

83-#692 - 11657

GEOLOGICAL and DRILLING
ASSESSMENT REPORT ON THE 9/84
W.C. CLAIMS
FOR
STACKPOOL RESOURCES LTD.
92G/11E
49° 37' N 123° 01' W.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,657

W. G. Timmins Exploration & Development Ltd.

CONSULTING GEOLOGISTS

#203 - 4 PARKDALE CRES. N.W.
CALGARY, ALBERTA T2N 3T8
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December 7, 1983

Office of the Chief Gold Commissioner
Ministry of Energy, Mines, and
Petroleum Resources
Douglas Building
Victoria, B.C.
V8V 1X4

Dear Sirs:

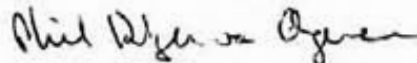
Re: Stackpool Resources Ltd.
Assessment Report - W.C. Claims

Please accept the enclosed Assessment Report on behalf of Stackpool Resources Ltd. The work described in this report was filed for assessment credit by Mr. P.D. Van Angeren on behalf of Stackpool Resources Ltd.

I would appreciate it if you would contact me or Mr. Jim Brady to confirm your receipt of this report, and to discuss any further requirements you may have.

I ask that the contents of the report be kept confidential.

Sincerely yours,



P.D. Van Angeren, Geologist

W.G. Timmins Exploration
& Development Ltd.

/bk

Contact: P.D. Van Angeren
403-270-3021 (Calgary)
or: Jim Brady
604-681-9507 (Vancouver)

ASSESSMENT REPORT ON THE

W.C. CLAIMS

GEOLOGICAL AND DRILL REPORT

SQUAMISH, B.C.

VANCOUVER MINING DIVISION

LATITUDE $49^{\circ} 37'N$; LONGITUDE $123^{\circ} 01'W$

FOR

STACKPOOL RESOURCES LTD.

December 5, 1983

P.D. Van Angeren, Geologist
W.G. Timmins Exploration
& Development Ltd.

TABLE OF CONTENTS

	PAGE NO.
SUMMARY	
Introduction	1
Property Location Map - Figure 1	2
Location, Access and Physiography	3
Exploration History	4
Geology	6
Mineralization	12
Drill Report	16
Conclusions and Recommendations	18
Cost Statement	20
D.W. Coates Invoices	23
Certificate - P.D. Van Angeren	26
- Frank B. Gigliotti	27
References	28
APPENDIX I - Descriptive Core Log	
MAPS - W.C. Claims, Howe Sound Project (map pocket)	
- W.C. Claims, Geology, D.D.H. (map pocket)	

SUMMARY

This report describes the geological investigation and the drilling results from the exploration programme carried out on the W.C. claims held by Stackpool Resources Ltd., in the Squamish, B.C. area from July to September, 1983.

The W.C. 1 to 4 claims, located at the headwaters of the Indian River, were investigated by W.G. Timmins Exploration & Development Ltd., and drilled by D.W. Coates Enterprises Ltd. for Stackpool Resources Ltd.

The geology of the property consists of a roof pendant of Gambier Group dacite tuffs of lower Cretaceous Age. The tuffs enclose part of a rhyolite volcanic dome, host to numerous quartz-chalcopyrite veins. Sphalerite and galena also occur locally as impregnations in the rhyolite.

The diamond drill hole was drilled with the intention of hitting down-dip projections of mineralization outcropping in the center of the property. This attempt was unsuccessful, as the hole had to be abandoned due to difficulties in drilling through progressively more shattered rock.

Geological studies show the area to bear resemblances to the Kuroko area of Japan. It is concluded that the property has very good potential for both buried volcanogenic massive sulphide and base-precious metal quartz-vein mineralization.

December 5, 1983

INTRODUCTION

W.G. Timmins Exploration & Development Ltd. carried out mineral exploration for Stackpool Resources Ltd. on the W.C. claims held by Stackpool in the Squamish, B.C. area during July, August and September, 1983 (figure 1).

Simultaneously, D.W. Coates Enterprises Ltd. of Richmond, B.C. was contracted by Stackpool to drill one diamond drill hole on the property.

This report discusses the results of these exploration programmes.

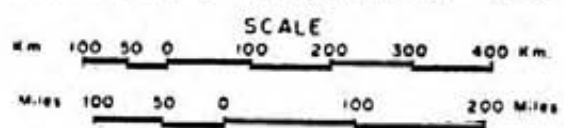
The following mineral claims owned by Stackpool Resources Ltd. were studied by the exploration crew:

Name	Number of Units	Record No.	Anniversary Date
W.C.	4	25054 to 25057	September 9



STACKPOOL RESOURCES LTD.

PROPERTY LOCATION MAP



LOCATION, ACCESS AND PHYSIOGRAPHY

The W.C. claims are situated near the headwaters of Indian River in NTS map sheet 92G/11E at longitude $123^{\circ} 01'W$ and latitude $49^{\circ} 37.5'N$ in the Vancouver Mining Division (figure 2). This is 38 kilometres north of Vancouver and 12 kilometres southeast of Squamish.

Access to the claims is by logging road from Squamish along the Stawamus River and Indian River valleys. The road network extends into the claim group.

The topography is steep and mountainous with local relief in the order of 500 metres. The claims are on a steep northeast facing slope which has been partially logged. The western half of the property is covered with douglas fir, cedar and hemlock, whereas the logged portion is covered with thickets of blueberry, devil's club and slide willow making foot progress slow and difficult. The logging road provides good access to all parts of the claims as well as providing excellent outcrop exposure.

EXPLORATION HISTORY

The history of the area dates back to 1898 when Oliver Furry and associates discovered and staked extensive copper showings, later becoming the Britannia mining camp which operated from 1905 to 1974 (Timmins and Sivertz 1983).

This discovery resulted in a flurry of exploration activity in the Howe Sound region in the early 1900's. By the end of 1911 numerous copper showings (including the W.C. showings) were found in the Indian River and Stawamus River valleys and at the head waters of Raffuse Creek (Mt. Baldwin). Most of these were held by the Howe Sound Company, which also controlled the Britannia mine, but in time most of these showings were optioned off to various companies.

Presently, Kidd Creek Mines Ltd. is holder of the McVicar showings at the headwaters of Raffuse Creek, whereas Anaconda Mines Ltd. and Falconbridge Copper Ltd. hold the Britannia mine and the Indian River showings respectively. Maggie Mines Ltd. is owner of base and precious metal showings on the Stawamus River-Indian River divide, approximately 2 kilometres northwest of the W.C. claims.

Exploration was carried out sporadically in the area from the 1920's to the mid 70's. Interest was renewed in the mid 70's and early 80's due to the increase in the price of gold and to the discovery of precious metals by Northair Mines in the Whistler area (mid 70's) and by Maggie Mines Ltd. discovery of gold in 1982. Both discoveries occur in rocks similar to those found in the Britannia area.

Stackpool staked in excess of 900 claim units in the Stawamus-Mamquam River area in 1981, to surround the ground held by Maggie Mines and Kidd Creek Mines. The W.C. claims were acquired at that time. An airborne geophysical survey was completed over most of Stackpools claims in 1982.

The amount and type of work conducted on the W.C. claims prior to 1982 is unknown, although an attempt to drill the copper showings has been made as indicated by the remains of core boxes, piping and a drill platform still present on the property.

In 1982, the claims were surveyed geologically and geochemically by W.G. Timmins Exploration & Development Ltd. (Timmins and Sivertz, 1983).

In 1983 a single diamond drill hole was drilled towards

the center of the property in an attempt to determine the down-dip extent of the known surface mineralization and to correlate hole stratigraphy with surface geology.

GEOLOGY

The Britannia-Squamish area is underlain by three main geological units: (from Roddick et al 1974).

- i) Roof pendants of metavolcanic and metasedimentary rocks belonging to the Gambier Group of upper Jurassic to lower Cretaceous age;
- ii) Granitic rocks of the Coast Plutonic Complex of upper Cretaceous Age;
- iii) Dikes and lavas of Tertiary to Recent Age belonging to the Caribaldi Group.

On a regional scale, the rocks of the Gambier Group consist mainly of andesitic tuff, flows and sills enclosing large areas of rhyolitic tuff and flows; representative of felsic domes associated with volcanic centers. Graphitic mudstones and impure siltstones form an important subdivision of the group.

Chlorite and sericite schists are a significant subdivision of the group as well, since most of the roof pendants

represent the remains of anticlinal structures along the axial planes of which major shear zones have developed. The Britannia and Raffuse Creek areas are underlain by such schists.

Some of these shears extend into the enclosing granitic rocks, which vary from hornblende quartz-diorite to biotite granodiorite. The intrusive rocks have little variation in texture and composition throughout the Howe Sound region.

The Tertiary rocks cut all other units and occur mostly as dikes and flows ranging in composition from basalt to dacite. The dikes are widespread, but are narrow, steep dipping, and of limited lateral extent.

Mapping in 1982 and 1983 has shown that the W.C. claims cover part of a 350 metre wide, northwest trending pendant of felsic volcanic rocks bound to the southwest and northeast by quartz-diorite (figure 3). It should be emphasized that the intrusive rocks to the northeast form a narrow sliver, which may be in fault contact with the volcanic rocks.

The volcanic rocks consist mainly of various phases of felsic extrusives; mainly dacites, which have undergone thermal metamorphism to variable degrees.

The main lithological units, visible both on the surface and in the core, consist of massive porphyritic, tuff and weakly bedded, lapilli to blocky tuff and debris flows. All units have bedding attitudes which strike northwesterly and dip moderately to the southwest.

The most common unit is a grey-green and massive porphyry (unit Rfp) which is interpreted to be a series of andesitic to dacitic crystal tuffs, on the basis of weak wispy bedding, thinness of bedding, broken feldspar crystals and rounded (abrated) quartz phenocrysts. Unit Rfp is particularly well preserved and fresh looking in the southern corner of the claim (W.C. 1) whereas it is progressively more strongly metamorphosed towards the northern side of the claim. In W.C. 4 it still retains its porphyritic appearance despite being metamorphosed to a crystalline, cordierite bearing hornfels. In W.C. 3, metamorphism is most intense and primary textures are mostly destroyed. In this area, the rock has a pebbly appearance with cordierite forming rounded porphyroblasts to 2 cm in size in a biotite-magnetite rich cherty matrix (unit Qer) (Petrographic studies indicate this rock to

be a dacite porphyry).

