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THIS SUBMITTAL CONSISTED OF VARIOUS REPORTS, SOME OF WHICH HAVE BEEN CULLED FROM THIS FILE. THE CULLED MATERIAL HAD BEEN PREVIOUSLY SUBMITTED UNDER THE FOLLOWING RECORD SERIES (THE DOCUMENTS CAN BE VIEWED IN THESE SERIES):

THE FOLLOWING WERE PREVIOUSLY SUBMITTED:

1. OUTCROP MAP (1:2400), PARKHILL PROPERTY → SEE: MCMURRAY 0049, #2

2. OUTCROP MAP (1:2400), DARWIN PROPERTY → SEE: MCMURRAY 0049, #1

Dunraine Property, Dunraine Mines Ltd., Wawa, Ontario

Progress Report: May 1983

Wawa, Ontario
June 1, 1983

Paul A. Studemeister

INTRODUCTION

This report summarizes the progress to June 1, 1983 regarding the exploration activity on the Dunraine property south of Wawa, Ontario. Geologic mapping of the area encompassing the Parkhill and Darwin mines has outlined a stratigraphic horizon and a shear zone favored to host deposits of gold. A detailed examination of the known occurences suggests that gold was concentrated by fumarolic and sedimentary processes at the time that the host rocks were deposited. A VLF survey of the property has outlined lineaments that may prove useful in locating gold-bearing rocks with disseminated sulphide minerals. An estimate of the dump piles at the Parkhill mine is 49,700 tons averaging 0.056 oz/ton Au and at the Darwin mine is 32,600 tons averaging 0.049 oz/ton Au. The underground workings of both past producers hold a substantial tonnage of muck that is ore grade and is recoverable once the tunnels are de-watered. Outstanding targets to explore for new ore are the Darwin mine, the Parkhill mine, and the Darwin Shear. The results of surveys completed to date encourage continuation of our exploration efforts on the property. The history of property development is detailed in previous reports to the company and will not be repeated in the ensuing discussion.

GEOLOGICAL SURVEY

The Dunraine property is underlain by an Archean assemblage that is part of the uppermost volcanic cycle of the Wawa greenstone belt. The Wawa greenstone belt has a lowermost cycle of mafic to felsic metavolcanic rocks that is capped by cherty iron-formation. The middle cycle has a base of mainly metavolcanic rocks that is overlain by clastic metasedimentary rocks. The uppermost cycle is centered south of Wawa lake and has pyroclastic metavolcanic plus metasedimentary rocks distributed around the Jubilee stock, a synvolcanic granodiorite. Gold and base metal prospects are found in the lowermost cycle and gold prospects also occur in the uppermost cycle; the middle cycle has few metal occurences.

Structure

The Archean sequence at the Dunraine property generally strikes north and dips gently to the east. Metamorphic grade is the lower amphibolite facies, most likely the result of intrusion of the Jubilee stock. The knonw gold occurences, including the Parkhill and Darwin mines, are within the contact aureole of the stock. Metamorphic grade passes into the lower greenschist facies away from the stock south of the Darwin mine, east of the Parkhill mine, and to the west near the Darwin Shear. The Darwin Shear is a prominent fracture that strikes northward

dips gently to the east, and can be traced along strike for over 4000 feet. The structure is parallel or nearly parallel to bedding in the Archean sequence it traverses. Foliated rocks with quartz, carbonate, muscovite, plus chlorite and systems of quartz-carbonate veins line the Darwin Shear. It is thought to be the faulted extension of the Jubilee Shear, a similar structure to the north of the property that hosts the Jubilee, and Surluga mines, former gold producers. There are no producers along the Darwin Shear, but diamond drill cores into the structure have intersected quartz veins anomalous in gold. The sub-parallel attitude to bedding and the conspicuous quartz-carbonate veining suggest that the Darwin Shear may host gold deposits not unlike the mines along the Jubilee Shear.

The known gold occurences in the Dunraine property are distributed in an assemblage of graywacke, tuff, and chert at the interface between polymictic breccia and crystal-lapilli tuff (Figure 1). This stratigraphic horizon marks a salient transition from an environment dominated by felsic volcanism to one dominated by debris-flow accumulation. The interface assemblage outlines the margin of a bowl-shaped trough that is now filled with a chaotic, polymictic breccia. The Darwin and Parkhill mines mined ore along this interface assemblage which continues at depth.

Rock Units

Gabbro is a medium grained, mafic rock with plagioclase, amphibole, epidote, biotite, and accessory quartz plus epidote. It is commonly mottled with clots of fine grained biotite-amphibole. The Jubilee stock consists of granodiorite; a medium grained, leucocratic rock with plagioclase, quartz, and minor biotite, amphibole, and epidote. It is locally xenolithic where a granitic matrix supports angular clasts of volcanic rocks. The felsic metavolcanic rocks are fine to medium grained quartz, plagioclase, biotite, muscovite, epidote, and chlorite. Crude banding is sometimes seen and lapilli sized clasts of felsite are common. The crystal-lapilli tuffs have feldspar chips mixed with felsite lapilli that are set in a fine grained matrix darker than the clastic component. These rocks are waterlain products of pyroclastic eruptions of felsic magma, locally reworked and mixed with detrital material.

The metasedimentary rocks are mainly clastic rocks derived from the weathering of coeval volcanic rocks. The graywacke is a lithic, granular textured rock that has the appearance of a sandstone. These rocks have variable amounts of quartz, plagioclase, amphibole, biotite, chlorite, muscovite, epidote, and Al-silicate. The rock is generally layered and has sub-rounded

clasts of felsic material. Graywacke, cherty, and granitic clasts also occur scattered in the matrix. The tuffaceous mudstone is a fine grained, micaceous rock with quartz, biotite, muscovite, plagioclase, amphibole, and Al-silicate. This rock is generally schistose, may be laminated, and has scatterd clasts also. Discontinuous bands of sugary-textured quartz occur in the graywacke and mudstone series. These cherty bands may be concordant or discordant to the bedding in the graywacke, and generally are breccia textured. Quartz clasts are suspended in a siliceous and micaceous matrix.

Lobes of fragmental rock are chaotic melanges of sub-rounded to sub-angular clasts that include felsite, mafic, graywacke, chert, and even granitic rocks. The most distinct unit is a polymictic breccia with granitic clasts that crops-out southeast of the Parkhill mine. Also recognized in the Archean sequence is a volcanic breccia with subangular clasts of volcanic and sedimentary rocks in an argillaceous matrix. Clasts may constitute up to 80% of the rock and include blocks up to three feet in diameter.

GOLD OCCURENCES

Native gold is concentrated in sugary-textured quartz and tuffaceous schists within the metasedimentary assemblage at the interface between polymictic breccia and crystal-lapilli tuffs. Sulphide minerals are accessory and include

arsenopyrite, pyrite, pyrrhotite, and chalcopyrite. The wallrocks to the gold-bearing rocks do not bear the imprints of hydrothermal alteration that is typical of epigenetic vein deposits.

Morphology

There are three general forms to the gold-bearing rocks. Native gold is disseminated in massive quartz veins that strike northward, are conformable to bedding in the graywacke, and tend to be uniform in attitude. The north-south veins mined at the Parkhill and Darwin mines are examples; these veins provided some of the richest ore. Native gold is also disseminated in blocks or lenses of quartz within bands of micaceous rock with Al-silicate. These narrow bands also have clasts of volcanic rocks, tend to terminate or change orientation abruptly, and have a non-uniform gold distribution. Examples are the east-west structures at the Parkhill mine, Moody Pit, and Nyman occurence. A third type of gold-bearing rock is an arsenopyrite-bearing schist with quartz, biotite, and Al-silicate that flanks the massive quartz veins. These tuffaceous rocks have scattered clasts of volcanic rock as well as sugary-textured quartz. The arsenopyrite-bearing schist and the east-west bands with quartz blocks merge into the massive quartz veins.

Interpretation

The field relations clarify several aspects about the nature of gold concentration:

1) Exhalative activity syngenetic with sedimentation deposited gold-bearing quartz and mud horizons in a seafloor trough during a quiescence in volcanism.

2) Weathering accompanied fumarolic deposition of gold-bearing silica and yielded pelitic muds with disseminated gold at the flanks of the massive quartz horizons. Mechanical erosion of the gold-bearing quartz horizons resulted in the down-slope slumping and mixing with pelitic muds giving rise to channels filled with agglomerates including blocks of gold-bearing quartz. These slump bands radiate outward from the fumarolic centers where they merge into massive quartz bearing gold.

3) The emplacement of the Jubilee stock was responsible for introduction of gold into the sedimentary system by providing the heat to generate a hydrothermal system and the fractures to focus the ascending gold-bearing fluids.

4) Metamorphism has subsequently modified and perhaps enriched the auriferous horizons and bands.

GEOPHYSICAL SURVEY

A VLF survey was conducted around the Darwin mine with a Geonics EM-16 instrument. The first phase covered the Darwin EW grid extending from the Moody Pit to the Darwin Shear using station NAA Cutler Maine. The second phase concentrated on the southern half of the Darwin Shear and used station NSS Annapolis Maryland. It was impossible to accurately conduct a survey over the northern half of the Darwin Shear because of the strong remnance by the power and telephone lines that cross the area.

Darwin Mine

Several small conductors are outlined in this area around the Darwin mine (Figure 2). Three of these are situated near and below Trout creek west of Moody Pit and east of the Darwin mine. These strike due west and are covered by swamp. Conductor A could represent fracturing at or near the contact between the Jubilee stock and the metavolcanic rocks to the south. Conductor B is of unknown origin and warrant geochemical sampling for a proper evaluation. Conductor C may also be a geological contact for it conforms to the margin of the gabbro body.

Two more conductors are outlined in a swampy area northwest of the Darwin mine (Figure 2). Conductor D strikes southwest and is within 1000 feet of the Darwin mine. It is 800 feet in

lenght and occurs in the swampy draw immediately north of the recently discovered Skunky Dog Showing. As there is known gold concentration in the vicinity of this structure, geochemical sampling and possible drill testing is warranted. Conductor E is weak and may be due to the proximity of old telephone and power cables.

Darwin Shear

The Darwin Shear is a conductive structure (Figure 2). The area where an east-west striking conductor comes into the structure may indicate a favorable prospecting area in analogy with the reports from the Jubilee mine. These results suggest that a geochemical survey be carried out over the Darwin Shear.

DUMP TONNAGE ESTIMATES

Estimates of volume and tonnage in the waste dumps at the Parkhill and Darwin mines are presented. Bulk samples of dump material were dispatched to Temiskaming Testing Laboratories in Cobalt, Ontario. Several shovel-full and grab samples were also taken and shipped to Swastika Laboratories for analysis.

The volume and tonnage estimates required accurate measurements. The instruments included a 6 foot engineers ruler, 100 foot metal chain, hand held level, and Brunton compass. A grid was set-up over the rock piles to calculate surface area. Using the prismoidal formula for volume determination:

$$V = h/6\ (A + 4m + B)$$

where h = height average of dump

A = area at top

m = area at middle

B = bottom area

a reasonable estimate was arrived at. The tonnage factor used was 20 cubic feet per ton.

Parkhill Mine

The waste material at this mine is divided into two piles: the north dump and the mill dump. The north dump has an average height of 30 feet and a calculated volume of 765750 cubic feet. This gives a total of 38287 tons. Two smaller islands of waste piles total 744 tons. Total of north dump material is 39000 tons. The mill dump with an average height of 20 feet has a volume of 201833 cubic feet which translates into about 10000 tons. This excludes a 600 ton "near ore" pile mentioned by R. E. Barrett, the former mine manager.

The total dump tonnage at the Parkhill mine is:

38287	North dump
744	Island dumps
10091	Mill dump
600	Barrett dump
49722 tons	(total)

Darwin Mine

This mine has essentially three sections of dump material. One is the dump over and behind the Grace vein which totals 11000 tons. The second area is that which has been used as fill to level the mine area. This is calculated to have 17500 tons of waste. Thirdly, the dump east of the vertical shaft has about 4000 tons of waste in it. In summary, the tonnage at the Darwin mine dumps is:

11008 tons	Grace dump
17564 tons	Main Flats
4000 tons	Vertical Shaft Dump
32572 tons	(total)

Therefore, the combined total of the Parkhill and Darwin waste dumps is in the order of 80,000 tons.

Grade

In 1981 a bulk sample of 3039 lbs was takes from the north dump at the Parkhill mine and shipped off to Temiskaming Testing Laboratories. This sample returned an average gold assay of 0.056 oz/ton. In 1983 a bulk sample of 5271 lbs was taken from the Darwin Dump and shipped off to the same laboratory. This material assayed 0.049 oz/ton Au.

The dump tonnage estimates are reasonably accurate. More bulk sampling may be required in the future to give a more accurate figure but the values will be similar to

those presented here.

RECOMMENDATIONS

The results of geological and geophysical surveys summarized in the preceeding sections warrant the following recommendations:

1) Geochemical Survey

A geochemical survey should be conducted to delineate primary and secondary anomalies, surface expressions of gold deposits at depth. This survey would involve sampling soil material and rock chips over areas of interest, and dispatching these to analytical laboratories for analysis. The elements to analyze for are Au, As, S, and Hg - these are the pathfinding elements for gold. The survey would be carried out on a reconnaisance scale to outline the anomalies, followed by a detail survey around the anomalies to pinpoint the target zone. The structures to evaluate with this survey are:

1) the Darwin Shear
2) the Darwin mine and the extension along strike
3) geophysical conductors disoussed previously.

The cost of analysis for 200 samples at $15 per sample is $3000. The laboratory that could handle the analysis is X-Ray Labs. or Barringer Labs. in Toronto.

2) Geochemical traits

It is recommended that a suite of gold-bearing rocks from the main occurences be sent for analysis to quantify the metal assemblage. Grab samples of gold-bearing quartz and schist should be analyzed for Au, Ag, As, Hg, Sb, Co, Ni, Cu, Zn, Pb, Pd, and Cl. The cost for 20 samples at $30 per sample is $600.

A suite of samples taken perpendicular to the Darwin Shear should be collected to evaluate the chemical changes in the wallrocks to the fracture. Mass balance calculations carried out on these rocks can be compared with the results from other gold camps and assist in the evaluation of the Darwin Shear. Samples collected at the surface or from drill core intersections should be analyzed for SiO_2, TiO_2, Al_2O_3, MnO, FeO_t, MgO, CaO, Na_2O, K_2O, P_2O_5, CO_2, S, and H_2O. The cost for 40 samples at $20 per sample is $800. X-Ray Assay Laboratories are best suited for this task.

3) Geological Survey

The southern part of the Dunraine property should be mapped down to the Mountain Lake showing at a scale of 1" to 200'.

4) Drilling targets

The Darwin mine and immediate vicinity offers good prospects of finding new orebodies, particularly extensions of the rich north-south vein and cluster of east-west zones within the sedimentary horizon. The Parkhill mine should be de-watered and mapped in detail underground to locate extensions of the gold-bearing veins. The Darwin Shear offers promise in the future once all geological and geochemical data relevant to the structure in completed. At the present time, the areas of interest are the Darwin mine, the Parkhill mine, and the Darwin Shear. However, most specific targets within this areas awaits completion of the geological and geochemical programs now in progress.

The aim of any underground exploration should be to locate north-south quartz veins which have proved to be the richest and more persistent zones. Furthermore, clusters of east-west zones are more likely to be found at the flanks of these massive veins since our exploration model predicts that the former zones are slumped and reworked equivalents of the conformable, north-south structures. Both the Darwin and Parkhill mines are known to have north-south veins whose extensión at depth is suspected. Isolated east-west zones, such as the Mariposa Pit, are poor exploration targets because these zones tend to terminate abruptly and have erratic gold content.

LATE PRECAMBRIAN

d Diabase

EARLY PRECAMBRIAN (ARCHEAN)

Gabbro

Granodiorite

Xl - Lapilli Tuff

Polymictic Breccia

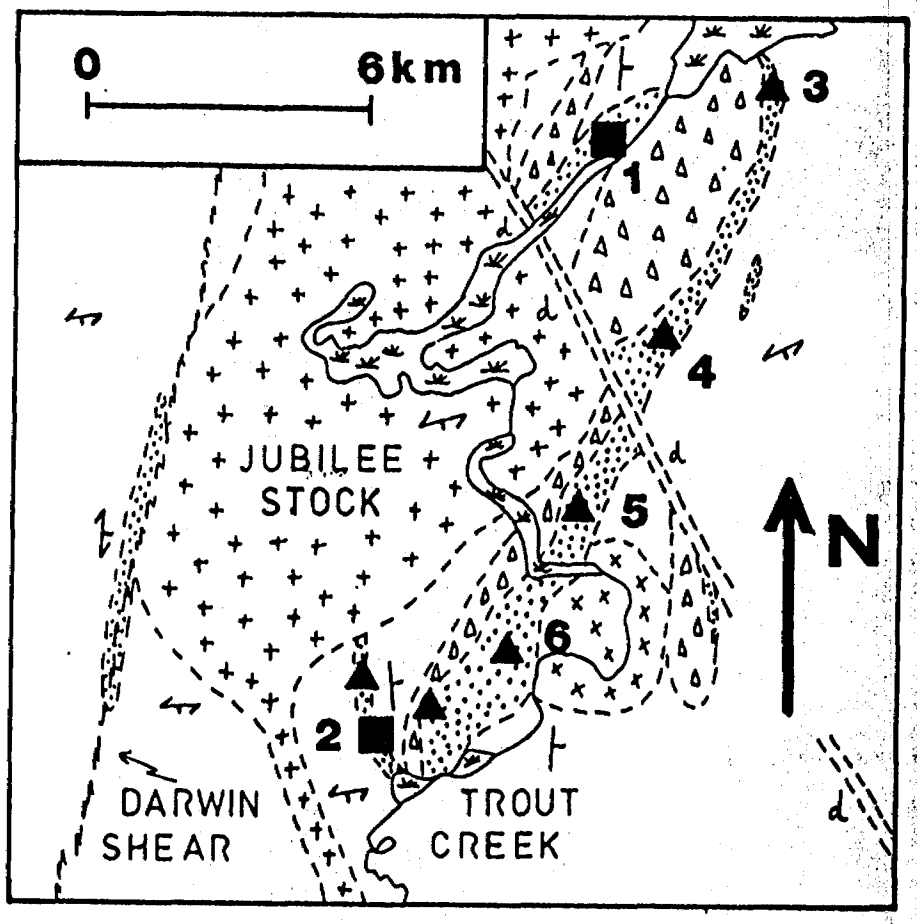
Graywacke - Tuff - Chert

Bedding Schistosity

GOLD OCCURENCE

1 Parkhill Mine
2 Darwin Mine
3 Van Sickle Mine
4 Mariposa Shaft
5 Moody Pit
6 Nyman Zone

■ Major ▲ Minor



Geology Around The Parkhill And Darwin Mines

Fig 1

Sketch of Location of VLF Conductors.

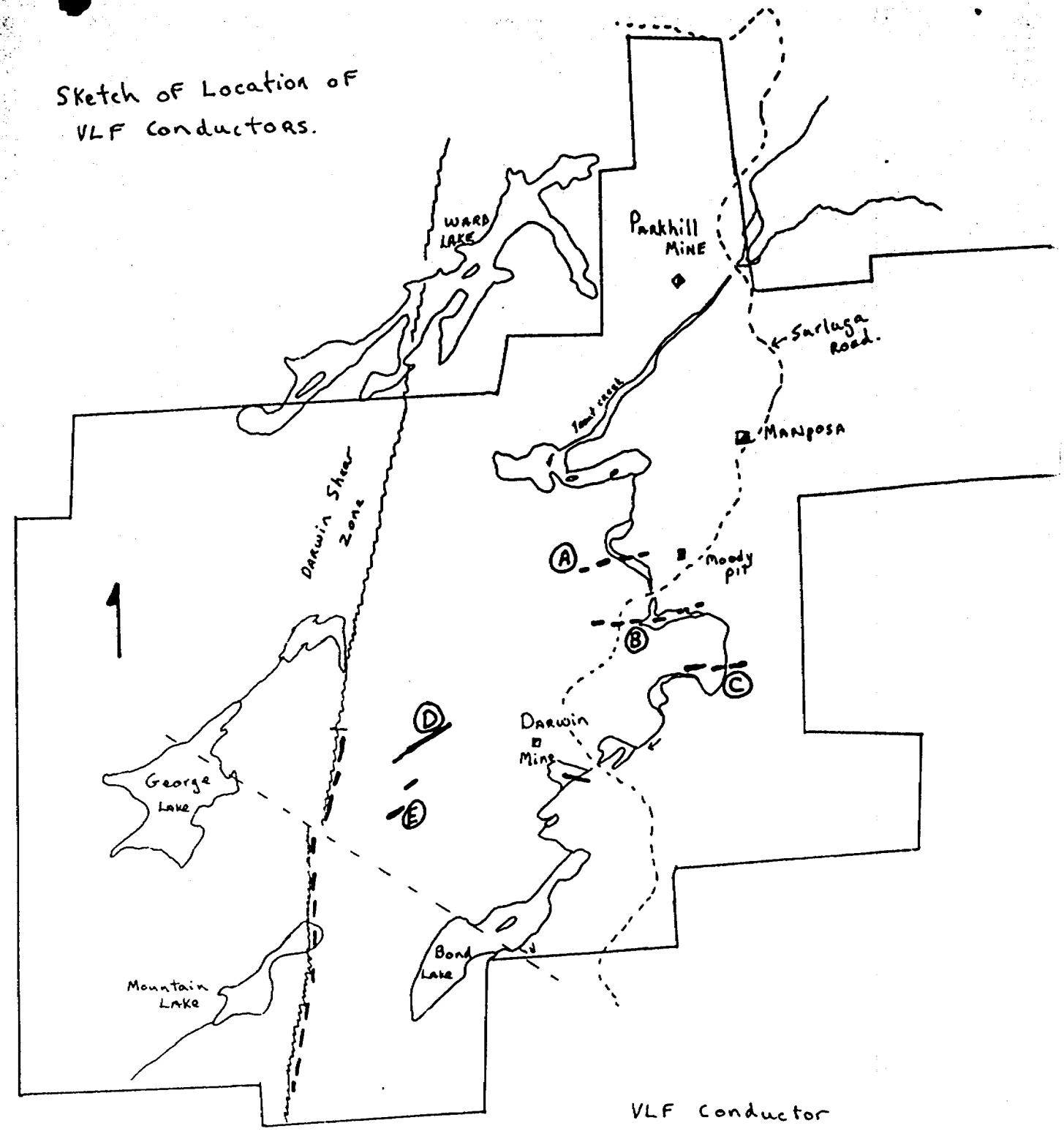


Fig 2

This report is respectfully submitted.

Paul Studemeister

Paul A. Studemeister
Geologist, Dunraine Mines Ltd.

Wawa, Ontario
June 1, 1983

DUNRAINE PROPERTY, DUNRAINE MINES LTD., WAWA, ONTARIO

Progress Report: June 1983

Wawa, Ontario

July 12, 1983

Paul A. Studemeister

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INTRODUCTION

This report summarizes the progress in the exploration of the Dunraine property. The geology of the property has been mapped at a scale of 1" to 200'. There are two rock transitions in the Archean sequence that warrant examination for new gold deposits. A banded pelitic rock with quartz lenses is host to two former producers and to several prospects. This stratigraphic horizon of reworked tuff and slumped chert marks a transition from crystal-lapilli tuff into polymictic breccia. A 300 ft extension of the Grace horizon was uncovered south of the Darwin mine. Chip samples across 6 ft widths average 0.10 oz/ton Au.

The Darwin Shear is a fracture over 4000 ft. long that is occupied by a schistose chlorite-sericite-carbonate-quartz rock 20 to 100 ft. wide. Metamorphic grade changes abruptly from the upper to the lower greenschist facies across this lineament. A geochemical survey outlines zones along the Darwin Shear that are anomalous in gold with up to 0.14 oz/ton Au.

Exploration should continue on three fronts. The gold potential of the Darwin Shear can best be evaluated

with a detailed geochemical survey. A thin section study of the Archean sequence would improve our understanding of the timing of gold concentration. A diamond drill program of 2000 to 3000 ft. is proposed to test the gold tenor in the Darwin mine workings.

The Dunraine property consists of 56 claims that cover an area of 1740 acres in the southwest corner of McMurray Township, Sault Saint Marie Mining Division, Ontario. The property is accessible via the Surluga road from the town of Wawa located 5 miles away. The main group of 48 claims includes the Parkhill and Darwin mines, two former gold producers. The south group of 8 claims is separated from the main group and includes several pyrrhotite prospects.

GEOLOGY

The Dunraine property is underlain by an Archean sequence that generally strikes north and dips west. The Jubilee stock of granodiorite is intrusive into this assemblage of pyroclastic and epiclastic rocks. A schistosity that generally strikes west and dips south traverses the stock and the intruded sequence. Near the Darwin Shear, the

attitude changes to a north strike with an east dip.

The Archean sequence is divided into two metamorphic zones. The biotite zone has hornfels, gneiss, and schist characterized by essential biotite, plagioclase, and dark amphibole. There is also quartz, epidote, andalusite (?), muscovite, arsenopyrite, carbonate, chlorite, pyrite, pyrrhotite, chalcopyrite, flourite, scheelite (?), and native gold. The mineral assemblage corresponds to the upper greenschist or lower amphibolite facies. The biotite zone adjoins the Jubilee stock and is a contact aureole, merging to the south into the regional aureole that flanks the Wawa greenstone belt. It is noteworthy that all gold occurences on the Dunraine property are near the Jubilee stock within the biotite zone.

The chlorite zone extends west of the Darwin Shear and is not obviously associated with intrusive rock. The schistose rocks that make up this zone are characterized by albite, sericite, calcite, and chlorite. There is also quartz, epidote, pale amphibole, biotite, pyrite, and pyrrhotite. The rocks of the chlorite zone are better foliated; have more sericite, chlorite, plus calcite; and have less

biotite and dark amphibole. The mineral assemblage corresponds to the lower greenschist facies. There are no known gold occurences on the property within the chlorite zone west of the Darwin Shear.

The minerals listed are based on observations made in the field using the hand lense. The mineral assemblage needs to be verified under the microscope.

DARWIN SHEAR

The Darwin Shear is a lineament that is 20 to 100 ft. wide and can be traced for over 4000 ft. It is a fracture that strikes north-northeast, dips 50° to 70° east, and is occupied by a schistose rock with chlorite, sericite, quartz, and carbonate. The carbonate minerals are calcite and ferroan dolomite or ankerite.

THE DARWIN SHEAR MARKS A TRANSITION IN METAMORPHIC GRADE OVER THE ARCHEAN SEQUENCE.

Rocks in the upper greenschist facies to the east pass into rocks to the west in the lower greenschist facies. Near Mountain lake, the isograd is not well delineated because the grade transition is over a wider area. Here the physical expression of the Darwin Shear on aerial

photos is poorly developed.

The Darwin Shear is truncated by the Parkhill fault north of Ward lake. The Jubilee Shear to the north is the faulted extension of the Darwin Shear and it contains two former gold producers. A diamond drill program by Dunraine Mines Ltd. in 1981 intersected narrow lenses of gold-bearing quartz in the Darwin Shear at shallow depth. THERE IS REASON TO SUSPECT THE EXISTANCE OF GOLD OCCURANCES YET TO BE DISCOVERED IN THE HANGING WALL OF THE DARWIN SHEAR.

GEOCHEMICAL SURVEY

A geochemical survey was carried out along the Darwin Shear to find the distribution of gold and to reduce the strike lenght over which to concentrate exploration. Chip samples of outcrops were collected at around 100 ft. intervals and analyzed for Au, Hg, S, plus As. The results of the survey are presented graphically on four diagrams, one for each element.

THE GOLD DISTRIBUTION REVEALS 5 ANOMALOUS ZONES ALONG THE DARWIN SHEAR. THE MOST INTERESTING ANOMALY WITH 4.7 PPM. Au (0.14 oz/ton Au) OCCURS NEAR DRILL SITE 81.6. The rock is a sericite-carbonate-quartz schist that resembles the

material found on the dumps of the old Surluga mine. IT IS ALSO INTERESTING THAT THIS ANOMALY LIES NEARLY ON STRIKE OF THE GRAPE HORIZON, HOST TO THE DARWIN MINE.

A wide anomaly of around 100 ppb Au occurs south of drill site 81.2. Smaller zones with 100 to 200 ppb Au occur near drill sites 82.1, 82.2, and 81.13. The maximum anomalies for Hg, As, and S generally overlap some or all of the gold anomalies. Mercury and arsenic are often called path finding elements for gold.

GOLD WITHIN THE OUTLINED ANOMALIES IS CONCENTRATED 50 TO 200 TIMES BACKGROUND ABUNDANCE. These enrichments are significant and narrow the strike lenght for exploration from over 4000 ft. to around 1000 ft. Many gold deposits in Archean greenstone belts are spatially associated with halos anomalous in gold, arsenic, mercury, and sulphur. The primary halos along the Darwin Shear may indicate rocks altered by gold-bearing hydrothermal fluids that migrated up the structure. Conversely, the gold enrichment may be stratigraphically controled, revealing auriferous horisons that intersect the Darwin Shear. There are laminated schists scattered along the Darwin Shear.

but their precise distribution in relation to the gold anomalies is yet to be determined.

PARKHILL FAULT.

Parkhill Fault

A northwest striking and a subordinate northeast striking system of faults traverses the Archean assemblage. Many of these faults post-date gold concentration because they cross-cut the Darwin Shear and many gold-bearing lenses. The most prominent is the Parkhill fault, a northwest striking and steeply dipping fault that is occupied by fresh diabase. The horizontal displacement is west side south with respect to the east side. The west side also appears to have moved down relative to the east side. The Parkhill fault truncates the Darwin Shear and the east-west bands of gold-bearing quartz lenses at the Parkhill mine. The metasedimentary horizon that hosts the Parkhill mine is the offset extension of a similar horizon that joins the Darwin mine and Hyman prospect.

- INTRUSIVE ROCK

Meta-Intrusive Rocks

The Jubilee stock is an epizonal granodiorite with abundant xenoliths of supracrustal rocks. The granodiorite is a medium grained, rock with feldspar laths and blue quartz grains. A marginal phase of diorite is finer grained and has more mafic minerals. An intrusive breccia commonly occurs at the margin of the stock, and to a lesser extent in the interior. A mafic meta-intrusive rock east of the Darwin mine is a medium grained rock with plagioclase and amphibole. There is a finer grained phase of this gabbro that is referred to as diorite.

The gold occurences on the property are all in the Archean sequence near the stock. There are no major gold-bearing lenses hosted in the stock.

METAVOLCANIC ROCKS

Metavolcanic Rocks

Metavolcanic rocks of felsic to intermediate composition are the most common rock type on the property. The intermediate metavolcanic rocks are feldspar-laden. These rocks commonly have feldspar laths in a fine grained

matrix. For the most part, the intermediate rocks are derived from pyroclastic tuffs and flows of andesite. There are crystal tuffs with abundant feldspar chips; crystal lapilli tuffs with both feldspar chips and felsite lapilli; and tuff-breccia with abundant block-sized clasts. Massive tuffs are fine grained, locally laminated, rocks.

The felsic metavolcanic rocks are restricted to the block west of the Darwin Shear. These rocks are gray colored rocks derived mainly from pyroclastic material of rhyodacite composition. These rocks are characterized by abundant quarts; quartz commonly occurs as granules in the felsic rock. There are crystal tuffs with quartz grains; crystal lapilli tuffs with both quartz grains and felsic lapilli; and crystal tuff-breccia with block-sized clasts. The entire spectrum of metavolcanic rocks can be seen along the shores of George lake.

METASEDIMENTARY ROCKS

Metasedimentary Rocks

The metasedimentary rocks are dominated by detrital rocks derived from pyroclastic tuff and siliceous deposits.

The lithic graywacke is a felsic, granular rock that is banded and has clasts of felsic material together with mafic, granitic, and siliceous material. The detrital material is generally subrounded, but some is subangular. At the Parkhill mine, the lithic graywacke has size gradation of clasts, slump structures, cross-bedding, and intrastratal veinlets. The tuffaceous mudstone is common in the Grace horizon and it is a quartzo-feldspathic gneiss or schist. It is fine grained and micaceous; it may be laminated with stripes or bands of quartz, carbonate, and mica. This rock also has a clastic component, but clasts are less abundant than in the lithic graywacke.

~~The clastic metasedimentary rocks are host to the~~ THE CLASTIC METASEDIMENTARY ROCKS ARE HOST TO THE GOLD-BEARING QUARTZ LENSES AND SCHISTS AT THE PARKHILL ~~gold-bearing quartz lenses and schists at the Parkhill~~ AND DARWIN MINES. ~~and Darwin mines.~~ The gold prospects at the Hyman and Moody Pit are also within a metasedimentary assemblage that joins the clastic rocks at the Darwin mine.

TIME SEQUENCE

~~Time Sequence~~

Field criteria suggest that contact metamorphism near the Jubilee stock was followed by metamorphism to

a lower greenschist grade. The hornfelses and gneisses near the Jubilee stock are partly retrograded; there is mottling with chlorite, sericite, and calcite. The granodiorite of the stock is partly altered; the feldspar is variably clouded by sericite and the hornblende/biotite is replaced by chlorite. Shear zones traverse the stock and its aureole.

ECONOMIC GEOLOGY

~~ECONOMIC GEOLOGY~~

THE DARWIN MINE HAS PRODUCED 15,191 OZ OF GOLD FROM ~~The Darwin mine has produced 15,191 oz of gold from~~ 45,528 TONS MILLED FOR A RECOVERED GRADE OF 0.33 OZ/TON AU. ~~45,528 tons milled for a recovered grade of 0.33 oz/ton Au.~~

There are two shafts on the property. The original incline shaft sunk to 450 ft. and a three compartment shaft to the 830 ft. level with a winze to 900 ft. There is over 13,000 ft. of underground workings at the time, now inaccessible because of flooding. No underground exploration of the Darwin mine has been carried out by Dunraine Mines Ltd.

THE GRACE HORIZON STRIKES NORTH-NORTHWEST, DIPS NORTHEAST, AND CAN BE FOLLOWED FOR 2,500 FT NORTH AND SOUTH OF THE GRACE SHAFT. ~~The Grace horizon strikes north-northwest, dips northeast, and can be followed for 2500 ft. north and south of the Grace shaft.~~ Near the Grace shaft, the horizon is a succession

of lenticular quartz lenses that are gold-bearing and enveloped in a pelitic gneiss or schist. To the north, quartz lenses become smaller and the horizon passes into a tuffaceous gneiss or schist with local pockets of auriferous arsenopyrite disseminations. To the south of the Grace shaft, the horizon contains few quartz lenses. It is essentially a gneiss that is locally banded and has disseminated pyrrhotite. According to company reports from the 1930's, the south extension at depth is gold-bearing quartz lenses in succession.

The south extension of the Grace horizon extends on the south shore of Trout creek, possibly displaced by fault movement. This extension of about 300 ft. was recently uncovered and chip samples across 6ft widths average 0.10 oz/ton Au. At two localities there are arsenopyrite-bearing quartz lenses.

Underground operations in the 1930's at the Darwin mine followed the north striking Grace horizon and intersected east trending bands of gold-bearing quartz. This system of quartz bands are also eveloped by gneissose or schistose rocks. These are common at the Hyman and

Parkhill mine.

PARKHILL MINE

THE PARKHILL MINE PRODUCED 54,301 OZ OF GOLD FROM 125,192 TONS OF ORE. THE RECOVERED GRADE AVERAGED 0.43 OZ/TON AU AND DAILY PRODUCTION WAS ABOUT 80 TONS.

The Parkhill mine has an incline shaft to a depth of 1244 ft. The underground workings include 30,000 ft. of drifting, 4,000 ft. of cross-cutting, and 5,000 ft. of raises. Dunraine Mines Ltd. drilled 38 holes totalling 11,107 ft. in the property between 1979 and 1980. Drilling was concentrated in an area between the Parkhill and Van Sickle mines.

The gold at the Parkhill occurs in lenticular lenses of quartz that are en-echelon. Four of these quartz bands strike northeast and one strikes north-northwest. Only three of the veins were located at the surface, the other two discovered during underground operations. The east-trending veins converge to the west and downward. The host assemblage is a banded lithic graywacke with much clastic material including some siliceous clasts

anomalous in gold. These reworked tuffs grade into crystal-lapilli tuff and polymictic breccia that are not favorable hosts for gold.

SOUTH GROUP

South Group

There are several pyrrhotite prospects within the southern group of claims. The pyrrhotite occurs concentrated as disseminations and clots within a siliceous rock that is often fragmental textured. There are clasts of siliceous or cherty material within a tuffaceous matrix that is also siliceous. Locally the rock is crudely laminated and sections are micaceous. These rocks are conformable to bedding in the surrounding rocks. The siliceous rock generally has 1% to 5% pyrrhotite with accessory chalcopyrite and pyrite; sections have up to 20% pyrrhotite clots.

The gold content in these rocks is negligeable. Samples from the surface of the better mineralized rocks assay less than or equal to 0.002 oz/ton Au. Similar bands of siliceous rock with pyrrhotite outcrop amongst tuffs southeast of the Parkhill mine and east of the Darwin mine. The pyrrhotite horizons are up to 15 ft. wide and tend to be continuous along strike for tenths to a few hundred feet.

The gold tenor in selected mineralized samples from the main group also at or below 0.002 oz/ton Au. In light of the results of analysis and the geological survey, it is recommended that exploration of the south group for gold be discontinued. The geology and our assay results of the best mineralized material are not favourable.

RECOMMENDATIONS

The gold potential of the Darwin Shear can best be evaluated by a geochemical survey to detect primary anomalies in gold and to evaluate the nature of hydrothermal alteration. The following strategy is suggested:

1) evaluate the redox state of iron in the Darwin Shear. Hydrothermal alteration associated with Archean lode gold deposits involves a reducing fluid that will shift (Fe^{+2}/Fe_t) in rocks affected from 0.7 to 1.0.

2) Conduct a detailed survey of element abundances (Au, As, Hg, S) on a grid over the anomalies to outline the shape in two dimensions.

3) Sample the drill cores along the strike lenght of the Darwin Shear to find the vertical dimension of the anomalies in Au, As, Hg, and S.

4) Detailed mapping of the anomalous zones to evaluate the possibility of a stratigraphic control.

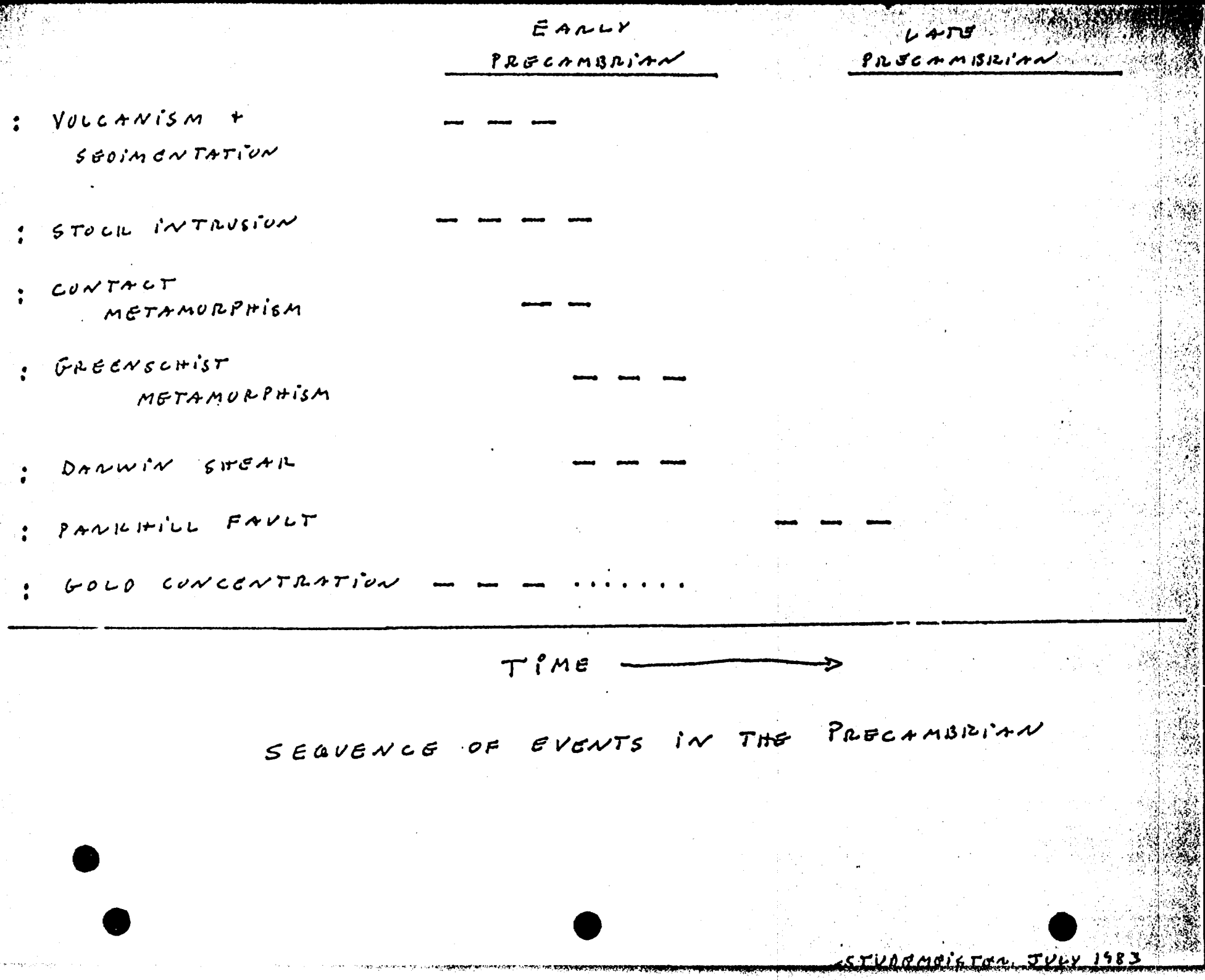
It is recommended that a DIAMOND DRILL PROGRAM OF ~~a diamond drill program of~~ THE DARWIN MINE ~~the Darwin mine~~ be carried out to test the gold tenor in the underground workings. This program would involve one deep hole of 600 ft. to test the down dip extension of the Grace horizon below the fifth level. Three holes are destined into the areas between the second and fifth level where reports from the 1930's report reserves. One hole into the newly uncovered south extension of the Grace horizon.

