DIAMOND DRILLING REPORT

ON THE

IDAHO ZONE

Longitude 121° 17' 30" E / 49° 30' 34" N Latitude

N.T.S. 92H/11 W

NEW WESTMINSTER M.D.

COQUIHALLA GOLD BELT

For

CAROLIN MINES LTD.
602 - 700 West Pender Street
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(Owner - Operator)

By

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EXECUTIVE SUMMARY

The Idaho surface exposure was discovered in the summer of 1915 by the late T. DeAngelis, a long-time resident of Hope. A commercially viable orebody was defined by Carolin Mines Ltd., after a large scale, carefully staged exploration program between 1973 and 1978. Cost of the exploration phase was about 4 million dollars. An independent Feasibility Study by Kilborn Engineering recommended production at 1,500 tons per day.

The Idaho orebodies were placed into production by Carolin Mines Ltd. as operator and 50% owner in late 1981 (first dore bar poured in February 1982). Published ore reserves at the time of the production decision were 1.5 million tons averaging 0.141 oz/ton gold (using a 0.08 oz/ton cut-off and 20% dilution). The general exploration potential, to the immediate north and elsewhere on the claims, was considered to be one of the great attractions of the property and would result in the long-term success of the operation. This exploration potential was left largely untested.

Based on detailed underground mapping and relogging old exploration core by J.T. Shearer, in conjunction with surface studies by G. Ray (government geologist), a clearer geological model of the Idaho orebodies was formulated in 1983. Essentially, this model recognizes that the mineralized zones amenable to long-hole stoping occur in the tectonically disrupted hinge areas of northward plunging antiforms and are associated with a distinct stratigraphic package.

Building on the voluminous data base that has been assembled in the past on the Idaho orebodies, a program of diamond drilling was completed in November 1989 on two separate targets as follows:

Target 1: Northward continuation of No. 1 Zone,. 1989 program consisted of nine off-section drill holes to investigate the detailed morphology of the No. 1 Zone north of 934 N as a follow-up to the NEX 1 to 3 long-holes drilled in 1983. Total drilled in 1989 on this target was 929 feet.

Target 2: Investigation of No. 3 Zone below 79 stope and 73 stope, for a total of 1,074 feet in four holes.

Drilling in 1989 on Target 1 demonstrated that ore-grade mineralization extends north to at least the 966N, as shown in NEX 9 which averaged 0.095 oz/ton gold over 121.6 feet. Existing drill stations at 966N on 800 level provide limited access for future drilling to track No. 1 Zone to the north. An additional 2,000 feet of drilling is recommended from the 966N section before drifting will be necessary to allow access to 1000N and north.

The initial 2,000 feet of northward drilling will cost about $60,000 and will investigate the area between holes 966-1 and 966-3. By swinging the drill to the north, the area north to 1000N can be reached from the 966N - 800 level drill site. The drifting program will require a minimum of 600 feet of a exploration-sized opening and a minimum of 5,000 feet of drilling. The cost of such a program will be around $400,000 to $500,000 (see cost estimate). The objective would be to initially track No. 1 Zone to the north to find a new major ore body either above or below 800 level and north of 1000N. **I strongly recommend that the drifting program be started only after the results of the Summer 1990 McMaster Program are compiled (Shearer 1989).**

Drilling in 1989 on Target 2 demonstrated that ore grade mineralization occurs in No. 3 Zone above and below the 800 haulage level. This part of No. 3 Zone has the potential to contain several hundred thousand tons. Intervals encountered (in addition to previous wide-spaced holes) from 800 Level drill stations are as follows:

Hole #	Dip	Interval	Core Length	Assay
89-776-1	+5°	196.85 ft to 231.30 ft	34.45 ft	0.125 oz/ton Au
		241.14 ft to 254.21 ft	13.12 ft	0.200 oz/ton Au
89-776-2	0°	236.55 ft to 241.45 ft	4.92 ft	0.101 oz/ton Au
89-766-1	-5°	218.76 ft to 233.53 ft	14.78 ft	0.104 oz/ton Au

Additional drilling of 3,000 ft. is recommended to fill-in and extend this part of No. 3 Zone on cross-sections 750 N, 766 N, 776 N, 785 N and 804 N. If this program is successful, then an additional 3,000 feet of drilling would be warranted to raise the mineral inventory to an indicated category. Cost of each phase would be about $90,000. Once the size and grade of the zone is known, a mining engineer should review the data and assign development and operating costs to bringing the ore up to a loading pocket on the 800 level. The No. 3 Zone is close to the 79 scram on 835 level. The likelihood of continued success of Target 2 work is, in my opinion, quite good. The structure appears strong and the mineralized widths are relatively wide.

Other underground targets of lower priority, presently defined by one or two drill holes, exist in the general Idaho area. Each of these targets is listed and rated according to the likelihood of success in expanding reserves.

Respectfully submitted,

J.T. Shearer, M.Sc., F.G.A.C.
New Global Resources Ltd.

INTRODUCTION

The Idaho surface exposure was discovered in the summer of 1915 by the late T. DeAngelis, a long-time resident of Hope. A commercially viable orebody was defined by Carolin Mines Ltd., after a large scale, carefully staged exploration program between 1973 and 1978 at a cost of about 4 million dollars. An independent Feasibility Study by Kilborn Engineering recommended production at 1,500 tons per day.

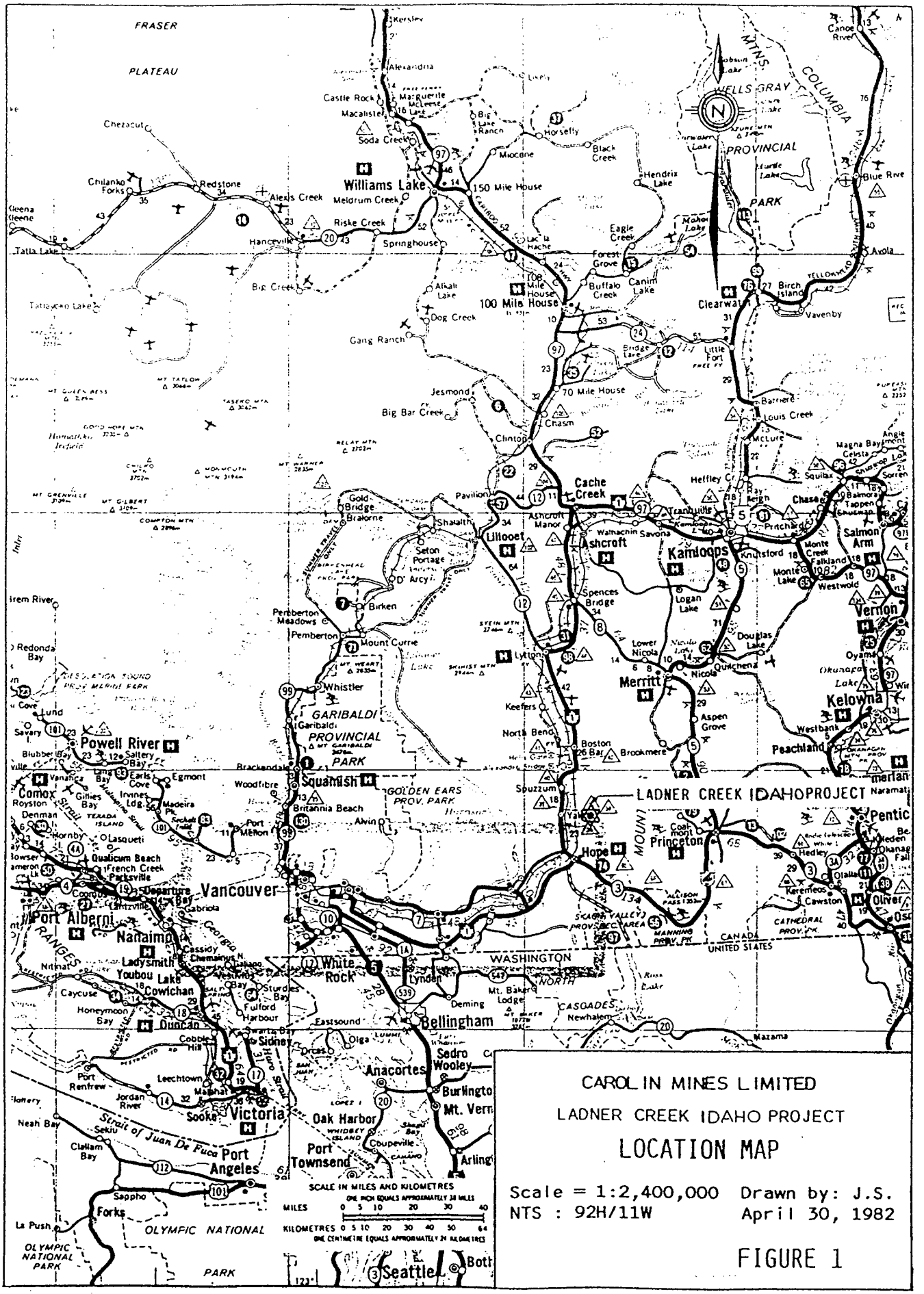
The Idaho orebodies were placed into production by Carolin Mines Ltd. as operator and 50% owner in late 1981 (first dore bar poured in February 1982). Published ore reserves at the time of the production decision were 1.5 million tons averaging 0.141 oz/ton gold (using a 0.08 oz/ton cut-off and 20% dilution). The general exploration potential, to the immediate north and elsewhere on the claims, was considered to be one of the great attractions of the property and would result in the long-term success of the operation. This exploration potential was left largely untested at the close of operations.

Unfortunately, a series of critical technical and interrelated management errors resulted in the closure of the operation in September 1984 after milling about 800,000 tonnes and producing 1,354 kg of gold. Mining and milling has not resumed to date.

Major operational mistakes include the following:

(1) Initial bench scale metallurgical test work was not completed (despite clear recommendations) resulting in immediate failure of the milling process (first year gold recoveries averaged around 30% instead of 86%). Mill staff were not competent to redesign the process. Millions of dollars were wasted trying "trial and error" changes and modifications. A staff metallurgist was not hired until mid-1983 and then was not given proper support by the mill management.

(2) Unnecessary environmental problems were brought onto the operation through "unauthorized" discharges directly from the mill (which were



CAROLIN MINES LIMITED

LADNER CREEK IDAHO PROJECT

LOCATION MAP

Scale = 1:2,400,000 Drawn by: J.S.

NTS : 92H/11W April 30, 1982

FIGURE 1

detected purely by coincidence by a fish stocking program in the Coquihalla River). This resulted in intense scrutiny by media and governmental regulatory agencies which developed additional problems and temporary shut-downs.

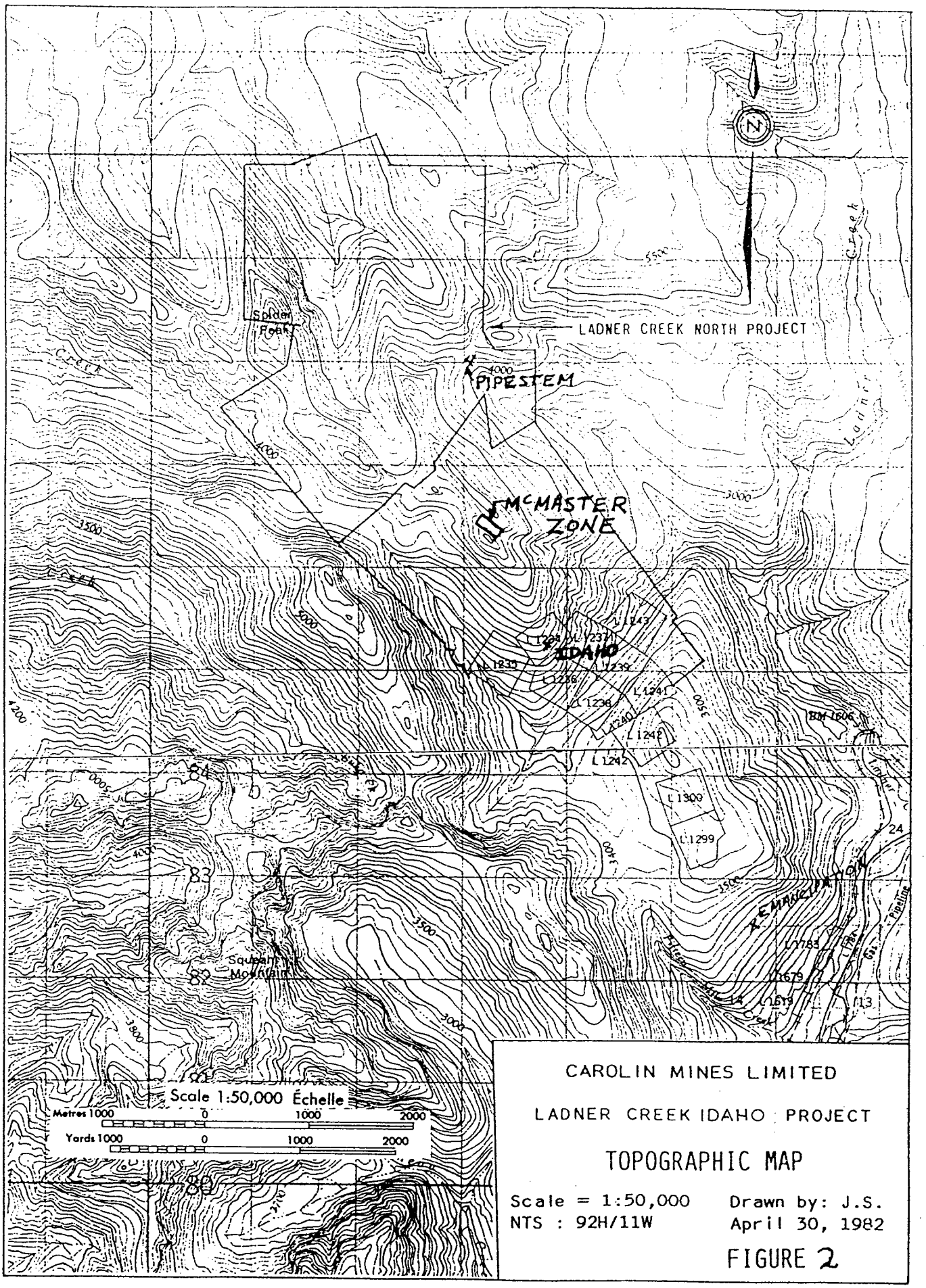
(3) Management decided to change to a 0.05 oz/ton cut-off due to euphoria about the temporary $800 per ounce gold price. Stope preparation (perimeter drifts and ring drilling) was done according to a 0.05 oz/ton cut-off. The nature of low-cost long-hole stoping is such that the option to return to 0.08 oz/ton cut-off was severely limited. Mining was also changed to start in the middle of No. 1 zone (79 stope) rather than higher grade areas or at surface and designed pillar locations were moved without proper analysis.

(4) As expected profits and operating revenues were not realized, due to the extremely low mill recoveries, maintenance of mining and milling equipment was neglected which resulted in costly downtime in both mine and mill. 79 stope was left open many months (November 1981 to June 1983) past its designed life and also not backfilled. Unexpectedly (by the mine staff), the back of 79 stope started to fail resulting in massive sloughage that diluted the expected grade. Low grade from 88 stope was hurriedly developed and mined.

(5) Day-to-day senior management of the company was highly unorthodox. Virtually all major decisions were made by an individual with minimal mining experience who had surrounded himself by "yes-men", and who had not visited the mine site since 1978. Consequently, front-line staff never pulled together. Staff meetings were not allowed.

(6) Northward exploration of the Idaho zone was cancelled due, in part, to the catastrophe in the mill recoveries, but also due to the lack of appreciation by company management of the systematic exploration approach required. A coherent geological synthesis of the deposit to use in the exploration programs was not encouraged by management.

The mine (as distinct from the mill, contrary to general uninformed perceptions) during the first year of production easily and efficiently could have delivered



CAROLIN MINES LIMITED

LADNER CREEK IDAHO PROJECT

TOPOGRAPHIC MAP

Scale = 1:50,000 Drawn by: J.S.

NTS : 92H/11W April 30, 1982

FIGURE 2

1,500 tons per day of ore to the fine ore bin at the expected grade and at low cost. Before the collapse of 79 stope, the grade of the Rod mill discharge correlated very closely to the draw-point sample average, car samples and the original grade calculations based on the drill cross-sections.

Therefore, as partially documented in this report, past mining experience points to the likelihood, if new ore reserves are found by future exploration (and given proper mine planning, development, reasonable mill recoveries and strong financial management), that grade and tonnage estimates can be accurately defined.

Based on detailed underground mapping and relogging old exploration core by J.T. Shearer, in conjunction with surface studies by G. Ray (government geologist), a clearer geological model of the Idaho orebodies was formulated in 1983. Essentially, this model recognizes that the mineralized zones amenable to long hole stoping occur in the tectonically disrupted hinge areas of northward plunging antiforms and are associated with a distinct stratigraphic package.

Using the voluminous data base that has been assembled the past on the Idaho orebodies, a program of diamond drilling was completed in November 1989, and is the subject of this report.

LOCATION AND ACCESS

The Idaho Mine and surrounding claims are situated between the headwaters of Ladner Creek to the south and upper reaches of the south fork of Siwash Creek to the north. The Idaho Claim at latitude 49° 31' 34", longitude 121° 17' 30" is in the north-central portion of the claim group. The property is 19 km northeast of Hope, B.C., as shown on Figures 1 and 2. Elevations in the immediate area range from 700 m to 1,510 m.

Access from Hope is by the new Coquihalla Highway along the old Kettle Valley Railway grade to km 25 and then up the mine road 5 km to the Carolin Mine site. From the mine, a 4-wheel drive gravel and dirt road 8 km long leads north to the

McMaster Zone. The west and north sides of the property are accessible by logging roads up Qualark and Siwash Creeks (Figure 2).

CLAIM STATUS

Recently, Carolin Mines Ltd. completed a financial reorganization and asset consolidation, which among other things, enabled the company to arrange 100% ownership in the Carolin mine, mill complex and mineral claims in the Belt. The company also acquired the remaining mineral claim interests in the Ladner Creek North Property and a portion of the Coquihalla Belt property. A partial list of claims is shown in Table 1 and illustrated on Figure 3. The Government-issued claim map is significantly different than the actual claim positions. Carolin Mines Ltd. contracted a legal survey of the common boundary between Ladner Creek North Project and the claims surrounding the Idaho Mine to Tunbridge and Tunbridge Ltd. in 1982. Between June and August most of this boundary, referred to as "the Fence" was located and brushed out and is located just north of McMaster Pond. The relative positions of Cabin 9 and 10, plus Home Gold 5 and 6, were established, but the relatively minor deviation through Caro 17 and Home Gold 15 remain to be calculated. The extreme easterly portion of the Fence along Caro 5 and 6 and a closing loop from east to west have not been surveyed. Fred Tunbridge was involved in staking the Cabin claims with Buster McCombs in 1962.

The Carolin property consists of Crown granted mineral claims, located 2-post claims, Modified Grid System claims and several fractions. The pertinent claim data around the Idaho Mine are as follows:

TABLE 1
LIST OF CLAIMS

Name	Record No.	No. of Units	Expiry Date
Caro #5 - #16	28618 - 28629	12	June 29, 1991
Caro #24 - #27	28637 - 28640	4	June 29, 1991
Caro #29 & #30	28641 - 28642	2	June 29, 1991
Caro #1 Fr - 5 Fr & 6 Fr	28643 - 28646 - 28647	5	June 29, 1991
Sylvia Fraction	13364	1	July 20, 1991
Cabin #9 - #14	11911 - 11916	6	July 21, 1991
Cabin #20 Fr & #21 Fr	11917 - 11918	2	July 21, 1991
Gold Star No. 1 - No. 4	11365 - 11368	4	July 28, 1991
Home Gold #5 - #14	14727 - 14736	10	August 21, 1991
PCR 1	89	6	March 8, 1991
PCR 2	43	2	July 28, 1991
Idaho, Tramway	1234 - 1235	2	Crown grants
Aurum No. 1 - No. 6	1236 - 1241	6	Crown grants
Monitor	1242	1	Crown grant
	Total	63	

Claims to the north are listed below, Carolin Mines Ltd. also owns claims to the north and south of the listed claims.