From this distribution of metamorphic textures, it is concluded that the heat source was located towards the northwestern corner of W.C. 3.

The other rock types of importance on the claim group are cherty, rhyolitic lapilli and blocky tuffs (unit Rlt) and massive to brecciated rhyolite flows, flow breccias and intrusives (unit R).

These two units occur as a belt, parallel to bedding, through the center of the claims. This belt varies from 150[±] metres thick in the northwest to 50 metres thick in the southeast. Unit Rlt also occurs as thin beds within unit Rfp in the southern part of the claims.

Unit R is white massive, siliceous, and weakly porphyritic in the northwest (intrusive?) but has a brecciated/blocky appearance (debris flow/talus apron?) towards the southeast. It eventually thins out to a more cherty, flow banded rhyolite. The unit is enclosed in unit Rfp throughout the property except in the southeastern corner where it is enclosed in unit Rlt. The relationship with the lapilli/blocky tuffs is unclear (gradational/interbedded) but

contacts are clear and sharp with units Rfp and Qer.

Unit Rlt is a grey-white weakly bedded, cherty rhyolite with upwards to 70% lapilli to metre sized rock fragments, themselves consisting of chert, tuff and lapilli tuff.

On the basis of distribution, textures and composition, it is concluded that unit R is part of a felsic dome, the northwest part being closest to the core, the central portion being the brecciated-talus part of the dome and the southeastern end being the dome edge, an area of coarse pyroclastic deposits. This dome rests upon older, volcanic rocks which were metamorphosed during its emplacement.

This interpretation would place the center of extrusion in the northwestern corner of the claim group (W.C. 3), and would place the younger strata above (upslope from) unit R.

All rock units have undergone a certain degree of pervasive silicification (development of sugary quartz in matrix) and biotite has developed throughout. This hornfels development was caused during the intrusion of the quartz-diorite. Post Gambier and Tertiary Garibaldi group

basaltic to dacitic dikes have pervaded the area. Faulting and fracturing is intense throughout; a result of both the nature of the rhyolites and the emplacement of the quartz-diorite. However, regional shearing has had no effect on the rocks.

Alteration assemblages have been mostly masked by thermal metamorphism. This is particularly true of units Rfp and Qer which outcrop below unit R. Unit Rfp above unit R has undergone weak propylitic alteration, with chlorite and epidote weakly developed in phenocrysts. Unit R itself has undergone strong sericite and quartz alteration, which has obliterated many of the primary textures. Silicification (the rock has a cherty appearance) is prominent in W.C. 3 whereas sericitization is evident in W.C. 1.

Unit Qer was probably strongly altered (chloritized and sericitized) prior to being thermally metamorphosed. The original rock must have been rich in quartz, chlorite and sericite to explain the presence of such a high concentration of cordierite (up to 40%) as found in this unit.

MINERALIZATION

The Gambier group is a proven base and precious metal producer which includes the Britannia and Northair mines. Britannia produced 55 million tons of ore grading 1.1% copper, 0.65% zinc, 0.2 oz/t silver and 0.02 oz/t gold from a large number of separate ore bodies within sheared dacite pyroclastics (Timmins and Sivertz, 1983). The ores are thought to be of a volcanogenic exhalative origin (Payne 1980).

The Northair mine produced approximately 100,000 tons of ore a year between 1976 and 1982 with total production of 150,000 oz. of gold, 800,000 oz. silver, 12 million pounds zinc and 9 million pounds lead, from base metal quartz-calcite veins (Timmins 1983).

Numerous base and precious metal showings occur in Gambier group rocks in the vicinity of the W.C. claims, most notably the McVicar Crown grants of Kidd Creek Mines which consist of lenses, veins and stockworks of sulphides in rhyodacite rocks. Maggie Mines has reported interesting gold values from its base metal vein a few kilometres north of W.C. (Timmins and Sivertz, 1983).

Copper and copper-zinc mineralization was discovered on the W.C. claims prior to 1910. Ten showings with copper or zinc values in excess of 0.5% are known to date (figure 3).

The mineralization occurs in three modes:

i) Discontinuous layers to 2 metres thick of coarsely crystalline to mainly disseminated pyrite and chalcopyrite which occur at the contact between unit R and a few basaltic dikes. The mineralization is within unit R and has quartz, limonite and sericite as gangue. Average grades are 3 to 4% copper and 0.5 to 3.0 oz/t silver.

ii) Veins and layers of coarsely crystalline quartz-chalcopyrite with minor pyrite, parallel to bedding within unit R. These are similar in grades to mode i) but they are rarely more than 0.5 metres in thickness.

iii) Disseminated sphalerite and galena with traces of chalcopyrite, pyrite in cherty to sericitized breccias of unit R. Zinc and lead values grade to 3% and 1% respectively with minor copper and silver.

Pyrite occurs sporadically as disseminations throughout most of the claim group, particularly along fault zones

and in unit Qer.

The best exposed showings occur in a creek at the very center of the property. Here, mineralized horizons have a strike length of 50 metres whereas other horizons appear to be discontinuous along strike; old open-cuts testify to the attempts made by previous operators to establish continuity.

In order to better direct further exploration an attempt has been made to determine the nature of the mineralization. The question remains whether the mineralization is syngenetic (volcanogenic) or epigenetic (epithermal).

Mode i) mineralization is associated with a 0.3 metre thick diabase dike, subparallel to bedding and traceable from the center to the northwestern extremity of the property. Other similar dikes in the vicinity are devoid of mineralization. It is believed mode i) sulphides were redistributed by the dike after it had intruded through pre-existing sulphide mineralization or that the dike has intruded along a mineralized horizon.

Mode ii) mineralization also appears to be mainly of an epigenetic nature. The showings of this type are similar

to the quartz-chalcopyrite veins associated with the Britannia ores in that they are small, high grade, contain no pyrite, and that the chalcopyrite occurs as disseminations and massive veins crosscutting the quartz vein but restricted to it (Payne 1980).

Mode iii) sulphide showings appear to represent rhyolite extrusives impregnated with sphalerite and galena; basically of syngenetic origin.

Interestingly enough, the copper rich mineralization is concentrated in the 'core' section of unit R whereas the zinc-lead rich rocks occur at the southeastern end of the same unit (in W.C. 1).

From the present information it appears that the mineralization outcropping on the W.C. claims represent remobilized sulphides. The nature of the source of these sulphides remains highly speculative but in light of the observations to date, a buried massive sulphide body would seem to be a likely candidate.

Remobilization may have been caused by thermal activity soon after deposition of the volcanic rocks or during the emplacement of the various phases of post Gambier intrusive rocks.

DRILL REPORT

D.W. Coates Enterprises Ltd. of Richmond, B.C. was contracted by Stackpool to drill a deep, NQ sized diamond drill hole on the property (DDH WCD 83-01). A Longyear 44 unit was used and the hole was collared near the end of a logging road on the W.C. 1 claim (figure 3). The drilling was carried out from August 13th to September 9th, 1983.

The intention was to drill from the Gambier Group/quartz-diorite contact towards the down-dip projection of the main showings outcropping in the center of the property. Simultaneously, a stratigraphic section of the Gambier group would have been obtained.

The particulars pertaining to the hole attitude and description core log are shown in Appendix I.

The hole was drilled to a depth of 1156 feet at which time it was abandoned due to difficulties in drilling (loss of water circulation). It appears the rock is highly shattered even at depth. Quartz-diorite was observed to a depth of 740 feet, after which a series of dacitic tuffs and rhyolite lapilli tuffs were encountered. The hole ended in a quartz-diorite dike.

Generally speaking, the subsurface stratigraphy is similar to that observed above units R and Rlt, on the surface, although thin horizons of unit Rlt are more common in the core than on surface. All the rocks were weakly hornfelsed.

The hole did not reach the horizons of interest, (unit R and mineralized veins) thus, no core samples were taken. These horizons were expected to be reached at depths in excess of 1500 feet.

CONCLUSIONS AND RECOMMENDATIONS

The W.C. claims are underlain by part of a mineralized felsic volcanic dome which is enclosed within dacite and andesite tuffs. The distribution of rock types and thermal metamorphic features points to the northwestern corner of the property as being the volcanic center.

The claims thus cover a geological environment similar to that of Kuroko, Japan where sulphide ore bodies occur adjacent to felsic domes (Timmins 1983).

Unit Qer, (which may represent a strongly metamorphosed alteration pipe) and the presence of remobilized sulphides in both this unit and unit R (rhyolite dome), strongly support the theory that volcanogenic sulphide ore bodies may be found at depth on the property. Conversely, the sulphide veins may have developed to such a stage as to contain economically significant concentrations of copper, lead, zinc, silver and gold, such as on the Maggie Mines property.

An attempt to drill a deep hole on the property was unsuccessful. The shattered nature of the rock forced abandonment of the hole, 300 feet above the targeted down-

dip projection of the surface mineralization.

One explanation for this may be that the hole was drilled along a minor fault zone.

Recommendations at this time include drilling of the major showings with a portable drill such as a Winkie drill. Short vertical holes, to 100 m in depth, should be drilled in order to determine the down-dip extent of the showings with intent to locate the potential source sulphide body.

Simultaneously, rock lithogeochemistry should be attempted from the northwestern to the southeastern corners of the claims, in order to determine potential mineralized halos. Research is being completed on refining the efficiency of such an exploration approach.

As well, a more detailed grid controlled mapping survey should be attempted as volcanic stratigraphy is a vital facet in exploration for volcanogenic massive sulphides. Alteration assemblages are most important with respect to vein mineralization.

Finally, the feasibility of magnetometer and VLF-EM surveys should be tested.