This report is respectfully submitted,

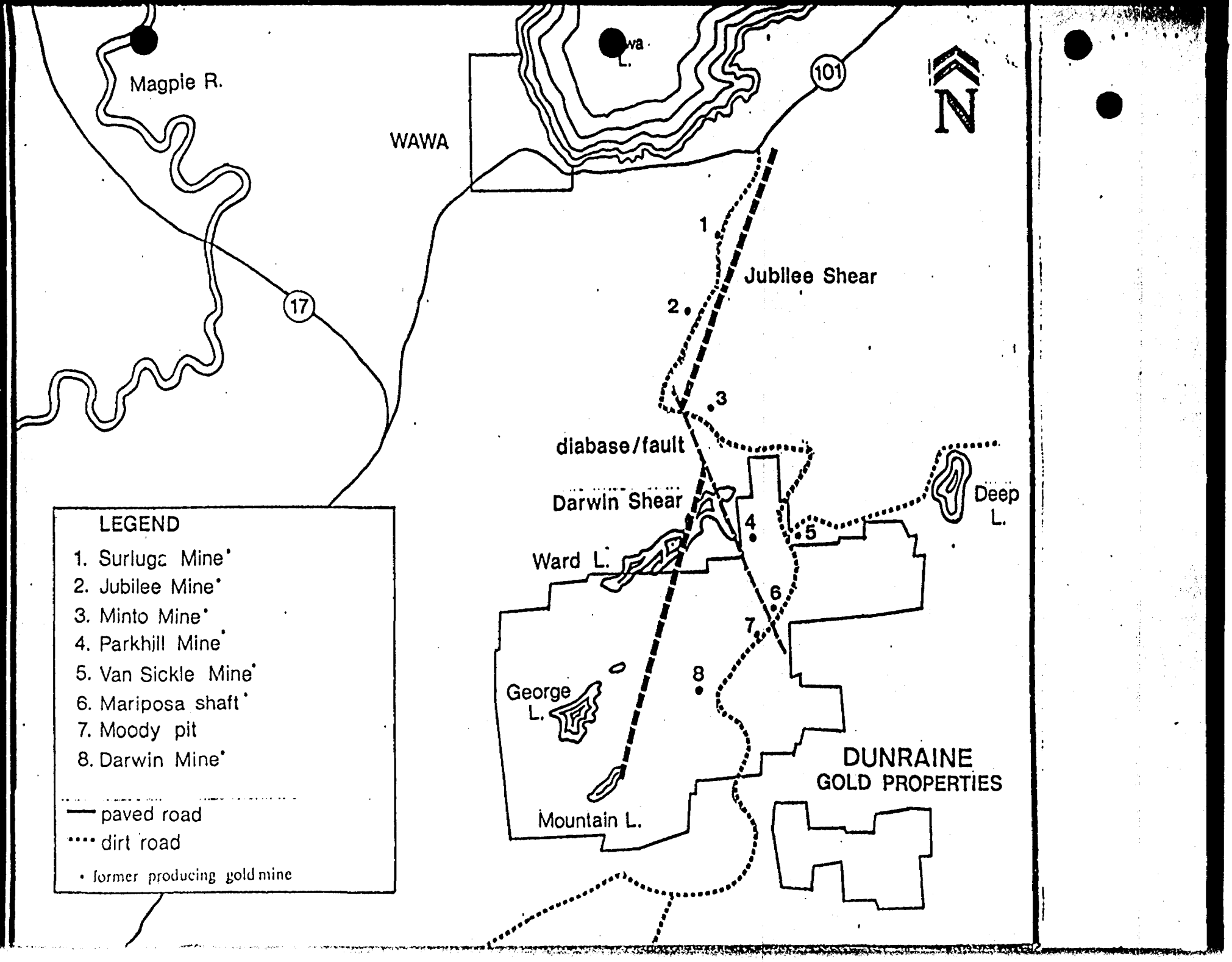
Paul Studeneister

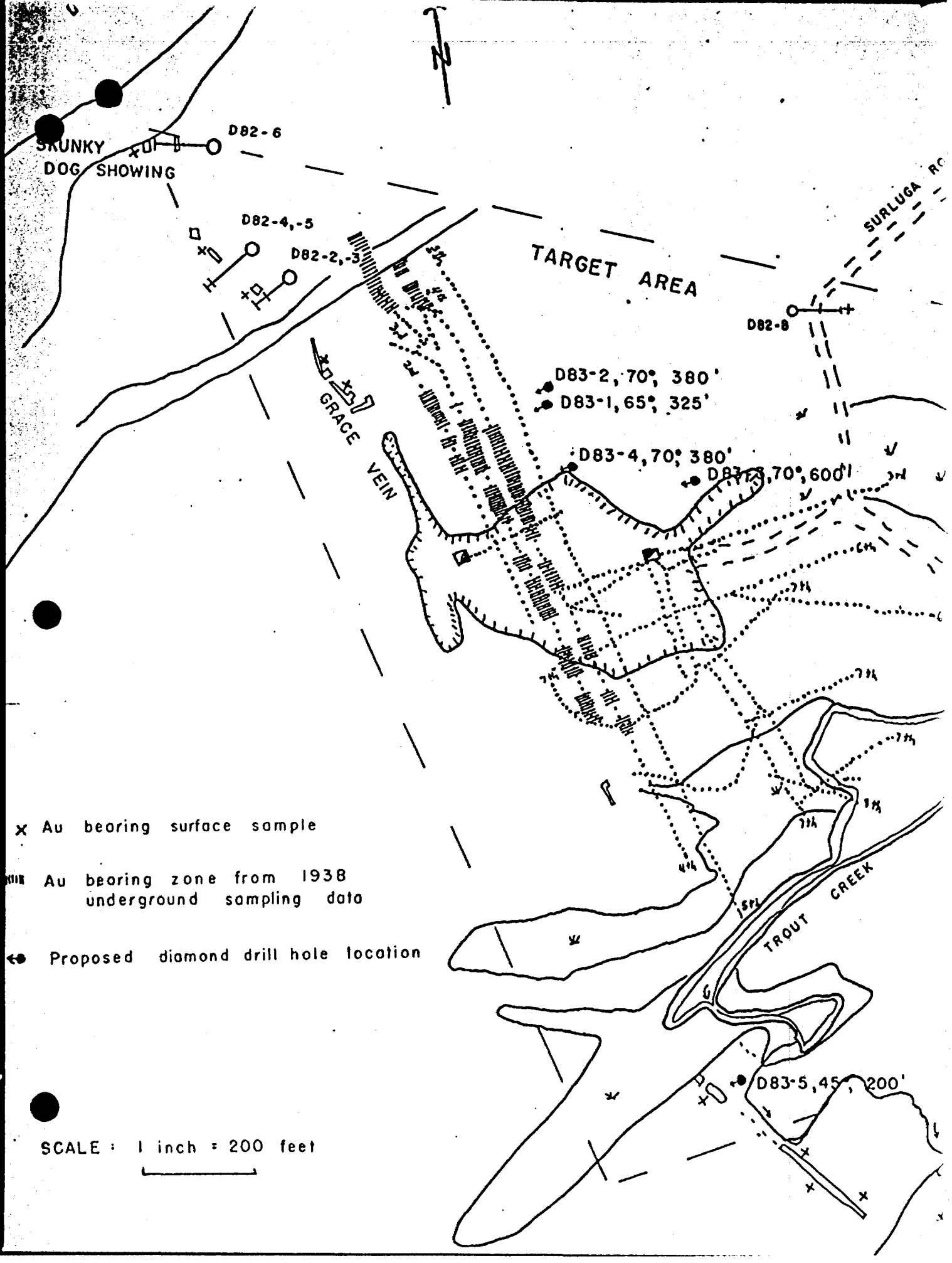
Paul A. Studeneister
Geologist
Dunraine Mines Ltd.

Wawa, Ontario
July 12, 1983



SEQUENCE OF EVENTS IN THE PRECAMBRIAN


Magpie R.
WAWA
101
17
N
1
Jubilee Shear
2
3
diabase/fault
Darwin Shear
4
5
Deep L.
Ward L.
6
7
8
George L.
DUNRAINE GOLD PROPERTIES
Mountain L.
LEGEND
1. Surluga Mine
2. Jubilee Mine
3. Minto Mine
4. Parkhill Mine
5. Van Sickle Mine
6. Mariposa shaft
7. Moody pit
8. Darwin Mine
paved road
dirt road
former producing gold mine


SKUNKY DOG SHOWING
D82-6
D82-4,-5
D82-2,-3
TARGET AREA
SURLUGA RO
D82-8
D83-2, 70°, 380'
D83-1, 65°, 325'
GRACE VEIN
D83-4, 70°, 380'
D83-3, 70°, 600'
TROUT CREEK
D83-5, 45°, 200'
X Au bearing surface sample
Au bearing zone from 1938 underground sampling data
Proposed diamond drill hole location
SCALE : 1 inch = 200 feet

DUNRAINE MINES LIMITED

WAWA AREA PROPERTY - PROPOSED EXPLORATION PROGRAM

The Company holds 72 patented claims with a total area of approximately 1740 acres in McMurray Township, Sault Ste. Marie Mining Division, about two miles south of the town of Wawa, Ontario. The property is the site of two former gold producing mines of the 1930's, the Parkhill, which milled 125,778 tons of ore with an average recovery of 0.43 ounce gold per ton, and the Grace or Darwin Mine, which milled 45,528 tons with an average recovery of 0.33 ounce per ton. Wawa is the centre of mining operations of the Algoma Steel Corporation so that the area is very favourably situated with respect to transportation, electric power, labour and mine and community services.

Geologically, the property is in the Wawa Greenstone Belt, which contains numerous gold showings and several former producing mines within an area about three miles long and less than a mile wide. The principal mineralized structure of the area is the Jubilee-Darwin Shear Zone, which is an overthrust fault cutting early pre-cambrian volcanic and intrusive rocks. It strikes northeasterly and dips to the east at angles ranging from 20 to 60 degrees..The rocks in the zone have been sheared over widths of 100 feet or more and have been subjected to intense hydrothermal alteration and quartz injection. The original discovery on this zone was the Jubilee Ore Shoot (now on the Surluga-Pango-Pursides property) which was over 600 feet long, ranging in width from 10 to 40 feet, and extended to a depth of 640 feet on an incline of 35 degrees. Later operations have discovered similar ore shoots further down dip.

At the Parkhill, the ore shoots were quartz bodies in a band of tuffaceous sediments within felsic volcanics. The zone containing the shoots strikes about N60 E and

dips 45 degrees south. Individual ore shoots were quartz lenses up to 125 feet long and about 2 feet wide, with pitch lengths up to five times the strike length. Recovered grade was 0.43 ounce per ton, so that mine grade including dilution must have been about 0.50 ounce per ton. The mine has 14 levels to a vertical depth of 1244 feet.

At the Grace or Darwin Mine the Grace Vein strikes N 30 W and dips 70° NE, and another vein which was mined strikes EW and dips 40° South. There is a vertical shaft to 830 feet with 8 levels. The Grace Vein was explored by drifts to a maximum length of 1200 feet down to the 500 level, but for only 400 feet below the 500, where the grade appeared to be uneconomic. The EW Vein appears to have been discovered on the sixth level and apexed shortly above it. The ore shoots in the Grace Vein raked to the south, which is the direction of dip of the EW Vein, and apparently the mineralised zone as a whole pitches to the southeast.

The Darwin Shear is about 2500 feet west of the Darwin mine. It greatly ressembles the Jubilee Shear and is believed to be its faulted extension. It is sheared, altered and mineralised with quartz over widths of 100 feet or more and has a probable length of 5000 feet within the property boundaries but could extend even further south through Mountain Lake, where it appears to split. A 3000 foot length of the Shear has been explored at 400 foot intervals by shallow drill holes (1981) attempting to locate the type of wide ore shoots which occur on the Surluga-Jubilee to the north. These holes did not disclose economic gold mineralisation, but the southern part of the zone has not been tested at all, and there are major possibilities at greater depths.

There is ample justification for continued exploration of this large well mineralised property and the following program is recommended:--

1. Exploration of the Grace Vein of the Darwin Mine beyond existing workings on strike and to greater depths.
   Minimum Program:-- 16 holes to intersect the Grace Vein at points shown on the vertical longitudinal section which accompanies this report, with total length about 14,000 feet. If substantial encouragement is obtained in the minimum program, at least 5,000 feet of additional drilling should be anticipated, for a total program of 19,000 feet.

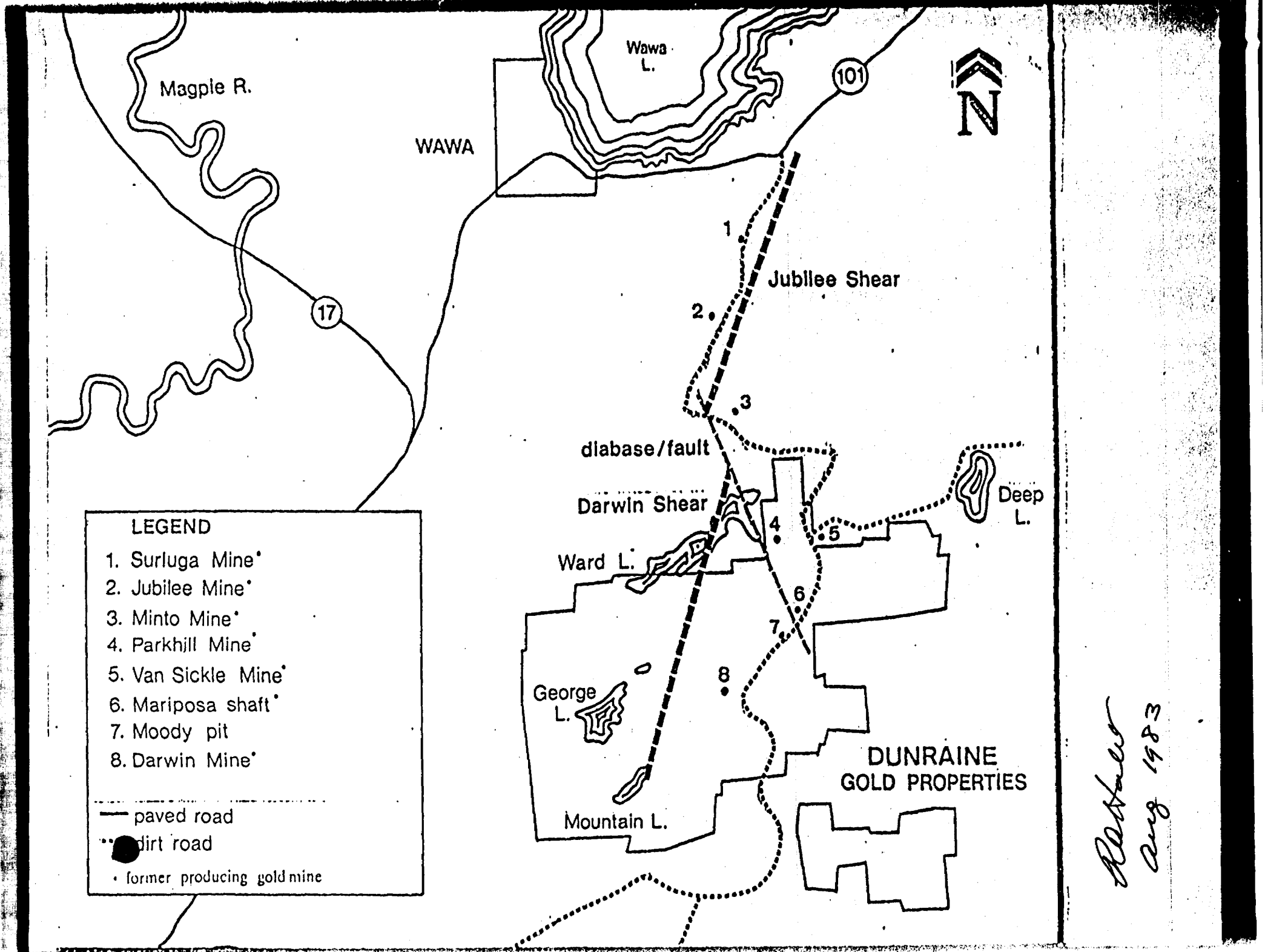
2. Exploration of the Darwin Shear.
   a) Complete the geological and geochemical study currently in progress..
   b) When the most favourable section of the structure has been selected, drill two cross sections of three holes each, to intersect the structure at depths of 500, 1,000 and 1,500 feet, as shown in the hypothetical cross section which accompanies this report.

   Minimum Program:-- 6 holes with a total length of 7,400 feet
   Probable additional drilling----------5,000 feet
   Total drilling anticipated---------- 12,400 feet

The overall cost of drilling to the contemplated depths is estimated at $ 25 per foot, including contractor's extras, assaying and supervision, and the estimated cost of the total program is therefore $600,000 for the Darwin Mine Area and $310,000 for the Darwin Shear, for a combined total of $ 910,000.

R.A. Halet, Ph.D., P.Eng.,
Consulting Geologist

August 1, 1983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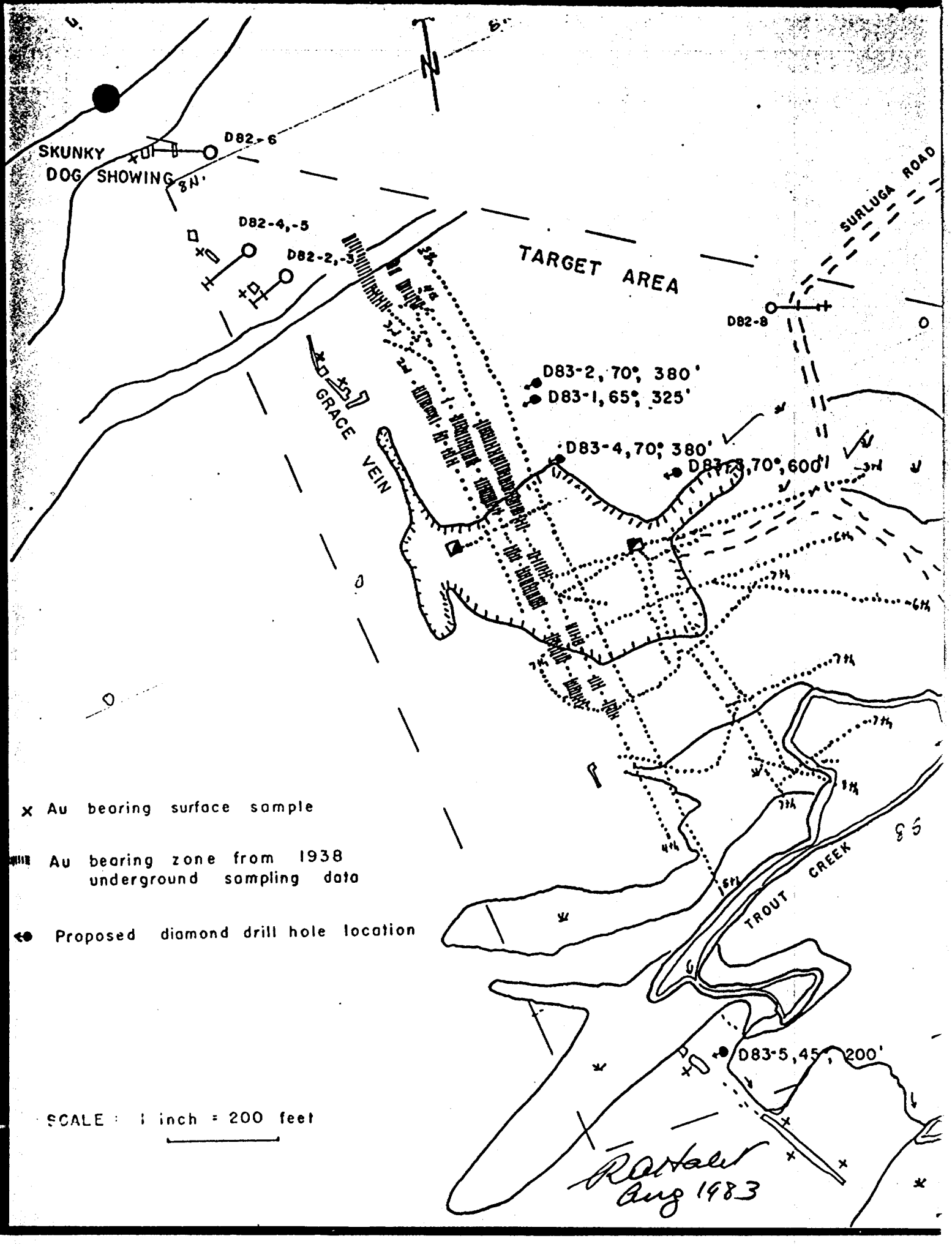
Aug 1983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Au bearing zone from 1938 underground sampling data
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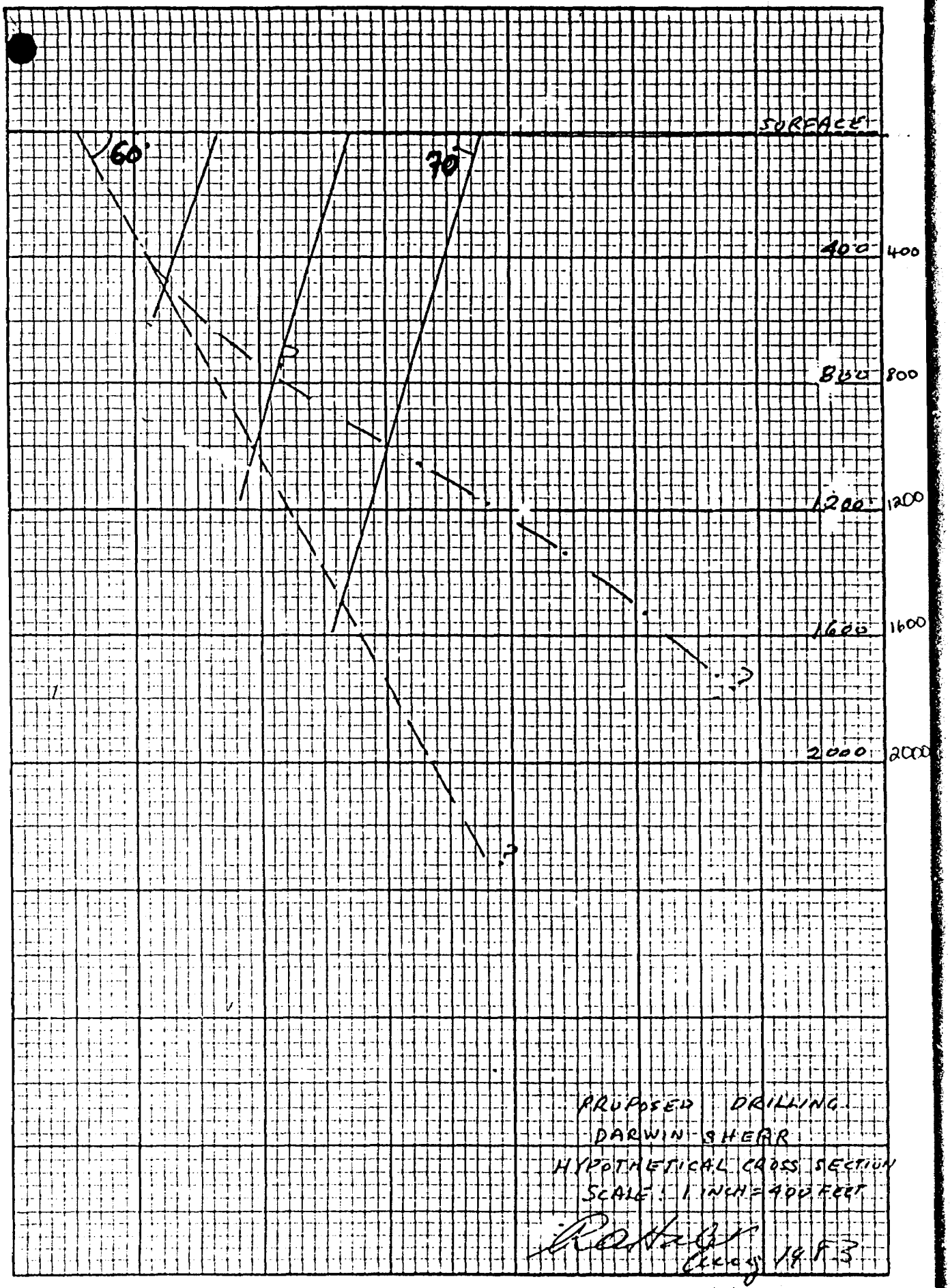
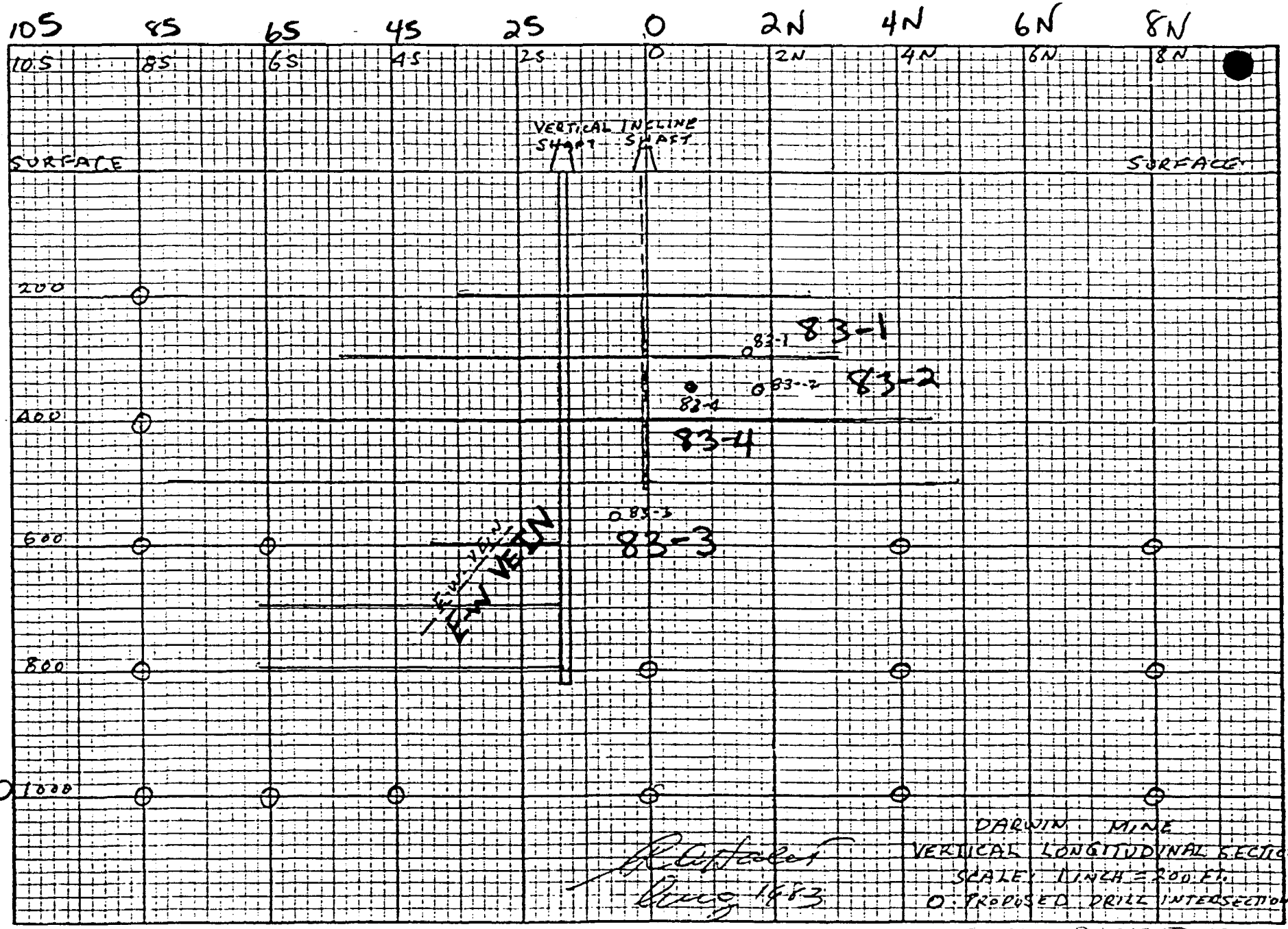


PROPOSED DRILLING
DARWIN SHEAR
HYPOTHETICAL CROSS SECTION
SCALE 1 INCH 400 FT



VERTICAL LONGITUDINAL SECTION
1" = 200 FT

CERTIFICATE OF QUALIFICATION

I, ROBERT ALFRED HALET, hereby certify as follows;

1. That I am a Consulting Geologist and Professional Engineer, residing at R.R.#1, Campbellville, in the Town of Milton, Ontario.

2. That I hold the degrees of B.A.Sc. (Geological Engineering) from the University of British Columbia(1931) and Ph.D. in Economic Geology from McGill University and that I have been practising my profession continuously for more than forty years.

3. That I have visited the property several times during the past year.

4. That I have no interest, and do not expect to receve any interest, in the properties covered by this report, or in the securities of Dunraine Mines Limited.

R.A. Halet

Dated at Toronto, Ontario, this secpnd day of August, 1983.

REPORT ON THE DUNRAINE MINES LTD. PROPERTY NEAR WAWA, ONTARIO

August 1983

Paul A. Studemeister, Ph.D.
Geologist
Dunraine Mines Ltd.
Suite 506
199 Bay Street
Toronto, Ontario

TABLE OF CONTENTS

REPORT ON THE DUNRAINE MINES LTD. PROPERTY NEAR WAWA, ONTARIO

INTRODUCTION

This report summarizes the results of a diamond drill program completed in August around the Darwin mine. Dunraine Mines Ltd. holds a block of 56 claims 5 miles south of Wawa, Algoma District, Ontario. There are two former gold producers on the property, the Darwin and Parkhill mines. Exploration at Dunraine is aimed at understanding the distribution of gold-bearing quartz lenses, settling the origin of the gold, and finding new orebodies.

The property is covered by Archean volcanic and sedimentary rocks at the margin of a granodiorite stock. The known gold occurences are in a graywacke-tuff-cherty breccia assemblage that occupies a paleo-basin in pyroclastic tuffs. Auriferous quartz lenses are thought to be placer deposits of water-charged debris that slid downslope from exhalative sources underlain by plumbing systems.

The exhalative source of the placer gold has not been discovered, but it may occupy sections of the Darwin Shear within the Dunraine property.

A preliminary survey of the shear has delineated zones anomalous in gold at the intersection with the epiclastic horizon host to the placer gold.

THIN SECTION EXAMINATION

A suite of rocks was collected from the Archean sequence and cut into thin sections. These were examined under the petrological microscope to determine the mineral assemblage. The following conclusions may be drawn from the study.

All Archean rocks have been modified by metamorphism to the greenschist facies. There is apparently no primary igneous or sedimentary minerals that have survived recrystallization. Bedding, detrital textures, truncated bedding, and other primary structures were not obliterated by greenschist metamorphism. The metamorphism appears to have evolved through time from the upper to the lower greenschist facies, as explained in the previous June report.

The rocks host to the gold are peculiar. These are banded or gneissose rocks with more quartz and mica (biotite, muscovite) compared to the enclosing pyroclastic tuffs. Andalusite is present

which suggests a sedimentary parentage. Arsenopyrite with or without pyrite, pyrrhotite, and chalcopyrite are accessory. This banded rock has scattered clasts of subangular siliceous material and is traversed by veinlets of granular quartz. The rock is a metamorphosed tuffaceous mudstone or cherty breccia, derived from water-ladened debris flows.

The pyroclastic tuffs enclosing the epiclastic horizon have an assemblage of plagioclase, epidote, biotite, and quartz. The feldspar chips in the crystal tuffs are aggregates of fine grained plagioclase and epidote. The gold was apparently concentrated before or during the metamorphic event. It is envisaged that the gold and quartz were deposited together with the host epiclastic assemblage. The quartz veinlets present are common near gold-bearing lenses and probably represent silica precipitated from water flushing out of the debris deposit soon after deposition. These stockworks of granular quartz are generally barren and also occur in polymictic breccia and pyroclastic tuffs.

EXPLORATION MODEL

The paleo-basin of graywacke-tuff-cherty breccia is the target of exploration. It is a synclinal

shaped zone trending northeast and extending from the Van Sickle to the Darwin mines. It is displaced by the northwest striking Parkhill fault. The paleo-basin has a margin of graywacke-tuff-cherty breccia and a core of polymictic breccia. The detrital rocks occupy a relict depression or gorge on the Archean seafloor.

Exploration should attempt to find pockets of gold-bearing quartz lenses along former slump channels. The floor of the paleo-basin should be a prime target also. Large pockets of gold-ladened quartz and schist may occupy notches into the footwall, traps where placers accumulated.

We envisage a subaqueous environment with active volcanoes separated by fault-bounded basins or gorges. Crystal and lapilli tuffs extruded from volcanic vents forming ejecta blankets on the flanks of volcanoes. Heat emanating from magma at the root of the volcanic edifice set up a convective system. Gold-bearing hydrothermal fluids issued out of fractures traversing the skirts of volcanoes. Silica with gold and sulphide precipitated in massive quantities in the throats and sides of hot springs. Precipitation also occured in fractures of the plumbing system beneath the hot springs.

Unconsolidated sinters mixed with mud and water would slump downslope from the exhalative centres, scouring the banks of flow-channels, and picking-up loose debris along the way. The gold-bearing silica would preferentially concentrate as placer deposits in slump channels. It would also concentrate on the floor of the basin into which the debris flows emptied, downslope from the source area. During erosion, sulphide minerals would tend to decompose as a result of a cooler and more oxidizing environment away from the exhalative centre. The accessory arsenopyrite present at the Darwin mine may suggest that the placer deposits there are near to the source. The downhill creep of the silica agglomerate was probably the mechanism by which detrital gold reaches the basin downslope.

The gold deposits at Dunraine may be classed at placer deposits, except that the gold is in volcaniclastic rocks deposited in a subaqueous volcanic setting. In contrast to many modern placer deposits, transport distance was short, there was limited abrasion, and the setting was not fluviatile. The erratic distribution of gold,

association with detrital rocks, and lensoidal or block-like shape of quartz lenses is consistent with a placer origin.

DIAMOND DRILL PROGRAM

Six diamond drill holes totalling 2422 ft. were drilled into the workings of the old Darwin mine. The Darwin mine yielded 15,191 oz of gold before 1940 from milled ore averaging 0.33 oz/ton Au. The logs of the six holes are in Appendix I. Three holes intersected gold-bearing rock 2' to 6' ft wide and averaging 0.1 oz/ton Au. Two holes intersected stopes in the old workings. The purpose of the program was to assess the nature and continuity of the Grace horizon that produced gold in the early part of this century.

Gold occurs in a metasedimentary horizon, the Grace Vein horizon, that strikes N30W and dips to the southeast. There is also a system of gold-bearing quartz lenses that strikes east and dips to the south. The thickness of the Grace horizon is 7' to 150', and the gold-bearing quartz lenses are a few inches to over 5 ft wide. Gold occurs disseminated in quartz lenses and in a micaceous schist that are bands within the Grace horizon.

The attitude of the Grace horizon is not conformable with the regional attitude of bedding. This implies that the epiclastic tuffs were laid down on a slope, perhaps fault bounded. The southward trending bands of auriferous material within the Grace horizon represent debris slides from exhalative centres upslope. The east trending systems discovered below the 600 ft level of the mine may be the downslope extensions at the base of the paleo-basin.

Large concentrations of gold may occur between the Darwin mine and the Moody Pit prospect at depths exceeding 600 ft. These deposits would occupy the axis of the paleo-basin that has an overall northeast trend and possibly a southwest plunge.

The exhalative source of the placer gold has probably been eroded away. However, the Darwin Shear may represent the plumbing system that fed the exhalative deposits now scattered amongst the epiclastic tuffs filling the relict basin.

SEQUENCE OF EVENTS

A general model to explain the geology of the Dunraine property is as follows:

Archean

1) Explosive volcanic activity spews out large quantities of crystal and lapilli tuffs to cover the seafloor.
2) Eruption of the pyroclastic material depletes the magma chamber below the volcanic edifice. A caldera several miles accross results from collapse of the volcano summit into the empty magma chamber.
3) In respose to hydrothermal activity during a quiescence in explosive volcanism, hot springs issue out of caldera-related fractures.
4) Aprons of silica bearing gold and other metals precipitate around hot springs at the flanks of smoldering volcanoes.
5) In response to gravity and earthquake activity, the siliceous rubble mixed with mud and water slumps and creeps downslope collecting in channels and in a basin at the foot of the volanoes.

6) Hydrothermal activity slows down and erosion of the volcanic assemblage continues. Water charged debris slides and mudslides eventually fill the basin, one of many formed during the episode of caldera collapse.

7) There is renewed explosive volcanism with the deposition of ejecta blankets on top of the earlier tuffs and sedimentary material.

8) The Jubilee stock intrudes the sequence and the region is metamorphosed to the greenschist facies.

Late Precambrian

9) Regional faulting and dibase intrusion

Recent

10) Glaciation of the region followed by erosion to result in the present topography and outcrop pattern.

RECOMMENDATIONS

The following program of diamond drilling is recommended for the Dunraine property.

1) The Grace Vein horizon and environs-
The purpose is to find extensions of mined orebodies and quantify the geometry of the paleo-basin. There are three target areas.

a) Moody Pit: Drill about 5 holes totalling 5000 ft to intersect the continuation of

the Parkhill orebodies offset by the Parkhill fault.

b) Hayne Vein: Drill about 6 holes totalling 5000 ft to intersect the east-west system of the Darwin mine. Explore for possible orebodies along the northeast trending axis of the paleo-basin for placer gold.

c) Darwin mine: Drill about 5 holes totalling 4000 ft to intersect the north and south extensions of the Grace Vein horizon.

Total: 17 holes totalling 14,000 ft.

Extra: 5,000 ft to follow up ecouraging results if any.

Total Program : 19,000 ft.

2) The Darwin Shear -

The purpose is to find possible plumbing systems to the exhalative centres. Drill to intersect at depths the shear anomalous in gold. The best target at present is at the intersection with the Grace Vein horizon. The exact location of drill sites await results of follow-up geochem survey of the Darwin Shear. We anticipate 12,400 ft of drilling following the recommendations of Dr. R. A. Halet.

The granodiorite of the Jubilee stock and

pyroclastic tuffs removed from the paleo-basin are least likely to hold an orebody. It is recommended that drill sites be chosen so as to minimize the drill footage through barren rock. The best host rock for gold is the epiclastic assemblage of reworked tuff and cherty breccia. Sections of this assemblage southeast of the Darwin mine appear to be covered by a thin veneer of pyroclastic tuffs.

The overall cost of the drilling program for the Darwin Mine and environs is $600,000. The cost for the Darwin Shear is $310,000. These figures were calculated assuming $25 per foot. The combined total is $910,000.