TABLE I

List of Claims

LADNER CREEK NORTH PROJECT

NAME	RECORD NUMBER	UNITS	DATE LOCATED	DATE RECORDED	EXPIRY DATE	LOCATOR
CABIN #1	11903	1	July 8, 1962	July 21, 1962	July 21, 1991	A. McCombs
CABIN #2	11904	1	July 8, 1962	July 21, 1962	July 21, 1991	A. McCombs
CABIN #3	11905	1	July 8, 1962	July 21, 1962	July 21, 1991	A. McCombs
CABIN #4	11906	1	July 8, 1962	July 21, 1962	July 21, 1991	A. McCombs
CABIN #5	11907	1	July 8, 1962	July 21, 1962	July 21, 1991	A. McCombs
CABIN #6	11908	1	July 8, 1962	July 21, 1962	July 21, 1991	A. McCombs
CABIN #7	11909	1	July 12, 1962	July 21, 1962	July 21, 1991	Rae McCombs
CABIN #8	11910	1	July 12, 1962	July 21, 1962	July 21, 1991	Rae McCombs
CARO #1	28614	1	June 13, 1973	June 29, 1973	June 29, 1991	L. McClelland
CARO #2	28615	1	June 13, 1973	June 29, 1973	June 29, 1991	L. McClelland
CARO #3	28616	1	June 13, 1973	June 29, 1973	June 29, 1991	L. McClelland
CARO #4	28617	1	June 13, 1973	June 29, 1973	June 29, 1991	L. McClelland
CARO #17	28630	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
CARO #18	28631	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
CARO #19	28632	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
CARO #20	28633	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
CARO #21	28634	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
CARO #22	28635	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
CARO #23	28636	1	June 13, 1973	June 29, 1973	June 29, 1991	M. Mathieu
HOME GOLD #1	14723	1	August 6, 1965	August 21, 1965	August 21, 1991	A. McCombs
HOME GOLD #2	14724	1	August 6, 1965	August 21, 1965	August 21, 1991	A. McCombs
HOME GOLD #3	14725	1	August 6, 1965	August 21, 1965	August 21, 1991	A. McCombs
HOME GOLD #4	14726	1	August 6, 1965	August 21, 1965	August 21, 1991	A. McCombs
HOME GOLD #15	14737	1	August 6, 1965	August 21, 1965	August 21, 1991	A. McCombs
DI #1	34	20	July 4, 1975	July 11, 1965	July 11, 1991	D. J. Griffiths
CALEB #1 FRACTION	999	1	July 10, 1980	July 15, 1980	July 15, 1991	W. F. Chase
CABLE #2 FRACTION	1004	1	July 18, 1980	July 21, 1980	July 21, 1991	W. F. Chase
STEM #1	29356	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #2	29357	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #3	29358	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #4	29359	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #5	29360	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #6	29361	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #7	29362	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #8	29363	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #9	29364	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #10	29365	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #11	29366	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
STEM #12	29367	1	June 29, 1974	July 2, 1974	July 2, 1991	G. Beyko
	TOTAL	58 units				

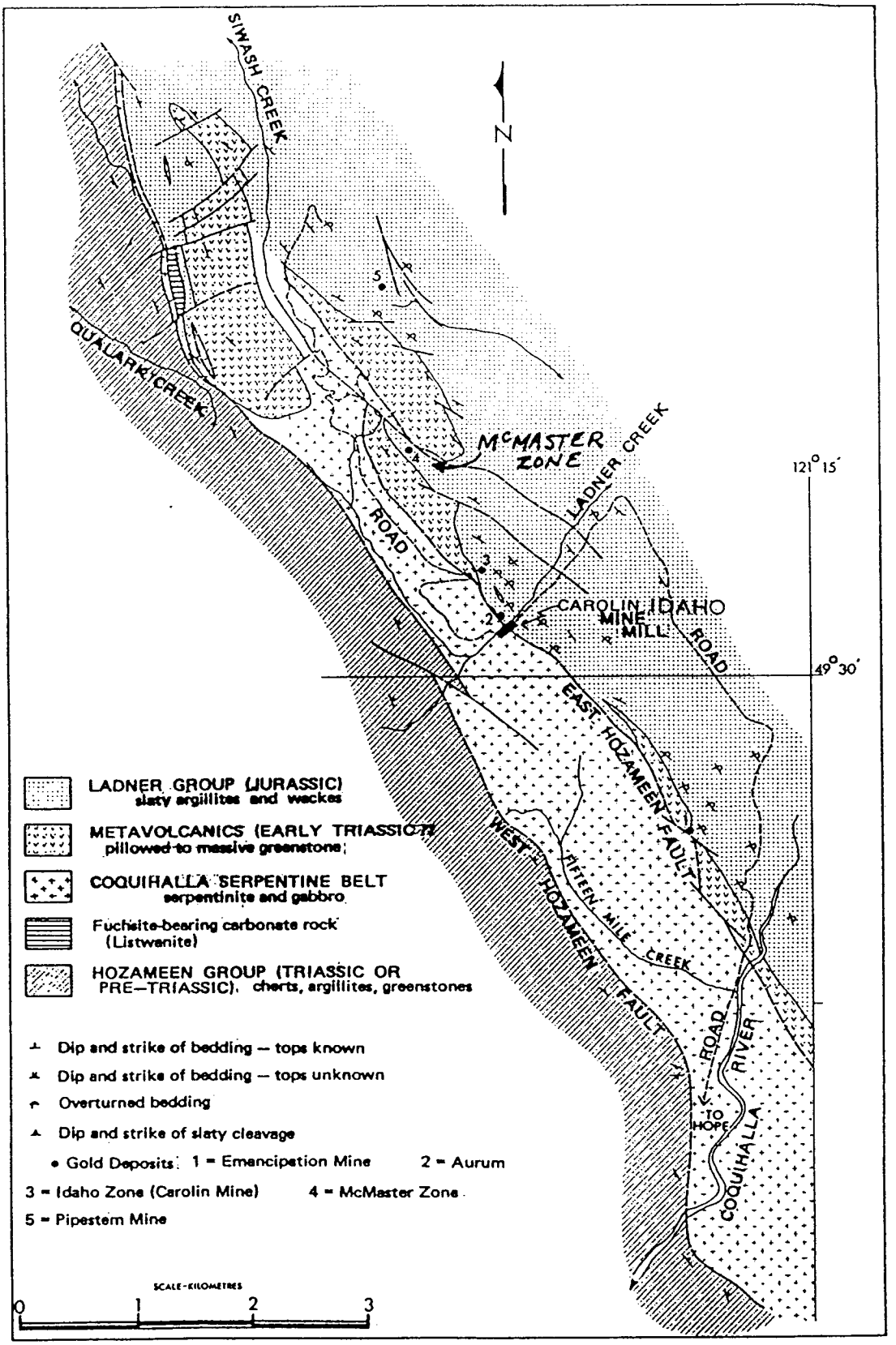


Figure 4 The regional geology of the Carolin-Pipestem-Emancipation gold mines area. (After Ray, 1983).

FIELD PROCEDURES (IDAHO ZONE)

All geological work, diamond drilling and project supervision was done under the author's direct supervision by experienced personnel employed by New Global Resources Ltd.

The Idaho logs reflect the rock nomenclature system built-up during mining of the Idaho ore zones 1981 - 1984, as established by Shearer (1982) (1984).

Diamond drill logs are in Appendix V. The drill contract (Appendix IV) was awarded in feet and the core was carefully converted into metric lengths at the Idaho core shack. Core recovery was measured on each piece of core and closely estimated through the uncommon, short rubbly sections.

A drill log form was designed for the project featuring from the left side: drilling blocks, boxes, core recovery, graphic columns for alteration, fracturing, sulfides and geology. The center is reserved for normal written descriptions and assay results are listed on the right. Each drill hole was logged on a scale of 1:250.

Each drill core sample was carefully split by a experienced splitter. New Global personnel checked each sample number with the assay ticket number and each bag was numbered. At the end of the shift all samples were placed in a locked aluminum box. Samples were brought to Chemex Labs by truck. The core shack was locked at all times when New Global personnel were not actually working on the core. Analytical procedures (fire assay) at Chemex Labs Ltd. are outlined in Appendix III. A suite of samples from the Idaho drilling project will be sent to a second independent lab for check assay. The results of the check assays are expected shortly.

HISTORY OF EXPLORATION

An account of the initial prospecting, Aurum discovery and then subsequent development of the Idaho Zone is discussed in detail by Shearer (1982A). The Idaho claim was located August 9, 1915 by T. De Angelis adjacent to the existing Pitsburg claim.

In 1926, a silicified zone was found by trenching along the ultramafic contact. As this trenching was extended in 1928, astonishing values in free gold in a talcose shear zone were revealed. Aurum Mines Limited was formed to handle operations (Cairnes, 1930).

The Idaho Group was under option from December 1945 to October 1946, during which time the first diamond drilling and geophysical survey were conducted. No. 2 Zone was encountered in nine drill holes which gave an overall average of mineralized intersections of 0.171 oz/ton gold.

Local residents of Hope became interested in the area during the early 1960s. An important feature was the consolidation of claims to the north, including the Pipestem Mine under one ownership. A road was excavated along the hillside to expose rock and provide access to the Idaho Zone. Sharp (1966) was retained as geological consultant.

Exploration work by Carolin Mines Limited started on July 3, 1973, with a preliminary program of soil sampling, ground magnetometer, geological mapping and diamond drilling as recommended by independent geological consultant, D.R. Cochrane.

Mason (1947) viewed the Idaho mineralization as massing with continuity along the flank of a drag fold southeast from the nose. Sharp (1966) suggested that the folded and fractured silicified tuff hosting the gold values was largely structurally controlled:

> "Particularly by a local flat warp of the slaty roof rocks, and perhaps by a transversely-striking N.W. dipping roof fault."

Both workers recognized the more significant gold assays were associated with pyritic "Arkosic sediments".

Initial surface diamond drilling by Carolin was interpreted as indicating a recumbent fold structure with mineralization located in both limbs. Later, when the "Mine Fault" was observed from the Idaho decline in 1977, the fold structure concept was completely discarded. Ideas concerning ore controls were then dominated by northwest trending major faults cutting comfortable "mineralized bands or beds". It was not until 1983 that these concepts were modified by the results of detail geological mapping to include a substantial "fold" component.

REGIONAL GEOLOGY

The Idaho claim north to the McMaster Zone covers part of the Coquihalla Serpentine Belt and the Early to Middle Jurassic Ladner Group metasedimentary rocks which are adjacent on the east (Cairnes, 1924; Monger, 1970). The two groups of rocks are separated by the Hozameen Fault (Figure 6). This assemblage makes up the main elements of the Coquihalla Gold Belt.

General characteristics of the Ladner Creek area have been discussed by Cochrane and Griffith in numerous Carolin Mines Limited private reports since 1973. Some of these are listed in the bibliography. Surface mapping by Ray (1982, 1983) shows that much of the stratigraphy in the immediate vicinity of the Idaho Orebody is inverted. Major folding and tilting of fault panels appear to be of fundamental importance in ore genesis. A summary of the importance of detail stratigraphic measurements is contained in Shearer and Niels (1983). The lower Ladner Group rocks represent a transition from a proximal turbidite depositional environment to a progressively distal turbidite and deeper water regime. A regular stratigraphic sequence is recognized within the Ladner Group at the Mine (Figure 6).

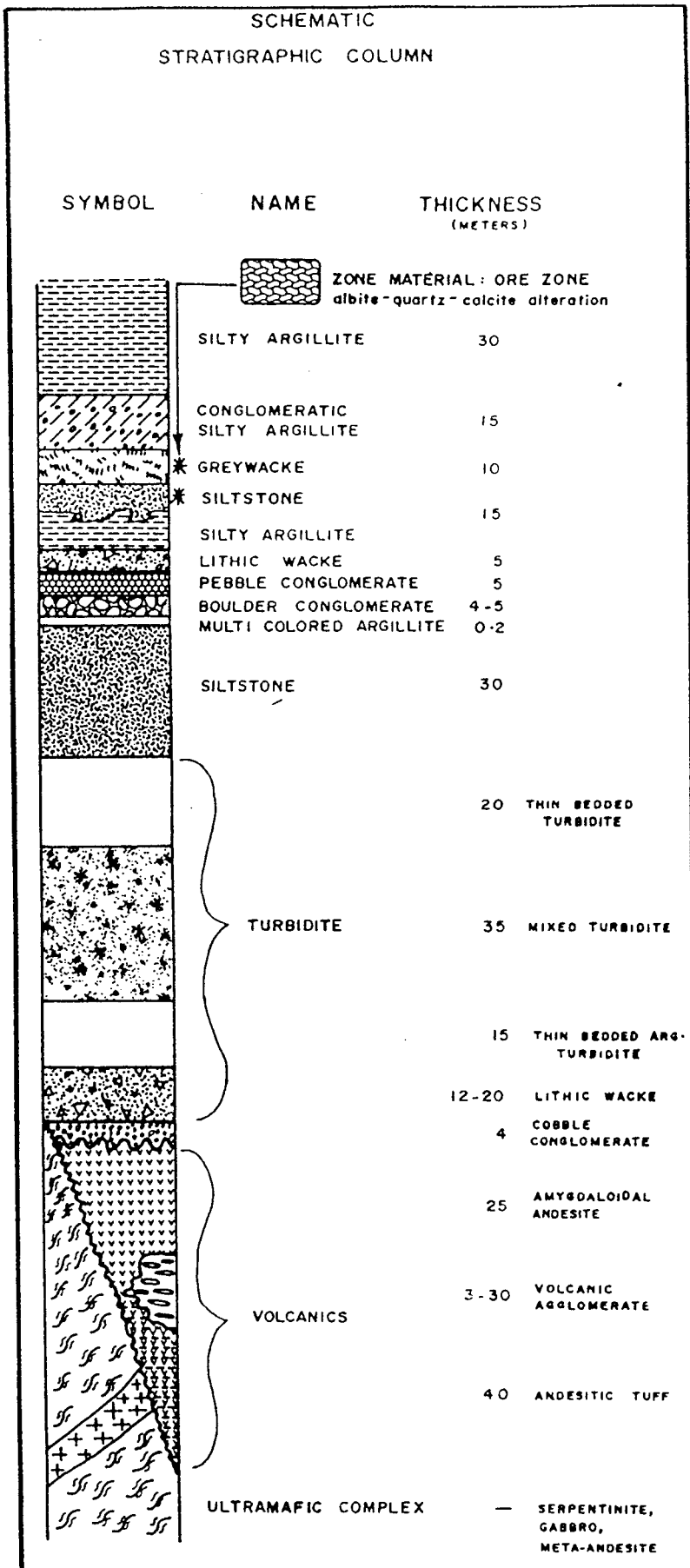


FIGURE 6 STRATIGRAPHY in the vicinity of the CAROLIN MINE.

The basic structure in the Idaho Mine is a complex, asymmetric antiform which plunges about 20° to the northwest. The ore zones amenable to open longhole stoping are located in the thickened hinge portions of the fold while mineralization generally disappears or thins along the fold limbs. The main fold structure is cut by major late fault structures that run subparallel to the fold axial plane. Cross-cutting faults, trending northeast, appear to be an early element that has moved large blocks of volcanic rocks toward the east.

LOCAL GEOLOGY AND MINERALIZATION

Geological mapping of surface exposures has not been satisfactorily completed. There are several areas of particular importance that have not been examined in detail and should be mapped during 1990 (Shearer, 1990A).

The first systematic geological mapping of the entire Idaho, Aurum 1 and Aurum 2 Crown grants, after the reconnaissance by Cairnes from 1924 and 1930, was conducted by D.J. Griffith starting in September 1973. Griffith, in Cochrane, Griffith and Montgomery, 1974, recognized four principal units:

(1) Serpentine
(2) Chloritic, porphyritic greenstone
(3) Interbedded welded tuffs and calcareous argillites and shales
(4) Black slates (Ladner Slate Group)

Essentially, Griffith found the greenstone in isloated blocks near the Hozameen Fault and the welded tuff unit was in an area mainly to the east of the greenstone but west of the Idaho Zone. A detail geological plan by Griffith (Figure 13, 1974 at 1:1,200) shows outcrops, but no geological legend or individual outcrop descriptions are included. Apparently, Griffith at first thought the lithicwacke beds (now included in the Turbidite Unit) represented a welded tuff sequence, although this pyroclastic terminology was dropped from all later reports without explanation.

Unfortunately, this early Carolin mapping by Griffith did not recognize that the greenstone (Andesitic volcanics) are not restricted to discontinuous pods along the Hozameen Fault but are present also as a result of fold and thrust structures within the Ladner Group sedimentary rocks. No comprehensive attempt was made to correlate this early surface mapping with the subsequent drilling or underground programs.

Detail remapping of the 800 Track Level was done during December 1982 and January 1983 by J. Shearer (1983a) (Figure 8). Emphasis was placed on documenting an accurate lithological succession. Care was taken to establish all significant mappable rock units that could be plotted at the 1:250 scale. An integral part of the mapping program was sawing representative rock specimens with a 20 inch diamond saw and examining the textures enhanced on the flat surface. A permanent display case of representative rock types has been set up in the core shack office as a reference suite for future comparison and study.

Structurally, the fundamental element is a plunging, asymmetric, isoclinal antiform as indicated by the northwest strike and easterly dips south of 850N. Diamond drill hole U-240 at 766N shows part of the steeply dipping (-80°) east limb. North of 830N bedding starts to trend northeasterly with northward dips of 25° around 900N. This change in strike and dip is probably due to the drift passing through the hinge area of the plunging antiform.

Starting at the north end of the drift, three partial repetitions of the siltstone unit are apparent between 780N and 835N. These are relatively narrow, tight isoclinal folds subsidiary to the west limb of the main antiform.

A massive node of boulder and pebble conglomerate is exposed between 840N and 890N. Considerable fore-shortening of the coarse clastic units has occurred at this locality. The idea of multiple repetitions by local faulting and isoclinal folding correlates very well with the conglomerate intersections noted in DDH-U-240 at 766N. It is noteworthy that these extremely important conglomerate units are not mentioned in previous diamond drill logs. Correlation of this stratigraphy throughout the Mine as illustrated by the diamond drill log of DDH-587-4 shows that from the north-end of the orebody on 800 Level at 900N to the south-end at

587N on 950 Level the footwall rocks are very similar. Drill hole DDH-587-4 is 330 metres south along plunge from the north end of 800 Level. The difference in elevation is 124 metres. Of particular interest is the section of drillhole 587-4 starting from the major fault at 15.55 metres, where the upper part of the stratigraphic sequence seen on 800 Level is found including (a) multicolour argillite unit, (b) boulder conglomerate, (c) mixed sequence and then mineralized greywacke. The slightly mineralized interval from 31.62 to 33.12 represents the weak southerly extension of the Main "No. 1 ZONE" orebody. Therefore, the rocks from 33.12 to 52.82 compose what was loosely termed in the past "DEAD STUFF IN THE MIDDLE" (Griffiths, 1975). This term is ludicrous to say the least. No. 2 Zone mineralization was intersected in 587-4 between 52.82 and 82.80. From 59.74 to 80.60 the zone averaged 0.122 oz/ton gold over 20.86 metres.

On 800 Level at 720N, graded bedding indicates that the stratigraphic sequence has been inverted. Local inversions may give slightly larger estimates of true thickness in the siltstone and turbidite units than actually occur.

A large area of volcanic rocks have been recognized in the 800 drift starting from 540N and south. Distinct amygdaloidal textures are evident at 508N and fragments up to 10 cm. in diameter with chilled margins make up the bulk of the rock. Granulated fragment boundaries are common.

Major faulting and widespread shattering are apparent in the 800 Exploration Drift between 896N and 925N. This zone of weakness appears to have affected the continuity of the northward extension of minable One Zone mineralization and may be related to the occurrence of higher grade mineralization noted in holes NEX-1, 2 and 3. This is a complex faulted region with some vertical displacement associated with apparent substantial horizontal movement. Preliminary analysis suggests possibly a south block down -north block up vertical displacement. Horizontal movement suggests that the south block has moved west in relation to the north block in which the drift has come into close proximity with the volcanic package. A pair of cross sections should be constructed along the plane of the shatter zone with one section showing the south side and the other the north side. In this manner a more accurate estimate of relative movement may be possible.

