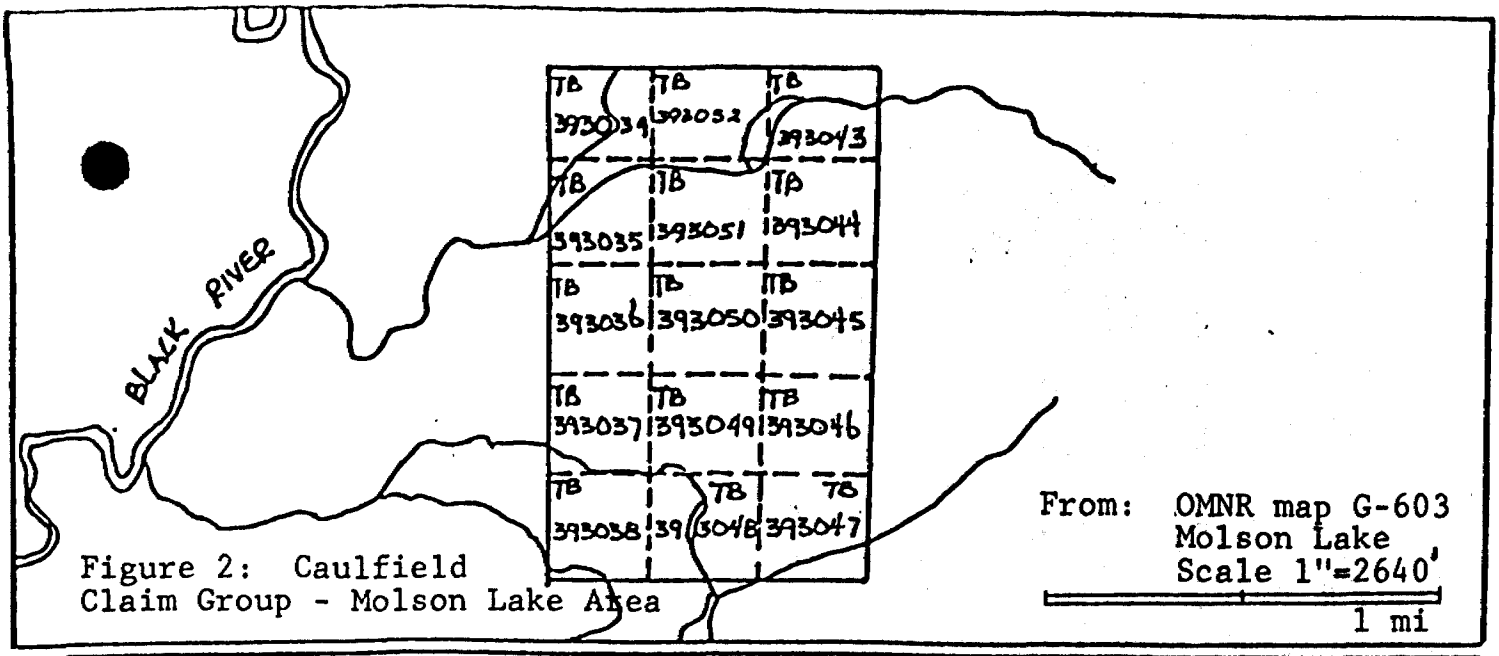


Figure 2: Caulfield Claim Group - Molson Lake Area

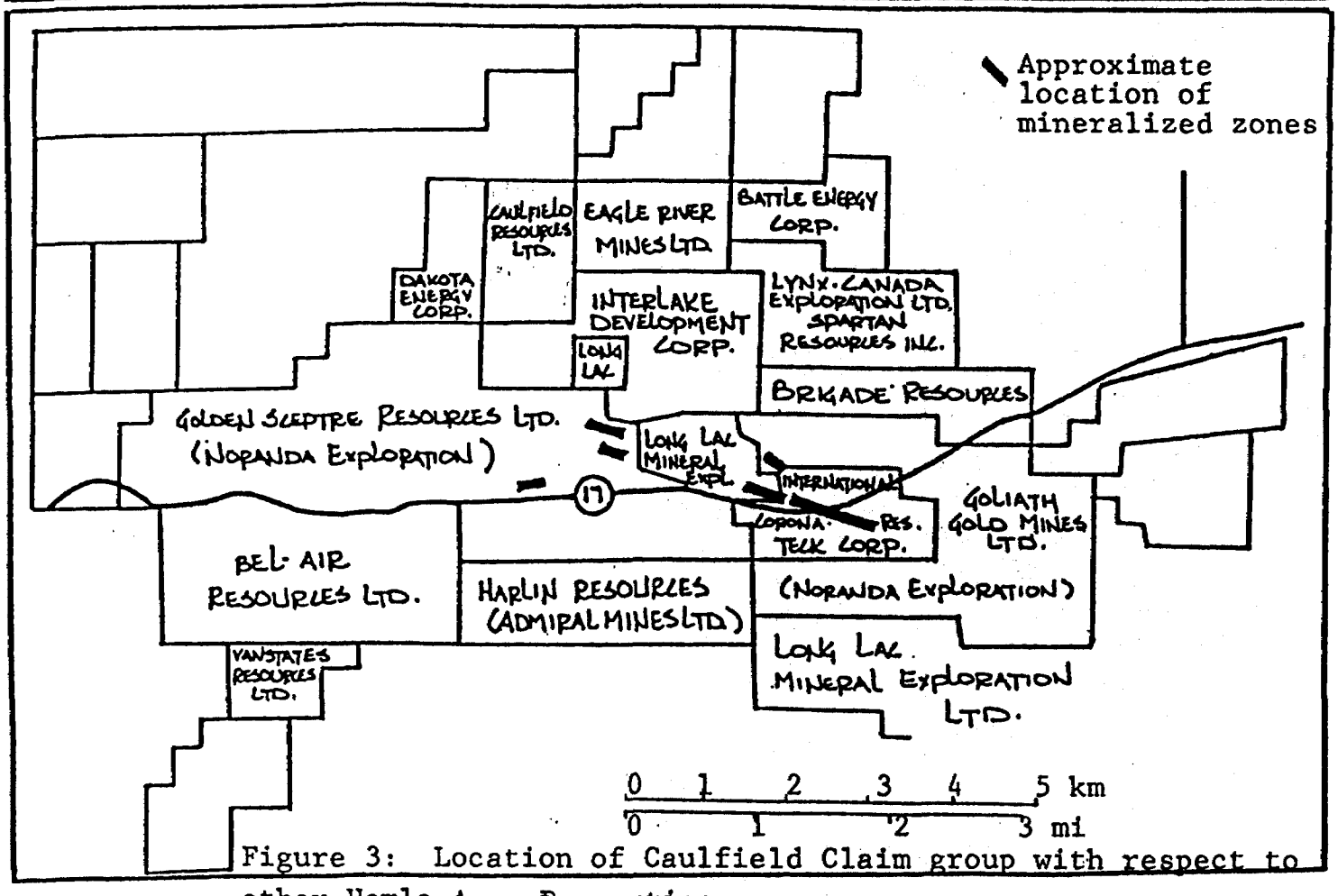


Figure 3: Location of Caulfield Claim group with respect to other Hemlo Area Properties

DAVID R. BELL GEOLOGICAL SERVICES INC.
VULCAN-CAULFIELD
LOCATION MAP
DISTRICT OF THUNDER BAY, ONTARIO

TABLE 1
DIAMOND DRILL HOLE LOCATIONS AND LENGTHS

IP Zone	DDH #	Collar	Azimuth	Dip	Length
1	427-83-1	L16E/12+50N	Grid S (160°)	-50°	514.8'
1&2	427-83-2	L16E/10+00N	Grid S (160°)	-50°	836'
2	427-83-3	L16E/6+80N	Grid S (160°)	-50°	583.1'
5	427-83-4	L4E/9+50S	Grid S (160°)	-50°	454.2'
5	427-83-5	L16E/11+86S	Grid S (160°)	-50°	618.2'
5	427-83-6	L24E/13+00S	Grid S (160°)	-50°	800.3'
6	427-83-6A	L24E/18+00S	Grid S (160°)	-50°	301.2'

Drill hole 427-83-5 and 6 were drilled to intersect anomaly 5, which was the geophysical expression of the pyritic tuffs seen in the core. The final hole 427-83-6A was cored to investigate anomaly 6 which was parallel to but south of anomaly 5. It is apparent (after core examination) that anomaly 6 is the result of pyritic metasediments and pyritic tuffs.

III GEOLOGY

For detailed description of rock types see the logs included with this report.

Structural Geology

During the visual inspection of the drill core, several structural features were noted. First, foliation planes were observed in the metasediments and metavolcanics, indicating a general (east-west strike, while dipping steeply to the north. Second, offsets of individual beds and brecciation are seen to represent small scale faulting. These features were observed at various locations in all holes. And lastly, an injection or flame structure was noticed at one location.

Stratigraphy

The only stratigraphic or top indicator observed during the drilling program, was a coarsening of grain size. This change in grain size, was observed in holes 427-83-5 and 427-83-6, with a fining up hole. This would suggest north facing tops. A possible reinforcement of this idea was located during the mapping program, with a northwards grain size fining in a crystal tuff.

Mineralization

Various forms of sulphide mineralization were observed during the logging of the drill core. These sulphides were pyrite and pyrrhotite being the most abundant, chalcopyrite and molybdenite. All metallic mineralization occurred as fine grained disseminations, with chalcopyrite being confined to the mafic meta-volcanics and molybdenite found only in one quartz vein. The occurrence of both chalcopyrite and molybdenite was extremely rare, being of no economic interest. Pyrite and pyrrhotite, as well as fine grained disseminations, was observed as coarse grain disseminations and massive accumulations in the intermediate to felsic tuffs. In the argillaceous metasediments pyrite (predominantly) and pyrrhotite were seen as discontinuous to continuous bands (up to 2/10" wide), that were parallel to the bedding or foliation planes.

A total of 202 core samples were sent for analysis. All samples were analyzed for gold, while others were analyzed for copper (due to presence of chalcopyrite) and nickel (because of pyrrhotite).

The higher values for each element are reported in Table 2.

TABLE 2

ANOMALOUS RESULTS OBTAINED DURING VULCAN-CAULFIELD 1983 DRILL PROGRAM

Sample No.	Hole No.	Element	Assay Result	Rock Type
427-000-104	427-83-5	Gold	124 ppb	Intermediate to Felsic Ash tuff
427-000-135	427-83-5	Nickel	123 ppm	Mafic tuff
427-000-023	427-83-1	Copper	84 ppm	Interbedded Argillaceous Metasediments and Ash tuff

IV CONCLUSIONS AND RECOMMENDATIONS

Mineralization of an economic nature was not located during the drilling program. Therefore, as was suggested in the geology report, a soil geochemistry survey should be conducted, providing coverage of the northern portion of the claim block. If the results of the geochemistry survey warrant, follow-up work in the nature of prospecting and an Induced Polarization survey should be conducted.

Respectfully submitted,

Stephen Conquer

Timmins, Ontario
October 3, 1983

By: Stephen Conquer, B.Sc.
Per: David R. Bell Geological Services Inc.

CERTIFICATE OF QUALIFICATIONS

I, Stephen W. Conquer hereby certify:

1. that I am a geologist employed by David R. Bell Geological Services Inc., Suite 4, 251 Third Ave., Timmins, Ontario.

2. that I am a graduate of the University of Waterloo, holding a Bachelor of Science degree (1979).

3. that I have been practising my profession as a geologist since 1979.

4. that I do not have nor do I expect to receive either directly or indirectly, any interest in this property or the securities of Vulcan Resources Limited or Caulfield Resources Ltd.

Stephen Conquer

Timmins, Ontario
October 3, 1983

By: Stephen W. Conquer, B.Sc.
Per: David R. Bell Geological Services Inc.

REFERENCES

Nelson, L.J. 1983 — Unpublished Progress Report, Ground Geophysics (Proton Mag, Radem and IP surveys) on the Hemlo Area, District of Thunder Bay, Ontario; property of Caulfield Resources Ltd. (company report), Vancouver, B.C., 14p, 2 plans

1983 — Unpublished Progress Report, Soil Geochemistry Survey on the Hemlo Area, District of Thunder Bay, Ontario, property of Caulfield Resources Ltd., (company report), Vancouver, B.C., 5p, 3 plans

Muir, T.L. 1982 — Geology of the Hemlo Area, District of Thunder Bay; Ontario Geological Report 217, 65p. Accompanied by Map 2452 (coloured), Scale 1:31, 680 or 1 inch to ½ mile

Sutherland, D.B. 1983 — Report of Induced Polarization Survey on the Hemlo Area, District of Thunder Bay, Ontario; Caulfield Resources Ltd. Option for Vulcan Resources Ltd. (company report), Vancouver, B.C., 9p, 3 maps

1982 — VLF-EM survey map, Caulfield Resources Limited

1982 — Magnetometer survey map, Caulfield Resources Ltd.

David R. Bell Geological Services Inc.

SUMMARY TABLE OF DIAMOND DRILLING PROGRAM

Company: Vulcan-Caulfield Joint Venture

Project No: 427

Diamond Drill Hole Number	Location	Azimuth	Dip	Total Footage	Anomaly Description		Anomaly Intersection		Comments
					Geophysical	Geochemical	Proposed	Actual	
427-83-1	L16E/12+50N	Grid South (160°)	0', -50°; 250', -43.5°, 514.8', 39.5°	514.8'	IP, Anomaly 1*		125'-475'	134'-330'	lithic tuff with 5% sulphides, plus graphitic argillites with up to 5% sulphides
427-83-2	L16E/10+00N	Grid South (160°)	0', -50°; 250', -39° 500', -28°; 843.5'- 19.5°	843.5'	IP Anomaly 1 Anomaly 2		0'-790' 485'-620'	0'-50' 510'-614'	graphitic argillites with 2-5% sulphides
427-83-3	L16E/6+80N	Grid South (160°)	0', -50°; 150', -34.5° 300', -31°; 583.1', -31°	583.1'	IP Anomaly 2		125'-265'	239'-266'	graphitic argillites with lithic tuff 5-10% sulphides in places
427-83-4	L4E/9+50S	Grid South (160°)	0', -50', -44°, 300' -42°; 454.2', -41°	454.2'	IP Anomaly 5		150'-330'	170'-177' 232'-310'	Argillites Diabase dyke
427-83-5	L16E/11+86S	Grid South (160°)	0', -50°; 200', -45° 400', -41°; 600', -41°	618.2'	IP Anomaly 5		155'-600'	160'-190' 214'-265' 475'-570'	Lithic tuff-up to 5% pyrite graphitic argillites pyrite up to 5% Ash to lithic tuff up to 5% pyrite

David R. Bell Geological Services Inc.

SUMMARY TABLE OF DIAMOND DRILLING PROGRAM

Company: Vulcan-Caulfield Joint Venture

Project No: 427

Diamond Drill Hole Number	Location	Azimuth	Dip	Total Footage	Anomaly Description		Anomaly Intersection		Comments
					Geophysical	Geochemical	Proposed	Actual	
427-83-6	L24E/13+00S	Grid South (160°)	0', -50°; 200', -37.5' 400', -36.5°; 600; -32.0° 800, -28°	800.3'	IP Anomaly 5 Anomaly 6		150'-450' 720' to end of hole	168'-380' 725'-800' ?	Ash, lithic tuff Argillites up to 5% pyrite Wacke and Ash tuff 1-2% pyrite
427-83-6A	L24E/18+00S	Grid South (160°)	0', -50°; 150', -36.5° 301.2', 36.5°	301.2'	IP Anomaly 6		90' to end of hole	118'-301.2'	generally up to 2% pyrite wacke, lithic tuff Ash Tuff

*Anomalous zone boundary taken as 40 millisecond contour of n_1 data

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

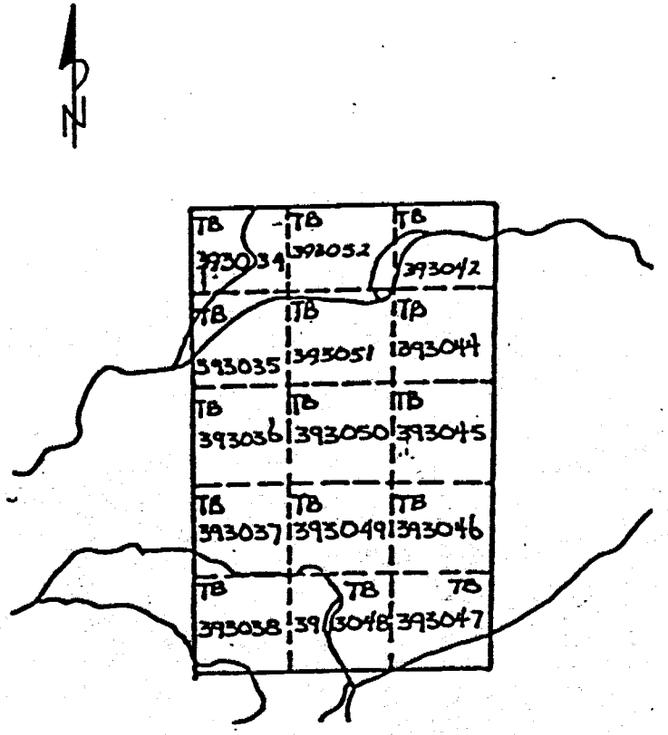
Company Vulcan-Caulfield Joint Venture

Hole No. 427-83-1

LOCATION	DIP TEST					
AREA or TWP. Molson Lake Area S.S.Marie/Thunder Bay	FOOTAGE	ANGLE RECORDING	ANGLE CORRECTED	LEVEL Surface	HORIZONTAL COMPONENT 370'	DATE STARTED June 21/83
CLAIM NO. Mining Division TB393050	0'	50°	50°		VERTICAL COMPONENT 388'	DATE FINISHED June 23/83
	250'	52.5°	43.5°	ELEVATION	BEARING Grid South (160°)	LOGGED BY Stephen Conquer
NTS 42C/12 UTM	514.8'	48°	39.5°	LATITUDE L16E	LENGTH 514.8'	PURPOSE Test IP Anomaly
				DEPARTURE 12 + 50N	CORE LOCATION White River Freezer	TOT. RECOVERY 100%

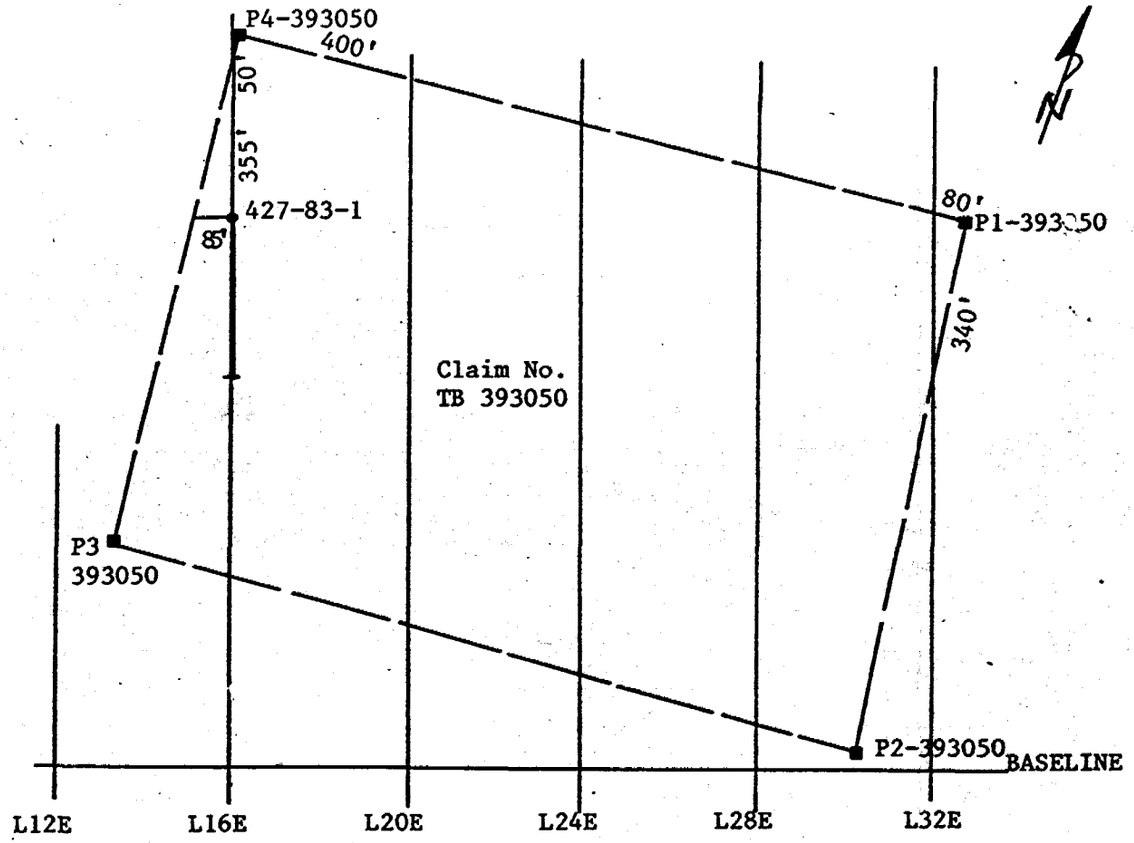
DIAMOND DRILL HOLE LOCATION SKETCHES

CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet



Signature Stephen Conquer

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 1 of 20

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50S Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
0'	6'	Casing - Overburden						
6'	7.7'	Interbedded Intermediate Crystal Tuff and Arkosic Wacke -individual units vary in size from 1/8" to 4" ←Intermediate Crystal Tuff - Foliated at 56° to core axis fine grained to medium grained -quartz eyes vary in size up to 1/20" (0.05") in length -finely disseminated sulphides (pyrite), microscopic size -weak carbonate alteration throughout or pervasive (not in stringers) -Quartz and feldspar in matrix -overall grey colour, with dark (biotite) and light (quartz) grains -porous in places due to weathering of biotite, Fe staining associated with porous zones -feldspathic fragments up to 1/20" in size ←Arkosic Wacke - foliated at 56° to core axis -fine grained equigranular Metasediment -mafic component (biotite) between 30-40% -felsic component (quartz feldspar) between 60-70% -foliation evident by alteration of leucosome and melanosome bands -small boudinaged quartz stringers 1/20" to 1/10" in width parallel to foliation -contact between two rock types is at 56° to core axis						
7.7'	12.0'	Arkosic Wacke - as in core from 6.0' to 7.7', foliation 58° to core axis						
12.0'	12.7'	Intermediate Crystal Tuff-as in core from 6.0' to 7.7' contact to core axis 58°						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 2 of 20

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
127'	14.0'	Arkosic Wacke - as in core from 6.0' to 7.7' -quartz-carbonate stringers parallel to foliation (56° to core axis), contact 58° to core axis						
14.0'	16.5'	Intermediate Crystal Tuff - as in core from 6.0' to 7.7' -silicification at 14.1' cutting core at 27° to core axis -other silicified, carbonatized zones subparallel to parallel to foliation						
16.5'	30.7	Arkosic Wacke - as described in core 6.0' to 7.7' -chert zone (1/10" wide) at contact (16.5') -foliated at 60° to core axis -quartz-carbonate alteration zones (carbonate-calcite?) same mafic (chlorite, biotite) inclusions, trace sulphides; cut core at 35° to core axis as well as parallel to foliation; up to 0.4" width -also quartz stringers parallel to foliation, up to 0.1" wide -trace sulphides in this unit -alteration to light and dark grey areas (parallel to foliation) -contact irregular approximately 108° to core axis						
30.7'	35.5'	Feldspar Porphyry (porphyritic lithic tuff) - few lapilli size -fine grained siliceous and biotite ground mass, with feldspar phenocrysts -mafic fragments in first 0.3' section suggest tuff (felsic tuff) -fragments 0.5" long, 0.1" wide maximum, minor fragments rest of section -at 31.0'; 2" section of Arkosic Wacke as in core 6.0' to 7.7' -upper contacts at 140° to core axis; lower contact obscured	427-000 -001	30.7' -35.5' width 4.8'	19ppb			

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
30.7'	35.5'	cont'd by broken core, disseminated pyrite 1% -FP - silicification appears at 32.0', irregular contact with FP at 172° to core axis -up to 5% fine grained disseminated sulphides (pyrite)in FP -sulphides, fine grained disseminated sulphides, plus small 0.05" clots (pyrite) -core entirely silicified at 33.5'; still retains some relict FP textures -epidote along fractures of silicified zone along with larger clots of sulphide(pyrite), also carbonate weak along fractures and in silicified zone -contact at 49° to core axis sharp, sulphides along contact -foliated at 40° to core axis						
35.5'	43.6'	Arkosic Wacke -fine grained disseminated sulphides 2% -description as per 6.0' to 7.7' this log -multiple fractures (hairline) at 10° to core axis, filled with carbonate(calcite)plus ankerite -fractures parallel to foliation show alteration of host rock -small hairline fracture at 129° to core axis - acts as conduit for silica rich fluids; alteration along fracture and along foliation planes of metasediments -0.25' silicified zone at 40.5', disseminated sulphides -contact at 36° to core axis slightly irregular Feldspar Porphyry (Porphyritic Lithic Tuff) - as described in logs from 30.7 to 35.5 -Contact at 62° to core axis (sharp)	427-000 -002 427-000 -003	40.1- 43.6' 3.5' 43.6'- 48.6' 5.0'	5 ppb 8ppb			

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 4 of 20

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
48.6'	50.9'	Arkosic Wacke - as described in logs from 60' to 7.7' -foliation at 53° to core axis, quartz stringers parallel to 0.05" wide -few lapilli sized felsic fragments -contact at 51° to core axis, appears slightly gradational						
50.9'	53.2'	Intermediate to Felsic Crystal Tuff - foliation at 56° to core axis -appears to be Arkosic Wacke with Lighic size fragments included - may be mid-way between Arkosic Wacke and Feldspar Porphyry (porphyritic Lithic Tuff) -see description in logs 6.0' to 7.7' for Crystal Tuff -0.3" silicified zone parallel to foliation at 52.5' -trace disseminated sulphides -contact at 46° to core axis						
53.2'	53.7'	Arkosic Wacke - foliation at 47° to core axis -see logs this hole 6.0' to 7.7' -contact hard to see, gradational?, but appears to be parallel to foliation						
53.7'	56.5'	Intermediate to felsic Crystal Tuff - foliation (weak, alignment of mafic and feldspar fragments) at 50° to core axis - trace sulphides -for description see logs this hole 6.0' to 7.7 -quartz-carbonate alteration zones up to 0.3" wide, parallel to foliation -also sporadic alteration, some chlorite included 56.1' -small 1" Argillaceous section at 55.9' -contact at 50° to core axis						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 5 of 20