This report is respectfully submitted,

Paul Studemeister

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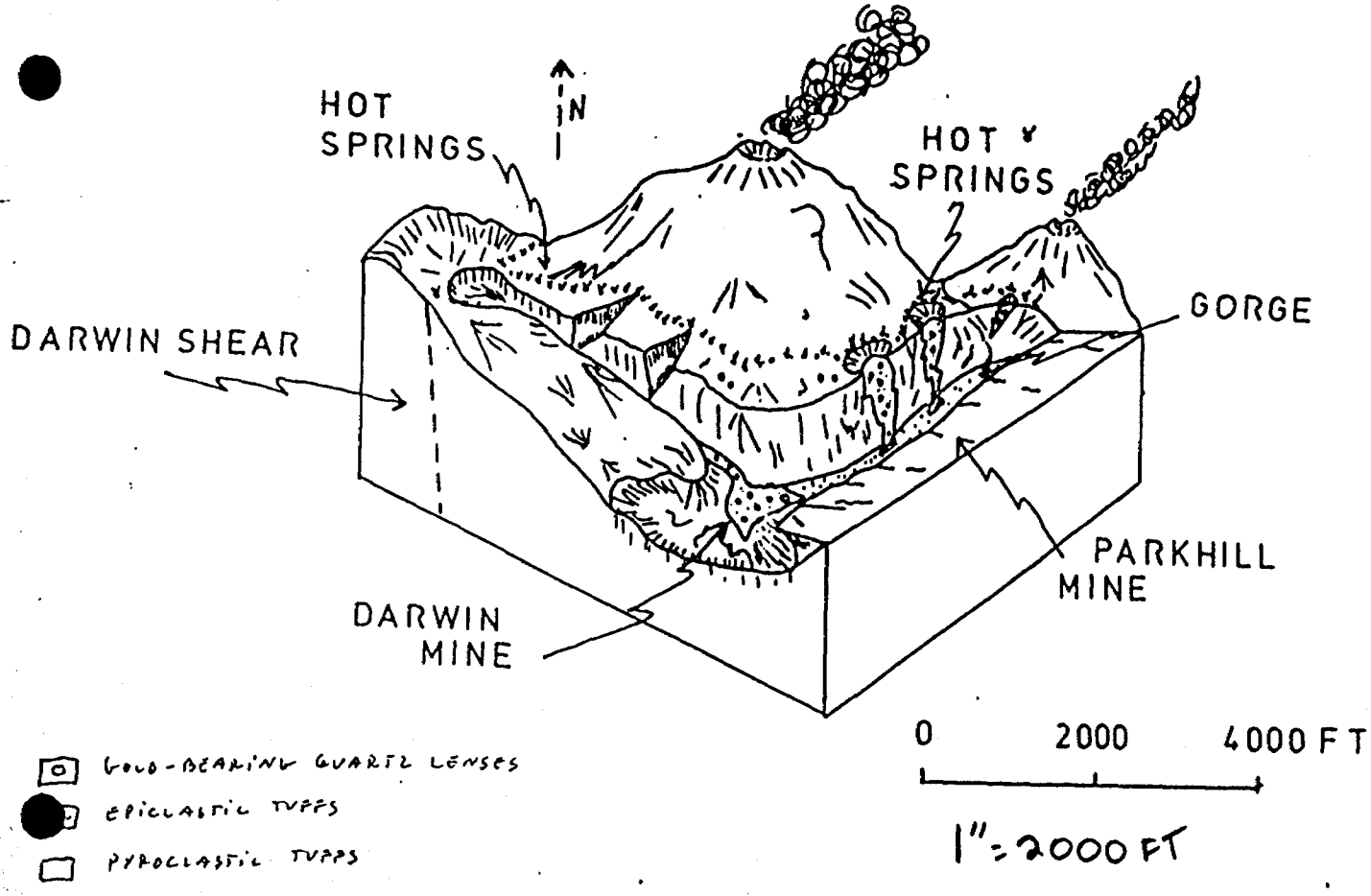
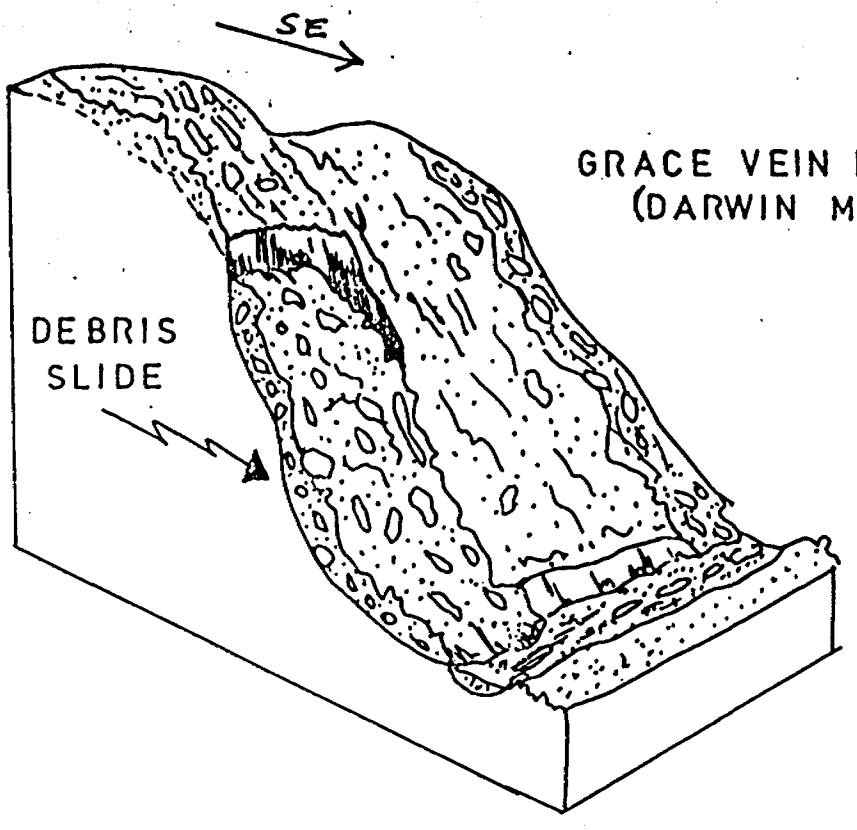
Geologist
Dunraine Mines Ltd.
Suite 506
199 Bay Street
Toronto, Ontario M5J 1L5

Wawa, Ontario
August 20, 1983


HOT SPRINGS
N
HOT SPRINGS
DARWIN SHEAR
GORGE
PARKHILL MINE
DARWIN MINE
GOLD-BEARING QUARTZ LENSES
EPICLASTIC TUFFS
PYROCLASTIC TUFFS
HOT SPRINGS
0
2000
4000 FT
1" = 2000 FT



GOLD-BEARING QUARTZ LENSES
EPICLASTIC TUFFS
PYROCLASTIC TUFFS

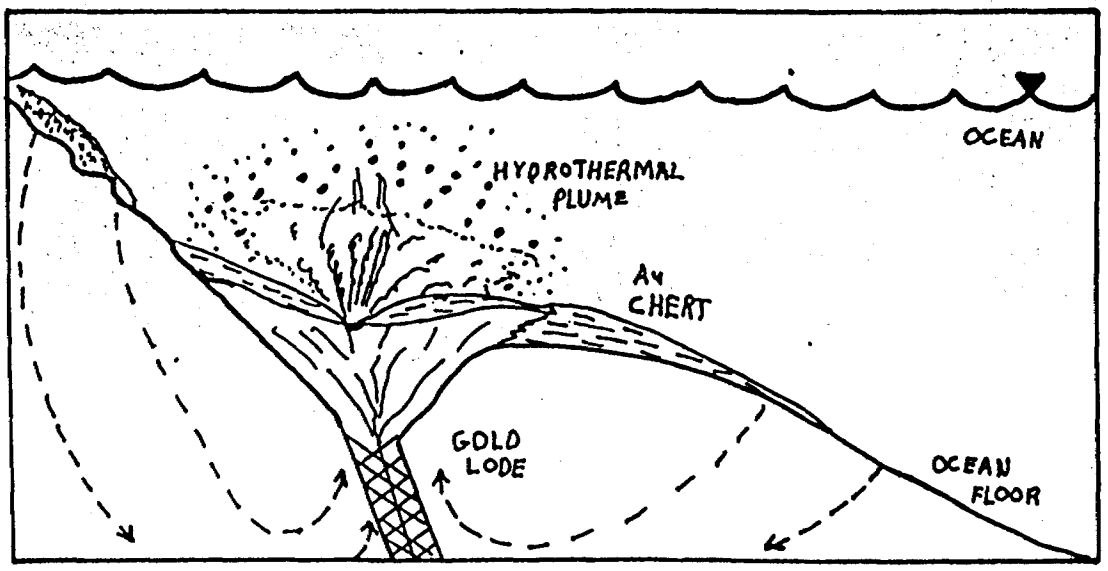


Figure 1: Exhalative Stage-

Aprons of silica with gold and sulphide precipitate around hot springs at the flank of a smoldering volcano.

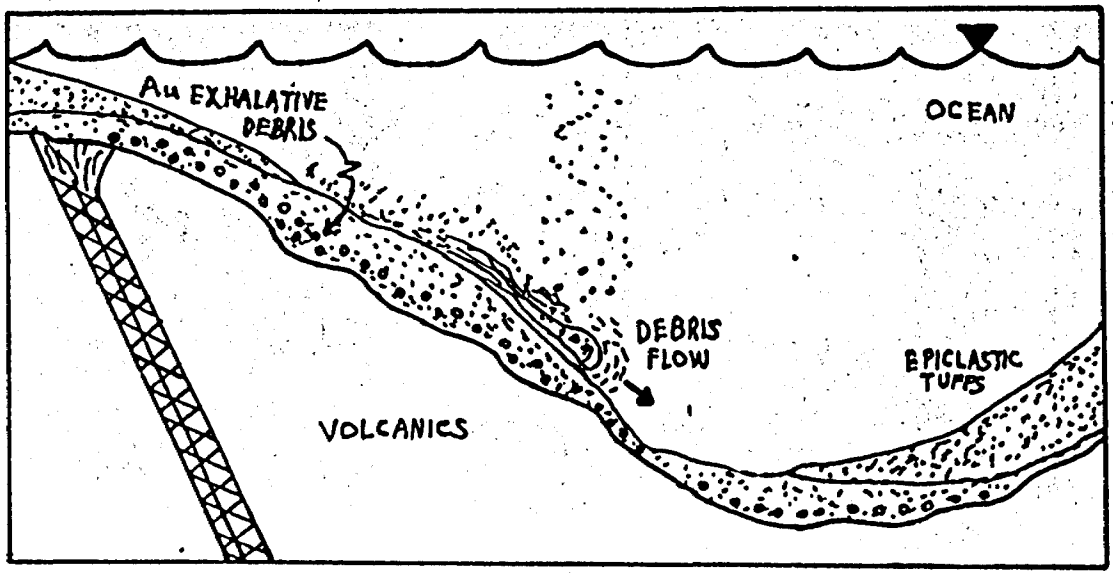


Figure 2: Erosional Stage-
Erosion of the unconsolidated silica and tuff yields blankets of exhalative debris that slump downslope

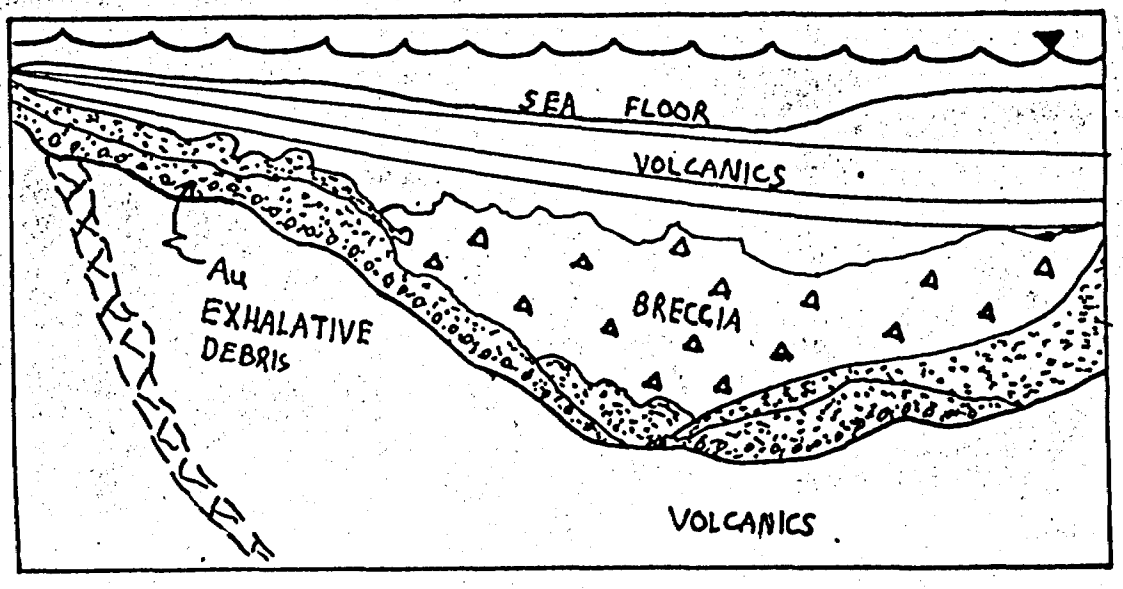
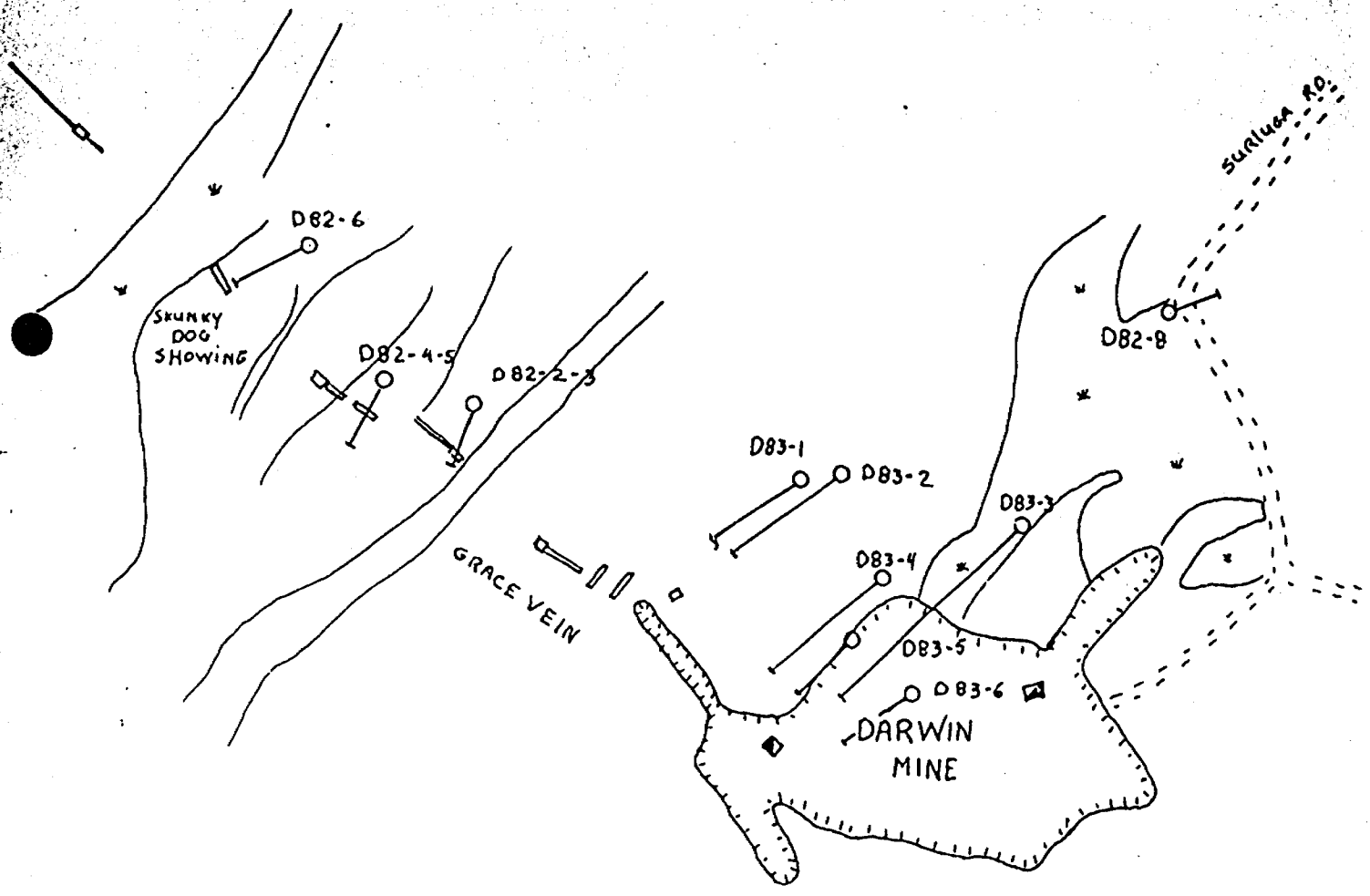


Figure 3: Volcanic Stage-
Basin at foot of volcano is filled with epiclastic tuffs and debris-flow breccias. Pyroclastic tuffs cap the layered assemblage.

DUNRAINE MINES LTD.

GRACE VEIN DIAMOND DRILL PLA

1982, 1983.



SCALE: 1 INCH = 200 FEET

Dunraine Mines Ltd. PROPERTY: DARWIN

LATITUDE: N 3400 of Grace Shaft	BEARING: 245°	DIP: 65°	STARTED: Aug 6 / COMPLETED: Aug 10	HOLE NO. 83-1
DEPARTURE: E 1145 of Shaft	V.D.	H.D.	DRILLED BY: Poisson Drilling	DEPTH: 412
ELEVATION:	LOCATION: DARWIN - Grace Vein within Grace Workings N of Shaft.			LOGGED BY: Paul Sterlenk

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
0 – 1.6	CASING				
1.6 – 40.0	INTERMEDIATE METAVOLCANIC ROCKS				
	1.6 – 17.5 : FSP XL TUFF				
	– A FEW THIN BANDS 2" – 3" WIDE OF FINE GRAINED TUFF				
	17.5 – 17.9 : FINE GRAINED TUFF				
	17.9 – 32.2 : FSP XL TUFF				
	32.2 – 40.0 : FSP XL – LAPILLI TUFF, INTRUDED BY GRANODIORITE				
40.0 – 44.7	GRANODIORITE				
	– WITH QUARTZ GRAINS				
44.2 –	INTERMEDIATE METAVOLCANIC ROCKS				
	44.7 – 47.2 : FINE GRAINED TUFF				
	47.2 – 71 : FSP XL TUFF WITH MINOR LAPILLI				
	71 – 72.3 : FINE GRAINED TUFF WITH MINOR FSP XLS DISSEMINATED IN MATRIX				
	72.3 – 76 : FSP XL TUFF				
	76 – 82.3 : FINE GRAINED TUFF WITH SCATTERED FSP XLS				
	82.3 – 100.1 : – FSP XL TUFF WITH MINOR	← 1" – 7" BANDS OF FINE GRAINED TUFF.			

PROPERTY:					HOLE NO. 83-1
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

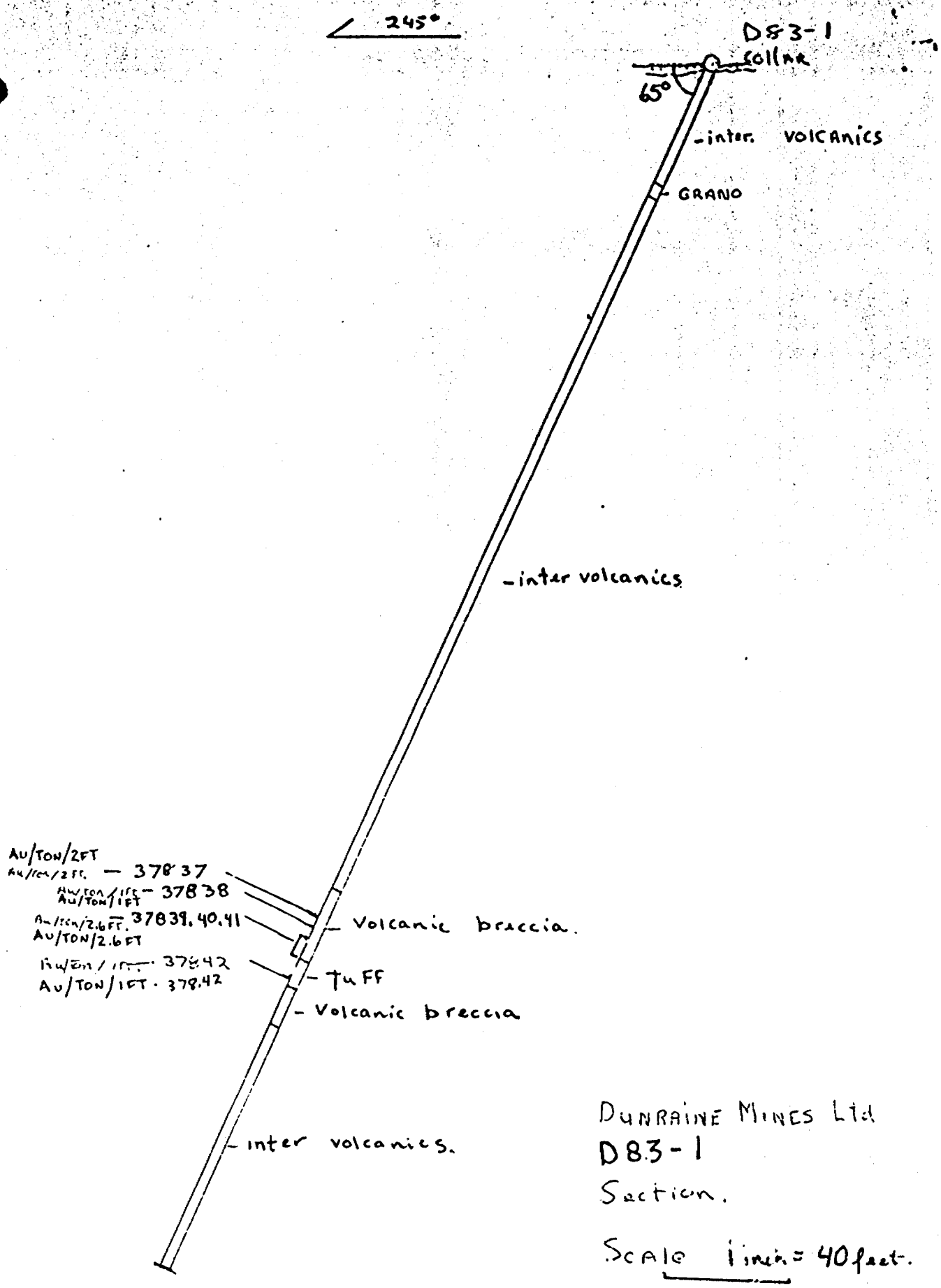
FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	100.1 - 100.7 : QTZ VEIN WITH ~1%-2% CPY, PY				
	100.7 - 140.7 : FSP XL TUFF				
	- FINER FSP XLS THAN BEFORE				
	140.7 - 146.8 : FINE GRAINED TUFF				
	- GRADATIONAL CONTACT, MAY				
	BE A REWORKED TUFF				
	- FINE GRAINED BIO, EPI, PLAG,				
	QTZ ± PY				
	- LOCAL LAPILLI OF FSP TUFF				
	146.8 - 165 : FSP XL TUFF				
	- CONTACT AT ~80°CA FOR				
	BANDS OF FINE GRAINED TUFF				
	165 - 174.5 : LAPILLI TUFF WITH A FINE				
	GRAINED MATRIX				
	174.5 - 201.6 : FINE GRAINED TUFF				
	WITH MINOR CLASTS OF				
	INTERMEDIATE VOLCANICS				
	201.6 - 224.5 : FSP XL TUFF AND MASSIVE				
	FSP FLOW OR SILL				
	- CONTACT ~45°CA				
	- GRANULAR FLOW OR SILL				
	224.5 - 246 : FINE GRAINED TUFF				
	246.0 - 282 : FSP XL TUFF ± FINE GRAINED TUFF				

PROPERTY:				HOLE NO. 83-1
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY: K. Thurston

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au/ton
282 - 305	VOLCANIC BRECCIA				
	- POLYMICTIC WITH PORPHYRY, FELSITE, AND MINOR SILICEOUS CLASTS UP TO BLOCK SIZE	293 - 295	37837	2.0	
		302 - 303	37838	1.6	
305 - 314.5	FINE GRAINED TUFF	307.5 - 308.5	37839	1.0	
		308.5 - 309.2	37840	0.8	
314.5 - 327.9	VOLCANIC BRECCIA	309.2 - 310	37841	0.8	
	- CONTACTS AT ~25°-40° C.A	312.5 - 313.5	37842	1.0	
	- POLYMICTIC AS BEFORE				
	- CLASTS ARE SUBROUNDED TO SUB-ANGULAR				
327.9 - 412	INTERMEDIATE METAVOLCANIC ROCKS				
	327.9 - 343 : FSP XL - LAPILLI TUFFS				
	343 - 354.2 : FSP XL TUFF WITH MINOR LAPILLI CLASTS SIMILAR TO MATRIX				
	354.2 - 355.7 : FINE GRAINED TUFF				
	355.7 - 357.6 : FSP XL - TUFF				
	357.6 - 358.1 : FINE GRAINED TUFF				
	358.1 - 390 : FSP XL - TUFFS WITH FSP CRYS 1-3mm DIAMETER				
	390 - 400.2 : ALTERNATING FSP XL TUFF AND FINE GRAINED TUFF, 80°-90° C.A				

PROPERTY:				HOLE NO. 83-1
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY: Paul Brake

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	~~400-2-~~				
400.2-412	ALTERATION ZONE : EXTENSIVE VEINING AND MOTTLING WITH QTZ, HM, CARBO, ± CLAY(?), MUSCO				
412	END OF HOLE				
	~~X~~ : 225'-339' : ROCK ARE EXTENSIVELY ALTERED WITH QTZ, HM, SERI, CARBO, CLAY(?), CHLO ± FLOURITE, PYRITE : ALTERATION ASSOCIATED WITH LAMPROPHYRE DIKE				



DUNRAINE MINES Ltd
D83-1
Section.

Scale 1 inch = 40 feet.

by. D. Gignac Aug 17/53

J- DUNRAINE 1983 | PROPERTY: DARWIN MINE | HOLE NO. 83-2

LATITUDE: N 2+95 of Grace Shaft	BEARING: 245°	DIP: 70°	STARTED: Aug 12/83	COMPLETED: Aug 16/83
DEPARTURE: E 1+90 of Shaft	V.D.	H.D.	DRILLED BY: Poisson	DEPTH: 460'
ELEVATION:	LOCATION: Between third + fourth level 2+00 N of Shaft station.			LOGGED BY: Paul Schmidt

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au/ton
0 - 1.4	CASING				
1.4 - 4.8	FELDSPAR CRYSTAL TUFF - 1 - 3MM FSP CHIPS WITH MINOR QTZ				
4.8 - 13.4	CHERTY BRECCIA - QTZ - BIO GNEISS WITH LARGE CLASTS OF GRANULAR QUARTZ UP TO 2" WIDE - 1 - 5% DISSEMINATED Po, Py - CONTACT WITH FSP XL TUFF ALMOST // TO CA	10.6 - 12.2	37832	1.6	
13.4 - 156.3	INTERMEDIATE METAVOLCANIC ROCKS				
	13.4 - 36.8 : FSP XL-TUFF - 2-5 MM FSP CHIPS, ALTERED TO PLAG, EPI - MATRIX F.G. PLAG, EPI, QTZ, BIO ± MUSCO, CHLO				
	36.8 - 49.4 : FINE GRAINED TUFF - F.G. PLAG, BIO, QTZ, EPI WITH SCATTERED CLASTS OF INT. MATERIAL				
	49.4 - 58 : FSP XL - TUFF				

PROPERTY:				HOLE NO. D83-2
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	58 - 69 : FSP XL - LAPILLI TUFF				
	WITH ABUNDANT INT CLASTS				
	69 - 76.1 : FSP XL - TUFF				
	WITH MINOR CLASTS				
	76.1 - 77.9 : FINE GRAINED TUFF				
	77.9 - 97.5 : FSP XL - TUFF				
	87.2 - 90.9 : ALTERED ZONE WITH				
	QTZ, HM, CHLO, CARBO.				
	97.5 - 100 : FSP XL - LAPILLI TUFF				
	100 - 108.2 : FSP XL - TUFF				
	108 - 122.2 : FINE GRAINED TUFF				
	122.2 - 124 : FSP XL - LAPILLI TUFF				
	124 - 125.7 : FINE GRAINED TUFF				
	125.7 - 149.8 : FSP XL - TUFF				
	WITH SOME INT CLASTS				
	149.8 - 156.3 : FINE GRAINED TUFF				
	BETWEEN 102' AND 156', TUFFS				
	ARE ALTERED WITH QTZ, HM, CHLO, CARBO				
156.3 - 189.8	DIABASE				
	FINE GRAINED NEAR CONTACT, GRADING				
	INTO MEDIUM GRAINED AT CORE				
	160 - 161.3 : ALTERED WR INCLUSION				

PROPERTY:				HOLE NO. D83-2
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

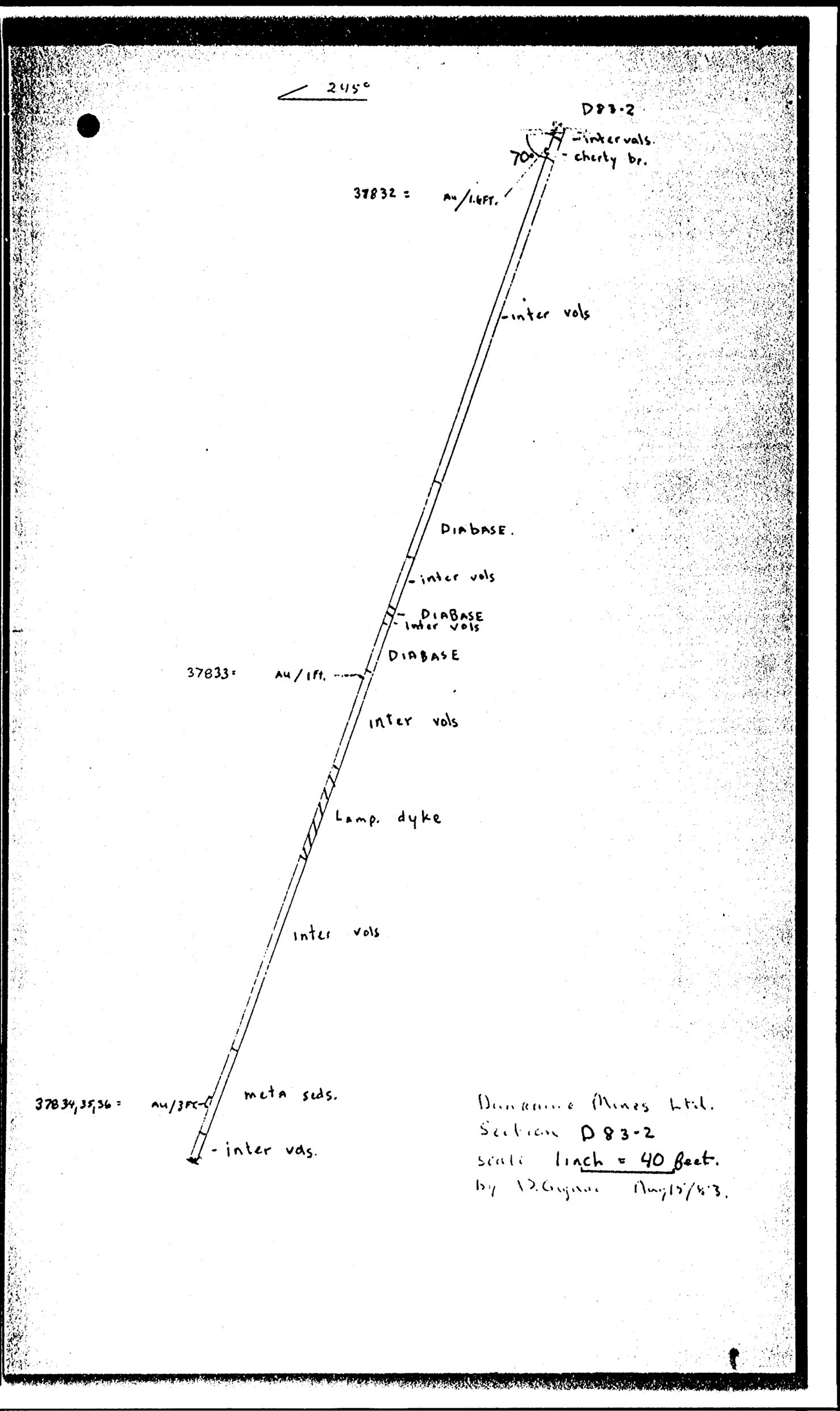
FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
189.8 - 211.9	FSP XL - TUFF, ALTERED				
	- VERY ALTERED WITH HEMATITE STAINS				
211.9 - 214	DIABASE				
	- CHILLED MARGIN				
214 - 217	FSP XL - TUFF, ALTERED				
	- VERY ALTERED WITH HEMATITE STAINS				
217 - 240.3	DIABASE				
	- CHILLED MARGIN AT CONTACTS, FINE GRAINED AT CORE				
240.3 - 283.6	FELDSPAR CRYSTAL TUFF				
	- ALTERED NEAR DIABASE				
	- M.G. PLAG, QTZ, BIO, EPI & MUSC				
	246 - 246.9 : BARREN QTZ VEIN WITH MINOR CARBO, EPI + HM 1-5% PY, CPY	246 - 247	37833	1.0	
	271.4 - 271.9 : QTZ VEIN WITH ~3% PY, CPY				
28[illegible] - 323.3	LAMPROPHYRE DIKE				
323.3 - 408.5	INTERMEDIATE METAVOLCANIC ROCKS				
	323.3 - 325.3 : FSP XL - TUFF				

PROPERTY:				HOLE NO. D83-2
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au/Ag
	325.3 - 327.2 : FINE GRAINED TUFF				
	327.2 - 328.4 : FSP XL - TUFF				
	328.4 - 330.5 : FINE GRAINED TUFF				
	330.5 - 381 ; FSP XL - TUFF AND FSP XL - LAPILLI TUFF				
	381 - 408.5 : FINE GRAINED TUFF				
408.5-447	METASEDIMENTARY ROCKS				
	408.5 - 420.6 : TUFFACEOUS MUDSTONE WITH CHERT CLASTS - QTZ-BIO-PLAG GNEISS WITH QTZ CLASTS				
	420.6 - 431 ; VOLCANIC BRECCIA WITH CLASTS OF INT. VOLCANIC ROCK				
	431 - 443.4 : TUFFACEOUS MUDSTONE - QTZ-BIO GNEISSOSE ROCK WITH F.G. QTZ, BIO, PLAG, EPI, ANDA., LOCALLY 1% - 3% Po, Py	431.2-432.2	37834	1.0	
	- 432.3 - 432.7 : QTZ WITH TR ASPY	432.2-433.2	37835	1.0	
		433.7-434.2	37836	1.0	
	- 437.1-437.3 : QTZ STRINGER WITH ~5% ASPY, Py, CPY				
	443.4 - 447 : VOLCANIC BRECCIA - AS BEFORE WITH VOLCANIC + SILICEOUS CLASTS				

PROPERTY:				HOLE NO. D83-2
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
447 - 460	INTERMEDIATE METAVOLCANIC ROCK				
	447 - 451.4 : FSP XL-TUFF				
	451.4 - 453.4 : FINE GRAINED TUFF				
	453.4 - 459.8 : FSP XL- TUFF				
	459.8 - 460 : FINE GRAINED TUFF				
460	END OF HOLE				



Dimension Mines Ltd.
Section D83-2
scale 1inch = 40 feet.
by D. Cugnet May 15/83.

N Grace Vein	PROPERTY: DARWIN		PAGE 1 OF 10		HOLE NO. D83-2 83-3
LATITUDE: 1+55 N of Vert. Shaft	BEARING: 240°	DIP: 70°	STARTED: July 27	COMPLETED: Aug 2/83	
DEPARTURE: 0+95 E of Vert Shaft	V.D.	H.D.	DRILLED BY: Poisson		DEPTH: 600'
ELEVATION:	LOCATION: Darwin Mine Area Grace Vein below Grace Shaft				LOGGED BY: Paul Studemeister

FOOTAGE	DARWIN MINE AREA GRACE VEIN BEFORE GRACE SHAFT	SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
0 - 12	CASING				
12 - 14.8	FELDSPAR CRYSTAL - LAPILLI TUFF				
14.8 - 16.5	FELDSPAR CRYSTAL TUFF				
16.5 - 26.6	FELDSPAR CRYSTAL - LAPILLI TUFF - CLASTIC TEXTURED WITH LAPILLI-SIZE CLASTS OF FELSIC AND SILICEOUS MATERIAL; MATRIX HAS FSP CHIPS - MINERAL ASSEMBLAGE: PLAGIOCLASE, QTZ, BIO, EPI WITH MUSCO, CHLO - 0.5 TO 1% Po, Py, AND CPY IN MATRIX - SCHISTOSE - MOST COMMON CLAST IS SILICEOUS MATERIAL, 1-5 MM IN SIZE				
26.6 - 27.2	LAMPROPHYRE DIKE				
27.2 - 31.0	FELDSPAR CRYSTAL - LAPILLI TUFF				
31[illegible] - 43.5	INTERMEDIATE FLOW - MEDIUM GRAINED PLAGIOCLASE AND QUARTZ - QUARTZ DIORITE COMPOSITION				

PROPERTY:			Page 2 of 10	HOLE NO. D83-3
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	- MINERAL ASSEMBLAGE : PLAG, QTZ, EPI, BIO WITH ACCESSORY CHLO, CARBO.				
43.5 - 45	LAMPROPHYRE DIKE				
45 - 59.6	FELDSPAR CRYSTAL TUFF - FELDS. GRAINS ARE BLOCKY TO ROUNDED, MOST ARE SUBANGULAR 1-5 MM SIZE - SCATTERED SILICEOUS CLASTS IN FINE GRAINED MATRIX - GRADATIONAL CONTACT INTO CHERTY BRECCIA				
59.6 - 65.6	CHERTY BRECCIA - LAPILLI - SIZE CLASTS OF CHERT IN A SILICEOUS MATRIX WITH BIOTITE - CLASTS ARE SUBROUNDED TO SUB-ANGULAR - SOME BIOTITE-RICH CLASTS ALSO PRESENT				

PROPERTY:

LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	HOLE NO. D87-3
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA oz/ton					
65.6 - 74.5	FELDSPAR CRYSTAL TUFF									
	- INT. COMPOSITION WITH PLAG, QTZ, EPI., AND BIO									
	- FELDSPAR CHIPS ARE 1-5 MM SIZED, VARIATION IN ANULARITY									
74.5 - 113.0	METASEDIMENTARY ROCKS									
	74.5 - 88.8 : CHERTY TUFF									
	- GNEISSOSE ROCK WITH A N1MM ASSEMBLAGE OF QTZ, BIO, PLAG, EPI, ± MUSCO, ANDA. CH.									
	- SILICEOUS MATRIX WITH BIO									
	- CHERTY CLASTS DISPERSED IN MATRIX; SOME FSP CHIPS ALSO PRESENT									
	- LOCALLY ~1% Po, Py, CPY									
	- 82.8 - 85.5 IS ALTERED									
88.8 - 90.3	LAMPROPHYRE DIKE									
	90.3 - 97.2 : CHERT TUFF									
97.2 - 100.7	LAMPROPHYRE DIKE									
	100.7 - 103.7 : TUFFACEOUS MUDSTONE	100.8 - 102	37816	1.2	n.v.					
	- FINE GRAINED MATRIX OF QTZ, BIO, EPI, MUSCO WITH ≤ 5% SULP.	102 - 103.5	37817	1.5	n.v.					