A rough stratigraphic column for the footwall sequence below the Idaho Orebody is outlined below:

Unit No.	Colour On Map	Name	True Thickness	Description
		LOWER LADNER GROUP		
9	944	Greywacke (Favourable host for zone material)	15m. exposed in drift.	relatively coarse grained abundant albite-quartz-calcite alteration.
8	936	Mixed sequence: - silty argillite) - argillaceous greywacke) - siltstone)	22 m.	Alternating beds of greywacke, laminated silty argillite and thin bedded siltstone.
3	905	Multi-coloured argillite	0.2 m.	Thin, distinctive laminations of black, green and brown argillite.
2	746	Boulder conglomerate	5 m. to 13.2 m.	Coarse clastic boulders to cobbles, heterolithic, well-rounded.
1	934	Pebble conglomerate	3 m. +	Uniform close packed, pebble size dominate, well-rounded.
4	756	Lithicwacke	3 m.	Very angular, pebble size, clasts have perferred orientation.
5	916	Siltstone	50 m.	Thinbedded, 1 to 2 cm. beds, commonly graded, grades to turbidite.
6a	942	Turbidite (Brown)	10-20 m.	Thicker bedded 5-10 cm. beds, well graded cross bedding, slump structures.
6	942	Turbidite (Green)	55 m.	
		FAULT CONTACT		
		SPIDER PEAK FORMATION		
		Volcanic sequence		
	910	Dark Tuff	40 m.	Dark green, non-bedded.
	738	Coarse volcanic agglomerate - lapilli tuff.	3 m.	Coarse well-rounded fragments, chilled margins.
	738	Amygdaloidal andesite	25 m.+ no base exposed.	Dark green, finely amygdaloidal.
		FAULTED CONTACT		
	931	Serpentinite	Very thick	

DIAMOND DRILLING

(a) Introduction

After the Idaho deposit was delineated by surface diamond drilling starting in 1945-46 with work by Mason (1946) and later continued by Carolin Mines Limited in 1973, 1974 and 1975, confirmation of the surface drill-indicated tonnage was required for senior financing. This was done in 1977 and 1978 by a close spaced, well surveyed, underground diamond drill and bulk sampling program from the Idaho Decline which was driven at roughly -20°. Diamond drill cross sections were constructed at about 33 metre intervals along 600N, 625N, 650N, 700N, 733N, 766N, 804N and 867N.

Drilling by Carolin Mines Limited (and Precambrain Shield in 1975) totalled 39 initial surface holes (22,665 feet). The longest and most northerly, hole #37, was 1,617 feet deep. The underground program consisted of 107 relatively short holes totalling 22,284 feet.

During the surface investigations, D.J. Griffith produced the most detailed logs and devised a workable lithological system. Drill core records of a more reconnaissance nature were produced by W.E. Clarke and apparently by D.R. Cochrane who did not supply a copy to the mine.

Unfortunately, Griffith logged in a pseudo "computer compatible" style using four letter abbreviations which are difficult to decipher and understand. The apparently anticipated computerization of the logs was never completed. However, what is more important, Griffith did not record individual lithological types and their exact position, but rather lumped many diverse rock units together over broad intervals. An example of the comparative inadequacies of Griffith's logging for detail lithological correlation is surface hole #37 which was relogged in 1983. Even major faults in #37 are not mentioned by Griffith.

TABLE II

SIGNIFICANT GOLD INTERSECTIONS
1989 DIAMOND DRILLING IDAHO ZONE
Carolin Mines 1989 Underground Drilling Program

Hole	Interval (metres)	Interval (feet)	Length m (ft)	oz/ton Au
NEX 7	4.57 - 18.5 m	15.0 - 60.7 ft	13.93 m (45.7 ft)	0.195
NEX 8	0 - 14.00 m	0 - 45.7 ft	14.00 m (45.9 ft)	0.077*
includes*	4.50 - 9.93 m	14.8 - 32.6 ft	5.43 m (17.8 ft)	0.086
	19.00 - 21.33 m	62.3 - 70.0 ft	2.33 m (7.65 ft)	0.083
NEX 9	1.50 - 11.53 m	4.9 - 37.8 ft	10.03 m (32.9 ft)	0.101
	19.15 - 28.87 m	62.8 - 94.7 ft	9.72 m (31.9 ft)	0.151
	30.32 - 37.07 m	99.5 - 121.6 ft	6.75 m (22.1 ft)	0.095**
includes	34.37 - 37.07 m	112.7 - 121.6 ft	2.70 m (8.9 ft)	0.151
overall or	1.50 - 37.07 m	5.0 - 126.6 ft	35.57 m (121.6 ft)	0.095
NEX 10				
NEX 11	2.60 - 12.33 m	8.5 - 40.5 ft	9.73 m (31.9 ft)	0.136***
***includes	2.60 - 10.10 m	8.5 - 31.1 ft	7.5 m (24.6 ft)	0.162
	19.07 - 26.47 m	62.6 - 86.9 ft	7.4 m (24.3 ft)	0.115
NEX 12	0 - 10.40 m	0.00 - 34.1 ft	10.40 m (34.1 ft)	0.092
NEX 13	13.90 - 15.30 m	45.6 - 50.2 ft	1.40 m (4.6 ft)	0.092
NEX 14/15		no intersections		
683-1	16.00 - 18.00 m	52.5 - 59.0 ft	2 m (6.5 ft)	0.103
	27.80 - 29.25	91.2 - 96.0 ft	1.45 m (4.8 ft)	0.107
776-1^{+5}	60 - 70.50 m	196.9 - 231.3 ft	10.5 m (34.5 ft)	0.125
	73.50 - 77.50 m	241.1 - 259.3 ft	4 m (13.12 ft)	0.200
776-2^{00}	68.10 - 73.60		5.5 m (18.0 ft)	0.071
	72.10 - 73.60	236.6 - 241.5	1.5 m (4.9 ft)	0.101
776-1^{-50}	66.68 - 71.18 m	218.8 - 233.5 ft	4.5 m (14.7 ft)	0.104

Logs produced by W.E. Clark, because of their nature of being a rapid overview, do not delve into lithological intricacies.

Clark's stratigraphic subdivisions consist essentially of three units: greywacke, argillite, and interbedded greywacke-argillite. Minor subdivisions are greenwacke, lithicwacke and greenstone. The terms greenwacke and greenstone have been used by Clarke and Niels to describe andesite-agglomerate and bedded turbidite. Greenwacke should be discarded as a useful rock name, since it can only lead to confusion on new maps.

(b) 835 Scram Level - North (934N)

An aggressive exploration program north from the existing underground workings has been considered by a number of individuals: Cochrane 1979 C, Clarke 1981, Niels 1982 and Shearer 1983 D, E and I.

Essentially, the north exploration program will entail advancing a drift either on the 862 Level, 835 Level or 800 Track Level to the vicinity of 1150 N and then conducting wide ranging diamond drilling. The likelihood of a general eastward and up movement along the northeast cross faults has been discussed (Shearer 1983 D) and 3 long diamond drill holes N. Ex-1, 2, and 3 were collared in October 1983 to test this projection. The rock types encountered were fully expected by extrapolation from OG-37 surface hole and the 966 N cross-section.

It is therefore apparent that the present knowledge of the stratigraphic column can be used as a powerful tool in projecting the geology beyond the limits of drilling.

Briefly, the results of N.Ex. #1, #2 and #3 can be summarized as follows:

1) All cut a high grade part of No. 1 Zone near the collars of the holes. This portion of No. 1 zone is not included in present ore reserves. The mineralized intersections are as follows:

Drill Hole No.	Intersection (m) From	To	Length m	(ft)	Grade oz/ton Gold
NEX 1	4.20	22.85	18.65	(61.19)	0.194*
*includes	4.20	15.90	11.70	(38.4)	0.261
NEX 2	0	16	16	(52.49)	0.273
NEX 3	4.63	11.50	6.87	(22.54)	0.188

The higher grade gold mineralization found in these holes may be related to the cross-shattering observed between 896N and 925N on 800 Level. Other areas of cross-shattering should be examined for similar higher grade zones.

2) The easterly splay of the SUMP Fault was clearly identified in each hole.

3) A weakly mineralized siltstone unit was encountered in N.Ex. #1 that between 89.00 to 96.50 averaged 0.056 oz/ton gold. This zone does not appear in N.Ex. #2 although the adjacent conglomeratic silty argillite is present in both holes.

4) The Boulder Conglomerate marker unit is present in both holes at around 120 m. This likely represents one limb of a major antiformal structure-Mine fault system.

5) This major antiformal structure is complicated in N.E. #2 by the presence of andesitic agglomerate in the probable core of the fold. The andesite is weakly mineralized with assays running as high as 0.164 oz/ton Au. Substantial ore reserves from altered, sulfide-rich volcanics is a real possibility that should not be ignored.

6) The east limb of the major antiform contains weakly mineralized greywacke and siltstone. This is where a major orebody could be found.

7) N.Ex. #2 terminates in a thick sequence of conglomeratic silty argillite which is usually associated with the eastern margins of the known orebodies.

It is evident that favourable rock units have been identified an additional 100 meters east of the previously known area and that parts of this favourable stratigraphy are mineralized. The fold structures and faults found to the east have many of the characteristics of the ore-bearing zones known in the mine.

Various options (Shearer, 1983 I) of drifting to the north have advantages and disadvantages inherently associated with trackless or tracked mining. From an exploration standpoint, any opening driven past 1150N will adequately explore the favourable ground. The choice between the options will be decided based on equipment availability or subsequent access to small ore blocks. If 800 Level is extended (which now could be done trackless), drill hole N.Ex. 4 suggests that a cross cut should be driven north of 10,000 N to avoid excessive amounts of andesite. The detail results of the 1989 drilling program are discussed below and illustrated on Figures 7, 9, 10, 11 and 12.

835 Scram Level - North (934N)
Diamond Drill Holes NEX-2, 3 (1983) and NEX-7, 8, 9, 10 (1989)
Cross-Section Azimuth 030.5°.

Diamond Drilling along this longitudinal section was designed to test for mineralization continuity of the No. 1 Zone between and down-dip from drill holes NEX-2 and 3.

1989 - NEX-7 (+17°) - This hole tested the mineralized zone material between holes NEX-2 and 3. Zone material was intersected between 3.42 and 23.04 metres. A 13.93 m (45.7 ft) section of the zone averaged 0.195 oz/ton gold. Within this section a 2.81 m interval between 11.21 and 14.02 m assayed 0.391 oz/ton gold. The intense albite-quartz-carbonate alteration and 5 to 20% sulphide content is consistent with what was found in holes NEX-2 and 3.

1989 - NEX-8 (+8°) - This hole tested the mineralized zone immediately below hole NEX-2. The zone material in this hold, although intensely altered and pyritized, carry lower gold values. Low angle faulting has disrupted the mineralized zone. From the hole collar to 14.00 metres the zone

average 0.077 oz/ton gold over 14 m (46 ft). From 18.83 - 20.25 metres a "fault-wedge" of zone material averaged 0.083 oz/ton gold.

1989 - NEX-9 (0°) - This horizontal hole intersected three significant sections of zone material. The grade of these intersections is of a higher tenor then found in NEX-8 immediately above. A 10.03 m (32.9 ft) section of zone material (between 1.5 m and 11.53 m interval) carries 0.101 oz/ton gold. A second mineralized zone carries 9.72 m (31.88 ft) of 0.151 oz/ton gold. This zone occurs in the interval between 19.15 and 28.87 metres. A third section of zone material occurs near the end of the hole between the 30.32 to 37.07 interval. This 6.75 m (22 ft) zone assays 0.075 oz/ton gold within which a 2.70 m (8.86 ft) section of 0.151 oz/ton gold occurs. All zones are grey coloured and intensely altered with albite-quartz-carbonate. The zones are bounded on both hanging and footwall sides with either chloritic greywacke or altered siltstone.

1989 - NEX-10 (-6°) - This hole was drilled to test down dip extension mineralized zones found immediately above in NEX-9. Zone material was only present to a minor extent in this hole. Gold values are very weak ranging between 0.004 and 0.050 oz/ton gold. Strong brecciation and shearing between 2 metres and 7 metres down hole indicate that a major low angle fault has displaced No. 1 zone and forms the lower boundary of the mineralization.

835 Scram level - North (934N)
Diamond Drill Holes NEX-1 (1983), NEX-11, 12, 13 (1989)
Cross-Section Azimuth 053° (Based on Mine North)

Drill holes NEX-11, 12 and 13 were drilled in 1989 to test easterly extensions of the No. 1 Zone adjacent to and below the major intersection indicated in hole NEX-1 in 1983.

1989 - NEX-11 (+20° dip, 053° Azimuth) - This drill hole was designed to test the zone found in NEX-1 farther to the east and at the same elevation.

The No. 1 zone retained continuity towards the east of this elevation from 2.60 m to 12.33 m, 9.73 m (31.9 ft) the zone averaged 0.136 oz/ton gold. Within this interval a 7.5 m (24.6 ft) averages 0.162 oz/ton gold.

A second interval of zone material is present between 19.07 and 26.47 m. This 7.4 m (24.28 ft) section assayed 0.115 oz/ton gold.

A major fault zone occurs between 12.33 and 14.32 m.

1989 - NEX-12 (+10°, Az 053°) - This hole tested the No. 1 Zone below hole NEX-11. The zone was found to continue downwards, but gold values decreased. From the collar of the hole to a depth of 10.4 m, the 10.4 m (34.12 ft) section of zone material assayed 0.092 oz/ton gold. Shearing of altered siltstone and greywacke occurs between the 10.9 - 18.95 m.

1989 - NEX-13 (0°, Az 053°) - This hole was designed to further test the extension of the No. 1 Zone below hole NEX-12. A major fault zone was found near the collar of NEX-13 and no intervals of mineralized zone material was found. This low angle faulting observed near the hole collar has displaced the No. 1 Zone at this elevation.

835 Scram Level - North (934N)
Drill Holes NEX-6 (1984), NEX-14 (1983)
Cross-Section Azimuth - 010° (Based on Mine North)

Drill hole NEX-6 was drilled along azimuth 350° to test the northerly extension and plunge of the No. 1 Zone. In 1989 Drill hole NEX-14 was drilled along azimuth 010° to test the northerly extension of the No. 1 Zone between holes NEX-2, 3, 7 - 10 and NEX-6.

1983 - NEX-6 (-5°) - This hole intersection 9.88 m (32.7 ft) of 0.097 oz/ton gold. Moderate albite-quartz-carbonate alteration is characteristic of this zone.

1989 - NEX-14 (+15) - This hole was designed to test for zone material between the lower grade material found to the northwest in hole NEX-6 and high grade material found to the east in holes NEX-2, 3 and 7 - 10. Hole NEX-14 is weakly mineralized and only one lower grade section of zone material was found in the interval between 20.50 and 26.53 metres. The gold values range between 0.018 and 0.085 oz/ton gold. The No. 1 Zone appears to be diminishing in strength towards the northwest, however, the more intense faulting found in this area suggest that the zone is tectonically displaced.

835 Scram Level - North (934)
Diamond Drill Hole NEX-15
Cross-Section Azimuth 330°

1989 - NEX-15 (+15°) - This hole was designed to test for extensions of the No. 1 Zone further to the west than previously tested. Two small sections of zone material was found but alteration (albite-quartz-carbonate) was found to be generally weak. Chlorite alteration is of moderate intensity. The first section occurs in the interval between 4.00 and 6.00 m and the gold content range between 0.014 and 0.074 oz/ton gold.

The second section of zone material occurs in the interval between 9.00 and 13.45 m. The gold values range between 0.012 and 0.058 oz/ton gold.

Overall, these sub-longitudinal holes show that the No. 1 Zone is relatively narrow between 934N and 966N. Individual higher grade sections are sandwiched along the Mine and Sump Faults, and have a lenticular (limited strike extend) shape. The mineralized zone as a whole is continuous, but due to its narrowness, the cross-sectional holes on 966N have not investigated the area where No. 1 Zone extends past 966N.

(c) 835 Scram Level - South Exploration Drift Cross-Section 683 N

Drill hole 89-683-1 was drilled to test for the northerly continuation of a well mineralized intermediate zone that was discovered in hole 675-6 (dip +57°) (Figure 13). Hole 675-6 was drilled easterly from section 675N and intersected 11.24 m of 0.252 oz/ton gold. Hole 89-683-1 was drilled from section 683N in an easterly direction and at an angle of +16°. Hole 89-683-1 intersected 4.4 metres (27.80 - 32.20 m) of dark chloritic altered zone material that contained short sections of albite and quartz alteration. This intersection averaged 0.072 oz/ton gold. Although this intersection extended the mineralized zone northwards from section 675 N the albite and quartz alteration is not as well developed as in the well mineralized intersection found in hole 675-6. Chloritic greywacke is in contact with the zone material in hole 89-683-1 which is a characteristic feature of the Idaho No. 1 zone. The diminished albite and quartz alteration and weaker mineralization most likely represents a local variation in alteration /mineralization intensity rather than pinching out of the zone. Because the zone remains well developed to the north, further drilling in this area is warranted at a lower priority.

(d) 800 Level 766N and 776N

During 1989, one hole was drilled at the bottom of the 766N section and two holes on the 776N section. This is the thickest and highest grade part presently known of the No. 3 Zone.

A great deal of geological information is contained in the regular diamond drill cross-sections throughout the mine. Unfortunately, much of this information is not presently available due to inadequate drill logs. The following discussion is based on one section that has been relogged by J. Shearer and reasonable extrapolations to other sections taking into consideration nearby underground workings that have been remapped.

A re-examination of cross section 766 N (which is presently the southern edge of 79 Stope) has demonstrated that all geological data should be compiled as soon as

possible throughout the Mine. This re-logging is based on the fact that a regular, easily defined stratigraphy with prominent marker units occurs around the orebody. The most important cross sections from the 1978 Idaho decline drilling campaign to be re-logged are 733 N, 750 N and 785 N for No. 3 Zone details plus 900 N, 934 N and 966 N for future drilling from the 800 North Exploration Drive.

Essentially, the re-examination of cross section 766 N (Figure 14) demonstrates that:

(A) The orebody can be easily divided between (1) light coloured "Zone Material" (quartz-albite-calcite rock) grading much greater than 0.15 oz/ton Au and (2) dark chloritic greywacke which consistently runs around 0.05 oz/ton Au or lower. These two ore units have not been adequately differentiated in the past.

As a consequence, even at 0.05 oz/ton Au cut-off the ore outlined for stoping in the upper part of No. 1 Zone on 766 N cross-section could have been moved west to the center drift on 900 Level and much of the low grade material could have been avoided during mining.

(B) The overall structure of the ore zones conforms to an apparent complex asymmetric antiform with the main concentration of ore in the hinge region. Ore zone repetitions are related to general "saddle-reefs" along the main axial plane of the antiform. The mineralized intersections on 766 N section are not connected in a straight-line vertical sense as previously thought, but rather are separated by the enclosing sediments over the hinge area. The lowest ore intersections are distinctly separate from No. 1 Zone.

(C) The uppermost ore intersections are likewise connected over the hinge area instead of two lenses on both sides. Ore outlines in this region will be much different than previously thought. The top drill holes end in altered sediments rather than volcanics.

Drill hole 89-776-1 (-5°) intersected 4.5 m (14.76 feet) averaging 0.104 oz/ton of zone material flanked by chloritic greywacke. This demonstrates the zone found in U-240 (+5°) (14.88 m averaging 0.123 oz/ton Au) extends to depth. The same zone was seen in both holes on 776N section. This part of No. 3 Zone has not been investigated to the north (Sections 804N, 867N, lower part of 900N) or immediately to the south (733N and 700N).

The zone of potential ore on 766N (No. 3 Zone) extends from about 850 elevation to at least 805 elevation (open at depth) and has an approximate presently defined cross-sectional area of 400 square metres.

(e) Miscellaneous Future Targets

A review of areas in and around the Idaho Zones indicates that attention of a lower priority than given to the North Exploration or Northern 3 Zone is required to evaluate these smaller zones of moderate potential. These areas are often presently indicated by one or two holes.

(1) 766N 950 Elevation to the east
3,000 feet of drilling (600 - 700E)
To probe for new ore above and east of the Idaho

(2) 733N 980 Ramp
3,000 feet of drilling
New ore above and east of the Idaho

(3) 804N 950 Elevation
3,000 feet of drilling
New ore above and east of the Idaho

(4) Extreme south end of 3 Zone and "4" Zone
612N 900 Level
625N 900 Level
637N 900 Level
650N 900 Level
687N 900 Level
3,000 feet of diamond drilling

(5) Block 8: north and south extensions
900 Level, 750N + 785N, 90-74 decline, 1400 feet of drilling
(Block 8 presently is estimated to contain 34,600 tons at 0.133 oz/ton Au).