COST STATEMENT

This certifies that I, Philip D. Van Angeren, geologist for W.G. Timmins Exploration & Development Ltd., have caused to be carried out geological exploration and drilling on the W.C. claims from July 5 to September 8, 1983, to the value of the following:

GEOLOGICAL

Labour - 53 man days (7.5 days)

G. Sivertz - Geologist	3 days @ \$150/day	\$	450.00
P. Van Angeren - Geol.	12 days @ \$125/day		1,500.00
W. Kiesman - Geol.	13 days @ \$120/day		1,560.00
A. Weston - Geol.	5 days @ \$120/day		600.00
J. Anderson - Asst.	6 days @ \$100/day		600.00
F. Sivertz - Assistant	8 days @ \$100/day		800.00
W. Timmins, Jr. - Asst.	6 days @ \$100/day		600.00

53 man/days = 7.5 work days

A. Serra - Cook	7.5 days @ \$ 80/day		600.00
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60.5 man days

Labour Total 6,710.00

Camp Costs

Food 60.5 man days @ \$25/man day		1,512.50
Accommodation (\$800/month) \$26/day x 7.5 days		195.00
Rentals (truck \$1,000/month) \$32/day x 7.5 days		240.00
Supplies (fuel, drafting supplies, etc.)		<u>302.50</u>

Camp Costs Total 2,250.00

Total Geological Costs \$ 8,960.00

W. G. TIMMINS EXPLORATION & DEVELOPMENT LTD.

CONSULTING GEOLOGISTS

DRILLING EXPENSES

Labour

F. Gigliotti - Geologist 29 days
@ \$125/day \$ 3,625.00

Camp Costs

Food, Accommodation, etc. \$30/man day
x 29 days 870.00

Total Geologist Costs 4,495.00

D.W. Coates Costs

Costs - period Aug. 11 to 15, 1983
inclusive (as per invoices) 8,704.10

Costs - period Aug. 16 to 31, 1983
inclusive (as per invoices) 47,072.98

Costs - period Sept. 1 to 9, 1983
inclusive (approximate cost
breakdown) 30,439.73

Total Drilling Costs
- period Aug. 11 to
Sept. 9, 1983 \$ 86,216.81

TOTALS

Total Geological Costs	\$ 8,960.00
Total Drill Geologist Costs	4,495.00
Total Drilling Costs	<u>86,216.81</u>
Total Costs July 5 to Sept. 9, 1983	\$ <u>99,671.81</u>

Respectfully submitted,

Phil DeGruva Owen

P.D. Van Angeren, Geologist

W.G. Timmins Exploration

& Development Ltd.

December 5, 1983



D.W. COATES
ENTERPRISES LTD.
DIAMOND DRILLING CONTRACTORS

- 23 -

2560 A Simpson Road, Richmond, B.C. V6X 2
Phone: (604) 273-09
Telex No.: 04357E

Stackpool Resources Ltd.
Suite 980-789 W. Pender St.
Vancouver, B.C.
V6C 1H2

INVOICE NO.: 2532
JOB NO.: 521
DATE: August 22, 1983

E: Squamish, B.C. Drilling

RIOD: August 11 - 15, 1983

Drilling Detail	\$2,387.60
Mobilization	4,332.50
Reaming Casing	747.37
Drilling With Mud	216.63
Travel Time	345.00
Standby	<u>675.00</u>
	<u>\$8,704.10</u>



D.W. COATES
ENTERPRISES LTD.
 DIAMOND DRILLING CONTRACTORS

Stackpool Resources Ltd.,
 Suite 880 - 789 West Pender Street,
 Vancouver, B.C.
 V6C 1H2

INVOICE NO.: 2540
 JOB NO.: 521
 DATE: Sept. 12/83

Squamish, B.C. Drilling

PERIOD: August 16-31, 1983

Drilling Detail	\$15,924.40
Hole Stabilizing	16,331.63
Drilling With Mud	5,604.50
Travel Time	2,328.75
Standby	562.10
Water Supply	3,625.00
Moving Between Holes	460.00
Testing	234.60
Special Trip	973.39
Core Boxes	<u>1,028.61</u>
TOTAL	<u>\$47,072.98</u>



D.W. COATES
ENTERPRISES LTD.
 DIAMOND DRILLING CONTRACTORS

Stackpool Resources Ltd.,
 Suite 880 - 789 West Pender Street,
 Vancouver, B.C.
 V6C 1H2

INVOICE NO.: 2551
 JOB NO.: 521
 DATE: Sept. 28/83

Squamish, B.C. Drilling

PERIOD: September 1 - 15, 1983

Drilling Detail	\$ 8,212.6
Reaming Casing and Hole Stabilizing	30,257.3
Moving Between Holes	776.2
Water Supply	3,950.6
Drilling With Mud	3,301.7
Travel Time	<u>2,328.7</u>
TOTAL	<u>\$48,827.3</u>

Actual costs incurred for period Sept. 1 to
 Sept. 9 inclusive

\$30,439.7

CERTIFICATE

I, PHILIP D. VAN ANGEREN residing at 1904, 840 - 9 St. S.W., Calgary, Alberta do hereby certify that:

1. I am a geologist having been practising my profession for seven years.
2. I am a graduate of McGill University, Montreal, P.Q., having received an honours B.Sc. degree in Geology in 1977.
3. I have no interest direct or indirect in the property or securities of Stackpool Resources Ltd., nor do I expect to receive any such interest.
4. I am the author of this report which is based on personal knowledge of the area gained during an exploration program supervised by W.G. Timmins and conducted by myself and a field crew between July 5 and October 4, 1983.

Dated at Calgary, Alberta this 5th day of December, 1983:

Phil D. Van Angeren

P.D. Van Angeren, Geologist
W.G. Timmins Exploration
& Development Ltd.

W. G. TIMMINS EXPLORATION & DEVELOPMENT LTD.

CONSULTING GEOLOGISTS

CERTIFICATION

I, Frank B. Gigliotti, residing at 329 - 8451 Westminster Highway, Richmond, B.C., do hereby certify that:

1. I am a geologist having been practising my profession for 8 years.
2. I am a graduate of the University of British Columbia in Vancouver, B.C. having received a BSc. degree in geology in 1975.
3. I am a registered member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
4. I have no interest, direct or indirect, in the properties or securities of Stackpool Resources Ltd. nor do I expect to receive any such interest.
5. I have examined and produced a descriptive log for drill hole WCD-8301 which is included in this report.



Frank B. Gigliotti, P.Geol.
December 5, 1983

REFERENCES

PAYNE, J.T., BRATT, J.A., AND STONE, B.G., 1980, Deformed Mesozoic Cu-Zn Sulfides in the Britannia District, B.C., in Economic Geology, Vol. 75, pp. 700-721.

RODDICK, J.A., WOODSWORTH, G.J., HUTCHISON, W.S., 1974, Geology of Vancouver West Half, G.S.C. Open File 611 (map).

TIMMINS, W.G., AND SIVERTZ, G.W.G., 1983, Geological, Geochemical and Ground Geophysical Exploration Programme, Squamish, B.C. Claims, Report for Stackpool Resources Ltd., February, 1983.

TIMMINS, W.G., 1983, Report on the Kuroko Project, Whistler, B.C. Area, Report for Stackpool Resources Ltd., March 9, 1983.

APPENDIX I

DIAMOND DRILL HOLE WCD-8301

DESCRIPTIVE CORE LOG

Collar Location: 5496600 N
498850 E

Elevation: 1036 m.

Azimuth: 020°

Dip: -61.5°

Dowhill Dips (Acid Etch):	496'	-68.0°
	556'	-66.0°
	696'	-67.0°
	895'	-67.5°

Drilling Started: August 13, 1983
Completed: September 9, 1983

Logging Started: August 14, 1983
Completed: September 9, 1983

Contractor: D.W. Coates Enterprises Ltd.

Logged By: F.B. Gigliotti

All measured depths are in feet, recovery calculated as percent.

W. G. TIMMINS EXPLORATION & DEVELOPMENT LTD.
CONSULTING GEOLOGISTS

FROM	TO	THICK	DESCRIPTION	REC
0.00	26.00	26.00	Casing	
26.00	54.58	28.58	Quartz Diorite Broken in places, some alteration with kspr and epidote, occasional mafic rich, fine grained xenoliths (few cm in diameter).	61
54.58	86.00	31.42	Quartz Diorite Very broken, occ mafic rich xenoliths as above, fractured and sheared with kspr, chlorite and epidote, fracture to core angle @ base: 10 deg. (Fe stain on frags @ base of unit), frags of fspr-hblnd dyke and altered (ep, chlor) tuff in middle of unit.	55
86.00	93.30	7.30	Quartz Diorite Very broken, fractured and sheared; qtz and fspr frac filling; frags parallel and perpendicular to core axis; shear to core angle: 30 deg.	65
93.30	110.39	17.09	Quartz Diorite Occasional fractures, frequent shears at angles of 10, 30, 50, 55 and 70 deg to core; some frags contain epidote and kspr, some contain biotite; epidote is also present on shear surfaces.	100
110.39	113.30	2.91	Quartz Diorite Fractured and sheared @ 5 and 45 deg to core axis; epidote, biotite, kspr assoc. with frags & shears; some mafic rich xenoliths as before; core broken in places towards base of unit.	100
113.30	114.47	1.17	Quartz Diorite Mafics altered to chlorite; fractured @ 30-35 deg to core axis; frags filled with kspr, some with abundant chlorite.	100
114.47	116.89	2.42	Quartz Diorite Fractured and broken; FCA(fracture to core axis angle) = 20-30 contain minor yellow epidote; FCA = 60-80 are sheared with associated epidote.	100

FROM	TO	THICK	DESCRIPTION	REC
116.89	126.72	9.83	Quartz Diorite Core rel solid; mafics altered to chlorite over most of section; sheared @ FCA 10-20,35; shears contain assoc calcite and are assoc with some kspr alteration; some Fe staining; fracture density: 3-4 per meter; core very broken @ base.	100
126.72	129.97	3.25	Quartz Diorite FCA=30,45, sheared surfaces with abundant epidote and dolomite?; alteration of fspr to kspr, mafics somewhat altered to chlorite @ base.	94
127.97	131.97	4.00	Quartz Diorite Sheared with epidote and kspar alt, FCA=25-35,60; foliations of very fine grained clay? minerals, mostly associated with mafics.	89
131.97	133.72	1.75	Quartz Diorite FCA=80,30; sheared with some epidote and Fe stain; mafics are somewhat altered to chlorite, feldspars show some k-feldspathization; fracture density is 4 per meter; core very broken @ base of unit.	86
133.72	142.43	8.71	Quartz Diorite Solid core, rel unalt except at frags; FCA=55,10,30(near top); sheared with assoc epidote, calcite, Fe oxide; frac density is 2-4 per meter; alteration extends 2-3 cm into Q. Diorite from some frags; some small ((1-20 sq.cm) mafic rich, fg. xenoliths.	100
142.43	150.26	7.83	Quartz Diorite As above; frac dens = 4 per meter; Very broken area near top assoc with fractured zone @ FCA=0-10 deg, sheared with some epidote and brassy biotite.	100
150.26	153.29	3.03	Quartz Diorite Solid core; frac @ FCA= 25,35; alt as above, fspr somewhat alt to epidote.	100
153.29	158.21	4.92	Fspr-Hblld Ppy Dyke Plag phenos to 1cm, hblde phenos to 1mm in green andesite matrix; fspr part alt to ep;qtz(.5cm), calct, dolomite? cavity fill; calct filled micro frags(fspr phenos alt where cut);ep laths to 1cm (2ndary);abnd calct on frags,FCA=40-55;upr cont 40 deg to core, lwr 20-25, rel sharp, flow bnd, Q.D. alt.	100