PROPERTY:				PAGE 4 OF 10	HOLE NO. D83-3
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	- SOME DETRITAL MATERIAL	THF 100.8 - 102.!			
	PRESENT, SILICEOUS CLASTS				
	- MICACEOUS MATRIX				
	103.7 - 106.8 : CHERTY BRECCIA				
	- CLASTS OF GRANULAR QTZ IN A				
	SILICEOUS MATRIX WITH BIO,				
	EPI I MUSCO, CHLO, ANDA				
	- MATRIX HAS 1-7% PY, PO I CPY				
	- COARSE LAPILLI - SIZE CLASTS				
	106.8 - 113 : TUFFACEOUS MUDSTONE				
	WITH SOME CHERTY CLASTS				
113.0 - 119.8	FELDSPAR CRYSTAL TUFF				
	- 1-3 MM FSP CHIPS IN AN INTERME.				
	COMPOSITION MATRIX WITH PLAG.,				
	QTZ, EPI, BIO				
	- MINOR CLASTS ALSO PRESENT				
119.8 - 124.5	FINE GRAINED TUFF				
	- INTERMEDIATE COMPOSITION				
	- FELDSPAR CRYSTALS NOT ABUNDANT				
124[redacted] - 223.7	METASEDIMENTARY ROCKS				
	124.5 - 128.8 : ARGILLACEOUS MUDSTONE (?)				
	WITH ABUNDANT BIO, ~50° CA				

PROPERTY:				Page 5 of 10	HOLE NO. D83-3
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA oz/ton					
	128.8 - 136.8 : LITHIC GRAYWACKE									
	- MEDIUM GRAINED PLAG, QTZ, BIO, EPI ± ANDA, CHLO, CARBO									
	- CLASTIC TEXTURE WITH FINE TO MEDIUM LAPILLI, ≤ 5MM									
	136.8 - 147 : CHERTY TUFF									
	- BIO - PLAG QTZ GNEISS, CRUDE BANDING									
	- SLIVERS OR CLASTS OF QTZ									
	- SILICEOUS, BIOTITIC MATRIX WITH ~20% CLASTS									
	147 - 178.5 : CHERTY BRECCIA	163.5 - 165	37818	1.5	nil					
	- GRADATIONAL CONTACT WITH	165 - 166	37819	1.0	nil					
	CHERTY TUFF, CHERTY CLASTS	167.5 - 169.1	37820	1.6	nil					
	BECOME ABUNDANT									
	- LAPILLI SIZE CLASTS OF									
	CHERT IN A THIN, WISPY									
	MATRIX WITH BIO									
	- TRACE PY, PO, ± CPY									
	- LOCAL VEINING OF QTZ,									
	BARREN, WITH CHLO									
	- CRUDE FOLIATION IN MATRIX									
	IS AT 0° TO 15° CA									
178.5 - 179.9	LAMPROPHYRE DIKE									

PROPERTY:			PAGE 6 OF 10	HOLE NO. D83-3
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au/ton
	179.9 – 184.5 : CHERTY BRECCIA				
	– EXCESSIVE QTZ–CARBO.				
	VEINING & ALTERATION AT				
	181 – 183.5				
184.5–187.5	LAMPROPHYRE DIKE				
	187.5 – 220 : CHERTY BRECCIA				
	– GNEISSOSITY AT ~15°CA				
	– CHERTY CLASTS IN A	188.1–190	37821	1.9	.005
	SILICEOUS MATRIX WITH	190 – 191	37822	1.0	n.i
	BIO				
	– ALTERATION WITH QTZ–CARBO.–PY				
	VEINS AT 176.3 – 198.5	207–208	37823	1.0	.005
	– MATRIX HAS QTZ, PLAG, BIO				
	WITH MINOR EPI, ANDA, 1–2% Py				
	LOCAL				
	220 – 223.7 : TUFFACEOUS MUDSTONE				
	–CROSS-CUT BY QTZ–CARBO. VEINS				
	WITH ALTE. HALOS				
	– FINE GRAINED MICACEOUS MATRIX				
	WITH SOME FSP CHIPS,				
	GRADING INTO FSP XL – TUFF				
223.7 – 281	INTERMEDIATE METAVOLCANIC ROCKS				
	223.7 – 237.8 : FELDSPAR CRYSTAL TUFF				

PROPERTY: HOLE NO. D83-3

LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	DEPTH:
DEPARTURE:	V.D.	H.D.	DRILLED BY:		LOGGED BY:
ELEVATION:	LOCATION:				

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au/ton
	- SUBROUNDED TO SUB ANGULAR FSP CHIPS, 1-5 MM SIZE				
	- QTZ-CARBO. VEINS AND ALTERATION AT 231-235				
	237.8-240.4 : FINE GRAINED TUFF				
	- WITH ~10% FSP CHIPS, A FEW SILICEOUS CLASTS				
	240.4-281 : FELDSPAR CRYSTAL TUFF	258-259.5	37825	1.5	.005
	- 1-5 MM CHIPS, A FEW ~10 MM				
	- LOCAL INTERFLOW BANDS OF FINE GRAINED TUFF, BUT MINOR				
	- CROSS-CUT BY QTZ-CARBO. VEINS AT 245-250°				
281-283.5	CHERTY BRECCIA				
	- CONTACT AT ~65° CA				
	- SUBANGULAR CHERT CLASTS IN A QTZ-BIO MATRIX WITH ~1% PY				
283.5-326.0	FELDSPAR CRYSTAL TUFF				
	- FELDS. CHIPS 1-5 MM, SOME ~10 MM				
	- SCATTERED CLASTS OF INT. ROCK				
	- TOWARDS BASE, FSP CHIPS GET SMALLER + LESS ABUNDANT				

PROPERTY:			Page 8 OF 10	HOLE NO. D83-3
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au/Ta
326 - 361.8	METASEDIMENTARY ROCKS				
	326 - 352.5 : POLYMICTIC VOLCANIC BRECCIA				
	- CLASTS : FSP XL-TUFF OR PORPHYRY				
	CHERTY OR SILICEOUS ROCK				
	AND MINOR				
	MAFIC, BIO-RICH MATERIAL				
	MASSIVE INT. CLASTS	334 to 335	37824	0.9	nil
	- ANGULAR TO SUB ANGULAR, SOME				
	ROUNDED; LAPILLI SIZE				
	- FINE INTERSTITIAL MATRIX OF QTZ				
	BIO RICH; LOCAL ~1-3% CPY, PO				
	- CLASTS = 80% TO 90%				
	352.5 - 353.6 : LITHIC GRAYWACKE				
	WITH 1-3% CPY, PO, PY				
	353.6 - 361.8 : POLYMICTIC VOLCANIC BRECCIA				
	- SMALLER SIZED AND FEWER				
	CLASTS, ~40% - 50%, IN				
	A DETRITAL MATRIX				
	- CROSS-CUT BY VEINING				
361.8 - 488	INTERMEDIATE METAVOLCANIC ROCKS				
	361.8 - 365.6 : FINE GRAINED TUFF				
	- FINE GRAINED BIO, QTZ, EPI, PLAG, CHLO				
	SOME FSP CHIPS, SCHISTOSE				
	365.6 - 378.5 : FELDSPAR CRYSTAL TUFF (Flow)				

PROPERTY:				PAGE 9 OF 10	HOLE NO. DS3-3
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

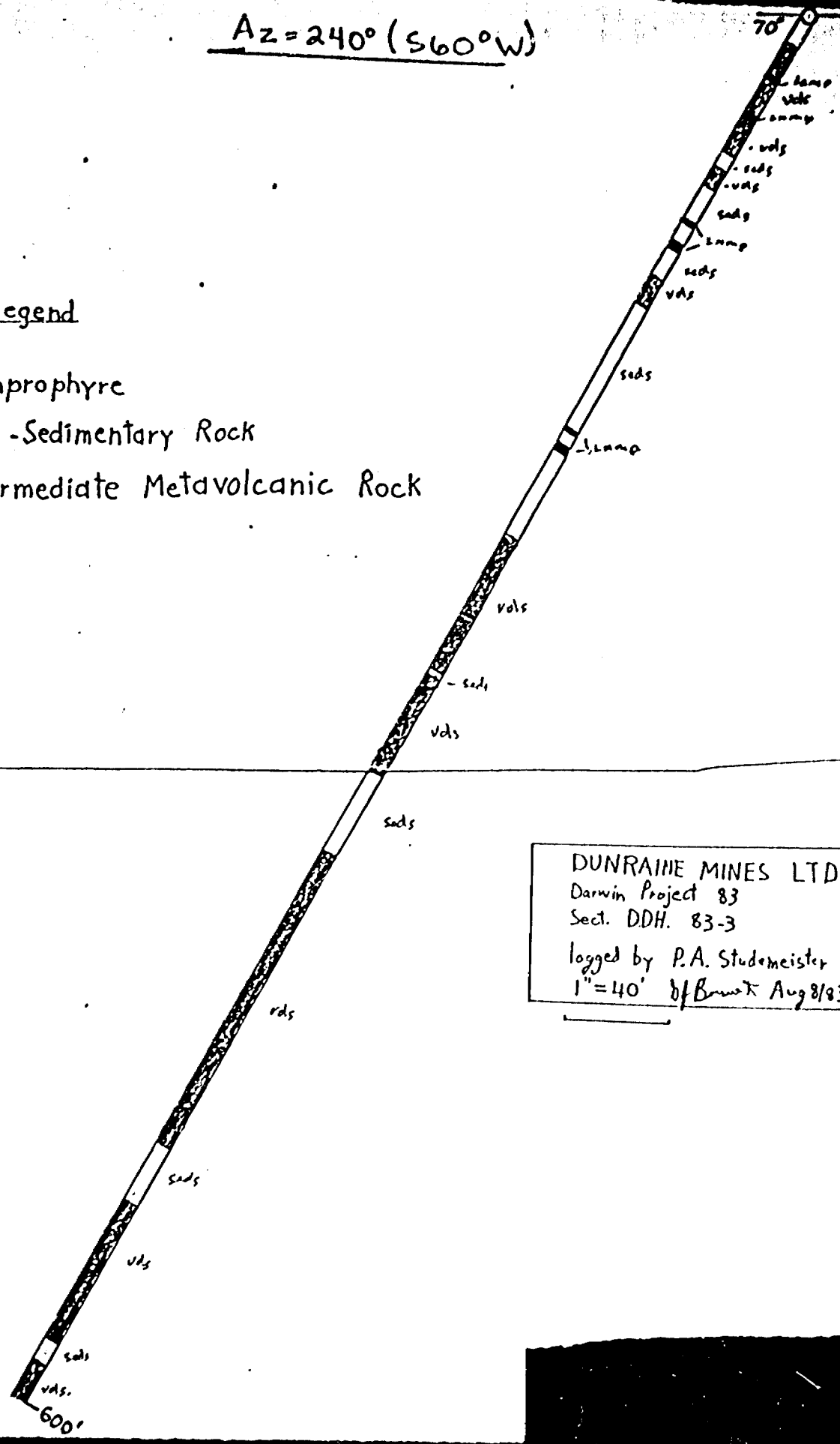
FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	378.5 - 383 : FINE GRAINED TUFF				
	383 - 402.8 : FELDSPAR CRYSTAL TUFF				
	- 1-2 MM FSP CHIPS IN FINE GRAINED				
	MATRIX WITH DLAY, EPI, QTZ, BIO				
	CONTACT AT 50°CA				
	402.8 - 417 : FINE GRAINED TUFF				
	- MAY BE PARTLY REWORKED				
	- FINE GRAINED QTZ, PLAG, EPI, BIO, CHL				
	CRUDELY BANDED WITH SHADES OF GREEN				
	417 - 440.4 : FSP XL TUFF				
	- 1-3 MM FSP CHIPS, RARE 3-5 MM				
	LOCAL BANDS OF F.G. TUFF, THIN				
	440.4 - 442.3 : FINE GRAINED TUFF				
	442.3 - 473.7 : FSP XL TUFF				
	- THIN BANDS OF REWORKED TUFFS				
	AT ~50°CA				
	- 451.5 - 451.8 : BARREN VEIN				
	473.7 - 474.7 : FINE GRAINED TUFF				
	- CRUDE BANDING AT ~50°CA				
	- FINE GRAINED BIO, QTZ, EPI, CHLO				
	474.7 - 483.7 : FELDSPAR XL TUFF				
	- CHERTY BRECCIA AT 483 - 483.7'				
	483.7 - 484.7 : FINE GRAINED TUFF				
	484.7 - 488 : FSP XL TUFF				
	- 1-3 MM FSP CHIPS, SOME CLASTS				

PROPERTY: Darwin				HOLE NO. D83-3 page 10 of 10
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	DEPTH:
DEPARTURE:	V.D.	H.D.	DRILLED BY:	LOGGED BY:
ELEVATION:	LOCATION:			

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA ppb/ppm					
488-512	Tuffaceous Mudstone - reworked tuffs, micaceous - gneiss with qtz, bio, and plag. - scattered siliceous clasts - cherty breccia at 490-491.6 - with ≤ 3% po, cpy, py	502 - 503	37826	1.0	n.l					
512-572	Intermediate metavolcanic Rocks 512 - 528.2 - Fine grained tuff - barely banded 528.2 - 572 - Feldspar xl tuff									
572-580.2	Metasedimentary Rocks 572 - 574.6 - tuffaceous mudstone - has 1-3% po, cpy, py 574.6 - 576.2 : massive qtz with minor bio+aspy 576.2 - 580.2 - tuffaceous mudston - Fine grained bio, qtz, epi, gneiss ≤ 5% cpy po, py 578 - 578.5 - qtz.	573.5 - 574	37827	0.5	.01					
		574 - 575	37828	1.0	.07					
		575 - 576.2	37829	1.2	.11	.13	= .12	≈ 0.1 oz/ton		
		576.5 - 578	37830	1.5	.01					
		578 - 579	37831	1.0	n.l					
580.2 - 600	Intermediate Metavolcanics 580.2 - 581 - Feldspar xl tuff 581 - 582.2 - Fine grained tuff 585.1 - 592 - Fine grained tuff with some fe chips 592 - 600 - Fsp xl tuff									
600-	End of Hole.									

Az = 240° (S60°W)

70°



Legend

- Lamprophyre
- Meta-Sedimentary Rock
- Intermediate Metavolcanic Rock

DUNRAINE MINES LTD
Darwin Project 83
Sect. DDH. 83-3
logged by P.A. Studemeister
1"=40' Aug 8/83

DUNRAINE MINES — PROPERTY: DARWIN — HOLE NO. D83-4

LATITUDE: 1+70N OF GRIDLINE	BEARING: 240°	DIP: 70°	STARTED: JULY 22	COMPLETED: JULY 26
DEPARTURE: 2+10E OF SAME	V.D.	H.D.	DRILLED BY: POISSON	DEPTH: 404'
ELEVATION:	LOCATION: DARWIN WORKINGS BETWEEN 300 & 400 LEVEL			LOGGED BY: Paul Valente

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
0 - 6	CASING - LATER REAMED TO 14' FT				
6 - 22.7	LAMPROPHYRE DIKE				
	- WITH WALLROCK INCLUSIONS				
	- LOWER CONTACT BRECCIATED AND SILICIFIED AT 60°CA				
22.7 - 29.4	FELDSPAR CRYSTAL TUFF				
	- MASSIVE, INTERMEDIATE COMPOSITION				
	- 1-5 MM FSP CHIPS IN DARK, FINE GRAINED MATRIX				
	- CROSS-CUT BY QTZ VEINLETS WITH FE-CARBONATE				
29.4 - 35.6	LAMPROPHYRE DIKE				
35.6 - 39.5	FELDSPAR CRYSTAL TUFF				
	- ANGULAR TO BLOCKY FSP CHIPS, 1-5MM SOME ARE SUB-ROUNDED				
	- MASSIVE WITH PLAGIOCLASE, EPIDOTE, QUARTZ, AND BIOTITE				
3[illegible] - 42.3	TUFFACEOUS CHERT				
	- A CHERTY BRECCIA WITH A TUFFACEOUS MATRIX				

PROPERTY:					HOLE NO. DB3-4
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	- LAPILLI SIZE CLASTS OF GRANULAR QUARTZ IN A FINE GRAINED MATRIX OF BIOTITE, MUSCOVITE, QUARTZ, CARBONATE, ANDALUSITE (?)				
	- MATRIX IS LOCALLY LAMINATED				
	- MATRIX HAS SCATTERED FELSITE CLASTS, TRACE CPY (< 1%)				
42.3 - 49.0	LAMPROPHYRE DIKE				
49.0 - 88.5	FELDSPAR CRYSTAL TUFF				
	- FSP CHIPS DISSEMINATED IN FINE GRAINED MATRIX				
	- MINOR LAPILLI CLASTS, SOME CLUMPS OF FSP XLS				
	- CROSS-CUT BY RED STAINED QTZ VEINS				
88.5 - 91.8	LITHIC GRAYWACKE				
	- MASSIVE, INTERMEDIATE COMPOSITION				
	- MEDIUM-FINE GRAINED PLAGIOCLASE, QUARTZ, EPIDOTE, ANDALUSITE (?)				
	- GRANULAR, REWORKED TUFF				

PROPERTY:				HOLE NO. DP3-4
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
91.8 - 168	FELDSPAR CRYSTAL TUFF				
	- SAME AS BEFORE				
	- OCCASIONAL LAPILLI SIZE CLASTS OF INTERMEDIATE VOLCANIC ROCK				
	- FELDSPAR CRYSTALS ARE BLOCKY TO SUB-ANGULAR, UP TO ~6 MM				
	- PLAG, EPI, QTZ, BIO MINERAL ASSEMBLAGE				
	- CROSS-CUT BY RED STAINED FRACTURES WITH QUARTZ				
	92.8 - 95.5 LITHIC GRAYWACKE WITH ABUNDANT CLASTS; GRANULAR QUARTZ WITH MICACEOUS MATRIX AT 94.6 - 94.8				
	- LOCALLY 1-2% P_o				
168 - 170.4	FELDSPAR CRYSTAL - LAPILLI TUFF				
	- FELSIC AND INTERMEDIATE CLASTS IN A FINE GRAINED MATRIX WITH FSP CHIPS				
	- PLAG, EPI, BIO, MUSCO, + QUTZ MINERAL ASSEMBLAGE				
	168.3 - 168.8 GRANODIORITE DIKE				

PROPERTY:				HOLE NO. D83-4
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
170.4 - 200	FELDSPAR CRYSTAL TUFF				
	- 1-5 MM FELDSPAR CHIPS				
	WITH SCATTERED CLASTS OF				
	INTERMEDIATE COMPOSITION				
	183.0 - 200.5 : SECTION OF INTENSE				
	RED FRACTURES WITH				
	QTZ - CARBO. FILLING				
200 - 238.5	FELDSPAR CRYSTAL - LAPILLI TUFF				
	- FSP CHIPS AND VOLCANIC				
	CLASTS IN FINE GRAINED				
	MATRIX				
	- MINOR 1' TO 2' SECTIONS OF				
	MASSIVE FSP CRYSTAL TUFF				
	- MOST CLAST ARE SIMILAR				
	TO MATRIX IN COMPOSITION.				
	OUTLINES ARE GHOST-LIKE				
238.5 - 350	METASEDIMENTARY ROCKS				
	A SERIES OF MASSIVE TO BANDED ROCKS				
	DERIVED FROM THE RE-WORKING OF VOLCANICS.				
	BANDING AT 60° CA				

PROPERTY:					HOLE NO. D83-4
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	238.5 - 250.5 : ARGILLACEOUS MUDSTONES				
	- FINE GRAINED GREEN ROCK WITH				
	BIO, CHLO, QTZ, PLAG, ± ANDA, MUSCO				
	- LOCALLY LAMINATED				
	250.5 - 252.5 : TUFFACEOUS CHERT				
	- FRAGMENTAL TEXTURED WITH				
	CLASTS OF SILICEOUS MATERIAL				
	IN A MICACEOUS MATRIX OF				
	BIOTITE / MUSCOVITE				
	252.5 - 300.5 : POLYMICTIC BRECCIA				
	WITH VOLCANIC CLASTS				
	- POLYMICTIC WITH CLASTS OF				
	FSP-XL TUFF, INT. ROCK, AND				
	SOME MAFIC AND SILICEOUS ROCK				
	- FSP CHIPS IN MATRIX				
	- SECTIONS CROSS-CUT BY PINK				
	FRACTURES WITH QTZ ± PM, CARBO.				
	& GLASSY QTZ VEIN, BARREN, AT				
	269.4 - 270.6				
	300.5 - 320 : ARGILLACEOUS MUDSTONES				
	- FINE GRAINED BIO, CHLO, QTZ WITH BIO MSPS				
	- BADLY ALTERED TO CHLO PLUS HEMA				

PROPERTY:				HOLE NO. D87-Y
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

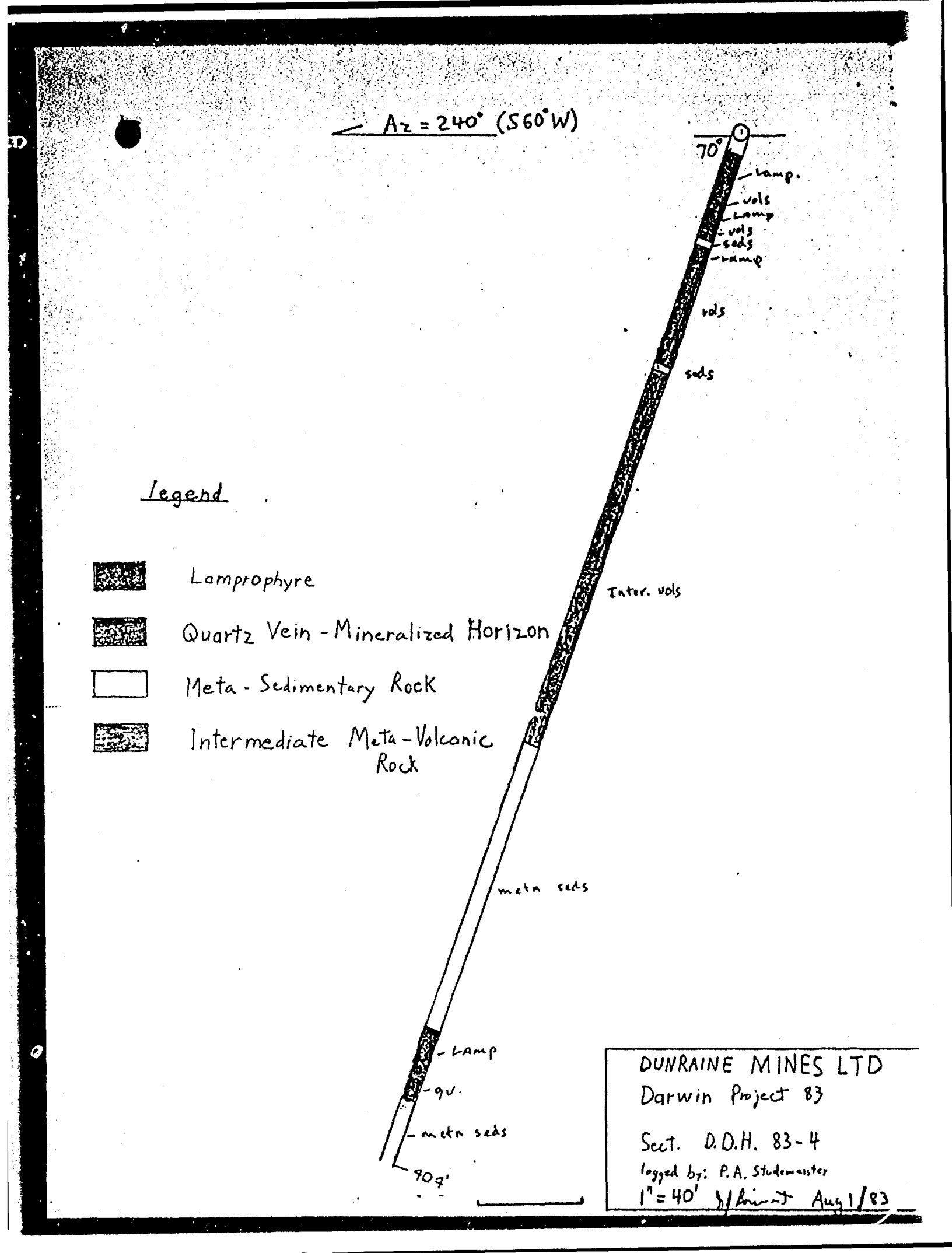
FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	320 - 341.5 : TUFFACEOUS MUDSTONES - FINE GRAINED MATRIX WITH SCATTERED CLASTS OF VOLCANIC MATERIAL - QTZ, EPI, BIO, CHLO, MUSCO, PLAG AND ANDA MINERAL ASSEMBLAGE - INTERMEDIATE COMPO WITH BIOTITE WISPS				
	305 - 327.5 : BADLY ALTERED BY QTZ-CARBO FRACTURES WITH HEMA STAINS				
	341.5 - 350 : LITHIC GRAYWACKE - REWORKED TUFFS OF INT. COMPO. - M.G. GRANULAR ROCK WITH MIAN QTZ, PLAG, EPI, BIO, AND SOME CARBO, ANDA. - TRACE CPY DISSEMINATED - LOCAL CLASTS OF SILICEOUS AND TUFF-LIKE MATERIAL; SUB-ROUNDED FSP CHIPS PRESENT				
350 - 370	LAMPROPHYRE DIKE -45° LA UPPER CONTACT				

PROPERTY:					HOLE NO.
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	DS3-4
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA Au					
					oz/ton					
370 - 378	MINERALIZED HORIZON									
	370 - 371.2 TUFFACEOUS MUDSTONE WITH ASPY	370 - 371	37801	1.0	0.04					
	- FINE GRAINED QTZ, MUSCOVITE SCHIST	371 - 372	37802	1.0	0.21	0.19				
	WITH 5-10% ASPY, MINOR PY, CPY	372 - 373	37803	1.0	0.18			0.13¢/7FT		
		373 - 374	37804	1.0	0.02			OR		
	371.2 - 376 QUARTZ LENSE	374 - 375	37805	1.0	0.38	0.34		0.17¢/5FT		
	- SUGARY-TEXTURED QTZ WITH MINOR	375 - 376	37806	1.0	0.11					
	INCLUSIONS OF ASPY-BEARING	376 - 377	37807	1.0	0.02					
	MUSCO-QTZ SCHIST	377 - 378	37808	1.0	0.005					
	- MINOR CPY, PY, Po, ASPY (1-3%)									
	IN QTZ	ReSamples								
	274-275: NATIVE GOLD	370.5-371.5	37809	1.0	.36					
		371.5-372.5	37810	1.0	.09					
	376 - 378 TUFFACEOUS MUDSTONE WITH ASPY	372.5-373.5	37811	1.0	.02			= .13¢/5FT		
	- FINE GRAINED QTZ-MUSCO SCHIST	373.5-374.5	37812	1.0	.09					
	WITH ASPY AND CHLO	374.5-375.5	37813	1.0	.12	.09				
		375.5-376.5	37814	1.0	.03					
378 - 404	METASEDIMENTARY ROCKS	376.5-377.5	37815	1.0	.02					
	378 - 381: TUFFACEOUS MUDSTONE									
	- MEDIUM - FINE GRAINED QTZ, EPI,									
	SIO, ± ANDA, PLAG WITH SIO STREAKS									
	- GNEISSOSE WITH TRACE Po, PY (<1%)									

PROPERTY:				HOLE NO.
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	D83-4
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	381-404 : LITHIC GRAYWACKE				
	- GRANULAR WITH SCATTERED				
	CLASTS OF VOLCANIC MATERIAL				
	- X-CUT BY QUARTZ - CARBO. VEINLETS,				
	AND HEMA. STAINS				
404	END OF HOLE				



DUNRAINE MINES LTD
Darwin Project 83

Sect. D.D.H. 83-4
logged by: P.A. Studemeister
1" = 40' Aug 1/83

Dunraine Mines Ltd PROPERTY: Darwin				HOLE NO. 83-5
LATITUDE: 0+90 N of Grace Shaft	BEARING: 255°	DIP: 70°	STARTED: Aug 10/83 COMPLETED: Aug 11/83	DEPTH: 260'
DEPARTURE: 1+28 E of Shaft.	V.D.	H.D.	DRILLED BY:	LOGGED BY: Paul Wilmshurst
ELEVATION:	LOCATION: Grace Vein North 40 Feet From shaft between 2nd + 3rd level			

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
0 - 6'	CASING				
6 - 17.8'	INTERMEDIATE METAVOLCANIC ROCKS				
	6 - 15.4 : FSP XL TUFF				
	15.4 - 17.8 : FINE GRAINED TUFFS				
	- PROBABLY REWORKED (EPICLASTIC?)				
	- CROSS-CUT BY UP TO 5MM WIDE GRANULAR QUARTZ WITH CPY, Po DISSEMINATIONS				
	- MATRIX ALSO HAS TRACE SULPHIDES				
17.8 - 36.3	METASEDIMENTARY ROCKS				
	17.8 - 32.2 : INTERLAYERED TUFFACEOUS AND MAFIC MUDSTONES				
	- FINE GRAINED QTZ, BIO, EPI, PLAG I ANDALU, CHLO				
	- MINOR CLASTS DISPERSED IN BIOTITE - BEARING MATRIX				
	- UP TO ~5% CPY, Po				
	- TRAVERSED BY VEINLETS OF GRANULAR QUARTZ WITH CPY, Po				
	- MAFIC PORTIONS ARE RICH IN BIOTITE; TUFFACEOUS BANDS ARE FELSIC AND HAVE LESS BIOTITE				
	- POSSIBLE FINE GRAINED GARNET				

PROPERTY:					HOLE NO. 83-5
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	32.7 - 36.3 : LITHIC GRAYWACKE				
	- MEDIUM - FINE GRAINED (~2-3 MM)				
	ASSEMBLAGE OF QTZ, PLAG,				
	BIO, AND A, EPI, AND GAR				
	- GRANULAR TEXTURED ROCK				
	- CONTACT AT ~30° CA				
	- MINOR CLASTS OF GRANULAR				
	QTZ				
36.3 - 98	INTERMEDIATE METAVOLCANIC ROCKS				
	36.3 - 39.5 : FSP XL TUFF				
	- CONTACT SHARP AT ~30° CA				
	39.5 - 39.9 : FINE GRAINED TUFF				
	39.9 - 59.3 : FSP XL TUFF				
	59.3 - 60.0 : FINE GRAINED TUFF				
	WITH SCATTERED FSP XLS				
	60.0 - 98 : FSP XL TUFF				
	- GRADATIONAL CONTACT WITH				
	ABOVE TUFFS				
	- HAVE MINOR LAPILLI CLASTS				
	OF INT COMPOSITION				
98 - 99	TUFFACEOUS MUDSTONE				
	- REWORKED TUFFS, SILICEOUS ROCK				
	- QTZ-BIO-PLAG GNEISS				

PROPERTY:				HOLE NO. 83-5
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

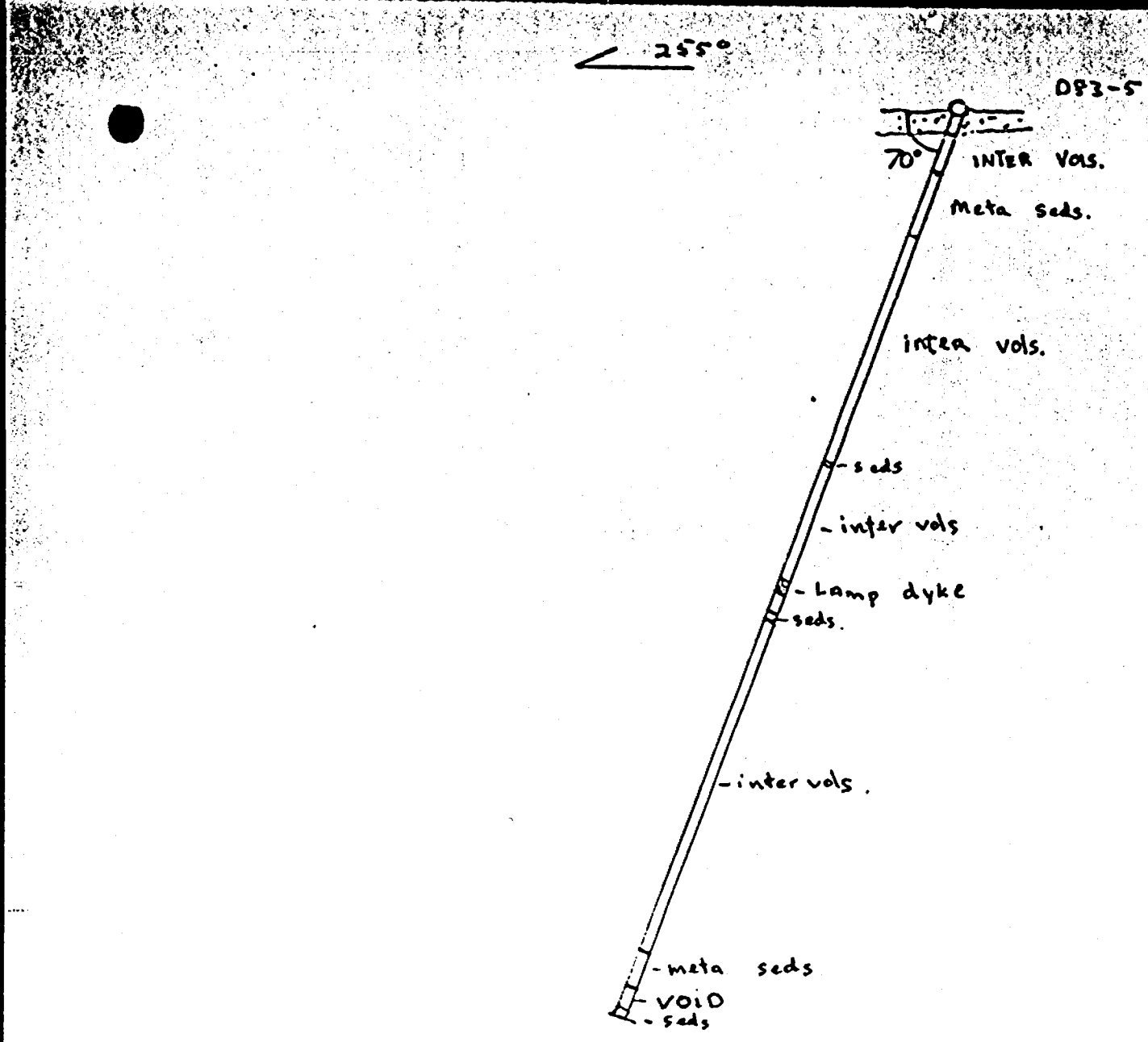
FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
99.-134.5	INTERMEDIATE METAVOLCANIC ROCKS				
	99 - 131 : FSP XL TUFF				
	- MINOR 2"-4" BANDS OF				
	FINE GRAINED TUFF				
	131 - 137.7: FINE GRAINED TUFF				
	131.7 - 134.5 : FSP XL TUFF				
134.5 - 137.4	LAMPROPHYRE DIKE				
	- WITH ALTERED TUFFS				
137.4 - 143	INTERMEDIATE METAVOLCANIC ROCKS				
	137.4 - 143 : FSP XL TUFF				
	- 142.6 - 143 : POSSIBLE DIKELET(?),				
	HAVE BLUE QUARTZ GRAINS				
143 - 144.6	TUFFACEOUS MUDSTONE				
	- FINE GRAINED LAMINATED ROCK				
	WITH QUARTZ STRINGERS				
	- HAVE QTZ, BIO, EPI I ANDA, CHLO,				
	MUSCO, PLAG				
	- CONTACT ~70°CA				
144.6 - 240	INTERMEDIATE METAVOLCANIC ROCKS				
	144.6 - 146.6 : FSP XL TUFF				
	146.6 - 146.8 : - FINE GRAINED TUFF; ~70° CA				

PROPERTY:					HOLE NO. 83-5
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	146.8 - 177.6 : FSP XL TUFF				
	- NEAR BASE FSP XLS BECOME SMALLER IN SIZE				
	177.6 - 200.6 : FINE GRAINED TUFF WITH FINE FSP XLS				
	200.6 - 215 : FSP XL TUFF				
	- SOME LAPILLI CLASTS				
	- GRADATIONAL INTO FINE GRAINED TUFFS				
	215 - 227.4 : FSP - XL LAPILLI TUFFS I FINE GRAINED TUFFS				
	- CLASTS ARE SIMILAR TO THE MATRIX, INT. COMPO.				
	227.4 - 240 : FINE GRAINED TUFF				
	- DISSEMINATED FSP (FELSITE?) XLS OR CHIPS				
	- 236 - 240 : REWORKED				
240 - 250	METASEDIMENTARY ROCKS				
	240 - 248.8 : TUFFACEOUS MUDSTONES				
	- M.F.G. QTZ-BIO GNEISS WITH BIOTITE MATRIX				
	248.8 - 250 : CHERTY TUFF				
	- CLASTS OF GRANULAR QUARTZ IN A QTZ-BIO MATRIX				
	- 1-2% PY, ASPY				

PROPERTY:					HOLE NO. 83-5
LATITUDE :	BEARING:	DIP:	STARTED:	COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:		DEPTH:
ELEVATION:	LOCATION:				LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
250 - 258	VOID - Vein stoped out ?!				
258 - 260	TUFFACEOUS MUDSTONES				
	- AS BEFORE				
	- DISSEMINATED PY ≤ 3%				
260	END OF HOLE				



D 83-5

Dunrhine Mines Ltd.
Section D83-5
Scale: 1 inch = 40 feet.
by D. Gignac Aug 15/83

Dunraine Mines Ltd	PROPERTY: Darwin			HOLE NO. 83-6
LATITUDE: 0+10 N of Grace Shaft	BEARING: 265°	DIP: 70°	STARTED: Aug 12/83	COMPLETED: Aug 13/83
DEPARTURE: 1+80 E of Shaft	V.D.	H.D.	DRILLED BY:	DEPTH: 286
ELEVATION:	LOCATION: Grace Vein South of Shaft - Sta. 20 Ft. - Between 2nd & 3rd level.			LOGGED BY:

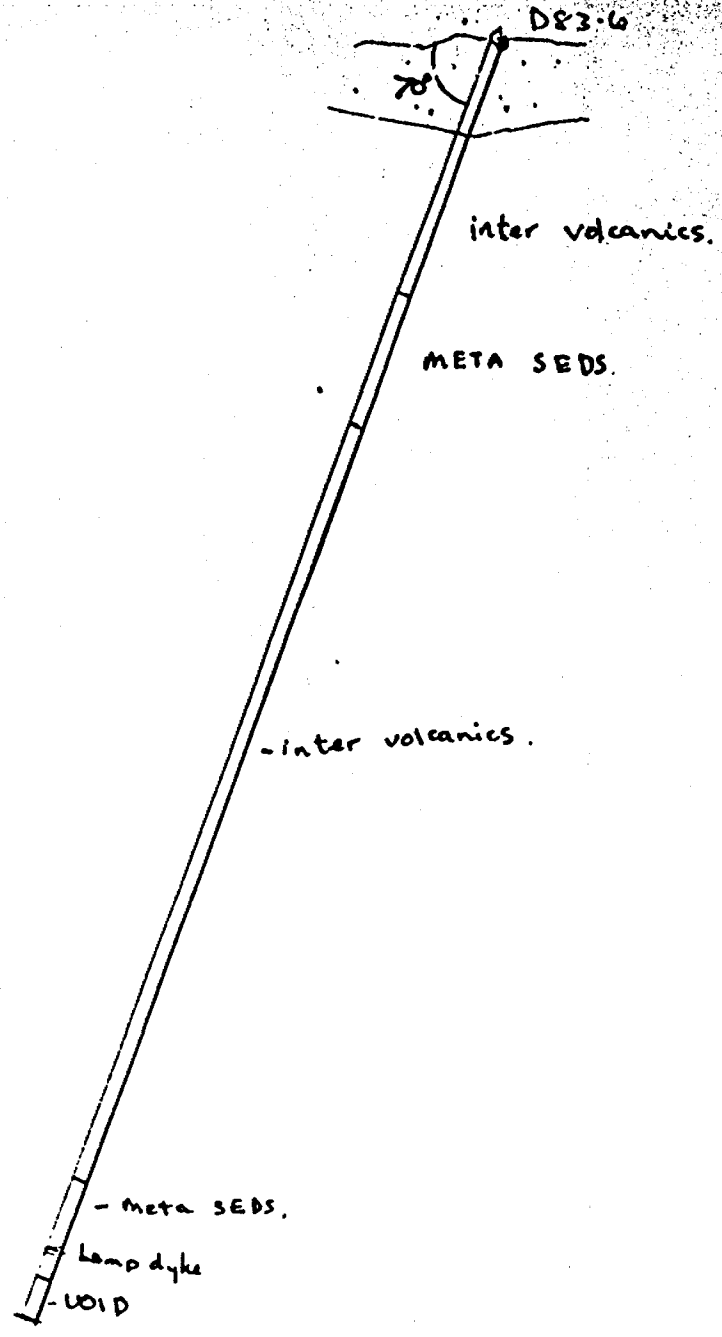
FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
0 - 22	CASING				
22 - 60.4	INTERMEDIATE METAVOLCANIC ROCKS				
	22 - 30.2 : FSP XL TUFF WITH MINOR LAPILLI CLASTS				
	30.2 - 30.8 : FINE GRAINED TUFFS				
	30.8 - 60.4 : FSP XL TUFF				
60.4 - 89.5	METASEDIMENTARY ROCKS				
	60.4 - 64.8 : CHERTY TUFF				
	- M.F.G. QTZ-BIO GNEISS WITH FINE CLASTS OF SILICEOUS AND FELSIC MATERIAL				
	64.8 - 89.5 : TUFFACEOUS MUDSTONES				
	- F.G. QTZ, BIO, PLAG, MUSCO WITH MINOR CLASTS				
	- MICACEOUS MATRIX				
89.5 - 262	INTERMEDIATE METAVOLCANIC ROCKS				
	89.5 - 99.5 : FSP XL TUFF				
	99.5 - 100.3 : FINE GRAINED TUFF				
	CONTACT ~ 65° CA				
	100.3 - 134 : FSP XL TUFF				
	102.7 - 103.1 : LAMPROPHYRE DIKE				

PROPERTY:				HOLE NO. 83-6
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY:

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
	134 – 135.2 : FINE GRAINED TUFF WITH ~20% FSP CHIPS				
	135.2 – 194.7 : FSP XL TUFF				
	– BECOMES FINER GRAINED WITH DEPTH				
	194.7 – 196.6 : FINE GRAINED TUFF WITH MINOR FSP CHIPS				
	196.6 – 208.4 : FSP XL TUFF				
	– CHIPS BECOME COARSER WITH DEPTH				
	208.4 – 217 : FINE GRAINED TUFF AND LAPILLI TUFF				
	217 – 241.2 : MASSIVE FSP XL TUFF OR FLOW				
	– ALMOST EQUIGRANULAR ROCK				
	– 225.2 – 225.8 : REWORKED TUFF				
	241.2 – 262 : FSP XL – LAPILLI TUFF				
262 – 279.7	METASEDIMENTARY ROCKS				
	262 – 279.7 : TUFFACEOUS MUDSTONES				
	– FINE GRAINED QTZ, BIO, EPI, PLAG WITH MINOR CHERTY STRINGERS				
279.7 – 282.3	LAMPROPHYRE DIKE				

PROPERTY:				HOLE NO. 83-6
LATITUDE :	BEARING:	DIP:	STARTED: COMPLETED:	
DEPARTURE:	V.D.	H.D.	DRILLED BY:	DEPTH:
ELEVATION:	LOCATION:			LOGGED BY: Paul Wallace

FOOTAGE		SAMPLE FOOTAGES	SAMPLE No.	WIDTH FT.	ASSAY DATA
282.3 - 286	LITHIC GRAYWACKE				
	- FSP CHIPS AND SMALL FELSIC CLASTS,				
	AND SOME PELITIC CLASTS				
	- GRANULAR ROCK				
286 - 294	Void				
294	End OF Hole				



Dunnaine Mines Ltd.
Section DS3-6 D83-6
scale 1 inch = 40 feet.
D. Lynch Aug 15/83

1" = 40'

REPORT ON THE DUNRAINE MINES LTD. PROPERTY

NEAR WAWA, ONTARIO

SEPTEMBER 1983

Paul A. Studemeister, Ph.D.
Geologist
Dunraine Mines Ltd.
Suite 506
199 Bay Street
Toronto, Ontario

DUNRAINE MINES LTD. PROPERTY NEAR WAWA

INTRODUCTION

This report summarizes the results of a geochemical survey along the Darwin Shear and outlines targets for exploration on the Dunraine property. The geochemical survey and the field work suggest that the potential for an orebody is miniscule except where the Darwin Shear intersects stratabound gold-bearing lenses. It is best to divert attention to the graywacke-tuff-cherty breccia assemblage that hosts the known gold occurences.

GEOCHEMICAL SURVEY

A survey of the gold content, redox state of iron, and chemical composition was conducted along the Darwin Shear between Ward and Mountain lakes. The purpose was to assess the relationship between gold concentration and the Darwin Shear.

Distribution of Gold

Rocks were collected around the Darwin Shear and analyzed for gold at the 10 ppb level of significance. Soil and organic matter adhering to the rocks were removed to avoid interference with the gold analysis.

A summary of the results is as follows:

1) 90% of the samples have less than or equal to 25 ppb Au, below a level of significance. 6% have 50 ppb to 270 ppb Au,

anomalous relative to background rocks. One composite sample assayed 4670 ppb Au but could not be duplicated.

2) The anomalous values (> 50 ppb Au) are scattered amongst background values (≤ 25 ppb Au).

3) There is no regular pattern to the distribution of the anomalous values. Some of the wallrocks to the Darwin Shear assayed over 25 ppb Au.

4) A compilation of assay results suggests that the graywacke-tuff-cherty breccia horizon is more anomalous in gold relative to the Darwin Shear.

5) There is no gold halo along the surface of the Darwin Shear to suggest an orebody at shallow depth.

