

85-1082-14625

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**ASSESSMENT REPORT**

on the

**DIAMOND DRILLING PROGRAM**

on the

**NAGY C CLAIM  
(PART OF THE GNAT 85 GROUP)**

**NEW WESTMINSTER MINING DIVISION**

**HARRISON LAKE AREA**

**BRITISH COLUMBIA**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

Latitude: 49°39'N

Longitude: 121°59'W

N.S. 92G/9E & 92 H/12W

14,625

OWNER OF CLAIMS:

**RHYOLITE RESOURCES INC.  
300, 535 THURLOW STREET,  
VANCOUVER, B.C.,  
V6E 3L2**

OPERATOR:

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AUTHOR:

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**FILMED**

SUBMITTED:

DECEMBER 24, 1985.

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## SUMMARY

1.0. Diamond core drilling totalling 517.6 meters (1698 ft) was completed on the North Millsite area, Nagy C claim, Doctors Point, Harrison Lake, in November 1985.

1.2. The drill holes were all located to test epithermal mineralization within Tertiary age dioritic rocks at, or adjacent to, gold soil geochemical anomalies at two main locations.

1.3. Multiple veining and mixed sulphide infill of epithermal style deposits was encountered in all holes.

1.4. Major alteration, and brecciation associated with epithermal veining was encountered in hole 85-NM-5. Drill core assays for this hole were disappointing with only one zone assaying 0.116 oz/ton Au. and 0.40 oz/ton Ag. over 1.83 meters (6').

1.5. Drill holes at the south end of the swamp area showed the most number of epithermal veinlets per meter of section. Veining was strong in two directions, however average gold content was less than .001 oz/ ton Au.

1.6. The mineralization encountered in this drill programme indicates a major epithermal event in the vicinity of the "North Millsite" area.

The main vein systems, predominantly mineralized with pyrite and arsenopyrite, carry variable gold content, reflecting a spatial variation of Au. because of distance from the main center of activity, suspected to be located within the area of the large swamp between the two areas drilled in this phase of work.

1.7. Present mapping indicates vein systems which dip to the east and west from the swamp area, and a major magnetic "low" linear in the diorite adjacent to major epithermal veining to the north of the "swamp".

1.8. Excellent drill targets are defined for massive pyrite-arsenopyrite sulphide vein mineralization with significant trends for increasing gold content, using the epithermal mineralization model of Dr. L. J. Buchanan. Heritage Petroleum Inc. optioned a group of 150 mineral claims from Rhyolite Resources Inc. via Harrison Gold Mines in October 1985.

## INTRODUCTION

The area was the scene of intense activity by Rhyolite Resources between 1981 and 1983, during which period a mineralized gold zone totalling 113,600 tonnes of 0.06 oz/ton Au., and 0.18 oz/ton Ag. was blocked out by diamond drilling, (Fahrni 1984.) in an area of hornfelsed volcanogenic sediments adjacent to a small diorite stock.

Field mapping, and limited drilling outside this "main mineralized zone" showed epithermal vein systems both in adjacent diorite stocks, and within other areas of hornfelsed sediments, up to 1.5 km. from the original drilled zone.

The B. C. Department of Mines completed a survey of the area in 1983, under the supervision of Dr. G.E. Ray, and the published data proposed epithermal veining associated with late fracturing in the five diorite - quartz diorite stocks at Doctors Point.

It was the purpose of this programme to determine the potential of the vein systems, and the diorite stocks, to provide additional ore-grade mineralization to enhance the previously drilled reserves.

Mr. F.M. Smith P. Eng. was requested by Heritage Petroleum Inc. to manage the proposed mineral evaluation, and to act as Project consultant .

Searchlight Resources is a private consulting company owned by F.M. Smith, and this project was field supervised by Peter G. Dasler M.Sc., contract geologist.

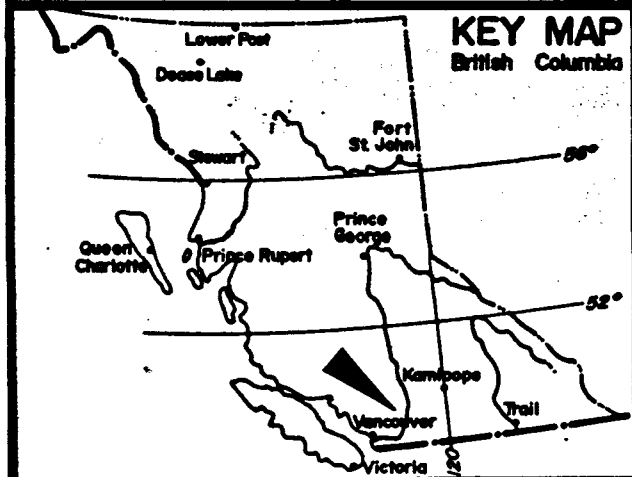
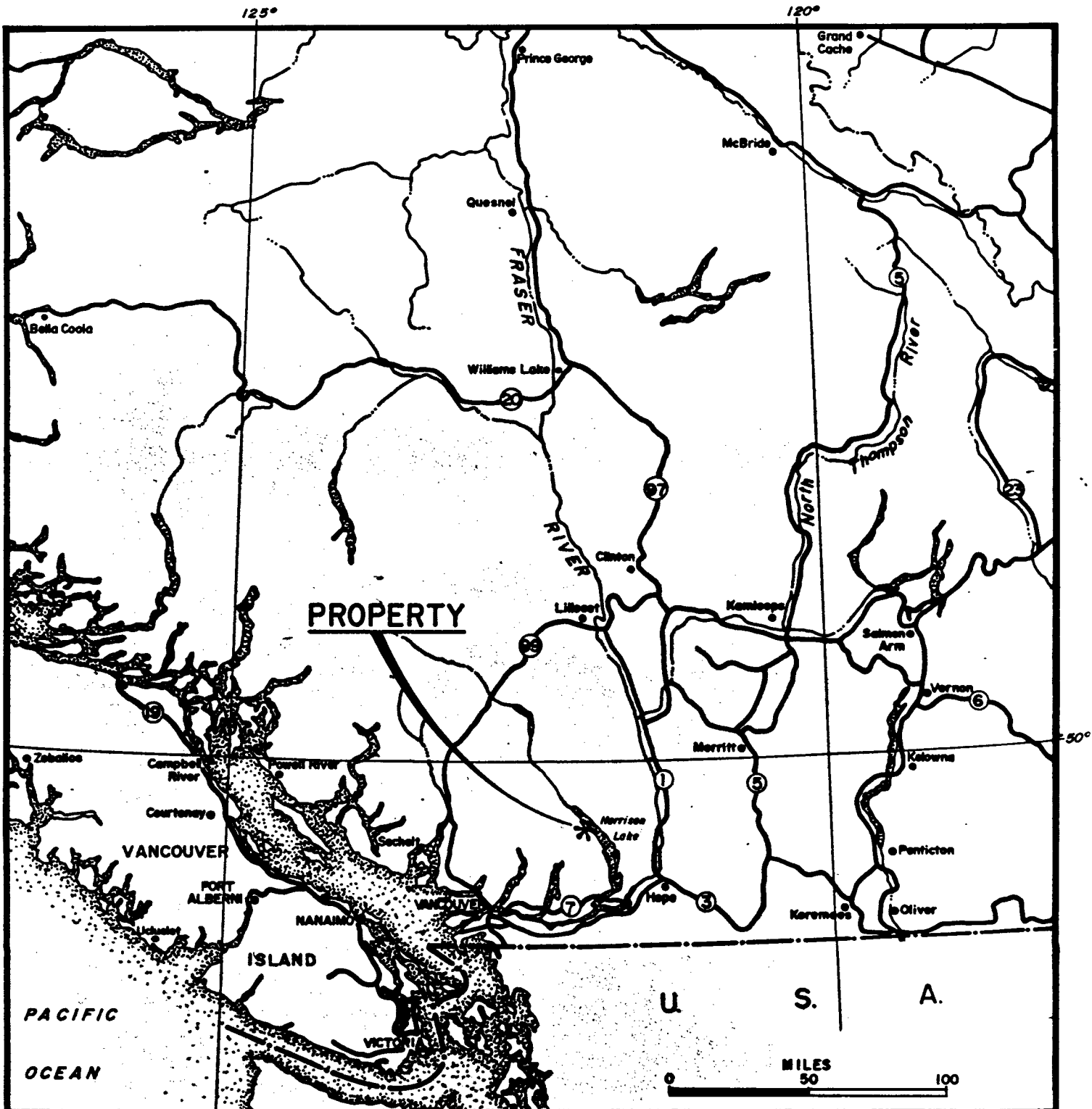
## LOCATION AND ACCESS

The property consisting of 150 claims, is located on the North West shore of Harrison Lake approximately 160 km by road from Vancouver and centered at latitude  $49^{\circ} 38'$  and longitude  $121^{\circ} 59'$ , N.T.S. map 92 H/12 W, and 92 G/9 E.

Access is via highway 7 from Vancouver to Harrison Mills at the south end of Harrison Lake, and then north on a paved branch road from the Sasquatch Inn to the Woods Creek Salmon Enhancement Spawning Beds. The road from this point is maintained as a power line service and logging access road, and continues along the west side of Harrison Lake.

The camp is located on the lake shore off a posted side road at the 50km marker from Woods Creek near the mouth of Trio creek. The blocked out mineralization at the "main zone" is adjacent to the road at 51.8 km.

Travel is good by two wheel drive vehicle in summer months, but snow build-up can cause difficulties in winter and spring.



**FIGURE I**

**HERITAGE PETROLEUMS INC.**

**HARRISON PROJECT**  
NEW WESTMINSTER MINING DIVISION  
HARRISON LAKE, B.C.

**LOCATION MAP**

Prepared by: **SEARCHLIGHT RESOURCES INC.**

SCALE: 1" = 50 miles

DATE: December, 1985

## PHYSIOGRAPHY AND VEGETATION

The topography of the area is generally rugged, except for an area to the north of the main drilled zone, ("The North Millsite"). Adequate water is available from the major streams which drain into Harrison Lake, and a small swamp lies near to the contact with the diorite intrusive on the north end of the property. This swamp dried up in the 1985 summer.

Relief is from the lake shore at 24 meters above sea level to 1200 meters on the peaks at the west of the property. The majority of the work to date has been confined to within 1km. from the lake and 300 meters above sealevel.

A power transmission line parallels the lakeshore adjacent to the West Harrison logging road. The camp for prospecting operations is located at Westwood bay and has a substantial arrangement of kitchen and dining facilities, sleeping accommodation for 40 people, offices and store buildings. Core is stored at the campsite in racks.

Road access to most parts of the property is adequate, and recent dozer trails provide additional trails to drill and trench sites.

Vegetation on the property consists of a secondary growth of fir, hemlock, and spruce following past logging operations.

Snowfall is generally light at lower elevations, but can become abundant at the higher elevations. Minor problems are caused by snow on the main access road during winter, however conditions do allow drilling for most of the year.

**PROPERTY: CLAIM OWNERSHIP**

The claim groups in existence at the beginning of November 1985 have been altered to allow a more even spread of work credits. The present grouping is as follows;

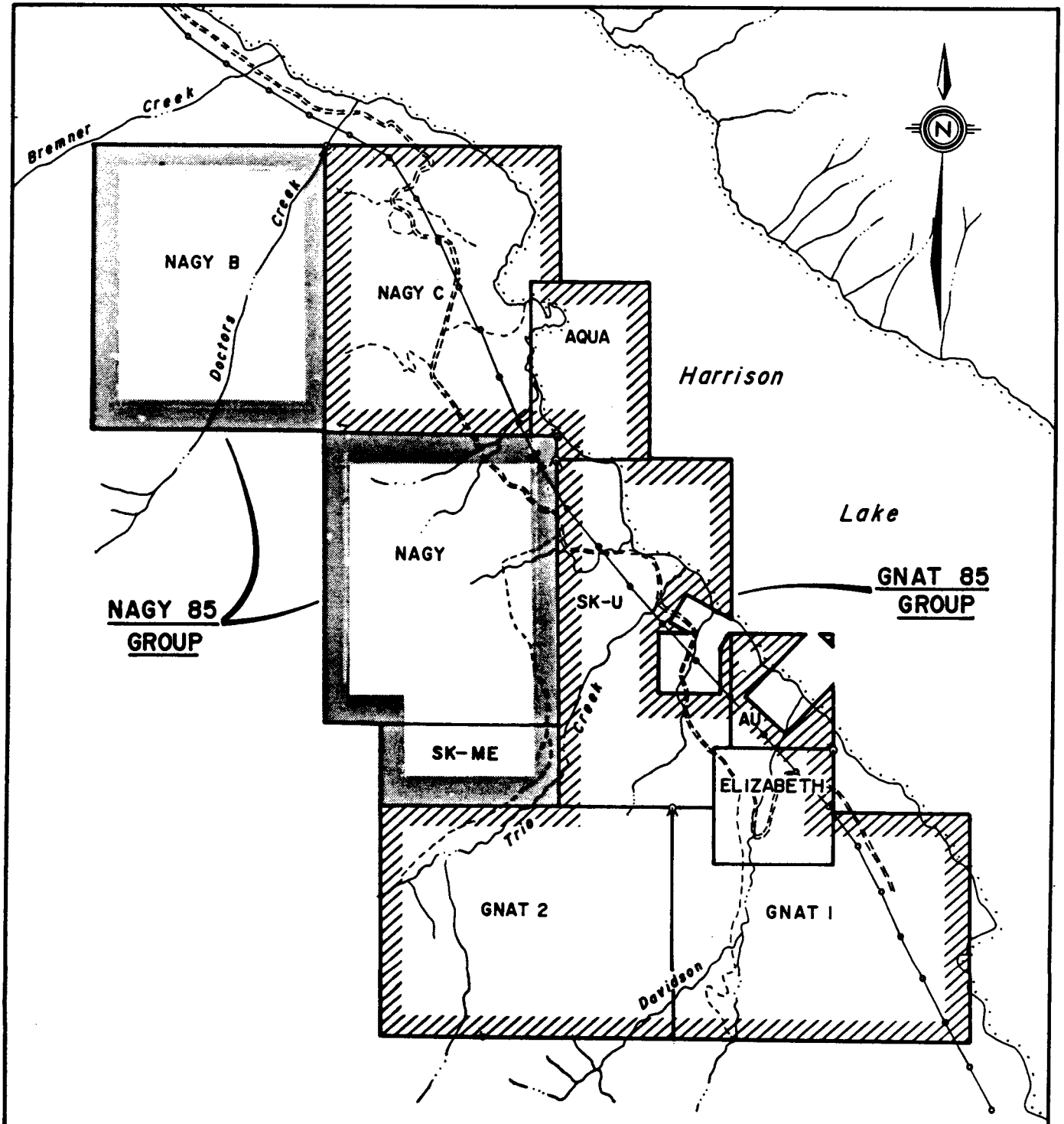
<u>CLAIM GROUP</u>	<u>CLAIM NAME</u>	<u>RECORD #</u>	<u>UNITS</u>	<u>EXPIRY DATE</u>
NAGY 85	Nagy B	1293	20	OCTOBER 2, 1986
	Nagy	1265	20	AUGUST 21, 1987
	SK-Me	1283	18	AUGUST 14, 1987
GNAT 85	Nagy C	1294	20	OCTOBER 2, 1990
	Aqua	1281	6	AUGUST 14, 1991
	SK-U	1282	18	AUGUST 14, 1991
	Au	1574	4	OCTOBER 8, 1989
	Elizabeth #1	1255	4	JUNE 14, 1989
	Gnat 1	2291	20	NOVEMBER 21, 1989
	Gnat 2	2292	20	NOVEMBER 21, 1989

**HISTORY**

The original mineral discovery at Doctors point was made by Mr. George Nagy in 1975. Between 1976 and 1981 various companies, (Cominco, Bow River Resources, Duval Corp., and Rapitan Resources), sampled and inspected the property, additional examinations were made by B.P., McIntyre Mines, Placer, Amax, and Welcome North.

Cominco reported;	0.09 oz/ton Au. over 16.0 ft
Bow River reported;	0.005-0.14 oz /ton from trenches and grab samples of 0.22 and 0.78 oz/ton Au.
Duval reported;	0.16 and 0.44 oz/ton Au.
Rapitan reported;	0.002-0.20 oz/ton Au. and 0.2-5.55 oz/ton Ag

It is assumed that these figures relate to the "main mineralized zone"



**NAGY 85**  
**GROUP**

**GNAT 85**  
**GROUP**

**LEGEND**

- ==== Road
- Tracks
- Power Line



FIGURE 2

<b>HERITAGE PETROLEUMS INC.</b>	
HARRISON PROJECT NEW WESTMINSTER MINING DIVISION HARRISON LAKE, B.C.	
<b>CLAIM MAP</b>	
Prepared by: <b>SEARCHLIGHT RESOURCES INC.</b>	
SCALE: 1 : 50,000	DATE: December, 1985



In 1981 Rhyolite Resources signed an agreement with Nagyville Mining to purchase the mineral claims. Since that time, a detailed grid soil geochemical and airborne magnetic survey with follow up ground magnetic survey, an I.P. survey over significant anomalies, and detailed regional mapping have been completed. In addition 5790 meters (19,000 feet) of diamond drilling was completed up to August, 1984. Until that date, the detailed exploration of the property had been under the supervision of Canadian Geoscience Corporation and Rhyolite Personnel. The reader is referred to Progress and Recommendation reports listed in the bibliography . In Mr. K.C. Fahrni's report of August 9, 1984 the following summary of reserve development was presented:

A body of gold and silver bearing material has been defined by close spaced grid drilling under moderate depth of cover rock. A total of 113,600 tonnes has been proven in a triangular mass of uniform thickness averaging 4.3 meters which slopes to the east at an angle of 25 degrees, slightly steeper than the hillside. The mineralized material could be extracted by conventional open pit methods with an approach from the north outcrop to horizontal benches, but there would be over 4 tonnes of waste for each tonne of mineralized rock. The metal values are mainly in gold, average assays being 0.063 troy ounces gold per ton and 0.18 troy ounces of silver per ton.

Mr. Fahrni recommended further drilling and geophysical evaluation.

In November 1984 an option agreement was signed with Harrison Gold Mines Ltd. to explore, drill and develop the mineral potential of the claim groups. Since that time a minor percussion drill programme, geophysical survey, and data aquisition has been completed.

The property is now funded and optioned by Heritage Petroleums Inc.