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
56.5'	67.3'	Ash Tuff -foliation at 50° to core axis -quartz stringers up to 0.1" wide -hairline fracture at 59.5' and 25° to core axis, silicification (bluish colouration) -alternating light and dark grey sections due to higher or lower mafic content -small percentage of lithic felsic fragments 5% up to 15% -at 60', 0.5" wide silicified, carbonatized zone (yellowish carbonate) parallel to foliation -at 61.6', 2" quartz vein, 3 small clots of Mo plus disseminated pyrite (fine grained) -plus inclusion of biotite masses 0.2" long -hairline fracture at 64.5' sulphides (pyrite) and carbonate along fracture -Ash Tuff silicified at contact -contact at 68° to core axis						
67.3'	74.3'	Argillaceous Metasediment-very fine grained, foliation 64° to core axis -presence of lithic sized fragments, felsic volcanic derived -alteration (what type?) occurs in and around fractures -at 72.8', 0.3' unit of crystal tuff -gradational contact						
74.3'	75.5	Ash Tuff - very fine grained massive with felsic fragments (2%) -intermediate composition, alteration along fracture zones -foliated at 65° to core axis						

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
75.5'	76.3'	Intermediate to Felsic Crystal Tuff - as described in log this hole 6.0' - 7.7' -alteration around fractures, last 4" of this section heavily altered pinkish colour outside 1", 2" greenish-blue alteration in middle, fine grained disseminated sulphides -contact 65° to core axis, sharp						
76.3'	80.8'	Argillaceous Metasediments-weakly foliated at 65° to core axis, very fine grained -several hairline fractures at 25° to core axis, alteration along these fractures, pinkish brown, and green-blue -1" quartz vein at 77.4' presence of Mo and pyrite 1% fine grained disseminated , small alteration zones 1" either side of quartz vein, mafic clots in quartz vein -similar quartz vein at 77.9' fine grained disseminated pyrite 1%, no Mo -Alteration at 78.9', pink-brown and green blue around fractures, with clots of sulphide on fractures only -contact at 80° to core axis						
80.8'	86.0'	Mafic to Intermediate Crystal Tuff-foliation at 45° to core axis -very fine grained felsic ground mass, with quartz eyes and thin clots of chloritized biotite -quartz filled fractures at 153° and 125°, carbonate (white carbonate) -weakly carbonatized throughout entire unit -contact gradational	427-0004 427-0005	8.08 83.8' 3.0' 83.8- 86.0' 2.2'	3 ppb 2 ppb			

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
86.0'	88.0'	Mafic to Intermediate Ash Tuff - similar to above section, except lack of quartz eyes and feldspar clasts, plus higher mafic content in ground mass -sulphide content reduced to only trace -foliated at 52° to core axis -quartz-carbonate filled fracture zones -contact lost due to broken core						
88.0'	91.3'	Argillaceous Metasediments - very fine grained, alternating bands of light and dark grey - foliation at 55° to core axis -alteration along fractures (hairline) -quartz-carbonate alteration zone (epidote) at 91.4' about 1" wide, at 62° to core axis -also at 88.75' 1½" wide -contact at 50° to core axis (irregular)						
91.3'	104.3'	Quartz-Feldspar Porphyry (Porphyritic Crystal Tuff?) (Intrusive?) -siliceous groundmass, with biotite flakes as well, quartz eyes and feldspar clasts (subhedral to euhedral) -fine grained disseminated pyrite 1% -massive -quartz-carbonate veining at 48° to core axis, predominantly quartz -contact at 58° to core axis						
104.3'	105.7'	Intermediate to Felsic Crystal Tuff - as described in logs this hole 6.0' to 7.7', foliation to 60° to core axis, small (up to 1/20") silicified zones parallel to foliation						

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
104.3'	105.7'	cont'd -contact at 51° to core axis						
105.7'	120.5'	Feldspar Porphyry (Porphyritic Lithic Tuff) - as described in logs this hole 30.7' to 35.5' 50-60% anhedral to euhedral feldspar fragments up to 0.1" in largest dimensions -fracture at 4° to core axis, filled with epidote -trace sulphides -silicification along hairline fractures 120.1' to 120.5', small clots massive sulphides (pyrite) in altered rock -contact at 70° to core axis						
120.5'	120.7'	Argillaceous Metasediments - foliation at 62° to core axis -randomly oriented hariline fractures with alteration -contact at 65° to core axis						
120.7'	121.0'	Intermediate to mafic crystal tuff-foliation at 60° -silicified and chloritized, throughout entire length -small clots of sulphides in chloritized fracture (at 14° to core axis) -quartz alteration zones at 55° to core axis -contact at 50° to core axis						
121.0'	121.7	Argillaceous Metasediments - foliation at 65° to core axis -hairline fractures (subparallel to foliation) with pinkish-brown alteration -Quartz veining and alteration, maximum 0.3" wide as well as 1 larger clot quartz -contact to 70° to core axis						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50S Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
121.7'	121.9'	Intermediate to Mafic Crystal Tuff -contact at 73° to core axis						
121.9'	122.2'	Argillaceous Metasediments -contact at 75° to core axis						
122.2'	122.6'	Intermediate to Mafic Crystal Tuff -silicification at 70° to core axis, 0.15" wide - also silicification at contact (0.1") -hairline fracture with alteration at 140° to core axis -contact at 75° to core axis						
122.6'	123.1'	Argillaceous Metasediments - 123.0' to 123.1', interbedded Argillaceous, Meta-Sediments and Intermediate to Mafic Crystal Tuff -Metasediments as described earlier, except no alteration -one 0.2" spherical altered zone with mafic fragment in center, alteration white in colour -contact irregular but approximately 73° to core axis						
123.1'	124.1	Intermediate to Mafic Crystal Tuff -near-upper contact, one 0.4" silicified, chloritized zone, no sulphides -chloritization of some more mafic zones -silicified zones of 0.1" wide, one of these right at lower contact -perpendicular to core axis -hairline fracture at 133° to core axis, alteration up to 0.05" on either side -contact at 88° to core axis						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip 50° Length 514.8 Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
124.1'	124.4'	Argillaceous Metasediments - foliation at 85° -two silicified zones near lower contact, only weakly altered parallel to foliation -core split along weakly altered hairline fracture at 167° to core axis -sulphides along fracture, 2 clots - but still less than 2% overall -contact at 65° to core axis						
124.4'	124.9'	Intermediate to Mafic Crystal Tuff - near lower contact, mafic fragment or chloritized clot 0.05" wide, 1.2" long -2 felsic fragments, in lower portion of section -0.2" wide silicified zone at lower contact -contact at 60° to core axis						
124.9'	130.7'	Argillaceous Metasediments - foliation perpendicular to core axis -some small sections where feldspar fragments make Metasediments appear to be Tuffaceous -126.2', quartz vein ½" to 1" wide, running parallel to core axis, flakes of pyrite on fracture plane perpendicular to core axis - 0.3" quartz veins off main vein at 90° and 50° to core axis, other 0.1" quartz stringers throughout unit perpendicular to subperpendicular to core axis -small fractures (as before) at 28° to core axis, slight alteration along these fractures -contact at 73° to core axis, interbedded plus appearance of some intermixing of Argillaceous Metasediments and Feldspar Porphyry						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 11 of 20

Latitude L16E Bearing Grid South Elevation Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
130.7'	142.0'	Feldspar Porphyry (Porphyritic Lithic Tuff?) -zoning and twinning of some plagioclase fragments can be seen -as described in earlier portion of logs for this hole -disseminated sulphides 2%-5% near contact with lower unit, decreasing % up hole - clots of massive pyrite on fractures (40° to core axis) -also fracture at 10° to core axis with clots of massive sulphides, part of fracture system from lower unit, 0.05" wide and filled with chlorite -½" either side of fracture porphyry takes on pinkish colour due to alteration -contact at 43° to core axis	427-000-006 427-000-007 427-000-008 427-000-009	134.0-136.0 2.0' 136.0-138.0 2.0' 138.0-140.0' 2.0 140.0-142.0' 2.0'	4 ppb 38 ppb 11 ppb 4 ppb			
142.0'	148.7'	Intermediate to Mafic Crystal Tuff - foliation at 5% to core axis -set of parallel to subparallel fractures, from hairline to 1/10" in width act as conduit for alteration fluids (at 20° to core axis) -chlorite alteration in fractures, also brown-grey core takes on greenish, pinkish and white colour due to alteration -small percentage of fine grained disseminated and massive clots of pyrite, plus carbonitization ankerite -contact at 60° to core axis	427-000-010 427-000-011	142.0'-146.7 4.7' 146.7-148.7' 2.0'	2 ppb 8 ppb			
148.7'	150.7'	Ash Tuff - foliation at 53° to core axis, 5-10% lithic sized fragments -silicification parallel to foliation -small hairline fractures at 158° to core axis -pyrite mineralization along fractures -contact at 47° to core axis	427-000-012	148.7'-150.7' 2.0'	5 ppb			

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
150.7'	151.1'	Intermediate to mafic crystal Tuff - foliation at 49° to core axis -hairline fractures at 20° to core axis - mineralized with pyrite -contact at 43° to core axis	427-000013	150.7-152.7 2.0	7 ppb			
151.1'	151.4	Ash Tuff - foliation at 49° to core axis -contact at 43° to core axis						
151.4'	152.7	Intermediate to Mafic Crystal Tuff - foliation at 42° to core axis -quartz vein or silicified zone at 30° to core axis -small hairline fractures (at 41° to core axis) pinkish-brown alteration -contact obscurred in core						
152.7	154.7	Pyroclastic Mafic to Intermediate Tuff (QFP) foliation at 45° to core axis -quartz and feldspar fragments, anhedral to subhedral, various sizes up to 0.6" in longest dimension, predominantly quartz -up to 60% biotite in matrix -carbonate clasts as well - up to 5% pyrite -contact at 130° to core axis (interfingering)	427-000014	152.7'-154.7' 2.0'	11 ppb			
154.7'	155.4	Intermediate to mafic tuff -about equal amounts of chloritized mafic material (biotite) and felsic material (quartz feldspar and carbonate), similar to above unit except for lack of fragments, and lower matix material -appearance of felsic fragments at lower contact -contact at 30° to core axis						

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8 Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
155.4'	155.7'	Intermediate to Mafic Crystal Tuff - foliation -as described earlier in logs this hole -contact 35°						
155.7'	157.8'	Ash Tuff - foliation at 20° to core axis, fine grained -fractures (hairline) with pinkish-brown alteration and green-blue alteration, clots of massive sulphide at contact with crystal tuff (also chlorite) -contact irregular						
157.8'	158.7'	Feldspar Porphyry - Intrusive -contact irregular						
158.7'	167.3	Ash Tuff - foliation at 25°, fine grained -as described above						
167.3'	176.4'	Intermediate to Mafic Crystal Tuff - foliation at 55° to core axis -alteration along fractures, as well as clots of sulphides -small patches of sulphides along foliation planes -quartz veining, parallel to foliation; at 175', a 0.75" quartz-carbonate veining, ¼" alteration either side of veining, disseminated and clots pyrite in and along quartz vein -contact at 55° to core axis						
176.4'	180.9'	Ash Tuff - mg, foliation at 55° to core axis, intermediate to mafic -in places more fine grained and also more felsic (quartz) -lineation and crenulation of biotite, in places chloritized	427-000 015	178.9-180.9 2.0'	7 ppb			

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conques

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8 Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.	Cu	Ni	
176.4'	180.9'	cont'd -trace sulphides predominate this unit, with flakes on fracture planes -contact parallel to foliation at 55° to core axis						
180.9'	196.4'	Interbedded Argillaceous Metasediments and Ash Tuff -foliation at 57° to core axis -bed thickness varies from 1/20" to 1.5" -also some small sections of Intermediate to Mafic Crystal Tuff, max 2" wide -mg to cg felsic fragments -fine grained disseminated pyrite plus stringers up to 1/20" along foliation planes -quartz alteration zone at 192.6' about 1.5" wide with pyrite along contact] wk -quartz vein at 193.4, 0.3' wide, pyrite associated with mafic inclusions] cb	427-000016 427-000017 427-000-018 427-000019	180.9'-185.9 5.0' 185.9-190.9 5.0' 190.9-192.9 2.0' 192.9-196.4' 3.5'	4 ppb 3 ppb 8 ppb 5 ppb			
196.4'	199.2'	Interbedded Ash Tuff and Intermediate to mafic crystal tuff -foliation at 46° to core axis -at 216.0' a 0.4' section of Crystal Tuff, within tuff is massive (almost cubic) sulphides pyrite, pyrrhotite (magnetic), these are in what appears to be a silicified fracture zone plus along foliation planes and randomly distributed throughout unit -at 218.2' a 0.2' silicified, carbonate, muscovite, pyrite, pyrrhotite and bornite zone, fracture at 30° to core axis with alteration mentioned above, also alteration zone parallel to core axis with massive sulphides -altogether 15-20% sulphides; silicified parallel to foliation	427-000020	196.4'-199.2' 2.8'	5 ppb	34 ppm	36 ppm	

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South Elevation Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8 Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES			
					Au.	Cu		
196.4'	199.2'	-contact parallel to foliation						
199.2'	210.2'	Interbedded Argillaceous Metasediments and Ash Tuff - foliation to 60° to core axis -as described on 14 of this hole -slight increase in sulphides (pyrite) 5-10% -contact 24° to core axis	427-000-021	199.2'-204.2' 5.0'	8 ppb			
210.2'	213.6'	Mafic to Intermediate Tuff-fine grained to medium grained -approximately 50% biotite, 30% quartz, 20% fsp. (plag) -1 to 2% fine grained sulphides trace -broken along contact Argillaceous and tuffs may be altered due to intrusion -biotite in flakes, quartz as siliceous ground mass, fsp as anhedral to euhedral crystals -contact 24° to core axis						
213.6'	233.5'	Interbedded Argillaceous Metasediments and Ash Tuff - foliation at 53° to core axis -as reported earlier this log -217.0' to 219.5' zone of alteration, silicification, disseminated and stringer sulphides 219.5' to 220.5' small hairline fractures (random orientation) filled with quartz-carbonate up to 1/20" in width, cp in one fracture -sulphides in foliation planes, 5-10% -at 227.4', 0.5" band of massive sulphides plus silicification -contact at 45° to core axis	427-000-022 427-000-023 427-000-024 427-000-025	217.0-219.5' 2.5' 219.5'-221.5' 2.0' 221.5'-226.5' 5.0' 226.5'-228.5' 2.0'	4 ppb 8 ppb 10 ppb 5 ppb	84 ppm		
233.5'	233.8'	Ash Tuff - foliation at 54° to core axis - weakly silicified throughout length	427-000-026	228.5'-233.5' 5.0'	2 ppb			

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 21/83

Departure 12 + 50N Dip -50° Length 514.8 Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
233.5'	233.8'	cont'd -silicified zone at 234.0'-234.25' - heavily silicified with some carbonate and fine grained diss. pyrite 1-2% -contact at 54° to core axis	427-000 027	233.5-235.8' 2.3'	4 ppb			
233.8'	244.3'	Interbedded Argillaceous Metasediments and Ash Tuff - foliation at 55° to core axis -as described earlier in this log -sulphides as stringers 1/20" in foliation planes 5-10% -contact at 55° to core axis	427-000 028	235.8-240.8 5.0'	4 ppb			
244.3'	245.1'	Mafic to Intermediate Tuff - as described 210.6'-213.6' - foliation at 55° to core axis -fine grained diss. sulphides (pyrite) 2%-5% -contact at 58° to core axis						
245.1'	294.5'	Interbedded Argillaceous Metasediments and Ash Tuff - predominantly Argillaceous Metasediments - foliation at 66° to core axis; 5-10% sulphides (pyrite) fine grained diss. and stringers parallel to foliation -291.8', ½" fracture at 25° to core axis, quartz-carbonate and massive pyrite -small amount of graphite throughout unit -contact at 67° to core axis	427-000 029	290.8' 292.8' 2.0	18 ppb			
294.5'	311.9'	Feldspar Porphyry (Lithic Tuff) - anhedral to euhedral feldspar fragments up to 1/10" with very fine grained ground mass	427-000 032	298.6'-300.6 2.0'	8 ppb			
		-alteration throughout entire unit (pink colour), especially fractures at 30° to core axis and 140° to core axis	427-000 031	308.1-312.1' 4.0'	15 ppb			

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Dip test at 250'

Departure 12 + 50N Dip -50 corrected dip -43.5° Length 514.8 Date Finished June 22/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
294.5'	311.9'	cont'd -at 308.1, a 3 foot zone of heavily fracture and altered Feldspar Porphyry, pink alteration suggests Tuff as opposed to Intrusive due to porosity needed for alteration fluids -at 299.6' small fracture zone about ¼" wide, alteration plus pyrite -overall fine grained pyrite associated with rock unit 2%, with higher concentrations in fractures -% of fragments decrease towards bottom of unit (only slightly) -contact - not definite appears that start of fragmental deposition						
311.9'	313.4'	Ash Tuff - intermediate composition, very fine grained groundmass, identical to groundmass of Feldspar Porphyry -fracture (broken core) alteration as with F.P. minor sulphides along fractures -may represent break in felsic fragment deposition -contact-not able to measure due to broken core	427-000 032	312.1'-316.3' 4.2'	7 ppb			
313.4'	314.7'	Feldspar Porphyry - as described 294.5' to 311.9' -contact? broken core						
314.7'	316.3'	Ash Tuff - as described above 311.9' to 313.4' -contact at 70° to core axis						
316.3'	325.0'	Argillaceous Metasediments - slightly graphitic, foliation at 70° to core axis -weakly foliated, pyrite along foliation planes -heavily fractured and silicified, pyrite along fractures	427-000 -033	316.3'-321.3' 5.0'	10 ppb			

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip 43.5° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
316.3'	325.0'	cont'd plus disseminated pyrite and minor carbonate -in places broken core	427-000 -034	321.3'- 324.6' 3.3'	7 ppb			
325.0'	326.6'	Breccia Zone - heavy fracturing and silicification, with sulphides 5% (pyrite) -also carbonate -may be Argillaceous Metasediments mixed with Mafic Volcanics hard to tell	427-000 035	324.6'- 326.6' 2.0'	12 ppb			
326.6'	350.5'	Mafic Volcanic - very fine grained massive flow, strongly fractured, chlorite or fracture planes, as well as pyrite (1-2% of whole rock) -heavily carbonate along fractures, fractures at random orientation -contact at 39° to core axis						
350.5'	351.0'	Feldspar Porphyry - as described earlier in these logs-intrusive -contact at 39° to core axis						
351.5'	354.8'	Mafic Volcanic - flow metamorphased to a tuff; lineation of mafic materials; foliation at 53° to core axis garnetiferous in places-anhedral to subhedral broken crystals -contact at; broken core						
354.8'	374.2'	Feldspar Porphyry - as described earlier in the log-intrusive -minor alteration along fractures at 31° to core axis -contact at 55° to core axis						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip 43.5° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
374.2'	388.0'	Mafic Volcanic - Flow, foliated at 55° to core axis, quartz-carbonate on foliation planes very fine grained mafic matrix, small percentage felsic material -contact at 39° to core axis						
388.0'	390.2'	Feldspar Porphyry - Intrusive; contact between Volcanics and Porphyry erratic with pieces of volcanic in Porphyry (lower contact) -minor alteration, pink to red -sulphides or chloritized fracture zone -contact erratic, almost perpendicular to core axis						
390.2'	393.5'	Mafic Volcanics -contact - unknown						
393.5'	393.9'	Quartz vein in Mafic Volcanics - bull quartz with pyrite along fracture plane (10° core axis) -contact approximately 35° to core axis						
393.9'	404.0'	Mafic Volcanics - fine grained foliated flows, in part maybe tuffaceous of flows metamorphased to tuff, trace sulphides, quartz-carbonate stringers parallel to foliation 63° to core axis - foliation observable due to alternating mafic and felsic bands -contact approximately parallel to core axis						
404.0'	404.2'	Feldspar porphyry - small intrusion, that only appears in part in core -contact approximately parallel to core axis						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip 43.5°; 514.8'-39.5° Length 514.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
404.2'	408.1'	Mafic Volcanics - fine grained foliated flow, as described above, trace sulphides -contact at 40° to core axis - intrusive						
408.1'	408.7'	Feldspar Porphyry - Intrusive, as described earlier in logs, mafic fragments next to contact -contact at 73° to core axis						
408.7'	514.8'	Mafic Volcanics - (Greenstone) - fine grained massive to weakly foliated flow -foliation at 60° to core axis -quartz vein (bull) at 415' (0.4'), contact at 90° to core axis -other quartz-carbonate veins parallel to subparallel to foliation -fractures at 25° to core axis, one filled with white to pink noneffervescent alteration material -some chlorite filled fractures parallel to foliation -garnetiferous in part, up to 0.1" diameter, anhedral to subhedral broken crystals, some stretched parallel to foliation with others rimmed -garnetiferous sections up to 1' -predominantly green colour but varies to light grey (due to % felsic material and degree of alteration) -at 462.7' Quartz vein (0.7' wide) barren -fracture system parallel to subparallel to core axis, filled with soft pink white alteration material runs from 481.0' to 489.4', trace pyrite -490.5' to 492.5' - zone of alteration and mineralization quartz vein at 490.6' (2") plus some silicification and carbonatization, hematite stain in quartz vein 10-15% pyrite along fractures						

Drill Hole 427-83-1 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 21/83

Departure 12 + 50N Dip -43.5°; 514.8'-39.5° Length 511.8' Date Finished June 23/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
408.7'	514.8'	497.8', 0.75" band of massive pyrite, plus disseminated pyrite above and below lower contact sharp at 42° to core axis, silicification below lower contact	427-000 -036	490.5'-492.5' 2.0'	19 ppb			
			427-000 037	496.4' 498.4' 2.0	12 ppb			
		END OF HOLE						

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

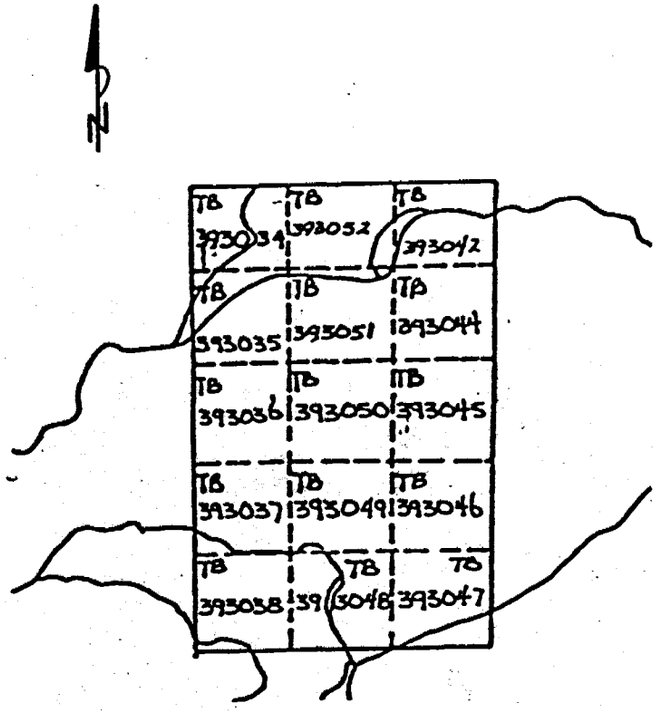
Company Vulcan-Caulfield Joint Venture

Hole No. 427-83-2

LOCATION	DIP TEST					
AREA or TWP. Molson Lake Area / SS Marie/Thunder Bay Mining Division	FOOTAGE	ANGLE RECORDING	ANGLE CORRECTED	LEVEL Surface	HORIZONTAL COMPONENT 702'	DATE STARTED June 25/83
CLAIM NO. TB393050, 393049	0'	50°	50°		VERTICAL COMPONENT 456'	DATE FINISHED June 28/83
	250'	47.5°	39°	ELEVATION	BEARING Grid South (160°)	LOGGED BY Mike Simunovic
NTS 42C/12 UTM	500'	35°	29°	LATITUDE L16E	LENGTH 843.5'	PURPOSE Test IP Anomaly
	43.5'	25°	19.5°	DEPARTURE 10 + 00N	CORE LOCATION White River Freezer	TOT. RECOVERY 100%

DIAMOND DRILL HOLE LOCATION SKETCHES

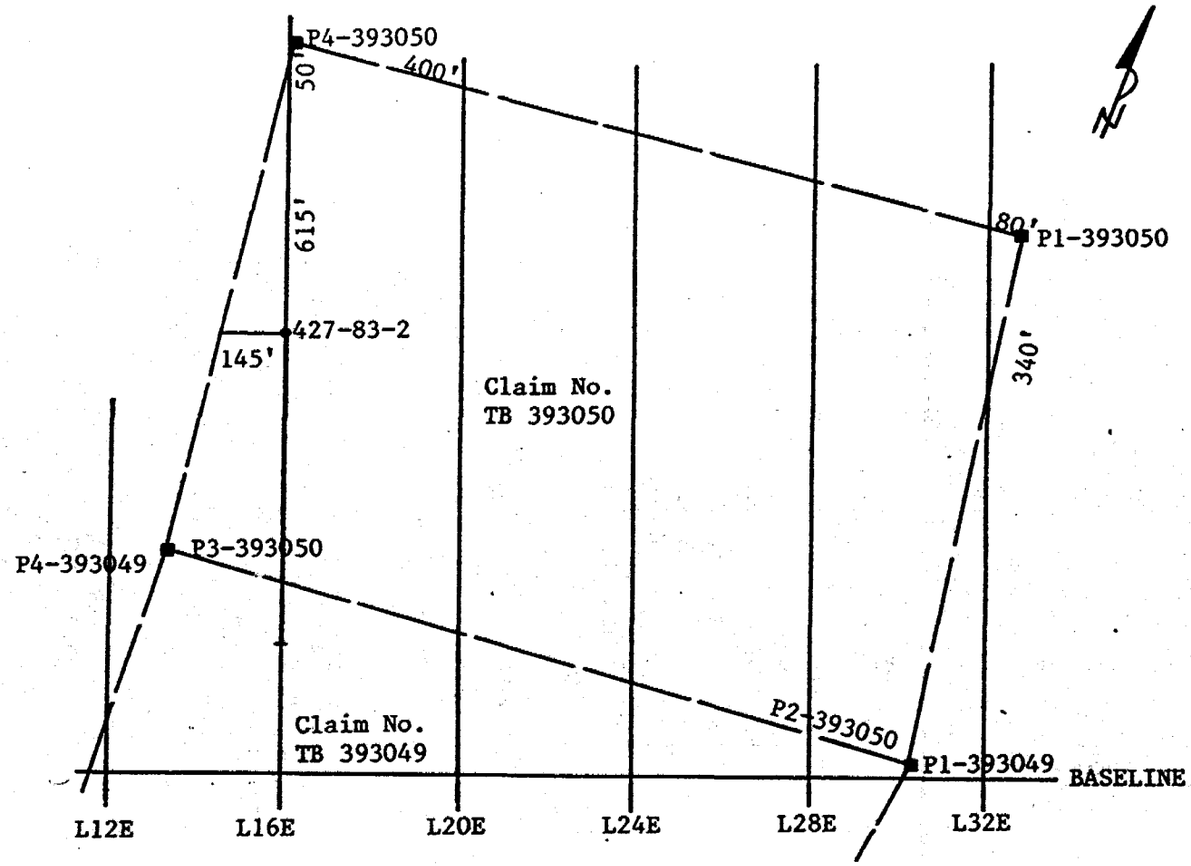
CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet

Signature Stephen Conger



Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic Page 1 of 19

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10+00N Dip -50S Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
0	6.0'	Casing for Overburden			
6.0'	49.8'	Argillaceous Metasediments Sample 427-000-038 8.0'-10.0' -slightly graphitic -extremely fine grained (black) -slightly silicified -minor sulphides in stringers and pods 2-5%	038	2.0	7 ppb
		Sample 427-000-039 10.0'-15.0' -not as graphitic -extremely fine grained grey-black -sulphides present parallel to foliation 2-5% (pyrite) -foliation 55° to core axis -slightly silicified -at 11.' 0.5" have a 6" zone which has been leached (porous) iron stained limonite -iron staining on fractures throughout	039	5.0'	5 ppb
		Sample 427-000-040 27'-32' -Argillaceous metaseds same as above -minor pyrrhotite 1-3% pyrite also -31.0'-33.0' zone of sedimentary deformation (slump) -minor silicification with some carbonate along fractures -at 36' 2", zone of silicification 4" wide minor carbonatization 4" wide	040	5.0'	4 ppb
		Sample 427-000-042 47-49.8' -at 47.0' zone of brecciation, shot through with quartz and carbonate	042	2.8'	8 ppb

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160) Elevation _____ Date Started June 25/83

Departure 10+00N Dip -50S Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
		Sample 427-000-042 cont'd -2.8' feet wide -slightly graphitic -2-5% sulphides (pyrite) -approximately 49.8' contact between metasediments and mafic volcanics -difficult to give exact contact core is broken						
49.8	104.4	Mafic Volcanics -grey green in colour (flow) -fine grained -minor silicification and carbonitization parallel to foliation -garnets present 1-3mm -chlorite rich -foliation 55° -minor iron staining on fractures -minor sulphides present 1-2% -at 85.2' there is a 2.5" band of mafic to intermediate Lithic tuff -fine grained biotite -some quartz and plagioclase 1-3mm -upper contact approximately equal to 100° to core axis lower 110° -at 89.6', 2" silicified zone -iron staining on fractures ends about 100' -at 102' mafics are more mineralized 2-5% sulphides						

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -50S Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
104.4'	105.4'	Mafic Tuff -Amphiboles present (possibly hornblende) -biotite -silicified -less than 1% sulphides (pyrite) minor garnets -upper contact core broken lower approximately equal to 110° difficult to see graded						
105.4'	107'	Mafic Volcanics - flow -same as described 49.8'-104.4'						
107'	109.2	Mafic Tuff -same as described 104.4-105.4' -more garnets -top contact core broken, bottom 50 °to core						
109.2'	270.1	Mafic Volcanics (flow) -same as described 49.8'-104.4'						
		Sample 427-000-041 116.8'-119.9' -mafic flow (chloritic) -fine grained -shot through with quartz-carbonate veins -silicified -2-5% sulphides pyrite, pyrrhotite	041	3.1'	10 ppb			
		Sample 427-000-043 169.5-171.5 -mafic flow (chloritic) -silicified -pyrite and pyrrhotite 1-3% -carbonate veins as well	043	2.0'	5 ppb			

Latitude L16E Bearing Grid South (160°(Elevation _____ Date Started June 25/83

Departure 10+00N Dip -50 Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
109.2'	270.1'	cont'd						
		Sample 427-000-041 116.8'-119.9' -mafic flow (chloritic) -fine grained -shot through with quartz-carbonate veins -silicified -2-5% sulphides py, po	041	3.1'	10 ppb			
		Sample 427-000-043 169.5-171.5 -mafic flow (chloritic) -silicified -py and po 1-3% -carbonate veins as well	043	2.0'	5 ppb			
		Sample 427-000-044 179-182.7 -mafic flow (chloritic) -quartz-carbonate veins parallel foliation 50° -possible Ankerite -2-5% sulphides py, po -pyrrhotite more massive in spots -181.8-182.4 heavily altered zone -chlorite extremely fine grained and biotite -quartz-carbonate alteration -py and po 5%	044	3.7'	4 ppb			
		Sample 427-000-045 184'-186' -183-187 mafic flow (chloritic) fine grained -quartz carbonate veins parallel foliation -2-5% py and po -garnets present	045	2.0'	4 ppb			

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -50 250'-39° Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
109.2'	270.1'	cont'd -about 193'-198' metamorphased flows chlorite, is altering to biotite on foliation planes -also along these foliation planes where this alteration occurs sulphides concentrate, po 238.8'-239.3'						
		Sample 427-000-046 244-246' -mafic flow (chlorite) fine grained quartz and carbonate veins present -1-3% sulphides py and po -garnet present -sulphides along fractures as well	046	2.0'	8 ppb			
		Sample 427-000-047 262'-264' -quartz vein present in mafics (flow) 4" -minor sulphides in mafics around but quartz is barren -1-3% sulphides py and po -upper contact uneven approximately equal to 90° lower 70°	047	2.0'	19 ppb			
270.1	270.6	Intermediate - Mafic Lithic Tuff (Lapilli) -biotite present as small elongated clasts 1-2mm long -biotite and quartz matrix minor plag. -also present larger anhedral clasts of quartz and plag. 2-10mm -some clast appear to have quartz with plag growing around it -no sulphides -upper contact 95° lower 70°						

Drill Hole 427-83-2 | Drilled by Norex Drilling Ltd. | Logged by Mike Simunovic | Page 6 of 19

Latitude L16E | Bearing Grid South (160) | Elevation | Date Started June 25/83

Departure 10 + 00N | Dip -39 | Length 843.5 | Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
270.1'	270.6'	Intermediate-Mafic Lithic Tuff (Lapilli) -biotite present as small enongated clasts 1-2mm long -biotite and quartz matrix minor plag. -also present larger anhedral clasts of quartz and plag 2-10mm -some clast appear to have quartz with plag. growing around it -no sulphides -upper contact 95° lower 70°						
270.6'	298.3'	Mafic Volcanics (flow) -same as described 49.8'-104.4' -283.4, 2" wide quartz vein, no mineralization around it, upper contact 90°, lower uneven						
298.3'	300.1'	Feldspar Porphyry (Lithic Tuff) -many more phenocrysts than above tuff -biotite and quartz matrix -intermediate to mafic -feldspar phenocrysts 1-3mm -no mineralization seen in matrix -some along fractures -upper contact 95°, lower 103°						
300.1'	354.2'	Mafic Volcanics (flow) -same as described 49.8'-104.4' -mafics appear to be more massive and less massive now						
		Sample 427-000-048 311.1'-313.1' -311.9' there is a 3" wide quartz vein (barren) -312.5 there is a heavily silicified zone 5" wide as well as minor carbonate alteration	048	2.0'	8 ppb			

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd Logged by Mike Simunovic Page 7 of 19

Latitude L16E Bearing Grid South (160) Elevation Date Started June 25/83

Departure 10 + 00N ℄ Dip -39 Length 843-5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
300.1'	354.2'	cont'd Sample 427-000-049 324'-329' -324-329 silicified mafic flow -massive -324.5', 3" zone of quartz-carbonate alteration -327.1', 6" zone heavily silicified zone, minor carbonatization -sulphides present in quartz 2-5% py and po -mafics contain more po 3% -336-337.5' heavily carbonatized zone in mafics, no sulphides present	049	5.0'	8 ppb			
354.2'	357.7'	Feldspar Porphyry (Lithic Tuff) -matrix of quartz and biotite some muscovite -intermediate - mafic -phenocrysts of feldspar 1-3mm -no sulphides present' -356'-356.2' quartz vein no mineralized -upper contact 75°, lower 64°						
357.7'	360'	Ash Tuff Sample 427-000-050 357.7'-360' -fine grained intermediate-mafic -biotite rich matrix some 1mm clasts of feldspar (very few) -sulphides present 1-3% py, po -generally more po -upper contact 64°, lower 69°	050	2.3'	16 ppb			

Drill Hole _____ Drilled by Norex Drilling Ltd. Logged by Mike Simunovic Page 8 of 19

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -39 Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
360	405.9'	Mafic Volcanics (flow) -same as described 49.8'-104.4' except now flows are more intermediate in composition -more plagioclase -this occurs at different intervals later on -392.7, 2.5" wide quartz vein (no sulphides present) -vein 30° to 30° core axis						
405.9'	407.4'	Feldspar Porphyry (lithic tuff) -small eye shaped phenocrysts of feldspar 1-2mm -matrix biotite and quartz -intermediate to mafic -no sulphides present -upper contact 93°, lower 92°						
407.4'	408.4'	Mafic Volcanics (flow) -same as described 49.8'-104.4'						
408.4'	409.1'	Lithic Tuff -fine grained -some anhedral fragments of plag and quartz (some blue) -matrix biotite and quartz -no sulphides present -some carbonate along fractures -upper contact 90° to core axis, lower 71° -inter-mafic						
409.1'	420.2'	Mafic Volcanics (flow) -same as described (49.8'- 104.4') -409.1-427.5 mafic flows have undergone metamorphism -not uniform alteration, some places remained unaltered -chlorite-biotite						

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 25/83

Departure 10 + 00N Dip -39 Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
409.1'	420.2'	cont'd -give a tuffaceous appearance			
420.2'	421.1'	Lithic Tuff Sample 427-000-051 420'-422' -Fine grained -inter-felsic -thin elongated biotite 2-4mm -tiny fragments of plag. and quartz -grey siliceous matrix (slightly silicified) -disseminated sulphide less than 1% pyrite	051	2.0'	22 ppb
421.1	514.8	Mafic Volcanics (Flow) -same as described 49.8-104.4' Sample 427-000-052 427.5'-429.5' -mafic flow (chloritic) -medium grained -silicified and carbonatized -carbonate veining -some places chlorite altered to biotite -2-5% sulphides py and po	052	2.0'	7 ppb
		Sample 427-000-053 458.6'-460.6' -mafic flow (chloritic) -459.0', 5.5" silicified zone in flows -also carbonatized -sulphides in quartz mostly po 2-3% -chlorite altered to biotite as well	053	2.0'	16 ppb

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -39 500'-28° Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.	Ni		
421.1	514.8	Sample 427-000-054 470'-472 -mafic flow -silicified and carbonatized zones -sulphides in quartz 3-5% po -some ankerite	054	2.0'	14 ppb	46 ppm		
514.8'	515.8'	Ash Tuff -intermediate-felsic -extremely fine grained -silicified -no sulphides -upper contact 91°, lower 90° approximately						
515.8'	539.6'	Mafic Volcanics (flow) -as described 49.8'-104.4'						
539.6'	540.8'	Feldspar Porphyry (lithic tuff)						
		Sample 427-000-055 539'-541' -intermediate-mafic -slightly silicified -feldspar clast anhedral to subhedral 1-2mm -biotite and quartz matrix -disseminated sulphides 1-2% pyrite -upper contact 140°, lower 100°	055	2.0'	5 ppb			
540.8'	554.7'	Mafic Volcanics (flow) -same as described 49.8'-104.4'						

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South 160° Elevation _____ Date Started June 23/83

Departure 10 + 00N Dip -28° Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
554.7'	555.7	Lithic Tuff -intermediate-felsic -fine grained matrix -feldspar clasts greater than 1mm -silicified slightly -sulphides 1-2% pyrite -upper contact approximately 90° to core axis, lower approximately 90° as well						
555.7'	567.9'	Mafic Volcanics (flows) -same as described 49.8'-104.4'						
		Sample 427-000-056 556-558 -at 557.0' zone of alteration in mafic flows (chloritic) -carbonate alteration -6" zone of silicification -garnets present 5% sulphides pyrite -minor pyrrhotite slightly magnetic	056	2.0'	8 ppb			
		Sample 427-000-057 563'-565' -at 563' zone of heavy carbonatization and silicification in flows approximately equal to 1.5' -greater than 1% sulphide pyrite -Ankerite present	057	2.0'	11 ppb			
567.9'	574.8'	Argillaceous Metasediments						
		Sample 427-000-058 567.9'-571.3' -567.9 contact between mafics volcanics and sediments	058	3.4'	7 ppb			

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -28° Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
567.9'	574.8'	cont'd -contact 80° to core axis -7" zone fine grained - argillaceous slightly graphitic sediments -2-5% pyrite present -carbonatization along fractures -matrix is also slightly siliceous and carbonatized Sample 427-000-059 571.3-574.8 -sediments become more graphitic -extremely fine grained -first 9.5" are highly carbonitized (Ankerite in some areas) -less than 10% sulphides pyrite occurs often as cubes and blobs -the remainder has less carbonate alteration and it occurs as veins 1-3mm -some along fractures -contact between these and above sediments is brecciated upper approximately equal to 90° -lower contact 140°	059	3.5'	12 ppb			
574.8'	580'	Inter-felsic Ash Tuff Sample 427-000-060 574.8'-579.8' -fine grained silicified -carbonate veining throughout (possibly some ankerite) -5-10% sulphides pyrite -some chlorite veining containing pyrite -chlorite mixed with carbonate as well -chlorite along fractures as well	060	5.0'	5 ppb			

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -28 Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
574.8'	580'	cont'd -at 577.0' 6" zone highly carbonatized, slightly silicified -brown specks present possibly staurolite? -also pinkish patches present cannot be scratched with a knife possibly and alusite? -seems to end at approximately 580'						
580'	584.8'	Mafic Volcanics (flow?) -no direct contact can be seen but core following becomes much more mafic and the sulphide content decreases 2-5% Sample 427-000-061 580-584.8' -very fine grained -chlorite grease fracture planes -carbonate veining -similar to those described 49.8'-104.4' -contact with metasediments 584.8' -difficult to see brecciated	061	4.8'	4 ppb			
584.8'	586.2'	Brecciated zone -contact between Argillaceous seds and volcanic flows Sample 427-000-062 584.8-586.8 -brecciated zone 17" to 586.2' less than 10% sulphides (pyrite cubes and blots) -carbonatization (Ankerite pink) also calcite -brown mineral possibly staurolite? -minor silicification -slightly graphitic -contacts seds at 586.2' 83° to core axis	062	2.0'	3 ppb			

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South 160° Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -28 Length 843.5' Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
586.2'	614.8'	Interbedded Argillaceous Metasediments and Intermediate -mafic Lithic Tuff Sample 427-000-063 586.8'-591.8' -Tuff tiny fragments of quartz and plagioclase less than 1mm -biotite rich matrix also enlongated biotite -also elongated biotites -first 5.0' 5-10% sulphides the decreases (minor) -591.4', 2.0" tuffaceous bed -591.6', 7.0" tuffaceous bed -contacts parallel foliation -metasediments slightly silicified with minor carbonatization (tuffs also) -foliation 82° -596.5', 5.5" tuffaceous bed -597.0, 5.0" tuffaceous bed -609.9 quartz vein 3" wide -less than 1% sulphides pyrite -3" wide	063	5.0'	5 ppb			
614.8	642.1	Lithic Tuff (Dominates) and Ash Tuff Interbeds -intermediate-mafic -same as described above (586.2'-614.8') -possible very minor metasedimentary interbeds difficult to tell -tuffs contain less than 1% sulphides -ash tuff poorly mineralized, trace sulphides -inter-mafic -lithic tuffs contain clasts of calcite less than 1mm						

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00 N Dip -28 Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
614.8'	642.1'	-all areslightly carbonatized (Ash and Lithic Tuff) -ash tuff contacts usually parallel to foliation -foliation 88° minor chloritic alteration along fractures -all above are slightly silicified and carbonatized						
642.1'	644.1'	Lapilli Tuff -similar to Lithic Tuff described earlier except now have clasts of plagioclase and quartz lapilli size 1-5mm in size -clasts are anhedral -upper contact 80°, lower 85°						
644.1'	654.4'	Interbedded Lithic and Ash Tuff -same as described (614.8-642.1)						
654.4'	658.5'	Lapilli Tuff -same as described (642.1-644.1)						
658.5'	742.5'	Interbedded Lithic and Ash Tuff -same as described (614.8-642.1) -667.2' 2" quartz vein -contains biotite -no sulphides present						

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 25/83

Departure 10 + 00 N Dip -28 Length 4.35 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
658.5'	742.5'	-upper contact 66°, lower 53° -after quartz vein comes 9.0" bed of intermediate felsic tuff -upper contact 53°, lower 130° -tuff contains tiny fragments of biotite slightly elongated -greenish chlorite present -slightly silicified, very minor carbonatization -fine grained -no sulphides present -668.2 inter-mafic tuff again -676.0' approximately to 677.7 tuff becomes finer -at 677.7' coarse bed of lithic tuff 3.5" thick to 678' -upper contact 95°, lower not sharp -tuff becomes finer till 679.3' -then 92° contact coarser lithic tuff -ash tuff interbedded with these -no sulphides -now get regular interbeds of lithic tuff and ash tuff as described (614.8-642.1) -699.9-742.5 tuffs become more highly carbonated gives these a metasedimentary appearance -slightly silicified -quartz carbonate veining -Ash tuff more dominant -no mineralization -quartz along foliation some biotite -706.7 quartz vein 4" wide upper contact 110°, lower 115 -contains a white-yellow mica possibly sericite -no sulphides present						

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -28 Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
658.5'	742.5'	cont'd -another minor quartz vein at 728.6', 1.75" wide -some mica -no sulphides -foliation approximately equal 83° -contacts parallel foliation						
742.5'	746.5'	Lithic Tuff Sample 427-000-064 742.5'-746.5' -intermedaite-mafic this unit is more mafic than those described earlier -carbonatized and slightly silicified -stringers of biotite - 1-3mm -biotite and quartz dominate especially biotite -minor clasts of quartz and plagioclase 1-3mm -biotite on foliation planes 77° -2-5% sulphides (pyrite) -upper contact 95° lower contact graded approximately equal to 90°	064	4.0'	3 ppb			
746.5'	843.5	Interbedded Lithic Tuff and Ash Tuff -same as described (614.8'-642.1') -746.1'-751.1' similar unit 699.9'-742.5' -750.3'-quartz vein 1.5" wide -non-mineralized -upper contact 90°, lower 105° -tuff now more massive -tract sulphides -minor carbonatization and silicification						

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 25/83

Departure 10 + 00N Dip -28 Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
746.5'	843.5	-green alteration along fractures 780.0' (chlorite). -802.3' quartz vein 1" wide -no mineralization -contact 130° -804.6' quartz vein 6" wide -no mineralization minor chlorite alteration -upper contact 90° -lower core broken -815.9' 2.7" quartz vein -non-mineralized -contains chlorite -upper contact 62° -lower contact uneven						
		Sample 427-000-065 822-825 -822.9 2" quartz vein -mineralized 1-2% sulphides (pyrite) -chlorite at contacts -upper contact 92° -lower contact uneven -824.9' quartz vein 2" wide -non-mineralized (sulphides) -some chlorite -upper contact 70° -lower contact 40° -slight silicification of tuffs between the two quartz veins	065	3.0'	8 ppb			
		Sample 427-000-066 828'-830.3' -828-830.3' highly silicified zone in lithic tuff -1-3% sulphides, pyrite in silicified areas	066	2.3'	4 ppb			

Drill Hole 427-83-2 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 25/83

Departure 10 + 00N Dip -28 Length 843.5 Date Finished June 28/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
746.5'	843.5'	cont'd -minor carbonatization Sample 427-000-067 840.5'-843.5' -841.0' quartz vein 1" wide -chlorite associated with contacts -upper contact 100° lower contact 67° -841.2' quartz vein 1" wide -chlorite associated with contacts -upper contact 65° lower contact 100° -minor sulphide mineralization associated with chlorite (pyrite) -841.6'-6" wide quartz vein -chlorite associated with contacts -no sulphides -upper contact 105° -lower contact 95° -842.8' quartz vein 2" wide -chlorite associated with contacts -minor pyrite in quartz less than 1% -upper contact 90° -lower contact uneven -all three quartz veins above are slightly carbonated -tuff between is slightly carbonatized and silicified -END OF HOLE	067	3.0'	5 ppb			

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

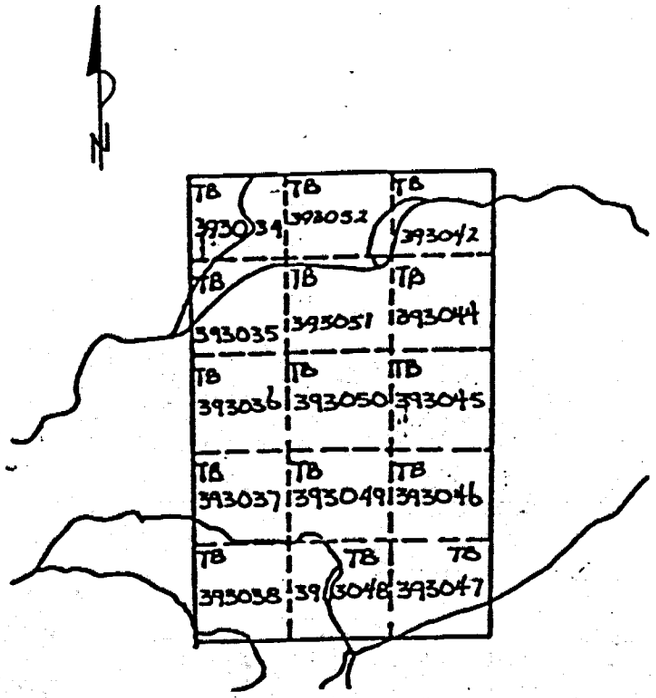
Company Vulcan-Caulfield Joint Venture

Hole No. 427-83-3

LOCATION	DIP TEST					
AREA or TWP. Molson Lake Area / SS Marie/Thunder Bay Mining Division	FOOTAGE	ANGLE RECORDING	ANGLE CORRECTED	LEVEL Surface	HORIZONTAL COMPONENT 480'	DATE STARTED June 29/83
CLAIM NO. TB393050, 393049	0'	50°	50°		VERTICAL COMPONENT 328'	DATE FINISHED July 2/83
	150'	43°	34.5°	ELEVATION	BEARING Grid South (160°)	LOGGED BY Mike Simunovic
NTS 42C/12 UTM	300'	39°	31°	LATITUDE L16E	LENGTH 583.1'	PURPOSE Test IP Anomaly
	583.1'	39°	31°	DEPARTURE 6 + 80N	CORE LOCATION White River Freezer	TOT. RECOVERY 100%

DIAMOND DRILL HOLE LOCATION SKETCHES

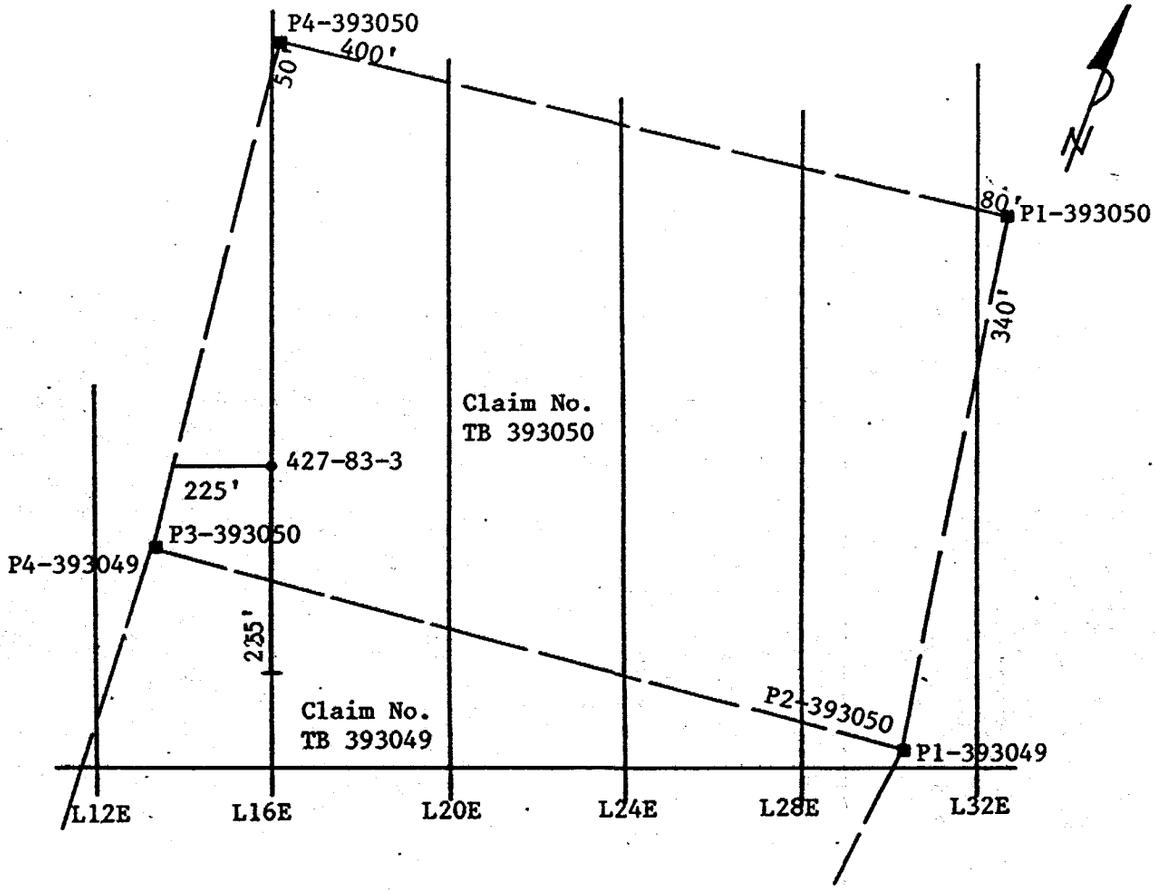
CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet

Signature Stephen Conger



Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic Page 1 of 14

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 29/83

Departure 6 + 80N Dip -50 Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
0	8.6'	Casing Overburden						
8.6'	20.8'	Mafic Volcanics (predominantly flow) -grey-green in colour -slightly silicified and carbonatized -also quartz carbonate veining throughout, parallel foliation -1-2% sulphides mostly pyrrhotite -rich chlorite -garnets present in places as well -fine grained -foliation 55° to core axis -iron staining along fractures (limonite) -at 12.0'-20.6' mafic flow same as above but none flows are coarser grained (medium) -minor chlorite to biotite alteration -same as above otherwise						
20.8'	22.6'	Intermediate to Mafic Ash Tuff -contact approximately equal to 75° to core axis (upper) -very fine grained -biotite-quartz -slightly silicified and carbonatized -no sulphide mineralization seen -quartz and carbonate veining parallel to foliation -ends at 22.6' contact 47° to core axis -last 6" weathered (porous)						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic Page 2 of 14