(6) Other Class III material, Blocks 4, 5, 6, 7 need to be defined with additional drilling. The possibility exists that these blocks could be extended.

These areas lend themselves to on-going evaluations and could be investigated in conjunction with major programs to the north to lower mobilization costs. A few holes on each target may give important information and continued work should be rigorously tied to the success of each hole.

CONCLUSIONS

Since August 1984 there has been no routine mining at the Idaho Mine. Between December 1981 and August 1984 production came from two orebodies at a rate of approximately 1,500 tons per day, but delays and interruptions of up to several months at a time were experienced.

Difficulties in metallurgy precluded adequate gold recoveries in the milling circuit which ultimately contributed to mining and grade control problems underground as stopes remained open and active long after their designed lifetime. Hangingwall sloughage resulted in unexpected dilution.

Geological work during routine mining and preparation for northward exploration has demonstrated a regular, but somewhat complex stratigraphy which appears to control the location of orebodies within the hinge area of major fold structures. This recognized stratigraphy has not been satisfactorily documented by relogging in detail through the close-spaced drill cross-sections in the mine.

The exploration potential of the property which formed one of the attractive facets of the operation when the production decision was announed has not been diminished by the passage of time simply because it has not been adequately tested.

Based on the comprehensive database that has been assembled in the past on the Idaho orebodies, a program of diamond drilling was completed in November 1989 on two separate targets as follows:

Target 1: Northward continuation of No. 1 Zone, 1989 program consisted of nine off-section drill holes to investigate the detailed morphology of the No. 1 Zone north of 934 N as a follow-up to the NEX 1 to 3 long-holes drilled in 1983. Total drilled in 1989 on this target was 929 feet.

Target 2: Investigation of No. 3 Zone below 79 stope and 73 stope, for a total of 1,074 feet in four holes.

Drilling in 1989 on Target 1 demonstrated that ore-grade mineralization extends north to at least the 966N, as shown in NEX 9 which averaged 0.095 oz/ton gold over 121.6 feet. Existing drill stations at 966N on 800 level provide limited access for future drilling to track No. 1 Zone to the north. The higher grade values found in NEX-1, 2 and 3 may be related to the east-west shatter zone found between 896N and 925N observed on 800 Level.

I strongly recommend that, if possible, this northward drifting program be done after the results are compiled for the McMaster surface drilling it the summer of 1990 (Shearer, 1990).

Drilling in 1989 on Target 2 demonstrated that ore grade mineralization occurs in No. 3 Zone above and below the 800 haulage level. This part of No. 3 Zone has the potential to contain several hundred thousand tons of mineralized material which could possibly be developed at reasonable cost. Intervals encountered (in addition to previous wide-spaced holes) are as follows:

Hole #	Dip	Interval	Core Length	Assay
89-776-1	+5°	196.85 ft to 231.30 ft	34.45 ft	0.125 oz/ton Au
		241.14 ft to 254.21 ft	13.12 ft	0.200 oz/ton Au
89-776-2	0°	236.55 ft to 241.45 ft	4.92 ft	0.101 oz/ton Au
89-766-1	-5°	218.76 ft to 233.53 ft	14.78 ft	0.104 oz/ton Au

RECOMMENDATIONS

On Target 1 an additional 3,000 feet of drilling is recommended from the 966N section before drifting will be necessary to allow access to 1000N and northward.

The initial 2,000 feet of northward drilling will cost about $60,000 and will investigate the area between holes 966-1 and 966-3. By swinging the drill to the north, the area north to 1000N can be reached from the 966N - 800 level drill site. The drifting program will require a minimum of 600 feet of a exploration-sized opening and a minimum of 5,000 feet of drilling. The cost of such a program will be around $400,000 to $500,000 (refer to Cost Estimate). The objective would be to initially track No. 1 Zone to the north to find a new major ore body either above or below 800 level and north of 1000N. I strongly recommend that, if possible, the northward drifting program be done after the results are compiled for the McMaster surface drilling in the summer of 1990 (Shearer, 1990).

On Target 2, additional drilling of 3,000 ft. is recommended to fill-in and extend this part of No. 3 Zone on cross-sections 750 N, 766 N, 776 N, 785 N and 804 N. If this program is successful, then an additional 3,000 feet of drilling would be warranted to raise the mineral inventory to an indicated category. Cost of each phase would be about $90,000. Once the size and grade of the zone is known, a mining engineer should review the data and assign development and operating costs to bring the ore up to a loading pocket on the 800 level. The No. 3 Zone is close to the 79 scram on 835 level. The likelihood of continued success of Target 2 work is, in my opinion, quite good. The structure appears strong and the mineralized widths are relatively wide.

Other underground targets of lower priority, presently defined by one or two drill holes, exist in the general Idaho area. Each of these targets should be assessed and rated according to the probability on a geological basis of success in expanding reserves. These areas can be investigated in conjunction with work on Target 1 and 2.

In preparation for the North Exploration the following items should be addressed:

(1) relog 1977-78 core that is available core in cross-sections 733 N, 750 N and 785 N, 804N, 837N, 867N and 900N and plot on 1:250 drawings;

(2) finish detail surface geological mapping;

(3) construct cross-sections north and south of the shattered area in the North Exploration drift 900N and 934N.

Cost Estimates for future work are contained in the following sections.

Respectfully submitted,

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COST ESTIMATE FOR FUTURE WORK

TARGET 1

(A) Diamond drilling from 966N - 800 Level

2,000 feet of drilling between 966-1 + 966-3
plus swinging the drill to the north (1000N)

Contract diamond drilling plus field cost items 2,000 feet @ $23.50 per foot	=	$ 47,000
Geological supervision, and planning and compilation	-	8,000
Shift boss control and incidentals (electric power, etc.)	-	2,000
Contingencies	-	3,000
Subtotal	-	$ 60,000

(B) Drifting and drilling past volcanic block in the vicinity of 1100N.

This program is recommended to commence after the results from the summer 1990 McMaster drilling and trenching are compiled.

At least 600 feet of exploration sized opening 600 feet @ $335 per foot (detailed cost estimate should be calculated) Trackless	=	$201,000
Contract Diamond drilling, 5,000 feet @ $23.50	=	117,500
Geological supervision, planning and compilation	=	30,000
Shift boss control and incidentals, surveying	=	20,000
20% extra footage (if required)	=	65,000
Contingencies	=	40,000
		$473,500

COST ESTIMATE FOR FUTURE WORK

TARGET 2 (3 Zone Mineralization)

(A) Diamond drilling on cross-sections 750N, 766N, 776N, 785N, 804N

Contract diamond drilling 3,000 feet @ $23.50 per foot	=	$ 70,500
Geological supervision, planning and compilation	-	14,500
Shift boss control and incidentals (electric power, etc.)	-	2,000
Mining consultant, preliminary evaluation	-	3,000
Cost		$ 90,000

(B) Follow-up diamond drilling on 3 Zone to raise preliminary mineral inventory calculations to an indicated category (contingent on success of the (A) drilling.

Cost	$ 90,000
Total	$180,000

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APPENDIX I

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Johan T. Shearer of the City of Port Coquitlam, in the Province of British Columbia, do hereby certify:

1. I graduated in Honours Geology (B. Sc. 1973) from the University of British Columbia and the University of London, Imperial College, (M. Sc. 1977).

2. I have practised my profession as an Exploration Geologist continuously since graduation and have been employed by such mining companies as McIntyre Mines Ltd., J.C. Stephen Explorations Ltd., Carolin Mines Ltd. and TRM Engineering Ltd. I am presently employed by New Global Resources Ltd.

3. I am a fellow of the Geological Association of Canada (Fellow No. F439). I am also a member of the Canadian Institute of Mining and Metallurgy, the Geological Society of London and the Mineralogical Association of Canada.

4. I supervised all exploration on the Ladner Creek North Project from February 1981 to November 1982 and worked underground as exploration geologist at the Idaho Mine from November 1982 to February 1984 engaged in detail geological mapping and project supervision. I have logged the Idaho program diamond drill core in November 1989 and supervised the geological staff during the underground drilling in 1989 for the Idaho Program.

5. I have no interest in Carolin Mines Ltd. or any of its affiliated companies, nor do I expect to receive any in the future. I consent to the use of this report in or in connection with a prospectus or in a statement of Material facts relating to the raising of funds.

6. Other New Global personnel working on the Idaho underground drilling Project were B. Lennan and W. Howell, both graduate geologists. A further note on these individuals is attached.

Dated at Vancouver, British Columbia

J.T. Shearer, M. Sc., F.G.A.C.
January 24, 1990

APPENDIX II

STATEMENT OF COSTS (IDAHO 1989 PROGRAM)

STATEMENT OF COSTS - IDAHO ZONE
1989 EXPLORATION PROGRAM

Labour, Wages and Benefits

J.T. Shearer, M.Sc., Senior Geologist 19.5 days at $300 per day	$ 5,850.00
W.B. Lennan, B.Sc., Geologist 28 days at $250 per day	7,000.00
W.A. Howell, B.Sc., Geologist 4.5 days at $250 per day	1,125.00
S.L. Shearer, Core Splitter 6 days at $140 per day	840.00
D.G. Perrett, Core Splitter 3 days at $175 per day	525.00
D. Crowmartie, Core Splitter 1.5 days at $100 per day	150.00
Subtotal	$15,490.00
Truck rentals and operating costs - Redhawk, New Global	1,215.00
Fuel	317.76
Meals and groceries	398.81
Accommodation (motels)	360.40
Project supplies	41.63
Reproduction	697.52
Drafting supplies	65.28
Word processing	766.75
Telephone (mobile and office long distance)	112.32
Gold assay analysis - Chemex Labs - 216 samples x $15/sample	3,240.00
Diamond drilling - 2,003 ft x $22.40/ft	44,867.20
Subtotal	$52,082.67
Total	$67,572.67

APPENDIX III

DIAMOND DRILL CONTRACT

F. BOISVENU DRILLING LTD.
203 960 QUAYSIDE DRIVE
NEW WESTMINSTER, B.C.
V3M 6G2

August 16, 1989

Carolin Mines Ltd.
602-700 W. Pender St.
Vancouver, B.C.
V6C 1G8

Attention: Robert Handfield

Dear Sirs:

Detailed below is our proposal for the surface and underground drilling contract on your company's property located near Hope, B.C. It is our understanding that there will be a minimum of 5,000 feet drilling, recovering BQ wireline core. Drilling to commence approximately August 1989.

Mobilization and Demobilization:

There will be a $2,500.00 charge for mobilization and demobilization of our men, drills, tractor and equipment from Delta to the truck unloading point and return.

Drilling Rates:	BQ
0-500'	$15.60/ft.
500'-1000'	17.40/ft.
Overburden drilling	Casing 0 - 30' will be charged at $15.60 per foot for BW. If overburden is greater than 30', field cost rates will apply for the excess, if it is more costly than the charge per foot.

Equipment:

We will supply a Conners electric drill for the underground drilling and a JKS 300 diesel drill for the surface drilling.

Surface Vehicle:

We will supply a surface 4 x 4 truck at no charge.

Kabota $150 per day —
Bike $30 per day. —
hr

Tractor:

We will supply a Komatsu D41A tractor for use in site preparation, moving and road building at $65.00 per hour.

Field Cost Rates:

Man hour rate $27.00 per hour
~~Drill hour rate~~ $20.00 per hour

Mud:

Mud, additives, rod grease and soluble oil required in the drilling will be supplied by us and charged at field costs.

Fuel:

We will supply fuel for the operation of the drill and equipment at no charge.

Surveys:

3 · 15.60 = dip tests

Clinometer dip tests, will be charged at three times the footage rate at the depth the test is taken. Other tests will be charged at field costs.

Drilling Crew:

We will operate two shifts, ten hours per day, seven days per week, as required for each drill.

Core Boxes:

Core boxes if supplied by ourselves will be charged at field costs. ? $8 box ?

Casing:

We will supply casing as required to carry on the work. Casing that is left in holes at request of the Field Representative will be charged to the company at field costs.

Drill Rods:

Drill rods, core barrels, core bits, reaming shells, casing shoes, and other down-hole tools lost or damaged in holes, without negligence on the part of the drill crew during a period when work is being performed at field cost rates, will be charged to the company at field costs.

Hole Stabilization:

If any hole requires stabilization because of caves, field cost rates will apply.

Daily Travel:

Daily travel in excess of two man hours per shift will be charged at the hourly labour rate.

Moves Between Holes:

Teardown, moving ~~and set-up of equipment~~ between drill holes will not be charged for the first 8 man hours of each move. Hours in excess of this will be charged at $27.00 per man hour.

Set-Up and Tear Down:

Moving from the truck unloading point to the first drill site and moving from the last drill site to the truck loading point will be charged at the hourly man hour rates for the total man hours to move in and out.

Waterline:

We will supply 3,000 feet of waterline hose and water pump capable of a vertical lift of 300 feet. The installation, maintenance and removal of the waterline and equipment will be charged at the hourly man hour rate.

Camp:

We will supply room and board for our crew at no charge.

Standby:

Standby will be charged at the field cost rates up to a maximum of 8 hours per man per shift and will include any delays caused by yourself. All other delays, such as mechanical breakdown, shortage of supplies, materials, tools or drill crew will be the contractors' responsibility. Standby includes waiting for moving orders, and delays caused by weather or lack of transport.

Payment:

Invoices will be rendered semi-monthly and will be due and payable in full in Canadian funds on receipt.

Yours very truly,

F.BOISVENU DRILLING LTD.

Per: Fern Boisvenu

FB/mg

APPENDIX IV

LIST OF PERSONNEL AND DATES WORKED

LIST OF PERSONNEL AND DATES WORKED
ON 1989 IDAHO ZONE

Name	Position	Address	Dates Worked - 1989 - 1990
J.T. Shearer	Senior Geologist (M.Sc.)	3832 St. Thomas St. Port Coquitlam, B.C.	Nov. 16, 17, 18, 21, 22, 23 27, 28 (8 days) Dec. 1 (½ days), 5, 6, 7, 8, 11, 12, 16, 28, 29 (9.5 days)
W.B. Lennon	Geologist (B.Sc.)	876 Lynwood Ave. Port Coquitlam, B.C.	Nov. 16 - 30, 1989 (15 days) Dec. 1, 2 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 22 (13 days)
W.A. Howell	Geologist (B.Sc.)	15294 - 96A Ave. Surrey, B.C.	Nov. 17 (½ day), 18 - 21, (4.5 days)
S.L. Shearer	Core Splitter	3345 Mason Ave. Port Coquitlam, B.C.	Nov. 16 - 21, 1989 (6 days)
D.G. Perrett	Core Splitter	15331 - 17 Ave. South Surrey, B.C.	Nov. 22 - 24, 1989 (3 days)
D. Crowmartie	Core Splitter	General Delivery Hope, B.C.	Nov. 24 (½ day), 25 (1.5 days)

Mr. Lennan graduated from the University of British Columbia in 1973 (B.Sc.) and has worked in Mining Exploration in a variety of projects since that time. Mr. Lennan has also worked on the Aurum (1988) and McMaster (1989) drilling programs.

Mr. Howell also graduated from the University of British Columbia in 1973 (B.Sc.) and has gained extensive experience in geological evaluations since graduation.

APPENDIX V

ANALYTICAL PROCEDURES AND ASSAY CERTIFICATES

■ SAMPLE PREPARATION

We emphasize the importance of properly preparing a sample for analysis. For most types of analytical determinations only a small fraction of the sample is utilized. The analytical result must be valid for the entire sample and not just for this sub-sample. In effect, a poorly prepared sample is not worth analyzing. Routine sample preparation procedures are listed below.

ROCK AND DRILL SAMPLES

NOTE: Codes in parentheses refer to procedures for geochemical (trace level) samples rather than ore-grade material. Separate facilities are used to avoid contamination.

Procedure code	Description
208 (205)	Multiple stage crushing of up to 5 kg (10 pounds) of sample; riffle split and pulverize to approximately -150 mesh.
248	Same as code 208, but using a ceramic (ZrO_2) pulverizer which eliminates Fe and Cr contamination.
207 (212)	For samples with suspected nugget or free gold effects. Procedure as per 208, then sieve pulp through a -150 mesh screen. Examine +150 mesh fraction for metallics. If present, save +150 mesh fraction; if not, +150 mesh fraction is hand pulverized and homogenized with original sample.
277	Crush and pulverize the entire sample (up to 5 kg/10 pounds) to approximately -80 mesh, then take a representative split and pulverize to less than -150 mesh.
247	Pulverize -10 mesh material to less than -150 mesh.
219	Drying charge. Applied to samples too wet to be crushed upon receipt.
251	Overweight charge for procedures 208/205 and 207/212. (Over 5 kg/10 pounds)
271	Overweight charge for procedure 277. (Over 5 kg/10 pounds)

ORE-GRADE ANALYSIS

If metric units (g/tonne) are preferred, please use the codes in parentheses.

398 (399)	Gold	1/2 A.T.	Fire assay, A.A. finish	0.002 oz/t
998 (999)	Gold	1 A.T.	Fire assay, A.A. finish	0.001 oz/t
996 (997)	Gold	1 A.T.	Fire assay, grav. finish	0.002 oz/t
	Silver	Added to any fire assay gold determination		
	Silver	Without gold determination		

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To: NEW GLOBAL RESOURCES

548 BEATTY ST.
VANCOUVER, BC
V6B 2L3

Project :
Comments:

Date : 3-DEC-89
Invoice # : I-8930916
P.O. # :

CERTIFICATE OF ANALYSIS A8930916

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T
73913	207	--	0.042
73914	207	--	0.038
73915	207	--	0.092
73916	207	--	0.040
73917	207	--	0.020
73918	207	--	< 0.003
73919	207	--	< 0.003
73920	207	--	0.020
73921	207	--	0.052
73922	207	--	0.032
73923	207	--	0.040
73924	207	--	0.062
73925	207	--	0.012
73926	207	--	0.026
73927	207	--	0.016
73928	207	--	0.044
73929	207	--	0.085
73930	207	--	0.018
73931	207	--	0.028
73932	207	--	0.038
73933	207	--	0.048
73934	207	--	0.026
73935	207	--	0.006
73936	207	--	0.010
73937	207	--	0.008
73938	207	--	0.026
73939	207	--	0.022
73940	207	--	0.014
73941	207	--	0.074
73942	207	--	0.038
73943	207	--	0.020
73944	207	--	0.058
73945	207	--	0.026
73946	207	--	0.012
73947	207	--	0.028
73948	207	--	0.006
73949	207	--	< 0.003
73950	207	--	0.038
73951	207	--	0.056
73952	207	--	0.008

CERTIFICATION : D Unrt

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212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To: [redacted] GLOBAL RESOURCES

548 BEATTY ST.
VANCOUVER, BC
V6B 2L3

Project :
Comments:

Date : 3-DEC-89
Invoice # : I-8930916
P.O. # :

CERTIFICATE OF ANALYSIS A8930916

SAMPLE DESCRIPTION	PREP CODE	Au FA oz/T
73953	207 --	0.004
73954	207 --	0.103
73955	207 --	< 0.003
73956	207 --	0.042
73957	207 --	0.004
73958	207 --	0.107
73959	207 --	0.052
73960	207 --	0.058
73961	207 --	0.008
73962	207 --	< 0.003
73963	207 --	0.006
73964	207 --	0.012
73965	207 --	0.120
73966	207 --	0.110
73967	207 --	0.114
73968	207 --	0.126
73969	207 --	0.082
73970	207 --	0.116
73971	207 --	0.204
73972	207 --	0.018
73973	207 --	0.032
73974	207 --	0.152
73975	207 --	0.142
73976	207 --	0.290
73977	207 --	0.012

CERTIFICATION : A Chrisé

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To: [redacted]

602 - 700 W. PENDER ST.
VANCOUVER, BC
V6C 1G8

Project : CAROLIN IDAHO
Comments: CC: J. SHEARER

Page No. : 1
Tot. Pages: 1
Date : 3-DEC-89
Invoice # : I-8930988
P.O. # :