## REGIONAL GEOLOGY

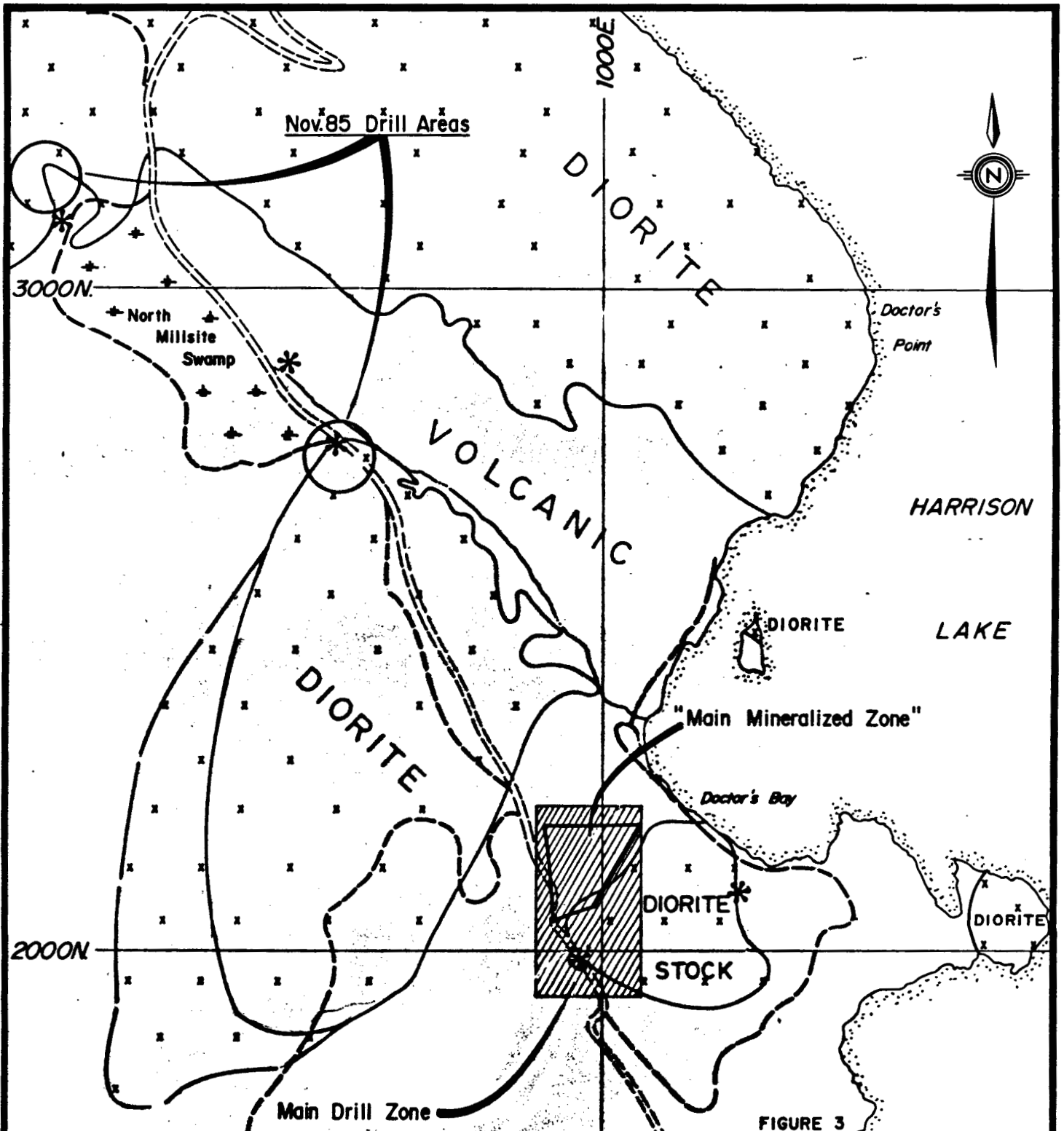
The regional geology is described by Ray et al (1984) as follows:

The Harrison Lake fracture system forms a major, southeasterly trending dislocation over 100 kilometers in length, which in parts passes along, and parallel to, Harrison Lake. The system separates highly contrasting geological regimes. To the northeast, the rocks include well-deformed supracrustals of the Pennsylvanian to Permian Chilliwack Group, as well as highly foliated gneissic rocks and some younger granites. By contrast, the rocks on the southwestern side of the fracture are generally younger, are less deformed, and have suffered lower metamorphic grade; they include a variety of volcanic, volcanoclastic, and sedimentary rocks, as well as intrusive granitic rocks and migmatites. These supracrustals are separable into a number of different groups of Jurassic/Cretaceous age. The most important regarding gold mineralization are the Fire Lake and Harrison Lake Groups which are well developed respectively northwest and southwest of Harrison Lake. The Fire Lake Group comprises a variety of coarse to fine-grained sedimentary rocks with lesser greenstone volcanic rocks, while the Harrison Lake Group is predominantly a volcanic sequence of andesitic to dacitic composition, with lesser amounts of volcanoclastic and sedimentary rocks. Both groups are intruded by younger plutonic rocks ranging from granite to diorite.

The rocks in the Doctors Point area, where Rhyolite Resources Inc.'s mineralization was discovered, were originally assigned to the Fire Lake Group and the Mysterious Creek Formation. However, the prevalence of acidic to intermediate volcanic rocks in the area suggests they probably belong to the Harrison Lake Group.

## PROPERTY GEOLOGY

A series of 5 dioritic plutons intrude a variety of generally moderately-dipping volcanic, volcanoclastic and sedimentary rocks. These plutons vary from 25 meters in diameter to over 1 kilometer across. The B.C. Dept. of Mines has provided K/Ar dates for intrusion as 23 Ma for the small stock adjacent to the "main mineralized zone" and just recently (G.E.Ray, pers. comm.) a 20 Ma. date for the northern diorite body.



**LEGEND**

- \* Exposure of mixed sulfide veining
- Main West Harrison Road
- . - . - . 4 x 4 Roads



FIGURE 3

<b>HERITAGE PETROLEUMS INC.</b>	
HARRISON PROJECT NEW WESTMINSTER MINING DIVISION HARRISON LAKE, B.C.	
<b>PROPERTY GEOLOGY AND AREAS OF INTEREST</b>	
Prepared by: SEARCHLIGHT RESOURCES INC.	
SCALE: 1: 8,333	DATE: December, 1985

Associated with the plutons, and within the hornfelsed sediments surrounding them, are numerous epithermal veins and veinlets containing pyrite and arsenopyrite with minor chalcopyrite, pyrrhotite sphalerite and occasional galena. Ray et al (1984), has attributed these veins to be the result of late stage thrust faulting and fracturing in the diorite plutons followed by hydrothermal alteration and precipitation of sulphides. K/Ar dates were also performed on the vein sericite at the main zone resulting in dates of 24.5 +/- 1 Ma.

A gently dipping, brecciated, resilicified, and sulphide rich horizon has been drill tested adjacent to the Doctors Bay pluton, and determined to contain reserves of 113,600 tonnes of 0.06 oz/ ton Au. mineralization, Fahrni (1984). Ray et al (1984) proposes that this zone is a late stage epithermal replacement along a thrust fault plane which has continued from the diorite into the surrounding hornfelsed sediments. An alternative proposal can be made for the zone being an exhalite type deposit formed during the intrusive activity, and later remobilized to its present form.

The range of dates obtained for the diorite bodies, and the vein minerals indicates more than one phase of intrusion and vein formation. This is supported by Littlejohn (1983) who showed two phases from thin-section analysis. The younger date for the northern diorite body is of significance as it may have been the generator of the late stage thrusting.

Numerous small geochemical gold soil anomalies occur on the property, both on the margins of diorite-hornfels (volcanic sediments) and within the massive quartz diorite. Field mapping has shown several of these to be associated with epithermal veins containing massive pyrite-arsenopyrite, and other mixed sulphide infill. They occur up to 2km from the main drilled zone, and the most visible show sub-horizontal attitudes, and are 15cm-25cm in width. They all appear to be spatially related to the diorite plutons and although the gold distribution is variable there is insufficient evidence of to categorize high and low gold types or areas. Some subvertical veining is found adjacent to sub-horizontal veins. The veins may be contemporaneous or represent separate time events as appearance and sulphide mineralization are similar, but cross-cutting relationships are not seen.

The plutons appear similar in mineralogy but vary from diorite to quartz-diorite, with hornblende and biotite well developed. Occasionally pyritic phases are seen in the intrusive, and in the north adjacent to drillhole 85-NM-5, the quartz-diorite hill is heavily pyritized and fractured. Adjacent to sulphide filled veins the diorite is highly propylitized and generally has an extremely friable character. The epithermal alteration removes the often abundant magnetite mineralization in the diorite.

## DRILL TARGETS

Two areas with anomalous gold mineralization in soils, with associated surface outcrop of pyrite-arsenopyrite filled epithermal veins to 10cm. in width, were chosen as priority targets for drilling in October 1985. These zones were located at the north and south ends of the North Millsite swamp.

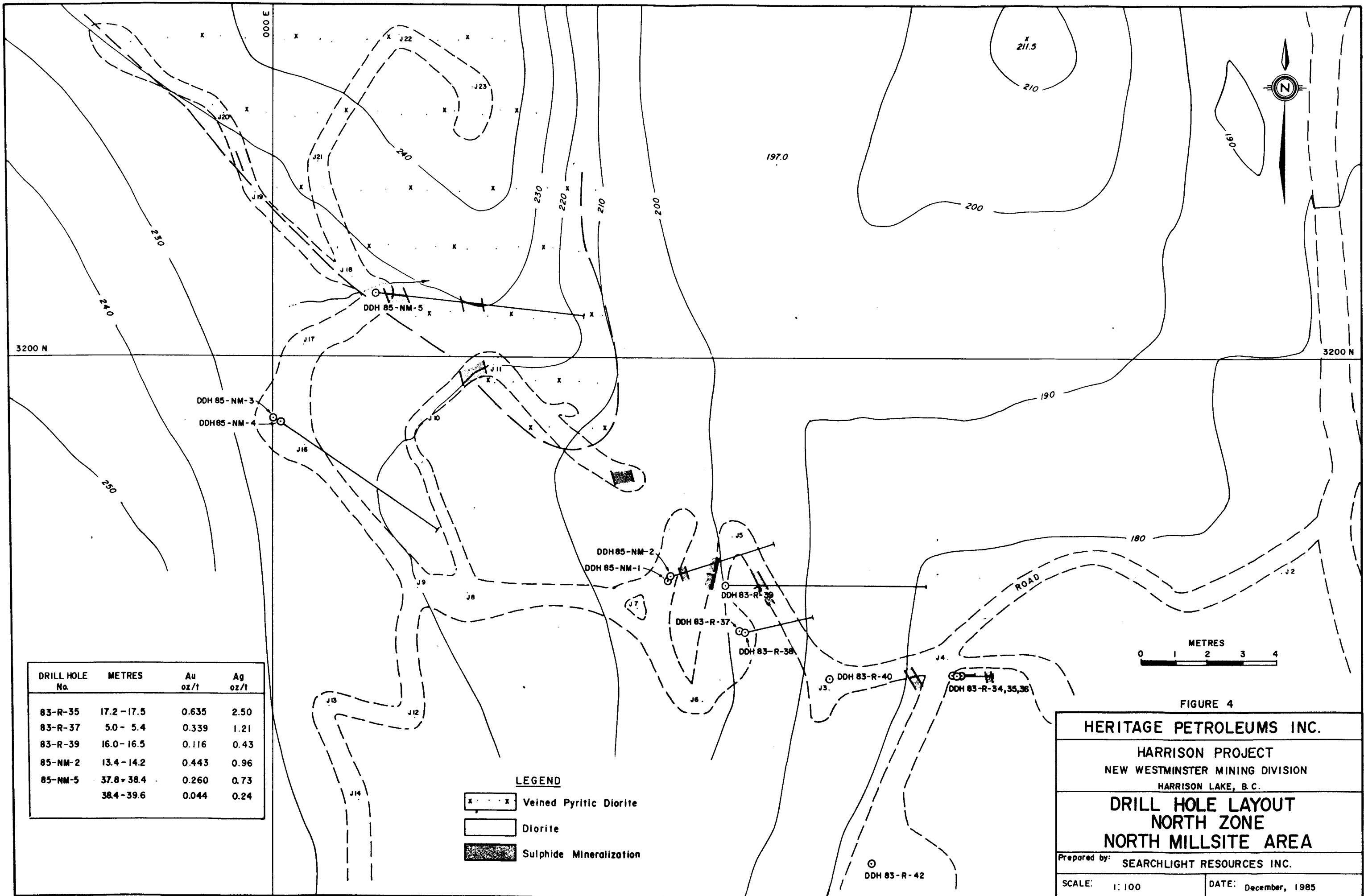
The soil geochemical anomalies at the north end of the swamp were up to 600 ppb Au. but generally <35 ppb, and defined a linear trend within the diorite. At the south end of the swamp a zone at the diorite-hornfels contact showed sulphide veining and soil sampling along the creek downhill of this contact zone produced anomalies up to 2650 ppb Au.

Surface mapping of veining indicated general NW-SE trends, but with variable vein dips, both to the west and east. Veining also showed considerable width variation, <1cm up to 10cm., and was generally associated with good crystalline quartz with massive sulphide infill (generally pyrite-arsenopyrite). The diorite was generally altered from a bluish, competent, salt and pepper character, to a friable, rusted, and easily eroded product adjacent to major veins.

The diamond drill holes were located to cut major veining perpendicular to strike, and to test at least one other possible vein orientation at 90 degrees to the first hole on each target.

Two holes were drilled in the northern area in the vicinity of hole 83-R-39 to test vein sulphides returning 0.116 oz/ton over 0.5 meters in that hole. A further two holes were placed nearby to test the diorite adjacent, and NW of the 600ppb soil anomaly, with the second of the two holes angled to intersect possible fault mineralization under the cliff slope at station 400N/420E. The last drill hole in the northern area was targeted to cross a zone of altered diorite (pyrite veining and rusty fracturing) just north of the 600ppb soil anomaly.

At the southern end of the North Millsite swamp the three holes were drilled to intersect known surface veining and proposed veining at depth. Two of the holes were drilled off one site, and the third was moved uphill to intersect further veins trending at an angle subparallel to the plane of the first two holes.



DRILL HOLE No.	METRES	Au oz/t	Ag oz/t
83-R-35	17.2 - 17.5	0.635	2.50
83-R-37	5.0 - 5.4	0.339	1.21
83-R-39	16.0 - 16.5	0.116	0.43
85-NM-2	13.4 - 14.2	0.443	0.96
85-NM-5	37.8 - 38.4	0.260	0.73
	38.4 - 39.6	0.044	0.24

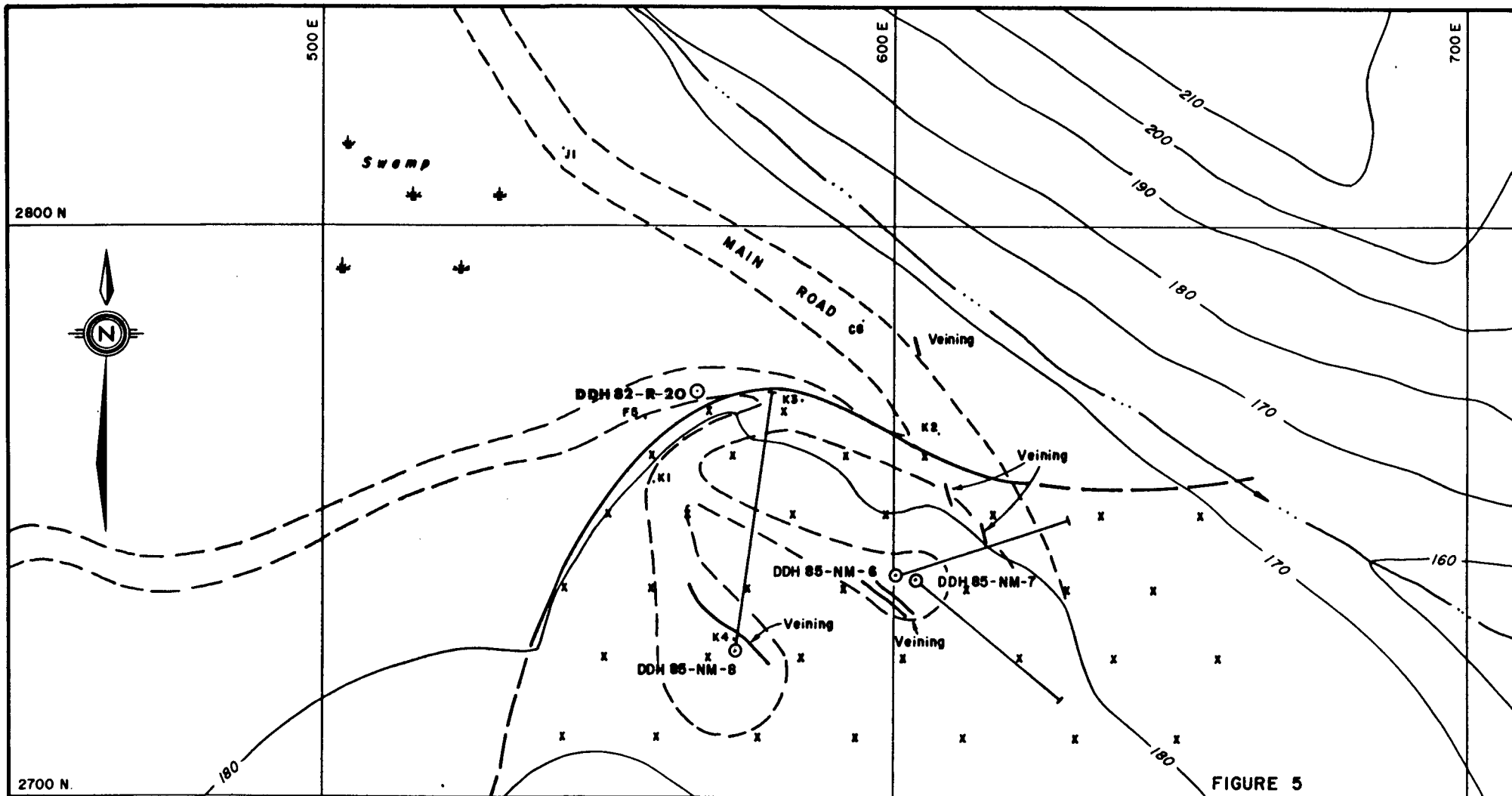
**LEGEND**

- Veined Pyritic Diorite
- Diorite
- Sulphide Mineralization



FIGURE 4

<b>HERITAGE PETROLEUMS INC.</b>	
HARRISON PROJECT NEW WESTMINSTER MINING DIVISION HARRISON LAKE, B.C.	
<b>DRILL HOLE LAYOUT NORTH ZONE NORTH MILLSITE AREA</b>	
Prepared by: SEARCHLIGHT RESOURCES INC.	
SCALE: 1:100	DATE: December, 1985



**LEGEND**

- Volcanics
- x x Quartz-Diorite
- J1 Survey Station
- Drill Hole



**HERITAGE PETROLEUMS INC.**

**HARRISON PROJECT**  
**NEW WESTMINSTER MINING DIVISION**  
**HARRISON LAKE, B.C.**

**DRILL HOLE LAYOUT**  
**SOUTH ZONE**  
**NORTH MILLSITE AREA**

Prepared by: **SEARCHLIGHT RESOURCES INC.**

SCALE: 1:1,000

DATE: December, 1985

**DRILL RESULTS**

All of the drill holes intersected mixed sulphide mineralization in epithermal veins and veinlets. The drill holes at the northern end of the swamp showed sparse veining, but of larger width, and the drill holes at the southern end of the swamp showed more continuous veining, but mostly of a fine nature, with only narrow alteration halos.