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 29

Departure 6 + 80N Dip -50 Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
22.6'	54.2'	Mafic Volcanics (flow) -medium grained see (12.0-20.6') Sample 427-000-068 -22.6'-24.6' -medium grained flow (same as 12.0-20.6') -1-2% pyrrhotite -mafic flows become finer at approximately equal to 27.3' -still the same as described earlier -some Ankerite (pink) carbonate -34.5'-34.7' quartz vein -no mineralization -quartz contains carbonate veins in fractures -contacts upper 70° lower 75° -at 45'0 another quartz vein approximately equal to 2" wide -core broken cannot get upper contact lower uneven approximately equal to 90° -no sulphide mineralization -at 49.3', 1" quartz vein in flow -no mineralization -upper contact 60° lower contact 60°	068	2.0'	5 ppb			
54.2'	57.4'	Feldspar Porphyry (lithic tuff) -quartz and biotite matrix fine grained -feldspar clasts 1-3mm anhedral -slightly silicified and carbonatized -trace of sulphide less than 1% -upper contact 57°, lower core broken and ground -foliated approximately equal to 55°						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic Page 3 of 14

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 29/83

Departure 6 + 80N Dip -50 Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
54.2'	57.4'	cont'd Sample 427-000-069 54.5'-56.5'	069	2.0'	3 ppb			
57.4'	67.0'	Mafic Volcanics (flow) -some chlorite altering to biotite -otherwise same as before						
67.0'	68.1'	Intermediate - Mafic Ash Tuff -fine grained biotite and quartz matrix -no sulphide mineralization -slightly carbonatized and silicified -contacts upper 55° to lower 55°						
68.1'	80.0'	Mafic Volcanics flow -first 3' altered in places (chlorite-bio) -rest same as before Sample 427-000-70 74'-76' -75.2' in mafic flows -silified and carbonatized zone -2% pyrite, po assoc. contacts -biotite assoc. with contacts -mafics surrounding contact sulphides 1-2% -garnets present as well	070	2.0'	21 ppb			
80.0'	81.5'	Intermediate - felsic lithic tuff -elongated biotite fragments up to 5mm -tiny fragments of quartz and plagioclase -matrix mostly quartz -slightly carbonatized						

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 29/83

Departure 6 + 80N Dip -50 Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
80.0'	81.5'	cont'd -trace of sulphide mineralization -massive -upper contact 55° lower core broken Sample 421-000-71 79.5'-81.5'	-071	2.0'	3 ppb			
81.5'	217.0'	Mafic Volcanic (flow) -alteration present chlorite-biotite extends to approximately equal to 92' -at 92' alteration no longer seen, flows same as described earlier (12.0-20.6) Sample 427-000-72 93'-95' -mafic flow (chloritic) fine grained -quartz-carbonate veining -2-5% pyrite, pyrrhotite -119.5' pink mineral is not effervescent but can be scratched with a knife, in mafic flow	-072	2.0'	5 ppb			
		Sample 427-000-73 127'-129' -quartz 128' quartz vein approximately equal 1" in width, also a quartz pod -slightly carbonatized as well -pyrrhotite associated with quartz 1-2% -in mafic flow -chlorite veining as well -144.6' quartz vein 3" wide -upper contact approximately equal to 90°, lower 60° -less than 1% sulphides associated with contact with mafics	-073	2.0'	5 ppb			

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation Date Started June 29

Departure 6 + 80N Dip -50 150' -34.5° Length 583.1' Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
81.5'	217.0'	cont'd -145.7' another quartz vein 1.5" wide -upper contact 80° lower 73° -no mineralization -now mafics become slightly more intermediate at various intervals -more plagioclase 175'-180.0' and 188'-195' -no abrupt contacts (graded) -carbonate veining in fractures, Ankerite in some places Sample 427-000-74 199'-201'	074	2.0'	19 ppb			
		-200.4' silicified and carbonatized zone in mafics (flow) -also iron staining (hematite) -carbonate in veins -trace sulphides associated with chlorite at contact with carbonate veins -207.9' quartz vein 2" wide -upper contact 85°, lower 100° -trace sulphides associated with contact with mafics -minor carbonatization -215.7' minor quartz vein 0.5" wide -no mineralization present -upper contact 46°, lower 58°						
217.0'	221.8'	QFP (lithic tuff) -slightly silicified and carbonatized -biotite and quartz matrix extremely fine grained -quartz and feldspar clasts 1-3mm in size -very fine grained disseminated sulphides throughout py 1-2%						

Drill Hole 427-83-3 | Drilled by Norex Drilling Ltd. | Logged by Mike Simunovic |

Latitude L16E | Bearing Grid S (160°) | Elevation | Date Started June 2[illegible]3

Departure 6 + 80N | Dip -34.5° | Length 583.1 | Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
217.0'	221.8'	cont'd -upper contact uneven approximately equal to 80°, lower 95°						
		Sample 427-000-075 217.0'-221.8	075	4.8'	5 ppb			
221.8'	234.1'	Mafic Volcanics (flow) -same as described 12.0-20.6' -fine grained						
235.1'	235.8'	QFP (lithic tuff) -same as described above (217.0'-221.8') -no sulphides seen -chlorite alteration along fractures -appears to be slightly more alkaline (pinkish)						
235.8'	239.0'	Mafic Volcanics (flow) -same as described 12.0'-20.6'						
		Sample 427-000-076 237.0'-239.0' -mafic flow -238.6-239.0' silicified and carbonatized zone -contact zone between metasediments and mafic -greater than 10% sulphides pyrite -minor chlorite and biotite along fractures -some iron staining limonite -sulphides in mafics above as well	076	2.0'	3 ppb			
239.0'	241.3'	Argillaceous metasediments						
		Sample 427-000-239'-241.3' contact with flow 125°	077	2.3'	7 ppb			

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]3

Departure 6 + 80N Dip -34.5' Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
239.0'	241.3'	cont'd -sediments are extremely fine grained -they are also highly graphitic -beds 2mm-1cm -slightly carbonatized and silicified -5-10% sulphides (pyrite) -foliation 73° -minor iron staining along fractures as well -24.9'-241.3' quartz vein -shot through sediments brecciated them -quartz contains broken clasts of Argillaceous sediments -clast 1mm-5cm in length -contacts of clasts with quartz are mineralized -5-10% pyrite -carbonate pods in clasts -sediment clasts are also mineralized 5-10% (py) -quartz itself is mineralized 2-5% (pyrite) -upper contact 70°, lower contact 70°						
241.3'	241.8'	Intermediate to Felsic Lithic Tuff -biotite fragments 1-5mm in length -small lithic clasts of plag and quartz -matrix mostly quartz and feldspar (minor Alkali feldspar) -disseminate sulphides 2-5% -carbonatized as well and silicified -very minor chlorite present -bottom contact 73°						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic Page 8 of 14

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]3

Departure 6 + 80N Dip -34.5° Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
241.8'	243.4'	Argillaceous Sediments -same as described 239.0'-241.3' (minor hematite) Sample 427-000-078 241.3'-243.4' -greater than 10% sulphides	078	2.1'	7 ppb			
243.4'	253.7'	Mafic Volcanics (flow) -same as 12.0'-20.6' -contact difficult to see because of silicification -lower contact approximately equal to 90° to core axis						
253.7'	258.0'	Argillaceous metasediments Sample 427-000-079 253.7'-258.0' -graphitic -more fractured and shot through with carbonate -greater than 10% sulphides (pyrite)	079	4.3'	4 ppb			
258.0'	266.0'	Interbedded Argillaceous sediments and Tuff -upper contact approximately equal to 85° -sediments fine grained similar to those described 239.0'-241.3' -Tuff inter-mafic grey-black -lithic tuff -fine fragments of plag-quartz 1-2mm -matrix composed of biotite and quartz -carbonztized and slightly silicified -fine disseminated sulphides 1-3% pyrite Sample 427-000-080 258'-261' -Argill. metasediments and interbedded Tuff as described above	080	3.0'	5 ppb			

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]3

Departure 6 + 80N Dip -34.5° Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
258.0'	266.0'	cont'd -first 2' contain weathered out vugs in calcite -vugs are filled with pyrite greater than 10% -last 1.0' vugs decrease but sulphides parallel foliation approximately equal to 80° -maybe some andalusite Sample 427-000-081 261-266' -interbedded Argillaceous metased. and Tuffs -5-10% sulphides throughout po, py	081	5.0'	11 ppb			
266.0'	267.1'	Intermediate to mafic Tuff -as described above -upper contact 78°, lower 77°						
267.1	287.5'	Interbedded Wacke and Tuff -tuff same as described above -Wacke coarser than Argillites -matrix rich in quartz and bio -slightly carbonatized, minor silicified zone -fine disseminated sulphides parallel foliation 2-5% py, some places more (lenses) -grey-black colour -difficult to get contact graded Sample 427-000-082 266'-271' -interbedded Wacke and tuff	082	5.0'	4 ppb			
		Sample 427-000-083 271-276' -interbedded Wacke and Tuff } -as described above	083	5.0'	5 ppb			

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]3

Departure 6 + 80N Dip -34.5° Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
267.1'	287.5'	cont'd -283'-283.6' mafic tuff -composed of biotite and predominantly calcite, minor plag -no mineralization						
287.5'	358.2'	Interbedded Tuff and Ash Tuff -now tuff become dominant -Intermediate -mafic lithic tuff -similar to tuff described earlier -except more biotite fragments present 1-2mm -also only trace sulphides -weakly carbonatized and silicified (easily scratched with a knife) -minor fragments of quartz and plag up to 1mm Ash Tuff -ash tuff similar to lithic except extremely fine grained -weakly silicified and carbonatized -no mineralization seen (sulphide) -fine grained quartz -biotite along fractures also biotite -intermediate-mafic -foliation 80° -294' quartz vein 1.5" within lithic tuff -chlorite and biotite associated with contacts -no mineralization -upper and lower contacts approximately equal to 70° -minor carbonate veining throughout the unit -biotite is associated with the contacts on some of these veins						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 29/83

Departure 6 + 80N Dip -34.5° 300' 31° Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
287.5'	358.2'	cont'd -317.5' silicified zone in lithic tuffs -no mineralization present						
358.2'	365.9'	Lapilli Tuff Sample 427-000-084 358.2'-363.2' -intermediate to mafic -fragments of plag and quartz range from lithic to lapilli size 1mm-1cm silicified and slightly carbonatized -elongated biotite fragments 1-3mm -fine grained disseminated sulphides 2-5% -upper contact 77° lower core broken	084	5.0'	2 ppb			
365.9'	383.0'	Interbedded Lithic Tuff and Ash Tuff -same as described earlier						
383.0'	467.0'	Ash Tuff Dominates over Lithic Tuff -same as described earlier -400.8' 4" quartz vein -unmineralized -chlorite present at contacts -upper contact approximately equal to 90° lower uneven approximately equal to 70! -406.4, 1.5" quartz vein -unmineralized -chl and bio alteration at contacts -contacts uneven						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simunovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]83

Departure 6 + 80N Dip -31° Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
383.0'	467.0'	cont'd 406.7 1.0" quartz vein -similar to above -contacts uneven Sample 427-000-085 406'-408' 411.4 quartz vein 1.5" -unmineralized -biotite alteration on contacts -429.7 quartz vein running parallel to core (weaves through core) -nonmineralized 444.9 quartz vein 1" wide -nonmineralized -contacts approximately equal to 90° to core Sample 427-000-086 456.5-458.5' -zone in interbedded Lithic and Ash Tuff highly silicified and carbonatized -457.6 quartz vein 5" wide -nonmineralized -chlorite alteration at contacts -upper contact 140° lower 100° -chlorite present in fractures 463-463.5'	085 086	2.0' 2.0'	2 ppb 4 ppb			
467.0'	480.6	Lithic Tuff More Prominant Again slightly -same as described earlier						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd Logged by Mike Simunovic Page 13 of 14

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]3

Departure 6 + 80N Dip -31 Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
480.6'	484.4	Sample 427-000-087 480.6-484.44 -lithic tuff (more mafic) -stringers of biotite present parallel foliation 77° -minor clast of quartz and plag 1-3mm -carbonatized and slightly silicified -2-5% sulphides (py) -biotite and quartz matrix (more biotite) -upper contact 77° lower core broken	087	3.8'	2 ppb			
484.4'	509.8'	Lithic Tuff Ash Interbeds 486.0' 2 quartz veins each approximately equal to 1" wide -chlorite alteration present -nonmineralized -contacts uneven						
		Sample 427-000-088 496.5'-498.5' -silicified zone in tuff -tract sulphides (py) disseminate -very minor carbonatization	088	2.0'	2 ppb			
509.8'	583.1'	Lithic Tuff most Dominant 512.5 - more mafic lithic tuff band -7" wide -sample as that described 480.6-484.4' -more foliated (no sulphides) -528.0' quartz vein 1" wide -chlorite on contacts -nonmineralized -contacts approximately equal to 90° to core -539.1' quartz vein 4" wide -nonmineralized						

Drill Hole 427-83-3 Drilled by Norex Drilling Ltd. Logged by Mike Simuovic

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started June 2[illegible]3

Departure 6 + 80N Dip -31° Length 583.1 Date Finished July 2/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
509.8'	583.1'	cont'd -chlorite associated with contacts -contacts uneven approximately equal 90° Sample 427-000-089 548'-550' -548.6'-549.9' -silicified zone in tuffs minor carbonatization -tract sulphides	089	2.0'	4 ppb			
		Sample 427-000-090 550'-552' -same as above	090	2.0'	4 ppb			
		Sample 427-000-091 560'-562' -silicified zone slightly carbonatized -no sulphides evident -560.7' quartz vein 1.5" wide -nonmineralized -contacts approximately equal to 90° to core axis -560.0' quartz vein 3" wide -chlorite on contacts -nonmineralized -contacts uneven	091	2.0'	4 ppb			
		Sample 427-000-092 568'-570' quartz veins 5" 568' -tuff surrounding it is silicified -1.2% sulphides present in tuff -chlorite on contacts with quartz -contacts uneven	092	2.0'	45 ppb			
		-END OF HOLE 583.1						

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

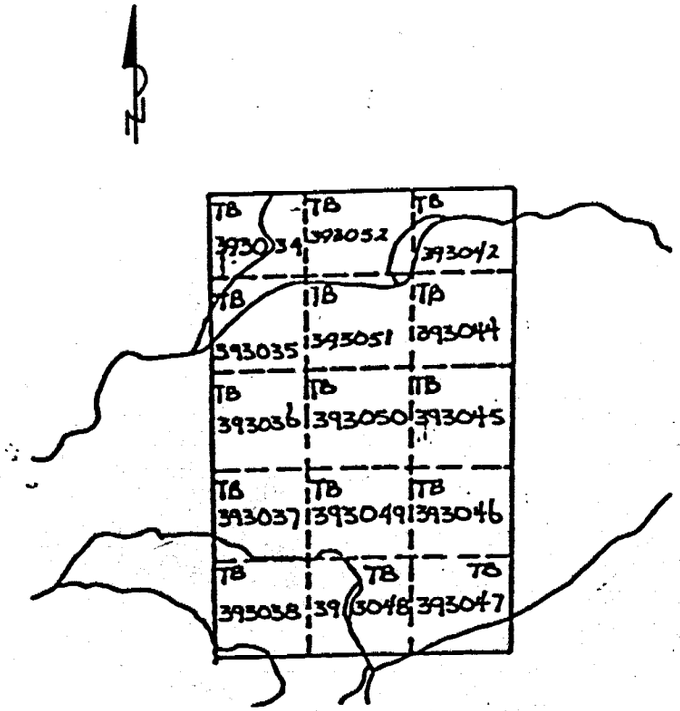
Company Vulcan-Caulfield Joint Venture

Hole No. 427-83-4

LOCATION	DIP TEST					
AREA or TWP. Molson Lake Area SS Marie/Thunder Bay	FOOTAGE	ANGLE		LEVEL Surface	HORIZONTAL COMPONENT 325'	DATE STARTED July 4/83
CLAIM NO. Mining Division TB393038		RECORDING	CORRECTED		VERTICAL COMPONENT 308'	DATE FINISHED July 5/83
	0'	50°	50°	ELEVATION	BEARING Grid South (160°)	LOGGED BY Stephen Conquer
	150'	53°	44°			
	300'	51°	42°	LATITUDE L4E	LENGTH 454.2'	PURPOSE Test IP Anomaly
NTS 42C/12 UTM	454.2'	50°	41°			
				DEPARTURE 9 + 50S	CORE LOCATION White River Freezer	TOT. RECOVERY 100%

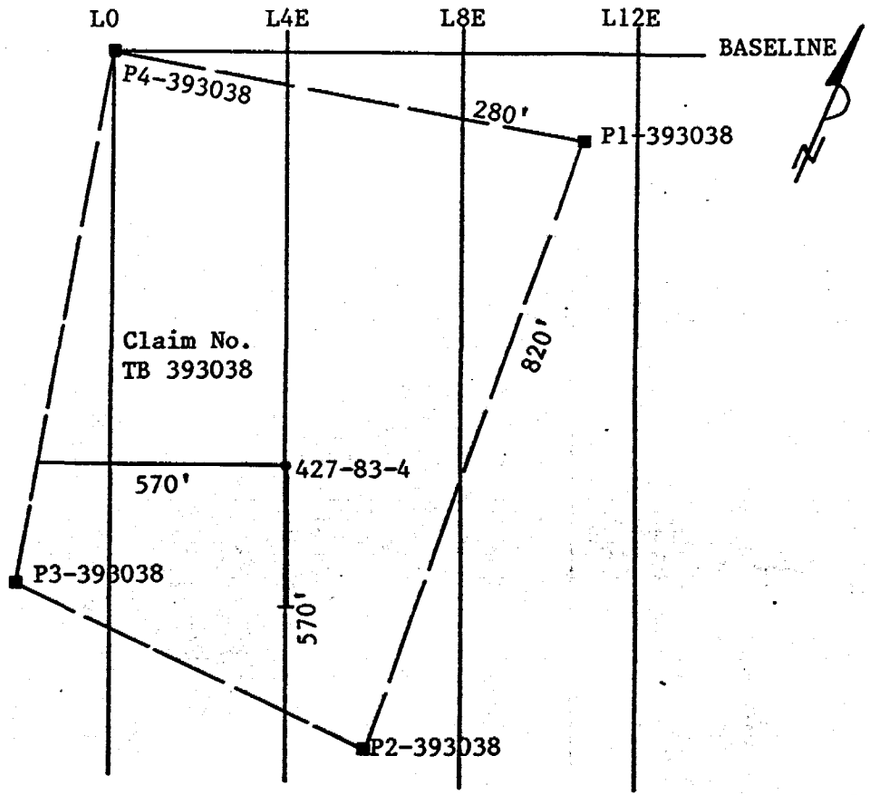
DIAMOND DRILL HOLE LOCATION SKETCHES

CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet



Signature Stephen Conquer

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/83

Departure 9 + 50S Dip -50° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
0	22'	Casing Overburden						
22'	31.5'	Intermediate to Mafic Tuff - foliation at 55° to core axis; 80-85% quartz and plag. with remaining 15-20% biotite, biotite in small clots (flakes) parallel to foliation (this gives foliated appearance) -breaks along foliation planes -sulphides trace very fine grained pyrite -contact at 56° tocore axis						
31.5'	39.5'	Intermediate to Mafic Flow-massive to weakly foliated at 55° to core axis -fine grained, predominantly felsic (quartz, feldspar), plus mafic component (chlorite (biotite?)) -silicification and chloritization along foliation planes; varies from place to place i.e., one zone more silicified, more chloritized (max. with 1/10") -chloritized zones may have included fragments of hostrock -randomly oriented hairline fractures, with green (chloritic) alteration --sulphides trace to 2% very fine grained disseminated pyrite -one chloritized zone contains 1/20" massive clots pyrite -quartz-carbonate zone of 34.2'; 1/10" wide parallel to foliation (calcite) -contact at 54° to core axis						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 2 of 15

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/

Departure 9 + 50S Dip -50° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
39.5'	43.3'	Intermediate to Mafic Tuff - strong to weak foliation to 50° to core axis -402', 2" quartz vein, contact 47° to core axis, trace fine grained pyrite; ½" silicified zone (either side) intermixing with biotite, trace pyrite in silicified zone -at 40.6', ½ quartz vein (massive), inclusion of mafic fragments -tuff predominantly composed of ash sized particles with minor amounts of felsic fragments, % of felsic fragments increase towards bottom of unit -at 43.0', 4.0" zone of alteration, silicification, 1% pyrite -grain size shows a coarsening towards-bottom of unit -pervasive carbonatization in unit -contact 57° to core axis						
43.3'	44.5'	Intermediate to Mafic Tuff - weakly foliated at 57° to core axis -as above unit, very fine grained Tuff, grading into fine grained to medium grained tuff, but lacks felsic fragments -silicification continues into top 4" of this unit -quartz vein at 44.0' approximately ½", trace - 1% sulphides -contact at 59° to core axis						

Drill Hole 427-83-4 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L4E | Bearing Grid South (160°) | Elevation | Date Started July 4/83

Departure 9 + 50S | Dip -50° | Length 454.2' | Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
44.5'	47.6'	Intermediate to Mafic Tuff - weakly foliated at 57° to core axis, this coincides with very fine grained to fine grained portion of Tuff, stronger foliation at 50° to core axis, coinciding with coarser grained (fine grained to medium grained) portion -coarsening of grain size towards bottom of unit corresponds to increase in % of lithic sized felsic fragments -47.5', a 1/10" quartz-carbonate veinlet (cross-cuts foliation), other carbonate stringers (hairline) parallel foliation -pervasive carbonatization in unit; trace pyrite -contact at 58° to core axis						
47.6'	50.7'	Intermediate to Mafic Tuff - foliation at 53° to core axis -as with above units, coarsening of grain size towards the bottom of the unit -only 2% felsic fragments -weakly carbonatized throughout unit, plus quartz-carbonate stringers up to 1/10" wide -lineation of biotite -contact lost due to broken core						
50.7'	58.8'	Intermediate (to Mafic flow) - fine grained weakly foliated in places at 47° to core axis -in part more chlorite than tuff -quartz-carbonate stringers sub-parallel to parallel to foliation hairline to 1/10" wide -quartz vein at 54.2', 1" wide; flow quite chloritic on contact with quartz vein -inclusion of chlorite and biotite in quartz						

Drill Hole 427-83-4 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer

Latitude L4E | Bearing Grid South (160°) | Elevation | Date Started July 4/83

Departure 9 + 50S | Dip -50° | Length 454.2' | Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
50.7'	58.8'	cont'd -at 52.7', 3" zone of heavy epidotization, hairline fractures act as conduit for alteration fluids, small block particles associated with alteration, may be altered chlorite material, very fine grained trace pyrite; also weakly carbonatized -alteration to chlorite next to lamprophyre -contact at 20° to core axis - not straight, slightly wavy						
58.8'	62.8'	Lamprophyre Dyke - chill margin approximately ½" wide, white carbonate phenocrysrs up to 0.3" in longest dimmension, phenocryst size increases towards the centre of dyke but quantity decreases, also presence of carbonate throughout dyke -mafic phenocrysts present as well, biotite and possibly chloritic -overall colour green-grey -very fine grained to fine grained mafic ground mass green-grey to black -presence of quartz also noted very minor -fragment of host rock in Lamrophre along bottom contact -contact at 52° to core axis						
62.8'	67.1'	Intermediate to mafic tuff - as described above, increase in grain size from very fine grained ash size to medium grained to coarse grained ash size towards bottom of section -contact at 58° to core axis						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd Logged by Stephen Conquer

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/83

Departure 9 + 50S Dip -50° Length 454.5' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
67.1'	71.8'	Intermediate to mafic tuff - as described above; foliation at 55° to core axis -7 separate units of tuff going from very fine grained to fine grained to medium grained within each unit largest unit 3' wide, smallest 0.1' wide -contacts of each unit parallel to foliation -quartz-carbonate stringers up to 1/10" wide parallel to foliation -at 68.5', 0.3" quartz-carbonate vein small % mafic material included						
71.8'	82.7'	Intermediate to mafic tuff - as described above, except more chloritic than above units, plus grain size more consistent at fine grained -at 74.6', 0.3", quartz vein -chloritic alteration along hairline fractures -contact at 58° to core axis	427-000 200	74.0'-76.0' 2.0'	2 ppb			
82.7'	105.8'	Intermediate to mafic flow - fine grained massive to weakly foliated 53° to core axis -numerous quartz-carbonate stringers parallel to sub-parallel to foliation -grain size coarsens towards lower portion near interflow contact -chloritic alteration along fractures -at 97.0', 1' zone of alteration (weak), follows hairline fractures that ore oblique to foliation as well as foliation planes, silicification, chloritization, hematization at 97.0' -0.4" quartz vein, weakly carbonatized at 97.9', plus epidote alteration just below						

Drill Hole 427-83-4 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L4E | Bearing Grid South (160°) | Elevation | Date Started July 4/83

Departure 9 + 50S | Dip -50° | Length 454.5' | Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
82.7'	105.8'	cont'd -weakly altered through entire section -at 101.1, 3/4" quartz-carbonate vein, chloritic zone throughout quartz vein up to 2% pyrite and disseminated (fg) and more massive cubes (1/10") -at 102.6, 1" quartz-carbonate vein, 2% massive and fine grained disseminated pyrite, chloritized an outer portions -contact at 57° to core axis, not very visible (faint)	427-000 -201	103-105 2.0'	3 ppb			
105.8'	125.9'	Intermediate to mafic Tuff - foliation at 54° to core axis -very fine grained to medium grained Ash tuff with some fragments -coarsening of grain size and degree of foliation increases towards bottom of hole; percentage of felsic fragments increase with degree of foliation and coarsening of grain size -at 109.1', a 4" quartz vein, plus carbonate, pyrite-2%, mafic material from tuff included and chloritized, smokey quartz in places -at 123.2', 1½" alteration zone, chlorite, epidote not parallel to foliation, fine grained disseminated pyrite 1-2% -at 120.8', silicified zone -pyrite fine grained disseminated trace-2% throughout unit -quartz-carbonate stringers (parallal to foliation) throughout up to 1/10" -in more coarse grained sections could be called lithic tuff -contact-very gradational	427-000 -202	114'- 116' 2.0'	3 ppb			