CERTIFICATE OF ANALYSIS A8930988

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T
39955	207	--	0.010
39956	207	--	0.046
39957	207	--	0.146
39958	207	--	0.119
39959	207	--	0.040
39960	207	--	0.034
39961	207	--	0.008
39962	207	--	< 0.003
39963	207	--	0.006
39964	207	--	0.068
39965	207	--	0.038
39966	207	--	0.032
39967	207	--	0.008
73978	207	--	0.010
73979	207	--	0.020
73980	207	--	0.018
73981	207	--	0.068
73982	207	--	0.082
73983	207	--	0.068
73984	207	--	0.036
73985	207	--	0.101
73986	207	--	0.026
73987	207	--	0.004
73988	207	--	0.032
73989	207	--	0.008
73990	207	--	< 0.003
73991	207	--	0.008
73992	207	--	0.016
73993	207	--	0.014
73994	207	--	0.006
73995	207	--	0.048
73996	207	--	0.026
73997	207	--	0.014
73998	207	--	0.024
73999	207	--	0.032
74000	207	--	0.032

CERTIFICATION : Ghost

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PHONE (604) 984-0221

To : [redacted] LIN[redacted]ES L[redacted] ED [redacted]
602 - 700 W. PENDER ST.
VANCOUVER, BC
V6C 1G8
Project : CAROLIN UNDERGROUND
Comments: CC: J. SHEARER

[redacted]age [redacted] : 1
Tot. Pages: 3
Date : 30-NOV-89
Invoice # : I-8930779
P.O. # :

CERTIFICATE OF ANALYSIS A8930779

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T
73173	207	--	0.120
73174	207	--	0.026
73175	207	--	0.014
73251	207	--	0.020
73252	207	--	0.118
73253	207	--	0.042
73254	207	--	0.064
73255	207	--	0.050
73256	207	--	0.040
73257	207	--	0.139
73258	207	--	0.032
73259	207	--	0.128
73260	207	--	0.098
73261	207	--	0.131
73262	207	--	0.076
73263	207	--	0.034
73264	207	--	0.016
73265	207	--	0.076
73266	207	--	0.052
73267	207	--	0.007
73268	207	--	0.102
73269	207	--	0.124
73270	207	--	0.197
73271	207	--	0.100
73272	207	--	0.206
73273	207	--	0.176
73274	207	--	0.034
73275	207	--	0.094
73276	207	--	0.020
73277	207	--	0.062
73278	207	--	0.134
73279	207	--	0.165
73280	207	--	0.026
73281	207	--	0.010
73282	207	--	0.022
73283	207	--	0.024
73284	207	--	0.008
73285	207	--	0.022
73286	207	--	0.008
73287	207	--	0.008

CERTIFICATION : A. Chuvt

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To: [redacted]LIN[redacted]ES L[redacted]ED
602 - 700 W. PENDER ST.
VANCOUVER, BC
V6C 1G8
Project : CAROLIN UNDERGROUND
Comments: CC: J.SHEARER

Date : 30-NOV-89
Invoice # : I-8930779
P.O. # :

CERTIFICATE OF ANALYSIS A8930779

SAMPLE DESCRIPTION	PREP CODE	Au FA oz/T
73288	207 --	0.006
73289	207 --	0.010
73290	207 --	0.012
73291	207 --	0.008
73292	207 --	0.010
73293	207 --	0.006
73294	207 --	0.050
73295	207 --	0.018
73296	207 --	0.012
73297	207 --	0.004
73298	207 --	0.020
73299	207 --	0.010
73300	207 --	0.024
73301	207 --	0.066
73302	207 --	0.180
73303	207 --	0.176
73304	207 --	0.232
73305	207 --	0.142
73306	207 --	0.050
73307	207 --	0.018
73308	207 --	0.008
73309	207 --	0.062
73310	207 --	0.050
73311	207 --	0.032
73312	207 --	0.122
73313	207 --	0.050
73314	207 --	0.090
73315	207 --	0.213
73316	207 --	0.124
73317	207 --	0.004
73318	207 --	0.022
73319	207 --	0.020
73320	207 --	0.008
73321	207 --	0.028
73322	207 --	0.146
73323	207 --	0.188
73324	207 --	0.070
73325	207 --	0.058
73901	207 --	0.036
73902	207 --	0.072

CERTIFICATION : A Unit

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PHONE (604) 984-0221

To : LIN[redacted]ES L[redacted]ED
602 - 700 W. PENDER ST.
VANCOUVER, BC
V6C 1G8
Project : CAROLIN UNDERGROUND
Comments: CC: J. SHEARER

Page [redacted] : 3
Tot. Pages: 3
Date : 30-NOV-89
Invoice # : I-8930779
P.O. # :

CERTIFICATE OF ANALYSIS A8930779

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T
73903	207	--	0.072
73904	207	--	0.032
73905	207	--	0.080
73906	207	--	0.060
73907	207	--	0.020
73908	207	--	0.044
73909	207	--	0.062
73910	207	--	0.054
73911	207	--	0.020
73912	207	--	0.004

CERTIFICATION : D Munro

Chemex Labs Ltd.
Analytical Chemists • Geochemists • Registered Assayers
212 BROOKSBANK AVE. NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To: CAROLIN MINES LIMITED

602 - 700 W. PENDER ST.
VANCOUVER, BC
V6C 1G8

Project : IDAHO
Comments: CC: JOE SHEARER

Date : 27-NOV-89
Invoice # : I-8930635
P.O. # : NONE

CERTIFICATE OF ANALYSIS A8930635

SAMPLE DESCRIPTION	PREP CODE	Au oz/T
73161	207 --	0.034
73162	207 --	0.078
73163	207 --	0.042
73165	207 --	0.122
73166	207 --	0.036
73167	207 --	0.042
73168	207 --	0.100
73169	207 --	0.062
73170	207 --	0.129
73171	207 --	0.060
73172	207 --	0.036

CERTIFICATION : Ahmst

Chemex Labs Ltd.
Analytical Chemists • Geochemists • Registered Assayers
212 BROOKSBANK AVE . NORTH VANCOUVER.
BRITISH COLUMBIA. CANADA V7J-2C1
PHONE (604) 984-0221

To: CAROLIN MINES LIMITED

602 - 700 W. PENDER ST.
VANCOUVER, BC
V6C 1G8

Project : UNDERGROUND
Comments: CC: J. SHEARER

Page No. : 1
Tot. Pages: 1
Date : 27-NOV-89
Invoice # : I-8930532
P.O. # :

CERTIFICATE OF ANALYSIS A8930532

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T
73148	207	--	0.040
73149	207	--	0.016
73150	207	--	0.060
73151	207	--	0.100
73152	207	--	0.128
73153	207	--	0.164
73154	207	--	0.052
73155	207	--	0.142
73156	207	--	0.479
73157	207	--	0.316
73158	207	--	0.284
73159	207	--	0.176
73160	207	--	0.110
73164	207	--	0.010

CERTIFICATION : D Christ

APPENDIX VI

DIAMOND DRILL LOGS: 1989 IDAHO ZONE

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): NORTH END 835 SCRAM LEVEL
DIP: +17 Az 030° DIRECTION
LATITUDE: N
DEPARTURE: E
STARTED: NOVEMBER 15 1989 N.S
O.B. THICKNESS: —— N/A. ——
B.R. THICKNESS:
CONTRACTOR: F. Boisvenu

LENGTH: 32.31 m
CORE SIZE: BQ
FINISHED: NOVEMBER 16 1989 DS
STARTED:
STARTED:
CORE STORED: IDAHO CORE

ELEVATION:
DATE LOGGED: Nov 16 1989
LOGGED BY: JTS, WBL
FINISHED:
FINISHED:
TOTAL RECOVERY: %

PROJECT:
HOLE NUMBER: 89 NEX - 7
CLAIM NUMBER: IDAHO C.G.
LOCATION: IDAHO
SAMPLED BY: JTS, WBL, SLS
CASING:

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc
COLLAR	030	+17	

PURPOSE:
COMMENT: LONGITUDINAL SECTION ALONG NORTHEND OF 1 ZONE ORE ZONE.

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 m
1.07			1
1.52	103		2
3.05	97		3
4.57	86		4
6.27	92	7.33	5
7.92	93		6
9.45	95		7
10.97	94		8
12.50	100	3.52	9
14.02	104		10
15.54	102		11
17.07	95		12
18.59	82	20.28	13
20.42	109	20.88	14
21.64	98		15
23.16	99		16
24.68	97	24	17
26.21	100		18
27.74	98		19
29.26	101	5 37.31	20

ALTERATION: CHLORITE | CALCITE | ALBITE | SILICA
FRACTURING
MINERAL
GEOLOGY

INTERVAL from	to	
0	1.07	WASH ? solid core starts at 1.52.
1.07	3.42	VERY ALTERED LITHIC WACKE: elongated fragments up to 1.3 cm long. chloritic slickensides parallel to core axis, Fractured over all.
3.42	23.04	ZONE MATERIAL: intense quartz - albite - calcite Alteration relatively high sulfide content. Rubble at 3.90 - crystalline pyrite filling fractures. Upper part 3.42-5.71 well banded (altered siltstone) Layering varies from 35° to cA at 5.00 to subparallel at 5.71 change at 5.71 to very sulfide-rich 'massively' altered quartz - albite rock. abundant chlorite on fracture surfaces coarse crystalline arsenopyrite 11.09 very abundant pyrite, coarse crystalline > 20% sulfides in light grey zone material 11.21 - 17.25 Pyrite euhedral in fracture filling 11.75 Altered siltstone, relatively less sulfides, thick chlorite on fracture lighter grey, distinctively more white quartz 17.25 → 19.80 but still abundant pyrite Graphitic Fault @ 20.80. Rehealed quartz pods. 70° to cA. Faulted-sheared lower contact.
23.04	26.96	LITHIC WACKE - GREYWACKE: bedding + elongation of fragments subparallel to core axis
26.96	28.18	FAULT BRECCIA (REHEALED)
28.18	32.31	CHLORITIC GREYWACKE EOH.

ZONE MATERIAL.

SAMPLE NUMBER	METERS from	to	LENGTH METERS	Au g/tonne oz/ton			
73148	0	1.52	1.52	0.090			
73149	1.52	3.42	1.90	0.016			
73150	3.42	4.57	1.15	0.060			
73151	4.57	5.71	1.14	0.100			
73152	5.71	7.00	1.29	0.128			
73153	7.00	8.50	1.50	0.164			
73154	8.50	10.00	1.50	0.052			
73155	10.00	11.21	1.21	0.142			
73156	11.21	12.50	1.29	0.479			
73157	12.50	14.02	1.52	0.316			
73158	14.02	15.50	1.48	0.284			
73159	15.50	17.00	1.50	0.176			
73160	17.00	18.50	1.50	0.110			
73161	18.50	20.00	1.50	0.034			
73162	20.00	21.50	1.50	0.078			
73163	21.50	23.04	1.54	0.092			
73164	23.04	24.50	1.46	0.010			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: NORTH END - 835 SCRAM

PROJECT:

HOLE NUMBER: 89 NEX-7

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 metres	ALTERATION: CHLORITE	ALTERATION: CALCITE	ALTERATION: ALBITE	ALTERATION: SILICA	FRACTURING	MINERAL	GEOLOGY
30.78	101	5	31							
32.31	100	32.31	32							
			33							
			34							
			35							
			36							
			37							
			38							
			39							
			40							
			41							
			42							
			43							
			44							
			45							
			46							
			47							
			48							
			49							
			50							

PURPOSE:

COMMENT:

INTERVAL from to

28.18 - 32.31 CHLORITIC GREYWACKE:

END OF HOLE 32.31 m
(106 feet)

SAMPLE NUMBER	METERS ~~to~~ from	METERS ~~from~~ to	LENGTH METERS	Au ~~g/tonne~~ oz/ton

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): NORTH END 835 SCRAM LEVEL
DIP: +8 AZ 030° DIRECTION (MINE N = 0)
LATITUDE: N
DEPARTURE: E
STARTED: NOVEMBER 16, 1989 D.S
O.B. THICKNESS: — N/A —
B.R. THICKNESS:
CONTRACTOR: F. BOISVENU

LENGTH: 24.38 m (80 feet)
CORE SIZE: BQ
FINISHED: NOVEMBER 16-17, 1989 MS
STARTED:
STARTED:
CORE STORED: IDAHO CORE SHACK

PROJECT:
HOLE NUMBER: 89 NEX - 8
ELEVATION:
DATE LOGGED:
LOGGED BY: JJS WBL
FINISHED:
FINISHED:
TOTAL RECOVERY: %
CLAIM NUMBER: IDAHO C.G
LOCATION: IDAHO
SAMPLED BY: J.T.S. W.B.L SLS
CASING:

SURVEY: DEPTH	BEARING	ANGLE Reading	ANGLE Correc
COLLAR	030	+8°	

PURPOSE: LONGITUDINAL SECTION ALONG NORTH END OF 1 ORE ZONE
COMMENT:

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	ALTERATION: CALCITE	ALTERATION: ALBITE	ALTERATION: SILICA	FRACTURING	MINERAL	GEOLOGY	INTERVAL from	INTERVAL to	DESCRIPTION
1.52	85		1								0	6.23	ALTERED AND MINERALIZED SILTSTONE AND GREYWACKE: chloritic 1.05 - 1.85, some lithic wacke intervals. Silty layering at 3.56 is 25° to core axis. quartz breccia is comanon 4.28 - 5.12
3.05	98		2										
4.57	88		3										
6.09	92	6.58	4								6.23	9.93	ZONE MATERIAL: Light grey quartz breccia and quartz - albite - carbonate rock
7.62	104		5							ZM			
9.14	92		6										
10.67	95		7								9.93	18.83	SHEARED AND FAULTED ARGILLACEOUS SILTSTONE very chloritic, euhedral pyrite fracture filling, layering subparallel to core axis. graphite on slickensides 14.04, 20° to core axis. very convoluted bedding layering, highly sheared appearance. Abundant pyrite disseminated uniformly throughout 17.92 - 18.83 dark laminated
12.19	98	12.6	8										
13.71	66		9										
15.24	103		10										
16.76	90		11										
18.29	94	18.72	12										
19.81	100		13								18.83	20.25	ZONE MATERIAL: high sulfide content, brecciated chloritic. Upper contact: fault breccia, Lower contact gradational.
21.33			14							ZM			
22.86			15								20.25	24.38	ALTERED CHLORITIC GREYWACKE: light grey sparse sulfides
24.38		24.38	16										SEQUENCE AT END OF HOLE, Doubtful: box spilt
			17										
			18										
			19										
			20										
			21										
			22										
			23										
			24										
			25										END OF HOLE 24.38 meters (80 feet)
			26										
			27										
			28										
			29										
			30										

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton			
73165	0	1.50	1.50	0.122			
73166	1.50	3.00	1.50	0.036			
73167	3.00	4.50	1.50	0.042			
73168	4.50	6.23	1.73	0.100	17.8ft	46 feet	
73169	6.23	7.50	1.27	0.062	↓	↓	
73170	7.50	8.50	1.00	0.129	5.43m	14 m	
73171	8.50	9.93	1.43	0.060	0.026 oz/ton Au	0.077 oz/ton Au	
73172	9.93	12.00	2.07	0.036			
73173	12.00	14.00	2.00	0.120			
73174	14.00	16.00	2.00	0.026			
73175	16.00	17.92	1.92	0.019			
73251	17.92	19.00	1.08	0.020			
73252	19.00	20.25	1.25	0.118	0.33 oz/ton Au	0.077 oz/ton Au	
73253	20.25	21.33	1.08	0.042			
73254	21.33	22.86	1.53	0.064			
73255	22.86	24.38	1.52	0.050			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL):
DIP: 0° DIRECTION - 030° (MINE N = 0)
LATITUDE: N
DEPARTURE: E
STARTED:
O.B. THICKNESS:
B.R. THICKNESS:
CONTRACTOR: BOISVENU DRILLING

LENGTH: 45.72m (150ft) ELEVATION:
CORE SIZE: BQ DATE LOGGED:
FINISHED: LOGGED BY: JTS, WBL
STARTED: FINISHED: CASING:
STARTED: FINISHED: TOTAL RECOVERY: %
CORE STORED: IDAHO CORE SHACK

PROJECT:

HOLE NUMBER: 89-NEX-9

CLAIM NUMBER:
LOCATION:
SAMPLED BY: JTS, WBL, SLS

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc.
COLLAR	030	0°	

PURPOSE: LONGITUDINAL SECTION ALONG
COMMENT: NORTH END OF 1 ZONE ORE ZONE

DRILLING INTERVAL | % CORE RECOVERED | BOX Number | SCALE 1:250 METERS | ALTERATION: CHLORITE, CALCITE, ALBITE, SILICA | FRACTURING | MINERAL | GEOLOGY

INTERVAL from to

1.52 | 72 | 1
3.05 | 62 | 2
4.57 | 95 | 3
6.10 | 98 | 4
7.62 | 82 | 5
9.14 | 85 | 6
10.62 | 80 | 7
12.19 | 100 | 8
13.72 | 95 | 9
15.24 | 98 | 10
16.76 | 96 | 11
18.28 | 90 | 12
19.81 | 92 | 13
21.34 | 98 | 14
22.86 | 92 | 15
24.34 | 101 | 16
25.91 | 101 | 17
27.43 | 98 | 18
28.95 | 97 | 19
20
21
22
23
24
25
26
27
28
29
30

6.81
13.38
19.70
26.67

0 - 10.32 ALTERED SILTSTONE AND GREYWACKE: weakly pyritic mineralized, alternating with weak zone material. chloritic greywacke very chloritic in places,

Fault zone at 10.00, coarse euhedral pyrite filling fractures

10.32 - 12.74 ZONE MATERIAL: pyritic, weak sulfide development. very quartz-rich. — ZM

12.74 - 14.19 ALTERED SILTSTONE chloritic well layered @ 30° to core axis

14.19 - 15.45 BRECCIATED ZONE MATERIAL

15.45 - 19.15 SHEARED ARGILLACEOUS SILTSTONE: Fault structure minor conglomeratic argillite

19.15 - 22.70 ZONE MATERIAL: well mineralized, strong quartz-carbonate-albite alteration, siliceous ~15% — ZM

22.70 - 24.86 CHLORITIC GREYWACKE: - dark green grey massive with strong chlorite alteration and moderate qtz-carbonate alt'n

24.86 - 28.87 ZONE MATERIAL - grey, very pyritic - pervasive silicification. Pyrite is crystalline and disseminated throughout, weakly veined. — ZM

28.87 - 35.57 ALTERED SILTSTONE

SAMPLE NUMBER	METERS to	METERS from	LENGTH METERS	Au g/tonne			
73256	0	1.50	1.50	0.040			
73257	1.5	3.5	2.0	0.139			
73258	3.5	5.5	2.0	0.032	32.90 ↓ 10.03 oz/ton Au	feet m	0.1008
73259	5.5	7.0	1.5	0.128			
73260	7.0	8.5	1.5	0.098			
73261	8.5	10.32	1.82	0.131			
73262	10.32	11.53	1.21	0.076			
73263	11.53	12.74	1.21	0.034			
73264	12.74	14.19	1.45	0.016			
73265	14.19	15.45	1.26	0.076			
73266	15.45	17.45	2.00	0.052			
73267	17.45	19.15	1.7	0.007			
73268	19.15	20.92	1.77	0.102			
73269	20.92	22.7	1.78	0.124	71.88 ↓ 9.72 oz/ton Au	feet m	0.1506
73270	22.7	24.86	2.16	0.197			
73271	24.86	26.36	1.50	0.100			
73272	26.36	27.86	1.50	0.206			
73273	27.86	28.87	1.01	0.176			
73274	28.87	30.37	1.5	0.039			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: NORTH END 835- SCRAM

PROJECT:

HOLE NUMBER: 89 NEX-9

PURPOSE:
COMMENT:

INTERVAL from to

28.87 - 35.57 ALTERED SILTSTONE - Grey to charcoal grey. Intense pyritic sulfide mineralization. Qtz flooding changes colour to light grey.

29.18 - 29.28 FAULT BRECCIA
Mottled appearance possibly indicated altered conglomeratic Argillite section.

35.57 - 41.56 ZONE MATERIAL. grey coloured qtz - carbonate - albite flooded - very brecciated - sulfide development ranges from weak to strong. Heavily fractured.

41.56 - 45.72 CHLORITIC GREYWACKE TO LITHIC WACKE - greenish grey. Weak qtz veining. Sulfides < 2%. Grades to lithic wacke at approximately 14m.