FROM	TO	THICK	DESCRIPTION	REC
158.21	159.96	1.75	Quartz Diorite Rel unalt; FCA 30,45 sheared with alt as before; Two frags of xtalline calct attached to andesite are out of place but are prob assoc with the dyke above this unit.	100
159.96	194.63	34.67	Quartz Diorite As above, rel unalt unit; shears, frags (occ hkly), assoc with calct, Fe oxide, biot, ep; some fspr alt to ep; frac dens up to 8 per m.; FCA=10-75 (10-20 and 50-60 common); frac in mid of unit with Fe on grey gouge (FCA=58); sml xeno nr base; some bkn core.	100
194.63	214.55	19.92	Quartz Diorite Broken core throughout; very frac and sheared; FCA= 20,70 common, some frags hackly; fspr somewhat alt to kspr, ep; mafics alt to chlorite in places; calct, dolo?, ep, some Fe ox. in frags; frac dens 5/m @ top; occ fg. xenoliths as before.	99
214.55	215.32	0.77	Fspr-Hbd ppy And Dyk As before (153.29-158.21); contacts and one fracture @ 60 deg to core; another frac @ 20 deg with calct; several calct filled microfracs.	100
215.32	230.41	15.09	Quartz Diorite As before, frac and sheared; alteration products as above; FCA 20-40, 60-65; core bkn in places; frac dens >6/m near base of unit.	
230.41	230.95	0.54	Fspr-Hld And Dyke As before, grn andesite; phenos alt to epidote, some fspr alt to kspr; some calct in frags, hematite with fspr phenos and microfracs; FCA 5,55; contact @ 70 deg to core; upper contact has a 3mm pink kspr band between dyke and rel unalt Q. diorite above.	100
230.95	305.33	74.38	Quartz Diorite As before; FCA 0-25, 45-70 most common, dens up to 10/m, commonly 4-6/m, frags sub li core usually not sheared; ep, dolo?, Fe, calct, chlor assoc w. frac, shr; some fspr alt to ep, some mafic alt to ep, sericite, chlor esp nr base; minor py @ 258.5; some fg. xenos.	100
305.33	316.28	10.95	Andesite Dyke Fspr, hld ppy as before; fspr laths alt to epidote, kspr and calcite; laths oriented @ 90 deg to core at base of unit; basal contact irregular @ 80-90 deg to core axis; FCA 30 with calct at top of unit.	100

FROM	TO	THICK	DESCRIPTION	REC
316.28	360.45	44.17	Quartz Diorite As before; some bkn core esp in upper part of unit; frac, shear; FCA mostly in the 25 and 65 ranges; calc and chlor (in gouge) in fracs; frac dens 2-5/m; some alt of fspr to kspr, ep; alt of mafics to chlorite, occ fine grained xenoliths (Q. or granodiorite?).	100
360.45	370.49	10.04	Quartz Diorite Core solid; occ fracs FCA 62 accompanied by shears. alteration of mafics to chlorite, alteration of fspr to kspr and epidote, minor pyrite and calcite frac dens 2/m	100
370.49	400.08	29.59	Quartz Diorite As above, somewhat bkn near top; FCA 20, 70 common (20 deg fracs tend to be sheared); fracs assoc with calct, ep, dolo?; frac dens 2-3/m @ top, greater near base; occ fg. xenoliths near top.	100
400.08	425.73	25.65	Quartz Diorite Core solid; rare pyrite at top; biotite (secondary?) on fracs in middle of unit (FCA 20); FCA 20-25, 60-75 frac dens 2-4/m; occ fg. xenos at base.	100
425.73	435.98	10.25	Quartz Diorite As above; broken in upper half; frac, FCA 0, 20-35, 45, 65; fracs with assoc chlor, ep, kspr, biotite, minor py alt of mafics to chlorite at top.	100
435.98	445.98	10.00	Quartz Diorite FCA 65-70; core very bkn w. abndt. shears and chlor near top; ep, calct assoc w. shears; mafics alt to chlorite to some degree throughout; frequent xenos of fg. quartz diorite (as before) throughout.	100
445.98	471.68	25.70	Quartz Diorite As above, core somewhat bkn near base; frac FCA 10, 60-90, dens 2-4/m; pervasive alt of mafics to chlor; fspr slightly altered in lower part (creamy color) fracs @ low FCA tend to be hackly, those @ higher FCA tend to be sheared; fg. xenos up to few cm dia.	100
471.68	485.05	14.17	Quartz Diorite Mafics alt to chlorite; fspr alt to kspr, epidote in upper part of unit; epidote veins (1-2mm wide @ FCA 35, fspr adjacent to these alt to ep, kspr; occ fg. dioritic xenoliths; frac at FCA 15, 35, 45, 50.	100

FROM	TO	THICK	DESCRIPTION	REC
485.85	498.56	4.71	Quartz Diorite Mafics almost completely alt to chlorite;fspr is pinkish and yellowish (some alt to kspr,ep);some Fe stain on frags @ base;occ dioritic, fg. xenos up to 10cm across.	100
498.56	505.94	15.38	Quartz Diorite Frac,sheared,FCA 28,45,60,dens 5-8/m;biotite on some frags (prob. secondary);epidote altn assoc w. frags;mafics partially altered to chlorite;occ fg. xenos up to 4cm across.	100
505.94	508.98	3.04	Quartz Diorite Core solid;FCA 30;speck of MALACHITE on hackly fracture in middle;biotite (secondary) on same surface;chlorite alteration of mafics throughout.	100
508.98	515.81	6.83	Quartz Diorite Solid,rel unalt except for slight,pervasive mafic alt to chlorite;fsprs show some alt to epidote in sheared area near base;occ fg. xenos...one, near top,is 5x10 cm and porphyritic with fspr? porphroblasts containing euhedral hblnd and pyrite specs.	100
515.81	527.69	11.88	Quartz Diorite Solid core;FCA 15,70;crystalline epidote in 1-2mm vein near middle of unit(FCA 70);xenos as above, some ppy;hblnd alt to biotite;fspr rel unalt,cream colour common;calcite and some epidote on shears.	100
527.69	555.93	28.24	Quartz Diorite Core rel solid,some bkn;fg. dioritic phenos,some ppy;frac,sheared,FCA 10,25,70,80;calct,biot,on frags;some ep and minor chlor alt;frac dens up to 8/m.	100
555.93	564.93	9.00	Quartz Diorite As above;mafic alt to chlor,sericite;fspr partly alt to kspr at frags;calct,flaky biot,some ep @ frags;hint of shearing;FCA 28,70-75;dens 10/m.	100
564.93	583.39	18.46	Quartz Diorite Solid core,slightly bkn shear zone near base;rel unaltered unit;FCA 20,30,65;sheared;frac dens 9/m @ top,1-3/m in middle;frequent ppy dioritic xenos, 1-7 cm across in middle of unit;sheared near base with assoc calct and pyrite specs and blebs.	100

FROM	TO	THICK	DESCRIPTION	REC
583.39	583.93	0.54	Quartz Diorite Altered fracture zone; abndt pink kspr, black chlor, some calct; CHALCOPYRITE blebs disseminated near frac assoc with minor MALACHITE, (poss py+cpy); abndt sericite scattered throughout;	100
583.93	586.01	2.08	Quartz Diorite Relatively unaltered core.	100
586.01	595.84	9.83	Quartz Diorite As above but altered at fractures with epidote, chlorite and disseminated sulphides (py and poss CPY); ppy dioritic xenos common; dominant frags at FCA 20, 50.	100
595.84	602.65	6.81	Quartz Diorite Upper 1.5 m solid, rel unalt, 1 frac/m; lower part is frac and partly bkn w. ep, chlor, kspr alt @ shears, FCA 45, 55, dens 10/m in this lower part of unit.	100
602.65	606.07	3.42	Quartz Diorite Rel solid; fg. dioritic xeno near base; 4-5 frac/m, FCA 25, 52; shearing, chlor alt, some kspr alt.	100
606.07	615.53	9.46	Quartz Diorite As above, solid core; FCA 35, 75, density 1-2/m; hackly frags with abndt. biotite; some shearing.	100
615.53	620.03	4.50	Quartz Diorite FCA 50 dom, 78; dens 5/m, with assoc chlor, ep, calct, sericite; core highly bkn @ base with frags containing chlor, some CHALCOPYRITE and MALACHITE; mineralized frag also has qtz veins w. open spc fill (qtz xstls to 3-4mm in cavities), dissem py.	100
620.03	620.66	0.63	Quartz Diorite Highly bkn; rounded frags (partly by drill, some could be cave from hole or overburden); most frags rel unalt, mafics somewhat alt; siderite? on frags; one frag has epidote veins and (assoc?) abndt kspr; one rounded pebble (2x3cm) seems to be Gamb. tuff.	100