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 7 of 15

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/

Departure 9 + 50S Dip -50°; 150' -44° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
125.9'	170.4'	Intermediate to Mafic flow - weakly to moderately foliated at 56° to core axis -on broken surface massive, foliation due to slip planes (during regional stress) -may in fact be a tuff, that has been metamorphased -fragments which are quite angular (phenocrysts) may be crystallized quartz also to give less than 1mm quartz eyes -pyrite trace- 2% fine grained disseminated -weathered out gas cavities, not round as vesicules but possibly stretched -at 133.6', epidote alteration along fractures at 170° to core axis -presence of very fine needle like crystals randomly oriented, due to hardness probably amphiboles max. length 1.5mm -at 136.6', a 2" zone of epidote alteration with amphiboles -at 139.2', a 1" zone of epidote alteration with brown alteration (?) to either side of an epidote-carbonate vein 1/20" wide -at 144.2', start of 1.3' zone of alteration, epidote, ankerite, plus pink-brown mineral?, presence of amphiboles -at 148.9', a 0.75' quartz vein, weak carbonate, large clots of biotite, but cleavage not well developed in places biotite has been chloritized, no pyrite, rose quartz, smokey quartz and epidote -in places looks tuffaceous, may just be due to foliation or regional stress -silicified over last 7" -contact at 58° to core axis	427-000-093 427-000-094	143.8'-145.8' 2.0' 148.3'-150.3' 2.0'	7 ppb 5 ppb			

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 8 of 15

Latitude 14E Bearing Grid South (160°) Elevation _____ Date Started July 4

Departure 9 + 50S Dip -44° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
170.4'	171.3'	Intermediate to Felsic Tuff - (Lithic Tuff) - foliated at 58° to core axis -silicified and what appears to be chloritization (green alteration) -up to 5% fine grained disseminated sulphides (py, po) plus few 1/10" clots more massive clots -at 171.2' zones of po parallel to foliation, massive, up to 0.15" wide -contact to 58° to core axis	427-000-095	170.4'-172.4' 2.0'	7 ppb			
171.3'	177.2'	Interbedded Ash to Lithic Tuff and Argillaceous Metasediments -bedding at 58° to core axis -Tuff units up to 4", sediments up to 1.5", generally 0.2" wide -po, py along along bedding planes, as stringers plus fine grained disseminations -at 174.6' tuff unit with streaked lapilli sized quartz fragments -at 175.5', offset (minor fault) 0.4" offset, at 20° tp core axis diaplaced uphole -contact at 53° to core axis	427-000-096	172.4'-177.2' 4.8'	5 ppb			
177.2'	179.7'	Intermediate to Mafic Lapilli Tuff - felsic fragments up to 1.7" in longest dimension; weakly foliated at 57° to core axis -grey-brown in colour -trace pyrite -fine grained ground mass, biotite with felsic material (quartz, feldspar) -approximately 40% fragments -contact at 58° to core axis						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conguer Page 9 of 15

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/

Departure 9 + 50S Dip -44° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES			
					Au.			
179.7'	187.4'	Intermediate to Mafic Lithic Tuff - weakly foliated at 57° to core axis -grey-brown to grey in colour -% lithic fragments varies up to 30% -ground mass - quartz, feldspar biotite very fine grained -flakes of biotite parallel to foliation -tract pyrite (sulphides) -183.7'-183.8' silicified zone within tuff] -184.3-184.4' silicified zone within tuff]Biotite flakes -184.8-185.0' silicified zone within tuff]visible -185.2'-0.25" quartz vein parallel to foliation -clots of chloritized biotite in quartz vein near contacts with tuff -185.4' to 186.0 - alteration zone - silicification along fracture planes at 145° to core axis, 1% pyrite as small clots (6 clots) 186.7' to 186.9': Quartz vein, massive, barren, rare biotite flake -ground core? contact between quartz vein and shear zone missing -186.9 to 187.2' - chlorite schist (shear zone), sheared tuff -green, very soft, greasy feel, stretched felsic fragments present -contact to 66° to core axis						
187.4'	203.8'	Agglomerate - groundmass intermediate to mafic ash sized fragments plus some lithic sized fragments -187.4' agglomerate sized fragment of feldspar porphyry with stretched lithic sized feldspar fragments, partial assimilation of fragments with ash sized ground mass						

Drill Hole 427-83-4 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L4E | Bearing Grid South (160°) | Elevation | Date Started July 4/

Departure 9 + 50S | Dip -44° | Length 454.2' | Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
187.4'	203.8'	cont'd -188.4', silicified zone, with biotite flakes observed 189.6 to 191.0', alteration zone chloritized silicified -191.0', 1" quartz vein as with 186.7' to 186.9' -191.7', 1" zone heavily silicified with 20% chloritized biotite -192.4', 3" massive quartz vein,with stringers of chloritized biotite -fragments of biotite rich mafic material feldspar porphyry with felsic groundmass -197.0' to 197.5', zone of alteration, silicification, chloritization, plus carbonate filling of randomly oriented fractures -201.4' to 202.2' zone of alteration with quartz vein, chloritization, hematite staining, amphiboles or may be tourmaline hard to tell, pyrite-3" wide also clots of serpentine Sample 427-000- , 200.9' to 202.9' - sample above zone plus -pyrite along fractures with po at 200.9' -appearance of garnets at 203.7', up to 1/20" in diameter anhedral to subhedral possibly even broken, just a few, much more predominent in flow -contact - not clear; diffuse	427-000 -097	200.9' -202.9' 2.0'	4 ppb			
203.8'	218.3'	Intermediate to Mafic Flow - green to grey in colour - pink brown -very fine grained massive to weakly foliated at 60° to core axis						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/

Departure 9 + 50S Dip -44° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
203.8'	218.3'	cont'd -very fine grained massive to weakly foliated at 60° to core axis -garnetiferous throughout entire section -up to 1/20" wide anhedral to subhedral generally with a few euhedral crystals along fracture planes -definite association between pink-brown areas and number of garnets, brown areas may represent alteration zones, large number of garnets in these areas -dark green on fresh surface -carbonate and silicified zones parallel to foliation -sulphides 1-2% fine grained pyrite -contact at 57° to core axis						
218.3'	221.0	Intermediate to Mafic Ash Tuff - weakly foliated at 60° to core axis -very fine grained, trace-1% pyrite -brown-grey in colour -fractures at 145° to core axis with silicification along fractures -predominantly hairline fractures although some zones up to 1/10" wide -presence of 1-2% lithic sized fragments -has nets are seen on tuff at upper contacts (infiltration of alteration fluids; also present along what appear to be more porous foliation planes (found with silica qtz)) -at 220.3', a 3" zone of alteration, silicification and fracturing (as above) -up to ½" offset along fractures (offset uphole) -contact at 75° to core axis-but generally irregular						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd Logged by Stephen Conquer

Latitude 14E Bearing Grid South (160°) Elevation _____ Date Started July 4

Departure 9 + 50S Dip -44° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
221.0'	226.6'	Intermediate to Mafic Lithic Tuff-weakly foliated at 50° to core axis -angular to rounded fragments predominantly feldspar with minor quartz and mafic fragments -cryptocrystalline groundmass composed of felsic and mafic material -predominantly lithic sized fragments few, few lapilli sized fragment fracture controlled alteration hematite plus epidote through approximately 40% of unit -contact at approximately 90° to core axis - irregular but sharp						
226.6'	232.7'	Intermediate to Felsic Ash Tuff - very fine grained, cryptocrystalline -alternating bands of light and dark grey and black -some sections contain lithic sized felsic fragments -heavily fractured, in part almost brecciated, definite offsets and deformation due to fractures -fine grained sulphides 2%-5% pyrite -maybe interbedded sediments and tuff						
		Sample 427-000-098; 226.6' to 230.6'	-098	4.0'	7 ppb			
		Sample 427-000-099; 230.6' to 232.7'	-099	2.1'	11 ppb			
		-both of above samples taken to cover Tuff; due to fracturing brecciation, alteration and mineralization -garnets also observed over lower portion of unit -alteration - silicification, chloritization, carbonatization, feldspathization -contact at 48°to core axis - irregular but sharp						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L4E Bearing Grid South (160°) Elevation _____ Date Started July 4/

Departure 9 + 50S Dip -44°; 300' -42° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
232.7'	314.3'	Diabase Dyke -first 1.9' of dyke is cryptocrystalline variety of main fine grained dyke -chill margin - gradual, increase in grain size -fine grained-medium grained towards centre of dyke -approximately equal % of feldspar (plag) and pyroxene, general anhedral to subhedral, in some places laths of plag can be seen -very magnetic throughout entire length, very fine grained anhedral magnetite grain, can be seen -trace pyrite, as well as minor quartz -overall colour grey to green-grey, green colour may be due to chloritization of pyroxene -along some fracture planes serpentine due to alteration of pyroxene -very smooth and greasy dark green -some fractures of 169° to core axis -also fractures (may be joints) at 47° to core axis -285.9' to 286.0' - quartz vein along possible fracture zone at 48° to core axis -inclusion of some mafic fragments that have been chloritized also feldspar (anhedral fragments) -needle like crystals possibly amphiboles -epidote in quartz vein and along fractures (hairline) either side of quartz vein -minor carbonate as well -approximately last 2.0' of diabase dyke is crypto-crystalline chill margin as with first 1.9' -contact - broken core; hard to see						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L4E Bearing Grid South (100°) Elevation _____ Date Started July 4/83

Departure 9 + 50S Dip -44°; 300'-42° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
314.3'	366.6'	Intermediate flow; massive fine grained to medium grained (tendency towards Mafic composition) -percentage composition varies from location to location main components -pyroxene 40%] -plag 40%] -biotite 10%] general, in some instances hornblende; up to 15% garnets in some locations -quartz 5%] pyrite 5%] -most prominent feature are blades of pyroxene-chloritized -randomly oriented; at most 1/10" long -grey-green to grey in colour 315.2' to 315.9'] quartz veins with cb, smokey quartz, 316.3' to 316.6'] cb, chloritized host rock eqidote and 316.9' to 317.7'] pink, brownish pink stains to quartz 319.0' to 319.9'] (andalusite) 320.0' to 321.2'] Sample 427-000-100 315.2'-317.7'] to sample above Sample 427-000-101 319.0'-321.2'] mentioned alteration zones -minor alteration of feldspar to red colour predominantly near fractures -grain size change from medium grained to fine grained at 325.2' - pyroxene blades still visible	-100 -101	2.5' 2.2'	12 ppb 10 ppb			
314.3'	366.6'	Intermediate Flow-(tending towards Mafic Composition) -325.0' to 326.8' - zone at alteration epidotization and pinkification of feldspar -further decrease in grain size at 328.1' to crypto-crystalline slight variation in grain size but						

Drill Hole 427-83-4 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L4E Bearing Grid South (100°) Elevation Date Started July 4

Departure 9 + 50S Dip -42°; at 450' -41° Length 454.2' Date Finished July 5/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
314.3'	366.6'	cont'd predominantly cryptocrystalline -slightly garnetiferous in places -at 357.2' (approximately) grain size increases to fine grained -contact gradual, at approximately 63° to core axis						
366.6'	454.2'	Mafic Volcanics - flow; similar to above except more mafic composition -proxene blades still visible throughout -garnetiferous in most part -some sections where pyroxene blades disappears-becomes plag. rich, still small mafic content plus garnets -small quartz stringers at 157° to core axis, these are parallel to small chlorite, carbonate filled fractures -at 45° to core axis what appears to be lineation, probably weakly foliated -some areas pyroxene blades completely enclosed by white carbonate -garnets vary from anhedral to not quite euhedral, up to 1/10" in diameter pink to red in colour -444.7' to 445.1' zone of extensive carbonatization, chloritization; also (clot of pyrrhotite (magnetic) 2/10" long -towards end of hole pyroxene blades are not as visible predominantly mushed together END OF HOLE						

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

Company Vulcan-Caulfield Joint Venture

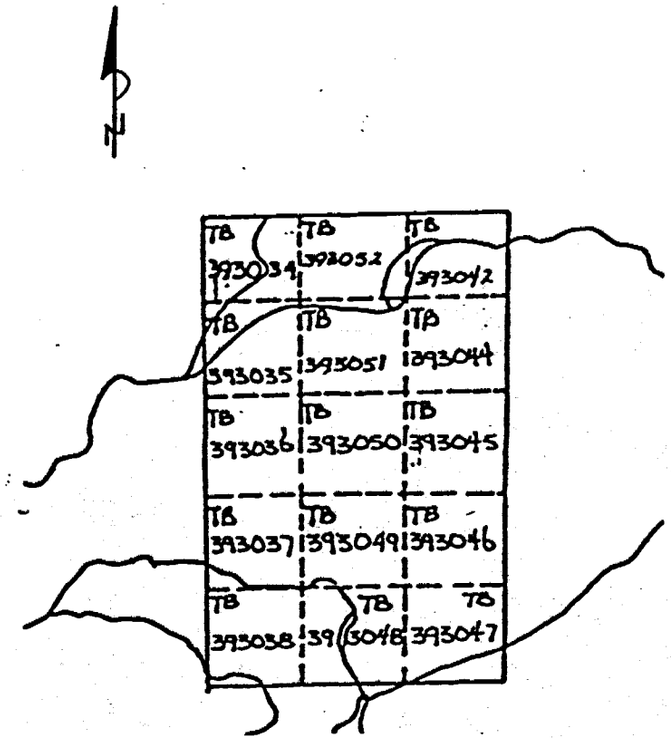
Hole No. 427-83-5

LOCATION	DIP TEST					
AREA or TWP. Molson Lake Area SS Marie/Thunder Bay Mining Division	FOOTAGE	ANGLE RECORDING	ANGLE CORRECTED	LEVEL Surface	HORIZONTAL COMPONENT 444'	DATE STARTED July 12/83
CLAIM NO. TB393048	0'	50°	50°		VERTICAL COMPONENT 427'	DATE FINISHED July 14/83
	200'	55°	45°	ELEVATION	BEARING Grid South (160°)	LOGGED BY Stephen Conquer
NTS 42C/12 UTM	400'	50°	41°	LATITUDE L16E	LENGTH 618.2'	PURPOSE Test IP Anomaly
	1000'	50°	41°	DEPARTURE 11 + 18S	CORE LOCATION White River Freezer	TOT. RECOVERY 100%

Signature Stephen Conquer

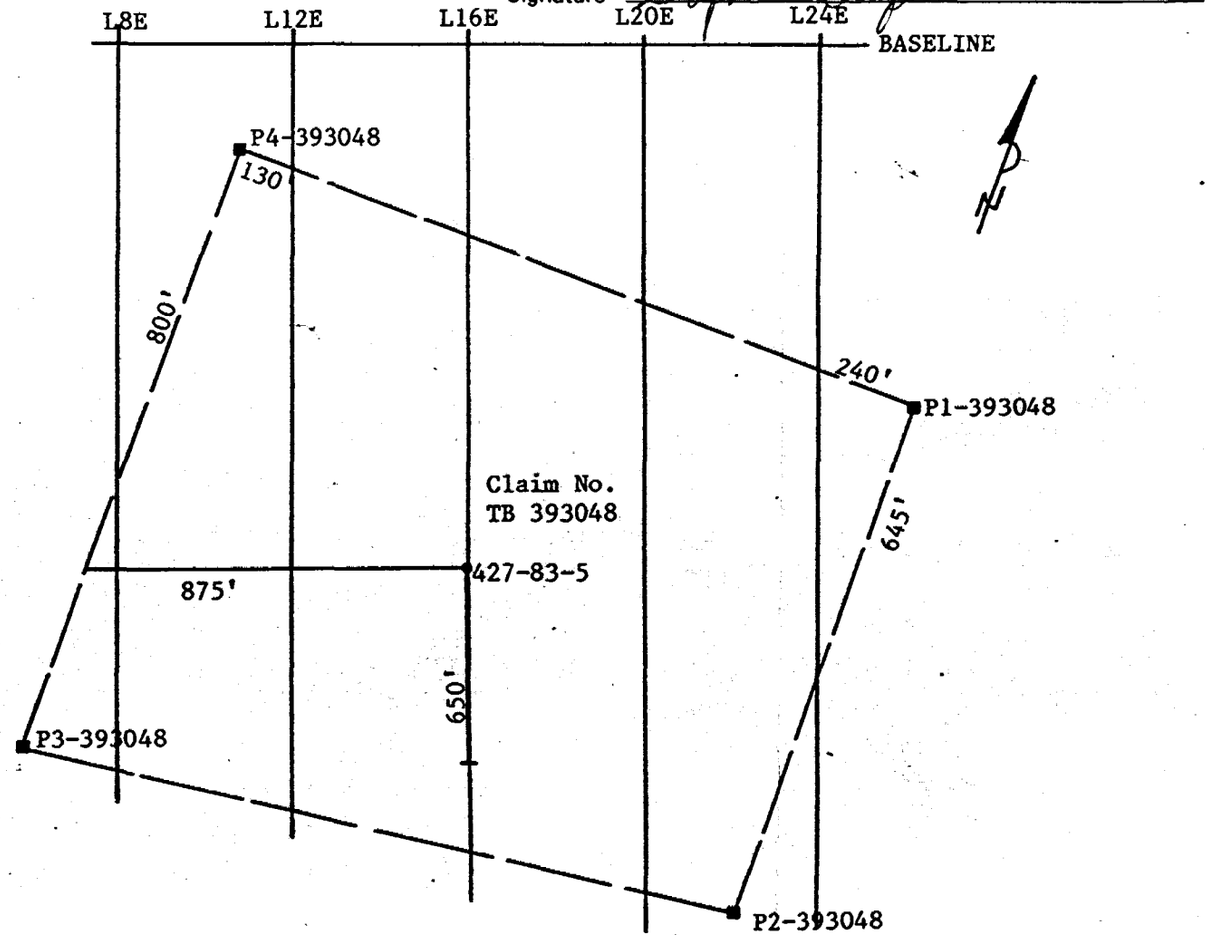
DIAMOND DRILL HOLE LOCATION SKETCHES

CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet



Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 1 of 21

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -50° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
0'	48'	Casing - Overburden						
48.0'	83.5'	Intermediate to Felsic Ash Tuff - extremely fine grained to cryptocrystalline massive, weak foliation at 65° to core axis -heavily fractured to the point that unit is almost brecciated in places -heavily silicified; fractures facilitated silicification -grey colour predominates the core -core broken in many places due to blocky nature; some places broken to rubble -impossible to identify individual components of Tuff due to fine grained massive nature of core -in places where silicification is not as great, chloritization is in evidence -sulphides vary from trace to almost 5%						
		Sample 427-000-102; 48' to 52.6' -ash tuff silicified; plus possible oxidation (brown-red colour) due to proximity to surface -sulphides trace to 2% -broken and fractured as above -zone of chloritization and serpentinization; 62.6' to 54.4' -serpentine along fractures; again quite fractured almost brecciated	-102	4.6'	7 ppb			
		Sample 427-000-103; 56.0'to 61.0' -silicified (pervasive); weakly carbonated along fracture zones up to 5% pyrite; pinkish alteration as well	-103	5.0'	3 ppb			

Drill Hole 427-83-5 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L16E | Bearing Grid South (160°) | Elevation | Date Started July 12/83

Departure 11 + 86S | Dip -50° | Length 618.2' | Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
48.0'	83.5'	cont'd			
		Sample 427-000-104; 61.0' to 66.0' -as above no pink alteration			
		Sample 427-000-105; 66.0' to 71.0' -as above - no pink alteration, but appearance of chloritic alteration	-105	5.0'	3 ppb
		-contact at 46° to core axis			
83.5'	124.2'	Intermediate to Felsic Ash Tuff - as above, foliated at 61° to core axis -except pervasive silicification stops at contact -silicification does occur from place to place in core			
		Sample 427-000-106; 84.0' to 86.0' -sample taken to cover two zones of intense silicification (chloritization) at 84.6', 2" zone; and at 85.3', 3" zone -2 to 5% pyrite	-106	2.0'	10 ppb
		Sample 427-000-107; 88.7 to 90.7' -sample taken to cover two quartz veins -sulphide mineralization along contacts of vein; massive to small cubes -quartz massive -up to 2% fine grained disseminated pyrite in country rock; silicified	-107	2.0'	10 ppb

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -50° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
83.5'	124.2'	cont'd -98.5', 0.7' quartz vein; trace pyrite, inclusion of mafic material (chloritic) -smokey quartz in part and rose quartz (pink alteration) Sample 427-000-108; 101.6' to 105.0' -silicified, up to 2% sulphides -heavy alteration and fracturing at 103.8' to 104.8' -chert layer 1/10" at 104.9' -grain size varies from cryptocrystalline to fine grained -in some places 1% lithic sized fragments -appears that grain size coarsens up the hole; individual units	-108	3.4'	3 ppb			
83.5'	124.2'	Intermediate to Felsic Ash Tuff Sample 427-000-109; 109.1 to 111.1' centered about 1/10" pyrite seam massive -some silicification and chloritization along fractures -at 124.1', ½" quartz breccia zone; felsic fragments in a silica groundmass, angular fragments, maybe quartz filled fault zone? -contacts at 50° to core axis -contact at 55° to core axis	-109	2.0'	4 ppb			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 4 of 21

Latitude L16E Bearing Grid South (160°) Elevation Date Started July 12/83

Departure 11 + 86S Dip -50° Length 618/2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
124.2'	125.2'	Intermediate to Mafic Ash Tuff - foliation at 50° to core axis; cryptocrystalline -hard to tell individual components, except small clots of mica (biotite) along foliation planes and fizzes with HCl-carbonate -overall grey colour and relatively soft -trace sulphides -just below upper contact, small quartz masses up to ½" in longest dimension-cemented together by quartz-carbonate, (smokey quartz) -contact at 54° to core axis						
125.2'	142.5'	Intermediate to Felsic Ash Tuff - as described above heavily silicified; foliation at 54° to core axis -quartz-carbonate filled fractures hairline to 1/20" wide parallel to the foliation -also fracture filling by pyrite (hairline) -at 129.4'; 2" of fine grained quartz grains (saccharoidal texture) this zone is filled with angular lapilli sized fragments of host rock maybe quartz filled shear or fault but contacts very sharp, parallel to foliation -at 129.9', quartz filled fractures, not as well developed but appears to be early stage of development as in above zone angular blocks of host rock in quartz -zone of intense silica alteration at 133.5', 6" zone; pyrite along -137.2'; 3" zone of deformation; displacement of what appear to be sedimentary features i.e., slump-offsets, faulting? -at 138.7'; 5" zone of lithic tuff, feldspar fragments in fine grained-medium grained matrix of felsic & minor mafics						

Drill Hole 427-83-5 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L16E | Bearing Grid South (160°) | Elevation | Date Started July 12/83

Departure 11 + 86S | Dip -50° | Length 618.2' | Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
		-last 3" brecciated-contact breccia? -contact at 52° to core axis						
142.5'	144.2'	Intermediate to Felsic Flow - very fine grained massive -individual components hard to distinguish -minor alteration in places, silicification -trace sulphides -contact at 53° to core axis, gradational						
144.2'	156.5'	Intermediate to Felsic Ash Tuff - weakly foliated at 54° to core axis to massive -as described above -very similar to flow except presence of felsic fragments and better foliation -2" zone of lithic tuff at 149' -zone of silicification at 154.5' -contact gradational but parallel to foliation						
156.5'	159.8'	Intermediate to Mafic Lithic Tuff - weakly foliated to massive -presence of lithic sized fragments-feldspar with some quartz eyes -weakly silicified in places -tract to 1% sulphides -contact at 57° to core axis						
159.8'	193.3'	Interbedded Lithic Tuff and Ash tuffs - Intermediate to mafic in composition -foliation and bedding planes at 53° to core axis -both rock types as described above -sulphides generally trace to 1% but locally up to 5%						

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 6 of 21

Latitude L16E Bearing Grid South (160°) Elevation Date Started July 12/83

Departure 11 + 86S Dip -50°; 200' -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
159.8'	193.3'	cont'd						
		Sample 427-000-110; 159.8' to 164.8'	-110	5.0'	5 ppb			
		427-000-111; 164.8' to 169.8'	-111	5.0'	4 ppb			
		427-000-112; 169.8' to 174.8'	-112	5.0'	4 ppb			
		427-000-113; 174.8' to 179.8'	-113	5.0'	3 ppb			
		427-000-114; 179.8' to 184.4'	-114	5.0'	2 ppb			
		427-000-115; 184.8' to 189.8'	-115	5.0'	2 ppb			
		427-000-116; 189.8' to 193.3'	-116	3.5'	7 ppb			
		-contact at 157° to core axis						
193.3'	197.8'	Mafic to intermediate Crystal Tuff - moderately foliated at 60° to core axis -blades of chlorite or chloritized biotite in a felsic (predominantly quartz groundmass) -quartz eyes also present -bands of mafic and felsic material alternate in some location -garnets noted at 195.4' -contact gradational						
197.8'	214.7'	Mafic Flow - gradational contact from tuffs to flows -fine grained massive, weakly foliated in places at 60° to core axis -in places interbedded with intermediate flow and alteration zones alteration to biotite -garnetiferous throughout mafic units - anhedral to subhedral up to 1/10"						
		Sample 427-000-117; 203.2'-205.2' -pyrite (secondary) filling fractures at 204.2	-117	2.0'	4 ppb			

Drill Hole 427-83-5 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L16E | Bearing Grid South (160°) | Elevation | Date Started July 12/83

Departure 11 + 86S | Dip -45° | Length 618.2' | Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
197.8'	214.7'	cont'd contact at 65° to core axis			
214.7'	228.7'	Interbedded Argillaceous Metasediments and Ash Tuff and Lithic Tuff - foliated at 68° to core axis -Arillites-very fine grained foliated to massive - graphitic throughout silicified in part -quartz-carbonate filled fractures -Ash Tuffs - Intermediate to Felsic - silicified, fractured -heavily altered in places -Lithic Tuff as with Ash tuff except presence of feldspar fragments			
		Sample 427-000-118; 214.7' to 219.7'] sampled due to 427-000-119; 219.7' to 224.7'] fracturing, 427-000-120; 224.7' to 228.7'] alteration and py along foliation planes	-118 -119 -120	5.0' 5.0' 4.0'	14 ppb 7 ppb 3 ppb
		-pyrite in places up to 5% -breccia zone 1" wide at 222.8'			
		-contact at 68° to core axis, gradational change			
228.7'	229.9'	Felsic Ash Tuff - silicified, maybe slightly intermediate in composition that is masked by silicification -foliation at 66° to core axis -contact parallel to foliation at 60° to core axis			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
229.9'	231.9'	Felsic Lithic Tuff - silicified, plus other alteration, maybe slightly intermediate in composition that is masked by silicification -heavy alteration with 1/10" feldspar fragments chloritization -trace to 1% pyrite Sample 427-000-121; 229.9' to 231.9' -sample entire unit due to alteration and fracturing -contact at 56° to core axis	-121	2.0'	3 ppb			
231.9'	248.5'	Intermediate to Mafic Ash Tuff - foliation at 56° to core axis -faulted (offset) up to ½ at upper contact -at 147° to core axis offset along their fracture -at 233.8' marked increase in carbonate along foliation planes -up to 30% carbonate, disappears at 234.9' -at 234.8'; start of quartz-carbonate vein running parallel to core axis, at upper end it has been truncated, upper end faulted off -just below up to ¼" offset running perpendicular to core axis -vein ½" wide -again truncated at lower contact -at 236.0' appearance of heavily carbonate zone again -interbedding of very fine grained tuff (maybe argillaceous) and medium grained tuff - may just be some zones more silicified -pyrite in hairline fractures parallel to sub-parallel to foliation						