E.O.H

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 meters	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
30.48			31							
32	98	5	32							
33.53	98	2268	33							
35.05	102	6	34							
36.57	95		35							
38.1	98		36							
			37							
	100	40.71	38							ZM
41.15		7	39							
	92		40							
44.19			41							
45.72	93	45.72	42							
			43							
			44							
			45							
			46							
			47							

SAMPLE NUMBER	METERS to	METERS from	LENGTH METERS	Au g/tonne			
73275	30.32	31.87	1.55	0.094			22ft
73276	31.87	33.37	1.50	0.020			6.75m
73277	33.37	34.37	1.0	0.062			20/0.095
73278	34.37	35.57	1.2	0.134	18864 ↓		02 Hm
73279	35.57	37.07	1.5	0.165	72.7m 02 Hm	0.151	Au
73280	37.07	38.57	1.5	0.026			
73281	38.57	40.07	1.5	0.010			
73282	40.07	41.56	1.49	0.022			
73283	41.56	43.56	2.0	0.029			
73284	43.56	45.72	2.16	0.008			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL):		PROJECT:	HOLE NUMBER: 89 - NEX - 10
DIP: -6° Az. 030° (MINE N = 0)			
LATITUDE: N	LENGTH: 23.47m (77')	ELEVATION:	CLAIM NUMBER: IDAHO C.G.
DEPARTURE: E	CORE SIZE: B.Q.	DATE LOGGED:	LOCATION:
STARTED: Nov 17 D.S 1989	FINISHED: Nov 17, D.S 1989	LOGGED BY: W.A.H, W.B.L, J.T.S	SAMPLED BY: W.A.H, S.L.S
O.B. THICKNESS: N/A	STARTED:	FINISHED:	CASING:
B.R. THICKNESS:	STARTED:	FINISHED:	TOTAL RECOVERY: %
CONTRACTOR: BOISUENU DRILLING	CORE STORED: IDAHO CORE SHACK		

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc
COLLAR	030	0°	

PURPOSE: LONGITUDINAL SECTION ALONG NORTHEND OF 1 ZONE ORE ZONE

COMMENT:

INTERVAL from	to	GEOLOGY
0	18.70	ALTERED SILTSTONE & GREYWACKE - weakly pyritic, both disseminated and on fractures. Local brecciation and flooding with carbonate @ 2.10-2.30 core is broken and rubbly 2.0-6.75, strongest shearing 3.6-4.2 sub parallel to C.A. also contains pyritic rubble @ 3.6-4.2; 6.21-6.50; 7.20-7.38. Bedding is locally chaotic to brecciated T.S (py) is 1-2% overall with local sections 2-3%.
18.70	19.45	ZONE MATERIAL sheared contacts 60-70° to C.A. py is 5-8%
19.45	20.23	ALTERED SILTSTONE - sheared, chaotic bedding, graphitic shears; py 3-4%
20.23	21.08	CHLORITIC GREYWACKE - foliation/bedding = 55° to C.A. Fracture py ≃ 1% or less
21.08	23.07	ALTERED SILTSTONE - similar to 19.45-20.23, sheared graphitic faces with weak qtz/albite flooding of matrix. T.S. (py) ≃ 2-3%
23.47		= E.O.H.

% CORE RECOVERED	BOX Number	SCALE 1:	ALTERATION CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL
100	1	1	mod					py
100		2	strong	strong	nil	weak		
100		3						
100		4	mod	mod				
100	6.00	5						
100	2	6						
100		7						
100		8						
99.35		9						
100		10						
100	12.75	11						
100	3	12						
100		13						
100		14						
97		15						
97	19.1	16						
92.1	4	17						
100		18						
100	23.47	19	Nil	minor	strong	major		py
		20				weak-mod		py
		21						py
		22						
		23						
		24						
		25						
		26						
		27						
		28						

SAMPLE NUMBER	METERS From	to	LENGTH METERS	Au oz/Ton
73285	0	2.00	2.00	0.022
73286	2.00	4.20	2.20	0.008
73287	4.80	6.00	1.80	0.008
73288	6.00	8.00	2.00	0.006
73289	8.00	10.00	2.00	0.010
73290	10.00	12.00	2.00	0.012
73291	12.00	14.02	2.02	0.008
73292	14.02	16.02	2.00	0.010
73293	16.02	17.70	1.68	0.006
73298	17.70	18.70	1.00	0.020
73294	18.70	19.45	0.75	0.050
73295	19.45	20.23	0.78	0.018
73296	20.23	21.08	0.85	0.012
73297	21.08	23.47	2.39	0.004

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): NORTH END 835 SCRAM LEVEL
DIP: +20 Az 053° DIRECTION (MINE N = 0)
PROJECT:
HOLE NUMBER: 89 NEX - 11

LATITUDE: N | LENGTH: 35.05 m (115ft) | ELEVATION: | CLAIM NUMBER: IDAHO C.G.
DEPARTURE: E | CORE SIZE: BQ | DATE LOGGED: Nov 18, 1989 | LOCATION: IDAHO
STARTED: November 17, 1989 P.S | FINISHED: November 18, 1989 P.S | LOGGED BY: W.B.L., J.T.S., W.A.H | SAMPLED BY: W.B.L., S.L.S
O.B. THICKNESS: N/A | STARTED: | FINISHED: | CASING:
B.R. THICKNESS: | STARTED: | FINISHED: | TOTAL RECOVERY: %
CONTRACTOR: F. BOISVENU | CORE STORED: IDAHO CORE SHACK

SURVEY:

DEPTH	BEARING	ANGLE Reading	ANGLE Correc
COLLAR	053°	+20	

PURPOSE: LONGITUDINAL SECTION ALONG NORTH END OF 1 ZONE ORE ZONE
COMMENT: CHECK EXTENSION OF 1 ZONE FOUND IN NEX 1

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 (meters)	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY	INTERVAL from	to	DESCRIPTION
1.52	79		1								0	1.10	ZONE MATERIAL - light grey brecciated - healed w/ qtz - alb. - carb.
											1.10	1.52	FAULT ZONE CONTACT (PY 5 - 15%) WITH CHLORITIC GREYWACKE
3.05	89		2								1.52	3.86	CHLORITIC GREYWACKE - from 1.52 to 2.5m core very broken up w/ fracturing 0 - 10° to C.A. w/ strong chl. alt'n. (FAULT ZONE) From 2.5 to 3.86 m greenish grey chloritic greywacke. Bedding 58° to C.A.
4.57	100		3										
6.09	98		4										
		6.92	5										
7.62	95		6								3.86	10.10	ZONE MATERIAL - light grey quartz - albite - carbonate altered material w/ sulfide content 15 - 20% (py, aspy), small siltstone sections. From 8.0 to 9.0 m open space fracturing // to C.A. carries coarse crystalline pyrite and drusy qtz.
9.14	89		7							ZM			
10.67	100		8										
			9										
12.19	95		10										
		13.0	11										
13.72	100		12								10.10	12.33	SHEARED SILTSTONE - dark grey - laced with qtz - carbonate veinlets to 3m - thick. Sulfides mainly weak but with very localized strong mineralization along some veins. Graphitic slickensides
15.24	99		13								12.33	14.32	BRECCIATED SILTSTONE - MAJOR FAULT ZONE intensely brec'td. - dark grey siltstone healed w/ irregular qtz - carbonate ± albite? veining. Some graphitic slickensides. Py & Aspy occur as dissemination ~ 10%
16.76	100		14								14.32	15.36	ALTERED GREYWACKE TO LITHIC WACKE - weak veining & mineralizn
18.29	98		15								15.36	17.57	ALTERED ARGILLACEOUS SILTSTONE - grey silicified and quartz - carbonate veined 10 - 15% disseminated pyrite and minor aspy.
			16										
			17										
19.81	100	18.29	18								17.57	20.74	ZONE MATERIAL - light grey - weakly mineralized from 17.57 to 19.75 m, From 19.75 - 20.74 m pyrite and aspy disseminated throughout, Only moderate intensity of qtz - carbonate - albite alteration
21.33	93		19										
22.86	103		20										
24.38	98		21										
25.91	102		22										
		26.6	23										
27.43	98		24										
28.95	98		25										
			26										
			27										
			28										
			29										
			30										
											20.74	24.06	GREYWACKE - grey massive, weakly silicified and mineralized. Qtz veins to 10 cm thick occur at intensity of 3 / 30 cm mainly at 70° to 90° to C.A.
										ZM	24.06	26.47	WEAK ZONE MATERIAL - light grey, moderately qtz - carbonate flooded, veining and fracturing is not intense, Py & Aspy ~ 1% Chlorite alteration along fractures parallel to a 10 - 15° to C.A.
											26.47	30.35	ALTERED GREYWACKE - grades from greenish grey to grey at 28.6m due to more qtz - carb. veining, weakly mineralized. Section of coarse Lithic wacke from 29 to 29.5m. Graphitic slickenside at 28.65 m.

SAMPLE NUMBER	METERS from	to	LENGTH METERS	Au oz/ton			
73299	0	1.10	1.10	0.010			
73300	1.10	2.60	1.50	0.029			
73301	2.60	3.86	1.26	0.066			
73302	3.86	5.36	1.50	0.180		24.64ft ↓ 7.5m	31.9ft ↓ 9.73m
73303	5.36	6.86	1.50	0.176			
73304	6.86	8.36	1.50	0.232		10.1616 oz/ton Au	10.136 oz/ton Au
73305	8.36	10.10	1.74	0.142			
73306	10.10	12.33	2.23	0.050			
73307	12.33	14.32	1.99	0.018			
73308	14.32	15.36	1.04	0.008			
73309	15.36	16.40	1.04	0.062			
73310	16.40	17.57	1.17	0.050			
73311	17.57	19.07	1.50	0.032			
73312	19.07	20.74	1.67	0.122			
73313	20.74	22.24	1.50	0.050		24.06ft ↓ 7.3m 0.1146 oz/ton Au	
73314	22.24	24.06	1.82	0.090			
73315	24.06	25.26	1.20	0.213			
73316	25.26	26.47	1.21	0.124			
73317	26.47	28.47	2.00	0.009			
73318	28.47	29.97	1.50	0.022			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: NORTH END 835 SCRAM LEVEL

PROJECT:

HOLE NUMBER: 89 NEX-11

PURPOSE:

COMMENT:

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
30.48			31							
32.0	100	5	32							
33.53	87		33							
35.05	93	6	34					~~~		
		35.05	35							
			36							
			37							
			38							
			39							
			40							

INTERVAL from to

30.95 - 35.05 ALTERED BROWN PEBBLE CONGLOMERATE - very distinct brownish colour particularly from 33.53 m to end of hole. Some black argillite clasts to 2 cm diameter occur. From 32 to 33 m altered to grey ZONE LIKE MATERIAL with brecciation and qtz - carbonate flooding. From 34 to 34.5 m - graphitic slickensides, start of Turbidite Sequence?

E.O.H. 35.05

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au g/tonne oz/ton			
73319	29.97	30.95	0.98	0.020			
73320	30.95	32.00	1.05	0.009			
73321	32.00	33.20	1.20	0.028			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): NORTH END 835 SCRAM LEVEL
DIP: +10 Az. 053° DIRECTION (MINE N = 0)
LATITUDE: N
DEPARTURE: E
STARTED: Nov. 18, 1989 MS
O.B. THICKNESS: N/A.
B.R. THICKNESS:
CONTRACTOR: F. Bois Menard

LENGTH: 37.49m (123ft) ELEVATION:
CORE SIZE: BQ DATE LOGGED: Nov 19, 1989
FINISHED: NOV 18, 1989 D.S. LOGGED BY: W.A.H, W.B.L. JTS
STARTED: FINISHED: CASING:
STARTED: FINISHED: TOTAL RECOVERY: %
CORE STORED: IDAHO CORE SHACK

PROJECT:

HOLE NUMBER: 89 NEX-12

CLAIM NUMBER: IDAHO C.G.
LOCATION: IDAHO
SAMPLED BY: SLS, WAH

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc
COLLAR	053°	+10°	

PURPOSE: LONGITUDINAL SECTION ALONG NORTH
COMMENT: END OF I ZONE ORE ZONE

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250	ALTERATION: CHLORITE	CALCITE	ALBITE	SERICITE	FRACTURING	MINERAL	GEOLOGY
1.52	72	1	1							
3.05	89		2							
4.57	100		3							
6.09	85	6.16	4							
7.62	97	2	5							
9.14	97		6							
10.67	95		7							
12.19	79		8							
13.72	92	13.0	9							
15.24	95	3	10							
16.76	97		11							
18.29	94		12							
19.81	97	19.51	13							
21.33	95	4	14							
22.86	100		15							
24.38	97		16							
25.91	95		17							
27.43	78	26.4	18							
28.65	104	5	19							
30.01	104		20							

INTERVAL from to

0 - 3.05 ALTERED GREYWACKE some small quartz veins and pyritic fract. strong fract. with py+chl sub parallel to C.A., qv. 45° to C.A.

3.05 - 10.4 ZONE MATERIAL Qtz-albite "crackled" GWKE, strong chl./py fracturing, sub parallel to C.A. to 10° to C.A. Py also disseminated. T.S ≈ 72-6% shearing..10° to C.A..4.5m-4.8m & 5.85m-6.15m..with..Py

10.4 - 18.95 ALTERED SILTSTONE WITH GREYWACKE. has local, small qtz/alb "crackle" zones of a few cm in width. py/graphite fracts are common but less py than previous section. T.S ≈ 3-5%. Laminar bedding is highly variable. between 0-20° to C.A., Shears commonly are graphitic Silica weakly floods the rocks, albite is not readily observed.

18.95 - 19.94 ZONE MATERIAL similar to above. qv contacts are 35° to C.A.

19.94 - 32.5 ALTERED SILTSTONE with occasional interbeds of greywacke. Bedding is disrupted and chaotic 30°-60° to C.A. Total sulphides (py) ≈ 1-3%. Several small intersections of Zone Materials, the largest of which is 17 cm @ 29.40-29.77. 32.25-32.5 has strong disseminated and fracture controlled pyrite. It may be part of the 'zone'

SAMPLE NUMBER	METERS from	to	LENGTH METERS	Au oz/ton			
73322	0	1.52	1.52	0.146			
73323	1.52	3.05	1.53	0.188			
73324	3.05	4.50	1.45	0.070		34.2 ↓ 10.4m	feet
73325	4.50	6.00	1.50	0.058			
73901	6.00	7.62	1.62	0.036		0.092	oz/ton
73902	7.62	9.14	1.52	0.072		Au	
73903	9.14	10.40	1.26	0.072			
73904	10.40	13.01	2.59	0.032			
73905	17.79	18.95	1.16	0.080			
73906	18.95	19.94	.99	0.060			
73907	19.94	21.33	1.39	0.020			
73908	28.5	31.00	2.5	0.044			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: NORTH END 835 SCRAM LEVEL

PROJECT:

HOLE NUMBER: 89 NEX - 12

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	ALTERATION: CALCITE	ALTERATION: ALBITE	ALTERATION: SILICA	FRACTURING	MINERAL	GEOLOGY
31.70	98	5	31							
		32.11	32							
32.92	80		33	Nil	Minor	Minor	Major			
34.49	84		34							
35.96	102	6	35							
			36	Nil	Major	Nil	Minor			
37.47	97	37.49	37							
			38							
			39							
			40							

PURPOSE:

COMMENT:

INTERVAL from to

32.5-35.96 ZONE MATERIAL with altered greywacke; Less well developed "crackle" contains strong pyritic fractures sub parallel to C.A.

35.96 - 37.49 DARK BROWN SILTSTONE Small carbonate veins and matrix carbonate is common, very little or no quartz. Rock cuts well and turns drill water muddy brown.

E.O.H 37.49m

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
73908	28.5	31.00	2.5	0.044
73909	31.00	32.50	1.5	0.062
73910	32.50	34.23	1.73	0.054
73911	34.23	35.96	1.73	0.020
73912	35.96	37.49	1.53	0.004

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): NORTH END 835 SCRAM LEVEL
DIP: 0° AZ 053 DIRECTION (MINE N = 0)
LATITUDE: N
DEPARTURE: E
STARTED: Nov 18-19, 1989 N.S.
O.B. THICKNESS: N/A
B.R. THICKNESS:
CONTRACTOR: F. BOISVENU

LENGTH: 27.43m (90ft)
CORE SIZE: BQ
FINISHED: November 19, 1989 NS
STARTED:
FINISHED:
CORE STORED: IDAHO CORE SHACK

PROJECT:
DATE LOGGED: Nov 19, 1989
LOGGED BY: W.A.H, W.B.L, JTS
FINISHED:
TOTAL RECOVERY: %

HOLE NUMBER: 89 NEX - 13
CLAIM NUMBER: IDAHO C.G.
LOCATION: IDAHO
SAMPLED BY: SLS WAH
CASING:

SURVEY:

DEPTH	BEARING	ANGLE Reading	ANGLE Correc
COLLAR	053°	0°	

PURPOSE: LONGITUDINAL SECTION ALONG NORTH
COMMENT: END OF 1 ZONE ORE ZONE

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METER	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY	INTERVAL from	INTERVAL to	GEOLOGY
1.52	60		1								0	4.0m	CHLORITIC GREYWACKE - dark green grey. Strong chlorite alteration. From 1.52 - 3.05 m. major fault zone with core loss. Minor veining and moderate carbonate alteration.
3.05	49		2								4.0	4.52m	SILTSTONE - well layered. chlorite greywacke interbeds 30° to C.A
4.57	79		3								4.52	5.90m	LITHIC WACKE - grey, coarse grained, massive. Minor veining
6.09	98		4								5.90	12.0	SILTSTONE - dark greenish grey - well layered with alternating greenish grey and charcoal grey argillaceous layers. Layers 30 to 50° to C.A. Minor qtz - carbonate veining mainly 45° to C.A.
7.62	100	7.9	5								12.0	13.90	ALTERED SILTSTONE AND GREYWACKE - dark grey, sheared area. laced with network of qtz - carbonate veins mainly to 3mm thick. Sulfides (py, aspy?) 5 - 10%.
9.14	94		6								13.90	15.30	GREYWACKE - grey. upper contact 50° to C.A. Altered & laced w/ qtz - carbonate veins - Carbonate altn is strong. Minor sulfides
10.67	100		7								15.30	22.30	SHEARED ARGILLACEOUS SILTSTONE - dark charcoal grey. Major FAULT ZONE from 15.4m to 15.9 m. Very graphitic slickensides. fine qtz - carbonate veining mainly 70° to C.A. Thin greywacke interbeds occur throughout (eg. 18.30 - 18.60m), FAULT ZONE 19.65 - 20m. and at 21.8 m.
12.19	95		8								22.30	25.57	ALTERED SILTSTONE - strong shearing and quartz carbonate veining from 22.3 to 22.86m. Graphitic slickensides. Contorted bedding from 22.86 - 25.57 m runs approximately 10 - 20° to C.A. Disseminated pyrite and pyrrhotite ~ 5 %.
13.72	102	14.9	9								25.57	27.43	CONGLOMERATIC ARGILLITE - dark grey - loosely packed from 25.57 to 26.10m. then tightly packed. Minor veining and sulfide content < 5%
15.24	102		10										
16.76	82		11										
18.29	93		12										
19.81	87	20.6	13										
21.33	93		14										
22.86	86		15										
24.38	100		16										
25.91	97		17										
27.43	102	27.43	18										
			19										
			20										
			21										
			22										
			23										
			24										
			25										
			26										
			27										
			28										
			29										
			30										

27.43 m E.O.H

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
73913	12.0	13.0	1.00	0.042
73914	13.0	13.90	0.90	0.038
73915	13.90	15.3	1.40	0.092
73916	15.30	18.0	2.70	0.040
73917	22.30	23.8	1.50	0.020
73918	23.8	25.57	1.77	<0.003
73919	25.57	27.43	1.86	<0.003

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

PROJECT:

HOLE NUMBER: 89 NEX - 14

LOCATION: (LEVEL): NORTH END 835 SCRAM LEVEL

DIP: + 15° AZIMUTH 010° DIRECTION (MINE N = 0)

LENGTH: 32.92m (108ft) ELEVATION: CLAIM NUMBER: IDAHO C.G.