The significant assay results are tabulated below:

HOLE NO.	ANGLE	DEPTH	WIDTH	Au.oz/ton	Ag.oz/ton
85-NM-1	-90	5.48-5.79	0.31	0.212	1.60
85-NM-2	-55	13.41-14.23	0.82	0.443	0.96
85-NM-5	-45	37.79-38.40	0.61	0.260	0.73
85-NM-5	-45	38.40-39.62	1.22	0.044	0.24
85-NM-5		AVE.	1.83	0.116	0.40
85-NM-8	-45	18.29-18.69	0.40	0.089	0.99

**DESCRIPTIONS:**

85-NM-1, at 5.48 meters, showed 0.12 meter of massive sulphide infill

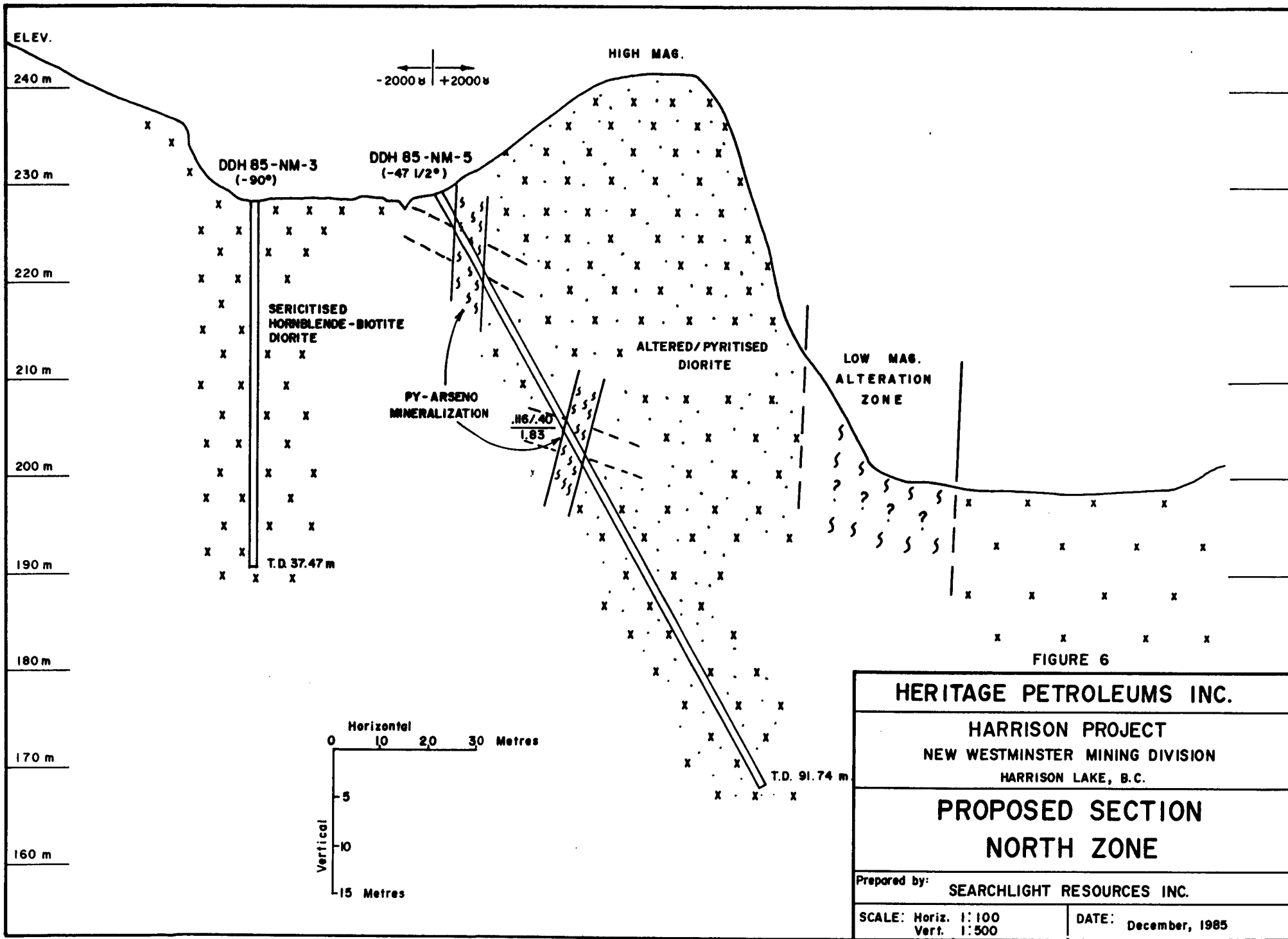
85-NM-2, at 13.41 meters, showed 0.038 meter of massive sulphide infill.

85-NM-5, at 37.79 meters, showed 0.076 meters of massive sulphide infill and between 38.40 and 41.76 meters showed a total of 0.76 meters of sulphide infill.

85-NM-8, at 18.29 meters showed .075 meter of massive sulphide infill.

Most noticeable in the above results is the inconsistency between the quantity of massive sulphides (pyrite and arsenopyrite) in each sampled section and the gold assay content. Re-splitting and re-assay of the above samples has been completed, however no significant change in results has arisen.





Drill hole 85-NM-5 showed the most significant sulphide intersections. The hole showed sulphide veining immediately after penetrating the overburden, and was drilled almost continuously in a heavily pyritized, fractured and brecciated quartz diorite. This was in contrast to the previous nearby hole 85-NM-4, which showed a uniform, unaltered, only slightly pyritic, biotite quartz diorite. Two zones of epithermal veining with mixed sulphide infill and associated wall rock alteration were outlined. The first was from surface to approximately 15 meters (50'), and the second from 37.8-43.3 meters (124-142'). The hole was located in a topographic depression, which was later trenched with the dozer, and intermittent altered diorite bedrock was uncovered, along with mineralized float, both to the NW and SE of the drill site.

Drill holes 85-NM-1 and 85-NM-2, extended the mineralized veining seen on surface between holes 83-R-35 and 83-R-39. The major intersection in the two holes is most probably the same vein, which is exposed at surface on the roadway below hole 83-R-39. They define the western limit of major vein development. The zone is open to the east along a topographic depression. Drill hole 85-NM-5 is approximately 200 meters NW and nearly along strike to this zone.

Neither of the other drill holes 85-NM-3 nor 85-NM-4 indicated significant mineralization, although occasional small epithermal veinlets were encountered and some quartz flooding was intersected where 85-NM-4 penetrated the subsurface expression of a steep (fault?) scarp.

At the southern end of the swamp the first holes, 85-NM-6 and 85-NM-7, were located to penetrate the two pyrite- arsenopyrite veins adjacent to the roadside. Hole 85-NM-8 was located further uphill to intersect veins which were uncovered during site preparation of the first two holes. In all three holes veining was prolific, and the drill logs show a tabulation of vein widths, alteration halo widths, angles, and content of massive sulphides. No large veins were drilled, however, some veins were up to 75mm (3") , drill assays produced low results. In 85-NM-6, the first 16.4 meters (54') was split and assayed to determine if the mineralization could be classified as massive, low-grade. Unfortunately assay results averaged < 0.001 oz/ton Au. for this zone.

Hole 85-NM-8 terminated in a massive quartz flooded section in the diorite, showing pyrite with occasional chalcopyrite, but low gold assays. This flooded zone is adjacent to hornfelsed volcanic sediments (see 82-R-20).

**SURFACE VEIN SAMPLING**

Following the receipt of low value gold results for assays of the massive sulphide veins, a series of samples were taken of the sulphide component of surface outcropping veins.

These samples were analyzed for Au. and Ag. as well as by ICP for 30 major and trace elements. It was anticipated that there may have been a regional variation in the gold content of the vein sulphides, and so the samples were taken over a 1.5km. length of the property. All Au. values obtained were moderate to high, and some were in high contrast to previous samples of the veins (e.g. sample 48571 had two previous assays of 0.78, and 0.36 oz/ton Au.), but there was no indication of a regional variation.

**SELECTED VEIN SAMPLE ASSAYS**

SAMPLE	Au.(oz/ton)	Ag.(oz/ton)	LOCATION
48569	1.230	2.05	3135N,125E.
48570	0.390	0.85	3148N,137E
48571	2.012	2.68	2900N,500E
48572	0.408	2.52	2725N,575E
48573	0.492	1.01	2020N,990E

## INTERPRETATION

### BUCHANAN MODEL OF EPITHERMAL MINERALIZATION

The mineralization encountered in DDH. 85-NM-5 is an excellent example of the upper part of an epithermal mineral deposit.

The style of mineralization emulates a model proposed by Dr. L. J. Buchanan and which has been used successfully by Searchlight Resources in the past to delineate ore zones.

The characteristics of the epithermal vein drilled in 85-NM-5 (quartz, adularia, sericite with feathered amorphous arsenopyrite and fine pyrite) indicates its location at the top of the major gold precipitation zone. Intersection of the vein at a greater depth (or along strike if it plunges) will produce higher gold values with an increasing crystalline nature to the co-deposited sulphides. At the base of the zone, coarse crystalline sulphides (with increasing galena, sphalerite and chalcopyrite) will be found.

Buchanans model relates the type of mineral deposition in a vein fill to characteristic alteration assemblages around the vein and in the host rock. The vein minerals are also found in characteristic zoned array as a result of pressure and temperature controls on the mineralizing fluid chemistry. As noted above, coarser mineralization is found with depth because of the greater periods available to reach equilibrium, fine grained and amorphous sulphides are therefore found in the upper rapidly deposited zones. Similarly, with regard for the chemistry, crystalline base metal sulphides precipitate lower in the sequence than the precious metals. DDH 85-NM-5 has penetrated the top of the gold zone, with its preponderance of amorphous arsenopyrite.

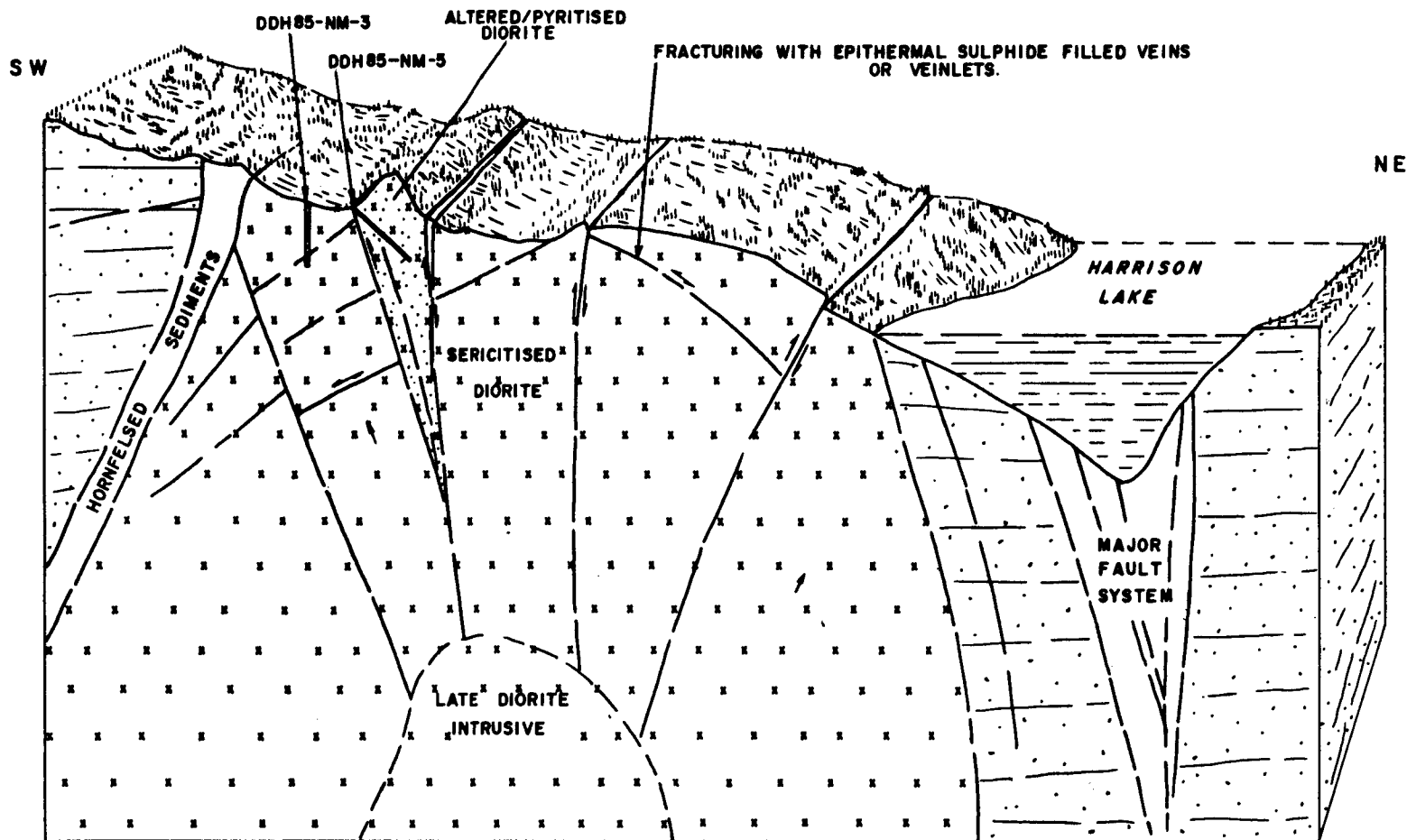


FIGURE 7

HERITAGE PETROLEUMS INC.

HARRISON PROJECT  
 NEW WESTMINSTER MINING DIVISION  
 HARRISON LAKE, B.C.

PROPOSED MODEL OF VEINING  
 NORTH MILLSITE AREA

Prepared by: SEARCHLIGHT RESOURCES INC.

SCALE: Not to scale

DATE: December, 1985

## CONCLUSIONS

An epithermal event of large character has produced numerous pyrite-arsenopyrite filled veins and veinlets in the diorite and surrounding hornfelsed rocks in the vicinity of the North Millsite area at Doctors Point.

The drilling programme completed has identified a zone of significant mixed sulphide veining within a heavily pyritized diorite adjacent to an unaltered diorite intrusive, but it has also shown the variable nature of gold mineralization within the vein sulphides.

The ground magnetic survey conducted on the north millsite area for Rhyolite Resources in November 1983 outlined a major magnetic "low" up to 45 meters in width and over 180 meters in length in the altered diorite. This zone is adjacent to the veining drilled in hole 85-NM-5. This anomaly was not drilled in this programme, however judging from the alteration noted around then the veining in hole 85-NM-5 it indicates a significant zone of epithermal alteration in the diorite.

The epithermal veins encountered in drilling, and later trenching near holes 85-NM-1 to 85-NM-5 explain the gold in soil anomaly in that area. The much higher anomalies at the south end of the swamp do not appear to be related to the veins and veinlets drilled in holes 85-NM-6 to 85-NM-8, because of the low Au. results produced from drilling.

To address the original aim of the project, the drilling (especially in 85-NM-5) has shown alteration zones in the diorite, with associated pyrite-arsenopyrite mineralization, which are of sufficient size to justify further exploration using the guidelines proposed by Buchanan. The low gold content but high arsenopyrite content in the veins is consistent with the proposal of the vertical depositional zones of the model. It can be expected, therefore, that drilling to depth or along strike (If the zone plunges) will provide higher grade gold mineralization.

The clay alteration of the feldspar minerals in the diorite adjacent to veining, and the alteration of magnetite to pyrite or iron carbonate, provides good field identification of the existence of veining. To this end the major linear magnetic low associated with the pyritized diorite between 3380N, 075E and 3180N, 125E indicates an epithermal alteration zone subparallel to existing surface outcrops of narrow sulphide filled veins and should be considered a major priority for future drilling.

As noted above, the present drilling has been on the periphery of a major geophysical anomaly, now interpreted as epithermal alteration around a main vein system. This zone is shown in figure 8, the proposed model of vein distribution in the area. The veins are both horizontal and vertical as a response to late stage intrusive activity, but the major systems can be identified by their surrounding low magnetic alteration halos.