Drill Hole 427-83-5 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L16E | Bearing Grid South (160°) | Elevation | Date Started July 12/83

Departure 11 + 86S | Dip -45° | Length 618.2' | Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
231.9'	248.5'	cont'd -Quartz-carbonate fill fractures up to 1/10" wide (pink to white) in colour -at 247.4; 2" zone of Lithic Tuff -argillaceous metasediments in places interbedded with Ash Tuff -pyrite up to 5% Sample 427-000-122; 231.9'-236.9']-sampled due 427.000-123; 236.9'-241.9'] to fracturing 427-000-124; 241.9'-246.5'] and mineralization 427-000-125; 246.5'-248.5'] -contact at 70° to core axis	-122 -123 -124	5.0' 5.0' 4.6'	3 ppb 2 ppb 8 ppb
248.5'	254.5'	Intermediate to Mafic Lithic tuff -may even be called Crystal Tuff - due to presence of quartz eyes -lithic sized feldpar fragments -rock very grainy in appearance, more so than Ash Tuff -chloritization of mafic component (biotite) in places parallel to foliation -no visible sulphides -vugs filled with calcite crystals -contact at 70° to core axis			
254.5'	261.5'	Interbedded Argillaceous Metasediments, Intermediate to Mafic Ash and Lithic tuff - foliated at 69° to core axis -as described above 214.7' to 228.7' -pyrite mineralization along fractures and foliation planes			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
254.5'	261.5'	cont'd						
		Sample 427-000-126; 254.5'-259.5'	-126	5.0'	3 ppb			
		427-000-127; 259.5'-261.5'	-127	2.0'	2 ppb			
		-contact at 76° to core axis						
261.5'	265.0'	Mafic Tuff - (Ash Tuff) - foliated at 70° to core axis -chloritic rich, very soft, green to grey green in colour -maybe serpentinized on slip (foliation) planes -extreme carbonatization on foliation planes -no visible pyrite or sulphides -contact at 73° to core axis						
265.0'	265.7'	Interbedded Argillaceous Metasediments & Ash Tuff (Inter to Mafic) -foliated at 73° to core axis -as described above 214.7'-except no Lithic tuff -2" mafic tuff at 265.8' -contact at 73° to core axis						
265.7'	287.3'	Intermediate to Felsic Ash Tuff - foliation at 65° to core axis -medium grained in places massive -alteration present - silicification -1/20" pyrite seam along upper contact -1/10" fractures filled with white quartz-carbonate, soft but not too much fizz -some argillaceous metaseds with graphite and sulphides along foliation planes -some locations look more Intermediate to Mafic -sulphides (pyrite) general trace-1% pyrite, others pyrite						

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 +86S Dip -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.	Cu		
		along foliation						
		Sample 427-000-128; 275.0'-280.0'	-128	5.0'	3 ppb			
		427-000-129; 280.0'-285.0'	-124	5.0'	2 ppb			
		-contact at 65° to core axis						
287.3'	290.8'	Intermediate to Mafic Lithic tuff - foliation at 65° to core axis -Lithic sized fragments just bigger than Ash size - at least visible to -pervasive carbonate throughout unit -some small zones (beds) within unit more silicified than others -feldspar fragments up to 1mm in size are seen -contact at 65° to core axis						
290.8'	317.6'	Interbedded Intermediate to Mafic Lithic tuff - Intermediate to Felsic Ash Tuff - foliation at 67° to core axis -both rock types as described above						
		Sample 427-000-130; 297.9'-302.9' -sulphides filling hairline fracturing, plus also along foliation planes, but not throughout entire 5' sample	-130'	5.0'	3 ppb	40 ppm		
		Sample 427-000-131; 302.9'-304.9', as above but with fine grained disseminated pyrite and clots of massive chalcopyrite (along foliation planes)	-131	2.0'	4 ppb	40 ppm		

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
290.8'	317.6'	Interbedded Intermediate to Mafic Lithic Tuff and Intermediate to Felsic Ash Tuffs cont'd -after 308.2' silicification and alteration increases -314.5'; shear zone, brecciated, silicified, chloritized and small clots of carbonate, at 25' to core axis, ½" wise of maximum Sample 427-000-132; 310.3'-315.3' -sulphides (pyrite) along foliation planes and fractures, fine grained disseminated and small 1/20" clots, up to 5% in places -at 315.9', 1/10" orangy-pink mineral? andalusite -contact at 72° to core axis	-132	5.0	3 ppb			
317.6'	324.9'	Intermediate to Mafic Lithic tuff - foliated at 72° to core axis -as described above -with very minor beds of ash tuff -very fine grained disseminated pyrite -at 322.6', breccia zone, fragments of host in Anhydrite-carbonate cement, 1" wide at 48° to core axis -vug? filled with calcite crystals and massive botryoidal pyrite -silicification as well as other alteration (chlorite?) Sample 427-000-133; 321.5'-323.5' -sample vug and tuff either side -gradational contact	-133	2.0'	4 ppb			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
324.9'	328.1'	Mafic to Intermediate Lithic tuff - foliated at 72° to core axis -basically the same as intermediate to mafic tuff, but content of Mafic is greater than Intermediate - chlorite etc. -contact at 67° to core axis						
328.1'	335.0'	Intermediate to Felsic Ash tuff - foliation at 72° to core axis -as described above in this log -rock grades from cryptocrystalline to fine grained, almost to lithic tuff at 332.7' (grainy appearance) -many hairline fractures with silicification -plus other alteration (brown and green) -fracturing, slight brecciation, voids filled with soft green mineral -gradational contact						
335.0'	337.4'	Intermediate to Felsic Lithic tuff -appearance of felsic fragments with coarsening of grain size -otherwise similar to Ash tuff -contact at 65° to core axis -above 2 unite really appear to be one unit with a grain size fining up the hole - i.e., a depositional cycle						

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 14 of 21

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
337.4'	343.1'	Intermediate to Felsic Ash Tuff - foliation at 67° to core axis -as described above, only trace pyrite -340.1' pervasive brown alteration starts here, goes for about 2'						
		Sample 427-000-134; 340.1 to 342.1' -sample above alteration zone, along with fracture parallel to core axis filled with carbonate (calcite crystals) and pyrite	-134'	2.0'	5 ppb			
		-contact at 62° to core axis - still partially gradational						
343.1'	348.6'	Intermediate to Felsic Lithic Tuff - foliated at 62° to core axis -silicified and altered throughout most of length -in part appears to be crystal tuff with quartz eyes -as described above-felsic fragments -354.7; a 1.4' zone broken core due to fracturing; heavily altered -carbonate along fractures with fine grained disseminated pyrite and cubic pyrite						
		Sample 427-000-137; 345.7'-347.7'	-137	2.0'				
		-brecciated zone 1" wide just above bottom contact -silicification, chloritization -contact at 72° to core axis						

Drill Hole 427-83-5 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer

Latitude L16E | Bearing Grid South (160°) | Elevation | Date Started July 12/83

Departure 11 + 86S | Dip -45° | Length 618.2' | Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
348.6'	352.8'	Intermediate to Felsic Ash tuff - massive to weakly foliated at 60° to core axis -as described above, no visible pyrite -one silicified (quartz vein) zone with clots of biotite -fracture parallel to core axis filled with quartz, anhyolrite and minor carbonate -no visible sulphides -contact not seen due to broken core						
352.8'	360.4'	Mafic tuff - foliated at 60° to core axis -extremely soft, grey green in colour -has undergone serpentinization -biotite and chlorite seen, as well as trace pyrite -carbonate also prominent -may possibly be shear zone in Mafic tuff -at upper contact; ½" zone of unlithified mafic material -definitely undergone shearing or deformation -rock becomes more competent at 359.1' -quartz vein at 359.8' with small clots of pyrite and pink mineral -intermixing of mafic and felsic material at bottom contact						
		Sample 427-000-135; 358.4'-360.4' - sampled quartz vein	-135	2.0'	4 ppb			
		-contact gradational						
360.4'	369.2'	Intermediate to Mafic Ash tuff - foliation at 63° to core axis -quartz-carbonate zones parallel to foliation						

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 1[illegible]83

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 13/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
360.4'	369.2'	cont'd -fractures at 158° to core axis, filled with quartz, anhydrite and minor carbonate -1/10" offset parallel to core axis, at 362.5', along fracture -some portions more mafic, appearence of chlorite (green-colour) -at 364.4', 3" quartz vein-no apparent sulphides -overall, tract sulphides -contact at 70° to core axis						
369.2'	375.8'	Intermediate to Felsic Ash Tuff - foliation at 69° to core axis -only weakly foliated, more massive -silicified zone at 370.0', 3" -1/20" wide pyrite stringer parallel to foliation at upper contact and 2" below contact; also small clots and small stringers pyrite in quartz anhydrite, minor carbonate in 1/20"-1/10" fracture at 165° to core axis -(other pyrite stringers parallel to sub-parallel to foliation, plus found in hairline fractures, and fine grained disseminated pyrite throughout unit. 5-10% -lower 2" (just above contact) silicified (pyrite as above) Sample 427-000-136; 369.2'-371.2'] samples above unit 427-000-137; 371.2'-374.8'] -contact to 70° to core axis	-136 -137	2.0' 3.6'	8 ppb 4 ppb			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation Date Started July 12/83

Departure 11 + 86S Dip -45° Length 618.2' Date Finished July 13/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
375.8'	376.8'	Intermediate to Felsic Lithic tuff -pervasive silicification throughout unit -chloritization along fractures with anhydrite, quartz, carbonate -pyrite fine grained disseminated up to 2% Sample 427-000-138; 374.8'-376.8'-samples Lithic tuff and 1 foot of Ash tuff -contact at 72° to core axis	-138	2.0'	4 ppb			
376.8'	386.8'	Intermediate to Felsic tuff - foliation of 72° to core axis -as described above -zone of intense carbonate 377.1' to 377.3' and 379.7' to 380.0' -trace to 1% fine grained pyrite -in places slightly more mafic -contact at 67° to core axis						
386.8'	393.1'	Mafic to Intermediate Ash Tuff - foliation at 71° to core axis -garnetiferous throughout entire length, up to 1/10" anhedral to subhedral -patchy colour, green and pink brown, possibly alternating biotite and chlorite rich zones, or alteration to biotite of chlorite -quartz-carbonate stringers parallel to sub-parallel to foliation -generally 1% pyrite, but more in anhydrite filled fractures -contact at 70° to core axis						

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -45°; 400' -41° Length 612.8' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
393.1'	399.9'	Intermediate to Felsic Lithic Tuff - massive to weakly foliated at 70° to core axis -in part may only be Ash tuff, but presence of small % age of felsic fragments suggests lithic -fragment content increases towards bottom of unit -heavily altered and silicified, throughout entire length Sample 427-000-139; 393.1' to 397.1'] tuff, 2% pyrite 427-000-140; 397.1' to 399.9'] -contact: broken core, not available	-139 -140	4.0' 2.8'	7 ppb 3 ppb			
399.9'	475.3'	Intermediate to Mafic Ash Tuff - weakly to well foliated at 60° to core axis -in the better foliated zones carbonate is more prominent -abundant quartz carbonate filled hairline fractures and quartz-carbonate zones parallel to foliation -deformation in the form of minor brecciation occurs at 416.2' to 419.5' -almost lithic sized material -predominantly medium grained-coarse grained Ash sized material with some zone of fine grained up to 2" wide -at 450.9' to 451.3' quartz vein with included mafic material biotite and chlorite -at 456.9'; 1" quartz vein as above Sample 427-000-141; 472.8'-474.8' - % sulphide slightly higher here than in other areas, quartz eyes -contact at 60° to core axis	-141	2.0'	2 ppb			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 19 of 21

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11; 586S Dip -45°; 400' -47° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
475.3'	570.0'	Intermediate to Mafic Ash to Lithic Tuff - foliation at 66° to core axis -the rock type does not change very much from above unit except, there seems to be a predominant grain size coarsening down hole, that is repeated several times, i.e., cyclic deposition						
		Sample 427-000-142; 496.3'-499.3' -disseminated sulphides fine grained to 1/20" in in diameter clots up to 5% pyrite	-142	3.0'	3 ppb			
		Sample 427-000-143; 508.4' to 511.4', quartz vein, silicification and what may be potassic alteration, also fine grained pyrite 2-5% -epidote alteration along fractures appears at 517.6' -potassic alteration at 518.0'	-143	3.0'	7 ppb			
		Sample 427-000-144; 524.0' to 526.0' -potassic alteration, pyrite-2-5%	-144	2.0'	12 ppb			
		Sample 427-000-145; 526.0'-531.0' -epidote, potassic alteration, silicification, pyrite 2-5%	-145	5.0'	5 ppb			
		-small quartz vein at 535.6', ½" wide at 142° to core axis -at 547.4', 9" zone containing 3 quartz veins, containing chlorite						

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -41° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
425.3'	570.0'	Intermediate to Mafic Ash to Lithic Tuff cont'd -just after quartz veins at 548.2', (2' zone of silicification in a Lithic tuff (feldspar fragments) with disseminated pyrite						
		Sample 427-000-146; 546.0'-551.0' - sample quartz veins and silicified zone	-146	5.0'	5 ppb			
		-contact at 73° to core axis						
570.0'	618.2'	Intermediate to mafic Ash tuff - foliation at 73° to core axis -lithic tuff now only minor interbeds (approx. 2" wide) -unit as a whole fairly well silicified -pyrite trace - 2%						
		Sample 427-000-147; 589.1'-591.1' -sample Ash tuff with small unit of lithic tuff and silicification	-147	2.0'	4 ppb			
		Sample 427-000-148; 591.1' to 596.1' -predominantly Ash tuff but with some small zones of lithic tuff, at 594.6', silicified at this point -1/20" stringers of pyrite and pyrrhotite (parallel to foliation) and fine grained disseminated sulphides 2-5%	-148	5.0'	11 ppb			
		Sample 427-000-149; 596.1-601.1' -as above sample (148)	-149	5.0'	14 ppb			

Drill Hole 427-83-5 Drilled by Norex Drilling Ltd Logged by Stephen Conquer

Latitude L16E Bearing Grid South (160°) Elevation _____ Date Started July 12/83

Departure 11 + 86S Dip -41° Length 618.2' Date Finished July 14/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
570.0'	618.2'	cont'd						
		Sample 427-000-150; 601.1'-606.1' -as above samples	-150	5.0'	8 ppb			
		Sample 427-000-151; 606.1'-611.1' -as above but includes, a 1" quartz vein with muscovite a 607.7'	-151	5.0'	5 ppb			
		Sample 427-000-152; 611.1-616.1'-as above] slightly	-152	5.0'	7 ppb			
		Sample 427-000-153; 616.1'-618.2'-as above] more silicification	-153	2.1'	2 ppb			

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

Company Vulcan-Caulfield Joint-Venture

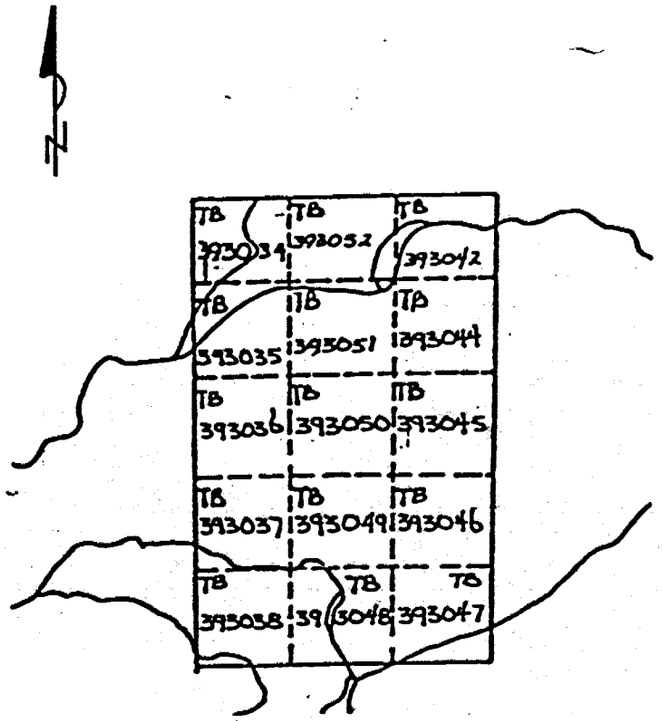
Hole No. 427-83-6

LOCATION	DIP TEST					
AREA or TWP. Molson Lake Area SS Marie/Thunder Bay	FOOTAGE	ANGLE RECORDING	ANGLE CORRECTED	LEVEL Surface	HORIZONTAL COMPONENT 641.0'	DATE STARTED July 15/83
CLAIM NO. Mining Division TB393048, TB393047	0'	50°	50°		VERTICAL COMPONENT 469.5'	DATE FINISHED July 18/83
NTS 42C/12 UTM	200'	46°	37.5°	ELEVATION	BEARING Grid South (160°)	LOGGED BY Stephen Conquer
	400'	45°	36.5°	LATITUDE L24E	LENGTH 800.3'	PURPOSE Test IP Anomaly
	600'	40°	32.0°	DEPARTURE 13 + 00S	CORE LOCATION White River Freezer	TOT. RECOVERY 100%
	800'	35°	28.0°			

Signature Stephen Conquer

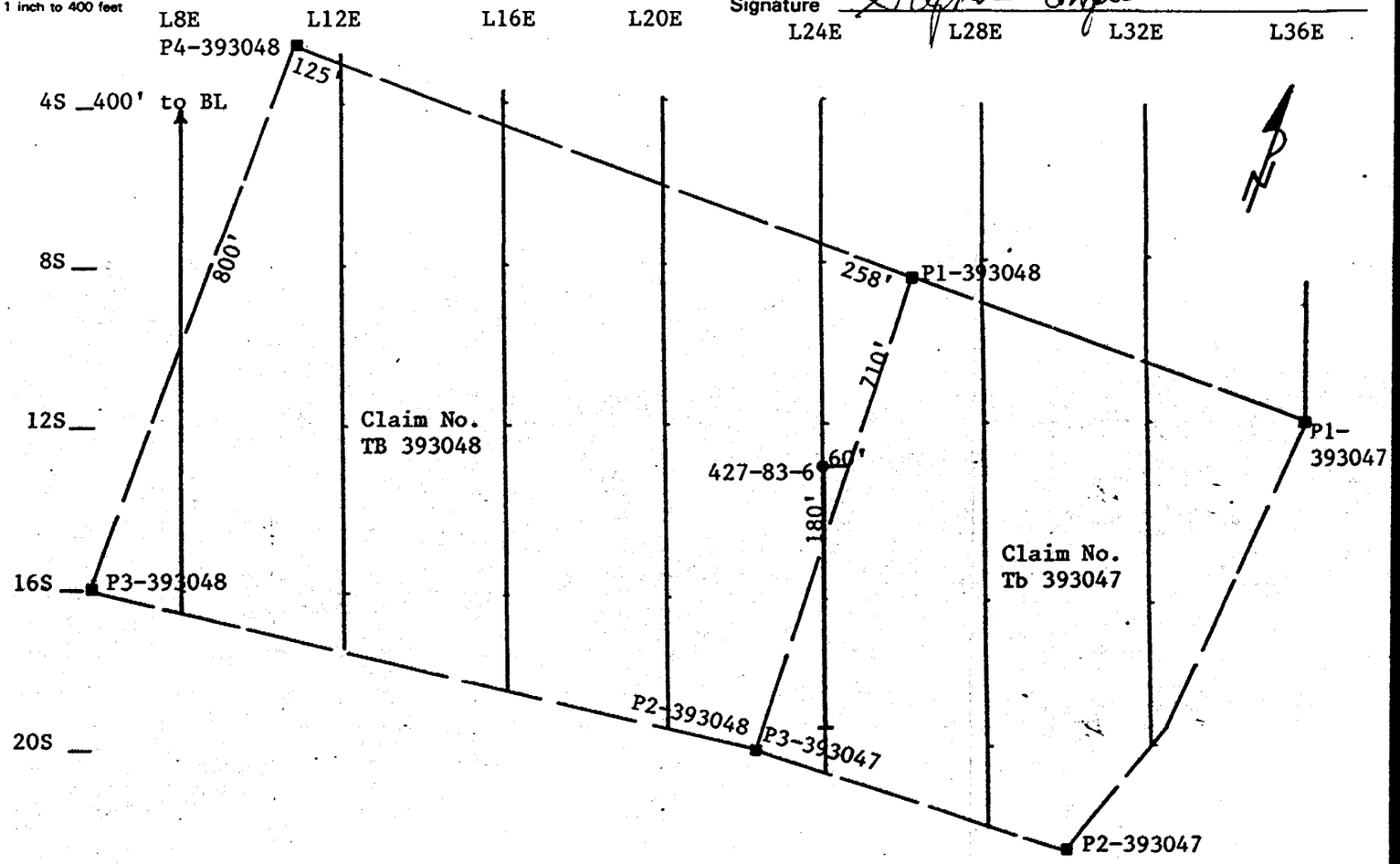
DIAMOND DRILL HOLE LOCATION SKETCHES

CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet



Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13+00S Dip -50° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
0'	6.0'	Casing - Overburden			
6.0'	24.4'	Mafic tuff - foliation at 56° to core axis -quartz-carbonate veins parallel to foliation -green to grey-green in colour -Ash sized material -chloritization of mafic material -vugs can be seen with some quartz-carbonate veins -sulphides generally trace fine grained pyrite, except associated as small approx. 1/10" clots with some quartz-carbonate veins			
		Sample 427-000-154; 7.4'-9.4'-0.15" quartz-carbonate veins with pyrite clots in tuff	-154	2.0'	4 ppb
		Sample 427-000-155; 19.6'-23.6' - sections includes 1 foot quartz vein, some inclusions of chloritic tuff	-155	4.0'	5 ppb
		-contact; broken core			
24.4'	51.3'	Intermediate to Mafic Ash to Lithic tuff - foliation at 58° to core axis -as seen in previous holes -series of repetitive depositional cycles, going from coarse grained to fine grained material up hole -silicification can be seen along hairline fractures -carbonate is present in small up to 1/10" stringers parallel to foliation and small fractures, in coarse grained material there is a more pervasive carbonatization -at 32.9' small quartz-carbonate vein, with possible potassic alteration			

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July [illegible]83

Departure 13 + 00S Dip -50° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
24.4'	51.3'	cont'd						
		Sample 427-000-156; 31.9'-33.9'-sample above vein with fine grained disseminated pyrite	-156	2.0'	8 ppb			
		-at 46.9', 3" section of fractured and silicified rock -contact at 53° to core axis						
51.3'	54.3'	Intermediate to Mafic Lithic tuff - foliation 55° to core axis -as with coarser grained Ash tuff, except for the presence of feldspar fragments -silicification along hairline at 154° and 25° to core axis -trace pyrite fine grained disseminated -contact at 56° to core axis, not sharp may be gradational as in grain size change; the Lithic tuff may be one half of depositional cycle						
54.3'	168.0'	Intermediate to Mafic Ash to Lithic tuff - foliation at 61° to core axis -as described 24.4'-51.3' -fine grained to medium grained predominantly ash sized material -at 55.1', ½"zone of silicification and minor epidote alteration -at 56.1', 0.5' zone of silicification along fractures, plus epidote alteration, more silicification at 53.0' -at 57.4', start of pink alteration, in coarser grained tuff only very minor % alteration -at 61.5', pervasive alteration, possibly silicification,						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 3 of 18

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -50° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
54.3'	168.0'	cont'd but predominantly pink colour (potassic alteration) over 3" length, but can be seen in core to 64.5' -at 64.2', quartz vein with carbonate plus hematite staining						
		Sample 427-83-157; 59.4-61.4' - sample alteration zones	-157	2.0'	15 ppb			
		Sample 427-83-158; 61.4-64.7'	-158	3.3'	4 ppb			
		Sample 427-83-159; 83.0'-85.0' - sample zone of silicification and potassic alteration, may be partly brecciated	-159	2.0'	3 ppb			
		-at 89.5' quartz intruded into ½" to 1" zone, chloritization of biotites included with quartz						
		Sample 427-000-160; 124.0'-129.0' - sample of heavily silicified and partly brecciated	-160	5.0'	3 ppb			
		Sample 427-000-161; 131.2'-135.4'-silicification -from approx. 120' on silicification fairly predominant	-161	4.2'	4 ppb			
		Sample 427-000-162; 138.7'-140.7' - silicification plus breccia zone	-162	2.0'	5 ppb			
		-contact at 65° to core axis						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conguer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 1[illegible]3

Departure 13 + 00S Dip -50°; 200' -37.5' Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.
168.0'	239.1'	Interbedded Intermediate to felsic Lithic (minor Ash) tuff and Argillaceous Metasediments - foliation (bedding) 65° to core axis -interbeds vary in width from 1/10" to 5" -170.9' to 172.1'; faulting (offsets) noticed between Lithic tuffs and argillites, no brecciation -deposition appears to be cyclic with sections up to 15" long predominantly one type of rock and the next section predominantly the other type -predominantly argillaceous metasediments -170.1', ¼" breccia zone			
		Sample 427-000-163; 187.5'-189.5'	-163	2.0'	8 ppb
		Sample 427-000-164; 189.5'-191.5'	-164	2.0'	4 ppb
		Sample 427-000-165; 191.5'-196.5' -sampling Argillites and tuffs of above unit	-165	5.0'	5 ppb
		Sample 427-000-166; 196.5'-201.5'	-166	5.0'	3 ppb
		Sample 427-000-167; 201.5'-205.0'	-167	3.5'	2 ppb
		Sample 427-000-168; 205.0'-207.0' - brecciated zone, with carbonate plus graphite	-168	2.0'	7 ppb
		-at 201.3'; 1.5" breccia zone, no carbonate, quartz as matrix fine grained disseminated pyrite up to 5% -Argillites are in part graphitic			
		Sample 427-000-169; 210.8'-215.8' - pyrite, pyrrhotite 5% parallel to foliation planes,	-169	5.0'	11 ppb