LATITUDE: N CORE SIZE: BQ DATE LOGGED: Nov. 20, 1989 LOCATION:

DEPARTURE: E FINISHED: Nov. 19, 1989 D.S. LOGGED BY: W.A.H, W.B.L S.T.J SAMPLED BY: S.L.S, W.A.H, W.B.L

STARTED: Nov. 19, 1989 D.S. STARTED: FINISHED: CASING:

O.B. THICKNESS: N/A STARTED: FINISHED: TOTAL RECOVERY: %

B.R. THICKNESS: STARTED: FINISHED:

CONTRACTOR: F. BOISVENU CORE STORED: IDAHO CORE SHACK

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc
COLLAR	010°	+15°	

PURPOSE:

COMMENT:

INTERVAL from to

0 – 2.14 **SILICIFIED GREYWACKE.** – pyritic – possibly zone material. Qtz carbonate altered.

2.14 – 7.66. **SILTSTONE AND ARGILLITE.** ... minor angular clasts and beds in chaotic bedding. Common thin (to 2mm thick) quartz – albite? carbonate stringers. Minor pyrite along fractures or as blebs

7.66 – 8.53 **ALTERED SILTSTONE** ... locally increased pyrite and silica around a qtz prh zone at 8.18 – 8.20m. Strong py. on fract 15° to C.A.

8.53 – 13.11 **SILTSTONE** – contains ~ 20% argillite interbeds. Bedding is irregular, but generally is 30 – 50° to C.A. A short section (9.45 – 9.95m) has bedding 80° to C.A. and also dramatically increased pyrite content from 1% to 5%. Minor silica stringers in this section

13.11 – 17.68 **GREYWACKE** – contains lithic clasts of black argillite, becomes finer grained with depth – becoming siltstone. Lower contact is somewhat arbitrary

17.68 – 20.50 **ARGILLITE & SILTSTONE** – dark green to black with bedding ~20° to C.A. Fracture controlled pyrite mineralization increases near 20.50m.

20.50 – 26.53 **ZONE MATERIAL** – 20.50 – 21.50 ZONE MATERIAL is made up of altered siltstone. Lower contact 30° to C.A. At 23.55m a small fault occurs. From 21.50 – 26.53 ZONE MATERIAL is strongly qtz altered with 5 – 10% pyrite and arsenopyrite, material is mixed with highly silicified and albitized ? greywacke.

26.53 – 28.88 **ALTERED GREYWACKE** – bedding is variable from sub-parallel to C.A. to 15° to C.A. Unit is flooded with silica & albite. Relict clasts of argillite still visible.

28.88 – 30.70 **ALTERED SILTSTONE** – similar to above but alteration is much weaker.

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METER	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
0.91	86		1							
2.44	87		2							
3.96	87		3							
5.48	94	6.30	4							
7.01	97		5							
8.53	66		6							
9.45	66		7							
10.97	75		8							
12.19	47		9							
13.11	97	12.55	10							
14.63	76		11							
16.15	97		12							
17.68	99		13							
19.2	85	19.05	14							
20.72	99		15							
22.25	97		16							
23.77	98		17							
25.3	97	25.58	18							
26.82	95		19							
28.34	100		20							
			21							
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							

SAMPLE NUMBER	METERS from	to	LENGTH METERS	Au oz/ton
73920	0	1.00	1.00	0.020
73921	1.0	2.44	1.44	0.052
73922	2.44	4.44	2.00	0.032
73923	4.44	6.44	2.00	0.040
73924	6.44	7.66	1.22	0.062
73925	7.66	8.53	0.87	0.012
73926	8.53	10.0	1.47	0.026
73927	10.0	11.0	1.00	0.016
73928	19.5	20.5	1.00	0.044
73929	20.5	21.5	1.00	0.085
73930	21.5	23.0	1.50	0.018
73931	23.0	24.5	1.50	0.028
73932	24.5	25.5	1.00	0.038
73933	25.5	26.53	1.03	0.048
73934	26.53	28.88	2.35	0.026
73935	28.88	30.70	1.82	0.006

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: NORTH END 835 SCRAM LEVEL

PROJECT:

HOLE NUMBER: 89 NEX-14

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
30.09	98	5	31							
32.92	95	23.35 32.92	32							
			33							
			34							
			35							
			36							
			37							
			38							
			39							
			40							

PURPOSE:

COMMENT:

INTERVAL from	to	
30.70	31.57	ZONE MATERIAL - 5 cm VEIN, sub-parallel to C.A. *
31.57	32.92	ALTERED SILTSTONE - foliated sub-parallel to C.A., minor py., chl/musc. on parting planes.

32.92 E.O.H.

*Zone ends against a small left lateral fault 75° to C.A.

SAMPLE NUMBER	METERS from	to	LENGTH METERS	Au oz/ton
73935	28.48	30.7	1.82	0.006
73936	30.7	31.57	0.87	0.010
73937	31.57	32.92	1.35	0.008

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): NORTH END 835 SCRAM LEVEL
DIP: +15° AZ. 330° DIRECTION
PROJECT:
HOLE NUMBER: 89 NEX-15

LATITUDE: N
DEPARTURE: E
STARTED: Nov 20-21, 1989 N.S.
O.B. THICKNESS: N/A
B.R. THICKNESS:
CONTRACTOR: F. BOISVENU

LENGTH: 24.38 m (80ft)
CORE SIZE: BQ
FINISHED: NOV. 21, 1989 D.S
STARTED:
FINISHED:
CORE STORED: IDAHO CORE SHACK

ELEVATION:
DATE LOGGED: Nov. 22, 1989
LOGGED BY: W.B.L, W.A.H, STS
FINISHED:
STARTED:
FINISHED:
TOTAL RECOVERY: %

CLAIM NUMBER: IDAHO C.G.
LOCATION:
SAMPLED BY: SCL WBL, WAH
CASING:

SURVEY:

DEPTH	BEARING	ANGLE Reading	ANGLE Correc
COLLAR	AZ 330	+15°	

PURPOSE:
COMMENT:

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
1.52	59	1	1							ZM
3.05	93		2							
4.57	93		3							
6.09	68		4							
		6.96	5							
7.62	86	2	6							
9.14	95		7							
10.67	100		8							
12.19	76		9							
13.72	86	13.40	10							
15.24	96	3	11							
16.76	91		12							
18.29	96		13							
19.81	92	20.11	14							
21.33	95	4	15							
22.86	99		16							
24.38	98	24.38	17							
			18							
			19							
			20							
			21							
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							

INTERVAL from to

0 - 2.82 ZONE MATERIAL - Brecciated Qtz and altered fragments of greywacke, siltstone & argillite. Strong silicification, moderate albite alt'n and weak carbonate. Sulfides < 5%

2.82 - 4.57 ALTERED GREYWACKE - grading to siltstone downhole. Bedding ~30° to C.A. (overturned?) Moderate silica alt'n, minor carbonate

4.57 - 6.00 ZONE MATERIAL - primarily a qtz-vein system with sections of altered greywacke. Mainly silica and albite alteration

6.00 - 6.60 ALTERED SILTSTONE - convoluted laminar bedding.

6.60 - 8.30 CHLORITIC GREYWACKE - dark grey green with strong chl. alt'n along fractures. Fault Zone 7.45 - 7.7m. Pyrite to 5% weak carb. alt.

8.30 - 9.00 SILTSTONE - grey, well layered w/ bedding ~40° to C.A. Part of Fault Zone

9.00 - 13.45 ZONE MATERIAL - grey, intensely quartz veined and fractured. Chlorite alt'n is intense in less silicified sections. Possibly could be classified as a very altered siltstone as relict layering is plainly visible. From 10.8 - 12m core very broken (Fault Zone). Carbonate alt'n is weak. Sulfide content is highly variable locally ranging from <5% to >10%

13.45 - 18.60 SILTSTONE - massive, well layered and weakly veined slight greenish grey to brownish grey colour. Layering 30° to CA

18.60 - 19.86 ALTERED SILTSTONE - light grey, laced with very fine qtz - carbonate stringers (fracture fillings). Sulfides very weak < 2%

19.86 - 24.38 ARGILLACEOUS SILTSTONE - dark charcoal grey, massive appearance. Well layered ~ 35° to C.A. Qtz - carbonate veining mainly parallel to layering. Pyrrhotite mineralization along bedding planes ~ 5%

24.38 m E.O.H.

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton			
73938	0	1.52	1.52	0.026			
73939	1.52	2.82	1.30	0.022			
73940	2.82	4.57	1.75	0.019			
73941	4.57	6.09	1.52	0.074			
73942	6.09	7.62	1.53	0.038			
73943	7.62	9.14	1.52	0.020			
73944	9.14	10.64	1.50	0.058			
73945	10.64	12.14	1.50	0.026			
73946	12.19	13.45	1.31	0.012			
73947	18.6	19.86	1.26	0.028			
73948	19.86	21.86	2.00	0.006			
73949	21.86	24.38	2.92	<0.003			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: (LEVEL): SOUTH END 835 SCRAM DRIFT
DIP: +46° DIRECTION - 090°
LATITUDE: N
DEPARTURE: E
STARTED: Nov. 20-21, 1989 D.S
O.B. THICKNESS: N/A
B.R. THICKNESS:
CONTRACTOR: F. BOISVENU

LENGTH: 68.88m (226ft) ELEVATION:
CORE SIZE: BQ
FINISHED: Nov 21, 1989 D.S.
STARTED:
STARTED:
CORE STORED: IDAHO CORE SHACK

PROJECT: IDAHO
DATE LOGGED: Nov. 22, 1989
LOGGED BY: J.T.S, W.B.L.,
FINISHED:
FINISHED:
TOTAL RECOVERY: %

HOLE NUMBER: 89-683-1
CLAIM NUMBER: IDAHO C.G.
LOCATION: IDAHO
SAMPLED BY: , W.B.L. J.T.S
CASING:

SURVEY:

DEPTH	BEARING	ANGLE Reading	ANGLE Correc
COLLAR	090	+46°	

PURPOSE: TEST FOR NORTHERLY CONTINUATION
COMMENT: OF MINERALIZATION IN HOLE 675-

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METER	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
1.83	100	1	1							
3.55	100		2							
4.88	100		3							
6.40	100		4							
7.92	100	7.80	5							
9.45	102		6							
10.97	100		7							
12.50	100		8							
14.02	96	13.88	9							
15.55	100		10							
17.07	100		11							
18.59	100		12							
20.11	100	20.53	13							
21.64	102		14							
23.16	98		15							
24.67	101		16							
26.21	99		17							
27.73	94	27.47	18							
29.25	102		19							
		5	20							
			21							
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							

INTERVAL from to

0-4.86 ALTERED (SILICIFIED) GREYWACKE: Light grey, many quartz breccia intervals, Minor pyrite content <2%.... traces of chlorite, Massive.
bottom of section contains many calcareous shears,
4.86 - 13.40 GREYWACKE: Less altered, minor shearing at 80° to C.A.
chloritic slickensides at 7.53 @ 15° to core axis.....
short breccia section between 9.08 - 9.32., no sulfides.
calcite stringers gradually become more abundant, Low sulfides..
gradational lower contact over about 1.00 m.....
13.40-18.20 BRECCIATED AND SILICIFIED GREYWACKE:
core relatively fractured and broken, very low sulfide content.
minor sulfides 16.80 - 18.00 associated with narrow qtz zones + veins.
some minor coarse arsenopyrite 17.10.....
18.20 - 27.80 CHLORITIC GREYWACKE: dark grey-green,
Massive, no bedding... quartz-carbonate veining at 20° to C.A.....
Uniform, less chlorite after 20.50
.....
broken core 24.10 - 24.30, Minor Zone Material 25.52 - 25.56
abundant monomineralic chlorite, 80° to C.A.
Relatively abrupt lower contact, sulfides making sharp boundary.
27.80 - 32.20 ZONE MATERIAL: Dark, altered greywacke,
short sections of white albite and quartz, abundant chlorite lenses.
graphite 28.10 - 90° to CA FRAC..... traces of sphalerite 28.44.....

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton			
73950	0	1.50	1.50	0.038			
73951	1.50	3.00	1.50	0.056			
73952	3.00	4.50	1.50	0.008			
73953	4.50	6.00	1.50	0.004			
73954	16.00	18.00	2.00	0.103			
73955	23.00	25.00	2.00	<0.003			
73956	25.00	26.50	1.50	0.042			
73957	26.50	27.80	1.30	0.004			
73958	27.80	29.25	1.45	0.107			
73959	29.25	30.78	1.53	0.052			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: SOUTH END 835 SCRAM LEVEL

PROJECT:

HOLE NUMBER: 89 683-1

PURPOSE:

COMMENT: 4.4m = 14.44 feet.

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	ALTERATION: CALCITE	ALTERATION: ALBITE	ALTERATION: SILICA	FRACTURING	MINERAL	GEOLOGY	INTERVAL from	INTERVAL to	SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
30.78	55	5	31								27.80	32.20	ZONE MATERIAL: continued. Darkest 29.50 – 30.78. very abundant pyrite seams near lower contact	73959	29.25	30.78	1.53	0.052
32.31	101		32											73960	30.78	32.20	1.42	0.058
33.83	88		33								32.20	43.74	TURBIDITE: Light green, fractured core near top well-layered silty sections grading to Lithic wacke: minor quartz lenses @ 90° to C.A. mostly fine lithic wacke 35.90, sheared contact 35.9 – 39.79. Lithic wacke dominate graded units, Light green. graphite on fractures at lower contact 80° to C.A.	73961	32.20	33.83	1.63	0.008
35.35	72		34											73962	33.83	35.35	1.52	<0.003
36.88	92	6	35															
38.40	102		36															
39.93	98		37															
41.45	91		38															
42.97	98		39															
44.50	98	7	40.95															
46.02	99		41															
47.55	100		42															
49.07	100		43															
50.59	98		44															
52.12	101		45															
53.64	100		46															
55.17	96	8	47.87															
56.69	79		48															
58.22	102		49															
59.74	105		50															
61.26	100		51															
62.79	100		52															
64.31	98		53															
65.83	102		54															
67.36	97	9	55.0															
68.88	87		56															
			57															
			58															
			59								58.01	60.39	ALTERED CHLORITIC GREYWACKE: and quartz breccia, minor sulfides	73963	59.10	60.39	1.29	0.006
			60															
		61.76	61								60.39	64.61	LITHIC WACKE (TURBIDITE): minor silty and greywacke intervals, not fractured, bedding at 75° to core a.x. is.					
			62															
		10	63															
			64															
			65								64.61	68.88	CONGLOMERATIC ARGILLITE: clasts up to 3cm (EOH) minor pebble layers at 67.62 – 67.66.					
			66															
			67															
		68.88	68															
			69										68.88 m E.O.H.					
			70															

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): 776 N SECTION - 800 LEVEL
DIP: +5° AZ 90° DIRECTION
LATITUDE: 776 N
DEPARTURE: E
STARTED: Nov 22, 1989 D.S
O.B. THICKNESS: N/A
B.R. THICKNESS:
CONTRACTOR: E. BOISVENU

LENGTH: 86.56m (284ft) ELEVATION:
CORE SIZE: BQ
FINISHED:
STARTED:
FINISHED:
STARTED:
FINISHED:
CORE STORED: IDAHO CORE SHACK

DATE LOGGED: Nov. 23, 1989
LOGGED BY: WBL, JTS

PROJECT:
HOLE NUMBER: 89 776-1
CLAIM NUMBER: IDAHO C6.
LOCATION: IDAHO
SAMPLED BY: WBL, JTS, DP
CASING:
TOTAL RECOVERY: %

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc
COLLAR	030	+5	

PURPOSE:
COMMENT: 776N CROSS-SECTION #3 ZONE AT 800 LEVEL

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METER	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
1.52	97		1							
2.74	82		2							
4.27	100		3							
5.79	97		4							
7.31	96	6.66	5							
8.84	98		6							
10.36	103		7							
11.89	97		8							
13.41	92		9							
14.93	95	14.35	10							
16.46	93		11							
17.98	95		12							
19.51	90		13							
21.03	101	19.96	14							
22.55	101		15							
24.08	97		16							
25.60	95		17							
27.13	98	26.40	18							
28.65	98		19							
30.16	96		20							
			21							
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							

INTERVAL from to

0 – 4.94 LITHIC WACKE – light grey green, massive medium to coarse grained. At 1.5m grades from medium to coarse grained. Near 4.4m grades back to medium grained. Weak to moderate chlorite alteration. Very minor qtz veining. Lithic clast aligned approx. 60° to C.A.

4.94 – 7.30m ALTERED SILTSTONE very fine grained with graded bedding. Moderate qtz – carbonate veining with < 2% sulfides
Fault Zone 5.5 – 5.9m

7.30 – 9.00 LITHIC WACKE – coarse grained green grey, massive upper contact abrupt ~60° to C.A. Weak to mod. chlorite alt'n. minor qtz veining
8.84 – 9.0 m grades to greywacke

9.00 – 10.28 GREYWACKE – some gradation to lithic wacke

10.28 – 11.93 LITHIC WACKE – coarse grained, grey. clasts aligned 60–70° to C.A.

11.93 – 22.72 TURBIDITE: (Greywacke) – dark greenish grey interbedded (SILTSTONE) very fine grained TURBIDITE and greywackes. Weak quartz carbonate veining primarily confined to very fine grained segments.
Fault Zone from 15.1 to 15.2m and 17.5 to 17.8m.
From 19.96 m – 22.72 m sequence has distinctive banding with dark charcoal grey interbeds of dark greywacke? Possibly an alteration feature.
Abrupt lower contact with coarse grained lithic wacke. contact roughly 45° to C.A very irregular contact. bedding 3–4 cm thick. 30° to CA
soft sediment deformation sometimes masked by cleavage development

22.72 – 24.04 LITHIC WACKE – light grey coarse grained, massive & unaltered. Lower contact 70 to 75° to C.A. Weak chl.

24.04 – 24.75 TURBIDITE – grey very fine grained – grades to Lithic wacke at 24.75 m.

24.75 – 27.97 LITHIC WACKE – grey medium to coarse grained with (SILTY SECTION WERE BIDDED)
Very minor quartz – carbonate veining, weak to moderate chlorite alteration
Fault Zone 25.1 – 25.4 m & 26.26 – 26.95 m

27.97 – 28.72 TURBIDITE Bedding 75° to core axis, siltstone

28.72 – 30.35 LITHIC WACKE – light grey, medium grained massive
Fault 30.1 to 30.16m

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: 776 N SECTION - 800 LEVEL

PROJECT:

HOLE NUMBER: 89 - 776 - 1

PURPOSE:

COMMENT:

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY	INTERVAL from to	GEOLOGY
31.7	100	5	31								30.35 - 32.39	TURBIDITE - grey with graded beds. Dark charcoal grey patches parallel to sub-parallel to bedding. Bedding 35° to C.A
33.22	101	33.19	32								32.39 - 34.60	GREYWACKE - grey massive appearance. Very minor qtz - carbonate stringers. Weak chlorite alteration. Abrupt lower contact with distinctive pebble conglomerate
34.75	101		33								34.60 - 37.18	PEBBLE CONGLOMERATE - upper contact irregular. 35 - 50° to C.A. Very distinctive unit. Speckled with angular block clasts, close. Clast size mainly < 0.5cm dia. From 37 to 37.18 m grades to greywacke packed
36.27	99		34								37.18 - 41.85	GREYWACKE (TURBIDITE) fine grained to very fine grained sequence of interbedded greywacke and very fine grained turbidite massive sequence. Small altered section 37.85 - 38.2m with intense quartz - carbonate veining and alteration 35° to C.A. No sulfides of significance.
37.79	99		35								41.85 - 45	ALTERED TURBIDITE - dark to light grey. Range from very fine grained turbidite to greywacke. Moderate silicification and strong carbonate alteration very minor sulfides < 1%. BLEACHING. very convoluted soft sediment deformation
39.32	100	6	36								45.00 - 58.04	TURBIDITE dark green grey, Fault at 45.00 interformational conglomerate 45.00 - 47.61. Moderate qtz - carbonate alteration. Strong chlorite alteration 48.50 - 50.25 intensely qtz - carbonate veined zone (small zone material) 10% pyrrhotite. From 52.60 to 52.75 m. Fault zone. From 53.05 m - 54.7m mottled appearance due dark chloritic lenses unit has a brecciated appearance although it is only well fractured.
40.49	100	39.95	37									
42.57	100		38									
43.89	97		39									
45.41	101		40									
46.94	100	46.94	41									
48.46	97		42									
49.99	100		43									
51.51	100	8	44									
53.03	96		45									
54.56	98	53.76	46									
56.08	98		47									
57.61	94		48									
59.13	99	9	49									
60.66	99		50								58.04 - 59.95	CHLORITIC GREYWACKE gradational lower contact., dark grey massive. < 1% sulfides
62.18	99	60.77	51								59.95 - 66.67	ZONE MATERIAL: very dark zone, sulfides mostly pyrrhotite. Strong chlorite alteration in dark zones. Arsenopyrite content is relatively high particularly in more silicified zones where it reaches 3-5%
63.70	99		52									
65.23	89		53									very abundant mono mineralic chlorite lenses 65.84 - 65.96.
66.75	98		54								66.67 - 68.55	CHLORITIC GREYWACKE: dark greyish green with 5% sulfides, mainly pyrrhotite: strong chlorite alteration, moderate qtz - carbonate veining
68.28	97	67.70	55								68.55 - 77.50	ZONE MATERIAL
69.80	100		56									

sequence right side "up"

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton			
73964	58.00	60.00	2.00	0.012			
73965	60.00	61.50	1.50	0.120			
73966	61.50	63.00	1.50	0.110			
73967	63.00	64.50	1.50	0.114			
93968	64.50	66.00	1.50	0.126		10.50 m	
93969	66.00	67.50	1.50	0.082	of	0.125 oz/ton	
93970	67.50	69.00	1.50	0.116		Au	
93971	69.00	70.50	1.50	0.204			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: 800 LEVEL, 776N

PROJECT:

HOLE NUMBER: 89-776-1

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	ALTERATION: CALCITE	ALTERATION: ALBITE	ALTERATION: SILICA	FRACTURING	MINERAL	GEOLOGY
71.32	100		71							
72.85	99		72							
74.37	99	74.62	73							
75.90	99		74							
77.42	98		75							
78.94	100		76							
80.46	99		77							
81.99	99	81.68	78							
83.52	99		79							
85.04	95		80							
	100	86.56	81							
			82							
			83							
			84							
			85							
			86							
			87							

PURPOSE:

COMMENT:

INTERVAL from to

68.55 - 77.50 ZONE MATERIAL : variable development of albite. An alternating zone of chloritic greywacke with well developed zone material. Minor chalcopyrite. Very abundant pyrrhotite 73.85 - 74.50.