Redox State of Iron

Research studies suggest that mineralized rocks which envelop gold-bearing hydrothermal veins display a strongly reduced state of iron (Fe^{+2}/Fe_t > 0.9) relative to the redox state of unmineralized rocks ($Fe^{+2}/Fe_t \simeq 0.7$). The shift in Fe^{+2}/Fe_t is related to the water/rock ratio, and the observed dominance of Fe^{+2} requires large volumes of a reducing hydrothermal fluid.

Twelve samples of altered rocks from the Darwin Shear are compared with twelve unaltered rocks west of the structure. The altered tuffs have a chlorite-calcite-sericite-albite-quartz assemblage whereas the unaltered tuffs have a biotite-epidote-quartz-plagioclase assemblage. The altered granodiorite have a chlorite-sericite-calcite-albite-quartz

assemblage whereas the unaltered granodiorite have a chlorite-epidote-biotite-quartz-plagioclase assemblage.

The Fe^{+2} to Fe_t ratios are plotted on histograms. The results are:

1) The altered tuffs (Fe^{+2}/Fe_t = 0.84) are slightly reduced compared to unaltered tuffs (Fe^{+2}/Fe_t = 0.71), but not to the extent to suggest a mineralized structure.
2) The altered granodiorites (Fe^{+2}/Fe_t = 0.65) have on average a similar redox state as the unaltered granodiorites (Fe^{+2}/Fe_t = 0.63).
3) The abscence of a reduced halo with $Fe^{+2}/Fe_t > 0.9$ may suggest that the Darwin Shear is not mineralized.

Major and Trace Elements

A characteristic feature of Archean vein-type gold deposits is an envelope of altered rocks. Research studies suggest that this wallrock alteration involved large additions of $K_2O + H_2O + CO_2$ and large loss of Na_2O. The chemical composition of altered and unaltered rocks are compared to determine what the element exchange trends between the fluid and rock were along the Darwin Shear.

The results of the survey are presented on histograms. The histograms reveal that alteration of tuff and granodiorite on average involved large additions of volatiles (e.g. L.O.I.), namely water and carbon dioxide. The abundances of Na_2O and K_2O between altered and unaltered rocks are not very different.

A suite of granodiorite samples was taken along D81-16 drill core to find the chemical change across the Darwin Shear. The results show that there was addition of $H_2O + CO_2$, but only minor loss of N_2O. In the opposite sense to that expected in a mineralized structure, K_2O was quantitatively leached.

The elemental exchange trends along the Darwin Shear only partly conform to those characteristic of mineralized structures. These results complement the redox state relations and gold distribution in suggesting that the Darwin Shear does not have large vein-type gold deposits at shallow depths.

Recommendations

The subsurface exploration of the Darwin Shear should be discontinued until new data of a favourable nature emerges. A large orebody at shallow depths is not likely. The field work and 1981 drilling suggest that the local gold anomalies are related to epiclastic tuffs traversed by the Darwin Shear.

Metamorphic grade changes across the Darwin Shear from the upper greenschist facies east to the lower greenschist west. There is no evidence for lateral displacement and this lineament appears to have formed during regional metamorphism, after gold concentration. The Darwin Shear has been discussed in a previous report to the company.

GEOLOGICAL SURVEY

The known gold occurences on the Dunraine property are in a graywacke-tuff-cherty breccia assemblage that occupies with polymictic breccia a paleotopographic basin in pyroclastic tuffs. The basin is synformal trending from the Van Sickle mine southwest to the Darwin mine for about a mile. The gold is concentrated with the graywacke sections rather than with the polymictic breccia. The hinge of this basin trends to the southwest and plunges moderately to the southwest.

The Parkhill fault cross-cuts the structure shifting the west block south relative to the east block. The extensions of the Parkhill oreshoots on the west block have yet not been discovered.

Exploration Strategy

The exploration for new orebodies should concentrate in and around the known gold occurences. There are essentially two general targets. The extensions of the Darwin and Parkhill oreshoots, coarse gold placers that occupy slump channels on the slopes of the paleo-basin. The hinge zone of the paleo-basin is not exposed but may host fine gold placers which offer the greatest potential for a large tonnage deposit.

The specific targets are:

1) In and around the old working of the Darwin and Parkhill mines, now inaccessible because of flooding.

2) The Moody Pit area which is thought to host the extensions of the Parkhill oreshoots offset by the Parkhill fault.

3) The Mariposa Shaft which is situated on the south limb of the basin.

4) The Grace Vein horizon south of the Grace shaft, around the Skunky Dog Showing, and near the intersection with the Darwin Shear.

5) The south closure of the basin near the Darwin mine.

CONCLUSIONS

Targets for drilling are:

1) Grace horizon south of the Grace shaft: 1 hole (400') to intersect the horizon and test width at depth.

2) Grace horizon south of Trout Creek: 2 holes (600') to test the width and grade at shallow detph.

3) Skunky Dog Showing: 1 hole (400') to test the width and grade below previous drilling.

4) The Moody Pit area: 2 holes (800') to intersect extensions of the Parkhill oreshoots offset by fault.

5) The south closure of the basin near the Darwin mine: 1 hole (500') to find the plunge of the basin.

6) Mariposa Shaft: 1 or 2 holes (600-700') to test the south limb of the basin assemblage across section.

7) Nyman Showing: 1 hole (500') to cut across section of the basin assemblage.

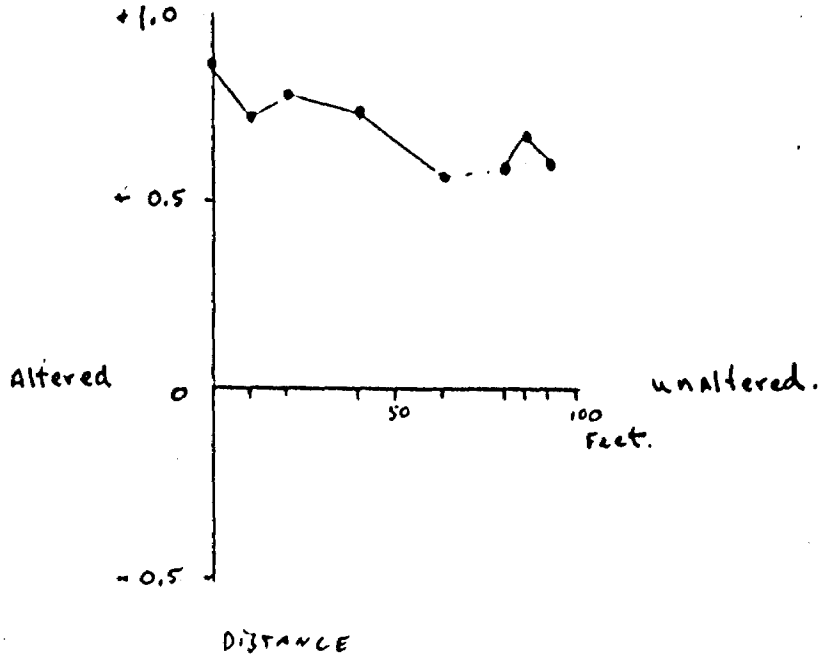
8) Extra footage for follow-up drilling (600').

Total footage: 4500'

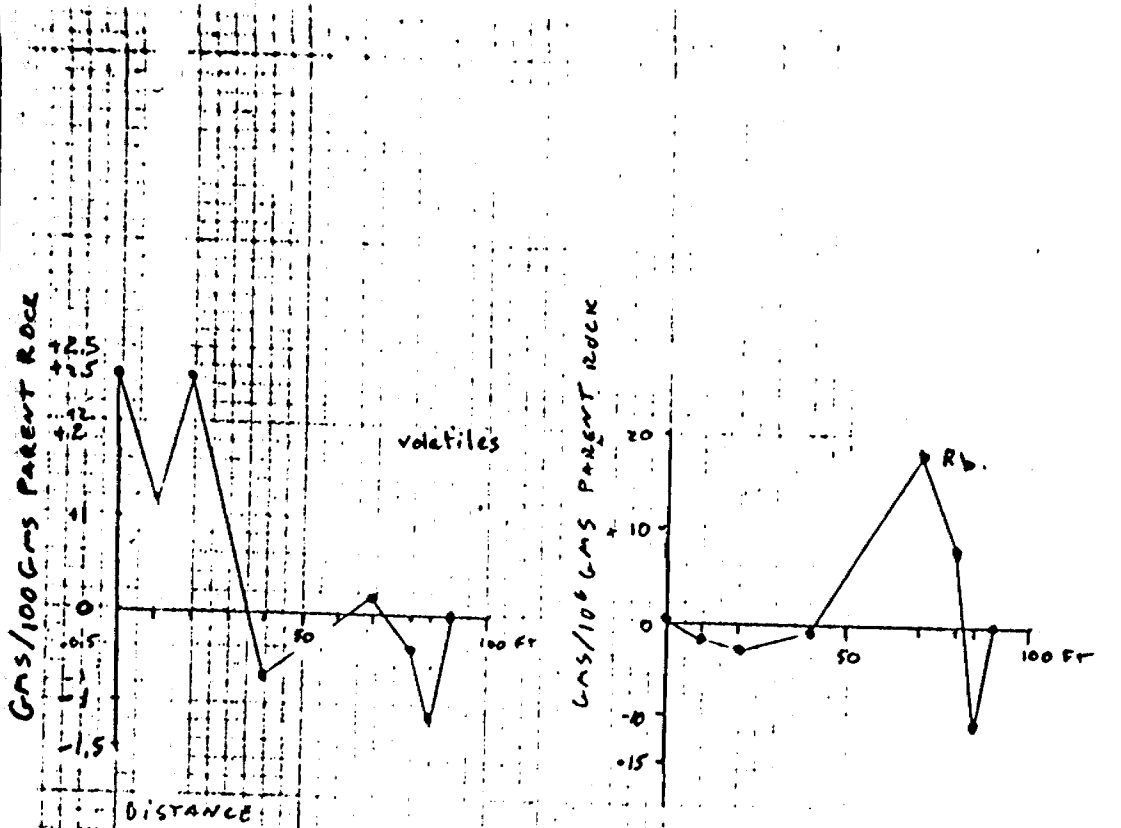
This report is respectfully submitted.

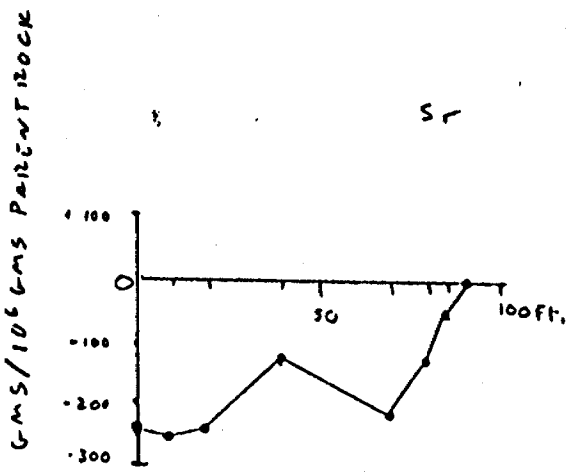
Paul Studemeister

Paul A. Studemeister
Geologist
September 28, 1983



CHEMICAL CHANGES IN GRANODIORITE ACROSS DARWIN SHEAR (D81-16)





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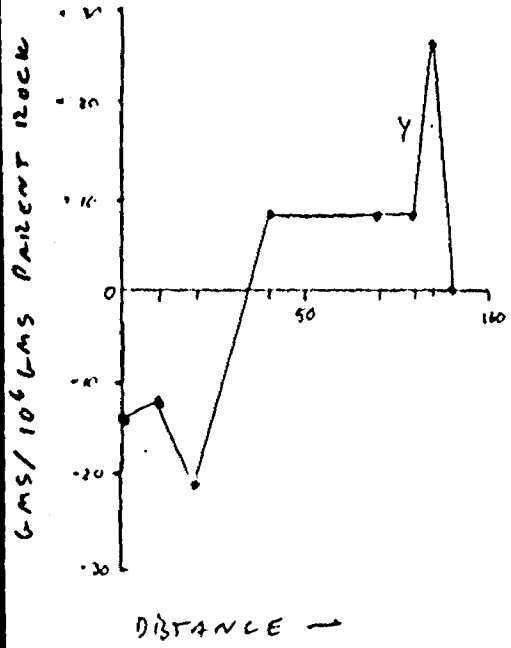

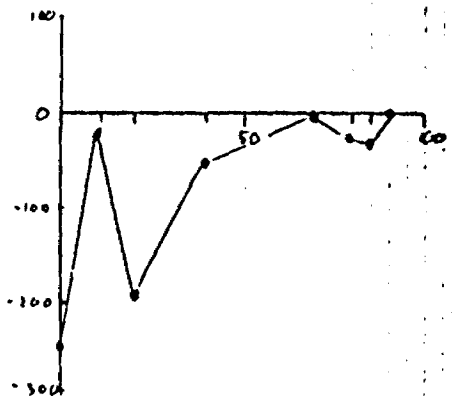

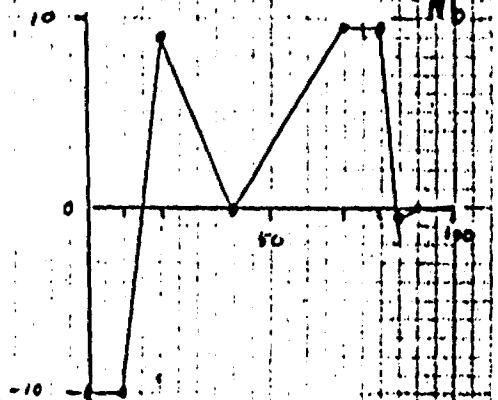

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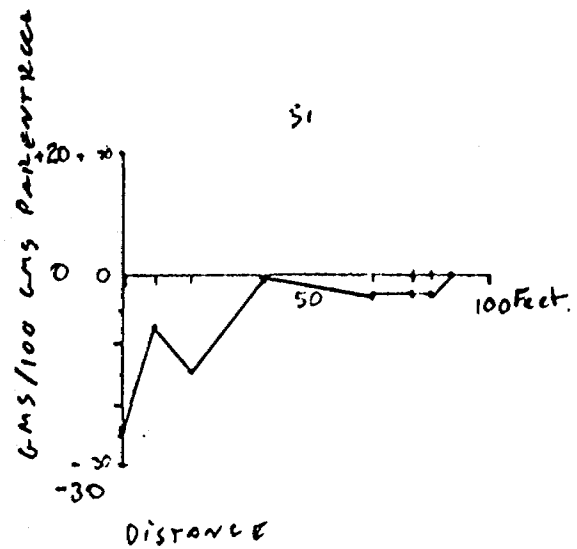
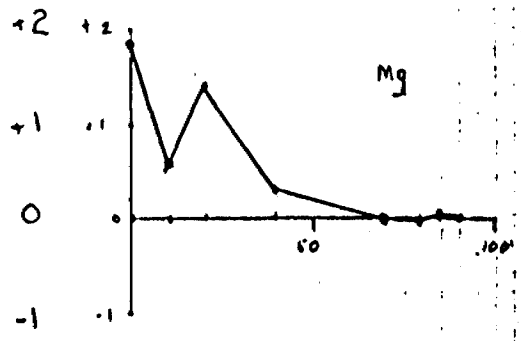
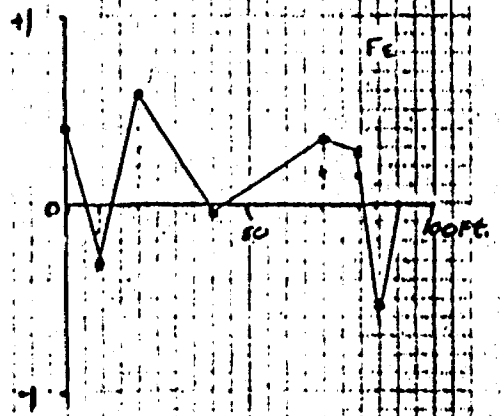
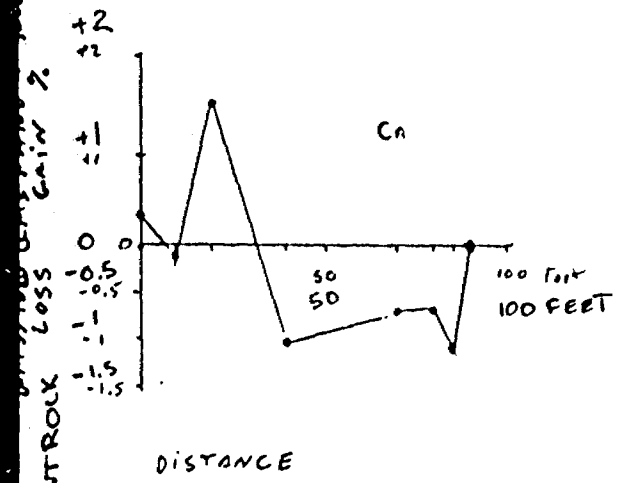


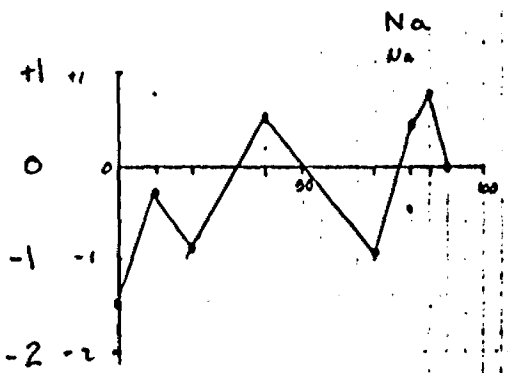


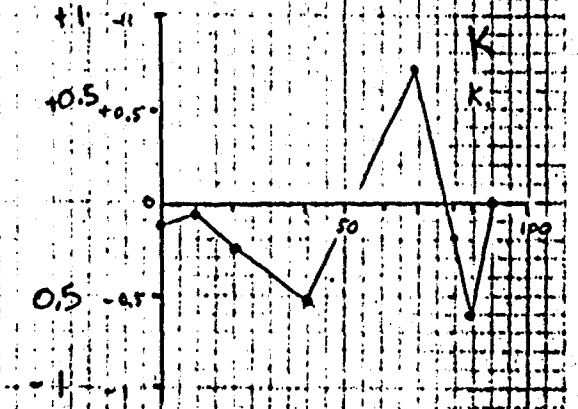


CHEMICAL CHANGES IN GRANODIORITE ACROSS DARWIN SHEAR

(081-16)

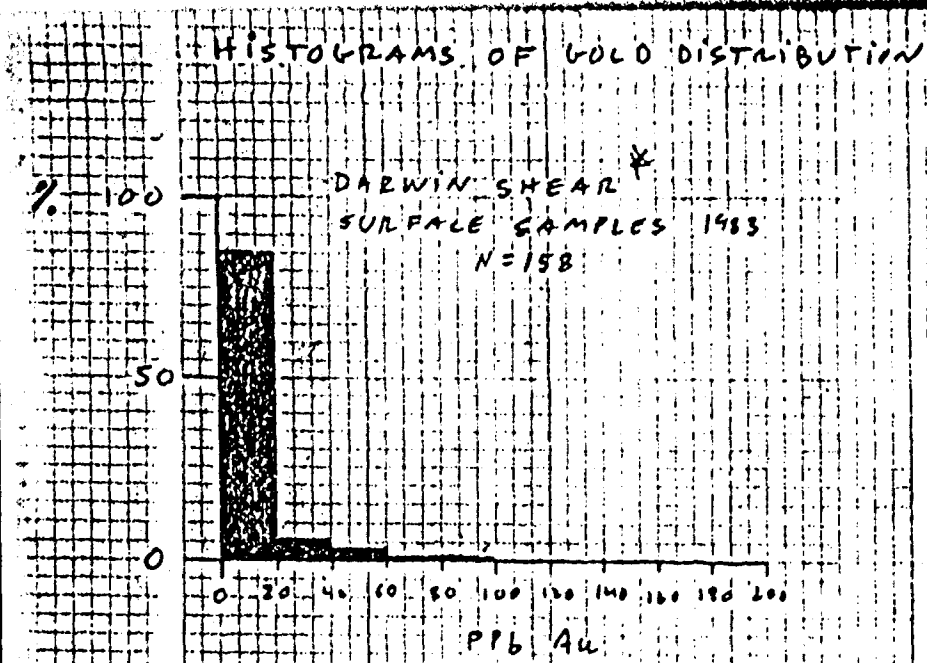


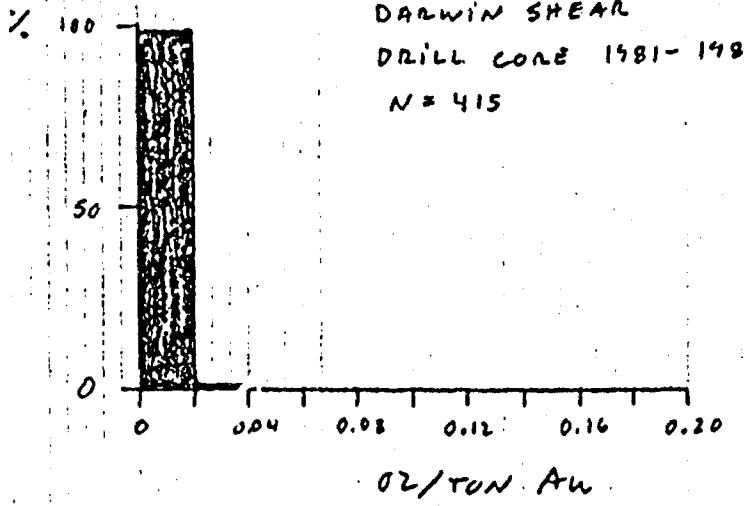


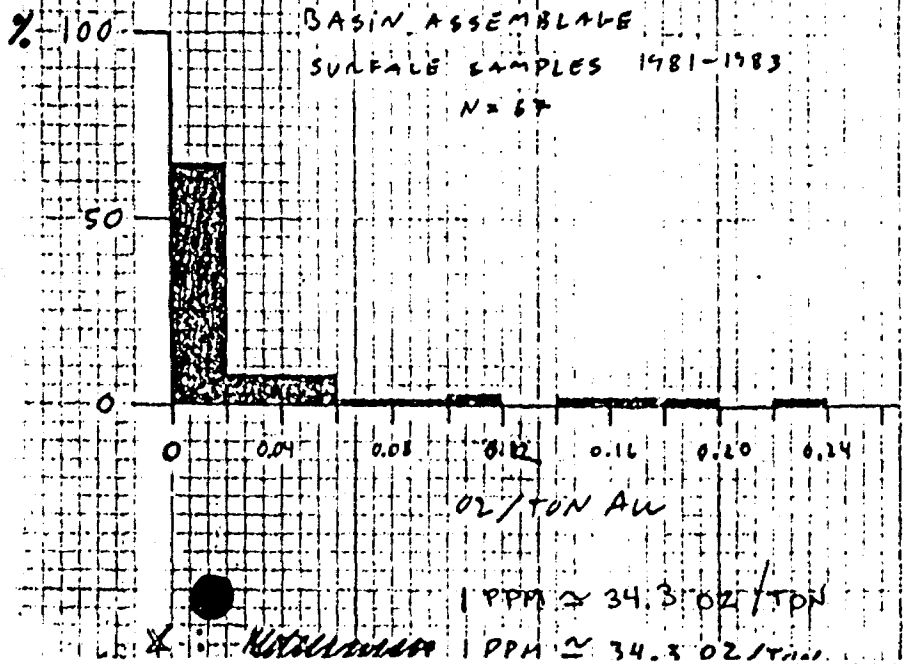


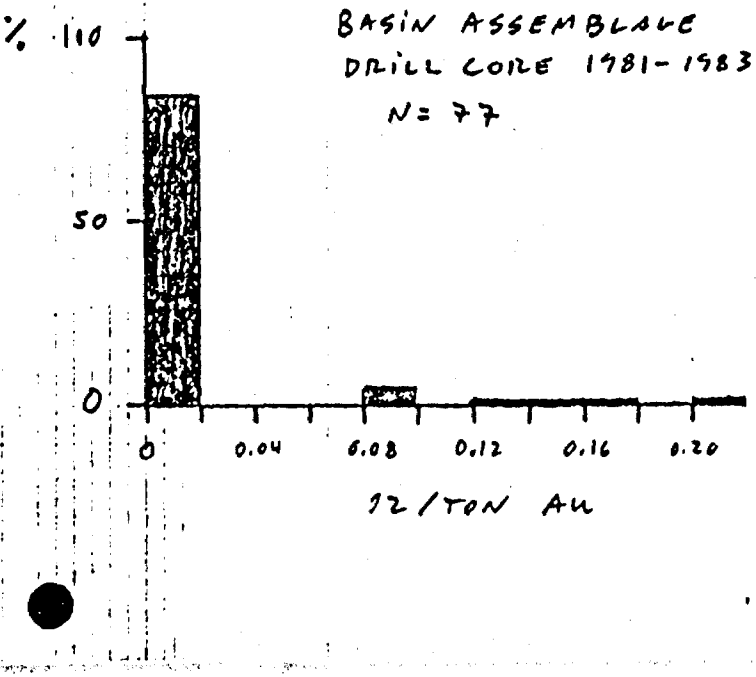
CHEMICAL CHANGES IN GRANODIORITE ACROSS DARWIN SHEAR (081-16)

HISTOGRAMS OF GOLD DISTRIBUTION





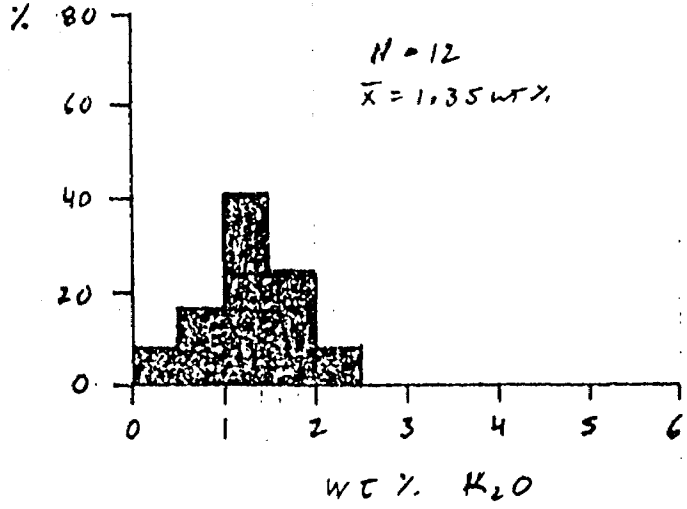




1 PPM ≃ 34.3 OZ/TON

* 1 PPM ≃ 34.3 OZ/TON

UNALTERED GRANODIORITE



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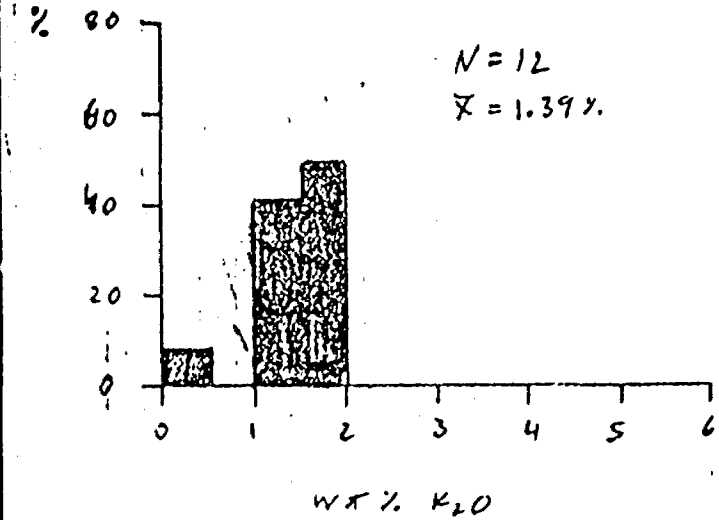

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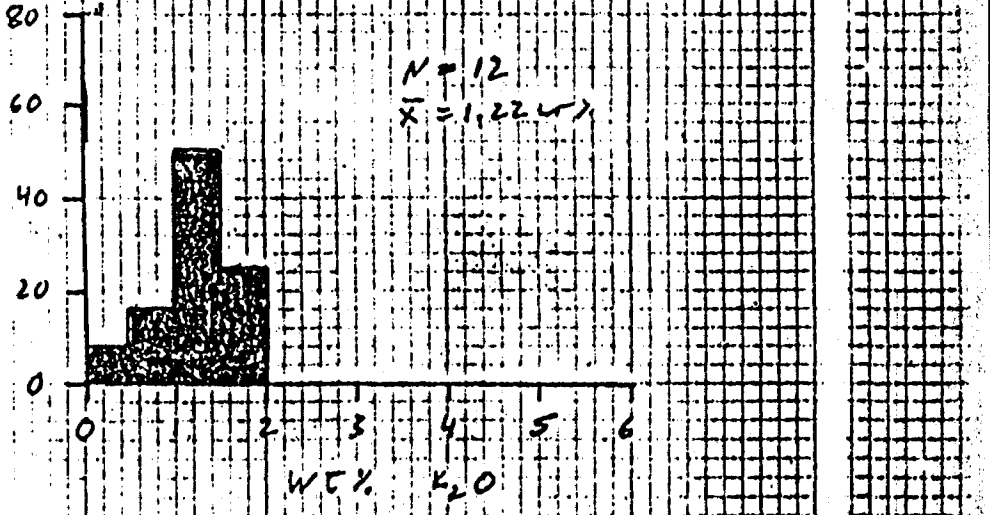

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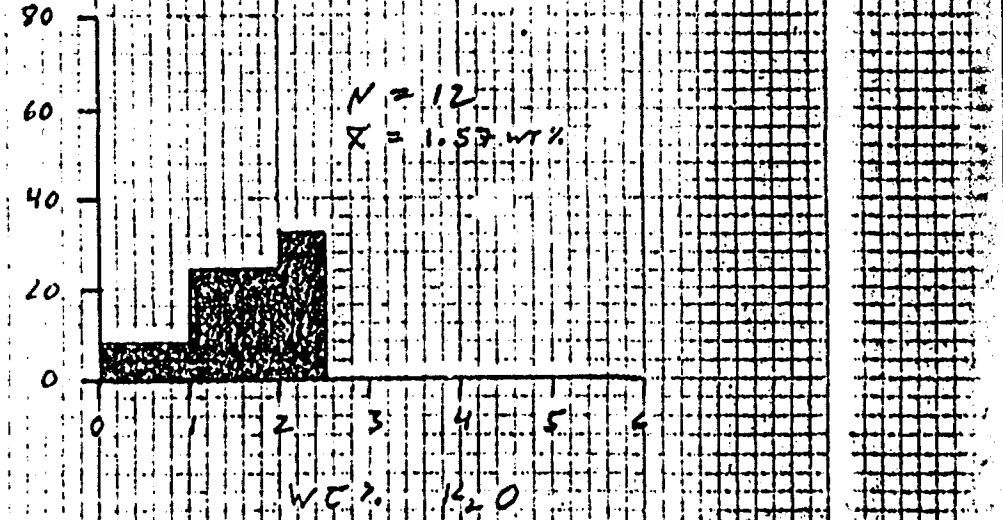

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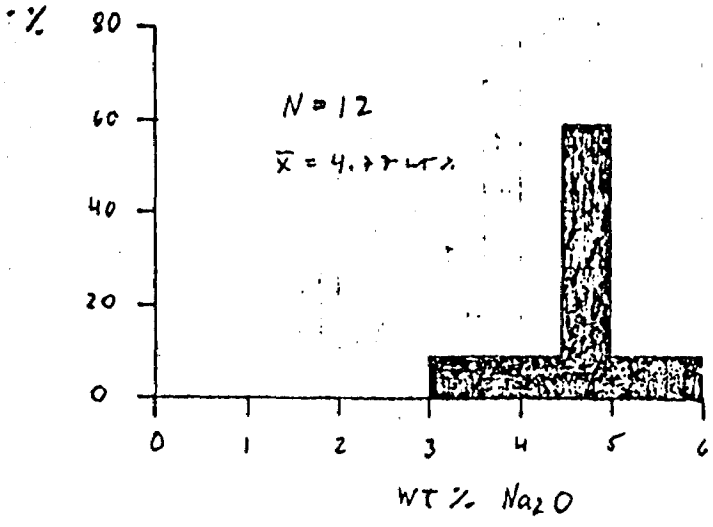

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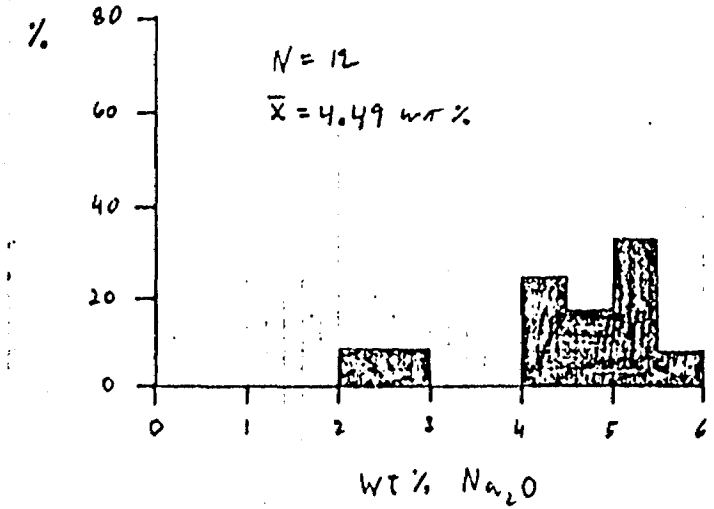

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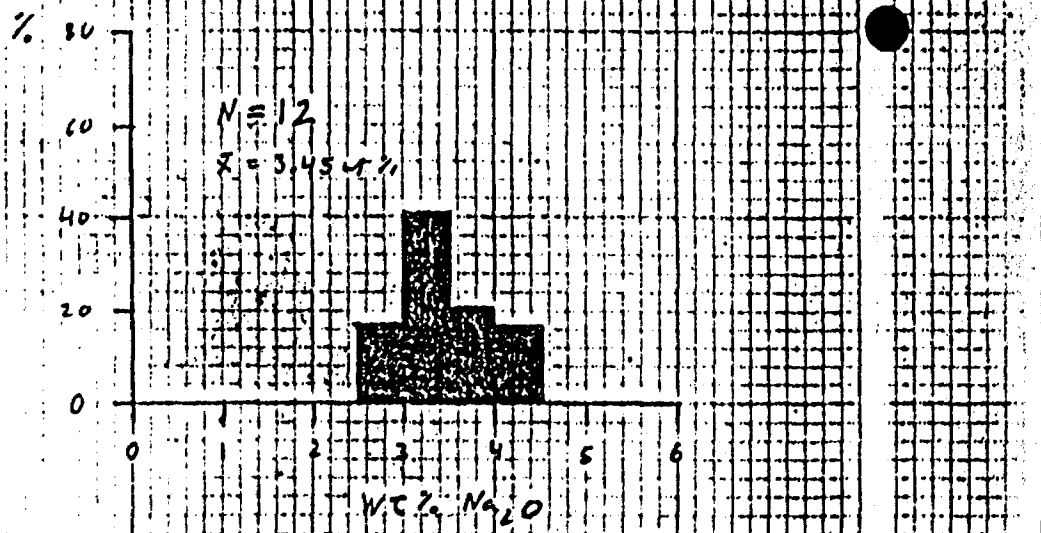

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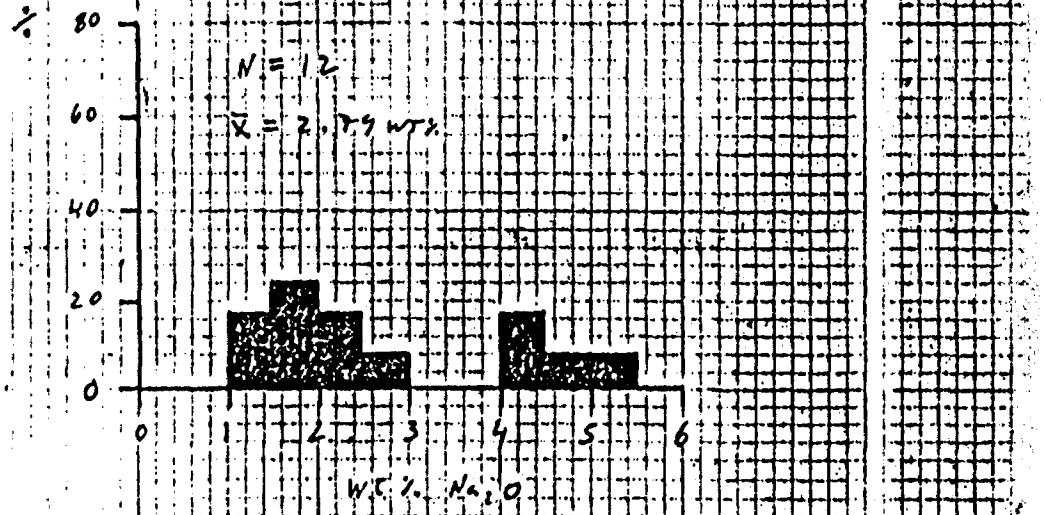
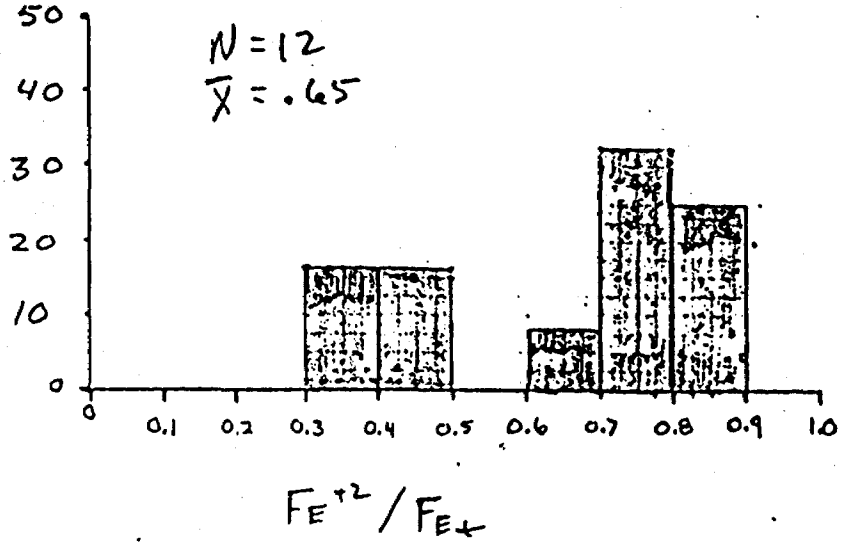
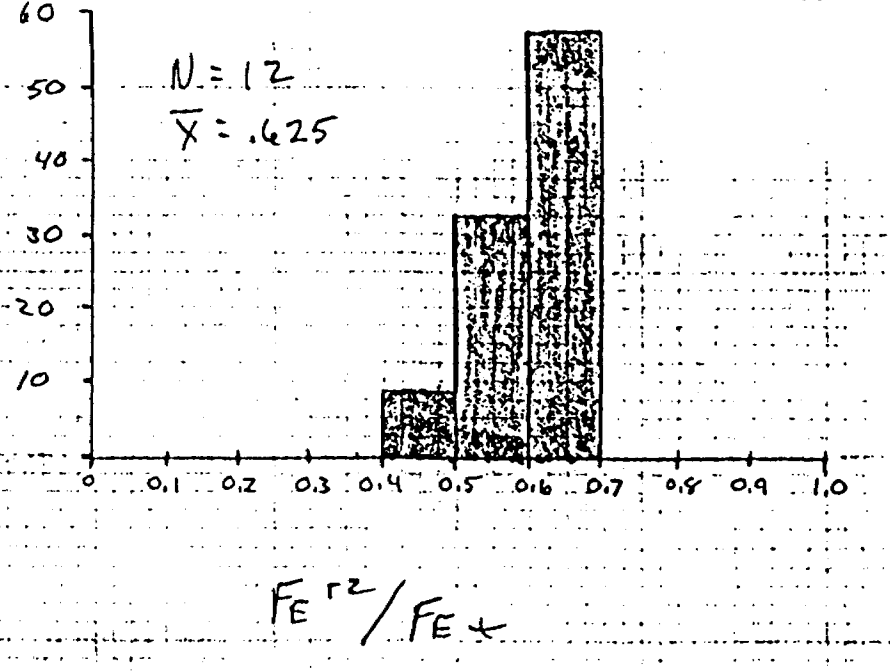