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 5 of 18

Latitude L24E Bearing Grid South (160°) Elevation Date Started July 15/83

Departure 13 + 00S Dip -50°; 200' -37.5' Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
168.0'	239.1'	cont'd also as fine grained disseminated in Lithic tuffs Sample 427-000-170; 220-0'-222.0' - predominantly Argillites, partially brecciated, with carbonate filling same gaps and pyrite filling others, breccia from 220.7' to 221.5' -contact at 70° to core axis	-170	2.0'	10 ppb			
239.1'	247.4'	Interbedded Intermediate to Mafic Ash to Lithic Tuff -foliation at 68° to core axis -as described above, in this log 54.3' to 168.0' Sample 427-000-171; 245.4'-247.4' - samples Ash and Lithic tuff with fine grained disseminated pyrite 2-5% -contact at 65° to core axis	-171	2.0	7 ppb			
247.4'	253.0'	Interbedded Argillaceous Metasediments and Intermediate to Felsic tuff - foliation to 65° to core axis -as described above, 168.0'-239.1' -at 247.4'; ½" breccia zone filled with anhydrite, at 65° to core axis also anhydrite vein at 26° to core axis; 2% pyrite in breccia zone Sample 427-000-172; 247.4'-249.4' - sample breccia zone -contact at 69° to core axis	-172	2.0'	11 ppb			

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -50°, 200' -37.5' Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
253.0'	257.7'	Interbedded Intermediate to Mafic Ash and Lithic tuffs with minor Argillite -as described above -predominantly Lithic tuff -contact at 62° to core axis						
257.7'	298.3'	Agglomerate -the matrix of this agglomerate is Ash to predominantly Lithic tuff material -fragments consist of feldspar (crystal tuff) porphyry, mafic ash tuff, intermediate to felsic Lithic tuff, intermediate to mafic ash tuff -some as silicified zones in fragment free Ash tuff -along fractures and fracture zones -contact at 62° to core axis						
298.3'	304.5'	Intermediate to Mafic Ash tuff - foliation at 62° to core axis -very fine grained to fine grained material composes this fock -extremely well silicified, appears that hairline fractures control silicification in very fine grained material						
		Sample 427-000-173; 301.3'-303.3' - silicified, fine grained disseminated pyrite 2%	-173	2.0'	7 ppb			
		-contact at 75° to core axis						
304.5'	317.6'	Interbedded Intermediate to Mafic Ash and Lithic tuff - foliation at 75° to core axis -as described above						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -37.5° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
304.5'	317.6'	cont'd -quartz vein at 313.4' to 313.8', barren -316.9' to 317.6'; a highly carbonatized zone possibly sheared contacts at 54° to core axis for upper contact and 67° to core axis lower contact-may be carbonatite dyke -contact at 67° to core axis						
317.6'	320.0'	Agglomerate - as described above: except predominantly Lithic tuff as groundmass; also some lapilli sized fragments -317.6' to 320.8' - extremely well silicified giving an overall light green colour to rock; in part looks partially brecciated Sample 427-000-174; 317.6'-320.8'- sample silicified zone, no sulphides visible -agglomeratic sized fragments stop at approx. 321.0' -gradational contact	-174	3.2'	10 ppb			
320.0'	335.2'	-Lapilli tuff - the same as the agglomerate except only lapilli sized fragments, set in a groundmass of Intermediate to Mafic Lithic tuff -quartz-veins at 324.5'; 1½" - barren 331.2' to 331.9' - massive quartz vein with 10% pyrite some mafic inclusions, chloritized; biotite and muscovite 333.4' to 335.2' - as with above quartz vein with chloritized mafic inclusions -breccia zone at 326.9' to 327.2'						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 8 of 18

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -37.5° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
320.0'	335.2'	cont'd						
		Sample 427-000-175; 331.2' to 335.2' - quartz vein in Lapilli tuff, with pyrite 10% in places, chloritized mafic material, biotite and muscovite	-175	4.0'	25 ppb			
		-gradational contact						
335.2'	370.2'	Intermediate to Mafic Ash to Lithic tuff - foliation at 76° to core axis -as described earlier; predominantly Ash tuff - very fine grained to medium grained -silicification parallel to subparallel to foliation and along fractures; pyrite along silicified fractures -341.9' intense silicification starts -343.3' intense silicification still, plus brecciation due to fracturing						
		Sample 427-000-176; 341.9'-344.2'; sample above silicification	-176	2.3'	7 ppb			
		-increases in mafic content at 354.5' to 355.18' with pervasive carbonate -at 355.8'; a 0.3' quartz vein with chloritized mafic material and muscovite and biotite -contact at 75° to core axis						
370.2'	381.9'	Interbedded Argillaceous Metasediments and Intermediate to Felsic Lithic tuff -foliation at 78° to core axis -stringers of pyrite along foliation planes						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer Page 9 of 18

Latitude L24E Bearing Grid South (160°) Elevation Date Started July 15/83

Departure 13 + 00S Dip -37.5° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
370.2'	381.9'	cont'd -same as described elsewhere -predominantly argillites -quartz-carbonate stringers along foliation planes -broken core						
381.9'	388.0'	Ultramafic flow - foliated at 40° to core axis -extremely soft, scratches with fingernail -may be serpentinized Mafic Volcanic -carbonate found in clots 1/10" by 2/20" along foliation planes -foliation apparent due to lineation of carbonate patches and biotite clots -predominatly composed of fine grained material -contact at 66°						
388.0'	394.2'	Intermediate to Mafic Ash tuff - foliation at 66° to core axis -as described elsewhere in this log -silicified for most part, along hairline fractures and parallel to foliation -no visible sulphides -393.8' - faulting (offset) can be seen with bedding planes -contact at 65° to core axis						
394.2'	395.0'	Interbedded Mafic tuffs (Ash) and Intermediate to Mafic Ash tuff -Mafic tuff extremely soft, with carbonate present along foliation planes predominantly hairline stringers						

Drill Hole 427-83-6 | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 15/83

Departure 13 + 00S | Dip -37.5°; 400' -36.5° | Length 800.3' | Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
394.2'	395.0'	cont'd -green to grey green in colour (some places brownish) -biotite noted as well as chlorite -Intermediate to Mafic Ash tuff - as described before -both rocks bedded or foliated at 70° to core axis -contact at 60° to core axis						
395.0'	401.7'	Intermediate to Mafic Ash Tuff - foliated at 72° to core axis -as described earlier -to a very minor extent argillaceous -some sections show minor silicification -few lithic sized feldspar fragments -contact at 72° to core axis						
401.7'	414.6'	Interbedded Intermediate to Mafic Ash and Lithic Tuff - foliated at 72°to core axis -as described earlier -individual sections vary in width from ¼" to 5" -at 402.3'; 2" quartz vein - some minor chloritized mafic material no visible sulphides -silicified in part, parallel to foliation -at 413.9'; start of mildly brecciated zone due to fracturing, fractures filled with white quartz; no sulphides noticed -contact at 75° to core axis						
414.6'	625.4'	Intermediate to Mafic Ash to Lithic tuff - foliation at 75° to core axis -as described earlier						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 13/83

Departure 13 + 00S Dip -36.5° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
414.6'	625.4'	cont'd -cyclic deposition, with grain size increasing from fine grained Ash tuff up the hole to medium grained to coarse grained Lithic tuff -first unit of cyclic deposition approx. 0.7' long -second unit approx. 8.5' long -417.7', start of silicification and possible chloritization -more heavily silicified at 419.6' with quartz filled fractures running parallel to subparallel to core axis -at 426.2'; 2" zone of breccia zone (silicified section) -quartz and chlorite as matrix -trace -2% pyrite -Ash segments are, in part, silicified along hairline fractures -but only Ash, probably due to competency of rock -Lithic tuff would be broken easier -the Lithic portions may in part be arenaceous metasediments (psamonitic) -at 439.9'; a 7" fracture zone that has been brecciated fracture zone at 10° to core axis, quartz filling spaces -at 444.9'; a 4" silicified zone with ½" quartz-epidote vein no visible pyrite, quartz vein at 140° to core axis -at 446.8', zone of fracturing and brecciation, anhydrite filling spaces, also quartz and potassic alteration, dark green soft mineral maybe serpentine, plus minor epidote, fine grained disseminated and cubic pyrite -2 to 5% Sample 427-000-177; 446.8'-451.2' - sample above brecciation zone	-177	4.4'	8 ppb			

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -36.5° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
414.6'	625.4'	cont'd -silicified zone (fractured) at 456.7' to 457.8' Sample 427-000-178; 460.5'-465.5' - predominantly Lithic tuff with 5% pyrite, chloritization -in part more Mafic than Intermediate -minor carbonate -gradual change has occurred (besides becoming more mafic)-at top of section predominantly Ash sized material but since about 450' Lithic sized material has predominated	?	5.0'				
		Sample 427-000-178; 485.2'-490.2' - 2-5% pyrite as fine grained disseminated with 1" quartz vein at 489.1" with mafic inclusions	-178	5.0'	16 ppb			
		-at 507.6' (top of depositional cycle) the mafic content decreases, to the point where the composition is more intermediate to mafic -also silicification increases, plus epidote alteration along fractures and parallel to quartz veins -extreme increase in sulphides to 5-10% fine grained disseminated pyrite						
		Sample 427-000-179; 507.6'-512.6'-sample above zone but includes a 1" anhydrite filled breccia zone at 529.9'	-179	5.0'	7 ppb			
		Sample 427-000-180; 512.6'-517.6' - as with above sample	-180	5.0'	4 ppb			

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -36.5°; 600' -32° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
414.6'	625.4'	cont'd						
		Sample 427-000-181; 537.4'-539.9' - appearance of potassic alteration about quartz-carbonate filled fractures (1/10"-hairline) main fracture parallel to core axis; minor epidote alteration	-181	2.5'	32 ppb			
		Sample 427-000-182; 539.9'-541.9'; pervasive epidote alteration along quartz vein, also potassic alteration but not as much as with sample 181						
		-other minor fractures show potassic alteration, ie., 547.8' -548.1' start of fracture controlled silicification, as well potassic alteration present to minor extent -also 3 small clots of pyrite enclosed within epidote altered spots at 549.4'						
		Sample 427-000-183; 548.0'-550.8' - sample above mentioned silicified and potassic alteration zone	-183	2.8'	5 ppb			
		-550.6' start of zone where potassic alteration is predominant but includes some silicification and epidote alteration -at 551.2' zone has experienced extreme potassic alteration but also heavily altered by epidote (predominantly along fractures) but also parallel to foliation -amphiboles are evident throughout the whole zone possible as a result of the potassic alteration of biotite -quartz-carbonate veining, parallel to subparallel to core axis						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -36.5°; 600' -32° Length 800.3 Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
414.6'	625.4'	cont'd -sulphides 5-10% fine grained disseminated and clots of pyrite Sample 427-000-184; 550.8'-555.8'- sample above mentioned zone	-184	5.0'	16 ppb			
		-small zone of potassic alteration 562.3', 4" -percentage sulphides decrease to trace-2% at approx. 565' -quartz vein at 585.5' to 585.7', inclusions of more mafic country rock -at 575.5' change to a slightly more mafic content -quartz vein at 600.1' to 600.9' barren only minor mafic contact -predominantly Ash sized material at approx. 604.0' -at 622.7', 0.3' section of Crystal tuff with augen feldspar -at 623.7, 0.4' section, cavity filling, muscovite in well developed books, intergrown books, also soft (about hardness 3.5-4) blade material? -contact at 70° to core axis						
625.4'	648.7'	Interbedded Intermediate to Mafic Ash tuff and Wacke -foliation at 73° to core axis -Ash tuff - as described elsewhere, except fine grained to medium grained in places small amount of Lithic tuff Wacke - coarser grained than argillites, composed of mafic (biotite) and felsic (quartz, feldspar) -fine grained disseminate pyrite 2-5%, plus stringers parallel to bedding						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -32° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
625.4'	648.7'	cont'd -individual units range in size from 1/10" to 3" long -muscovite filled fracture at 630.3', at 170° to core axis -deformation, observed at 641.0' -section predominantly wacke at 642.1' with bands of pyrite plus fine grained disseminated 5-10% Sample 427-000-185; 642.1'-644.6' - sample above section and pyrite bands	-185	2.5'	11 ppb			
		-contact at 80° to core axis						
648.7'	653.4'	Interbedded Mafic to Intermediate Lithic tuff, Ash tuff and minor Wacke - foliation at 78° to core axis -maximum width of individual units 1' -deformation of Ash and Wacke units at 651.3', offset 1/10" -contact at 77° to core axis						
653.4'	666.9'	Mafic to Intermediate Ash to Lithic tuff - foliation at -as described above; cyclic sedimentation-grain size coarsens down hole from Ash tuff to Lithic tuff -quartz vein at 663.1' - only mafic inclusions -contact at 80° to core axis						
666.9'	683.1'	Wacke (greywacke) - foliation at 77° to core axis -fine grained predominantly mafic -with minor medium grained Ash tuff (intermediate to mafic) -contact at 74° to core axis						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -32° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
683.1'	699.8'	Interbedded Intermediate to Mafic Ash and Lithic tuff and Wacke -as described above -predominantly Lithic tuff -only very minor carbonate in quartz-carbonate veins parallel to foliation Sample 427-000-186; 694.0' to 696.0' - up to 5% disseminated and clots of pyrite in lithic tuff -contact at 74° to core axis	-186	2.0'	8 ppb			
699.8'	705.6'	Intermediate to Mafic Lithic tuff -as described earlier -silicified along fractures (minor) -minor quartz vein or alteration -at 703.5' may be erosional surface then subsequent deposition due to nature of bedding -contact at 62° to core axis						
705.6'	724.9'	Interbedded Intermediate to Mafic Ash and Lithic tuff and Wacke -as described above -foliation at 81° to core axis -garnetiferous in portion of coarser grained Ash tuff at 711.7' -only occasional pyrite band (parallel to foliation) with wackes -at 718.0' start of fracture (at 106° to core axis) filled with muscovite -only minor carbonate associated with 1/10" wide quartz veins						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15/83

Departure 13 + 00S Dip -32° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
705.6'	724.9'	cont'd -quartz patch at 716.2', may be part of quartz vein -contact at 80° to core axis						
724.9'	800.3'	Interbedded Wacke and Intermediate to Mafic Ash tuff -foliation at 80° to core axis -only minor Ash tuff -738.4; middle of 2" zone of minor fractures with one major (angular) fracture zone (at 90° to core axis) anhydrite filled -739.9'-740.1' silicified zone in wacke with 2-5% pyrite (cubes)						
		Sample 427-000-187; 737.8'-739.8' - sample of above fracture and silicified zone	-187	2.0'	4 ppb			
		-recrystallized quartz with carbonate in zones (up to 2/10" wide) parallel to foliation -minor stringers of sulphides (pyrite) in zones parallel to foliation up to 1/10" wide, with minor disseminated -at 746.0'; 3" zone of quartz, maybe growth of quartz in void or space in rock, does not look like quartz vein -some deformation niticed in host rock -silicification also seen, as well a small clots of pyrite (1%) -deformation of wackes noticed at 755.8', offsets to beds of up to 3/8" along fracture systems (at 10° to core axis) appears as if may be slump of semi-competent beds						

Drill Hole 427-83-6 Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 15[illegible]

Departure 13 + 00S Dip -32°, 800' -28° Length 800.3' Date Finished July 18/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
724.9'	800.3'	cont'd -also presence of erosional surfaces seen at 756.6' and 757.7'; fractures stop abruptly at these locations -also offsets between these locations -garnets associated with Ash tuffs in some places -at 762.3' Ash tuff content increase to about the same as wacke -Ash tuffs show silicification fractures (mainly) and parallel to foliation -777.0'-777.3'; quartz vein massive smokey, with inclusions of mafic material, no visible pyrite -extreme silicification in certain sections of Ash tuff after 781.8' with a quartz filled fracture running through the center, surrounded by epidote alteration -798.0' - well silicified to end of hole with minor pyrite and epidote along fractures -END OF HOLE						

David R. Bell Geological Services Inc.

DIAMOND DRILL HOLE RECORD

Project 427

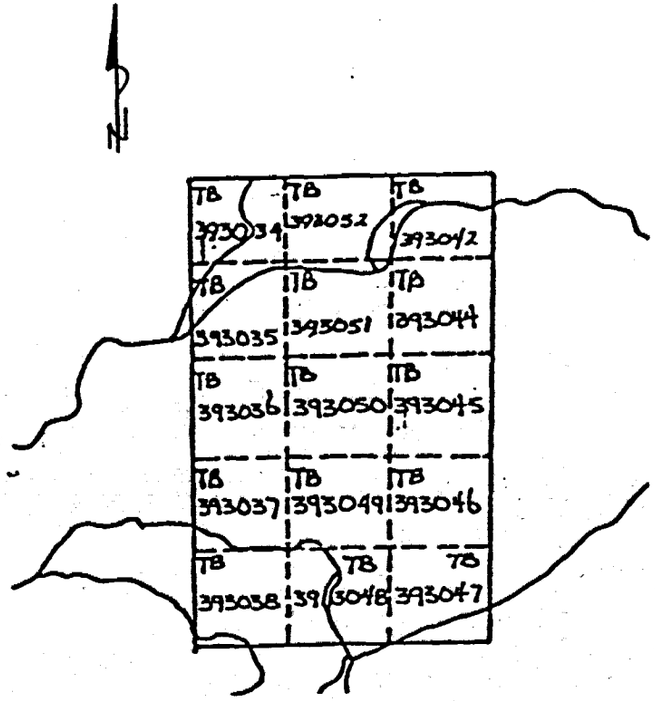
Company Vulcan-Caulfield-Joint Venture

Hole No. 427-83-6A

LOCATION	DIP TEST					
AREA or TWP Molson Lake Area SS Marie/Thunder Bay	FOOTAGE	ANGLE RECORDING	ANGLE CORRECTED	LEVEL Surface	HORIZONTAL COMPONENT 230'	DATE STARTED July 19/83
CLAIM NO. Mining Division TB393047	0'	50°	50°	ELEVATION	VERTICAL COMPONENT 191'	DATE FINISHED July 20/83
NTS 42C/12 UTM	150'	45°	36.5°	LATITUDE L24E	BEARING Grid South (160°)	LOGGED BY Stephen Conquer
	300'	45°	36.5°	DEPARTURE 18 + 00S	LENGTH 301.2'	PURPOSE Test IP Anomaly
					CORE LOCATION White River Freezer	TOT. RECOVERY 100%

DIAMOND DRILL HOLE LOCATION SKETCHES

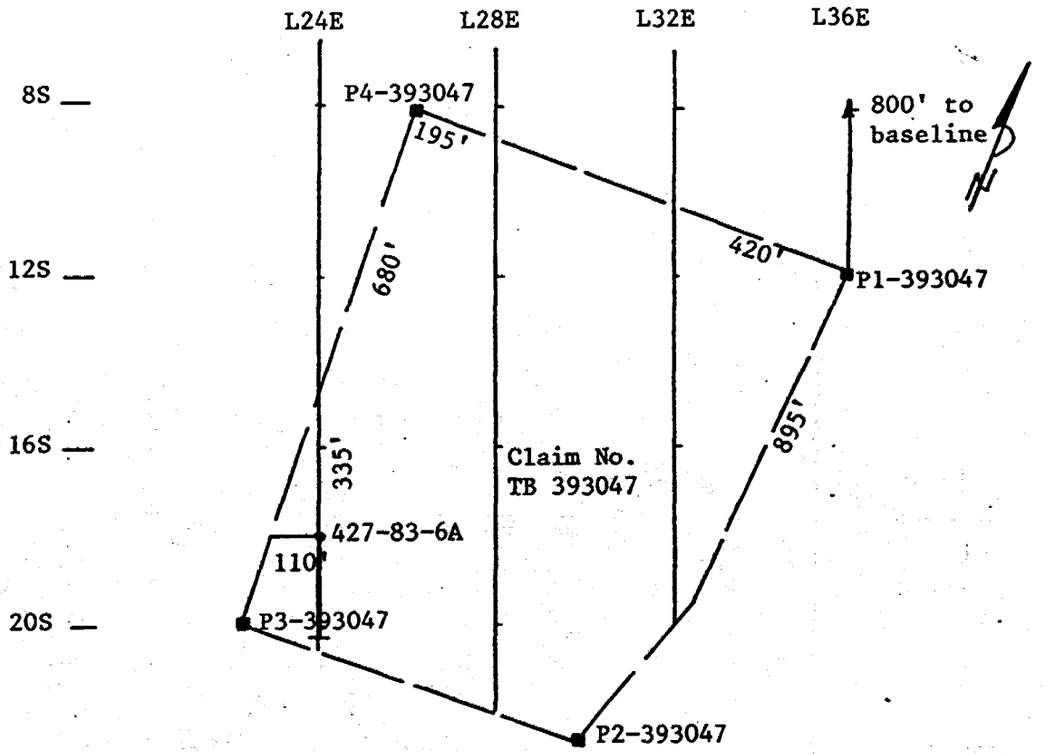
CLAIM MAP Scale: 1 inch to ½ mile



DIAMOND DRILL HOLE LOCATION WITH RESPECT TO CLAIM BOUNDARIES

Scale: 1 inch to 400 feet

Signature Stephen Conquer



Drill Hole 427-83-6A | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer | Page 1 of 7

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 19/

Departure 18 + 00S | Dip -50° | Length 301.2' | Date Finished July 20/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
0'	8.0'	Casing - Overburden						
8.0'	55.5'	Mafic to Intermediate Ash to Lithic tuff - foliation at 60° to core axis -grain size coarsening occurs from fine grained Ash tuff to coarse grained Lithic tuff with feldspar fragments -contacts can be seen between upper portion of Ash tuff (top of bed) and lower portion of Lithic tuff (bottom of bed from upper sequence - graded bedding) -contacts at 60° to core axis -individual sequences vary in width (thickness) -components - biotite (in places chloritized) - feldspar - quartz - trace sulphides, as fine grained disseminated pyrite (some cubes) -quartz-carbonate stringers (mainly quartz) 1/10" maximum width, scattered throughout -at 29.4'-29.8'; quartz vein, white and smokey quartz (minor pink (rose) quartz) -included biotite from host rock that has been chloritized -trace fine grained pyrite in chlorite patches -at 32.5'-32.9 zone of epidote alteration with quartz vein (32.7'-32.8') in center; intensity of epidote alteration greater near quartz vein and minor potassic alteration along a hairline fracture -48.6'; 1" quartz vein, pink in colour (potassic alteration) with fine grained disseminated pyrite trace 1% -contact at 62° to core axis						
55.5'	86.6'	Intermediate to Mafic Ash to Lithic tuff - foliation at 62° to core axis						

Drill Hole 427-83-6A | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 19[illegible]3

Departure 18 + 00S | Dip -50° | Length 301.2' | Date Finished July 20/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
55.5'	86.6'	cont'd -epidote alteration can be seen along fractures in silicified zone starts at 55.5', epidote ends at 57.4', silicification ends at 58.7', but minor amount continues -another zone of epidote alteration with minor silicification ends at 58.7', but minor amount continues -another zone of epidote alteration with minro silicification at 60.9'-62.4' -grain size of matrix of Lithic tuff, decreases from coarse grained-medium grained -feldspar fragments still present -extremely well silicified - pervasive -73-4'; small system of hairline fractures (running parallel to core axis) -this fracture where open has been filled with chlorite and carbonate, ¼" offset also observed suggesting minor fault -on fracture surfaces, sulphides are found smeared as well as fine grained disseminated pyrite -blue-grey in colour -contact at 65° to core axis						
86.6'	103.5'	Intermediate to Mafic Ash Tuff - foliation at 65° to core axis -purple grey in colour -mixture of felsic and mafic material - Ash sized material -mafic probably biotite -felsic probably feldspar -numerous silicified and/or recrystallized quartz zones; some with minor carbonate						

Drill Hole 427-83-6A | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 19/83

Departure 18 + 00S | Dip -50° | Length 301.2' | Date Finished July 20/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
86.6'	103.5'	cont'd -small interbeds at Felsic Lithic tuff (? Felsic to Intermediate) -trace-1% pyrite -contact at 65° to core axis						
103.5'	114.4'	Interbedded Wacke and Intermediate to Mafic Ash tuff - foliation at 65° to core axis -pyrite bands (1/10" wide) seen in wacke parallel to foliation -quartz-carbonate zones (1/10") parallel to foliation -offsets seen, with ¼" displacement of beds -fracture zone - brecciated at 106.8' at 162° to core axis -108'; silicified zone with mafic inclusions Sample 427-000-188; 106.4'-108.4' - sample fracture-breccia zone and silicified zone	-188	2.0'	5 ppb			
		-114'; multiple fracture breccia zone, with chlorite, epidote and 2-5% pyrite Sample 427-000-189; 112.4'-114.4'; sample previous mention fracture zone	-189	2.0'	5 ppb			
		-contact at 65° to core axis						
114.4'	118.0'	Intermediate to Mafic Ash tuff - foliation at 65° to core axis -as described elsewhere -but weakly to moderately silicified, along fracture planes						

Drill Hole 427-83-6A | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer | Page 4 of 7

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 19/

Departure 18 + 00S | Dip -50° | Length 301.2' | Date Finished July 20/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
114.4'	118.0'	cont'd and parallel to foliation -no visible sulphides contact at 65° to core axis						
118.0'	135.3'	Interbedded wacke and Intermediate to Felsic Ash to Lithic tuff -foliation at 65° to core axis -sililar to interbedded sequences seen before, except now tuff more felsic in nature -also silicified zones parallel to foliation -i.e., 118.5'-118.6' plus two quartz clots that have grown in situ - displace beds, fine grained disseminated pyrite 2-5%						
		Sample 427-000-190; 118.4'-122.9' - sample silicified zone	-190	4.5'	5 ppb			
		Sample 427-000-191; 122.9'-127.9' pyrite bands in wacke and fine grained trace disseminated pyrite in tuff	-191	5.0'	7 ppb			
		Sample 427-000-192; 127.9'-132.9' - pyrite bands in wacke and silicified zone	-192	5.0'	5 ppb			
		-contact at 60° to core axis						
135.3'	173.6'	Mafic to Intermediate Ash to Lithic tuff - foliation at 66° to core axis -as described before this log -cyclic sedimentation						