FROM	TO	THICK	DESCRIPTION	REC
620.66	621.49	0.83	Quartz Diorite Very broken.	100
621.49	628.24	6.75	Quartz Diorite Highly frac:8-10/m,FCA 40,70;sheared;mafics show chlorite alt;some epidote and kspr alt;chlorite, pyrite and CHALCOPYRITE in contact zone at base.	100
628.24	629.87	1.63	Feldspar Porphyry Rounded to ang. fspr phenos in predom green matrix colour banding at both contacts,flow banding at top;contacts are chilled (phenos very small here); max pheno size in dyke is 3-5mm across;freq. calct filled fracs;upper contact to core=53 deg,lower=60	100
629.87	637.25	7.38	Quartz Diorite Highly bkn in places;dissem py in chloritized patches in upper contact zone;occ py blebs in red (hematite?) groundmass throughout, esp in frac areas;some calct filled fracs;5cm section of fg. material w. fspr phenos;FCA 15-20,50,62.	100
637.25	637.75	0.50	Quartz Diorite Highly bkn frags;one has abndt kspr assoc with an epidote vein;some have minor py and poss CPY prob assoc with fractures;one frag is finer grained and more mafic.	
637.75	645.67	7.92	Quartz Diorite Rel unalt;occ py blebs with hematite? rims esp in frac areas;some fg. ppy xenos;FCA 20-70;hint of shearing;epidote @ fracs.	100
645.67	655.92	10.25	Quartz Diorite As above;rare py blebs;some ep assoc with mafics; epidote+calcite vein @ FCA 40 near base;FCA 20,45-55;frac dens 4/m @ top, 8/m @ base;occ xenos as above.	100
655.92	660.05	4.13	Quartz Diorite Core somewhat bkn in middle of unit;FCA 25,40-55; dens 6/m;some kspr assoc with frac in middle of unit;abndt fg. ppy dacitic? xenos @ base;frac @ middle shows evidence of vuggy Qtz filling.	100

FROM	TO	THICK	DESCRIPTION	REC
660.05	674.18	14.13	Quartz Diorite Rel unalt, solid; epidote on frags and assoc with some mafics; some mafic alt to chlor; weak kspr alt; rare py, some rimmed with hematite; chlor and calct in frags; some kspr assoc with epidote veins @ base frac dens 3-4/m.	100
674.18	692.64	18.46	Quartz Diorite Rel unalt; ep on frags; some kspr alt with epidote; mafics rel unalt, some are alt to epidote; occ xenos of fg. ppy dacite?; FCA 38, 58; dens 2/m.	100
692.64	695.85	3.21	Quartz Diorite Xeno of fg. porph dacite? and xeno of fg. fspr ppy with green groundmass (Gambier?) poss chloritized; abndt dissem py few %, concentrated in minor frags.	100
695.85	706.00	10.15	Quartz Diorite Very bkn in places; some kspr alt assoc with ep and calct in frags; biotite on hackly frags; ppy xenos 3-4 cm across; FCA 60.	98
706.00	711.38	5.38	Quartz Diorite As above; occ qtz filled frags some with chlorite; minor kspr; occ xenos as before; some shearing; epidote on some frags; FCA 40, 68; some calct filled frags; frac dens 6/m	100
711.38	725.53	14.15	Quartz Diorite Some chlor alt of mafics; calct, chlor, epidote on shears and frags; kspr predom assoc with frags; pyrite blebs (with hematite?) and dissem specks usually assoc with frags.	100
725.53	730.07	4.54	Quartz Diorite As above; py in one of the many fg. ppy xenos (intrusive xenos); py assoc with hematite, chlorite and epidote in altered mafics; frac dens 2-7m; FCA 25, 35, 45, 55, 75.	100
730.07	735.53	5.46	Quartz Diorite As above, rel unalt; some areas of kspr and epidote; rare pyrite and possibly CHALCOPYRITE; frac with abndt chlorite @ base.	100

FROM	TO	THICK	DESCRIPTION	REC
735.53	740.32	4.79	Quartz Diorite Upper half frac with abndt chlor alt; frequent areas of pink kspr alt; calct and rare pyrite on frags; FCA 60 dominant, dens 35-40/m; lower half is rel unalt; chlorite alt of mafics is pervasive; core somewhat broken 30cm from base; **GAMBIER CONTACT**	100

FROM	TO	THICK	DESCRIPTION	REC
740.32	745.57	5.25	Feldspar Porphyry Tuff Fspr phenos 1-3mm across are irreg shaped, somewhat rounded in matrix of fg. biot and dk green chlor?; contact with Q.D. somewhat irregular but sharp w. very little alt of the Q.D.; the unit contains a Q.D. dyke in the middle: biotite grains are larger and fspr phenos are generally smaller adjacent to the intrusive material; two 5-8cm units near base consist of large rectangular fspr phenos (up to 2x 5mm) imbricated in v. fg. black matrix. BCA here = 55 in upper unit, 40-55 in lower, lower unit has scoured down into tuff below (tops upright); tuff is fractured, cut by occ. qtz veins carrying biotite xstls; one frac contains a bleached frag of the tuff (brownish w. Fe); most fracs Fe stained; FCA 130, 12/m; occ epidote veinlets; MIN: py dissem specks throughout (1% max) and blebs assoc w. fracs where it may be up to a few % of the rock; Contact-core angle is 40; biot aligned with contact and fracs; zone near base has abndt fg. blk (biot?) foliated as above containing dissem py to a couple of %.	100
745.57	747.95	2.38	Tuff as above with some v. siliceous sections, almost cherty; zones of the imbricated, larger fspr phenos-matrix of this unit alt to chlorite; MIN: dissem py to 1% max; BCA (bedding to core angle) 45.	100
747.95	748.66	0.71	Heterolithic Tuff Ang to sub rnd frags of fspr and fg. tuff in siliceous matrix with abndt fg. biotite; Fe stained MIN: dissem py up to 1%.	100
748.66	753.83	5.17	Blocky Tuff Blocks of predon fg. tuff (w. fspr phenos) and heterolithic tuff (as above) in fg. siliceous matrix; layered fg. tuff wraps around some blocks; up to 20% mg. biotite in most blocks, w. weak foliation; one block is 25cm long (along core axis) unit bkn @ base; entire unit Fe stn; MIN: minor py (assoc w. fracs?) near top of unit.	100
753.83	755.58	1.75	Heterolithic Tuff As before, core broken.	62
755.58	762.00	6.42	Heterolithic Tuff As above; up to 30% sub to well rnd brown, fg. tuff clasts in grey fsp ppy tuff; occ isolated clasts of the fsp ppy tuff; fg. clasts range from few mm to 1cm dia; unit fines upward: largest clasts in lower portions; rare chert clasts; up to 20% biot throughout; core bkn @ base.	100
762.00	765.42	3.42	Heterolithic Tuff As above; fg. brown tuff clasts 1-1.5cm dia; quartz veins 1-1.5cm wide @ base.	100

FROM	TO	THICK	DESCRIPTION	REC
765.42	771.88	6.46	Heterolithic Tuff As above with a very fg. siliceous block (4cm) alt somewhat to calct and chlor;calct, chlor, epidote; (kaolinite?) in frags @ top; Q. diorite inclusions @ base with kspr and Fe ox rims; occ py in frags; FCA 20, 4/m @ top, 8/m @ bottom.	100
771.88	776.00	4.12	Heterolithic Tuff As above; continuation of prev Q. diorite incl. @ top 20cm; unit v. poorly sorted; frac and v. bkn in places; abndt py assoc w. frags in middle of unit; irreg Q. diorite incl. (partly Qtz w. no mafics) near base w. minor py blebs; rip up clasts of tuff below	92
776.00	778.50	2.50	Fspr-ppy Tuff Upper contact BCA 18; fspr phenos: sub rnd-sub ang, avg 2mm (up to 4mm), irreg, in lt-m gr matrix; py in frags and dissem; frac, bkn near top w. abndt py in frags and dissem (dissem thru contact into unit above; up to 10% py in frac areas, 1% dissem elsewhere; few % weakly foliated biot; FCA 20 common, 8/m	100
778.50	783.92	5.42	Fspr-ppy Tuff As above; bkn @ top; 1.5cm frac near top w. chlor and abndt py; zones w. few fspr phenos; core bleached to pale grey-green @ larger frags (usually w. chlor, +/- kspr, +/- ep); core bkn near base.	88
783.92	788.38	4.46	Dacitic Tuff Siliceous, granular; irreg sub ang to sub rnd fspr phenos up to 3mm; ~10% fresh biot; much orig texture of unit lost due to metamorphism; matrix lt-m grey; minor dissem py (1%; Fe stain on frags; frac dens 8/m; core broken.	97
788.38	791.71	3.33	Dacitic Tuff As above; v. siliceous and more felsic in places; occ Qtz veins; occ greenish highly siliceous veins w. ep alt; core bkn, esp @ base; frags FCA 20, 70; bottom 5cm v. siliceous (rhyolitic?) in contact with granodiorite below.	100
791.71	792.46	0.75	Granodiorite Fe stained rim, prob dyke; blebs and dissem pyrite @ contact with overlying tuffaceous unit.	100
792.46	793.17	0.71	Rhyolite V. fine grained frags w. frags of fine grained tuff; v. siliceous, prob hornfels; irreg vein of granodiorite, 2cm wide, near base w. assoc chlorite altn and minor pyrite.	100

FROM	TO	THICK	DESCRIPTION	REC
793.17	794.00	0.83	Altered Tuff Fine grained tuff @ top and base becomes very siliceous (rhyolitic?) hornfels in middle; fractured; mafic altn to chlorite and epidote.	100
794.00	794.92	0.92	Dacitic Tuff As before; broken core.	41
794.92	796.00	1.08	Andesite Tuff Fine grained, dark green; highly broken; occasional quartz veins.	100
796.00	798.58	2.58	Granite Pegmatitic, kspar granite and granitized rhyolite? tuff (about 30% "tuff", 60% granite).	100
798.58	801.08	2.50	Fspr-ppy And. Tuff Fspr phenos 2-3mm in dk grn, fg. andesite; phenos irreg, 10-15% of unit; finer grained fspr in matrix; core bkn, esp in middle; calct filled frac up to 1-2cm in middle of unit; some qtz veins w. pink kspr; upper contact to core angle is 35; FCA ~60.	100
801.08	816.81	15.73	Dacite-Rhyolite Tuff Interbeds and blocks of hornfelsed dac. and rhy. tuff; blocks to 10-15cm, interbeds to 40cm; intruded by pegmatitic granite, may have granitized part of tuff; dissem py common esp @ more felsic zones @ top of unit; core bkn; more felsic (rhy?) zones bleached; pyrrh w. py @ top; 2cm calct frac (w. ep, chlor) @ base	99
816.81	819.48	2.67	Fspr-ppy And. Tuff As before; matrix v. dk. green; (1% dissem py; upper contact @ 48 deg to core, rel sharp; core somewhat bleached around frac near top (qtz, calct in frac); py in frac (w. bleaching) near base.	100
819.48	820.86	1.38	Granite Pink w. kspr; rel sharp contacts; upper contact w. rip-up clasts of tuff; contact to core angle 52 deg	100