Altered Granodiorite

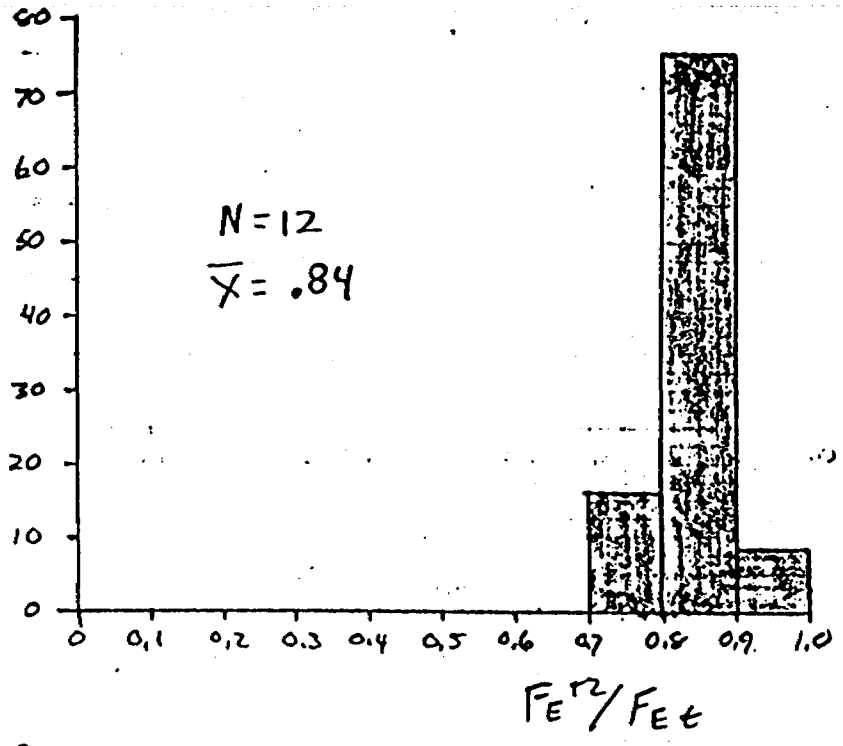


Percent %

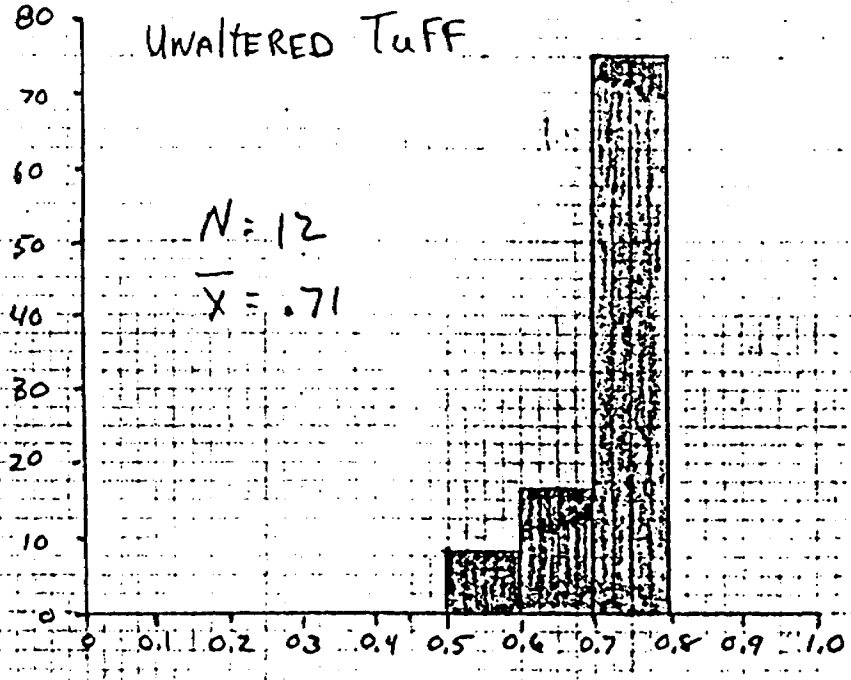
Unaltered Granodiorite



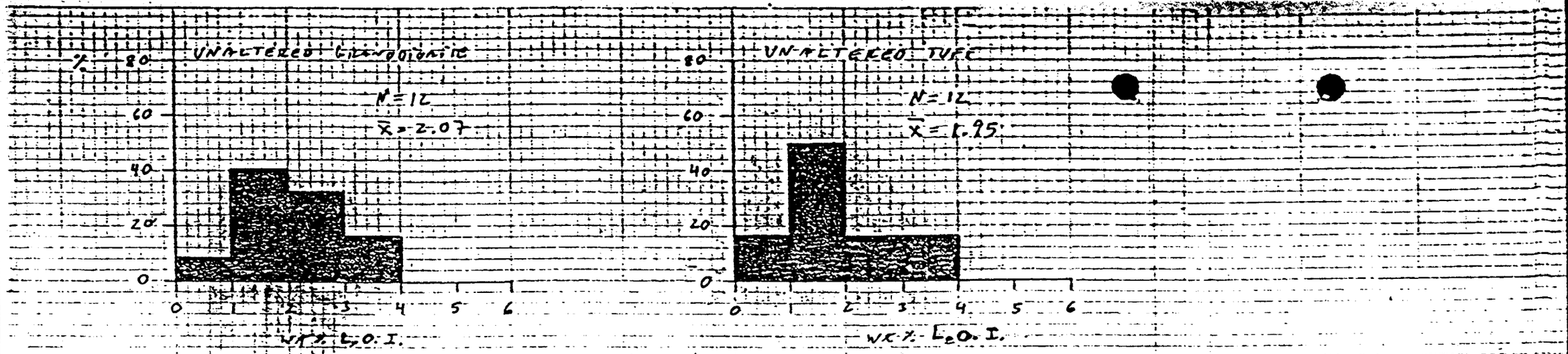
Altered Tuff

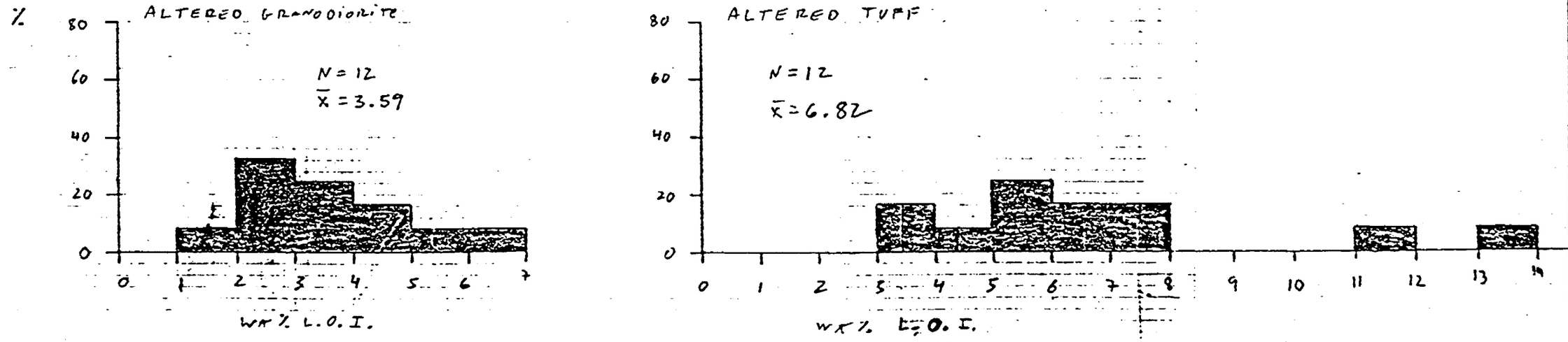


Unaltered Tuff



Relative Percent


%
UNALTERED GRANODIORITE
N = 12
$\bar{x}$ = 2.07
wt % L.O.I.
UNALTERED TUFF
N = 12
$\bar{x}$ = 1.95
wt % L.O.I.


%
ALTERED GRANODIORITE
N = 12
$\bar{x}$ = 3.59
wt % L.O.I.
ALTERED TUFF
N = 12
$\bar{x}$ = 6.82
wt % L.O.I.

- TKS -

THE DUNRAINE PROPERTY: A REVIEW

October 4, 1983

Paul A. Studemeister
Geologist
Dunraine Mines Ltd.

BACKGROUND

Dunraine Mines Ltd. has a gold property of 56 claims 5 miles south of Wawa in the Algoma District of Ontario. There are two former producers on the property, the Parkhill and Darwin mines, that were operated between 1902 and 1944 by the former owners. The Parkhill mine produced 54,301 oz of gold from 125,778 tons of ore with a recovered grade of 0.43 oz/ton Au. The mine has an inclined shaft to a depth of 1244 ft and over 30,000 ft of underground workings. The Darwin mine produced 15,191 oz of gold from 45,528 tons milled for a recovered grade of 0.33 oz/ton Au. There are two shafts and over 13,000 ft of drifts at the Darwin mine, located 3/4 miles southwest of the Parkhill mine. The original inclined shaft was sunk to 450 ft and a three compartment shaft was sunk to 830 ft with a winze to 900 ft. The underground workings at the Darwin and Parkhill mine are now flooded. There are 5 gold prospects between the two mines that are undeveloped.

BASIN ASSEMBLAGE

The Dunraine property is underlain by a volcanic sequence that is intruded by the Jubilee stock and that is metamorphosed to the greenschist facies. The known gold occurences are in a graywacke-tuff-cherty breccia assemblage that occupies with polymictic breccia a paleotopographic depression in pyroclastic tuffs. This basin is an inclined

synform extending for about a mile from the Van Sickle southwest to the Darwin mine. The hinge zone of this basin plunges moderately to the southwest, the bottom level lies to the south of the Darwin mine. The basin formed in a volcanic, shallow marine environment and was filled with sedimentary material during a quiescence in pyroclastic eruptions.

Native gold is disseminated in granular quartz lenses that strike in various directions and are hosted by a pelitic tuff that is locally banded and has soft-sediment deformation structures. Systems of gold-bearing lenses provided the richest ore in the gold camp during the producing years. The orebodies at the Darwin and Parkhill mines have a preferred elongation to the south or southwest. These auriferous quartz lenses represent coarse placer deposits that occupy with pelitic mud ancient channels on the slope of the paleo-basin.

Gold also occurs in an arsenopyrite-bearing pelitic schist that envelopes small lenses or stringer of granular quartz. This type of gold occurs at the Darwin mine but is rare or absent at the Parkhill mine. Pockets of auriferous schist represent fine placer deposits that concentrated in flexures or notches at the floor of ancient channels leading to the hinge zone of the paleo-basin.

MODEL

The field relations clarify several aspects about the origin of the gold:

1) The Jubilee stock provided the heat to cause ground water to circulate and the fractures to focus the discharge of this hot water bearing gold.
2) Exhalative activity syngenetic with sedimentation deposited gold-bearing silica and mud along troughs leading to an intra-volcanic basin.
3) Mechanical erosion of the exhalites resulted in the down-slope slumping and mixing with pelitic material giving rise to channels filled with exhalative debris on the slopes of the basin.
4) These channels bearing placer deposits merge down-slope along the hinge zone of the basin where a large size placer deposit accumulated.
5) Regional metamorphism has subsequently modified, and perhaps enriched, the auriferous bands by driving off volatiles.

DARWIN SHEAR

The Darwin Shear is a lineament 20 ft to 100 ft wide and can be traced for over 4000 ft. There is a transition in metamorphic grade across this lineament from the upper greenschist facies to the east to the lower greenschist facies to the west.

The Darwin Shear is a potential target for gold. The Jubilee Shear to the north of the Dunraine property is the faulted extension and it contains two former gold producers, the Jubilee and Surluga mines. A diamond drill program by Dunraine Mines Ltd. in 1981 intersected narrow gold-bearing quartz in the Darwin Shear south of Ward lake.

EXPLORATION

The exploration for ore on the Dunraine property will concentrate in and around the known gold occurences. The general targets are:

1) The Darwin and Parkhill mines to find extensions of the mined orebodies that occupied ancient channels leading to the paleo-basin.
2) The hinge zone of this paleo-basin which is not exposed at the surface but inferred on geological data to be at depth south of the Darwin mine.
3) The Darwin Shear may host deposits similar in nature to those at the Surluga and Jubilee mines.

DUNRAINE MINES LTD.

STATISTICAL REVIEW OF EXPLORATION RESULTS ON WAWA GOLD PROJECT

By: Daniel J. Gignac

December 14th, 1983

OM83-7-P-37

A. SURFACE

1. Showings - Parkhill Mine
- Main lense system
- Mill Lense system
- #4 Vein
- Moody Pit

- Darwin Mine
- Grace Horizon
- East-West lenses below 6th level
- Nyman Zone
- Hayne Zone

* see sketch for significant assay results and location

2. Tailings - Parkhill detail tailings sampling
- 75 auger holes
- 242 samples taken
- arithmetic average Au assay: 0.025 oz/ton

- Darwin random tailings sampling
- 7 samples taken
- arithmetic average Au assay: 0.077 oz/ton

3. Waste Dumps- Parkhill Mine
- estimated tons: 50,000
- grade from 3039 pound bulk sample: 0.056 oz Au/ton

- Darwin Mine
- estimated tons: 32,000
- grade from 5271 pound bulk sample: 0.049 oz Au/ton

B. UNDERGROUND

Clean up potential of Parkhill mine workings.

C. DIAMOND DRILLING

1980 Objectives

- Intersect additional ore lenses within and between the Parkhill Mine and Van Sickle Mine workings.

Hole #	Assay in oz/ton (over core length)	Footage From ' to '
D 80 - 1	0.025/2.5' .030/1.1'	152.2 - 154.7 154.7 - 155.8
D 80 - 2	0.02/0.7'	88.9 - 89.6
D 80 - 4	0.064/1.1' 0.031/2.5'	122.2 - 123.3 123.3 - 125.8
D 80 - 6	0.029/1.1' 0.019/5.6'	146.5 - 147.6 152.5 - 158.1
D 80 - 8	0.02/5'	177 - 182
D 80 - 9	0.067/0.7' 0.25/1.3'	163.7 - 164.4 261 - 262.3
D 80 -10	0.057/1.2'	10.5 - 11.7
D 80 -14	0.06 or less/6'	162 - 168
D 80 -18	0.13/0.8' 1.31/2.9'	268.7 - 269.5 269.5 - 272.4
D 80 -19	0.02/1.9'	186.1 - 188
D 80 -24	0.33/0.7' 0.07/0.5'	306.3 - 307 315.9 - 316.4
D 80 -30	0.12/1.9'	152.2 - 154.1
D 80 -31	0.052/0.8'	109.2 - 110
D 80 -35	0.05/0.6'	185.8 - 186.4

38 Surface Drill Holes: 11,106 feet of B.Q. Core

* Au bearing intersections (.02oz/ton or better)

1981 Objectives

- Outline possible Surluga type ore zone within Darwin Shear

Hole #	Assay in oz/ton (over core length)	Footage From ' to '
D 81 - 1	0.08/0.9'	232.7 - 233.6
D 81 - 2	1.02/0.5'	177.7 - 178.2
	0.10/1.5'	185.0 - 186.5
	0.06/0.9	267.1 - 268
D 81 - 3	0.05/0.6'	57.3 - 57.9
D 81 - 4	0.03/1.2'	155.3 - 156.5
	0.03/1.0'	230 - 231
	0.45/1.5'	245 - 246.5
D 81 - 8	0.03/2.3'	250 - 252.3
	0.461/2.1'	252.3 - 254.4
D 81 -11	0.10/1.3'	160.7 - 162
** D 81 -19	0.15/1.5'	78.5 - 80
	0.17/0.8'	80.0 - 80.8

** Drilled under Moody Pit Showing

20 Surface holes drilled: 4,920 feet of B.Q. core

* Au bearing intersections (.03 oz/ton or better)

1982 Objectives

Drill Test a) Newly discovered North extension of Grace Horizon at shallow depth

b) Darwin Shear

c) Hayne Showing

Hole #	Assay in oz/ton (over core length)	Footage From ' to '
D 82 - 2	0.158/4'	67.0 - 71.0
D 82 - 4	0.10/5'	89.0 - 94.0
	0.222/5'	94.0 - 99.0
D 82 - 7	0.03/2'	260 - 262

8 Surface holes drilled: 1,347 feet of B.Q. Core

* Au bearing intersections (0.03 Oz/ton or better)

1983 objectives

- Explore Grace Horizon within Darwin Mine workings

Hole #	Assay in oz/ton (over core length)	Footage From ' to '
D 83 - 1	0.085/0.7'	308.5 - 309.2
D 83 - 2	0.15/1.0'	432.2 - 433.2
D 83 -3	0.07/1.0'	574 - 575
	0.12/1.2'	575 - 576.2
D 83 - 4	0.174/5'	370.5 - 375.5

6 Surface Holes drilled: 2,430 feet of B.Q. core

* Au bearing intersections (0.03 oz/ton or better)

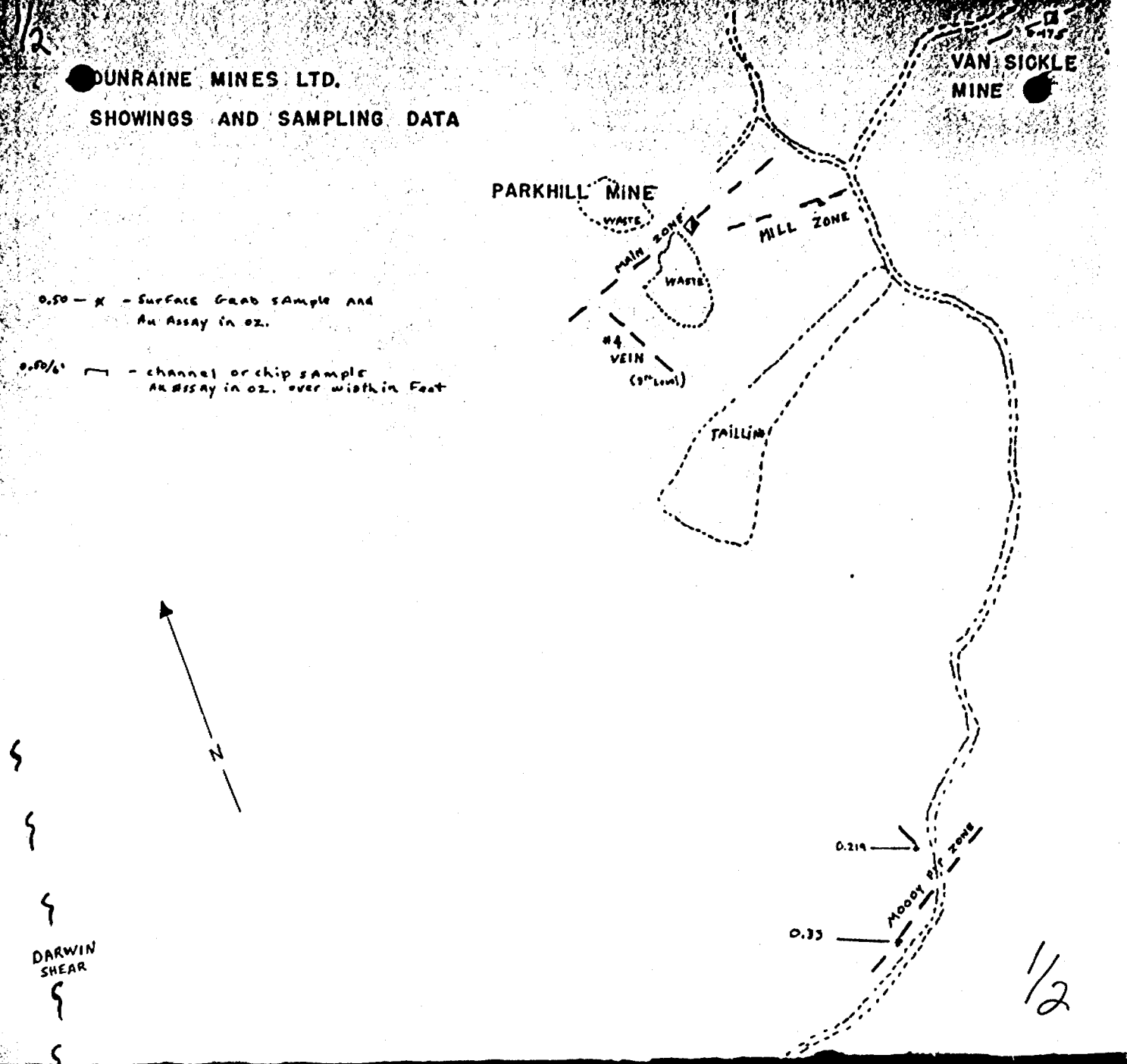
1/2

DUNRAINE MINES LTD.

SHOWINGS AND SAMPLING DATA

0.50 — X - Surface Grab sAmple and Au Assay in oz.

0.50/6' ⌐ - channel or chip sample Au assay in oz. over width in Feet

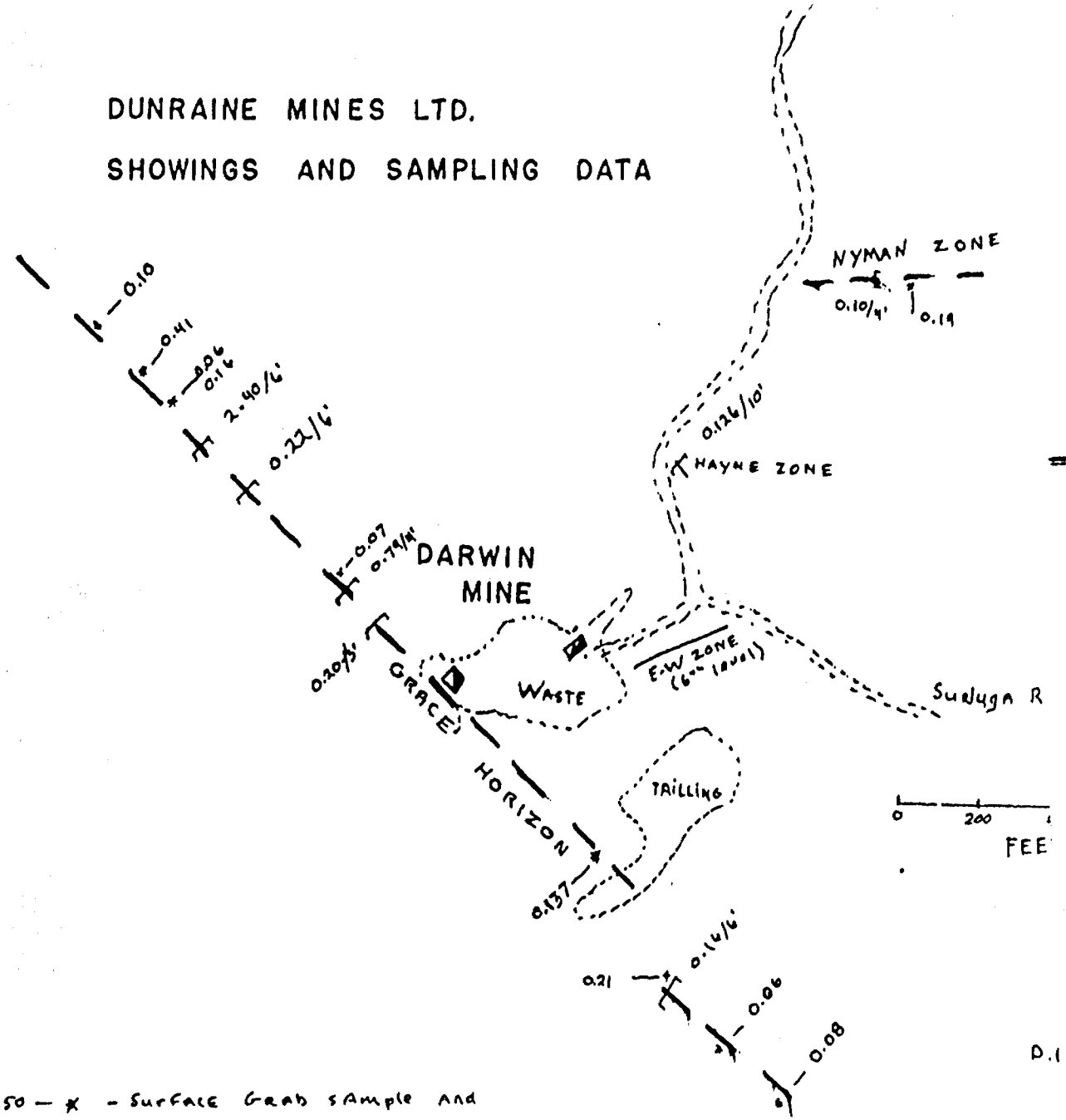


1/2

2/2

DUNRAINE MINES LTD.

SHOWINGS AND SAMPLING DATA



D.1

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 54941 Date: May 20 1983

Received May 17/83 15 Samples of Ore.

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton	SILVER Oz./ton	
39604	Nil	Trace	TRENCH ON B.L AT 37W - DARWIN
39605	0.32 0.32	0.08	SULPHIDIC SCHIST - DARWIN DUMP
39606	0.002	Nil	FELSIC SCHIST: ON 26 N - W OF BL - DARWIN SHEAR
39607	0.002	Nil	17 S ON L 8E PARKHILL - SULPHIDIC CHERT BRECCIA
39608	0.002	0.01	SULPH. CH. BRECCIA - 17S ON L 14E
39609	17.72 17.38 DUMP	1.15	QTZ. VEIN MATERIAL VAN SICKLE MINE
39610	16.40 16.66 TRENCH	0.98	
39611	0.06	0.01	B HOLDER OFF MAIN TRENCH, VAN SICKLE MINE
39801	0.02		BEAVER DAM SW END OF MOUNTAIN L.
39802	0.29 0.27		DARWIN DUMP - QTZ. SERICITE SCHIST.
Second Pulp	0.32		
39803	0.03		- ALEX ROCK 2667
39804	0.005		2668
39805	0.44 0.46		DARWIN DUMP
Second Pulp	0.45		
39806	0.002		PIT NEAR MOUNTAIN L.
39807	0.005		" " " "

Per G. Lebel

G. Lebel - Manager

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SWASTIKA LABORATORIES LIMITED

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Certificate of Analysis

Certificate No. 54963 Date: May 27 1983

Received May 24/83 10 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton	SILVER Oz./ton	COPPER %	NICKEL %	ZINC %
39612	0.002	0.01			
39613	Nil	Nil			
39614	Nil	Nil			
39615	0.02 0.02	0.01			
39616	0.03	0.01			
39618	0.005	Nil			
39619	0.002	0.01	0.16	0.14	0.005
39620	0.005	Trace	0.02	0.01	None
39621	Nil	Nil			
? 39817	0.02 0.02				

what from ?

Per G. Lebel

G. Lebel - Manager

ESTABLISHED 1928

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P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
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Certificate of Analysis

Certificate No. 54969 Date: May 27 1983

Received May 24 1983 9 Samples of Tailings

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton
39808	0.026
	0.026
39809	0.012
39810	0.022
39811	0.022
39814	0.082
	0.092
39815	0.068
A	0.076
	0.070
B	0.024
C	0.037

NOTE: The tickets for three samples were damaged beyond recognition. These were called A,B,C and assayed with results as shown.

Per G. Lebel

G. Lebel - Manager

ESTABLISHED 1928

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TELEPHONE: (705) 642-3244
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Certificate of Analysis

Certificate No. 55000 Date: June 1 1983

Received May 27/83 14 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton	SILVER Oz./ton
39622	0.002	Nil
39623	0.06 0.06	0.01
39624	0.002	Nil
39625	0.002	Trace
39626	0.01	Nil
39627	0.002	Nil
39818	0.06 0.06	
39819	0.005	
39820	Nil	
39821	0.03	
39822	0.002	
39823	0.02	
39824	0.01	
39825	0.17 0.21	

Per G. Tebel
G. Tebel - Manager

ESTABLISHED 1928

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 54997 Date: June 7 1983

Received May 27/83 6 Samples of Ore .

Submitted by Dunraine Mines Limited, Wawa, Ontario Att'n: Mr. D. Gignac

SAMPLE WEIGHTS lbs.	SAMPLE NO.	GOLD Oz./ton	"A" GOLD Oz./ton	"B" GOLD Oz./ton	"C" GOLD Oz./ton
90	39701	0.030	0.030	0.020	0.060 0.040
54	39702	0.070	0.070	0.085	0.095 0.090
95	39703	0.050	0.090 0.075	0.055	0.065
76	39704	0.170 0.115	0.110	0.125	0.100
60	39705	0.410 0.350	0.395 0.320	2.28 1.92	0.250 0.210
61	39706	0.060	0.040	0.070 0.065	0.060

NOTE: Each of the above samples were crushed to approximately 1/8" and repeatedly riffled to produce four 400g pulps for each sample. There is poor agreement between pulps for #39705. This is likely caused by the presence of coarse gold, and could be overcome using more elaborate (and expensive) sample preparation methods.

Per G. Tebel

G. Tebel - Manager

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55214 Date: June 28, 1983

Received June 21, 1983 17 Samples of . Split Core

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz.ton
39707	Nil
39708	Nil
39709	Nil
39710	Nil
39711	Nil
39712	0.002
	0.002
39713	Nil
39714	Nil
39715	Nil
39716	0.002
39717	Nil
39718	Nil
39719	0.01
	0.01
39720	Nil
39721	0.002
39722	0.002
39723	0.002

- Geochem samples

reren pulps - should be assayed in P.P.B.

Per G. Lebel

G. Lebel - Manager

ESTABLISHED 1928

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Certificate of Analysis

Certificate No. 55214-A Date: July 8 1983

Received June 21/83 17 Samples of split core

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

Rock
GEOCHEMISTRY.
1981 DRILL CORE

D-81-1
3' section per geochem sample

D-81-9
each sample is 3' of core

SAMPLE NO.	GOLD PPB
39707	Nil
39708	Nil
39709	Nil
39710	10
39711	10
39712	10
39713	Nil
39714	20
39715	Nil
39716	20
	10
39717	10
39718	Nil
39719	280
	340
39720	10
39721	40
39722	10
39723	50

per G. Tebel - Manager

ESTABLISHED 1938

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 55224 Date: July 12 1983

Received June 21/83 21 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Samples per: Mr. P. Studemeister

SAMPLE NO.	GOLD PPB	SILVER PPM	COPPER PPM	ZINC PPM	TUNGSTEN PPM	ARSENIC PPM	SULFUR %	MERCURY PPM	
Parkhill 39938	90400	12.1	220	93	123	1	0.413	0.05	Samples of all gold-bearing rock suites.
39939	1390	0.1	141	32	16	1	0.001	0.05	
39940	1060	0.1	144	14	69	1	0.035	0.05	
V.S 39941	112420	1.2	106	3	10	2	0.018	0.02	
39942	211400	8.4	231	44	32	4	0.676	0.03	
Mariposa- 39943	7021 7220	1.2	480	9	85	6	2.41	0.04	
39944	431	0.6	390	26	250	1	1.53	0.04	
39945	2980	0.5	151	103	380	11	0.089	0.05	
39946	396	0.9	194	6	10	1	0.035	0.02	
39947	3036 2950	2.7	291	15	56	1650	0.238	0.04	
39948	533 510	0.1	160	5	18	17560	0.025	0.07	Hayne
39949	3057	0.1	50	30	250	1880	0.259	0.03	
39950	973	0.3	158	7	< 10	18	0.023	0.03	
39951	105 73	0.1	122	59	109	4	1.02	0.03	
39952	205 213	0.1	139	10	64	3	0.034	0.01	
39953	120000	3.5	250	17	< 10	6	0.119	0.01	Moody Pit
39954	7584	0.2	166	84	200	880	0.406	0.04	

Cont'd.....

Per G. Lebel - Manager

SWASTIKA LABORATORIES LIMITED

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55224 Date: July 12 1983

Received June 21/83 21 Samples of Ore.

Submitted by Dunraine Mines Ltd., Wawa, Ontario Samples per: Mr. P. Studemeister

SAMPLE NO.	GOLD PPB	SILVER PPM	COPPER PPM	ZINC PPM	TUNGSTEN PPM	ARSENIC PPM	SULFUR PPM	MERCURY PPM
39955	5576 / 5700	0.1	84	32	140	2630	0.682	0.02
S.D.S 39956	28610	0.1	29	17	385	23800	1.58	0.01
39957	44580	---	---	---	---	1000	0.435	0.04
39958	48190	---	---	---	---	41	0.318	0.03

Per G. Lebel

G. Lebel - Manager

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Certificate of Analysis

Certificate No. 55316 Date: July 6, 1983

Received June 20, 1983 37 Samples of Ore

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

ROCK GEOCHEMISTR
1983
DARWIN SHEAR

SAMPLE NO.	GOLD PPB	ARSENIC PPM	MERCURY PPM	SULFUR %
39901	30	2	0.04	0.002
39902	180	<1	0.01	0.159
39903	20	<1	<0.01	0.008
39904	Nil	5	0.05	0.021
39905	Nil	4	0.03	0.018
39906	Nil	4	0.02	0.038
39907	20	2	0.03	<0.001
39908	40	1	0.04	0.055
39909	10	1	0.03	0.006
39910	20	3	0.09	0.004
39911	4700 4400	1	0.04	0.121
39912	50	3	0.11	0.039
39913	Nil	2	0.09	<0.001 <0.001
39914	Nil	2	0.08	0.113
39915	Nil	3	0.10	0.181 0.178
39916	Nil	3	0.12	0.128
39917	30	16	0.15	3.31
39918	20	5	0.09	0.319
39919	Nil	5	0.12	0.127
39920	40	2	0.07	0.064

Per G. Lebel - Manager

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Certificate of Analysis

Certificate No. 55316 Date: July 6, 1983

Received June 20, 1983 37 Samples of Ore

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD PPB	ARSENIC PPM	MERCURY PPM	SULFUR %
39921	50	2	0.15	0.096
39922	200	<1	0.07	0.137
39923	Nil	<1	0.01	<0.001
39924	Nil	<1	<0.01	0.042
39925	80	<1	0.04	0.054
39926	270	<1	0.08	0.021 0.025
39927	40	<1	0.07	0.033
39928	30	<1	<0.01	0.011
39929	20	<1	0.05	0.113
39930	Nil	<1	0.07	0.031
39931	70	<1	0.08	0.066
39932	60	1	0.09	0.063
39933	90	<1	0.06	0.161
39934	50	<1	0.07	<0.001
39935	100	<1	0.12	<0.001
39936	30	<1	0.02	0.029
39937	20	<1	0.04	<0.001

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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Certificate of Analysis

Certificate No. 55224-A Date: July 13 1983

Received June 21/83 19 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Samples per: Mr. P. Studemeister

SAMPLE NO.	PALLADIUM PPM
39938	<10
39939	<10
39940	<10
39941	<10
39942	<10
39943	<10
39944	<10
39945	<10
39946	<10
39947	<10
39948	<10
39949	<10
39950	<10
39951	<10
39952	<10
39953	<10
39954	120
39955	<10
39956	<10

Per G. Lebel - Manager

ESTABLISHED 1928

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TELEPHONE: (705) 642-3244
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Certificate of Analysis

Certificate No. 55263 Date: July 6, 1983

Received June 28, 1983 23 Samples of , Ore

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

Esquega.

SAMPLE NO.	GOLD Oz./ton	SILVER Oz./ton	
C-39628	0.60	0.21	Atael Showing
	0.65		
C-39629	0.08	0.47	
C-39630	0.40	0.11	
	0.38		
C-39631	0.30	0.04	Murray Algoma
	0.28		
Second Pulp	0.27		
C-39632	0.14	0.02	
C-39633	0.10	Trace	
C-39635	0.002	Trace	Surface - sample Darwin S. Group
C-39636	0.002	Trace	
C-39637	0.002	0.01	
C-39638	Nil	0.01	
C-39642	0.002	0.03	
C-39643	0.002	Trace	
C-39644	Nil	Trace	
C-39645	Nil	0.01	
C-39647	Nil	0.01	
C-39826	0.11	Trace	S. ext. Grace Vein 3' chip sample } 6' width.
	0.10		
C-39827	0.03	Trace	" 3' chip.
C-39828	0.04	Trace	" 3

SAMPLE NO.	GOLD Oz./ton	SILVER Oz./ton	
C-39829	0.11	0.01	" } 6' chip
C-39830 } 6' cut	0.17	0.02	S. ext. Grace
	0.14		
400' C-39831 }	0.16	0.01	Grace Vein
250's. C-39832 } grab	0.06	Trace	Grace Vein
C-39833 } sample.	0.08	Nil	Grace Vein

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55361 Date: July 11 1983

Received June 27/83 4 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Samples per: Mr. P. Studemeister

SAMPLE NO.	GOLD PPB	SILVER PPM	COPPER PPM	ZINC PPM	ARSENIC PPM	MERCURY PPM	SULFUR %	PALLADIUM PPB	TUNGSTEN PPM
39634	49	0.2	81	81	8	0.02	0.76	<10	52
39639	5360	0.6	125	249	500	0.03	0.75	<10	71
39640	9400	<0.1	41	40	4900	< 0.01	0.099	<10	10
39646	20	0.9	58	125	17	0.05	3.08	<10	33

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55372 Date: July 15, 1983

Received July 11, 1983 6 Samples of Ore

Submitted by Dunraine Mines Limited, Wawa, Ontario

Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton	
39648	0.005	
39649	0.23 - 3	trench on Darwin: Grace South Extension sulphidic zone
	0.19 - 5	
39650	0.002	150' E of Grace South E
39651	0.002	
39834	0.03	grab - Nyman Vein.
	0.05	
Damaged Tag	0.03	

Per G. Lebel
Mr. G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55524 Date: July 28, 1983

Received July 27, 1983 8 Samples of Split Core

Submitted by Dunraine Mines Ltd., Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton
37801	0.04
37802	0.21
	0.19
37803	0.18
37804	0.02
37805	0.38
	0.34
37806	0.11
37807	0.02
37808	0.005

D83-4

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55568 Date: August 8, 1983

Received August 2, 1983 7 Samples of Split Core

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton
37809	0.36
	0.36
37810	0.09
37811	0.02
37812	0.09
37813	0.12
	0.09
37814	0.03
37815	0.02

D-83 - RESAMPLE

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 55583 Date: August 9 1983

Received Aug. 3/83 37 Samples of split core, pulp, crushed ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton	GOLD PPB
37816	Nil	
37817	Nil	
37818	Nil	
37819	Nil	
37820	Nil	
37821	0.005	
	0.005	
37822	Nil	
37823	0.005	
37824	Nil	
37825	Nil	
37826	Nil	
37827	0.01	
37828	0.07	
37829	0.13	
	0.11	
37830	0.01	
37831	Nil	
39759		60
39760		90
39761		230
		160

SAMPLE NO.	GOLD PPB
39762	20
39763	Nil
39764	Nil
39765	60
39766	40
39767	60
39768	Nil
39769	130
	120
39770	70
39771	20
39772	10
39773	10
39774	10
39775	20
39776	40
39777	Nil
39778	20
39779	80
	90
39780	10

Per G. Lebel - Manager

ESTABLISHED 1928

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 55714 Date: August 23, 1983

Received August 16, 1983 11 Samples of Split Core

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton
37832	0.005
37833	0.005
37834	Nil
37835	0.15
	0.15
37836	0.01
37837	Nil
37838	0.002
37839	Nil
37840	0.09
	0.08
37841	0.002
37842	0.002

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 55788 Date: Aug. 25, 1983

Received Aug. 22, 1983 9 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario

SAMPLE NO.	GOLD Oz./ton
13630	0.002
13631	0.005
	0.005
39576	0.002
39577	Nil
39578	0.002
39579	Nil
39580	Nil
39581	Nil
	Nil
39582	Nil

Per G. Lebel

G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 56042 Date: September 26, 1983

Received Sept. 20, 1983 3 Samples of Ore

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD PPB	
39836	80	.002
39837	80570	2.349
	75090	2.190
Second Pulp	142630	4.159
	138860	4.049
39838	16180	.47
	13030	.38

Spectrographic analysis to follow.

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 56109 Date: September 30, 1983

Received Sept. 26, 1983 19 Samples of Split Core

Submitted by Dunraine Mines Limited, Wawa, Ontario Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton
39781	Nil
39782	0.002
39783	0.005
	0.005
39784	0.005
39785	0.002
39786	0.005
39787	0.01
39788	0.28
	0.26
39789	0.15
	0.17
39790	0.08
	0.07
39791	0.005
39792	0.002
39793	Nil
39794	Nil
39795	Nil
39796	Nil
39797	Nil
39798	Nil
39799	Nil

Per G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 56042-A Date: October 7 1983

Received Sept.20/83 3 Samples of Ore

Submitted by Dunraine Mines Ltd., Wawa, Ontario Att'n: Mr. D. Gignac

SEMIQUANTITATIVE SPECTROGRAPHIC ANALYSIS

SAMPLE NO. :	39836	39837	39838
Antimony	---	---	---
Arsenic	.05 - .3%	.5 - 3%	2 - 10%
Barium	.01 - .05%	---	.1 - .5%
Beryllium	---	---	---
Bismuth	---	---	---
Boron	---	.005 - .03%	.005 - .03%
Cadmium	---	---	---
Chromium	.02 - .1%	.02 - .1%	.02 - .1%
Cobalt	---	Less than .01%	Less than .01%
Copper	.005 - .03%	.005 - .03%	.02 - .1%
Gallium	Less than .01%	---	Less than .01%
Germanium	---	---	---
Indium	---	---	---
Iron	5 - 30%	2 - 10%	2 - 10%
Lanthanum	---	---	---
Lead	---	---	Less than .01%
Lithium	---	---	---
Manganese	.05 - .3%	.01 - .05%	.02 - .1%
Mercury	---	---	---
Molybdenum	---	---	---
Nickel	.01 - .05%	.005 - .03%	.005 - .03%
Niobium	---	---	---
Silver	---	Less than .01%	Less than .01%
Thorium	---	---	---
Tin	---	---	---
Titanium	.1 - .5%	.02 - .1%	.1 - .5%
Tungsten	---	---	---
Uranium	---	---	---
Vanadium	.005 - .03%	---	.005 - .03%
Yttrium	---	---	---
Zinc	---	---	---
Zirconium	.005 - .03%	---	.005 - .03%

NOTE: --- Indicates None Detected.

Per G. Lebel
G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

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

Certificate of Analysis

Certificate No. 56408 Date: November 2, 1983

Received October 25, 1983 13 Samples of Rock/Split Core

Submitted by ~~Osisko Lake Mines~~ D J Rawle Limited, Wawa, Ontario

Attn: Mr. D. Gignac

SAMPLE NO.	GOLD Oz./ton	
37920	Nil	
37921	0.002	
37922	Nil	
37923	Nil	
37924	0.060 0.070	
37925	0.015	
37926	0.035	
37927	0.135 0.140	between Grace shaft & T. Creek. near location of proposed hole.
37928	0.002	
37929	0.002	
37930	0.002	Batchawana Bay Po.
37931	Nil	Batchawana Bay Po. Osisko
39800	0.002	Batchawana Bay Po.

grab samples on S. ext. of Grace vein.

OSS.