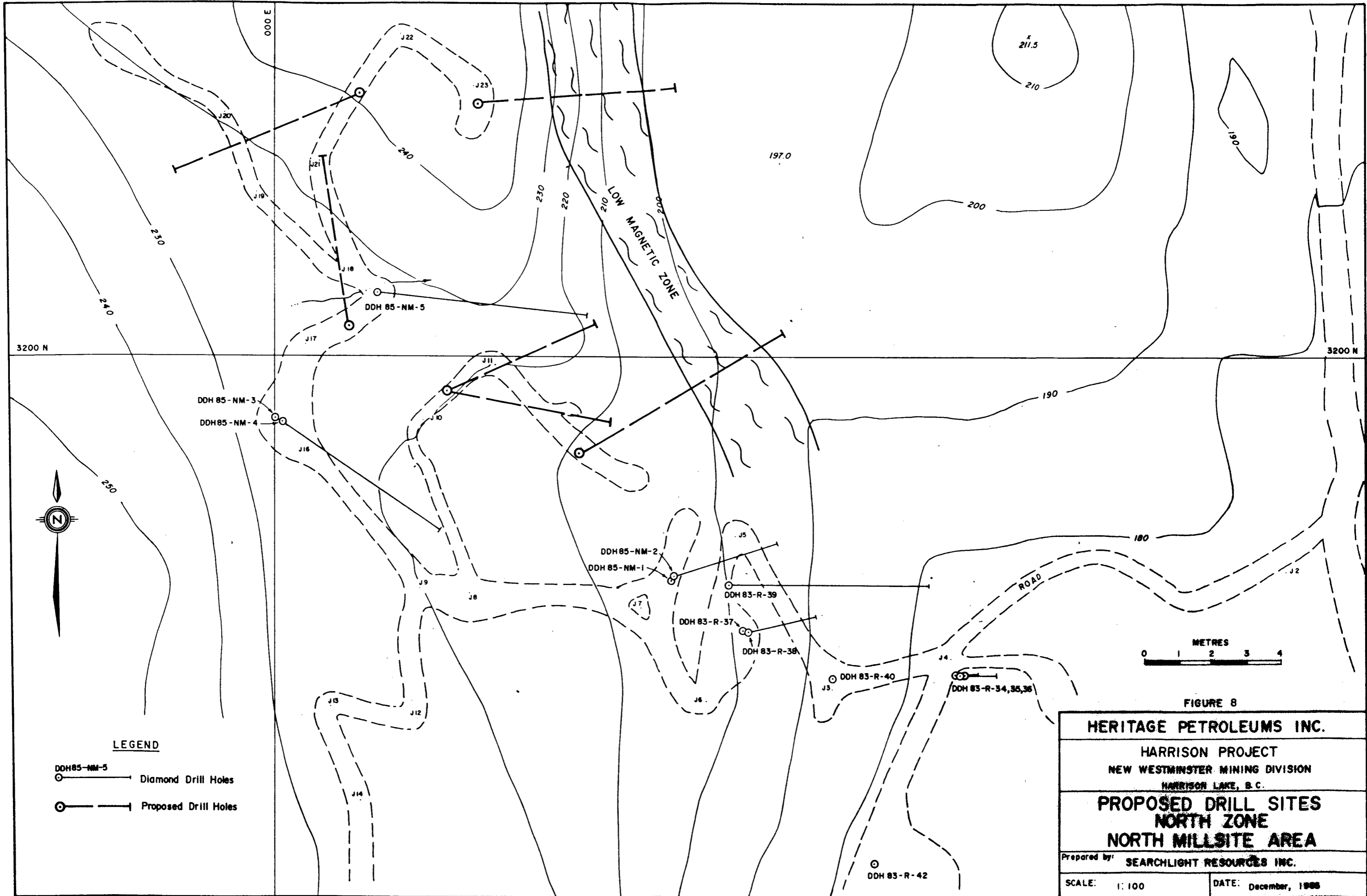


FIGURE 8

HERITAGE PETROLEUMS INC.	
HARRISON PROJECT	
NEW WESTMINSTER MINING DIVISION	
HARRISON LAKE, B.C.	
<b>PROPOSED DRILL SITES</b>	
<b>NORTH ZONE</b>	
<b>NORTH MILLSITE AREA</b>	
Prepared by:	SEARCHLIGHT RESOURCES INC.
SCALE: 1:100	DATE: December, 1988

## RECOMMENDATIONS

1.0. Field survey and measure all mineralized veining adjacent to the North Millsite area to establish evidence of "doming", pointing to a central zone of intrusion and associated fracture patterns.

2.0. Drill the veining adjacent to 85-NM-5 and continuing along the adjacent stream line to establish the continuity and grade of the two mineralized zones, and to interpret the strike and dip of the arsenopyrite veining.

3.0. Drill penetrate the magnetic "low" anomaly in the diorite which is 45 meters wide and extends from (3280N, 075E) to (3180N, 125E). This zone is best first drilled from the road access prepared below drillsite 85-NM-5. Later drilling may approach from the North-East (figure 8).

4.0. Continue the remaining portion of the programme proposed by F. M. Smith to investigate for bedded style gold mineralization adjacent to the known mineralization which has been drilled above Doctors Bay. This will require detailed mapping of stratigraphy to establish the location of depositional basins to the south-east of the diorite stock.

4.0. Complete the I.P. geophysical survey of the southern "Crescent Mag. Anomaly ". This anomaly was reviewed by Fahrni, and may easily represent a nearby intrusive. Mineralized float has been found in this area, but outcrop exposure is poor.



COST SUMMARY

## DRILLING

1698ft. @ \$21.836 incl. of accom., shifting and food		\$37188.48
--	--	------------

## ASSAYS

28 Au, Ag assays @ \$21.25	\$595.00	
4 Au, Ag assays @ \$22.25	\$89.00	
13 Au, Ag assays @ \$20.75	\$269.75	
7 Au, Ag, As assays @ \$32.25	\$225.75	
33 Au, Ag assays @ \$15.25	\$503.25	
4 Au, Ag assays @ \$10.50	\$42.00	
4 Au, Ag assays @ \$14.25	\$57.00	
5 Au, Ag resplits @ \$15.00	\$75.65	
34 Au, Ag geochem. @ \$10.75	\$365.50	
9 30 element ICP @ \$6.50	\$58.50	
+ 20 % overhead	\$456.28	
		\$2737.68

## BOARDING EXPENSES

Propane, diesel, food, kitchen equipment, core rack construction (not incl. wages)		\$2577.96
--	--	-----------

## EQUIPMENT RENTAL

Misc camp equip: saws, generator, radios, etc	\$2918.16	
low bed	\$1237.50	
D7 tractor, 50 hrs	\$4800.00	
		\$8955.66

## TRANSPORTATION AND TRAVEL EXPENSE

3 Ton truck	\$1148.04	
4X4 hire, one month	\$1348.00	
Fuel and oil	\$473.00	
Misc hire (trailer, etc.)	\$605.17	
		\$3574.21

## SALARIES AND WAGES


B. Crockford	10.5 days @\$180.00	\$1890.00	
J. Bond	4 days @ \$165.00	\$660.00	
I. Thompson	3 days @ \$180.00	\$540.00	
R. Weir	27 days @ \$180.00	\$4860.00	
J. Young	10 days @ \$165.00	\$1650.00	
P. Dasler	47,5 days @ \$240.00	\$11400.00	
			\$21,000.00


MANAGEMENT AND CONSULTANT FEES			\$1200.00
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DRAFTING			\$372.74
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ASSESSMENT REPORT COMPILATION			\$973.44
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<b>TOTAL EXPENDITURE ON PROJECT:</b>			<b>\$78,470.17</b>
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 F. Marshall Smith, P. Eng. MARSHALL SMITH  
 December 24, 1985.

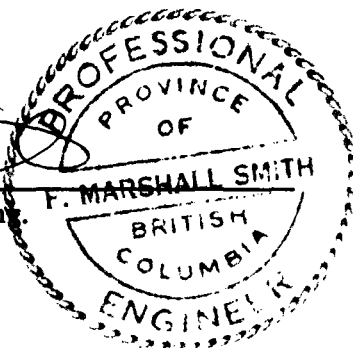


**CERTIFICATE**

I, F. Marshall Smith, do hereby certify that:

1. I am a consulting geologist and geochemist with offices at 218-744 West Hastings Street, Vancouver, British Columbia.
2. I am a graduate at the University of Toronto with a degree of B.Sc., Honors Geology.
3. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.
4. I have practiced my profession continuously since 1967.
5. This report is based on reports by Professional Engineers and others working for the previous owners and operators of the property and several examinations of the claims in 1985, before and during the work programme described in this report.
6. I have no interest in the property or shares of Heritage Petroleum Inc. or Rhyolite Resources Inc. or in any of the companies with contiguous property to the Harrison Project claims.

  
F. Marshall Smith, P.Eng.  
December 24, 1985.



**BIBLIOGRAPHY**

- Buchanan, L.J., (1981): Precious Metal Deposits Associated With Volcanic Environments, Arizona Geological Society Digest, Vol. 14, pp. 237-262.
- Fahrni K.C. (1984): Rhyolite Harrison Lake Property; Progress and Recommendations, Canadian Geoscience Corp, Report April 1984.
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- Ray, G. E. (1983) : The Nagy Gold Occurrences, Doctors Point, Harrison Lake (92H/12W) B.C. Ministry of Energy, Mines and Petroleum Resources, Geological fieldwork, 1983, paper 1983-1, pp55-61.
- Ray, G. E., Coombes, S., White, G. (1984): Harrison Lake Project, (92/H5,12), B.C. Ministry of Energy, Mines and Petroleum Resources, Geological fieldwork, 1983, paper 1984-1, pp42-53..

APPENDIX 1

DRILL LOGS

ASSAY SHEETS

ASSAY METHODS

# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET  
VANCOUVER, B.C. V6C 1A7

Property HARRISON LAKE Location NORTH MILLSITE District NEW WESTMINSTER Hole No. 85-111A-1 Length 200' 60.96M.  
Commenced 24 OCT 1985 Completed \_\_\_\_\_ Core Size NQ True Bearing VERT. Corr. Dip \_\_\_\_\_  
Lat. 3131.894 Dep. 115.832 Elev. 194.29 Hor. Comp. \_\_\_\_\_ Vert. Comp. \_\_\_\_\_  
% Recovery \_\_\_\_\_ Collar Dip 090 Date 24 OCT '85 Objective TEST AU VEIN IN BRASSIUMS IN DIORITE

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval Metres	Sample No.	Length M	ANALYSIS				
	From	To		ft.	met.				Au-oz/ton	Ag-oz/ton	Pb-oz	Cu-oz	
	0	1.22	CASING										
	1.22	2.44	COARSE Qtz DIORITE BROKEN TOWARDS END WITH SOME RUST/STAIN. SLIGHTLY CRUMBLY	4	-								
	2.44	3.96	START SIMILAR TO ABOVE BUT WITH ANDRESITIC ZONATION. CRUMBLY & RUSHY AT 2.74 CHANGE AT 3.05 TO MORE MASSIVE BLUEISH Qtz DIORITE WITH SOME FRACTURING AT 45° TO HOLE SOME DIORITE INTERGROWTH SLIGHTLY COARSE & CRUMBLY & FRAC.	5	-								
	3.96	5.49	SIM TO ABOVE BUT QUARTZ-CALCITE VEIN 1CM THICK AT 4.04 SOME QUARTZ "FLOODING" IN SURROUNDINGS. VEIN AT 4.5° TO HOLE SECOND SMALLER VEIN AT 4.11 AND CRUMBLY RUSHY ZONE AT 4.34 MINOR Qtz-CALCITE STRIEKS AT 4.88 PERP TO HOLE QUARTZ FLOODING & MINOR VEINING AT 4.5° TO HOLE AT 5.18	5	-	3.96-4.34 4.34-5.49 4.3-18.0	4608 48619	.38 1.14			390	18	
	5.49	6.10	SERICITISED Qtz DIORITE WITH Qtz FLOODING & VEINING (VUGGY PY. PYR, SPY, VUGGY Qtz) AT 5.54, 45° TO HOLE RETURNING TO BIOTITE Qtz DIORITE AT 5.66 (13CM)	2	-	5.49-5.79 5.2-19.0	48620	.30	2.12	1.6			
	6.10	7.62	SERICITISED BIOTITE Qtz DIORITE. NOTICEABLE GREEN ALT IN GROUNDMASS (SERICITE) AND ALONG FRAC. (ONE FRAC AT 20° TO HOLE 6.10-6.40) FILLS IN SUCKING ZONE ON FRAC. MOST FRAC. AT 45°-50° TO HOLE	5	-								
	7.62	9.14	SIM DIORITE. SMALL 2.5CM Qtz/CALCITE VEIN AT 7.62 (15° TO HOLE) (COLL. AT 8.61) - LIGHT GREEN CLAY ON FRAC SURFACE. SIM SMALLER	5	-	8.53-9.14 8.5-20.0	48621	.61			45	.4	

NOTE:

Logged by PG Desjar Checked by \_\_\_\_\_ Hole No. \_\_\_\_\_  
Date 25-10-85 Date core at Harrison Camp \_\_\_\_\_ Page 1 of 3

All angles measured from core axis.

# DRILL HOLE RECORD

Colour Plot 8 Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval Meters	Sample No.	Length M	ANALYSIS				
	from	to		Run	short				Au-oz/ton	Ag-oz/ton	g/t	g/t	
			VENILET AT 9.12 NOTICABLE SLICKENSIDES ON FRAC - SOME AT 80° TO HOLE										
	9.14	10.67	<sup>DOLEITE</sup> SIM TO ABOVE SMALL QTZ-CALCITE 6MM VENILET 80° TO HOLE AT 10.44	5	-								
	10.67	12.19	SIM TO ABOVE 1/2" QTZ-CALCITE <sup>BY REASON</sup> VENILET AT 11.13 LEGS FRAC. AND THOSE AT 80-90° TO HOLE										
	12.19	13.72	SCATTERED QTZ-BIOTITE SMALL 1/4" QTZ VENILET (1cm) AT 70° TO HOLE AT 14.50 ASSOC BY IN SURROUNDING - SAW 1/4" 45° STRIKING AT 12.8 & 14.63	5	-	12.65-13.26 -0-43.6	48622	.61			10	1.1	
	13.72	15.24	SIM. QTZ - 1/4" 45° VENILET AT 13.87 & 14.02 AT 45° TO HOLE. RUBBY GROUT & VENILET AT 14.81	5	-	13.72-14.86 45-48.9	49023	1.14			45	1.4	
	15.24	17.67	SIM. QTZ-CALCITE VENING AT 85° TO HOLE - W. FRAC SLICKEN SIDES.	5	-	15.24-16.15 500-530	49024	.91			45	.1	
	17.67	18.29	SIM. SM QTZ-CALCITE VENILET 17.12 (6mm) AT 85° TO HOLE. SOME FRAC, CHLORITE SLICKENSIDES/SLIP CONTINUING AT 45° TO HOLE	5	-								
	18.29	19.81	SIM. ANDESITIC ZONOLITE 19.30-20.12	5	0								
	19.81	21.34	MID GARNET BIOTITE QTZ DIOBASE. OCCASIONAL GREY-GREEN FINE										
	22.86	24.38	CRACKED (ANDESITIC?) ZENOLITHS 2CM - 50CM FRACTURING AND										
	25.91	27.43	QUARTZ-CALCITE GILING DECREASING DOWN HOLE NO ALTERATION										
	28.96	30.48	AROUND FRACTURE WHICH VEIN FROM 45-90° TO HOLE - BUT			28.97-29.67 464.976	49625	.30			45	.1	
	32.0	35.53	AT 49.99 SOME RELIC FRACTURING SUB PARALLEL TO HOLE.										
	35.53	35.05	LAST SIGNIFICANT QTZ-CALCITE VEIN AT 40.84 (1CM) SOME										
	35.05	36.58	1/4"										
	36.58	38.10	CORE GENERALLY COMPETENT AND UP TO 10CM SECTIONS										
	38.10	39.62	FRACTURED.										
	39.62	40.84	INTRUSIVE DENSE QTZ-VEIN CAVITY AT 29.62										

Project HARRISON Logged by P.G.D Checked by \_\_\_\_\_ Hole No. 85-NM-1  
 Location NORWICH Date 25-12-95 Date \_\_\_\_\_ Page 2 of 3

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval metres	Sample No.	Length	ANALYSIS	
	from	to		ft	short				Au-oz/ton	Ag-oz/ton
	40.84	42.37	Silty BIDTIT Qtz DIRT SEC DESCRIPTION ABOVE.	-	-					
	42.37	43.89		-	-					
	43.89	45.57		-	-					
	45.57	48.77		6"	-					
	48.77	50.29		-	-					
	50.29	51.82		6"	-					
	51.82	53.34		-	-					
	53.34	54.86		-	-					
	54.86	56.39		-	-					
	56.39	57.91		-	-					
	57.91	60.96	-	-						
	EOM									

Project HARRISON Logged by PGD. Checked by \_\_\_\_\_ Hole No. 85-NM-1  
 Location NORTH HILLSIDE Date 26 OCT 85 Date 26 OCT 8 Page 3 of 3



# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET  
VANCOUVER, B.C. V6C 4K6  
(604) 684-2000

Property HARRISON Location NORTH MILLSITE District NEW WESTMINSTER Hole No. 85-NM-2 Length (180') 54.86  
Commenced 26 OCT 85 Completed 27 OCT 85 Core Size NQ True Bearing 072 Corr. Dip 55° E  
Lat. 3133.282 Dep. 116.696 Elev. 194.29 Hor. Comp. 31.46 Vert. Comp. \_\_\_\_\_  
% Recovery \_\_\_\_\_ Collar Dip \_\_\_\_\_ Date 27 OCT 85 Objective Au Veining in Diorite.

Colour Plot #	DEPTH		DESCRIPTION	RECOVERY		Sample Interval (ft)	Sample No.	Length M	ANALYSIS					
	Dips	from		to	ft. run				short	Au-oz/ton	Ag-oz/ton	Ag ppb	Ag ppm	
		0	4.88	CASING.										
		4.88	54.86	BOTITE QUARTZ DIORITE WITH FRACTURING, QUARTZ/CALCITE/SULPH. VENING, AND VEIN ALTERATION ENVELOPES AS DETAILED BELOW.										
		RECOVERY		CORE RECOVERY 100% EXCEPT AS DETAILED BELOW.										
		4.88	- 5.49		2	6"								
		5.49	- 6.10		2	2"								
		6.10	- 7.62	(NOTE AT VEIN?)	5	9"								
		9.14	- 10.36	(NOTE RUBBY CORE)	4'	12"								
		DETAIL:												
		5.18	- 5.79	WEATHERED RUBBY Qtz DIORITE SLIGHTLY RUSTY										
		5.94	- 6.00	SIMILAR RUBBY Qtz DIORITE.										
		6.25	- 7.32	CHEMICAL WEARING, RUBBY, CORE LOSS AT START BUT BY 6.40 IN A ZONE OF Qtz-CALCITE VENEERS, PYRITE MINERALISATION ZONE AND RE-SILICIFICATION MEASURABLE VAINING AT 60° (MAX) & 90° TO AXIS ROCK NOT NOTICEABLE BLEACHED			6.55 - 7.32 (21.6" - 24.3")	48626	.84	.006	.35			
		8.08	- 8.99	THREE 1/2" Qtz-CALCITE PYRITE/SULPHIDE MIXED VEINS AT 60° TO CORE WITH FURTHER SMALL VAIN AT 60° BUT AT 90° TO OTHER VEINS. BLEACHED ALTERATION ENVELOPES UP TO 15cm FROM VEINS (NOTE DARK ANGULAR FRAGS TO 6mm IN MAIN VAIN)			7.92 - 8.14 (26.0" - 30.0")	48627	1.22	.009	.06			
		10.97		SMALL 1cm Qtz-CALCITE - PYRITE VAIN AT 75° TO AXIS.										
		11.66	- 12.12	BLEACHED SILICIFIED ZONE MASSIVE PYROXYLITE IN VAINS TO 1cm			11.66 - 12.12 (38.3" - 39.9")	48629	.46			380	3.6	

NOTE:

All angles measured from core axis.