FROM	TO	THICK	DESCRIPTION	REC
820.86	822.30	1.44	Andesitic Tuff Some faint fspr phenos; upper part of unit contains granitic material; stringers and patches of granitic material are scattered thru unit; overlies a felsic rhyolite unit, clasts of which are ripped up and scattered thru overlying unit; the granite appear to have been intruded into the clast interstices; one area (2x3mm) of pyrite assoc w. epidote in the andesitic material near a rip-up clast.	100
822.30	824.13	1.83	Rhyolite Tuff Very fine grained, very siliceous, pale green, intruded by quartz diorite.	100
824.13	828.88	4.75	Fsp-ppy And Tuff As before; good phenos (2x2mm), sub and, irreg; abndt "orbs" of andesite 2-3mm dia rimmed with fine g. fspr ((1% of rock); matrix is v. dk. green; occ rip up clasts of rhy. tuff @ base with some ep, chlor, py in frags; core bkn @ base; some calct frac fill; 3cm granitic intrusive near base w. assoc frags and rip-up clasts of overlying material.	100
828.88	829.38	0.50	Dacite Tuff Intruded by qtz diorite (as @ base of above unit), this "tuff" may actually be fine grained, chilled quartz diorite... (hornfelsed dacite looks very much like fine grained quartz diorite); core v. bkn.	100
829.38	831.38	2.00	Granodiorite sill w. incorporated clasts of rhy. and dac. tuff; abndt ()=1% dissem py, pyrrhotite in the more mafic clasts.	100
831.38	832.30	.92	Fspr-ppy Tuff Dk purple matrix; cut by a 1cm Granite-granodiorite vein FCA 20; lower and upper contacts of unit 40 deg to core.	100
832.30	833.72	1.42	Rhyolitic Tuff Fe stained; bkn area in middle w. 1-2% dissem pyrrhotite; minor dissem py elsewhere.	100
833.72	835.55	1.83	Rhyolite-Dacite Tuff Upper half predom rhyolitic, lower dacitic; cut by granitic veins, lower part with lenses of predom fspr alt in part to epidote; most of core is highly broken; dissem pyrrhotite and some pyrite.	100
835.55	841.26	5.71	Blocky Rhyodacite Tuff Blocks of rhyodacite up to 15cm dia intruded by dacitic sill; sill has abndt fresh biot (due to thermal metamorphism?); frequent calct veins @ base	100

FROM	TO	THICK	DESCRIPTION	REC
841.26	841.84	0.58	Quartz Diorite With small blocks of dacite.	100
841.84	842.17	0.33	Fsp-ppy And Tuff Irreg phenos 1-2mm dia in dk green, fg. matrix; dissem py, 1%.	100
842.17	842.50	0.33	Dacite Contact with overlying andesite appears to be chilled.	100
842.50	844.00	1.50	Fspr-ppy Tuff Dark green andesitic matrix; some fine grained disseminated pyrite.	100
844.00	845.88	1.88	Fspr-ppy Tuff As above; qtz, ep veins with bleaching of andesite around frac; qtz diorite vein near base with ep boundaries (bleached wall rock) with some assoc pyrite and hematite; lower contact-core angle = 63.	100
845.88	849.51	3.63	Blocky Tuff Blocks of rhy-dac tuff in layered, dacitic tuff; dacite has abndt fresh biotite; BCA 31; weak foliation of biotite parallel to bedding; 6cm wide granite vein near top.	100
849.51	852.75	3.24	Rhyodacite Tuff Some predom rhyolitic blocks near bottom; rhyodac. in middle has fspr phenos and a block of fspr-ppy andesite tuff (purple matrix, abndt dissem py); core very broken @ base; fractured throughout.	99
852.75	856.44	3.69	Rhyodacite Tuff Contains blocks of similar material; faint phenos of fspr throughout, very siliceous, hornfelsed; (1% py dissem throughout, some hematite rims; frac near top contains granitic looking material; qtz frac @ base with some epidote; BCA 70.	100
856.44	859.27	2.83	Fspr-ppy Tuff Green-grey and purple matrix (mostly purple); some bleaching @ frac which contain dolomite, calcite, epidote; FCA 65; frac dens 9/m.	100

FROM	TO	THICK	DESCRIPTION	REC
859.27	869.94	10.67	Hornfelsed Dacite Tuff Many frags of finer grained, more felsic material; dissem py, pyrrhotite (1%) with some CHALCOPYRITE; one "pebble" of pyrrhotite 3x6mm with blebs of py and CPY: py rimmed with silica, cyp looks exsolved from the pyrrhotite; ~5% fresh biotite, weakly foliated; occ qtz frags with epidote, dolomite, blebs and stringers of pyrite @ FCA 50-65; also frags @ FCA 20, 40; the fine grained, felsic frags have occ py blebs.	100
869.94	871.03	1.09	Granite Pink kspr; somewhat pegmatitic.	100
871.03	872.91	1.88	Quartz Diorite Xenos of dacite and fine grained tuff (see unit below); rare py in Q. diorite and dacite; granite veins @ base (1-3cm wide); lower contact irreg with rip-up features.	100
872.91	878.83	5.92	Fspr-ppy Tuff Dk green andesite matrix; cut by a 25.5cm wide dac. sill; abndt py in the tuff at and near the upper sill contact; 60%py, 40%pyrrhotite at the contact as very fine grained clots and dissem; sulphides are up to 50% of the rock @ contact over a zone from 0-2cm wide; py also v. fg. in rectangular clots in tuff above dacite contact; tuff is bleached @ contact with Q. diorite (unit above) with dolomite, epidote and dissem py; py dissem throughout tuff @ (~1%; one frac in middle of unit is 3.5 cm wide w. calcite, red dolomite, epidote, chlorite and abundant pyrite (py 2-3% of frac), massive and dissem in and near frac; FCA 40; others contain predom epidote, dolomite and some pyrite, one has minor kspr; frags result in bleaching of tuff.	100
878.83	889.79	10.96	Hornfelsed Dacite Tuff As before (unit above granite); dissem py throughout some concentrated along bedding planes and within the more felsic frags; felsic frags (rhy.) are 5% of the rock, some forming thin (1-2cm) bands; BCA 50-55; biot moderately well foliated parallel to bedding.	100
889.76	894.42	4.63	Hornfelsed Dacite Tuff Occ py blebs, some with hematite; some qtz veins, calct on frac @ top of unit; BCA 65.	100
894.42	907.46	13.04	Rhyodacite Tuff Hnflsd; somewhat blocky in places; bedding visible over most of unit, BCA top 45, bottom 60; shears in rhy. areas contain a film of sericite; FCA 40-50 common; frac dens 15-20/m; occ calct on frags; minor hematite; qtz diorite frags near top (4cm of core) are rounded, prob cave.	100

FROM	TO	THICK	DESCRIPTION	REC
907.46	911.13	3.67	Rhyodacite Tuff Hnfls;py blebs,dissem @ base;)=5% biot;somewhat ppy with fspr phenos;occ qtz veins w. ep,chlor; core frac;sericite on shears;BCA 50.	100
911.13	912.13	1.00	Fspr-ppy Andesite Dyke Sub parallel to bedding in core;flow banding @ contacts;matrix dk green-dk brown @ boundaries; calct frags;phenos 1-2mm,many laths;many 'ghost' phenos of partially altered? fspr;some py in dyke @ upper contact;contact to core angles: upper 60, lower 78.	100
912.13	916.17	4.04	Rhyodacite Tuff Hnfls;somewhat blocky, some bedding visible;some granitic material @ contact w. overlying dyke; minor py assoc w. frags,some w. qtz,ep,dolomite; occ calct filled frags;4cm ppy andesite dyke near bottom similar to dyke described above;core bkn @ base;BCA 50.	100
916.17	918.17	2.00	Dacite Tuff Hnfls;somewhat blocky w. finer grained,more felsic material @ top;well laminated over rest of unit;py dissem and blebs in chloritic (frags?) bands;BCA 42 @ top,58 near bottom;banding @ base influenced by Qtz diorite dyke.	100
918.17	919.71	1.54	Quartz Diorite Dyke Upper contact to core angle 25,lower 47(both vary) small xenos of overlying unit incorporated into quartz diorite @ upper contact.	100
919.71	925.12	5.41	Fspr-ppy and Rhyolite Tuff Interbedded units of predom rhy hnfls and fspr ppy hnfls;fspr ppy is 75% of unit with somewhat elongate 1-3mm phenos in a dark fg. matrix, the phenos are aligned parallel or sub parallel to bedding (long axis of pheno), the phenos are up to 25-40% of the rock in a finer grained matrix; the unit is blocky: predom fspr ppy w. clasts of rhy material;some rip-up features;there is a predom dacitic unit (20cm) underlain by a rhy. unit (20cm) near the top of this section;there is a thin (3-5cm) fspr ppy unit near the base of the section: sub ang to ang fspr phenos in a very dark fine grained matrix; fsprs are greenish (epidote) giving the entire unit a dark colour;the rhyolitic material is pale green to white;minor pyrite and pyrrhotite dissem thru unit.	100
925.12	931.06	4.55	Fspr-ppy Tuff As above with blocky, rhyodacite tuff interbeds; fspr ppy is 80% of the unit;frequent,poorly sorted clasts (1-3cm) of very fine grained andesitic material in ppy;occ qtz filled frags, one with sericite;minor py in blebs;BCA 40.	100