Drill Hole 427-83-6A | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer |

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 19/

Departure 18 + 00S | Dip -50°; 150' -36.5' | Length 301.2' | Date Finished July 20/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
135.3'	173.6'	cont'd -fine grained disseminated pyrite throughout section Sample 427-000-193; 144.3'-149.3' - sample one depositional unit; approx. 2% disseminated pyrite	-193	5.0'	5 ppb			
		-contact at						
173.6'	223.2'	Mafic to Intermediate Ash to Lapilli tuff - foliation at 56° to core axis -basically the same as above unit except for the introduction of lapilli (same agglomerate) sized fragments of mafic Ash tuff -fragments found in both ash tuff and lithic tuff sections -silicified zones mainly up to ½" wide found throughout unit -at 75° to core axis -up to 2% pyrite as small clots associated with silicified zones -major silicified zone; 185.0'-193.5' - in places secondary silicification noted (75° to core axis); pyrite up to 5% fine grained disseminated						
		Sample 427-000-194; 185.0'-190.0' - sample major silicified zone	-194	5.0'	5 ppb			
		Sample 427-000-195; 190.0'-193.5' - as above	-195	3.5'	49 ppb			
		Sample 427-000-196; 203.2'-205.7' - as above but different silicified zone	-196	2.5'	62 ppb			

Drill Hole 427-83-6A | Drilled by Norex Drilling Ltd. | Logged by Stephen Conquer | Page 6 of 7

Latitude L24E | Bearing Grid South (160°) | Elevation | Date Started July 19/83

Departure 18+00S | Dip -50°; 150' -36.5' | Length 301.2' | Date Finished July 20/83

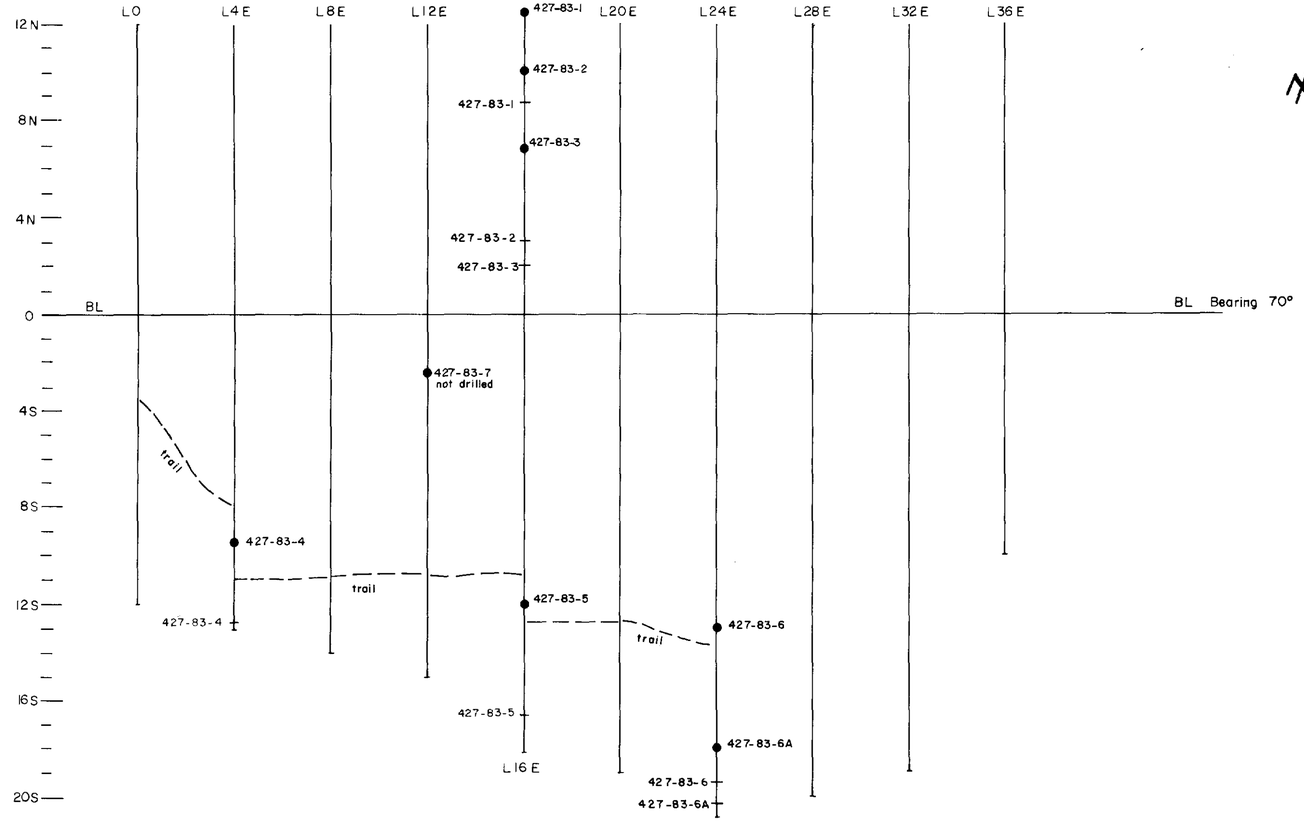
FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
173.6'	223.2'	cont'd Sample 427-000-197; 221.2'-223.2' - silicified Lithic tuff and minor wacke with 2-5% pyrite -contact at 62° to core axis	-197	2.0'	8 ppb			
223.2'	301.2'	Interbedded wacke and Intermediate to Felsic Lithic tuff -foliation at 63° to core axis -minor ash tuff -minor carbonate found in silicified zones parallel to foliation -dominant rock type switches between wacke and tuff Sample 427-000-198; 250.0' - primary sulphide bands parallel to foliation, pyrite, mainly wacke -minor hairline fractures, parallel to sub-parallel to core axis -secondary pyrite smears along fractures -at 269.4'-270.3'; quartz vein; smokey quartz as well as white -inclusion of mafic material -tract - 1% pyrite -minor brecciation at 274.7'-274.9' - spaces between fragments filled with carbonate -breccia zone at 275.1'-276.9' - spaces filled with quartz and pinkish brown material (potassic alteration) -apparent silicification -trace - 1% pyrite fine grained disseminated	-198	2.0'	51 ppb			

Drill Hole 427-83-6A Drilled by Norex Drilling Ltd. Logged by Stephen Conquer

Latitude L24E Bearing Grid South (160°) Elevation _____ Date Started July 19[redacted]

Departure 18 + 00S Dip -36.5° Length 301.2' Date Finished July 20/83

FROM	TO	DESCRIPTION	SAMPLE NO.	WIDTH	ASSAY VALUES Au.			
232.2'	301.2'	cont'd Sample 427-000-199; 274.6'-276.9'; sample above breccia zones -quartz vein at 286.2'-286.9' -minor fracture zones filled with dark green possible chloritic material -well silicified over last 5' of hole, trace pyrite -END OF HOLE	-199	2.3'	32 ppb			



LEGEND

PRECAMBRIAN
Late Precambrian (Proterozoic)
Alkalic Intrusive Rocks
9 Unsubdivided
9a Lamporphyre

MIDDLE TO LATE PRECAMBRIAN (PROTEROZOIC)
Mafic Intrusive Rocks
8 Unsubdivided
8a Diabase (Equigranular)

EARLY PRECAMBRIAN (ARCHEAN)
Intermediate to Felsic Dykes
7 Unsubdivided
7a Feldspar Porphyry
7b Quartz-Feldspar Porphyry

METAMORPHASED ULTRAMAFIC ROCKS
6 Unsubdivided

METAVOLCANICS AND METASEDIMENTS
Metasediments
5 Unsubdivided
5a Arkosic Wacke
5b Wacke
5c Argillite

METAVOLCANICS
Felsic Metavolcanics
4 Unsubdivided
4a Ash tuff
4b Lithic tuff

INTERMEDIATE TO FELSIC METAVOLCANICS
3 Unsubdivided
3a Crystal tuff
3b Lithic tuff
3c Ash tuff
3d Flow

INTERMEDIATE TO MAFIC METAVOLCANICS
2 Unsubdivided
2a Crystal tuff
2b Lithic tuff
2c Lapilli tuff
2d Agglomerate
2e Ash tuff
2f Flow

MAFIC METAVOLCANICS
1 Unsubdivided
1a Flow
1b Tuff

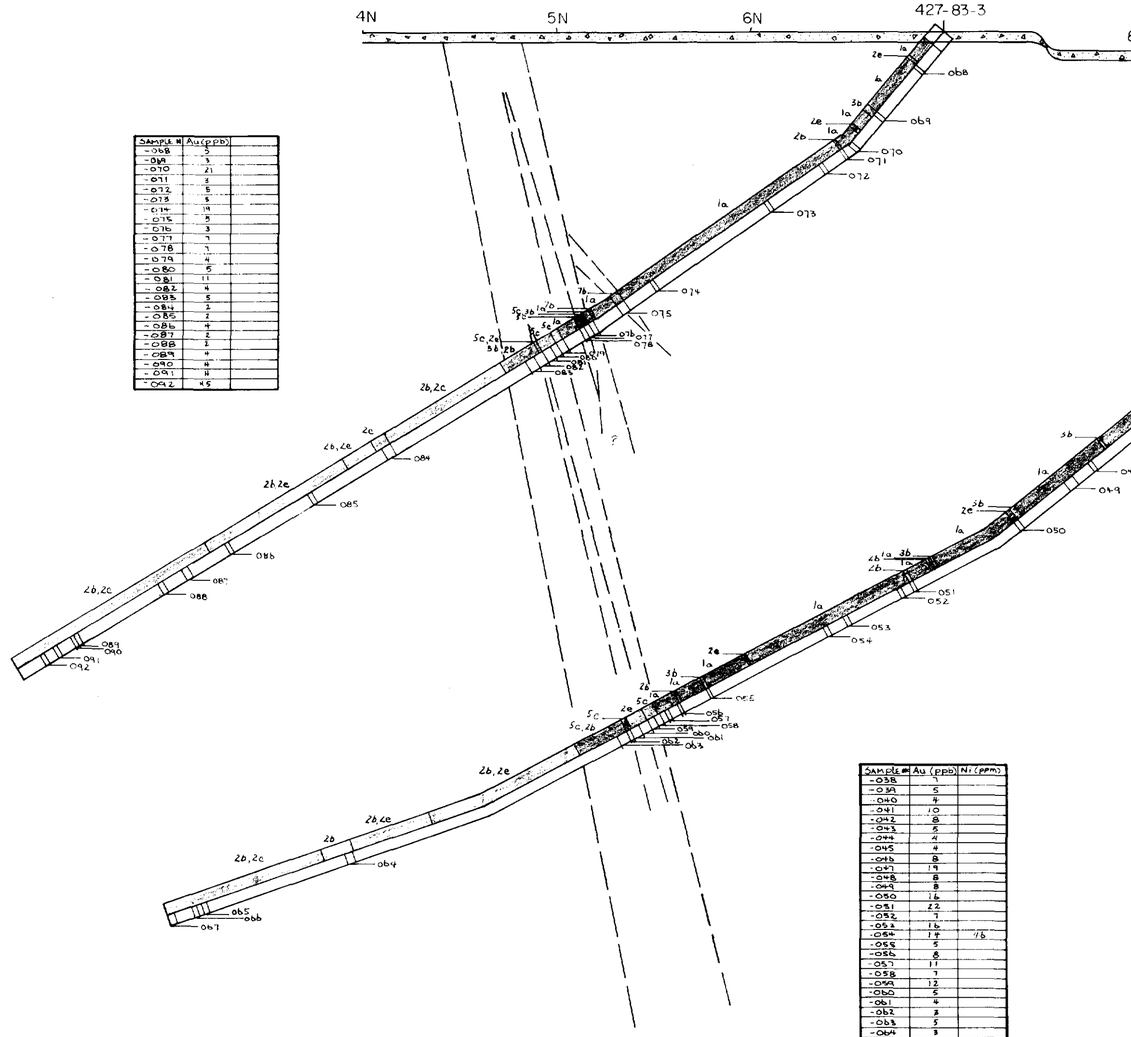
ALL SAMPLE #'S SHOULD BE PRECEEDED BY: 427-000-

DAVID R. BELL GEOLOGICAL SERVICES INC.

VULCAN-CAULFIELD JOINT VENTURE

DRILL PLAN & LEGEND

SCALE: 1"=400'-0"	DATE: OCT. 5/83	SHEET NO. 1



SAMPLE #	Au (ppb)
-068	3
-069	3
-070	21
-071	2
-072	5
-073	5
-074	14
-075	5
-076	3
-077	7
-078	7
-079	4
-080	5
-081	11
-082	4
-083	5
-084	3
-085	2
-086	4
-087	2
-088	1
-089	4
-090	4
-091	4
-092	45

SAMPLE #	Au (ppb)	Ni (ppm)
-038	7	
-039	5	
-040	4	
-041	10	
-042	8	
-043	5	
-044	4	
-045	4	
-046	8	
-047	19	
-048	8	
-049	8	
-050	16	
-051	22	
-052	7	
-053	16	
-054	19	76
-055	5	
-056	8	
-057	11	
-058	7	
-059	12	
-060	5	
-061	4	
-062	3	
-063	5	
-064	3	
-065	7	
-066	4	
-067	5	

SAMPLE #	Au (ppb)	Ni (ppm)	Cu (ppm)
-001	19		
-002	9		
-003	8		
-004	3		
-005	2		
-006	4		
-007	38		
-008	11		
-009	4		
-010	2		
-011	8		
-012	5		
-013	1		
-014	11		
-015	7		
-016	4		
-017	3		
-018	8		
-019	5		
-020	5	34	36
-021	8		
-022	4		
-023	8		84
-024	10		
-025	5		
-026	2		
-027	4		
-028	4		
-029	18		
-030	8		
-031	15		
-032	7		
-033	10		
-034	7		
-035	12		
-036	19		
-037	12		

ALL SAMPLE #'S SHOULD BE PRECEEDED BY: 427-000-

DAVID R. BELL GEOLOGICAL SERVICES INC.

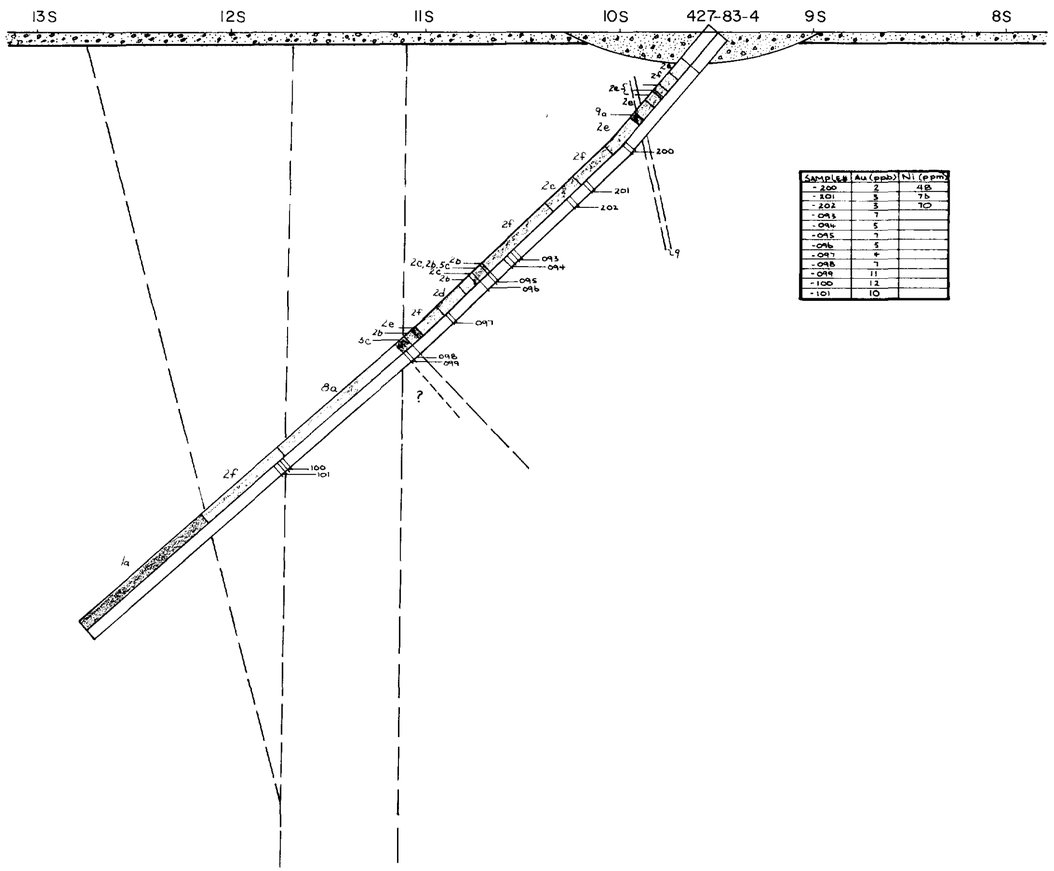
VULCAN-CAULFIELD JOINT VENTURE

DRILL SECTIONS

L16E LOOKING WEST

DDH: 427-83-1,2,3

SCALE: 1"=50'-0" | DATE: OCT 5/83 | SHEET NO. 2



SAMPLE #	Au (ppb)	Ni (ppm)
-200	2	48
-201	5	76
-202	5	70
-093	7	
-094	5	
-095	7	
-096	5	
-097	4	
-098	7	
-099	11	
-100	12	
-101	10	

ALL SAMPLE #'S SHOULD BE PRECEEDED BY: 427-000-

DAVID R. BELL GEOLOGICAL SERVICES INC.

VULCAN-CAULFIELD JOINT VENTURE

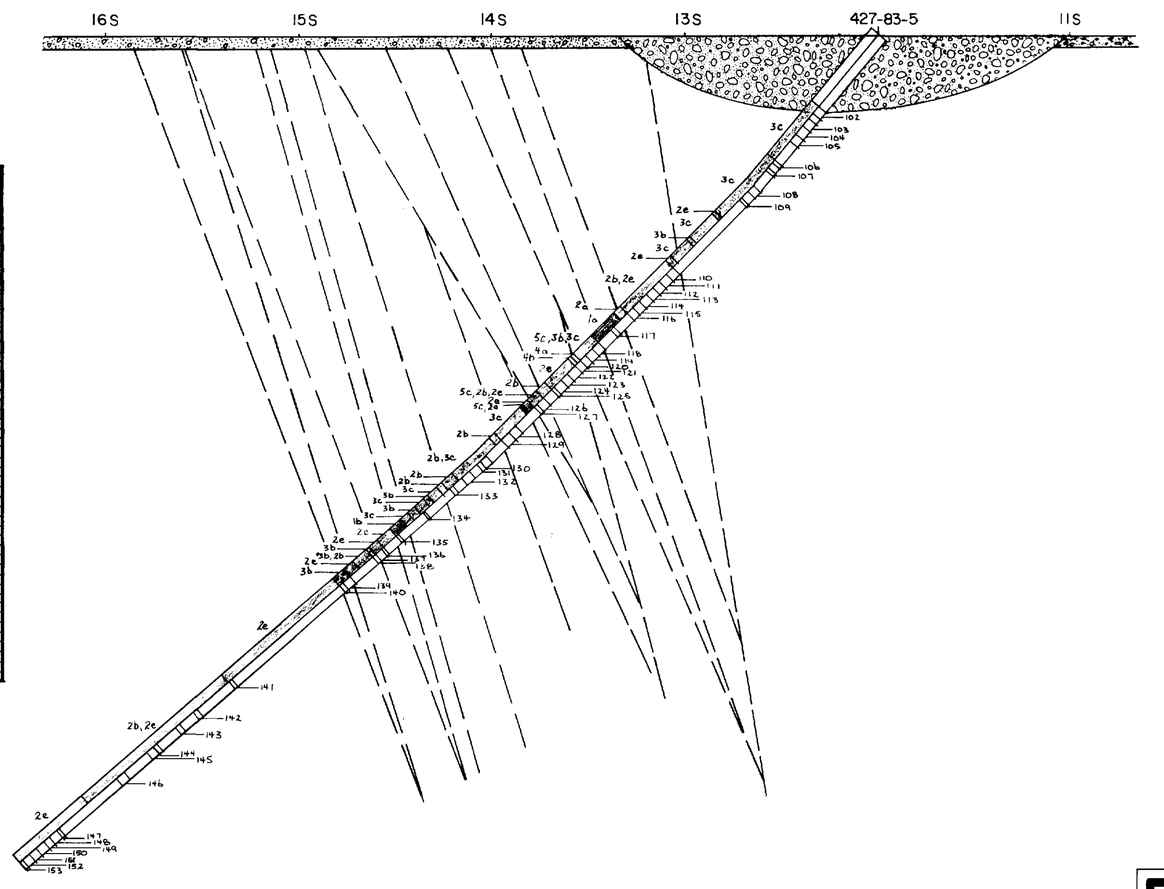
DRILL SECTIONS

L4E LOOKING WEST

DDH: 427-83-4

SCALE: 1"=50'-0" | DATE: OCT. 5/83 | SHEET NO. 3

SAMPLE #	Au (ppb)	Ni (ppm)	Cu (ppm)
-102	7		
-103	5		
-104	124		
-105	3		
-106	10		
-107	10		
-108	3		
-109	6		
-110	5		
-111	4		
-112	4		
-113	3		
-114	2		
-115	2		
-116	7		
-117	4		
-118	14		
-119	7		
-120	3		
-121	5		
-122	5		
-123	2		
-124	8		
-125	3		
-126	3		
-127	2		
-128	3		
-129	2		
-130	3		40
-131	4		40
-132	3		
-133	4		
-134	5		
-135	4	125	
-136	8	68	
-137	4	73	
-138	4	58	
-139	7	56	
-140	3	44	
-141	2	86	
-142	3	78	
-143	7	78	
-144	12	82	
-145	5	36	
-146	5	58	
-147	4	74	
-148	11	80	
-149	14	78	
-150	8	36	
-151	5	34	
-152	7	27	
-153	2	42	



ALL SAMPLE #'S SHOULD BE PRECEEDED BY 427-000-

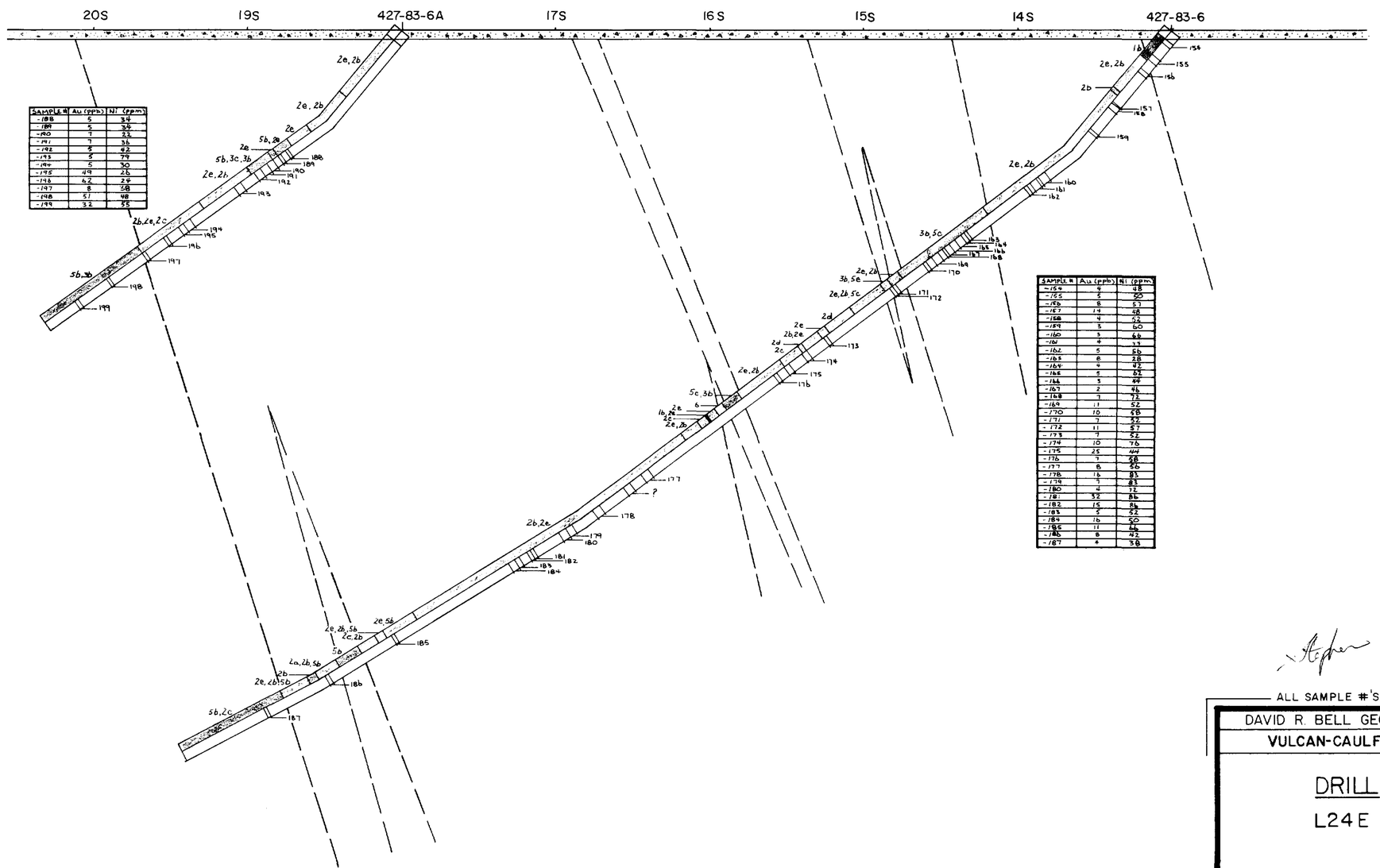
DAVID R BELL GEOLOGICAL SERVICES INC.
VULCAN-CAULFIELD JOINT VENTURE

DRILL SECTIONS

L16E LOOKING WEST

DDH: 427-83-5

SCALE 1=50'-0"	DATE OCT. 5/83	SHEET NO. 4



SAMPLE #	Au (ppb)	Ni (ppm)
-188	5	34
-189	5	34
-190	7	22
-191	7	36
-192	5	42
-193	5	79
-194	5	30
-195	49	26
-196	62	24
-197	8	58
-198	51	48
-199	32	55

SAMPLE #	Au (ppb)	Ni (ppm)
-154	4	48
-155	5	50
-156	8	53
-157	14	68
-158	4	52
-159	3	60
-160	3	66
-161	4	13
-162	5	56
-163	8	28
-164	4	92
-165	5	62
-166	3	64
-167	2	46
-168	7	72
-169	11	52
-170	10	68
-171	7	52
-172	11	57
-173	7	52
-174	10	76
-175	25	44
-176	7	58
-177	8	56
-178	16	85
-179	7	83
-180	4	72
-181	32	86
-182	15	84
-183	5	52
-184	16	50
-185	11	46
-186	8	42
-187	4	38

ALL SAMPLE #'S SHOULD BE PRECEEDED BY: 427-000

DAVID R. BELL GEOLOGICAL SERVICES INC.

VULCAN-CAULFIELD JOINT VENTURE

DRILL SECTIONS

L24E LOOKING WEST

D.D.H 427-83-6,6A

SCALE 1" =50'-0" | DATE: OCT 5/83 | SHEET NO. 5