Logged by PG DMSLGR Checked by \_\_\_\_\_ Hole No. 85-NM-2  
Date 28 OCT 85 Date Core at Harrison Camp Page 1 of 3

# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval (m)	Sample No.	Length M	ANALYSIS				
	from	to		run	short				Au-oz/ton	Ag-oz/ton	Ampt	Agpt	
			VENING IN 2 DIEN AT 30° AND 75° TO AXIS										
	12.19	12.80	SIM. VENING & MASSIVE PY + GRAY SULPH. IN Q12 CALCITE VEN AT 45° TO AXIS			12.34 - 12.80 (12.56 - 12.50)	48624	.46			55	.6	
	13.41	14.23	MAJOR RESILIFICATION AND BLEACHING MAJOR 2.5CM Q12 CALCITE VEN WITH UP TO 4CM MASSIVE PY + GRAY SULPH. MAJOR VENING AT 15° TO CORE OTHER AT 45°, 80°			13.41 - 14.23 (14.4 - 14.8)	48630	.82	.443	.96			
	14.33	14.63	MINOR VENING WITH SULPH. & BLEACHING AT 45° TO AXIS										
	14.63	15.09	VENING & 1CM RESILIFIED BUT NOT PARTIC. BLEACHED PY. ARSENIC IN VENS. VENING AT 60° (2 DIEN) & 80° TO CORE AXIS MAJOR VEN - MASSIVE Q12 FLOODING AT 15.09 - MIN SULPH.			14.63 - 15.06 (14.8 - 14.5)	48631	.43			60	1.2	
	16.76	17.58	SIMILAR VENING & SILICIFICATION & SMALL VENS AT 75° - 80° TO AXIS										
	17.98	18.14	1 SIM VENS & SILICIFICATION WHILE BLEACHING AT 60-75° TO CORE										
	18.95	19.05	2 VENS. 50° TO CORE - PY (ARSENIC)										
	19.96		FAINT SILICIFICATION AT 45° TO CORE										
	20.27	20.73	- CHLORITIC SHEAR 50° & 80° TO AXIS			20.27 - 20.73 (16.6 - 16.8)	48632	.46			45	.1	
	22.71	23.01	2 SMALL VENS AT 45° & 80° TO AXIS WITH PY.										
	23.93	24.38	4 SMALL KIMBENS AT 45 & 80° TO AXIS WITH MASS. PY. SOME BLEACHING.			23.71 - 24.38 (18.0 - 80.0)	48633	.61			60	.8	
	25.45		PF. ARSENIC Q12 VENING 2.5CM AT 45° TO CORE.										
	26.82	27.43	5 SMALL CHLORITE FILLED SHEARS, SOME RE-CRYSTALLISATION. 45, 90° TO AXIS.			26.82 - 27.43 (88.0 - 90.0)	48634	.61			45	.1	
	28.80	29.26	CHLORITIC SHEARS PY ARSENIC? + CHALCOPI (60cm) SLIGHT RECRYSTALLISATION AT 28.80			28.85 - 29.26 (94.0 - 96.0)	48635	.61			45	.1	

Project: Hillson      Logged by: PED      Checked by:      Hole No: 85-NH-2  
Location: 18th Avenue      Date:      Date:      Page: 2 of 3

# DRILL HOLE RECORD

Colour Plot & Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval (m)	Sample No.	Length (M)	ANALYSIS				
	from	to		run	short				Au-oz/ton	Ag-oz/ton	Au ppm	Ag ppm	
			FURTHER INTERMITTENT VEINING AS FOLLOWS										
		33.38	80°										
		35.81-36.27	50-60°			(1176-119)	48636	.46			70	.9	
		37.44	80°										
		37.64	Q12 - CALCITE VULGY VEIN TO 1cm										
		42.06	CHLORITE LOT SHEAR AT 75°										
		44.50	SMALL CALCITE SHEAR NORTHWARD										
		45.57-46.02	CHLORITE SHEAR VEINING 5cm CALCITE VEINING										
		47.24	" " AT 65°										
		49.68	Resilification OVER 15cm										
		52.27	CALCITE SHEAR AT 45° SOME RESILIFICATION										
		53.64	RESILIFICATION Q12 BY CHLORITE AT 80°			(115-117.6)	48637	.76			30	.5	

Project Harrison      Logged by POD      Checked by \_\_\_\_\_      Hole No. 25-NM-2  
 Location 1600 CALCITE      Date 28 Dec 80      Date \_\_\_\_\_      Page 3 of 3

# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET  
VANCOUVER B.C. V6C 3K5

Property HARRISON Location NORTH MILLSITE District NEW WESTMINSTER Hole No. 85 NM3 Length 37.47m  
 Commenced 28-10-85 Completed 29-10-85 Core Size NQ True Bearing VERT. Corr. Dip 090  
 Lat. 379.5 Dep. 1.00 (Not sure) Elev. 216.42 Hor. Comp. \_\_\_\_\_ Vert. Comp. \_\_\_\_\_  
 % Recovery \_\_\_\_\_ Collar Dip \_\_\_\_\_ Date 28 OCT 85 Objective TEST DIORITE AT GOLD GEOTHERMAL RESERVE

Colour Plot & Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS			
	from	to		run	short				Au-oz/ton	Ag-oz/ton	ppm	ppm
	0	- 37.47	<p>QUARTZ DIORITE</p> <p>- un-form med. crystalline composition, except for mottling at 23.72 - 24.0m and slightly finer at 24.6m.</p> <p>- rock generally massive, and only a few fractures at top edge to core.</p> <p>- composition qtz, fsp, biotite (rather hor. blades) generally green colour to core few scattered alteration. Two 2" siliceous streaks at 30.6m and 34.4m, Magnetite common, occ. py traces of cpy at 1.83, 5.10 and on fracture with arsenopyrite at 24.6m.</p> <p>- Hole terminated because of lack of fracturing and visible alteration (no small sulphide (py) at surface and py in rusty fracture at 1.63m.</p> <p>FRACTURING AS FOLLOWS</p> <p>1.83 - 80° to core axis</p> <p>2.13-3.23 - sub parallel - qtz, chlorite, magnetite, some little alteration</p> <p>6.0-6.70 - slight chlorite alt. on 90° fiss.</p> <p>10.80m - " " " 40° Fiss</p>									
						83-1.83	8216	1.0			10	.1
						2.13-3.66	8217	1.53			20	.1
						4.57-6.10	8218	1.53			30	.1
						11.28-12.80	8219	1.52			10	.1

NOTE: Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. 85-NM-3  
 All angles measured from core axis. Date \_\_\_\_\_ Date Core at Harrison camp Page 1 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot & Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS				
	from	to		run	short				Au-oz/ton	Ag-oz/ton	ppb Au	ppm Ag	
			16.60-17.07 - quartz on fract at 15° to axis no visible sulphides										
			18.0-18.6 - Frac at 15° to axis - sericite alteration			20.12-21.64	8220				25		.1
			22.3-22.8 - quartz sericite alteration of Frac. at 15° to axis										
			23.77-24.0 - Qtz, sericite, chlorite at 15° to axis			23.57-24.20	8221	.63			10		.1
			25.3-25.60 " " " " (no alteration)										
			29.9-30.1 " " " " " "										
			30.62-30.63 quartz sericite in fill at 80° to axis										
			32.7-32.92 Frac at 15° to axis no sulph.										
			34.46-34.49 quartz sericite in fill at 20° to axis like Ag in surrounding core (v. fine)			34.24-34.64	8222	.40			5		.1
			37.16 fine quartz segment										

Project HARRISON Logged by PGD Checked by \_\_\_\_\_ Hole No. 85-NM-3  
 Location NORTH MILLSITE Date \_\_\_\_\_ Date \_\_\_\_\_ Page 2 of 2

# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET  
VANCOUVER, B.C. V6C 3K5  
(604) 664-2501

Property HARRISON Location NORTH MILLSITE District NEW WESTMINSTER Hole No. 85-NM-4 Length 300' 91.44m  
Commenced OCT 29 Completed OCT 31 Core Size NW. True Bearing 121° Corr. Dip -50°E  
Lat. 3178.434 Dep. 1.387 Elev. 216.42 Hor. Comp. 58.77 Vert. Comp. \_\_\_\_\_  
% Recovery \_\_\_\_\_ Collar Dip -50°E Date 6 NOV 1985 Objective Test diorite at Au. concn. and for faulting at diff.

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval M.	Sample No.	Length	ANALYSIS				
	from	to		run	short				Au. oz/ton	Ag. oz/ton	Au. ppb	Ag. ppm	
	0	91.44m	<p>Sericitized Biotite Quartz Diorite</p> <ul style="list-style-type: none"> <li>- Biotite main amphibole (after hornblende?)</li> <li>- Texture and colour changes in hole mostly related to degree of sericitization (core is noticeably green)</li> <li>- Fracturing not partic. common, but major trends noted below</li> <li>- Occasional small quartz-pyrite (± titanite) fills with occasional wall rock bleaching (minor)</li> <li>- occasional pyritic segregations (minor), pyrite scarce</li> <li>- magnetite well developed throughout core</li> <li>- Traces of chalcoprite (minor)</li> <li>- sampling taken of diorite over range in hole for checks, and at areas of sulphide veins, quartz "sveeds" or chloritic shearing</li> <li>- small fine grained <del>deformed</del> dyke (Chilled margin?) at 39.01</li> </ul>										
	12.0-12.5		small quartz veins			12.50-12.0	8223	0.70			45	0.1	
	34.14-34.6		minor quartz filled cracks at 25° to core			34.14-34.6	8224	0.72			45	0.1	
	36.0		" " " "										
	39.01-40.33		7 mm quartz veins up to 5 cm			38.4-40.33	8225	1.43			5	0.1	

NOTE: Logged by P.G.D. Checked by \_\_\_\_\_ Hole No. 85-NM-4  
All angles measured from core axis. Date \_\_\_\_\_ Date \_\_\_\_\_ Page 1 of 2

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS				
	from	to		run	short				Au-oz/ton	Ag-oz/ton	Au ppb	Ag ppm	
	46.6	56.0	Phosporic ... in core - some fr ... no ... like sulph ... Most ... 47.9 - 49.2 Small quartz ... 49.28 at 50°			47.85-49.2	8226	1.53				10	.1
						53.95-55.47	8227	1.52				25	.1
						62.5-62.9	8228	.40				25	.1
	1.584	-	mass. quartz - chlorite shear - slightly finer grained 35° to axis			65.5-66.5	8229	1.0				45	.1
	71.0	71.43	Three minor quartz shears at 40°, but with up to 1/2" massive py shearing at 55° to axis - main			71.0-72.00	8230	1.0				45	.1
	76.50	-	chlorite shear, minor crumbly core - quartz sweets - raggy quartz at 10° to axis			77.5-78.5	8231	1.0				45	.1
	78.05	91.44	Qtz dmb.			89.92-91.44	8232	1.52				45	.1

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. 85-NM-4  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 2 of 2

# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET  
VANCOUVER, B.C. V6C 1A5  
(604) 684-2361

Property HARRISON Location NORTH MILLS District N.W. WESTMINSTER Hole No. 25NM5 Length 917.4M. (301ft)  
Commenced 31 OCT 85 Completed 2 NOV 85 Core Size NQ True Bearing 296° Corr. Dip -4.72°  
Lat. 3217.092 Dep. 29.048 Elev. 215.17 Hor. Comp. 61.97 Vert. Comp. \_\_\_\_\_  
% Recovery \_\_\_\_\_ Collar Dip \_\_\_\_\_ Date 2 NOV 85 Objective TEST SULPHIDE FRAC IN DRILL HOLE TO Au ANALYSIS

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
	0	91.74	<p><b>Biotite Quartz Diorite</b></p> <ul style="list-style-type: none"> <li>- Biotite predominant over hornblende (not well developed)</li> <li>- Majority of diorite has up to 5% fine dispersed pyrite mineralisation (rare in surrounding diorite)</li> <li>- Xenoliths common and fine grained rock from 32.0m to 39.62 may easily be xenolith.</li> <li>- diorite is distinctly greenish for first 60.96 but towards end of hole has a lighter speckled character - green mineral sericite replacement.</li> <li>- Fractures and hydrothermal veining common to 51.82, quartz, pyrite, occasional chalcopyrite and magnetite with chlorite? and fine grained soft sulphide (sincapite?) - latter is major vein filler.</li> <li>- massive sulphide filling of veins (upto 20m) with associated sericite sulphide disseminations</li> <li>- chlorite on fracture surfaces with pyrite</li> <li>- diorite varies in texture, and around some veins to coarse amphibole mineralisation (greenish) with blebbing. IN PLACE sections MAGNETITE MOTTLED with small "iride quartz nuggets" freely with fine generally massive</li> </ul>							

NOTE:

All angles measured from core axis.

Logged by PG DASLER Checked by \_\_\_\_\_ Hole No. 85 NM -5  
Date 2 NOV 85 Date Core at Curson Camp Page 1 of \_\_\_\_\_



# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length M	ANALYSIS					
	from	to		run	short				Au-oz/ton	Ag-oz/ton	Am-zn	Am-pb		
			Following is detailed description with any noted ore loss.											
	5.49		Rubble - 012 diorite											
	5.49	5.51	Small qtz vein at 65° to axis. light mottling on fracturing in core											
	5.51	6.40	Recrystallised quartz diorite - large amphibole & dark sulph.			5.49 - 6.40 18.0 - 21.0	48631	.91	<.002	.09				
	6.40	7.16	3, 1cm qtz veinlets with assoc. bl. v. some sphalerite and cpy along with py, & soft grey sulph (fine arsenic) veins filling fiss at 40° to axis			6.40 - 7.16 21.0 - 24.0	48629	.92	<.002	.16				
	7.16	7.92	Dark recrystallised qtz diorite											
	7.92	9.45	4, 1cm veinlets and 1 massive sulphide/ qtz veinlet lateral 823 - 8.59 heavy py, & dk grey sulphide some cpy and sphalerite some py. Fracture fill. Veinlets 50°			7.92 - 9.45 25.0 - 27.0	48640	1.22	.010	.11	.008	.11		
	9.45	10.97	veinlets at 9.60, 9.83 10.31 - 10.52 moderate bleaching but coarse recrystallisation of diorite (v. green) 10.67 some qtz flooding.			9.45 - 10.36 30 - 34	48641	1.22	.006	.07	.005	.06		
	10.97	12.50	veinlets at 11.20, 10.46, 11.89, 12.04, 12.19, all small except 1st (8cm) - py, dk grey sulph predominates (arsenic?) main vein at 45° hit minor partings at 90°			10.36 - 11.89 34 - 39.0 11.89 - 12.50 39.0 - 42.0	48642 48643	1.52 .91	<.002 <.002	.07 .05	<.001 <.001	.05 .05		
	12.50	14.02	12.90 to 13.11, 13.26, 13.41 - 13.56 qtz sulphide veins and assoc. dissemin. sulph, diorite recrystallised veinlets 45°			12.50 - 14.02 42.0 - 44.9	48644	1.49	<.002	.07	.006	.07		
	14.02	15.54	Small fiss. fills qtz + sulph at 14.43, 14.53 14.63 - also some spiderly decpl of pyrite along fiss at 40° to axis			14.02 - 15.54 47.0 - 51.0	48645	1.52	<.002	.05	.002	.04		

Project HARRIS 1 Logged by PG DWELER Checked by \_\_\_\_\_ Hole No. 85-NM-5  
 Location NORTH MOUNTAIN Date 2/10/65 Date \_\_\_\_\_ Page 2 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length M	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
	15.54	17.68	Coarse dark diorite fac at 45° & 2 small qtz filled fac at 80° fine grained at 1707 & speckled with pyrite							
	17.68	17.98	open cavity with massive pyrite mineralisation in finer diorite			(1707)				
	17.98	24.38	coarse dark diorite, but lines at 18.59, 20.57, 21.11, 21.49. Noticeably fine & spidery pyrite			18.44 - 20.12 60.6' - 66'	48646	1.68	<.002	.08
			5cm qtz fac at 22.10 2m fac at 22.75, 1m at 22.56			21.03 - 21.95 69.5 - 72.0	48647	.91	<.002	.05
			all between 40° & 45° to core			21.45 - 22.86 72.0 - 75.0	48647	.91	<.002	.06
	24.38	24.54	white diorite dyke - no real alteration surrounding zone which is at 60° to core and is very distinct - mainly qtz + fsp, but some spidery pyrite mineralisation few small amphibole xstals.							
	24.54	25.60	Coarse dark = quartz diorite							
	25.60	25.91	similar white diorite dyke at 60° to core. some finer diorite recrystallisation, and lots of py. on fractures.			25.45 - 26.21 82.6 - 86.0	48649	.76	<.002	.02
	25.91	26.21	fin white diorite dyke at 60°							
	26.21	29.11	Mottled quartz diorite and fine grained xenoliths - magnetic in parts, spidery pyrite forming along fractures showed over at 29.11			26.21 - 26.82 86 - 88	48650	.61	<.002	.04
	29.11	37.80	Dark, fine grained diorite - diorite texture ghosted in places, appears to be reheated granite - numerous spidery pyrite filled fractures, occasional qtz stringer + pyrite, appears to be mostly b. ill. fractures at 90° to core							