FROM	TO	THICK	DESCRIPTION	REC
931.06	937.23	6.17	Rhyodacite Tuff Hnfls;predon banded dacite tuff, some beds of fspr ppy as above;unit is composed of well bedded tuffs interbedded with blocky zones of the same rhy., rhyodacitic and fspr-ppy tuffs;occ veins and patches of granitic material,one such vein with sericite;BCA 40.	100
937.23	939.27	2.04	Rhyodacite Tuff Hnfls;some biot foliation para. bdg;scattered patches of chloritized mafics,vein of pink kspr (granitic material) in middle of unit;core rel. solid;BCA 40.	100
939.27	941.27	2.00	Rhyolite Tuff Hnfls;lineations of biotite parallel to bdg and patches of chloritized biotite parallel to bdg; BCA 46,35;FCA 45 (85 to bdg);FCA 25 (~10 to bdg); core bkn @ base;fracs filled with greenish fspr.	100
941.27	942.94	1.67	Rhyodacite Tuff Hnfls;cut by occ qtz veins (w. minor pink fspr); ppy w. vague fspr phenos;biotite lineations are 'bent' parallel to veins, otherwise they parallel bedding;BCA 35.	100
942.94	947.57	4.63	Rhyolite Tuff Hnfls;weak biot alignment para to bdg;much of the biot alt to chlor;qtz veins para and perp bdg; BCA ~38;frequent py blebs in lower part of unit;Fe stn in this area;abndt cubic py on frac near base w. chlor,epidote.	100
947.57	950.55	2.98	Porphyritic Andesite Dyke Fspr phenos 1-6mm,sub rnd to sub ang, up to 25% of unit in fg. green andesite;phenos @ base alt to chlor,biot,hblde, assoc w. py and pyrhh; phenos destroyed and matrix bleached around fracs,FCA 45-75;occ py and pyrhh blebs thru core and in small mafic filled fracs;lower contact to core ang 70; pheno align near base @ 42 deg to core axis;fracs filled (from centre of frac outward) with massive pyrite,garnet?,epidote and chlorite...up to 1-2cm wide.	100
950.55	960.68	10.13	Rhyolite Tuff As before;well banded w. align biot;BCA 33 @ base 33-40 near top;somewhat blocky @ top incl blocks of andesite (as in unit above,prob brecciation as unit above was intruded);upper 3cm of unit alt to ep+kspr w. minor py in fracs;occ py blebs,some assoc w. small fracs;py assoc w. hematite which shows alt to limonite or goethite;core v. bkn near base;biot shows alt to chlor,ep;some small fracs w. ep+py;frac near top of unit w. qtz+dolomite? accompanied by ep+kspr alt of wall rock.	100

FROM	TO	THICK	DESCRIPTION	REC
960.68	978.83	18.15	Rhyolite Tuff Well banded w. biot align para bdg; somewhat blocky @ 972'; fspr ppy, 15cm thick, 50cm above base is a v. siliceous unit w. sub rnd fspr phenos (2-3mm) align subpara to bdg; below this ppy the unit is again rhyolite but blocky; BCA 40 @ top, 42 @ base; much of the biot, esp where clotted, is alt to chlorite; occ frags w. sericite and pyrite; occ pyrite blebs throughout core, more common below fspr ppy near base in blocky tuff; py w. hematite which alt to oxides.	100
978.83	983.21	4.38	Rhyolite Tuff Hnfls; soem biot zones align w. bdg; BCA 30 @ top; qtz, fspr filled frags @ top w. chlorite, epidote, hematite; abndt annealed frags, most subparallel to core axis, FCA ~40 common.	100
983.21	994.00	10.79	Blocky Tuff Blocks of rhy and dac tuff predom; some blocks are more mafic incl frags of v. fg. siliceous material near top; granitic material has intruded the unit, esp between blocks w. resultant rip-up contacts in places; some of this granitic material is somewhat pegmatitic w. pink kspar and graphic intergrowths; one frac zone has been filled w. ep, chlor, garnet and minor pyrite; core is broken throughout and extremely broken @ base; BCA in middle of unit 40.	99
994.00	996.08	2.08	Blocky Tuff Very siliceous, almost cherty (rhyodacitic?), somewhat blocky unit; mottlet due to alternating light and darker coloured blocks; full of healed frags; frac zone near base w. ep, dolomite, garnet; FCA 33 common for healed frags; unit is much darker than rhyolitic material above (increased amount of v. fine grained mafics and poss higher Fe content of silicates); FCA 38 @ base; minor pyrite assoc w. frags.	100
996.08	998.08	2.00	Blocky Tuff As above; sedimentary banding in lower 75% of unit; BCA 55 @ base; thin beds (1-2mm) of siliceous frags @ base; occ blocks/clasts @ base; lower contact to core angle = BCA = 40 degrees; py in cubes and blebs on frags @ base and in fractured, chloritized frags in blocky part of unit (@ top).	100

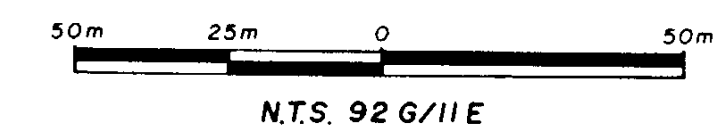
FROM	TO	THICK	DESCRIPTION	REC
998.08	1012.50	14.42	Rhyolite-Rhyodacite Tuff Well banded throughout with blocks of similar material in places;biot areas allign para bdg form the abovementioned banding;clots of fg. dark material common, often altered to chlor, some garnet, epidote, pyrite and hematite;Py/hematite also assoc w. fracs;some fracs w. sericite?;some fracs w. pinkish kspr (or kaolinite?);abndt iron staining throughout core but little visible pyrite;BCA 37 @ 1010', 30 @ 1008.5', 50 near top of unit; fine grained clasts and clots (mentioned above) are often rimmed with iron oxide;core is highly broken throughout.	97
1012.50	1022.90	10.40	Rhyodacite Blocky Tuff Hnfls;predom rhyolitic;some banding due to biot allign;predom rhyolitic @ top;occ py in fracs w. v. fg. mafics (incl chlor), ep, calct;sericite in some fracs;core broken throughout.	90
1022.90	1030.05	7.15	Rhyolite Hornfels Criss-crossed with healed fracs;v. bkn throughout; lt grey;sugary w. biotite specks (~1%);some calct fracs;hint of shearing;v. minor chlorite;rare py in fracs w. assoc Fe stain.	100
1030.05	1033.81	3.76	Hornfelsed Blocky Tuff Rhy and rhyodac (predom rhy) blocks,all very siliceous;core bkn in middle of unit;sheared;abndt healed fracs;darker blocks are vaguely ppy; alteration rim of kspr? around one small elongate frag (thermal alt?);BCA 43 in bedded portion.	100
1033.81	1041.96	8.15	Hornfelsed Rhyodacite Tuff 75% of unit is grey to purple-grey porphyry with 1-2mm irreg fspr phenos;phenos are bedded;BCA 40 @ top, 37 @ bottom;criss-crossed w. healed fracs; rhyolitic zones are somewhat blocky in places; calct on fracs;FCA 25,40,62;some chlor on fracs; core broken throughout.	94
1041.96	1045.96	4.00	Rhyolite Hornfels Pale greenish grey w. specks of biot;v.bkn core; sugary;some calct on fracs;sericite, chlor on fracs areas of purplish,higher biot content rock;all v. siliceous.	98
1045.96	1054.48	8.52	Rhyolite Hornfels-Blocky Tuff Entire unit v. siliceous;blocky in places w. the more mafic,purplish-grey, rhy. hnfls mottlet by frags of pale grey rhy. hnfls;these units are also interbanded in places;many healed fracs;BCA 44 @ 1052';healed fracs roughly parallel and perp to core axis are common;darker areas are bleached around fracs;chlor,ep in fracs;rare pyrite w. ep, chlor (near base of unit);core bkn @ 1052'.	93

FROM	TO	THICK	DESCRIPTION	REC
1054.48	1055.42	0.94	Quartz Diorite Dyke Upper contact to core ang, 27; lower contact bkn; rel fresh w. some chlor @ base; bkn @ base; lower contact appears to be parallel to bedding of unit below.	100
1055.42	1058.00	2.58	Dacite-ppy Hornfels Prob dacite tuff, fspr phenos (although it looks like a granodiorite sill); biot is allign in bands parallel to bedding; core highly bkn @ base (granite contact) w. abndt chlor and some calct frags; py in altered zone (much chlorite) parallel to a 3-5cm wide Q. diorite dyke near top of unit (related to main Q. diorite dyke above); BCA 45.	100
1058.00	1058.75	0.75	Granite Pegmatitic; pink (kspr); graphic; upper contact to core angle 45, lower 55; core bkn @ top.	100
1058.75	1063.00	4.25	Hornfelsed Dacite Tuff As before but finer grained; b. bkn and frac; cut by peg. granite veins @ base (.5-1cm wide); calct frags; occ frags of rhy. hnfls; biot foliated; FCA 45-60 common, >=20/m @ top, 10/m @ base; biot foliations @ 40 deg to core axis near top of unit, ~40 near base; ep, chlor in granite veins; ep, chlor, kspr assoc w. smaller frags.	96
1063.00	1065.76	2.76	Hornfelsed Dacite Tuff As above with granite veins; muscovite in frags within vein; py on sheared surfaces w. abndt chlor, calct; abndt fresh biot in lower half; core highly bkn in lower half.	83
1065.76	1066.07	0.31	Quartz Diorite Broken into rounded fragments; kspr, chlor alt.	100
1066.07	1066.95	0.88	Dacite Tuff As before; greenish w. pervasive chlor alt; v. bkn.	100
1066.95	1067.58	0.63	Dacite Tuff As above; granite veins; core rel solid; abndt muscovite in granite.	100
1067.58	1070.25	2.67	Dacite Tuff As above; some alt of biot to chlor; banded w. fresh biot allign; occ frags of v. siliceous material; BCA 50-55.	100

FROM	TO	THICK	DESCRIPTION	REC
1070.25	1071.50	1.25	Rhyolite Hornfels V. bkn; dacitic @ top; greenish granite veins with abndt muscovite; chlor in frags.	100
1071.5	1071.83	0.33	Rhyolite Hornfels Pale green; chlor on sheared surfaces; calct frags.	100
1071.83	1076.38	4.55	Dacite to Rhyodacite Hornfelsed Tuff Occ rhy. frags; well frac; bleached @ frags w. chlor FCA 60-80 common @ 10-15/m; sheared and green w. chlor in lower portion.	100
1076.38	1077.13	0.75	Rhyolite Pebble Tuff Dacitic matrix; pebs are sub rnd, up to 12mm dia, avg 5mm dia; pervasive chlor alth; minor py.	100
1077.13	1079.33	2.20	Dacite Hornfels Core bkn @ top; kspr alt around qtz veins; alt of biot to chlor throughout.	64
1079.33	1080.75	1.42	Altered Dacite Tuff The original, porphyritic, banded texture is difficult to recognize due to the pervasive alt to ep and chlor; a few rel unaltered areas remain and banding can be traced thru these into the altered rock; some kspr; BCA 55; basal 20cm is a bed of fspr xstls and rhy. frags in a fine grained, chloritized matrix; py blebs, specks on frac surfaces.	100
1080.75	1084.75	4.00	Dacite-ppy Tuff Upper part fragmental as in unit above; pink kspr is common alt around frags; core is very bkn.	72
1084.75	1096.55	11.80	Dacite-ppy Tuff Well banded w. align of fspr phenos and biotite foliations; fresh biot; biot is ~3% of rock; phenos are sub rnd and average 2-3mm dia, a few larger, somewhat rectangular ones; a few granitic veins thru core are predom pink kspr; chlor, occ ep on shears; kspr alt common around veinlets and frags; some alt of plag to ep; rare py blebs; BCA 40 @ top, 40 @ mid, 30 @ bottom; frequent clasts of both felsic (rhy.) and fg. mafic siliceous rocks from (1-2cm dia; FCA 10-15, 45-55 common; dens 10/m.	100
1096.55	1099.37	2.82	Dacite Tuff Core bkn, esp @ base; frac and sheared; chlor and kaolinite? on shears; muscovite in frags; sericite on shears; abndt kspr alt throughout apparently assoc w. small calct frags; rare py dissem; magnetite and hematite on frags.	56