Per G. Lebel

G. Lebel - Manager

ESTABLISHED 1928

BARRINGER MAGENTA

REXDALE, ONTARIO
M9W 5G2
(416) 675-3870

SUITE 105
CALGARY, ALBERTA
T2E 6V2
(403) 276-9701

FILE: 13-0448
DATE: 25/03/93
MATRIX: AQ REG

DUNRAINE MINES (P. STUDENIESTER) WO NO: 93-0448 PAGE: 1

SAMPLE ID	AU PPB	SAMPLE ID	AU PPB	SAMPLE ID	AU PPB
4201	<10	4250	10	4299	20
4202	<10	4251	<10	4300	<10
4203	<10	4252	<10	39653	20
4204	<10	4253	<10	39681	20
4205	<10	4254	<10	39682	<10
4206	<10	4255	<10	39683	10
4207	<10	4256	<10	39684	<10
4208	<10	4257	<10	39685	<10
4209	20	4258	<10	39686	<10
4210	<10	4259	<10	39687	<10
4211	<10	4260	10	39688	<10
4212	<10	4262	<10	39689	100
4213	<10	4263	<10	39690	20
4214	<10	4264	10	39691	30
4216	<10	4265	<10	39692	<10
4217	10	4266	<10	39693	<10
4218	<10	4267	<10	39694	20
4219	<10	4268	<10	39695	<10
4220	<10	4269	<10	39696	<10
4222	10	4270	<10	39698	60
4223	<10	4271	<10	39699	<10
4224	<10	4272	<10	39700	10
4225	20	4273	<10	13601	10
4227	<10	4274	<10	13602	<10
4228	<10	4275	<10	13603	<10
4229	<10	4277	<10	13604	60
4230	<10	4278	<10	13605	<10
4231	<10	4279	<10	13606	20
4233	<10	4280	20	13607	30
4234	<10	4282	<10	13608	20
4235	<10	4283	<10	13609	<10
4236	10	4284	<10	13610	<10
4237	10	4286	<10	13611	<10
4238	10	4287	<10	13612	<10
4239	10	4288	<10	13801	<10
4240	10	4289	<10	13802	<10
4241	<10	4290	20	13803	<10
4242	<10	4291	<10	13804	<10
4243	<10	4292	<10	13805	<10
4244	<10	4293	30	13806	<10
4245	20	4294	<10	13807	10
4246	<10	4295	<10	13808	10
4247	<10	4296	<10	13809	<10
4248	<10	4297	20	13810	<10
4249	<10	4298	20	13811	<10

BARRINGER MAGENTA

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO
M9W 5G2
(416) 675-3870

3750 - 19TH STREET
SUITE 105
CALGARY, ALBERTA
T2E 6V2
(403) 276-9701

FILE: 83-0448
DATE: 25/08/83
MATRIX: AQ REG

DUNRAINE MINES (P. STUDEMEISTER) WO NO: 83-0448 PAGE: 2

SAMPLE ID	AU PPB	
13812	<10	
13813	<10	
13814	<10	
13815	<10	
13816	<10	
13817	<10	
13818	<10	
13819	<10	
13820	<10	
13821	<10	
13822	<10	
13823	<10	
13824	<10	
13825	<10	
13826	10	
13827	10	
13828	10	
13829	<10	
13830	<10	
13831	<10	
13832	<10	
13833	<10	
13834	<10	
13835	<10	
13836	<10	
13837	<10	
13838	<10	
13839	20	
13840	<10	
13841	<10	
13842	<10	
13843	40	-
13844	<10	
13845	10	
13846	140	-
13847	<10	
13848	10	
13849	<10	
13850	<10	

Ministry of Natural Resources
Ontario

Temiskaming Testing Laboratories

P.O. Box 799
Presley St.
Cobalt, Ontario
P0J 1C0

Shipping and Receiving Report
Gravity Concentrates

79-8313

To: ~~Canadian Smelting and Refining (1974) Ltd.~~
~~Cobalt, Ontario~~
Dunraine Mine, c/o J.Koza, Cobalt, Ont.

Shipper	Address
T.T.L. Returned to Owner	Dunraine Mine, c/o J. Koza, Cobalt, Ont.
Via Trucking Firm: Dunraine Own Trans.	
Address:	
File No. / Colour / Date: May 25, 1983.	Driver: D Cojua
Signature:	

Lot No.	Drum/Bag No.	Gross Weight	Drum Tare	Net Weight	Analysis Ag. oz. per ton
Au Sample Lots					
6835	1	684	38	646	
	2	762	41	721	
	3	788	43	745	to Timmins
	4	774	38	736	
	5	221	30	191	
		3229	190	3039 lbs.	
6881	1	576	38	538 lbs.	
6882	1	779	36	743	
	2	760	38	722	
	3	401	30	371	
		1940	104	1836 lbs.	

X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4

PHONE 416-445-5755 TELEX 06-986947

CERTIFICATE OF ANALYSIS

TO: DUNRAINE MINES
ATTN: HARRY KOZA
199 BAY STREET, SUITE 506
TORONTO, ONTARIO
M5J 1L5

CUSTOMER NO. 773

DATE SUBMITTED
2-AUG-83

REPORT 18775

REF. FILE 14364-L6

18 S.CORES,9 W.CORES,27 ROCKS,6 PULPS

WERE ANALYSED AS FOLLOWS:

	METHOD	DETECTION LIMIT
WRMAJ %	WR	0.010
WRMIN PPM	WR	10.000
FEO %	WET	0.100

X-RAY ASSAY LABORATORIES LIMITED

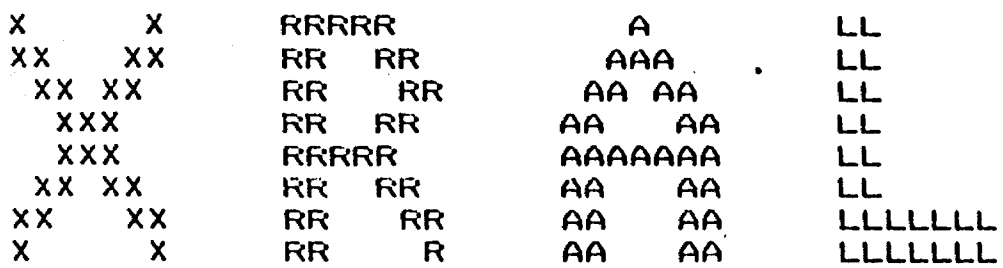
DATE 01-SEP-83

CERTIFIED BY .....

*** UNLESS INSTRUCTED OTHERWISE WE WILL DISCARD PULPS 180 DAYS ***
AND REJECTS 90 DAYS FROM DATE OF THIS REPORT

SAMPLE	FEO %
13613	3.2
13614	5.2
13615	3.9
13616	3.6
13617	3.5
13618	4.4
13619	5.0
13620	2.5
13621	2.5
13622	2.6
13623	2.7
13624	2.6
13625	3.2
13626	4.1
13627	3.0
13628	5.0
13629	5.1
13856	5.3
13859	5.7
13860	4.2
13862	5.4
13863	6.0
13864	3.4
13869	4.1
13872	5.8
13873	7.1
13874	5.4
13901	4.2
13905	3.5
13906	4.2
13908	4.2
13909	1.7
13910	2.2
13917	1.7
13921	1.6
13925	1.8
13926	3.6
13927	2.8
13928	6.4
13929	1.6
13930	0.5
13931	0.3
13932	0.5
13933	0.3
39735	2.7
39737	3.7
39738	3.2
39741	10.1
39749	5.1
39752	5.3

SAMPLE	FEO %
39754	5.9
39755	9.3
39757	5.2
39758	4.4
P-1M	5.8
P-2M	9.3
P-3M	7.0
P-4M	6.5
P-5M	17.2
P-6M	9.2



XRF - WHOLE ROCK ANALYSIS

DUNRAINE MINES
Attn: HARRY KOZA
199 BAY STREET, SUITE 506
TORONTO, ONTARIO
M5J 1L5

CUSTOMER No. 773

DATE SUBMITTED
2-AUG-83

REPORT 18775 REF. FILE 14364 DATE REPORTED 01-SEP-83

XRF W. R. A. SUMS INCLUDE ALL ELEMENTS DETERMINED.
FOR SUMMATION ELEMENTS ARE CALCULATED AS OXIDES.

SAMPLE	SIO2	AL203	CAO	MGO	NA20	K20	FE203	MNO	TIO2	P205	LOI	SUM
13613	64.4	14.3	3.34	1.78	5.23	1.55	4.61	0.06	0.46	0.10	3.77	99.6
13614	57.4	16.4	2.29	6.67	1.97	1.85	6.96	0.07	0.65	0.13	5.77	100.2
13615	58.2	15.1	5.88	1.75	4.33	1.49	5.85	0.08	0.78	0.20	6.00	99.7
13616	64.8	15.0	2.60	2.01	5.03	1.35	4.92	0.04	0.49	0.10	3.85	100.3
13617	60.6	15.8	6.41	2.22	3.73	0.42	6.97	0.09	0.89	0.27	1.93	99.4
13618	63.6	14.7	2.80	1.98	4.61	1.47	6.15	0.05	0.90	0.27	3.62	100.2
13619	58.0	16.0	5.37	2.44	4.35	0.84	7.85	0.09	0.92	0.29	3.31	99.6
13620	67.4	12.7	4.31	1.61	4.58	1.07	3.46	0.05	0.45	0.11	4.47	100.3
13621	66.3	14.6	3.34	0.90	4.97	1.36	4.60	0.04	0.54	0.12	2.77	99.6
13622	67.3	15.5	2.39	1.01	6.08	0.80	4.34	0.03	0.58	0.14	1.70	100.0
13623	66.2	15.2	2.72	0.90	5.66	1.21	5.10	0.04	0.56	0.13	2.47	100.2
13624	65.6	15.4	2.71	0.94	4.22	2.17	5.16	0.04	0.56	0.13	3.08	100.0
13625	67.1	14.8	2.36	1.25	5.69	0.88	4.83	0.04	0.58	0.14	2.16	100.0
13626	58.2	15.6	5.50	2.62	4.63	1.24	5.82	0.08	0.64	0.13	5.93	100.5
13627	64.0	14.9	3.51	1.63	5.05	1.40	4.36	0.05	0.63	0.14	4.23	100.0
13628	53.5	16.9	4.66	3.54	4.42	1.58	6.42	0.08	0.77	0.13	6.77	98.9
13629	59.0	17.0	1.60	6.85	1.64	1.58	6.71	0.04	0.77	0.15	5.08	100.4
13856	57.7	16.5	6.64	3.99	3.23	1.07	8.03	0.11	0.72	0.12	1.77	99.9
13859	57.2	16.2	5.84	3.34	3.24	1.71	8.62	0.11	0.88	0.26	1.62	99.0
13860	61.5	16.2	5.19	2.80	3.61	1.74	6.96	0.06	0.65	0.13	1.23	100.1
13862	56.8	16.2	6.30	3.39	3.40	1.09	8.31	0.11	0.92	0.27	2.31	99.1
13863	53.3	16.9	9.12	5.08	2.58	0.90	9.00	0.12	0.68	0.11	1.70	99.5
13864	64.5	15.8	4.14	2.09	4.27	1.75	5.22	0.07	0.53	0.10	0.70	99.3
13869	59.8	16.0	5.63	2.90	3.78	1.38	6.59	0.08	0.65	0.14	1.93	98.9
13872	56.8	16.5	7.17	3.61	2.57	1.24	8.55	0.13	0.89	0.26	0.77	98.6
13873	53.9	17.3	5.02	5.15	3.20	1.43	10.3	0.11	0.77	0.14	2.77	100.1
13874	54.1	16.9	6.67	4.20	3.39	1.05	8.26	0.10	0.68	0.12	3.39	98.9
13901	60.5	16.3	3.67	1.11	4.84	1.62	7.31	0.08	0.79	0.19	3.31	99.7
13905	61.2	16.4	5.19	1.26	4.59	1.18	6.48	0.06	0.83	0.21	1.54	99.0
13906	59.0	16.9	6.68	2.79	3.54	0.99	6.83	0.09	0.71	0.14	2.31	100.1

SAMPLE	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	LOI	SUM
13908	61.4	16.1	3.78	1.18	5.08	1.18	6.75	0.06	0.75	0.19	3.16	99.8
13909	70.1	14.5	3.37	0.97	4.78	1.34	3.09	0.04	0.32	0.07	1.00	99.7
13910	68.4	14.2	2.44	0.97	4.49	2.26	3.59	0.04	0.30	0.07	2.31	99.1
13917	69.0	14.4	2.64	1.02	4.82	1.82	3.15	0.03	0.30	0.07	2.31	99.6
13921	70.1	14.4	2.54	0.99	4.69	1.84	3.12	0.04	0.32	0.07	1.47	99.6
13925	65.4	16.1	5.84	0.75	4.99	0.42	4.31	0.06	0.55	0.12	1.08	99.8
13926	61.7	15.9	5.91	1.43	4.38	1.39	5.74	0.07	0.72	0.19	1.93	99.4
13927	70.5	13.3	0.64	4.30	0.33	2.58	4.12	0.03	0.27	0.06	3.70	99.9
13928	51.8	16.4	5.94	4.27	4.31	0.81	8.30	0.13	0.68	0.13	7.31	100.2
13929	72.7	13.5	1.49	1.48	4.06	1.63	2.87	0.02	0.27	0.05	2.23	100.3
13930	72.9	12.8	1.97	0.59	5.32	1.17	1.39	0.02	0.21	0.04	2.23	98.7
13931	73.8	13.3	1.82	0.42	4.91	1.62	1.08	0.02	0.21	0.04	2.16	99.4
13932	72.9	12.8	2.30	0.49	5.08	1.31	1.29	0.03	0.20	0.04	2.39	98.8
13933	88.4	4.60	0.47	0.12	2.17	0.50	0.71	0.01	0.07	0.02	1.23	98.3
39735	65.8	15.4	2.34	1.48	5.92	1.28	3.65	0.03	0.53	0.11	3.23	99.8
39737	61.6	17.2	2.28	2.63	5.11	1.66	5.37	0.04	0.57	0.11	3.70	100.3
39738	64.6	14.2	2.99	2.85	2.69	1.83	4.33	0.05	0.55	0.10	4.93	99.2
39741	41.5	13.3	9.89	6.74	2.21	0.30	12.3	0.19	0.88	0.07	12.1	99.5
39749	53.4	15.9	4.86	4.60	2.81	2.37	6.99	0.07	0.63	0.12	7.08	98.9
39752	58.2	18.1	1.46	6.00	1.34	2.19	6.86	0.04	0.84	0.17	4.62	99.9
39754	54.4	18.2	2.07	6.26	1.70	2.20	7.76	0.05	0.84	0.16	5.70	99.4
39755	41.8	13.4	9.70	6.92	1.32	1.11	11.6	0.17	0.87	0.08	13.2	100.3
39757	53.3	16.6	5.87	3.55	2.66	1.86	6.84	0.07	0.72	0.14	7.08	98.7
39758	55.7	15.9	6.86	2.72	2.13	2.02	6.29	0.08	0.68	0.14	6.70	99.2
P-1M	53.5	13.9	3.50	6.80	5.17	2.81	9.67	0.17	0.53	0.07	2.23	98.4
P-2M	45.4	13.5	9.82	7.56	2.34	1.37	13.9	0.27	2.14	0.22	1.62	98.3
P-3M	47.8	14.2	10.6	6.37	2.47	0.20	12.8	0.21	1.75	0.18	1.85	98.5
P-4M	49.6	14.2	8.42	8.66	1.31	3.56	9.58	0.19	0.94	0.09	2.08	98.8
P-5M	41.3	16.2	9.94	4.37	0.79	0.88	21.1	1.27	1.91	0.05	1.00	98.8
P-6M	49.2	12.2	6.11	7.26	4.59	0.41	13.7	0.17	2.58	0.31	1.70	98.3

SAMPLE	CR	RB	SR	Y	ZR	NB
[illegible]13	40	30	150	10	170	10
13614	80	40	180	<10	120	30
13615	20	50	200	20	140	20
13616	40	40	220	30	200	<10
13617	30	20	360	30	200	<10
13618	30	50	170	60	160	<10
13619	30	30	410	50	230	10
13620	20	80	200	<10	280	20
13621	20	30	390	30	350	10
13622	20	20	370	60	340	10
13623	20	40	290	40	340	20
13624	20	50	180	40	360	20
13625	20	30	270	40	320	10
13626	50	30	180	10	180	20
13627	20	30	150	20	360	<10
13628	80	40	190	20	120	<10
13629	40	40	140	10	140	<10
13856	60	30	300	20	90	<10
13859	70	50	360	30	140	30
13860	40	70	330	10	150	10
13862	70	40	370	30	160	<10
13863	200	10	260	20	60	10
13864	40	50	300	30	150	<10
13869	50	40	280	20	160	<10
13872	70	40	440	30	150	10
13873	80	50	270	20	90	<10
13874	80	30	360	20	70	10
13901	20	30	280	20	370	<10
13905	20	40	430	40	340	30
13906	40	30	360	20	130	30

SAMPLE	CR	RB	SR	Y	ZR	NB
[redacted]08	20	40	400	20	360	10
13909	20	50	300	10	160	20
13910	30	70	230	20	150	<10
13917	30	60	330	10	170	20
13921	30	50	240	30	160	<10
13925	10	20	440	20	340	10
13926	20	50	280	10	290	20
13927	30	70	50	30	280	<10
13928	80	10	190	10	100	10
13929	20	40	80	30	260	<10
13930	20	40	110	40	230	<10
13931	20	50	100	50	270	20
13932	20	30	100	20	230	10
13933	30	<10	50	10	90	<10
39735	30	40	160	<10	180	40
39737	40	40	220	20	220	20
39738	60	30	260	30	220	<10
39741	220	10	150	30	40	20
39749	80	50	140	10	110	30
39752	50	70	140	10	140	10
39754	50	50	160	<10	140	40
39755	220	40	90	20	60	<10
39757	40	40	270	<10	140	20
39758	40	50	260	30	100	20
P-1M	350	70	50	<10	30	<10
P-2M	170	30	110	50	150	10
P-3M	120	10	120	30	110	<10
P-4M	350	110	210	20	40	<10
P-5M	110	20	20	80	220	10
P-6M	130	30	220	50	170	10

1982 - Grace North

DDH Resample:

Hole number:
D82-4, D82-6

sample #	From	To	Au. Assay	sample #	From	To	Au Assay
D82-6							
39781	103.7	105					
39782	111.6	113.6					
39783	117 ST	118					
39784	122	123					
D82-4							
39785	61.7	63.7					
39786	93	94					
39787	92	93					
39788	91	92					
39789	90	91					
39790	89	90					
39791	88	89					

SAMPLE NUMBER	LOCATION AND DESCRIPTION	ASSAY Au-Ag VEIN	REMARKS
39619	SULPHIDE CLOTS AT L16N, 20S, NORTHEAST OF DARWIN MINE	Au 0.002 Ag 0.01 Cu 0.16 Ni 0.14 Zn 0.005	SURFACE SAMPLE PS-10-5A
39620	SULPHIDIC VEIN AT L16N, 20S, NORTHEAST OF DARWIN MINE	Au 0.005 Ag TRACE Cu 0.02 Ni 0.01 Zn NONE	SURFACE SAMPLE PS-10-5B
39621	CHERT BRECCIA WITH Po, L16N, 25S, NORTHEAST OF DARWIN MINE	Au NIL Ag NIL	SURFACE SAMPLE PS-10-3
39817	Ser. chl. shist - biotitic reworked Felsic vols. minor sulfide - maybe extension Grace Vein to South	Au 0.02	
39818	Mariposa Float Trench S side of road.	.06 Au	massive qtz diss py - cpy
39819	Mariposa trench S side road in place.	.005 Au	qtz diss, py - trace cpy.
39820	Mariposa Float dump near shaft.	nil	qtz carb ser. 5% po diss
39821	Mariposa dump.	.03	vuggy q/tz + su ffd.
39822	Mariposa dump NW shaft	.002	glassy qtz carb. po-py minor cpy.
39823	Mariposa dump near shaft opening.	.02	qtz - much diss po-py - minor cpy
39824	Sulfidic chert lense near road FOR Mariposa.	.01	- sucrose chert po-py cpy minor.
39825	Grab sample - Nyman Vein	.17 .21	sucrose qtz carb minor Fine sulfide.

Dump Sampling

Sample #	Location + Description	Assay	Au/ton.
TT — Assay 7, 45 gals drums	- pay loader took 10 bites of dump. at randan - Total dry weight = 5271 lbs	0.049	
3970'	- Bag Samples Line 40 W to 25 main Flats	.03, .03, .02 wgkt .06/.04	
702	- Main Flats L 41 W, 15	.07, .07/.085, .095, .09	
703	- Main Flats S. W of Vert. Shaft	.05, .09/.095, .05 .065	
704	- Grace Vein North Dump	.115/.17, .11, .125, .10	
705	- L 42 W West half Grace Vein dump.	.35/.41, .32, .395, 2.28/1.92, .25/.21	
706	- Grace vein Dump South. large pile.	.06/.04, .07, .06 .06	

Sample number	Location and Description	Assay in ppb + % Au	As	S.	Hg
	Gold Showings - (surface)	PPB	PPM	%	PPM
39938	- Parkhill mine - qtz in place - minor sulfide - Escape raise.	90400	1	.413	.05
39939	- Parkhill mine - Vein o/c near road + trout creek E of shaft.	1390	1	.001	.05
39940	- Parkhill - N-S vein between VanSickle + Pkhill mines - chips From near road (sulfides) near creek.	1060	1	.035	.05
39941	- Van Sickle: Trench W of shaft (100') - blue sulfidic fine grained qtz - mostly py minor cpy. (not in place)	112420	2	.018	.02
39942	- Van Sickle - qtz From trench 30' W of shaft - minor carbt sulfide + no VG.	211400	4	.676	.03
39943	- Mariposa - sulfidic qtz From Vein on S side road accross From shaft	7021 7220	6	2.41	.04
39944	- Mariposa - sulfidic qtz From near mouth of shaft - minor schisty inclusions	431	1	1.53	.04
39945	- Nyman Vein - chip Samples of carb altered material undersurvey pin.	2980	11	.089	.05
39946	- Nyman Vein: qtz py F.W of V 50' NE of carb rich sections of main Vein	396	1	.035	.02
39947	- Nyman Vein: in place chips of Sacrpse qtz + sulfides - some walls.	3036 2950	1650	.238	.04
39948	- Hayne Vein - qtz only From various exposes sections.	533 510	17560	.025	.07
39949	- Hayne Vein - As py rich schist	3057	1380	.259	.03
39950	- E W Vein - East of Darwin mine N of Road.	973	18	.023	.03
39635	- Po and tr cpy in cherty rock, Gossan stained wall at "adit" on South edge of marsh, Southeast Dunraine property (Stop 11, Day 23)				
39636	- Po, Py, and tr cpy in cherty rock, Gossan stained wall at "adit" on South edge of marsh, Southeast Dunraine property (Stop 11, Day 23)				
39637	- Po in cherty rock, Gossan stained o/c on cliff North of marsh, Southeast Dunraine property (Stop 11, Day 23)				

Surface Sampling File

SAMPLE NUMBER	Location and Description	Assay in ppb Au	As	S.	Hg
39638 Surface	Po and Py in cherty Breccia, showing off main trail at Dunning's southeast property (Day 23, Stop 6) (PS-23-4)			Surface Sampling	
39639	Assy-bearing siliceous sinter, cherty breccia-tuff, trench south of Darwin mine (Day 26, Stop) PS-26-1A	5360	500	.75	.03
39640	Assy-bearing etc, trench south of Darwin mine (Day 26, Stop) PS-26-1B	9400	4900	.099	<.01
39951	L 16W 18+50S - glassy sulfides & North striking.	105 73	4	1.02	.03
39952	L 16W 14+30S - EW striking Sdip sugar qtz carbonate neg. sulf.	205 213	3	.034	.01
39953	Moody pit Au bearing qtz py - Po - cpy carb ← V. G.	120000	6	.119	.01
39954	L 12W, 1N - N Striking q v parts crystaline others sucrose - minor sulfides Assy? - Fair sericite & biotite.	7584	880	.406	.01
39955	Grade Vein - blast rock from pit North of Skunky Dog - qtz - bio-Assy py.	5576 5700	2630	.682	.02
39956	Skunky Dog showing - Assy rich sericite - some weathering	28610	23800	1.58	.01
39957	Darwin Dump - Au bearing qtz - Sulfides - po-py-cpy V. G.	44580	1000	.435	.04
39643 Surface	Po in siliceous rock, SE Dunning property (Day 27, Stop 3) (PS-27-5)				
39642	Po in siliceous-mica rock, SE Dunning pit. (Day 27, Stop 3) (PS-27-8)				

Surface Sampling -

SAMPLE number	Location and Description	Assay in ppb Au only	As	S.	Hg
	Diamond Drill Core				
39707	D81-1 Darwin Shear 220-223 ft.	n.i			
39708	D81-1 Darwin Shear 223-226 ft	n.i			
39709	D81-1 Darwin Shear 226-229 ft	n.i		43 ppb	
39710	D81-1 Darwin Shear 229-232	10			
39711	D81-1 Darwin Shear 232-235	10			
39712	D81-1 Darwin Shear 235-238	10			
39713	D81-1 Darwin Shear 238-240	n.i			
39714	D81-9 Darwin Shear 269-272	20			
39715	D81-9 Darwin Shear 272-275	n.i		17 ppb Avg.	
39716	D81-9 Darwin Shear 275-278	20 10			
39717	D81-9 Darwin Shear 278-279.6	10			
39718	D81-9 Darwin Shear 281.3-283	n.i			
39719	D81-9 Darwin Shear 283-286.	280-310 Avg. 340			
39720	D81-9 Darwin Shear 286-289	10		80 ppb Avg.	
39721	D81-9 Darwin Shear 289-292	40			
39722	D81-9 Darwin Shear 292-295	10			
39723	D81-9 Darwin Shear 295-298	30			

1983 Diamond Drill hole re-sampling.

Sample number	Drill hole number and Footage	Assay / Au/ton.
37809	D83-4 376.5-377.5	0.36
810	377.5-378.5	0.09
811	378.5-379.5	0.02
812	379.5-380.5	0.09
813	380.5-381.5	0.12. 0.09
814	381.5-382.5	0.03
815	382.5-383.5	0.02

GEOCHEM SAMPLING -1983-

SAMPLE number	Location and Description	Assay in ppb & % Au ppb	As ppm	S %	Hg ppm
	DARWIN Shear Zone. (Surface)				
39901	L 30+30N bc N end of pond at power line - foliation -	30	2	.002	.04
39902	L 31N - 4+00W - chloritic fine grained. minor sulfide + some feld. lap. clasts	180 (177)	<1	.159	.01
39903	L 31N - 5+20W - Fine grained chl. bio Fields clasts. minor sulfides.	20	<1	.008	<.01
39904	L 30N - 4+50W as 903	nil	5	.021	.05
39905	L 28N - 5+50W as 903 - more bio and better foliated.	nil	4	.018	.03
39906	L 27N - 5+50W Very Fine gr. minor sulf.	nil	4	.038	.02
39907	L 26+50N - 3+50W qtz - carb ser minor py	20	2	<.001	.03
39908	L 25+50N - 4+00W as 907	40	1	.055	.04
39909	L 24N - 4+00W Fine gr. Foliated chloritic some qtz carb ser. minor sulfide.	10	1	.006	.03
39910	L 21+60N 4+00W as 909	20	3	.004	.09
39911	L 21N - 4+00W slightly foliated inter rols. minor cube py.	4670 (4380)	1	.121	.04
39912	L 20+00N - 4+00W ≈ 5% diss sulfides.	50	3	.039	.11
39913	L 19+00N - 3+50W - scattered float (Talc)	nil	2	<.001	.09
39914	L 17+00N - 3+00W - qtz + diss. py.	nil	2	.113	.08
39915	L 16N - 3+00W - minor tourm. & 3% py. - bc E+W of swamp	nil	3	.141 .178	.10
39916	L 13+[illegible]14N - scattered of E side of swamp.	nil	3	.128	.12
39917	L 12+40N +50W - sulfidic chert From Frank	30	16	3.31	.15
39918	10+[illegible]12N E side of Lake.	20	5	.319	.09
39919	L 8+00W - chips E side of Shear.	nil	5	.127	.12
39920	L 8+00W - chips W side of shear	40	2	.064	.07

SAMPLE NUMBER	Location and Description	Assay in ppb + % Au	As	S.	Hg
39921	L 6+N 2W - Foliated chloritic sericite some weathering minor py	50 (200 ppb)	2	.096	.15
39922	L 4+N - 2W - chlorite schist some sericite and carb < 5% py.	195	<1	.137	.07
39923	L 3+N - 2+W - qtz chl. schist, minor py	nil	<1	<.001	0.01
39924	L 2+N - 1+50W - qtz chl. sericite silicification and carb alt.	nil	<1	.042	<.01
39925	L 0+75N - 1W Foliated chl. schist minor Alteration + sulfides.	80	<1	.054	.04
39926	L 0+30S - 1W - chl schist. carb + tourmaline (only 2 o/c)	268 (270)	<1	.023	.08
39927	L 1+30S - 1W - chl. schist - less foliated some sericite + sulfide	40	<1	.033	.07
39928	L 2S - 1W - chl. schist. qtz-carb + tourm.	30	<1	.011	<.01
39929	L 3+25S - 3+50W - West side shear qtz - chl. schist - minor sulfides.	20	<1	.113	.05
39930	L 4+25S - 3W - West side Shear chl. schist, carb rich + qtz + sulfide	nil	<1	.031	.07
39931	L 4S - 3W - o/c W side Shear - qtz carb - chl. + minor sulfide + good tourm.	70	<1	.066	.08
39932	L 4S 1W - o/c E side shear - no foliation - minor sulfide	40	1	.063	.09
39933	L 7S - 1W - E side Shear - melange of stock - Fol. + unfol. vols - qtz stringers & sulfides.	90	<1	.161	.06
39934	L 7+75S - 1+50W W side shear - carb, qtz string - Foliated chl. material + tourm	50	<1	<.001	.07
39935	L 8S - 1W - 1 o/c - slightly Foliated chl. vols. - minor py.	100	<1	<.001	.12
39936	L 9+50 1W - Foliated + Altered vols. - minor py + carb.	30	<1	.029	.02
39937	- Location not known - qtz carb. very siliceous inter vols. minor sulfide - good carb. - gap - between #39932 + 33 -	20	<1	<.001	.04

Swastika Labs — 1983 SURFACE SAMPLING

-705-642-3244

SAMPLE number	Location + Description	ASSAY Au/ton		REMARKS
39604	SULPHIDE FACIES IRON-FORM, TRENCH ON BL AT 3+W, DARWIN MINE	Au Ag	NIL TRACE	STOP 4-33; IF1 MASSIVE CHERT WITH ~20% Po AND WITH PHAG.
39605	SULPHIDIC SCHIST, DUMP AT THE DARWIN MINE	Au Ag	.32 0.08	STOP 4-55, SCH 1 MUSCO-QTZ SCHIST WITH DISSEMINATED PO, ASPY
39606	FELSIC SCHIST, ON 26N WEST OF BL, ALONG POWER LINE, DARWIN SHEAR AREA	Au Ag	.002 NIL	STOP 6-12, PS-6-4 SILICEOUS SCHIST WITH ~1% PY
39607	SULPHIDIC CHERT-BRECCIA, AT 17S ON L8E, PARKHILL MINE AREA	Au Ag	.002 NIL	STOP 3-38, PS-7-9 BRECCIA TEXTURED CHERT AND MICACEOUS ROCK WITH DISPERSED PO
39608	SULPHIDIC CHERT BRECCIA, AT ~17S ON L14E, PARKHILL MINE AREA	Au Ag	.002 0.01	STOP 7-9, PS-7-4 CHERT AND MICACEOUS ROCK WITH DISPERSED PO.
39609	QTZ VEIN, DUMP AT THE VAN SICKLE MINE	Au Ag	17.5 1.15	STOP 7-0, PS-1V QTZ WITH PY, PO
39610	QTZ VEIN, TRENCH AT THE VAN SICKLE MINE	Au Ag	16.4 0.98	STOP 7-0, PS-2V QTZ WITH PY, PO
39611	SULPHIDIC SCHIST, BOULDER OFF MAIN TRENCH AT THE VAN SICKLE MINE	Au Ag	.06 0.01	STOP 7-0, PS-2W PY-LADEN QTZ, CH SCHIST
39801	Silicious sulfidic float From Beaver Dam SW end Mountain Lake.		.02	
39802	Darwin Dump 9t3 chl. sericite + ASPY		.27	
39803	Alex Rock # 2667		.03	
39804	Alex Rock # 2668		.005	
39805	Darwin Dump - sericite and ASPY		.44	
39806	Mountain Lake Pit schistose sulfidic wall Rock - rusty		.002	
39807	- Mountain Lake Pit - sulfidic 9t3 blast rock		.005	

SAMPLE NUMBER	LOCATION AND DESCRIPTION	ASSAY Au/Ag (oz/ton)	REMARKS
39630	MCILVEN SHOWING NEAR HAWK JCT. DISSEMINATED PY IN QTZ		SURFACE SAMPLE FROM GOLD BEARING TRENCH
39631	MURRAY - ALGOMA MINE, HAWK JCT. QTZ WITH DISSEMINA. PY, PO, CPY. ALSO HAS SOME CARBO. & SERICITE		DUMP SAMPLE FROM BOULDER
39632	MURRAY - ALGOMA MINE, HAWK JCT. QTZ WITH MINOR PY, PO, CPY		DUMP SAMPLE FROM TRENCH
39633	MURRAY - ALGOMA MINE, HAWK JCT QTZ WITH MINOR PY, VUGGY		MAIN TRENCH

Surface Samples

SAMPLE NUMBER	LOCATION AND DESCRIPTION	ASSAY Au-Ag oz/ton	REMARKS
✓ 39619	SULPHIDE CLOTS AT L16N, 20S, NORTHEAST OF DARWIN MINE	Au 0.002 Ag 0.01 Cu 0.16 Ni 0.14 Zn 0.005	SURFACE SAMPLE PS-10-5A
✓ 39620	SULPHIDIC VEIN AT L16N, 20S, NORTHEAST OF DARWIN MINE	Au 0.005 Ag Trace Cu 0.02 Ni 0.01 Zn None	SURFACE SAMPLE PS-10-5B
✓ 39621	CHERT BRECCIA WITH Po L16N, 21S, NORTHEAST OF DARWIN MINE	Au NIL Ag NIL	SURFACE SAMPLE PS-10-3
✓ 39817	Ser. chl. shist - biotitic reworked Felsic vols. minor sulfide - maybe extension Grace Vein to South	Au 0.02	
✓ 39818	Mariposa Float Trench S side of road.	.06 Au	massive qtz diss py - cpy
✓ 39819	Mariposa trench S side road in place	.005 Au	qtz diss, py - trace cpy
✓ 39820	Mariposa Float dump near shaft	Nil	qtz carb ser. 5% po diss
✓ 39821	Mariposa dump.	03	vuggy qtz + sulfd
✓ 39822	Mariposa dump Naf shaft	.002	glassy qtz carb. po-py minor cpy.
✓ 39823	Mariposa dump near shaft opening.	.02	qtz - much diss po - py - minor cpy
✓ 39824	Sulfidic chert lense near road Eab Mariposa.	.01	- sucrose chert po - py cpy minor
✓ 39825	Grab sample - Nyman Vein	.17 .21	sucrose qtz carb minor fine sulfide.
-39635	- Po. t. Trace cpy in chalty rock gossan stained wall at addit an south edge marsh - South East Dunraine prop. (Stop 11, Day 23)	.002 Au Trace Ag	
-39636	- Po-Py and tr. cpy in chalty rock gossan stained wall at addit. - As 635 -	.002 Trace Ag	
39637	Po in chert - Rock gossan stained o/c on cl. FF North of marsh. S. E. Dunraine prop. (Stop 12 day 23)	.002 .01 Ag	

Sample #	Description and Location	Assay Au/Ag	Remarks
39638	Po-py in cherty breccia-shearing off main trail. at Dunraine S.E prop. (Day 23 stop 6 - PS. 23-4)	NIL Au 0.01 Ag	
39642	Po in silicious mica rock - SE of Dunraine Prop. Day 27 stop 30 - PS-27-8 -	.002 Au .03 Ag	
39643	Po in silicious rock SE Dunraine Prop. - Day 27 - stop 37) PS-27-9	.003 Au .03 Ag	
39644	Po bearing silicious rock - gossan o/c on side of stream - S.E Prop. (Day 29 step 10) PS-29-2C	NIL Au trace Ag	
39645	Po Bearing silicious rock gos. wall of pit SE prop. Day 29 stop 17 - PS-29-5.	NIL Au trace Ag	
39646 *	Po bearing silicious rock gossan wall of pit SE prop of Dunraine (DAY #29 stop 19) PS-29-11A.		
39826	- Grace Vein S. Ext. 3'chip N end W half trench.	.11 Au .10 trace Ag	
39827	- Grace Vein S Ext. 3'chip N end E half trench.	.03 Au ~~nil~~ trace Ag	
39828	- Grace Vein S Ext. G's of 26-27 3'chip E half	.04 Au trace Ag	
39829	- Grace Vein S Ext. as 328 3'chip W half.	.11 Au 0.01 Ag	
39830	- Grace Vein S. Ext. G's of 28, 29 3'chip E wall	.17 = Au .14 .02 Ag	
39831	- Grace Vein S Ext. 3'chip W wall	.16 Au .01 Ag	
39832	- Grace V. ext. 2+50' S of front creek in trench.	.06 Au trace	
39833	- Grace Vein ext S end. 400' S of front creek.	.08 Au nil Ag.	