Project HARRISON Logged by RJD Checked by \_\_\_\_\_ Hole No. 85-N11-5  
 Location NORTH Mt. ... Date 2.10.1985 Date \_\_\_\_\_ Page 3 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length M	ANALYSIS			
	from	to		run	short				Au-oz/ton	Ag-oz/ton	Pb-PPM As-PPM	Pb-PPM As-PPM
	29.11	37.80	CONT			33.00-33.53 105-110	8201	1.52	<.002	.11		
			Some relic fractures at 60° samples taken of visibly pyritic zones (.5%)			36.27-36.88 119-121	8202	.61	<.002	.07		
	37.80	41.76	MASSIVE SULPHIDE INTERCALATED WITH FINE GRAINED DORITE AND PYRITE SPECKLED DURING SULPHIDE PYRITE AND SOFT GREY SULPH + QUARTZ (6.1% ZONE) SOME ARSIC? Relic of pyrite in veins with small yellowish infill (ALBITE?) MAIN INFILLS AT 60° TO 90°									
			8cm (2") MASSIVE SULPH (124"-126")									
			20cm (8") " (125'4" - 126")			37.80-38.40 124-126	8203	.61	.260	.73	.240 .224	.69 .72
			25cm (10") " (126'2" - 127")									
			15cm (6") " (127'6" - 128")									
			15cm (6") " (130' - 130'6")			38.40-39.62 126-130	8204	1.22	.044	.24	.033 .036	.25 .26
			10cm (4") with 2' QZ vein (132' - 133'4")			39.62-41.00 130-134.6	8205	1.37	.012	.11	.007 .016	.14 .15
			10cm (4") (136'4" - 136'8")			41.00-41.76 134.6-137.0	8206	.76	.020	.13	.013 .009	.13 .13
			REST OF ZONE HEAVILY DIRTIFIED WITH NUMEROUS small stringers of arsenic sulphides + pyrite.									
	41.76	43.28	SPECKLED QZ DIRTIFIED - small pyrite dissem. in rock			41.76-42.98 137-141	8207	1.22	<.002	.06		
	43.28	53.95	AS ARSENIC (43.28) BUT PYRITE CALLED FINE GRAINED (60°) AND SOME VAR. ARSENIC IN GRAIN SIZE 2 TO 10 μm small 25cm arsenic pyrite A-44.04 & AT 51.21 samples sections show visible pyrite veins			43.54-44.50 143-146	8208	.91	<.002	.05		
						47.55-48.87 156-160.6		1.32	<.002	.08		
						50.29-51.51 165.0-169		.22	<.002	.08		
	53.95	59.44	pyrite zone - fine grained - mostly green, brown pyrite shows small dark ductile (1cm) at 54.25, 54.86 56.24, 58.06 - these at 45° to axis (like the pyrite zone)			53.95-55.17 177-181	8211	1.22	<.002	.03		

Project: HARVEY Logged by: P.B. DASSER Checked by: \_\_\_\_\_ Hole No. 8211  
 Location: 1180 - 1181 Date: 2/10/85 Page: 1 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length M	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
	59.44	62.48	REHEALED (SILICIFIED, CHLORITISED BRECCIATED) DIORITE PYRITE IN SMALL STRINGS AS 50" (BUT IN 20" DIAM.)			59.44 - 60.96	8212	1.52	<.002	.03
	62.48	63.09	SANDY SPECKLED ALT QTZ DIORITE WITH ABUNDANT PYRITE.							
	63.09	91.74	ALTERED QTZ DIORITE - SIMILAR TO 53.95 - 59.44 E.O.H. FINE GRAINED - (ALTHOUGH UNALTERED SECTION 68.58-69.19 BUT MANY SPHERULES AND PYRITE - FRACTURING STILL AT 50-70% TO CORE - SOME SMALL QTZ INFILL WITH PYRITE BUT NO ALTERATION HALOS AROUND VENING. 1/4" DIAMETER - 1 EVERY 1.0M CHLORITIC & PYRITE ON FRAC SURFACES. HOLE ENDS WITH A SLIGHT INCREASE IN QUARTZ INFILL. SLIGHT MOTTLED - REHEALED SECTION 73.76 - 74.04 - SOME MAGNETITE.			64.92 - 65.84 213 - 216 73.46 - 74.07 241 - 243 84.12 - 85.65 214 - 251	8213 8214 8215	1.91 .61 1.52	<.002 <.002 <.002	.05 .04 .08

Project: MINA 1 Logged by: P. G. WISLER Checked by: \_\_\_\_\_ Hole No: 85-1105  
 Location: MINA 1 SITE Date: 2 NOV 85 Date: \_\_\_\_\_ Page: 1 of \_\_\_\_\_

# DRILL HOLE RECORD

SEARCHLIGHT RESOURCES INC.  
#218-744 W. HASTINGS STREET  
VANCOUVER, B.C. V6C 1A5  
(604) 684-2361

Property HARRISON Location NORTH MILLSITE J.S. 2nd District NEW WESTMINSTER Hole No. RS-NM-6 Length 231'  
Commenced NOV. 2. 1985 Completed NOV. 3. 1985 Core Size NO True Bearing 072° Corr. Dip -75°  
Lat. 2738.144 Dep. 603.279 Elev. 180.78 Hor. Comp. 18.22 Vert. Comp. 1.52  
% Recovery \_\_\_\_\_ Coll. Dip \_\_\_\_\_ Date NOV 2 '85 Objective TEST VENING & Au ANALYSIS

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS																													
	from	to		run	short				Au-oz/ton	Ag-oz/ton																												
	0	70.4	<p>Sericitised Biotite quartz diorite similar to adjacent diorites, but containing more disseminated pyrite, and hosting numerous small (1-2mm) to medium width 2cm quartz feldspar veins containing pyrite + grey sulphides. Alteration halos around these veins are 2-3cm for the small fractures - mainly fine sericitisation, and up to 10cm for the larger fractures which have extensive pyrite + other sulphide infill.</p> <p>Core recovery 100%, throughout, rock very competent. First 4m slightly frac / rubble.</p> <p>Samples taken of fracture fill and alteration zones plus intermediate unaltered diorite.</p> <p>Venting as follows:</p> <table border="1"> <thead> <tr> <th>WIDTH OF VEINS</th> <th>WIDTH OF ALTERATION HALO</th> <th>MASSIVE SULPHIDE INFILL</th> <th>ANGLE</th> </tr> </thead> <tbody> <tr> <td>3.0m</td> <td>&lt; 5cm</td> <td>&lt; 10cm</td> <td>Dissem</td> </tr> <tr> <td>3.7</td> <td>&lt; 2cm</td> <td>&lt; 5cm</td> <td>45°</td> </tr> <tr> <td>4.4</td> <td>&lt; 2</td> <td>&lt; 5</td> <td>some 45°</td> </tr> <tr> <td>4.9</td> <td>5cm</td> <td>5cm</td> <td>yes 50°</td> </tr> <tr> <td>5.29</td> <td>&lt; 2cm</td> <td>5cm</td> <td>Dissem 60°</td> </tr> <tr> <td>5.15</td> <td>&lt; 2</td> <td>2cm</td> <td>" 60°</td> </tr> </tbody> </table>	WIDTH OF VEINS	WIDTH OF ALTERATION HALO	MASSIVE SULPHIDE INFILL	ANGLE	3.0m	< 5cm	< 10cm	Dissem	3.7	< 2cm	< 5cm	45°	4.4	< 2	< 5	some 45°	4.9	5cm	5cm	yes 50°	5.29	< 2cm	5cm	Dissem 60°	5.15	< 2	2cm	" 60°							
WIDTH OF VEINS	WIDTH OF ALTERATION HALO	MASSIVE SULPHIDE INFILL	ANGLE																																			
3.0m	< 5cm	< 10cm	Dissem																																			
3.7	< 2cm	< 5cm	45°																																			
4.4	< 2	< 5	some 45°																																			
4.9	5cm	5cm	yes 50°																																			
5.29	< 2cm	5cm	Dissem 60°																																			
5.15	< 2	2cm	" 60°																																			
	3.0m					2.44 to 3.25	8233		<.001	.02																												
	3.7					3.35 3.96	8234		<.001	.04																												
	4.4					3.96 5.49	8235		.001	.04																												
	4.9																																					
	5.29																																					
	5.15					5.49 - 6.40	8236		.001	.04																												

NOTE: Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. \_\_\_\_\_  
All angles measured from core axis. Date \_\_\_\_\_ Date Core at Home or Camp \_\_\_\_\_ Page 1 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
			WIDTH OF KENLET	WIDTH OF ALT HALO	MINERAL SUIT?	ANGLE OF DIPS				
	5.89		<2mm	4mm	Dissim	30°				
	5.99		<2	4mm	"	80°				
	6.15		2 at <2mm	10cm	same	45°				
	6.4-6.8		3 at <2mm	Dissim	dissim	50°	6.40-7.92	8237	1.52	.001 .04
	7.2		2 <2mm	"	dissim	50°				
	7.3		1 at 2mm	5cm	same	45°				
	7.5		1 at 2mm	5cm	"	45°	7.92-9.45	8238	1.53	<.001 .03
	7.22		2 at 2mm	5cm	"	40°				
	8.92		1 at <2mm	4cm	"	35°				
	9.15		1 at <2m	4cm	same	42°	9.45-10.97	8239		<.001 .02
	9.95		1 at 2mm	4cm	dissim	70°	10.97-12.58	8240		.004 .06
	12.25		1 at 2mm	4cm	dissim	50°	12.58-14.02	8241		.002 .02
	13.82		1 at 5mm	10cm	dissim	60°	14.02-15.54	8242		<.001 .03
	14.82		1 at 5mm	10cm	"	60°				
	15.0		1 at 30mm	20cm	"	45°	15.54-17.07	8243		<.001 .02
	15.64		1 at <2mm	4cm	"	40°	17.07-18.80	8244		<.001 .02
	17.5		1 at 5mm	5cm	same	45°				
	18.85		1 at 10mm	5cm	"	45°				
	19.21		1 at ?	5cm	"	?(1 at ?)				
	19.35		1 at <2mm	5cm	same, dissim	55°				
	19.51		1 at 10mm	5cm	"	60° (at 10mm)				
	21.25		1 at 5mm	5cm	"	70°				
	21.45		1 at <2mm	4cm	dissim	70°				
	21.64		1 at <2m	4cm	"	60°				

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. 25-111-6  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 7 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
			WIDTH OF VEINLET	WIDTH OF ACT. HALL	MASSIVE SULPH? ANGLE					
	22.26		2at <2mm	5cm	dissem	45°				
	23.59		2at <2mm	5cm	dissem	60°				
	26.4-26.85		3at 5mm <sup>+</sup>	10cm	Yes	2sets at 60° (at 60° on hole)	26.2 - 26.7	8245	.5	.003 .44
	31.8		1at 10mm	5cm	Yes, Dissem	55°	26.7 - 27.43	8246		<.001 .04
	31.5		1at <5mm	4cm	dissem	50°				
	31.8		1at <5mm	5cm	dissem	60°				
	31.8-32.0		2at 10mm	20cm	"	45-60°				
	32.3		1at <5mm	4cm	"	45°				
	42.9		1at 100mm	30cm	Massive pyritic	25°	42.9-43.5	8247	.6	.006 .05
	44.3		1at <5mm	10mm	dissem	65°				
	44.4		1at 10cm	10cm	Massive pyritic	60°				
	46.1		1at <5mm	<4cm	dissem	80°				
	46.82		1at <5mm	10cm	"	70°				
	46.95		1at 10mm	10cm	" Yes.	45°				
	47.10		2at 10mm	10cm	Yes	80°				
	53.5		1at <5mm	5cm	dissem	45°				
	53.6		1at 5mm	5cm	"	45°				
	55.1		1at 5mm	5cm	"	45°				
	55.5-55.8		2at 5mm	20cm	Yes	60°				
	56.2		1at 10mm	10cm	Yes	65°				
	56.65		1at 30mm	10cm	Yes	~60°				
	59.9		1at 20mm	10cm	Yes	60°				
	65.2-65.5		2at 10cm	20cm	Yes	60°	65.80-67.30	8248	50	.001 .04
	66.6-67.0		3 up to 50mm	20cm	Yes, 10mm/1012	60°				

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. \_\_\_\_\_  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 3 of \_\_\_\_\_

# DRILL HOLE RECORD

Colour Plot & Dips	DEPTH		DESCRIPTION				RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS			
	from	to					run	short				Au-oz/ton	Ag-oz/ton		
			WIDTH OF VEINLET	WIDTH OF ALTERATION	ASSASSINATE	GRAIN SIZE									
	67.1		5mm	10cm	dissemin	500			67.3-68.30	8249	1.0	.001	.05		
	67.9		20mm	20cm	YES	450									
	68.5		30mm	20cm	PIG IRON	450			68.30-68.88	8250	.58	.002	.03		
			N.B. LAST VEINLET GOOD SULPHIDE NOT ASSAYED												

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. 85-NM-6  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 4 of 4



# DRILL HOLE RECORD

SEARCHED INDEXED  
#218-74 SHEET  
VANCOUVER, B.C. V6C 1A5  
(604) 684-2361

Property HARRISON Location NORTH MILLSITE J.S. ZONE District NEW WESTMINSTER Hole No. 85-NM-7 Length 150' 45.72 m.  
 Commenced NOV 3 1985 Completed NOV 4 1985 Core Size NO. True Bearing 130° Corr. Dip -45° E  
 Lat. 2737 450 Dep. 606.650 Elev. 180.51 Hor. Comp. 32 33 Vert. Comp. 32 33  
 % Recovery \_\_\_\_\_ Collar Dip \_\_\_\_\_ Date NOV 3 '85 Objective TEST VEINING IN DIORITE: Au ANALYSE

Colour Plot # Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
	0	45.72	SERICITISED BIOTITE QUARTZ DIORITE. MODERATE AMOUNT OF QUARTZ - PIRITE ± CHALCOPIRITE - GREY SULPHID VEINING + VEINETS WITH ASSOC SERICITISED MINERALS SIMILAR TO 85-NM-6, BUT LESS VEINS - 2 MAJOR VEINS AT 8 METRES AND 40 METRES - BELOW IS LISTING OF VEINS FOR SAMPLES SEE 85-NM-6 AS SIMILAR SAMPLES ONLY TAKEN OF MAJOR VEINS.							
			0-218 CASING AT 2.13-5.18 RUBBLY (RUSKY VEINING)							
			VEIN WIDTH	ALTERATION HALO	MASSIVE SULPHIDES	VEIN ANGLE				
			3.9	2.5mm	< 5cm	YES	80°			
			5.1	2.5mm	< 5cm	dissem	65°			
			5.3	< 5mm	< 5cm	massive (?)	80°			
			5.5	< 5mm	5cm	"	70°			
			6.1	5mm	5cm	"	60°			
			6.4	< 5mm	5cm	dissem	"	6.4-7.90	9101	1.5 <.001 .13
			6.6	< 5mm	5cm	"	45°	7.92-9.00	9102	1.08 <.001 .05
			6.9-7.92	5 x < 5mm	total 40cm	dissem + massive	80° massive 45 fine			
			8.5	100mm	pyrite 2-3cm	"	?			
			8.7	100mm	Rubby "	" massive	80°			

NOTE: Logged by PGD. Checked by \_\_\_\_\_ Hole No. \_\_\_\_\_  
 All angles measured from core axis. Date \_\_\_\_\_ Date Camp at Harrison Camp Page 1 of 3

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
			VEIN WIDTH	ACT. HAZO	MASSIVE SULFIDE	VEIN DIRECTION				
	10.0	<5mm	5cm	dissem	45°					
	10.6	10mm	10cm	massive	80°					
	10.85	5mm	5cm	dissem	80°					
	11.6	5mm	5cm	"	80°					
	12.3	10mm	10cm	massive	80°					
	13.0	5mm	5cm	dissem	75°					
	13.41	<5mm	4cm	"	70°					
	14.2	5mm	5cm	"	45°					
	15.0	5mm	10cm	"	45°					
	15.4	5mm	5cm	massive with sphal.	75°					
	15.5	10mm	10cm	dissem qtz.	60°					
	16.2	5mm	5cm	mass dissem	70°					
	16.8	2x 5mm	10cm	massive py	90°					
	16.96	10mm	5cm	massive py + qtz	90°					
	17.4	2x 5mm	5cm	dissem	75°					
	18.3	10mm	10cm	massive	70°					
	18.5	10mm	10cm	massive	40°					
	19.9	10mm	5cm	massive py	60°					
	20.4	10mm	5cm	py + (py)	80°					
	22.10	<5	5cm	py	75°					
	23.2	<5	5cm	py	80°					
	24.6	2x 5mm	10cm	py + qtz	70°					
	25.6	50mm	20cm	py + qtz + calc. Sulf.	60°					
	29.7	<5mm	<5cm	dissem	30°					

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. 85-NW7  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 2 of 2

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION			RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS			
	from	to				run	short				Au-oz/ton	Ag-oz/ton		
	30.0	vein width	Alt. Halo	Massive Sulph	Vein angle									
	30.0	10 mm	10cm	qtz + py	80°									
	30.5	20 mm	20cm	qtz, py, g. sulph	80°									
	40.0	40.5	6 x 5mm	50cm	qtz, py	60-80°		40.0-41.15	9103	1.15	.006	.05		

Project HARRISON Logged by PGD Checked by \_\_\_\_\_ Hole No. 85-NM-7  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page ? of 3

# DRILL HOLE RECORD

SEALING  
#211  
VANCOUVER  
(604) 684-2301

Property HARRISON Location NORTH MILLSITE JS ZONE District NEW WESTMINSTER Hole No. 85-NM-8 Length (213') 64.92 m  
 Commenced NOV 4 1985 Completed NOV 5 1985 Core Size NQ True Bearing 008° Corr. Dip -45°N  
 Lat. 2725.340 Dep. 575.170 Elev. 187.66 Hor. Comp. 45.91 Vert. Comp. 45.91  
 % Recovery \_\_\_\_\_ Collar Dip \_\_\_\_\_ Date NOV 4 '85 Objective TEST VEIN IN DIORITE - Au ANOMALY

Colour Plot 8 Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS		
	from	to		run	short				Au-oz/ton	Ag-oz/ton	
	0	1.2	CASING - RUSTY QZ - PYRITE VEIN ON SURFACE (CPY + ARSENIC) (Special?)								
	1.2	55.5	SERICITISED BIOTITE QUARTZ DIORITE - DISSEMINATED PYRITE - NUMEROUS QZ - PYRITE + MIXED SULPHIDE VEINETS VEINETS - AS DETAILED BELOW - SERICITE ALTERATION AROUND VEINETS								
	55.5	64.92	HIGHLY ALTERED DIORITE - COMPLETELY QUARTZ FLOODED, MOTTLED GREY COLOUR, SOME MASSIVE PYRITE - MIXED SULPHIDE VEINING (59.4m) NUMEROUS "BLEBS" & DISSEMINATIONS OF PYRITE - OCCASIONAL COARSE BIOTITE DEVELOPMENT - FG (61.8m)								
			VEINING IN DIORITE AS FOLLOWS								
			VEIN WIDTH	ACT. HAIR WIDTH	SULPHIDE MINERALISATION	VEIN ANGLE					
	9.7m		10mm	20cm	mass py	50°?					
	12.49		45mm	10cm	" "	50°?					
	14.4		45mm	10cm	dissem py						
	15.5-16.5		10mm	CONTINUOUS	dissem py	Sublevel					
	16.86-16.96		10mm	10cm	mass py, chalc. tr.s.	20°					
	17.1-17.5		5mm	5cm	dissem py, chalc	Sublevel					

NOTE:

Logged by PGD.

Checked by \_\_\_\_\_

Hole No. 85-NM-8

All angles measured from core axis.