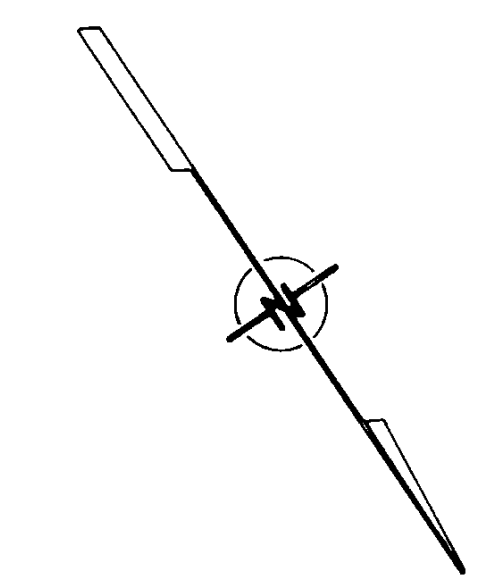
FROM	TO	THICK	DESCRIPTION	REC
1099.37	1108.00	8.63	Dacite Tuff Well banded; areas of kspr alt as above; core bkn to highly bkn throughout; BCA 43; frac alt: kspr, chlor, ep; calct frac filling; minor py on fracs; black stain (magnetite) on fracs; minor py dissem in lower 1.2m.	64
1108.00	1111.38	3.38	Andesite Dyke Bleached near upper contact (contact bkn) w. veins of calct, hematite and minor py; core is composed, mostly of chlor and ep here (similar ep, chlor veins through dyke); vein near base, 1-1.5cm, contains calct, garnet, chlor, ep; these veins parallel the lower contact @ FCA 63; lower contact is rel sharp; also calct frac @ FCA 3; numerous calct veinlets parallel and subparallel to lower contact.	100
1111.38	1116.54	5.16	Quartz Diorite Med grained (2-3mm); some calct veins, intruded by some pegmatitic granite (veins, clots); py blebs near upper contact (contact to core axis ang, 63); zones of kspr, chlor, ep around fracs/veins (mostly calct filled); FCA 55 common; frac dens 8/m; core bkn @ 1115'; a frag of unaltered, coarse grained Q. dior @ 1115' may be cave.	98
1116.54	1123.29	6.75	Quartz Diorite As above; some alt around fracs as above; fine to med grained in upper 2/3, med grained in lower 1/3.	100
1123.29	1130.54	7.25	Quartz Diorite As above but grain size increasing; most of unit is coarser grained (fsprs are 3-5mm across); frequent calct veins; many healed fracs; abndt kspr around fracs; epidote in and around fracs; some xenos of finer grained material; core is brecciated near top (recemented); FCA 67 common; frac dens 15/m; core bkn in places; sheared w. chlor, clays.	100
1130.54	1134.92	4.38	Quartz Diorite As above; some alt around fracs and calct veins; occ xenos of finer grained material, one w. abndt kspr and epidote in and around it.	100
1134.92	1138.82	3.90	Quartz Diorite As above; frequent finer grained xenos; sheared, esp in middle of unit w. abndt chlor on shears; kspr alt common; calct fracs common in middle of unit; mafics are somewhat alt to chlorite.	100

FROM	TO	THICK	DESCRIPTION	REC
1138.82	1141.86	3.04	Quartz Diorite As above;rel unalt except around frac in middle of unit where ep,chlor,kspr common;minor alt around other frac.	100
1141.86	1150.33	8.47	Quartz Diorite Rel unalt;ep and kspr around frequent ep veins and calct veins;FCA ~70 common;FCA 32 less common;frac dens 10/m;core bkn @ base.	96
1150.33	1153.00	2.67	Quartz Diorite As above;one ep vein cuts a qtz vein (postdates the qtz vein.	100
1153.00	1156.00	3.00	Quartz Diorite As above;rel unalt;FCA 32,45;mafics somewhat alt to chlor;some kspr, esp assoc w. frac,also ep and chlor alt @ frac;rare py blebs @ frac. END OF HOLE	85



LEGEND

- GAMBIER GROUP**
 Dacite feldspar porphyry/Rhyolite lapilli tuff. [Rfp, R]
 Rhyolite, fine grained flow, breccia, intrusive. [R]
 Cordierite-eye metamorphic rock. [Qer]
- INTRUSIVES**
 Diabase dykes and sills [Kad]
 Quartz diorite, probably Cretaceous-age [Kad]
 Coast Plutonic Complex [Kad]
 Bedding, strike and dip [50-120]
 Foliation, strike and dip [30-120]
 Fracture, strike and dip [30-120]
 Fault, strike and dip [30-120]
 Outcrop boundary [---]
 Contact, approximate, defined [---]
 Limit of mapping [---]
 Road [---]
 Creek [---]
 Mineralized outcrop, chalcopyrite, sphalerite, pyrite. [cp, py]
 Topographic contour (interval 50 meter) [---]

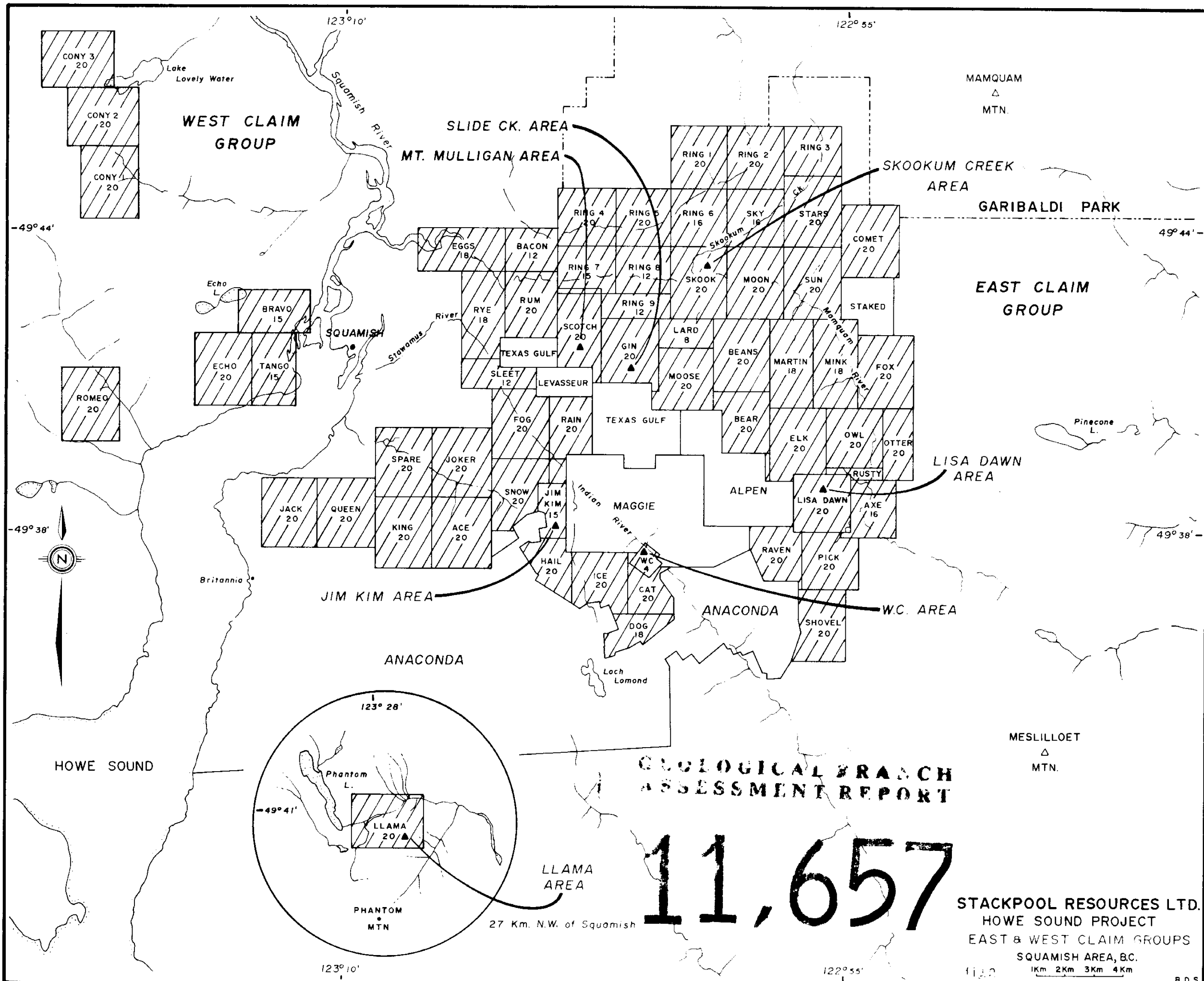


Geological mapping by G. Sivertz (West half) and L.K. Eccles (East half). Topographic features located by chain and compass surveys. Contours based on 1969 B.C. Government Air Photos (1:50,000) and aneroid altimeter readings taken during mapping.

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

11,657

STACKPOOL RESOURCES LTD.			
W.C. CLAIMS			
SQUAMISH AREA			
VANCOUVER M.D.			
GEOLOGY, D.D.H. LOCATION			
11-1250	Nov. 83	FIG 3	B.D.S.



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,657

STACKPOOL RESOURCES LTD.
HOWE SOUND PROJECT
EAST & WEST CLAIM GROUPS
SQUAMISH AREA, B.C.
 1:25000 1Km 2Km 3Km 4Km

27 Km. N.W. of Squamish