SAMPLE NUMBER	LOCATION + DESCRIPTION	ALLOCATION	REMARKS
39648	SOUTH EXTENSION OF DARWIN VEIN, IN WALLS OF TRENCH - EXTENSION BY CREEK; SILICEOUS ROCK WITH MIN. Po		PS-36-1B
39649	SOUTH EXTENSION OF DARWIN VEIN, ~100' NE SOUTH TRENCH; SILICEOUS GNEISS WITH MINOR Po, AsPy, ± Py		PS-36-4A
39650	SOUTHEAST GROUP, EXTENSION OF SULPHIDE ZONE; SILICEOUS ROCK WITH Po		PS-35-2B

Swastika Labs — 1983 SURFACE SAMPLING

-705-642-3244

Sample number	Location + Description	ASSAY Au/Ton	Remarks
39604	SULPHIDE FACIES IRON-FORM, TRENCH ON BL AT 37W, DARWIN MINE	Au nil Ag	STOP 4-33; IF 1 MASSIVE CHERT WITH ~20% F_o AND WITH PHAI
39605	SULPHIDIC SCHIST, DUMP AT THE DARWIN MINE	Au .32 Ag	STOP 4-55, SCH 1 MUSCO-QTZ SCHIST WITH DISSEMINATED PO, ASPY
39606	FELSIC SCHIST, ON 26N WEST OF BL, ALONG POWER LINE, DARWIN SHEAR AREA	Au .002 Ag	STOP 6-12, PS-6-4 SILICEOUS SCHIST WITH ~1% PY
39607	SULPHIDIC CHERT-BRECCIA, AT 17S ON L8E, PANKHILL MINE AREA	Au .002 Ag	STOP 7-38, PS-7-9 BRECCIA TEXTURED CHERT AND MICACEOUS ROCK WITH DISPERSED PO
39608	SULPHIDIC CHERT BRECCIA, AT N17S ON L14E, PANKHILL MINE AREA	Au .002 Ag	STOP 7-9, PS-7-4 CHERT AND MICACEOUS ROCK WITH DISPERSED PO,
39609	QTZ VEIN, DUMP AT THE VAN SICKLE MINE	Au 17.5 Ag	STOP 7-0, PS-1V QTZ WITH PY, PO
39610	QTZ VEIN, TRENCH AT THE VAN SICKLE MINE	Au 16.4 Ag	STOP 7-0, PS-2V QTZ WITH PY, PO
39611	SULPHIDIC SCHIST, BOULDER OFF MAIN TRENCH AT THE VAN SICKLE MINE	Au .06 Ag	STOP 7-0, PS-2W PY-LADEN QTZ, CH SCHIST
39801	Siliceous sulfidic float From Beaver Dam SW end Mountain Lake.	.02	
39802	Darwin Dump qtz chl. sericite + ASPY	.27	
39803	Alex Rock # 2667	.03	
39804	Alex Rock # 2668	.005	
39805	Darwin Dump - sericite and ASPY	.44	
39806	Mountain Lake Pit schistose sulfidic wall Rock - rusty	.002	
39807	Mountain Lake Pit - sulfidic qtz blast rock	.005	

Sample Number	Location + Description	Assay Au - Ag /ton			Remarks
		Au		Au	
39808	Parkhill tailing hole #1 0-4'	.026		.026	sonic sample
39809	Parkhill tailing #1 4-8'	.012			"
39810	Parkhill tailing #2 0-4'	.022			"
39811	Parkhill tailing #2 4-8.5	.022			"
39812	Parkhill tailing #3 0-4 ft.				"
39813	Parkhill tailing #3 4-6'				"
39814	Darwin main tailing hole #1 0-4	.092 .082	} Au		"
39815	Darwin tailing #1 4-6'	.068			"
39816	Darwin tailing #1 6-9 feet				"
39612	CHERT-BRECCIA WITH DISPERSED Py, STOP # 8-44, SE OF PARKHILL MINE, L4S, 11SE	.002 .01	Au Ag		SURFACE SAMPLE PS-8-1
39613	CHERT-BRECCIA, WITH DISPERSED Py, STOP # 8-44, SE OF PARKHILL MINE, L4S, 11SE	NIL NIL	Au Ag		SURFACE SAMPLE PS-8-1
39614		NIL NIL	Au Ag		
39615	QUARTZ VEIN, QV TRENCH AT L3W, 1S SE, SOUTH-EAST OF PARKHILL MINE	.02 .01	Au Ag		SURFACE SAMPLE PS-8-3
39616	QUARTZ VEIN, QV TRENCH AT L3W, 1S SE, SOUTHEAST OF PARKHILL MINE	.03 .01	Au Ag		SURFACE SAMPLE PS-8-3
39618	QTZ VEIN, AT L1.6W, 2SE, NORTHEAST OF DARWIN MINE	.005 NIL	Au Ag		SURFACE SAMPLE PS-10-4
39817		.02	Au		

SAMPLE NUMBER	LOCATION AND DESCRIPTION	ASSAY Au-Ag oz/ton	REMARKS
39619	SULPHIDE CLOTS AT L16N, 20S, NORTHEAST OF DARWIN MINE	.002 Au .01 Ag .16 % Cu .14 % Ni	SURFACE SAMPLE PS-10-5A
39620	SULPHIDIC VEIN AT L16N, 20S, NORTHEAST OF DARWIN MINE	.005 Au trace Ag .02 % Cu .01 % Ni	SURFACE SAMPLE PS-10-5B
39621	CHERT BRECCIA WITH PO, L16N, 25S, NORTHEAST OF DARWIN MINE	NIL Au NIL Ag	SURFACE SAMPLE PS-10-3

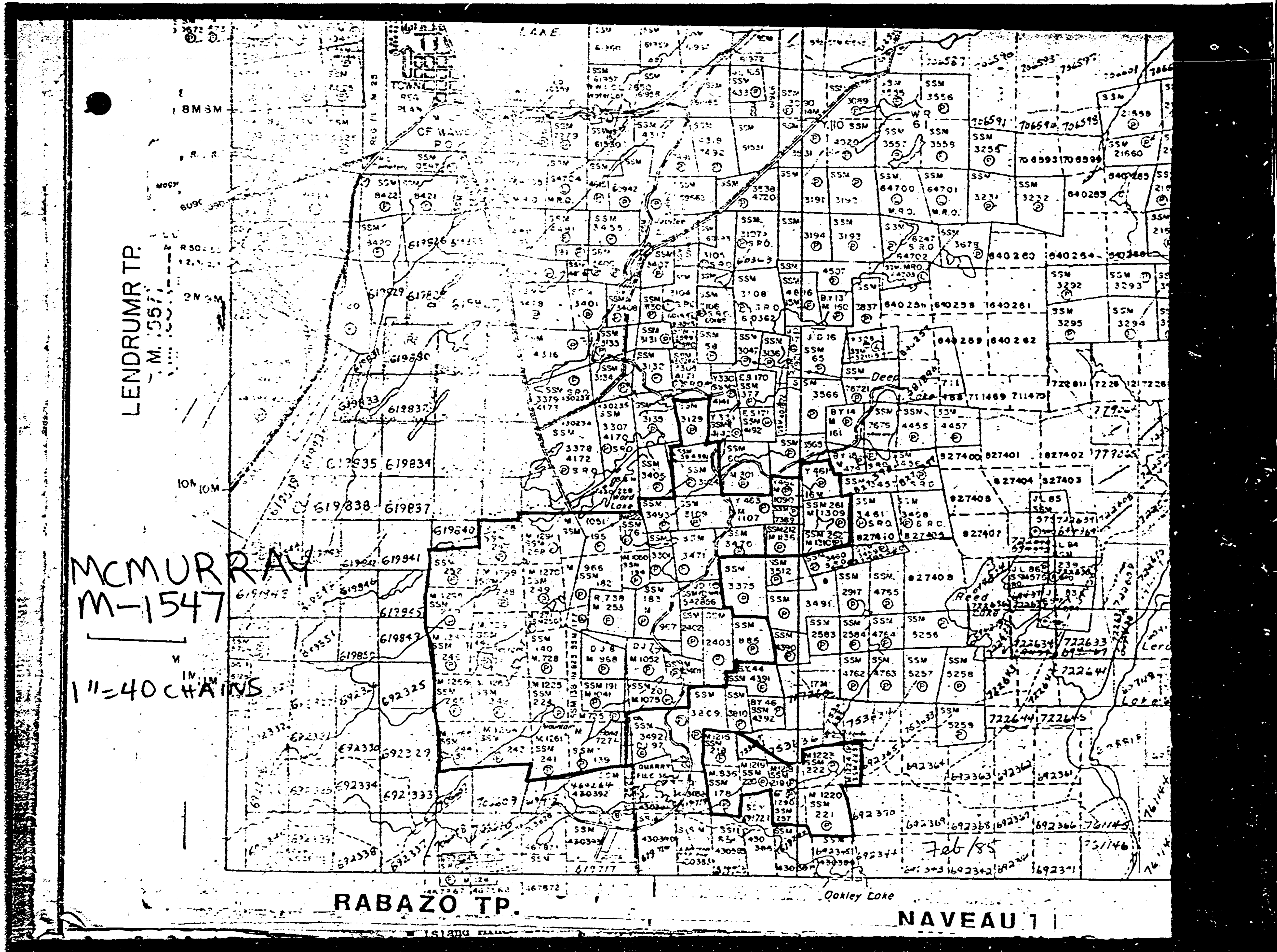
1983 Diamond Drill hole resampling.

Sample number	Drill hole number and Footage	Assay Au/ton.
37809	D83-4 376.5-371.5	0.36
810	371.5-372.5	0.09
811	3725-373.5	0.02
812	373.5-374.5	0.09
813	374.5-375.5	0.12, 0.09
814	375.5-376.5	0.03
815	376.5-377.5	0.02
D.80-10	D80-10	
39797	182.1-182.2	
39798	180.-180.2	
	D83-3	
39792	141.2-142.4	
39793	155.8-156.8	
	D83-8	
39794	515-516	
	D83.5	
39795	249-250	
39796	257.5-258.5	

Sample Number	Location and Description	Assay in ppb Au	As	Sb	Hg
58		48/90	41	.318	.03
39835	Darwin tailings Area. - (Osisko batch) - reworked pols - greywacke				
39836	- P.O. Bearing Fragmental F of Mariposa (30 element speck)				
39837	- Darwin Dump. Aspy - vg bearing 93 - 30 element -				
39838	Darwin Dump - Aspy schist (ser.) - 30 element				

Sample Number	Location + Description	Assay Au - Ag /Ton	Remakks
39808 ✓	Parkhill tailing hole #1 0-4'	Au 0.026	sonic sample
39809 ✓	Parkhill Tailing #1 4-8'	Au 0.012	"
39810 ✓	Parkhill tailing #2 0-4'	Au 0.022	"
39811 ✓	Parkhill tailing #2 4-8.5	Au 0.022	"
39812B ✓	Parkhill Tailing #3 0-4 ft.	Au 0.024	"
39813 ✓ C	Parkhill tailing #3 4-6'	Au 0.037	"
39814 ✓	Darwin main tailing hole #1 0-4	Au 0.082 0.092	"
39815 ✓	Darwin tailing #1 4-6'	Au 0.068	"
39816(A) ✓	Darwin tailing #1 6-9 feet	Au 0.076 0.070	"
39612 ✓	CHERT-BRECCIA WITH DISPERSED Py, STOP # 8-44, SE OF PARKHILL MINE, L4S, 11SE	Au 0.002 Ag 0.01	SURFACE SAMPLE PS-8-1
39613 ✓	CHERT-BRECCIA, WITH DISPERSED Py, STOP # 8-44, SE OF PARKHILL MINE, L4S, 11SE	Au NIL Ag NIL	SURFACE SAMPLE PS-8-1
39614 ✓		Au NIL Ag NIL	
39615 ✓	QUARTZ VEIN, QV TRENCH AT L3W, 19SE, SOUTH-EAST OF PARKHILL MINE	Au 0.02 Ag 0.01	SURFACE SAMPLE PS-8-3
39616 ✓	QUARTZ VEIN, QV TRENCH AT L3W, 19SE, SOUTHEAST OF PARKHILL MINE	Au 0.03 Ag 0.01	SURFACE SAMPLE PS-8-3
39618 ✓	QTZ VEIN, AT L16W, 21SE, NORTHEAST OF DARWIN MINE	Au 0.005 Ag NIL	SURFACE SAMPLE PS-10-4

SAMPLE NUMBER	LOCATION AND DESCRIPTION	ASSAY Au/Ag oz/ton	REMARKS
39622	DARWIN MINE, TRENCH NEAR THE MILL, SOUTH EXTENSION OF GRACE "VEIN". QTZ-RICH ROCK WITH MINOR Po, Py, ECPY	0.002 Au nil Ag	SURFACE SAMPLE PS-13-1
39623	DARWIN MINE, SURFACE SAMPLE AT THE NORTH EXTENSION OF SILVANUS PIT, SILICEOUS ROCK WITH ACCESSORY Py, LAMINATED WITH ASPY LAYERS	.06 Au .0 Ag	SURFACE SAMPLE PS-13-2
39624	DARWIN MINE, SURFACE SAMPLE AT THE NORTH EXTENSION OF SILVANUS PIT, SILICEOUS ROCK WITH TR Po, Py, CPY	.002 Au nil Ag	SURFACE SAMPLE PS-13-3
39625	DARWIN MINE, TRENCHES AT THE NORTH EXTENSION OF THE SILVANUS DOR, SILICEOUS ROCK WITH TR Py, Po & CPY	.002 Au trace Ag	SURFACE PS-13-4
39626	DARWIN MINE, FROM SOUTH WALL OF RAVINE NEAR SILVANUS DOR, ⊥ TO THE GRACE VEIN	.01 Au nil Ag	SURFACE PS-13-9
39627	DARWIN MINE, FROM TRENCH ON SOUTH WALL OF RAVINE NEAR SILVANUS DOR, ⊥ TO THE GRACE VEIN SILICEOUS ROCK WITH TR Po, Py, ASPY	.002 nil Ag	SURFACE PS-14-10
39628	MCKVEN SHOWING NEAR HAWK JUNCTION MASSIVE PY WITH QTZ, TOUR, & GRAPHITE (?)		SURFACE SAMPLE FROM TRENCH WITH GOLD TENOR
39629	MCKVEN SHOWING NEAR HAWK JUNCTION PY DISSEMINATED IN QTZ		SURFACE SAMPLE FROM TRENCH SAID TO BE BARREN.


LENDRUMR TP.
McMURRAY
M-1547
1"=40 CHAINS
RABAZO TP.
NAVEAU T
Oakley Lake
Deep Lake
Reed Lake
Ward Lake
TOWNSITE
QUARRY FILE
Feb/85

SWASTIKA LABORATORIES LIMITED

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

October 7 1983

Mr. D. Gignac
Dunraine Mines Limited
Box 265
Wawa, Ontario

Re: Certificate No. 56042-A

Dear Mr. Gignac:

Please Bear in mind that we use a pulverizer plate made of hard chrome steel. This is likely to cause some chromium contamination to samples.

If required a special sample could be prepared using ceramic plates.

Sincerely,

G. Lebel

GL/efk

G. Lebel --- Manager

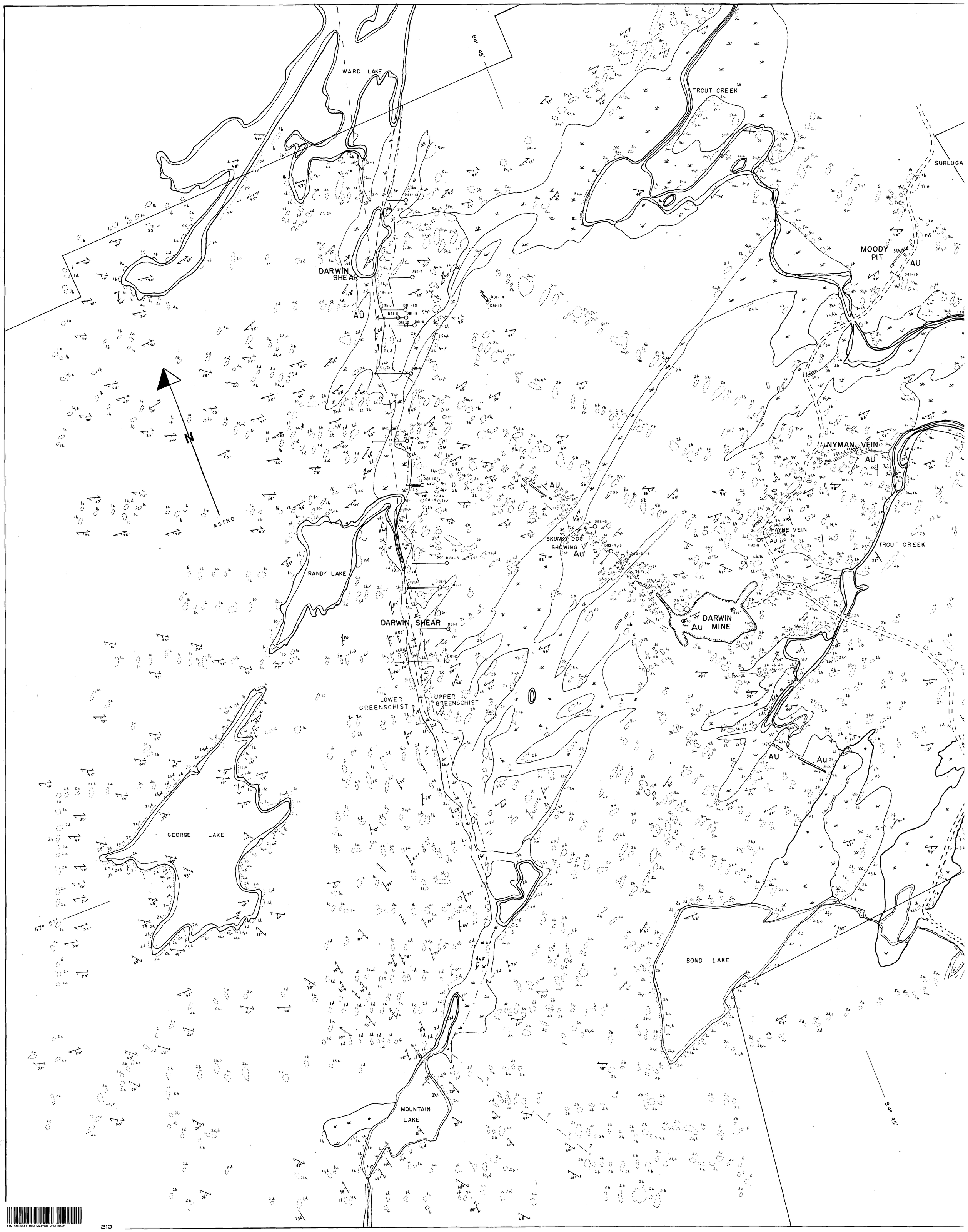
FOR ADDITIONAL

INFORMATION

SEE MAPS:

MCMURRAY-00060=1-6

MCMURRAY-0060,-



Sunluga Road.

To High Falls.

TRAIL

creek

creek

creek

To Oakley Lake

TABLE OF FORMATIONS

LATE PRECAMBRIAN

4 DIABASE

EARLY PRECAMBRIAN - ARCHEAN -

3 FELSIC META-INTRUSIVE ROCKS

- 3a GRANODIORITE, TRONDHJEMITE
- 3b INTRUSIVE BRECCIA, XENOLITHIC

2 INTERMEDIATE METAVOLCANIC ROCKS

- 2a MEDIUM GRAINED FLOW OR SILL
- 2b FELDSPAR CRYSTAL TUFF
- 2c FELDSPAR CRYSTAL-LAPILLI TUFF
- 2d FINE GRAINED TUFF
- 2e FELDSPAR CRYSTAL TUFF-BRECCIA

1 METASEDIMENTARY ROCKS

- 1a LITHIC GRAYWACKE
- 1b PELITIC TUFF
- 1c TUFFACEOUS CHERT, CHERTY BRECCIA

SYMBOLS

- SCHISTOSITY - inclined, vertical -
- BEDDING - inclined, vertical -
- LINEATION WITH PLUNGE - C = clasts ; A = fold axis

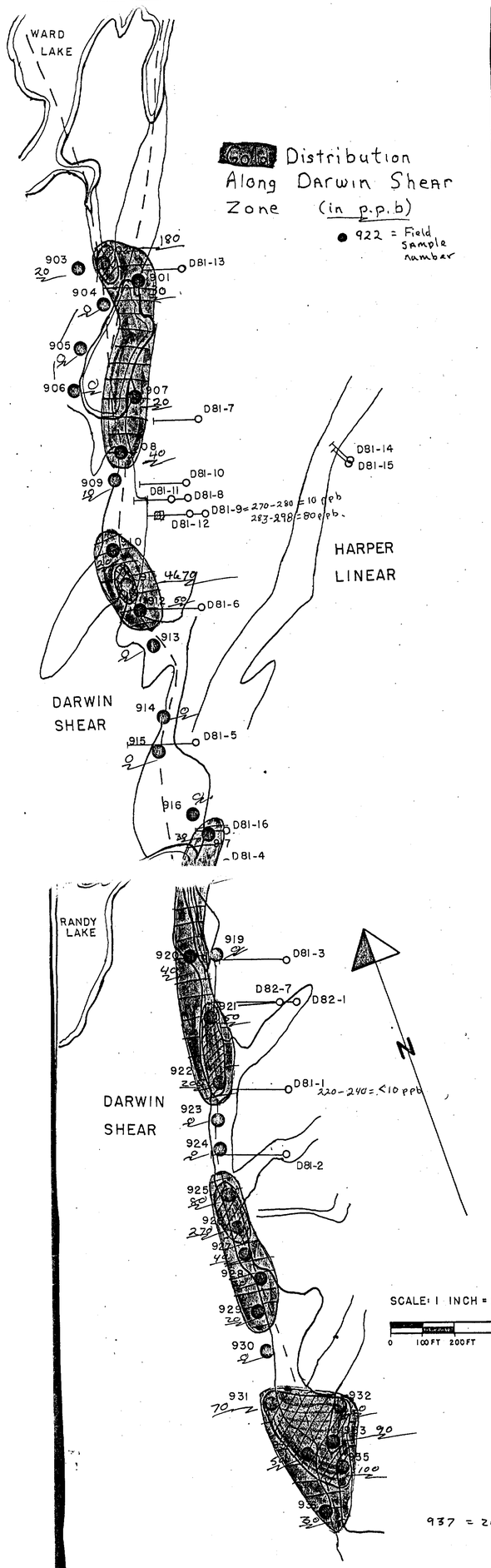
McMURRAY-0060, #3

DUNRAINE MINES LTD.
DARWIN SOUTH GROUP
WAWA ONTARIO

GEOLOGICAL MAP

SCALE
1:2400
feet
0 200 400 600

BY P.A. STUDEMEISTER JUNE, 1983


WARD LAKE
Gold Distribution Along Darwin Shear Zone (in p.p.b)
● 922 = Field Sample number
903
904
905
906
907
908
909
910
911
912
913
914
915
916
D81-13
D81-7
D81-10
D81-11
D81-8
D81-9
D81-12
D81-14
D81-15
D81-6
D81-5
D81-16
D81-4
HARPER LINEAR
DARWIN SHEAR
RANDY LAKE
919
920
921
922
923
924
925
926
927
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929
930
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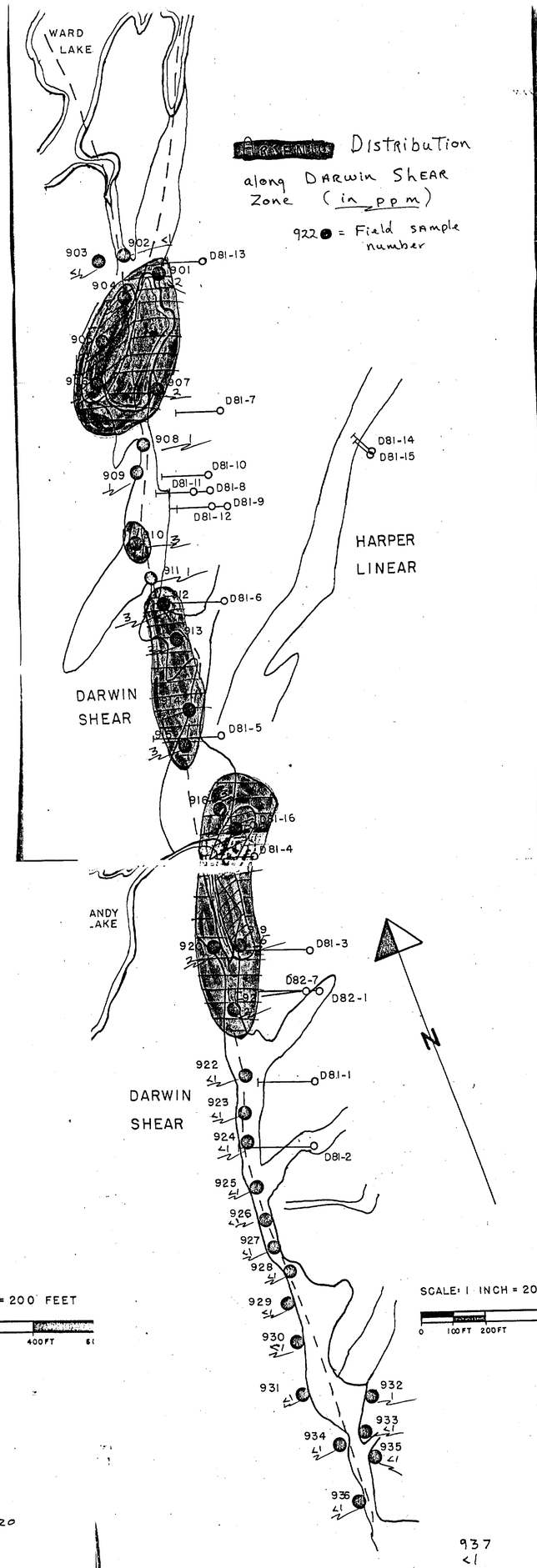
932
933
934
935
936
D81-3
D82-7
D82-1
D81-1
D81-2
SCALE: 1 INCH = 200 FEET
0 100FT 200FT 400FT
937 = 20
CRUSTAL ABUNDANCE
Au ~ 2 PPB
230


WARD LAKE
Distribution along DARWIN SHEAR Zone (in ppm)
922● = Field sample number
903
904
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912
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D81-7
D81-10
D81-11
D81-8
D81-9
D81-12
D81-14
D81-15
D81-6
D81-5
D81-16
D81-4
HARPER LINEAR
DARWIN SHEAR
RANDY LAKE
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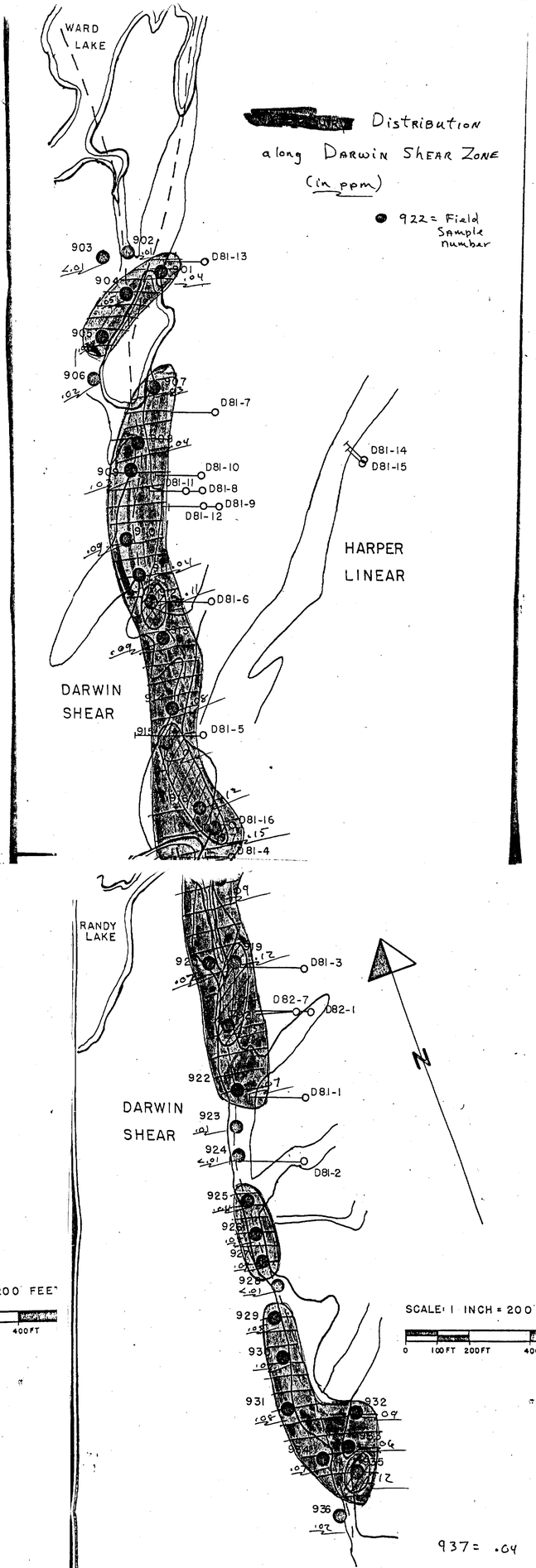
D81-3
D82-7
D82-1
D81-1
D81-2
SCALE: 1 INCH = 200 FEET
0 100FT 200FT 400FT
937 <1
CRUSTAL ABUNDANCE


WARD LAKE
Distribution along DARWIN SHEAR ZONE (in ppm)
● 922 = Field Sample number
903
904
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912
913
914
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916
D81-13
D81-7
D81-10
D81-11
D81-8
D81-9
D81-12
D81-14
D81-15
D81-6
D81-5
D81-16
D81-4
HARPER LINEAR
DARWIN SHEAR
RANDY LAKE
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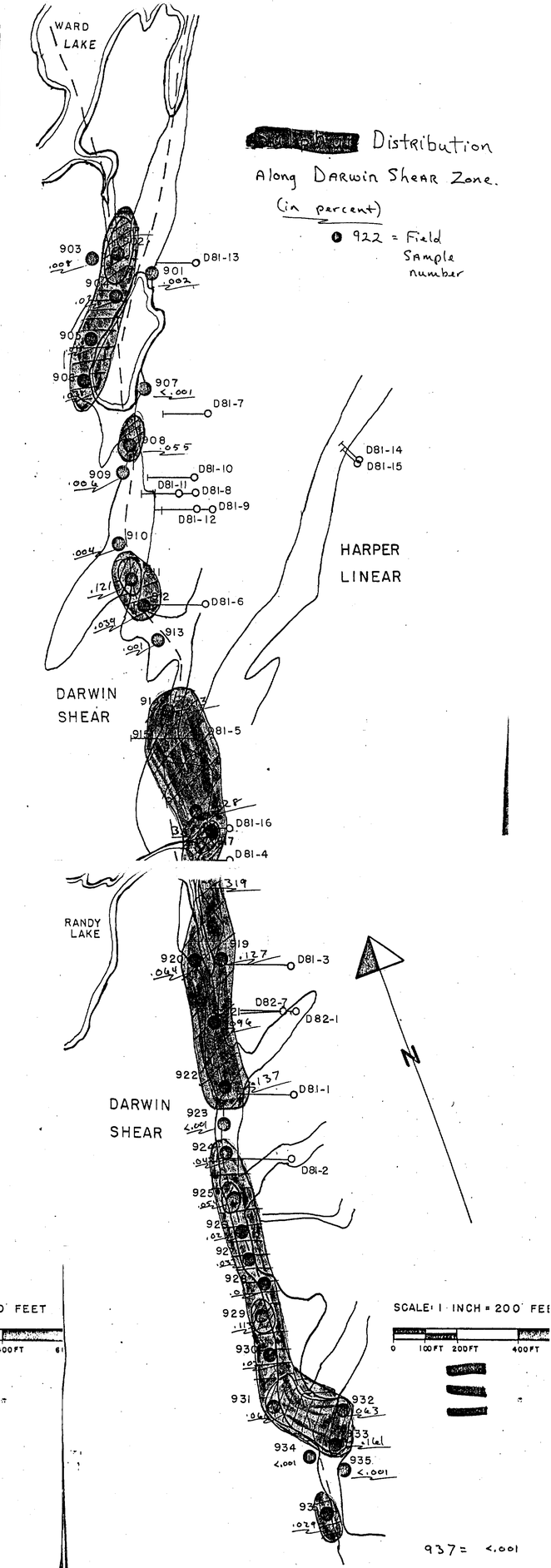
D81-3
D82-7
D82-1
D81-1
D81-2
SCALE: 1 INCH = 200 FEET
0 100FT 200FT 400FT
937 = .04
CRUSTAL ABUNDANCE


WARD LAKE
Distribution Along DARWIN SHEAR Zone. (in percent)
● 922 = Field Sample number
903
904
905
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908
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910
911
912
913
914
915
916
D81-13
D81-7
D81-10
D81-11
D81-8
D81-9
D81-12
D81-14
D81-15
D81-6
D81-5
D81-16
D81-4
HARPER LINEAR
DARWIN SHEAR
RANDY LAKE
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930
931
932
933
934
935
936
D81-3
D82-7
D82-1
D81-1
D81-2
SCALE: 1 INCH = 200 FEET
0 100FT 200FT 400FT
937 = <.001
MCMURRAY-0060, #4

WARD LAKE

TROUT CREEK

SHEAR ZONE GRID

1 South BASE LINE AND GRID

10W

DARWIN MINE

GEORGE LAKE

BOND LAKE

MOUNTAIN LAKE

McMURRAY-0060, #5

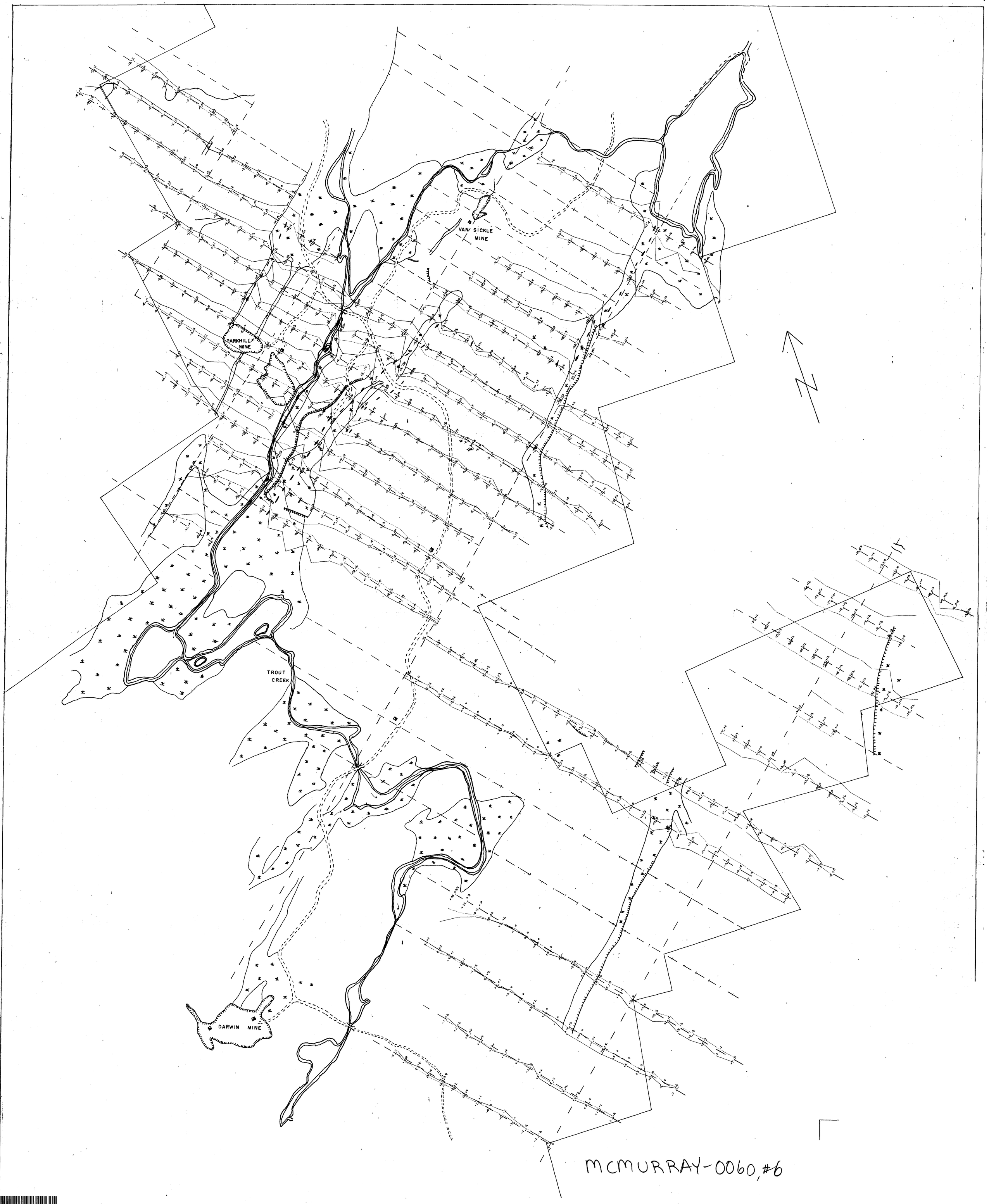
DUNRAINE MINES LIMITED
DARWIN MINE VLF SURVEY

SCALE: 1 INCH = 200 FEET
1 INCH = 40 DEGREES

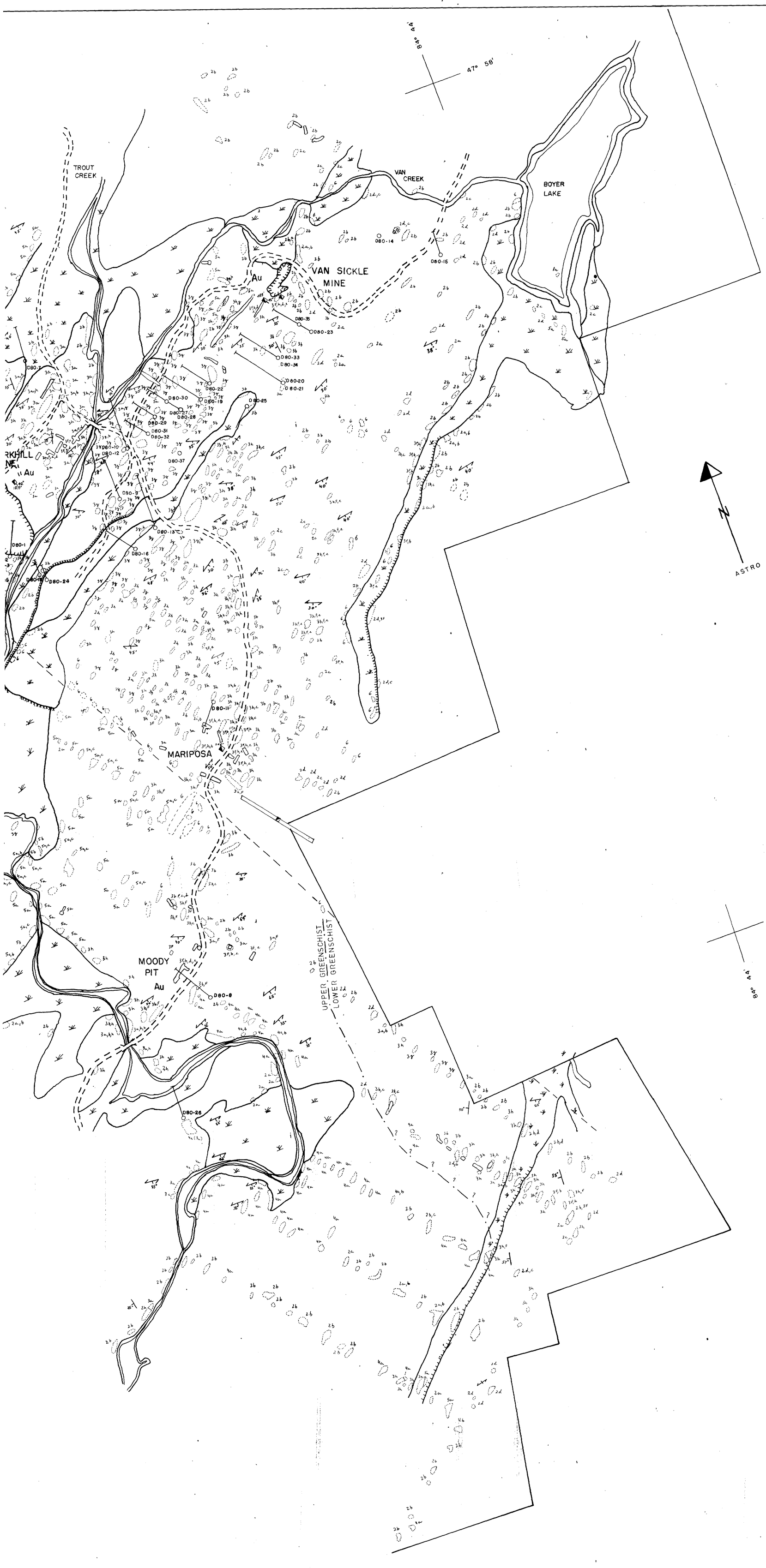
IN PHASE _____. QUADRATURE - - - -.

DRAWN AND CONDUCTED BY

D. J. GIGNAC JUNE, 1983



MCMURRAY-0060, #6



LEGEND

LATE PRECAMBRIAN

6 DIABASE

EARLY PRECAMBRIAN (ARCHEAN)

5 FELSIC META-INTRUSIVE ROCKS
- 5a Granodiorite, trondhjemite
- 5b Diorite
- 5c Intrusive breccia, xenolithic

4 MAFIC META-INTRUSIVE ROCKS
- 4a Gabbro, diorite
- 4b Fine-grained diorite

3 META-SEDIMENTARY ROCKS
- 3a Lithic graywacke
- 3b Tuffaceous mudstone
- 3c Argillaceous mudstone
- 3d Gold-bearing rock
- 3e Sulphide-bearing rock
- 3f Tuff-chert, cherty breccia
- 3g Polymictic breccia with granitic clasts
- 3h Polymictic breccia with volcanic clasts

2 INTERMEDIATE METAVOLCANIC ROCKS
- 2a Medium-grained flow or sill
- 2b Feldspar crystal tuff
- 2c Feldspar crystal-lapilli tuff
- 2d Fine-grained tuff
- 2e Feldspar crystal tuff-breccia

1 FELSIC METAVOLCANIC ROCKS
- 1a Medium-grained flow or sill
- 1b Quartz crystal tuff
- 1c Quartz crystal-lapilli tuff
- 1d Fine-grained tuff
- 1e Quartz crystal tuff-breccia

SYMBOLS

- Schistosity (inclined, vertical)
- Bedding (inclined, vertical, tops)
- Lineation with plunge (c = clast; a = fold axis; m = mineral)
- Lineament
- Metamorphic isograd
- D80-16 Drill hole
- Shaft with depth in feet (vertical, inclined with plunge)
- Trench
- Pit
- Mine dump
- Au Gold occurence
- Outcrop

MCMURRAY-0060,#1

DUNRAINE MINES LIMITED

PARKHILL PROPERTY - WAWA ONTARIO

OUTCROP MAP

SCALE : 1 INCH = 200 FEET

0 600

GEOLOGY BY : P.A. STUDEMEISTER Ph.D.

DRAWN BY : G.J. BOISVERT & D.J. GIGNAC
MAY and JUNE, 1983

WARD LAKE

TROUT CREEK

SURLUGA ROAD

MOODY PIT AU

RWIN SHEAR

AU

NYMAN VEIN AU

AU

SKUNKY DOG SHOWING Au

HAYNE VEIN AU

TROUT CREEK

LAKE

DARWIN SHEAR

DARWIN Au MINE

LOWER GREENSCHIST

UPPER GREENSCHIST

AU

Au

BOND LAKE

MOUNTAIN LAKE

B40 45'

47° 57'

B40 45'

LEGEND

LATE PRECAMBRIAN

6 DIABASE

EARLY PRECAMBRIAN (ARCHEAN)

5 FELSIC META-INTRUSIVE ROCKS
- 5a. Granodiorite, trondhjemite
- 5b Diorite
- 5c Intrusive breccia, xenolithic

4 MAFIC META-INTRUSIVE ROCKS
- 4a Gabbro, diorite
- 4b Fine-grained diorite

3 META-SEDIMENTARY ROCKS
- 3a Lithic graywacke
- 3b Tuffaceous mudstone
- 3c Argillaceous mudstone
- 3d Gold-bearing rock
- 3e Sulphide-bearing rock
- 3f Tuff-chert, cherty breccia
- 3g Polymictic breccia with granitic clasts
- 3h Polymictic breccia with volcanic clasts

2 INTERMEDIATE METAVOLCANIC ROCKS
- 2a Medium-grained flow or sill
- 2b Feldspar crystal tuff
- 2c Feldspar crystal-lapilli tuff
- 2d Fine-grained tuff
- 2e Feldspar crystal tuff-breccia

1 FELSIC METAVOLCANIC ROCKS
- 1a Medium-grained flow or sill
- 1b Quartz crystal tuff
- 1c Quartz crystal-lapilli tuff
- 1d Fine-grained tuff
- 1e Quartz crystal tuff-breccia

SYMBOLS

- Schistosity (inclined, vertical)
- Bedding (inclined, vertical, tops)
- Lineation with plunge (c = clast; a = fold axis; m = mineral)
- Lineament
- Metamorphic isograd
- DB1-10 Drill hole
- Shaft with depth in feet (vertical, inclined with plunge)
- Trench
- Pit
- Mine dump
- AU Gold occurence
- 3a Outcrop

McMURRAY-0060, #2

DUNRAINE MINES LIMITED
DARWIN PROPERTY - WAWA, ONTARIO

OUTCROP MAP

SCALE : 1 INCH = 200 FEET.

0 600

GEOLOGY BY : P.A. STUDEMEISTER Ph.D. 1983.
DRAWN BY : G.J. BOISVERT & D.J. GIGNAC
MAY and JUNE, 1983