Date \_\_\_\_\_

Date Core at Harrison Camp

Page 1 of 3

# DRILL HOLE RECORD

Colour Plot 8 Dips	DEPTH		DESCRIPTION	RECOVERY		Sample Interval	Sample No.	Length	ANALYSIS	
	from	to		run	short				Au-oz/ton	Ag-oz/ton
			Very weakly	10cm	massive pyrite					
	17.6	15mm		10cm	massive pyrite					
	18.3-18.6	75mm		20mm	pyrite, arsenic, mass pyrite	18.29-18.67	9104	40	0.89	0.99
	19.9-20.1	<5mm		10cm	disc py	18.69-19.09	9105	40	0.01	0.04
	20.1	10mm		10cm	pyrite					
	21.5-22.5	Several 5-10mm	continuous		py + sphat + gl. sulph					
	23.5	10mm		10cm	mass py, gl. sulph					
	25.6	10mm		10cm	"					
	25.9-26.2	2-10mm		10cm	disc py					
	26.5-26.8	2x <5mm		10cm	disc py					
	27.6	1x <5mm		5cm	"					
	27.8	1x <5mm		10cm	"					
	28.6	1x <5mm		5cm	"					
	29.0	1x 5mm		5cm	"					
	31.4	1x 5mm		10cm	disc py					
	33.5	1x 15mm		20cm	disseminated py + sphat					
	35.0	2x 10mm		20cm	disc py					
	35.6	1x 5mm		10cm	mass pyrite - dissem					
	37.2	5mm		10cm	py + gl. sulph					
	39-39.7	massive >20mm	10-20cm		massive mineral with gl. sulph					
	40.4	5mm		10cm	py + gl. sulph					
	41.4	10mm		5cm	pyrite					
	41.6	10mm		5cm	pyrite					
	42.5	10mm		5cm	"					
	43.7	10mm		5cm	"					

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. ES 111-5  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 1 of 3

# DRILL HOLE RECORD

Colour Plot B Dips	DEPTH		DESCRIPTION	RECOVERY		Sample interval	Sample No.	Length	ANALYSIS		
	from	to		run	short				Au-oz/ton	Ag-oz/ton	
			VEN W.D.M	ALT 17.10	Sulphide min						
	44.1	15mm	10cm	qtz + py	50°						
	46.6	2nd 5mm	20cm	qtz py diss	50°						
	47.0	<5mm	10cm	diss py	50°						
	51.0	15mm	10cm	diss py, minor sulph	50°						
	51.9	10mm	5cm	py + qtz vein	50°						
	52.55	30mm	10cm	qtz vein py, sphal	20°						
	52.8	30mm	10cm	qtz vein py, sphal	20°						
	59.30-59.6			mass sulph vein							
							56.78-57.30	9106	1.52	<.003	.02
							57.30-58.83	9107	1.53	<.003	.08
							59.30-59.60	9108	.30	.006	1.36
							60.35-61.89	9109	1.54	<.003	.01

Project \_\_\_\_\_ Logged by \_\_\_\_\_ Checked by \_\_\_\_\_ Hole No. 85-NM-2  
 Location \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Page 1 of 3



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## CERTIFICATE OF ANALYSIS

TO : GOLDEN PORPHYRITE LTD.  
218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8517451-001-A  
INVOICE # : I8517451  
DATE : 18-OCT-85  
P.O. # : NONE  
HARRISON

ATTN: PETER DASLER

Sample description	Prep code	Ag ppm Aqua R	Au ppo FA+AA				
48551 E	205	0.1	<5	--	--	--	--
48552 E	205	0.1	<5	--	--	--	--
48566 E	205	0.1	<5	--	--	--	--
48567 E	205	0.1	<5	--	--	--	--
48568 E	205	0.7	50	--	--	--	--

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VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8517450-001-A  
INVOICE # : I8517450  
DATE : 20-OCT-85  
P.O. # : NONE  
HARRISON

ATTN: PETER DASLER

Sample description	Prep code	Ag oz/T RUSH FA	Au FA oz/T				
48553	236	0.04	0.006	--	--	--	--
48554	236	0.03	0.002	--	--	--	--
48555	236	0.01	0.002	--	--	--	--
48556	236	0.02	<0.002	--	--	--	--
48557	236	0.01	<0.002	--	--	--	--
48558	236	0.01	<0.002	--	--	--	--
48559	236	0.01	<0.002	--	--	--	--
48560	236	0.01	<0.002	--	--	--	--
48561	236	0.16	0.002	--	--	--	--
48562	236	0.02	0.002	--	--	--	--
48563	236	<0.01	<0.002	--	--	--	--
48564	236	0.01	<0.002	--	--	--	--
48565	236	<0.01	<0.002	--	--	--	--

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218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8517980-001-A  
INVOICE # : I8517980  
DATE : 6-NOV-85  
P.C. # : NONE  
HARRISON

Sample description	Prep code	Ag ppm Aqua R	Au ppb FA+AA				
48617 E	205	0.1	<5	--	--	--	--
48618 E	205	1.8	390	--	--	--	--
48619 E	205	0.1	<5	--	--	--	--
48621 E	205	0.4	<5	--	--	--	--
48622 E	205	1.1	10	--	--	--	--
48623 E	205	1.4	<5	--	--	--	--
48624 E	205	0.1	<5	--	--	--	--
48625 E	205	0.1	<5	--	--	--	--
48628 E	205	3.6	880	--	--	--	--
48629 E	205	0.6	55	--	--	--	--
48631 E	205	1.2	60	--	--	--	--
48632 E	205	0.1	<5	--	--	--	--
48633 E	205	0.8	60	--	--	--	--
48634 E	205	0.1	<5	--	--	--	--
48635 E	205	0.1	<5	--	--	--	--
48636 E	205	0.9	70	--	--	--	--
48637 E	205	0.5	30	--	--	--	--

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V6C 1A5

CERT. # : A8518067-001-A  
INVOICE # : I8518067  
DATE : 7-NOV-85  
P.O. # : NONE  
HARRISON

ATTN: P. DASLER

Sample description	Prep code	Ag oz/T RUSH FA	Au oz/T RUSH FA				
8201 D	236	0.11	<0.002	--	--	--	--
8202 D	236	0.07	<0.002	--	--	--	--
8203 D	236	0.73	0.260	--	--	--	--
8204 D	236	0.24	0.044	--	--	--	--
8205 D	236	0.11	0.012	--	--	--	--
8206 D	236	0.13	0.020	--	--	--	--
8207 D	236	0.06	<0.002	--	--	--	--
8208 D	236	0.05	<0.002	--	--	--	--
8209 D	236	0.08	<0.002	--	--	--	--
8210 D	236	0.08	<0.002	--	--	--	--
8211 D	236	0.03	<0.002	--	--	--	--
8212 D	236	0.03	<0.002	--	--	--	--
8213 D	236	0.05	<0.002	--	--	--	--
8214 D	236	0.04	<0.002	--	--	--	--
8215 D	236	0.08	<0.002	--	--	--	--
48638 E	236	0.09	<0.002	--	--	--	--
48639 E	236	0.16	<0.002	--	--	--	--
48640 E	236	0.11	0.010	--	--	--	--
48641 E	236	0.07	0.006	--	--	--	--
48642 E	236	0.07	<0.002	--	--	--	--
48643 E	236	0.05	<0.002	--	--	--	--
48644 E	236	0.07	<0.002	--	--	--	--
48645 E	236	0.05	<0.002	--	--	--	--
48646 E	236	0.08	<0.002	--	--	--	--
48647 E	236	0.05	<0.002	--	--	--	--
48648 E	236	0.06	<0.002	--	--	--	--
48649 E	236	0.02	<0.002	--	--	--	--
48650 E	236	0.04	<0.002	--	--	--	--

.....*W. Benfante*.....  
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VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8517979-001-A  
INVOICE # : I8517979  
DATE : 8-NOV-85  
P.O. # : NONE  
HARRISON

Sample description	Prep code	Ag FA oz/T	Au FA oz/T				
48620	207	1.60	0.212	--	--	--	--
48626	207	0.35	0.006	--	--	--	--
48627	207	0.06	0.009	--	--	--	--
48630	207	0.96	0.443	--	--	--	--

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V6C 1A5

CERT. # : A8518206-001-A  
INVOICE # : 18518206  
DATE : 12-NOV-85  
P.O. # : NONE  
HARRISON

ATTN: P. DASLER

Sample description	Prep code	Ag oz/T		Au oz/T					
		RUSH	FA	RUSH	FA				
9106G	236	0.02	<0.003	--	--	--	--	--	--
9107G	236	0.08	<0.003	--	--	--	--	--	--
9108G	236	1.36	0.006	--	--	--	--	--	--
9109G	236	0.01	<0.003	--	--	--	--	--	--

*W. Stenhouse*

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TO : GOLDEN PORPHYRITE LTD.

218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8518208-001-A  
INVOICE # : I8518208  
DATE : 15-NOV-85  
P.O. # : NONE  
HARRISON

ATTN: P. DASLER

Sample description	Prep code	Ag ppm Aqua R	Au ppb FA+AA				
8216D	205	0.1	10	--	--	--	--
8217D	205	0.1	20	--	--	--	--
8218D	205	0.1	30	--	--	--	--
8219D	205	0.1	10	--	--	--	--
8220D	205	0.1	25	--	--	--	--
8221D	205	0.1	10	--	--	--	--
8222D	205	0.1	5	--	--	--	--
8223D	205	0.1	<5	--	--	--	--
8224D	205	0.1	<5	--	--	--	--
8225D	205	0.1	5	--	--	--	--
8226D	205	0.1	10	--	--	--	--
8227D	205	0.1	<5	--	--	--	--
8228D	205	0.1	<5	--	--	--	--
8229D	205	0.1	<5	--	--	--	--
8230D	205	0.1	<5	--	--	--	--
8231D	205	0.1	<5	--	--	--	--
8232D	205	0.1	<5	--	--	--	--

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## CERTIFICATE OF ASSAY

TO : GOLDEN PORPHYRITE LTD.  
  
218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A6518207-J01-A  
INVOICE # : 18518207  
DATE : 18-NOV-85  
P.O. # : NONE  
HARRISON

ATTN: P. DASLER

Sample description	Prep code	Ag FA oz/T	Au FA oz/T				
8233D	207	0.02	<0.001	--	--	--	--
8234D	207	0.04	<0.001	--	--	--	--
8235D	207	0.04	0.001	--	--	--	--
8236D	207	0.04	0.001	--	--	--	--
8237D	207	0.04	0.001	--	--	--	--
8238D	207	0.03	<0.001	--	--	--	--
8239D	207	0.02	<0.001	--	--	--	--
8240D	207	0.06	0.004	--	--	--	--
8241D	207	0.02	0.002	--	--	--	--
8242D	207	0.03	<0.001	--	--	--	--
8243D	207	0.02	<0.001	--	--	--	--
8244D	207	0.02	<0.001	--	--	--	--
8245D	207	0.44	0.003	--	--	--	--
8246D	207	0.04	<0.001	--	--	--	--
8247D	207	0.05	0.006	--	--	--	--
8248D	207	0.04	0.001	--	--	--	--
8249D	207	0.05	0.001	--	--	--	--
8250D	207	0.03	0.002	--	--	--	--
9101G	207	0.13	<0.001	--	--	--	--
9102G	207	0.05	<0.001	--	--	--	--
9103G	207	0.05	0.006	--	--	--	--
9104G	207	0.99	0.089	--	--	--	--
9105G	207	0.04	0.001	--	--	--	--

*W. St. Amant*  
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## CERTIFICATE OF ASSAY

TO : GOLDEN PORPHYRITE LTD.

218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8518315-001-A  
INVOICE # : I8518315  
DATE : 22-NOV-85  
P.O. # : NONE  
HARRISON

ATTN: P. DASLER

Sample description	Prep code	Ag FA oz/T	Au FA oz/T				
8203 D PULP	214	0.69	0.240	--	--	--	--
8204 D PULP	214	0.25	0.033	--	--	--	--
8205 D PULP	214	0.14	0.007	--	--	--	--
8206 D PULP	214	0.13	0.013	--	--	--	--
8203 D REJECT	207	0.72	0.224	--	--	--	--
8204 D REJECT	207	0.26	0.036	--	--	--	--
8205 D REJECT	207	0.15	0.016	--	--	--	--
8206 D REJECT	207	0.13	0.009	--	--	--	--

*W. Ken Fournier*  
 .....  
 Registered Assayer, Province of British Columbia



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## CERTIFICATE OF ASSAY

TO : GOLDEN PORPHYRITE LTD.

218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

DUPLICATE

CERT. # : A8518510-001-A  
INVOICE # : I8518510  
DATE : 27-NOV-85  
P.O. # : NONE  
HARRISON

Sample description	Prep code	Ag oz/T RUSH FA	Au oz/T RUSH FA	As %			
48569 E	236	2.05	1.243	10.80	--	--	--
48570 E	236	0.85	0.390	15.90	--	--	--
48571 E	236	2.68	2.012	16.80	--	--	--
48572 E	236	2.52	0.408	6.43	--	--	--
48573 E	236	1.01	0.492	7.26	--	--	--
48574 E	236	0.47	0.352	17.80	--	--	--
48575 E	236	1.74	0.340	11.30	--	--	--

.....  
*W. Steinman*  
.....  
Registered Assayer, Province of British Columbia







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CERT. # : A8518619-001-A  
INVOICE # : I8518619  
DATE : 2-DEC-85  
P.O. # : NONE  
HARRISON

ATTN: P. DASLER

Sample description	Prep code	Ag FA oz/T	Au FA oz/T				
48640 E RESPLITS	207	0.11	0.008	--	--	--	--
48641 E RESPLITS	207	0.06	0.005	--	--	--	--
48643 E RESPLITS	207	0.05	<0.001	--	--	--	--
48644 E RESPLITS	207	0.07	0.006	--	--	--	--
48645 E RESPLITS	207	0.04	0.002	--	--	--	--

.....*P. Dasler*.....  
Registered Assayer, Province of British Columbia





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V6C 1A5

CERT. # : A8518800-001-A  
INVOICE # : I8518800  
DATE : 11-DEC-85  
P.O. # : NONE  
HARRISON

ATTN: P.G. DASLER

Sample description	Prep code	Ag FA oz/T	Au FA oz/T				
48576	207	4.80	0.518	--	--	--	--

*W. Northman*

.....  
Registered Assayer, Province of British Columbia





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## CERTIFICATE OF ANALYSIS

TO : GOLDEN PORPHYRITE LTD.

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VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8518423-001-A  
INVOICE # : I8518423  
DATE : 22-NOV-85  
P.O. # : NONE  
HARRISON

Semi quantitative multi element ICP analysis

Nitric-Aqua-Regia digestion of 0.5 gm of material followed by ICP analysis. Since this digestion is incomplete for many minerals, values reported for Al, Sb, Ba, Be, Ca, Cr, Ga, La, Mg, K, Na, Sr, Ti, U and V can only be considered as semi-quantitative.

COMMENTS :

Sample description	Al %	Ag ppa	As ppa	Ba ppa	Be ppa	Bi ppa	Ca %	Cd ppa	Co ppa	Cr ppa	Cu ppa	Fe %	Ga ppa	K %	Li ppa	Mg %	Mn ppa	Mo ppa	Ns %	Ni ppa	P ppa	Pb ppa	Sb ppa	Sr ppa	Ti %	Tl ppa	U ppa	V ppa	W ppa	Zn ppa		
48569 E	0.49	70.0	>9999	160	<0.5	366	0.06	<0.5	16	34	934	15.77	<10	0.13	<10	0.12	171	1	0.01	7	80	2102	890	31	<0.01	<10	<10	11	<10	80	--	--
48570 E	0.09	31.0	>9999	10	<0.5	70	0.02	<0.5	23	25	213	21.02	<10	<0.01	<10	0.02	62	40	<0.01	7	30	620	250	1	<0.01	<10	<10	<1	<10	100	--	--
48571 E	0.17	96.0	>9999	10	<0.5	236	0.02	<0.5	24	22	1334	22.80	<10	0.02	<10	0.02	147	<1	<0.01	3	60	2840	1570	3	<0.01	10	<10	<1	<10	200	--	--
48572 E	0.42	82.0	>9999	30	<0.5	212	0.05	<0.5	71	30	7305	14.39	<10	0.14	<10	0.16	230	64	<0.01	9	40	462	220	1	<0.01	<10	<10	1	<10	230	--	--
48573 E	0.34	59.0	>9999	20	<0.5	286	0.02	<0.5	69	24	1684	23.02	<10	0.12	<10	0.07	78	<1	<0.01	10	70	310	70	2	<0.01	<10	<10	<1	<10	180	--	--
48574 E	0.18	30.0	>9999	10	<0.5	46	0.02	<0.5	43	26	844	20.76	<10	0.06	<10	0.02	69	<1	<0.01	11	90	74	200	<1	<0.01	40	<10	<1	<10	30	--	--
48575 E	0.96	33.6	>9999	60	<0.5	60	1.43	<0.5	44	15	794	16.88	<10	0.50	<10	0.28	726	<1	<0.01	6	370	736	100	9	<0.01	<10	<10	25	<10	4410	--	--

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*Handwritten signature: Kurt Richter*



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Semi quantitative multi element ICP analysis

## CERTIFICATE OF ANALYSIS

TO : GOLDEN PORPHYRITE LTD.

218 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A8518801-001-A  
INVOICE # : 18518801  
DATE : 11-DEC-85  
P.O. # : NONE  
HARRISON

Nitric-Aqua-Regis digestion of 0.5 gm of material followed by ICP analysis. Since this digestion is incomplete for many minerals, values reported for Al, Sb, Ba, Be, Ca, Cr, Ga, La, Mg, K, Na, Sr, Tl, Ti, W and V can only be considered as semi-quantitative.

COMMENTS :  
ATTN: P.G. DASLER

Sample description	Al	Ag	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Ti	Tl	U	V	W	Zn	
	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm		
48576	0.23	110.0	>9999	10	<0.5	52	0.12	92.5	23	14	4046	18.61	<10	0.15	<10	0.05	277	4	<0.01	27	110	>9999	2200	3	<0.01	<10	<10	5	<10	8080	--

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*H. B. Bickler*



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## CERTIFICATE OF ANALYSIS

TO : GOLDEN PORPHYRITE LTD.

212 - 744 W. HASTINGS ST.  
VANCOUVER, B.C.  
V6C 1A5

CERT. # : A9518068-001-A  
INVOICE # : I8518068  
DATE : 8-NOV-85  
P.O. # : NONE  
HARRISON

Semi quantitative multi element ICP analysis

Nitric-Aqua-Regia digestion of 0.5 gm of material followed by ICP analysis. Since this digestion is incomplete for many minerals, values reported for Al, Sb, Ba, Be, Ca, Cr, Ga, La, Mg, K, Na, Sr, Tl, Ti, W and V can only be considered as semi-quantitative.

COMMENTS :  
ATTN: P. DASLER

Sample description	Al	Ag	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sr	Ti	Tl	U	V	W	Zn		
	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm		
8203 D	2.30	21.0	>9999	70	<0.5	34	1.86	<0.5	39	14	823	11.23	10	0.59	<10	0.64	763	<1	0.15	9	1040	406	120	37	0.01	<10	<10	68	<10	330	--	--

*P. Dasler*

Note: All samples were initially crushed and pulverized to -100 mesh prior to analysis. Selected samples were also screened

ASSAY METHODS

for metallics.

Ag, Au (oz/T) :

Silver and gold analyses are done by standard fire assay techniques. In the sample preparation stage the screens are checked for metallics which, if present, are assayed separately and calculated into the results obtained from the pulp assay.

1.0 or 0.5 assay ton sub samples are fused in litharge, carbonate and silicious fluxes. The lead button containing the precious metals is cupelled in a muffle furnace. The combined Ag & Au is weighed on a microbalance, parted, annealed and again weighed as Au. The difference in the two weighing is Ag.

Silver ppm:

A 1.0 gram portion of sample is digested in concentrated perchloric- nitric acid (HClO<sub>4</sub> - HNO<sub>3</sub>) for approximately 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Silver is determined by atomic absorption technique using background correction on analysis.

Detection limit: 0.2 ppm

NEUTRON ACTIVATION METHODS

As NAA % :

A one gram sample is irradiated in a thermal neutron flux. The gamma activity of the resulting arsenic isotopes is determined by gamma spectroscopy to quantify the arsenic content to the Detection limit of 0.001 %.

GEOCHEM METHODS

Gold F.A.-A.A. Combo Method ppb:

For low grade samples and geochemical materials, 10 gram samples are fused in litharge, carbonate and siliceous flux with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO<sub>3</sub> and then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au on an atomic absorption spectrophotometer.

Detection limit: 5 ppb

**APPENDIX 2**

**SURVEY CONTROL DATA**

(SEE DRILLHOLE LOCATION PLAN FOR SURVEY STATIONS)

COURSE	HORIZ. $\angle$	BEARING	VERT. $\angle$	SLOPE DIST.	HORIZ. DIST.	DIFF. ELEV.	ELEV.	NORTHING	EASTING	STATION	B/S <sup>①</sup>	N	S	E	W
CB - F5	105° 57' 55"	245° 54' 10"	1° 43'	40.966	40.947	1.23	176.290	2766.362	599.475	F5		-	16.718	-	37.379
							175.360	2783.080	596.853	CB					
CB - K1	346° 05' 00"	231° 59' 10"	277° 20'	45.71	45.336	+5.83	181.17	2755.160	561.134	K1	F5	-	27.920	-	35.719
CB - K2	259°	144° 54' 10"	270°	23.89	23.89	-	175.34	2763.534	610.589	K2	F5	-	19.546	13.736	-
CB - K3	328° 30'	244° 24' 10"	270°	16.86	16.86	-	175.34	2769.169	587.327	K3	F5	-	13.911	-	9.526
CB - J1	54° 24' 50"	300° 19' 00"	267° 0'	60.10	60.02	-3.16	172.18	2813.377	545.041	J1	F5	30.297	-	-	51.812
K1 - DHNm85-6	60° 0'	111° 59' 10"	269° 05'	45.46	45.45	-0.73	180.28	2738.144	603.279	DH-6	CB	-	17.016	42.145	-
K1 - DHNm85-7	59° 16' 30"	111° 15' 46"	268° 49'	48.86	48.84	-1.00	180.51	2737.450	606.650	DH-7	CB	-	17.710	45.516	-
K1 - K4	101° 14' 30"	153° 13' 46"	281° 09'	31.76	31.16	+6.15	187.86	2727.340	575.170	K4	CB	-	27.820	14.036	-
K4 - DHNm85-8	COMPASS	180° 0'	270°		2.00	-	187.66	2725.340	575.170	DH-8	K1	-	2.000	-	-
J1 - J2	157° 34' 45"	322° 44' 15"	270° 11'	405.198	405.196	+1.31	173.52	3135.860	299.708	J2	CB	322.483	-	-	245.333
J2 - roads intersect	264° 28'	47° 12' 15"	270°	22.62	22.62	-	173.89	3151.228	316.306	intersect	J1	15.368	-	16.598	-
J2 - 1 <sup>st</sup> bend to eq. +	112° 22'	255° 08' 15"	270°	29.09	29.09	-	173.89	3128.332	271.596	1 <sup>st</sup> bend	J1	-	7.478	-	28.112
J2 - J3	112° 32' 35"	255° 16' 50"	272° 33'	140.450	140.311	+6.29	180.14	3100.209	164.002	J3	J1	-	35.651	-	135.706



COURSE	HORIZ. $\times$	BEARING	VERT. $\times$	SLOPE DIST.	HORIZ. DIST.	DIFF. ELEV.	ELEV.	NORTHING	EASTING	STATION.	B/S <sup>②</sup>	N	S	E	W
J3 - J4	0° 00'	75° 16' 50"	261' 21"	36.143	35.732	-5.434	174.68	3109.288	198.561	J4	J2	9.079	-	34.559	-
J3-DH 83-R-40	286° 32'	00° 44' 50"	270°	3.60	3.60	-	179.74	3103.809	164.049	DH-40	J2	3.600	-	.047	-
J3 - J5	107° 55' 48"	327° 21' 00"	282° 13'	55.023	53.715	+11.65	186.68	3145.487	134.990	J5	J2	45.278	-	-	29.012
J4-DH 83-R-42	125° 26'	200° 42' 50"	270°	64.89	64.89	-	175.03	3043.593	175.609	DH-42	J2	-	60.695	-	22.952
J4-DH 83-R-42A	125° 54' 30"	201° 11' 20"	270°	83.60	83.60	-	175.03	3031.340	168.344	DH-42A	J2	-	77.948	-	30.217
J4-DH 83-R-41	126° 48'	202° 04' 50"	270°	84.31	84.31	-	175.03	3021.162	166.865	DH-41	J2	-	78.126	-	31.693
J4 - L	COMPASS	93° 0'	270°	30.0	30°	-	174.68	3107.718	228.520	L		-	1.570	29.959	-
L - end	COMPASS	150° 0'	270°	16.0	160	-	174.68	3093.862	236.520	end		-	13.856	8.000	-
J5 - J6	42° 26' 45"	189° 47' 47"	275° 51'	49.543	49.285	+5.05	191.78	3096.921	126.604	J6	J3	-	48.566	-	8.386
J6-DH 83-R-37	18° 58'	28° 55' 47"	258° 28'	24.173	23.685	-4.83	187.08	3117.650	138.061	DH-37	J5	20.729	-	11.457	-
J6-DH 83-R-38	20° 46'	30° 43' 47"	258° 33'	24.305	23.820	-4.83	187.08	3117.396	138.776	DH-38	J5	20.475	-	12.172	-
J6 - J7	45° 28' 13"	324° 19' 34"	278° 41'	34.062	33.667	+5.17	197.08	3124.270	106.970	J7	J5	27.349	-	-	19.634
J7-DH 85-2	97° 09'	47° 10' 34"	257° 46'	13.57	13.26	-2.89	194.29	3133.283	116.696	DH-2	J6	9.013	-	9.726	-
J7-DH 85-1	95° 02'	43° 17' 34"	256° 03'	12.05	11.69	-2.89	194.29	3131.894	115.832	DH-1	J6	7.624	-	8.862	-
J7 - end	115° 35'	28° 44' 34"	265° 04'	33.21	33.08	-2.86	194.32	3153.274	122.898	end	J6	29.004	-	15.908	-

COURSE	HORIZ. $\angle$	BEARING	VERT. $\angle$	SLOPE DIST	HORIZ. DIST	DIFF. ELEV.	ELEV.	NORTHING	EASTING	STATION	③ 2/5	N	S	E	W
J7 - J9	130°36'15"	274°55'49"	280°17'	66.777	65.655	+119.14	209.09	3129.913	41.558	J9	J6	5.643	-	-	65.412
J8 - J10	110°28'50"	344°26'59"	269°19'	53.038	53.034	-.63	205.19	3179.725	42.191	J10	J7	51.093	-	-	14.218
J8 - J16	142°45'48"	312°10'01"	279°09'	65.984	65.144	+10.49	216.31	3172.363	8.125	J16	J7	43.731	-	-	48.284
J10 - J11	112°25'55"	52°03'04"	265°06'	26.889	26.791	-2.30	203.15	3196.200	-63.317	J11	J8	16.475	-	21.126	-
J11 - end	compass	128°0'	270°		57.0	-	203.15	3161.107	108.234	end.		-	35.093	44.917	-
J9 - J8	0°00'	94°55'49"	257°06'	15.292	14.906	-3.41	205.61	3128.632	56.409	J8	J7	-	1.281	14.951	-
J9 - J12	86°24'55"	181°20'44"	277°08'	38.950	38.648	+4.84	213.86	3091.276	40.650	J12	J7	-	38.637	-	.908
J12 - J13	83°44'10"	277°36'34"	275°15'	25.485	25.378	+2.33	216.24	3094.637	-15.496	J13	J9	3.361	-	-	25.154
J13 - J14	64°37'58"	162°14'32"	277°27'	29.453	29.204	+3.82	220.21	3066.824	24.403	J14	J12	-	27.813	8.907	-
J14 - J15	166°00'26"	176°14'12"	269°02'	47.454	47.391	-2.46	217.85	3019.535	27.514	J15	J13	-	47.289	3.111	-

COURSE	HORIZ. $\angle$	BEARING	VERT. $\angle$	SLOPE DIST	HORIZ. DIST	DIFF. ELEV.	ELEV.	NORTHING	EASTING	STATION	②				
											B/S	N	S	E	W
J16-DH1185-3	180° 51'	312° 01' 01"	270°		9.07	-	216.42	3170.434	1.386	DH-3	J8	6.071	-	-	6.739
J16-J17	132° 43' 10"	359° 26' 51"	269° 32'	29.482	29.481	- .24	216.18	3201.843	-7.841	J17	J8	29.480	-	-	.284
J17-DH1185-5	125° 10'	54° 16' 51"	267° 08'	26.153	26.120	-1.31	215.17	3217.092	29.048	DH-5	J16	15.249	-	21.207	-
J17-J18	144° 12' 55"	35° 13' 56"	269° 01'	24.550	24.547	-.42	216.06	3221.894	24.002	J18	J16	20.051	-	14.161	-
J18-J19	94° 17' 43"	329° 31' 39"	269° 50'	37.74	37.71	-.11	216.14	3245.895	-7.084	J19	J17	24.001	-	-	29.086
J18-J21	127° 16' 35"	342° 48' 31"	281° 43'	36.040	35.289	+7.32	223.57	3255.606	-11.572	J21	J17	33.712	-	-	10.430
J19-J20	150° 30' 20"	339° 01' 19"	279° 33'	25.07	24.970	+1.547	218.08	3269.210	-16.024	J20	J18	23.315	-	-	8.940
J20 - end.	Compass	305° 0'	270°	46.0	46.0	-	218.08	3295.595	-53.705	end		26.385	-	-	37.681
J21-J22	130° 25' 45"	32° 22' 46"	282° 48'	45.352	44.225	+10.05	233.93	3292.955	35.256	J22	J18	37.349	-	23.684	-
J22-J23	57° 06' 53"	125° 15' 53"	276° 45'	26.883	26.697	+3.16	237.19	3277.541	57.054	J23	J21	-	15.414	21.798	-
J23 - end	Compass	180°	270°	15.0	15.0	-	235.19	3262.541	57.054	end		-	15.000	-	-

ELEVATIONS

$$\begin{aligned}
 HI\ C8 &= 175.36 + 1.23 = 176.59 + 5.83 = 182.42 - 1.25 = 181.17\ (K1) \\
 HI\ C8 &= 176.59 + 0 = 176.59 - 1.25 = 175.34\ (K2) \\
 HI\ C8 &= 176.59 + 0 = 176.59 - 1.25 = 175.34\ (K3) \\
 HI\ C8 &= 176.59 - 3.16 = 173.43 - 1.25 = 172.18\ (J1) \\
 HI\ K1 &= 181.17 + 1.59 = 182.76 - .73 = 182.03 - 1.25 = 180.78\ (DH-6) \\
 HI\ K1 &= 182.76 - 1.00 = 181.76 - 1.25 = 180.51\ (DH-7) \\
 HI\ K1 &= 182.76 + 6.15 = 188.91 - 1.25 = 187.66\ (K4)
 \end{aligned}$$

$$187.66\ (DH-8)$$

$$K4 = 187.66 + 0$$

$$\begin{aligned}
 HI\ J1 &= 172.18 + 1.28 = 173.46 + 1.31 = 174.77 - 1.25 = 173.52\ (J2) \\
 HI\ J2 &= 173.52 + 1.62 = 175.14 + 0 = 175.14 - 1.25 = 173.89\ (roads\ intersect) \\
 HI\ J2 &= 175.14 + 0 = 175.14 - 1.25 = 173.89\ (1st\ bend) \\
 HI\ J2 &= 175.14 + 6.25 = 181.39 - 1.25 = 180.14\ (J3) \\
 HI\ J2 &= 175.14 + 6.25 = 181.39 - 1.25 = 174.68\ (J4) \\
 HI\ J3 &= 180.14 + 1.22 = 181.36 - 5.43 = 175.93 - 1.25 = 174.68\ (DH\ 83-R-40) \\
 HI\ J3 &= 181.36 - 0 = 179.74 - 1.62 = 179.74\ (DH\ 83-R-42) \\
 HI\ J4 &= 174.68 + 1.60 = 176.28 + 0 = 176.28 - 1.25 = 175.03\ (DH\ 83-R-42A) \\
 HI\ J4 &= 176.28 + 0 = 176.28 - 1.25 = 175.03\ (DH\ 83-R-41) \\
 HI\ J4 &= 176.28 + 0 = 176.28 - 1.25 = 175.03\ (DH\ 83-R-41) \\
 HI\ J4 &= 176.28 + 0 = 176.28 - 1.60 = 174.68\ (L) \\
 HI\ J4 &= 176.28 + 0 = 174.68\ (end)
 \end{aligned}$$

$$\begin{aligned}
 HI\ J3 &= 174.68 + 1.60 = 176.28 + 11.65 = 187.93 - 1.25 = 186.68\ (J5) \\
 HI\ J5 &= 186.68 + 1.30 = 187.98 + 5.05 = 193.03 - 1.25 = 191.78\ (J6) \\
 HI\ J6 &= 191.78 + 1.38 = 193.16 - 4.83 = 188.33 - 1.25 = 187.08\ (DH\ 83-R-37) \\
 HI\ J6 &= 193.16 - 4.83 = 188.33 - 1.25 = 187.08\ (DH\ 83-R-37) \\
 HI\ J6 &= 193.16 + 5.17 = 198.33 - 1.25 = 197.08\ (J7) \\
 HI\ J6 &= 193.16 + 5.17 = 198.33 - 2.89 = 195.44 - 1.25 = 194.29\ (DH-2) \\
 HI\ J7 &= 197.08 + 1.35 = 198.43 - 2.89 = 195.54 - 1.25 = 194.29\ (DH-1) \\
 HI\ J7 &= 198.43 - 2.89 = 195.54 - 1.25 = 194.29\ (end) \\
 HI\ J7 &= 198.43 - 2.86 = 195.57 - 1.25 = 194.32\ (end) \\
 HI\ J7 &= 198.43 + 11.91 = 210.34 - 1.25 = 209.09\ (J9) \\
 HI\ J9 &= 209.09 + 1.18 = 210.27 - 3.41 = 206.86 - 1.25 = 205.61\ (J8) \\
 HI\ J8 &= 205.61 + 1.46 = 207.07 - .63 = 206.44 - 1.25 = 205.19\ (J10) \\
 HI\ J8 &= 207.07 + 10.49 = 217.56 - 1.25 = 216.31\ (J16) \\
 HI\ J8 &= 210.27 + 4.84 = 215.11 - 1.25 = 213.86\ (J12) \\
 HI\ J9 &= 213.86 + 1.30 = 215.16 + 2.33 = 217.49 - 1.25 = 216.24\ (J13) \\
 HI\ J12 &= 213.86 + 1.30 = 215.16 + 2.33 = 221.46 - 1.25 = 220.21\ (J14) \\
 HI\ J13 &= 216.24 + 1.40 = 217.64 + 3.82 = 221.46 - 1.25 = 217.85\ (J15) \\
 HI\ J14 &= 220.21 + 1.35 = 221.56 - 2.46 = 219.10 - 1.25 = 217.85\ (J15) \\
 HI\ J10 &= 205.19 + 1.51 = 206.70 - 2.30 = 204.40 - 1.25 = 203.15\ (J11) \\
 HI\ J10 &= 205.19 + 1.51 = 206.70 - 2.30 = 203.15\ (end)
 \end{aligned}$$

$$\begin{aligned}
 HI\ J16 &= 216.31 + 1.36 = 217.67 + 0 = 217.67 - 1.25 = 216.42\ (DH\ 85-3) \\
 HI\ J16 &= 217.67 - .24 = 217.43 - 1.25 = 216.18\ (J17) \\
 HI\ J17 &= 216.18 + 1.55 = 217.73 - 1.31 = 216.42 - 1.25 = 215.17\ (DH-5) \\
 HI\ J17 &= 217.73 - .42 = 217.31 - 1.25 = 216.06\ (J18) \\
 HI\ J18 &= 216.06 + 1.44 = 217.50 - .11 = 217.39 - 1.25 = 216.14\ (J19) \\
 HI\ J18 &= 217.50 + 7.32 = 224.82 - 1.25 = 223.57\ (J21) \\
 HI\ J21 &= 223.57 + 1.56 = 225.13 + 10.05 = 235.18 - 1.25 = 233.93\ (J22) \\
 HI\ J22 &= 233.93 + 1.35 = 235.28 + 3.16 = 238.44 - 1.25 = 237.19\ (J23) \\
 HI\ J22 &= 233.93 + 1.35 = 235.28 + 3.16 = 235.19\ (end) \\
 HI\ J19 &= 216.14 + 1.64 = 217.78 + 1.55 = 219.33 - 1.25 = 218.08\ (J20) \\
 HI\ J19 &= 217.78 + 1.55 = 219.33 - 1.25 = 218.08\ (end)
 \end{aligned}$$