White quartz section 75.81 - 76.62, with 1-3% arsenopyrite.

77.50 - 79.40 CHLORITIC GREYWACKE - dark charcoal grey green massive unit. Chloritic sheets developed on slickensided surfaces.

79.40 - 83.95 TURBIDITE - graded sequence. brecciated upper contact, gradational. Lithic wacke section from 82.30m - 82.80m. healed, sheared lower contact.

83.95 - 86.56 CONGLOMERATIC ARGILLITE - dark charcoal grey. Very loosely packed. Very minor alteration. E.O.H.

END OF HOLE 86.56m. (284 Feet).

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au ~~g/tonne~~ oz/ton			
73972	70.50	72.00	1.50	0.018			
73973	72.00	73.50	1.50	0.032			
73974	73.50	74.50	1.00	0.152			
73975	74.50	76.00	1.50	0.142		4.00	m
73976	76.00	77.50	1.50	0.290	of	0.20 oz/ton	Au
73977	77.50	79.40	1.90	0.012			

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): 800 LEVEL
DIP: 0° DIRECTION: 090° MINE NORTH
LATITUDE: N
DEPARTURE: E
STARTED: Nov 22 1989 N.S.
O.B. THICKNESS: N/A.
B.R. THICKNESS:
CONTRACTOR: F. BOISVENU

PROJECT: IDAHO
HOLE NUMBER: 89 - 776 - 2

LENGTH: 85.34m (280ft)
CORE SIZE: BQ
FINISHED: Nov 23 1989 N.S.
STARTED:
FINISHED:
CORE STORED: IDAHO

ELEVATION:
DATE LOGGED: Nov 23 1989
LOGGED BY: VTS, WBL
FINISHED:
TOTAL RECOVERY: %

CLAIM NUMBER:
LOCATION: IDAHO
SAMPLED BY: VTS, WBL, DGP.
CASING:

SURVEY: DEPTH	BEARING	ANGLE Reading	Correc
COLLAR	090	0°	

PURPOSE:
COMMENT: 776 CROSS-SECTION
#3 ZONE AT 800 Level.

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METER	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
1.52	79	1	1							
3.05	100		2							
4.57	97		3							
6.09	92		4							
	92	2 (7.10)	5							
7.62			6							
9.14	100		7							
10.67	99		8							
12.19	96		9							
13.72	96	3 (13.72)	10							
15.24	87		11							
16.76	96		12							
18.29	90		13							
19.81	104		14							
		4 (20.48)	15							
21.33	98		16							
22.86	93		17							
24.08	95		18							
26.60	95		19							
		5 (26.76)	20							
27.28	91		21							
28.80	104		22							
30.48	92		23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							

INTERVAL from to

0 - 5.30 LITHIC WACKE - light grey green, massive unit. Chlorite altered. Very minor veining. From 0 - 1.60 m medium grained, grades to coarse grained. From 1.60 m - 5.00 m, coarse grained then grades to medium grained to 5.30 m. Clasts aligned 40 - 45° to C.A.

5.30 - 7.54 ALTERED SILTSTONE - dark grey mottled appearance, very fine grained. Moderate qtz - carbonate veining w/ < 1% sulfide. Small Fault Zone 6.48 - 6.65 m.

7.54 - 8.85 LITHIC WACKE - coarse grained, dark grey green massive. Upper contact abrupt at 45° to C.A.

8.85 - 12.93 GREYWACKE - gradationally interbedded with thin beds of fine to coarse grained Lithic Wacke, LITHIC WACKE section from 12.07 m to 12.93 m. Some qtz veining 10 - 20° to C.A. 12.50 - 12.93 m. Sulfides < 0.5%.

12.93 - 19.69 TURBIDITE (Greywacke & Siltstone) - dark grey green interbedded very fine grained Turbidite, greywackes and siltstones. Small micro faults clearly out of sect. Turbidite beds. Qtz - carbonate alteration is very weak. Chlorite alteration particularly along fractures is moderate. Fault zones from 14.60 - 15.03 m, 17.50 - 18.00 m.

19.69 - 21.00 LITHIC WACKE - light grey massive, fine to medium grained. Mostly unaltered or minor veining. Lower contact irregular 25 - 35° to C.A.

21.00 - 22.14 TURBIDITE (greywacke) light green grey, increase in qtz - carbonate veining.

22.14 - 24.23 LITHIC WACKE - coarse grained massive. Abrupt upper contact 30° to C.A. lower contact ~ 35°. No veining - moderate chlorite alteration.

24.23 - 25.00 TURBIDITE - dark grey (siltstone?) Fault zone 24.70 - 25.00.

25.00 - 26.40 GREYWACKE - very fine grained grey with siltstone sections, abrupt lower contact w/ Pebble conglomerate 23° to C.A.

26.40 - 29.30 PEBBLE CONGLOMERATE - very distinctive unit on D.D.H. 776-1 with angular black clasts. Clasts mainly < 0.5 cm dia. Fault 26.76 - 27.00 m. Grades to coarse Lithic Wacke at 29.30 m.

29.30 - 30.56 LITHIC WACKE - coarse grained, grades to greywacke - 30.56

SAMPLE NUMBER	METERS FROM	TO	LENGTH METERS	Au oz/ton.

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: 800 LEVEL 776 N- SECTION

PROJECT: IDAHO

HOLE NUMBER: 89-776-2

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
30.93			31							
32.00	96	5	32							
33.53	90	33.69	33							
35.05	97		34							
36.57	101		35							
38.10	100	6	36							
39.62	98		37							
41.15	98	40.78	38							
42.67	98	7	39							
44.19	99		40							
45.72	99		41							
47.24	100		42							
48.77	97	47.56	43							
50.29	100	8	44							
51.81	100		45							
53.34	98		46							
54.86	100	54.30	47							
56.39	96	9	48							
57.91	100		49							
59.43	101		50							
60.96	101		51							
62.48	101	61.40	52							
64.00	99	10	53							
65.53	100		54							
67.05	90		55							
68.58	96	69.69	56							
70.1	98	11	57							

PURPOSE:

COMMENT:

INTERVAL from to

30.56 – 31.80 GREYWACKE - grey, massive, gradational areas to a fine grained Lithic wacke

31.80 – 34.05 LITHIC WACKE - coarse grained, massive, minor alteration (chloritic). Abrupt upper contact 25° to C.A., Lower contact grades abruptly to fine grained lithic wacke and greywacke.

34.05 – 38.70 GREYWACKE - fine grained greenish grey with gradational interbeds of fine grained lithic wacke. Weak to moderate chlorite alteration. Weak carbonate alteration. Very massive appearance

38.70 – 40.97 ALTERED TURBIDITE - dark green grey colour with contorted & slightly brecciated appearance. Moderate tary carbonate veinlet alteration and chlorite alteration

40.97 – 46.80 LITHIC WACKE (Greywacke) - medium green grey very massive unit. From 40.97 - 42.67 unit is a medium grained lithic wacke that grades to a fine grained lithic wacke to greywacke after 42.67m. Minor qtz - carbonate veining. Moderate chlorite alteration

46.80 – 49.69 TURBIDITE (Greywacke) - greenish grey fine grained massive unit. Some graded convoluted bedding. Moderate Chlorite alteration. weak qtz - carbonate veining. minor pyrrhotite < 1% on veinlet margins

49.69 – 52.80 ALTERED TURBIDITE (Argillite) (Siltstone) mottled appearance due to dark charcoal grey and greenish grey areas. Intensely fractured. Rock healed with quartz - carbonate ± albite veins. Sulfides < 1%

52.80 – 55.00 TURBIDITE (Greywacke & siltstone) dark green grey very fine grained w/ fine graded beds 30° to C.A. Alteration & fracturing virtually absent except for chlorite alteration

55.00 – 69.10 CHLORITIC GREYWACKE - very massive dark green grey appearance due to strong chlorite alteration

From 57.99 to 58.05 6cm qtz - carb ± albite vein w/ fine grained asphy.
From 60.26 to 60.56 - 30 cm quartz albite ± carbonate vein.

Minor disseminated asphy.
From 64.80 - 65.00 m qtz - carbonate veins cut C.A. at 25 to 30°
Some dissem asphy and pyrrhotite.

69.10 – 75.25 ZONE MATERIAL - well defined section of zone material

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
73978	49.69	51.19	1.50	0.010
73979	51.19	52.80	1.61	0.020
73980	60.00	61.30	1.30	0.018
73981	64.50	65.10	0.80	0.068
73982	68.10	69.10	1.00	0.082
73983	69.10	70.60	1.50	0.068

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: 800 LEVEL 776 N- SECTION

PROJECT: IDAHO

HOLE NUMBER: 89 - 776 - 2

PURPOSE:

COMMENT:

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	ALTERATION: CALCITE	ALTERATION: ALBITE	ALTERATION: SILICA	FRACTURING	MINERAL	GEOLOGY	INTERVAL from	INTERVAL to	DESCRIPTION
71.60	103		71								69.10	75.25	ZONE MATERIAL - grey to dark charcoal grey. Brecciated appearance. Laced with quartz albite veins. Carbonate content is weak Sulfide ~ 10% with 1-2% espy. Pyrrhotite appears to be most common sulfide w/ pyrite being next. From 72.65 - 73.8 mainly greywacke. veining decreases but pyrrhotite common.
73.15	104		72										
74.67	99		73										
76.20	95	75.41	74										
77.72	104		75										
79.25	100		76										
80.77	102		77										
82.29	97	82.60	78										
83.92	98	13	79										
85.34	100	85.34	80										
			81										
			82										
			83										
			84										
			85										
			86								75.25	82.08	ALTERED CHLORITIC GREYWACKE - dark green grey to black. Weakly mineralized although some very laced 5cm section contain up to 15% pyrrhotite. Large quartz vein area (running 15° to C.A) from 77.84 - 78.29. Greywacke grades to fine to medium grained lithic wacke at 82.08m
			87								82.08	83.48	LITHIC WACKE - light green grey medium grained. Two qtz veins (barren) to 6cm cut this section at 50° to C.A
			88								83.48	85.00	LITHIC WACKE TO PEBBLE CONGLOMERATE massive green grey. grades to greywacke at 85m.
			89								85.00	85.34	GREYWACKE
			90										E. O. H. 85.34 m

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
73982	69.10	70.60	1.50	0.008
73989	70.60	72.10	1.50	0.036
73985	72.10	73.60	1.50	0.101
73986	73.60	75.25	1.65	0.026
73987	75.25	76.90	1.65	0.004
73988	76.90	78.90	2.00	0.032

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION (LEVEL): 766N SECTION - 800 LEVEL
DIP: -5° Az 090
LATITUDE: N
DEPARTURE: E
STARTED: Nov. 29, 1989 D.S.
O.B. THICKNESS: N/A
B.R. THICKNESS:

LENGTH: 86.56 m (284ft)
CORE SIZE: BQ
LOGGED BY: W.B.L., J.T.S
STARTED:
STARTED:

ELEVATION:
DATE LOGGED: Nov. 24, 25, 1989
CONTRACTOR: F. BOIS VENU
FINISHED: Nov 28 1989 D.S.
FINISHED:

PROJECT: IDAHO
LOCATION: IDAHO
STORED: IDAHO CORE SHACK
CASING:
TOTAL RECOVERY: %

HOLE NUMBER: 89-766-1

SURVEY:

DEPTH	BEARING	ANGLE Reading	ANGLE Correc
86.56 m	090	-5°	

% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
100		1							
86		2							
95		3							
98		4							
99	1	5							
97	2	6							
102		7							
95		8							
100		9							
103	3	10							
97		11							
100		12							
98		13							
100	4	14							
101		15							
100		16							
90	5	17							
97		18							
		19							
		20							
		21							
		22							
		23							
		24							
		25							
		26							
		27							
		28							
		29							
		30							

PURPOSE:
COMMENT:

INTERVAL from	to		SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
0	0.40	ZONE MATERIAL mainly qtz-calcite vein - 5% to 10%					
0.40	1.58	ALTERED SILTSTONE - light grey. relict layering visible. Weakly altered.					
1.58	5.90	TURBIDITE - (greywacke?) - brownish grey, well layered with graded beds. Fine grad material up hole grading to coarser material down hole. Massive, very minor stringers of Quartz-carbonate. Bedding 28° to C.A. lower contact w/ Lithic Wacke 25° to C.A.					
5.90	7.40	LITHIC WACKE - massive, brownish coloured. Medium to coarse grained. Very minor qtz-carbonate veining and alteration					
7.40	10.18	GREYWACKE - dark greenish grey very fine grained massive unit. Quartz carbonate veining is moderately intense. Contact area (lower) 10.08 - 10.18 m is brecciated and strongly qtz-carbonate veined contact 55-60° to C.A					
10.18	12.55	LITHIC WACKE - grey massive unit. Medium to coarse grained. Minor quartz-carbonate veining. weak chlorite alteration. Lower contact abrupt @ 70° to C.A.					
12.55	13.72	TURBIDITE - grey, graded bedding. Mod. qtz-carb. alt'n. Lower contact abrupt at 25° to C.A. with Lithic Wacke					
13.72	15.85	LITHIC WACKE - dark charcoal grey massive medium grained. Weak qtz veining. Slight increase in alteration at lower contact at 15.85					
15.85	16.83	LITHIC WACKE - light grey, coarse grained					
16.83	18.95	TURBIDITE primarily interbeds ranging from greywacke to coarse lithic wacke. Weak chlorite alteration					
18.95	21.03	LITHIC WACKE - light grey, massive - coarse grained gradual grading down hole to fine grained greywacke at 21.03 m. No qtz veining. Weak chlorite alteration					
21.03	22.56	GREYWACKE - massive, light green grey very fine grained					
22.56	24.02	PEBBLE CONGLOMERATE - upper contact abrupt at 55° to C.A - clast to 0.5 cm dia. grades down hole to fine grained lithic wacke and greywacke					
24.02	26.56	GREYWACKE - light grey. Sequence of interbedded greywacke and fine grained lithic wackes. Lower contact with fine to medium grained lithic wacke at 26.56 m is 55° to C.A.					
26.56	28.12	LITHIC WACKE - light grey massive medium grained. unaltered. Grades to greywacke at 28.12, fault zone 27.6 - 27.8 m.					
28.12	36.05	ALTERED TURBIDITE - graded bedding w/ greywacke sections. Intensely veined w/ quartz carbonate & albite. 31.90 - 32.35					

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: 766N SECTION - 800 LEVEL

PROJECT: IDAHO

HOLE NUMBER: 89-766-1

PURPOSE:

COMMENT:

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METERS	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
31.70	75	5	31							
33.22	100		32							
34.75	98	34.90	33							
36.27	105	6	34							
37.79	107		35							
39.32	100		36							
40.84	95	41.00	37							ZM
42.37	100	7	38							
43.89	98		39							
45.41	99		40							
46.94	95	47.49	41							
48.46	104	8	42							
49.99	102		43							
51.51	101		44							
53.04	98		45							
54.56	100	55.02	46							
56.08	100	9	47							
57.61	97		48							
59.0	102		49							
60.66	98		50							
62.18	100	62.18	51							
63.70	102	10	52							
65.23	98		53							ZM
66.75	98		54							
68.27	98		55							
69.80	72	69.90	56							V.G.

28.12 - 36.05 ALTERED TURBIDITE - qtz veining mainly of thicker type w/ most veins 1-2cm thick. Veining becomes less intense from 33.22 to 36.05. Bedding 38° to C.A. Moderate chlorite alteration. Sulfides mainly pyrrhotite is mainly < 2%.
Fault Zone 30.70 to 30.90m

36.05 - 40.74 WEAK ZONE MATERIAL - very intensely qtz-carbonate albite flooded turbidite material. Zone is laced with vein material. Sulfides mainly pyrrhotite 5-10%. Veining mainly sub-parallel to C.A. (5-20°) Abrupt lower contact at 40.72 m with very chloritic turbidite.

40.74 - 50.58 CHLORITIC TURBIDITE - dark green graded bedding sequence with interbeds of greywacke to fine grained lithic wacke
Very massive unit with strong chlorite alteration and weak quartz carbonate alteration
Fault zone from 45.41 m to 45.56
Bedding 30° to C.A.

50.58 - 53.88 SILTSTONE - dark charcoal grey, well layered w/ bedding 45° to C.A. weak quartz-carbonate alteration and veining. Some greenish greywacke beds.

53.88 - 62.18 CHLORITIC GREYWACKE - dark grey green massive unit. Intensely chlorite altered. Moderate quartz veining pervasive carbonate alteration. Sulfides consists mainly of pyrrhotite which occurs in patches to 5cm long. Overall sulfide content for sequence < 2%

62.18 - 72.85 ZONE MATERIAL - grey mottled colour due to intense quartz-albite-carbonate alteration of chlorite greywacke
Very well mineralized w/ sulfides to 20%. Pyrrhotite is primary sulfide with pyrite and chalcopyrite. Arsenopyrite 1-2%.

* At 68.96 m a 1mm dia. blob of native gold occurs in a less altered section of chloritic greywacke. Chalcopyrite occurs with pyrrhotite.

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton			
73989	33.40	34.90	1.50	0.008			
73990	34.90	36.40	1.50	<0.003			
73991	36.40	37.90	1.50	0.008			
73992	37.90	39.40	1.50	0.016			
73993	39.40	40.74	1.34	0.014			
73994	40.74	41.74	1.00	0.006			
73995	53.88	55.88	2.00	0.048			
73996	55.88	57.88	2.00	0.026			
73997	57.88	59.88	2.00	0.014			
73998	59.88	62.18	2.30	0.024			
73999	62.18	63.68	1.50	0.032			
74000	63.68	65.18	1.50	0.032		14.76	
39955	65.18	66.68	1.50	0.010		↓	
39956	66.68	68.18	1.50	0.096		4.5m	
39957	68.18	69.68	1.50	0.146		0.1036	oz/ton
39958	69.68	71.18	1.50	0.119		Au	

CAROLIN MINES LIMITED

DIAMOND DRILL RECORD

LOCATION: 766 N SECTION -800 LEVEL

PROJECT: IDA HD

HOLE NUMBER: 89-766-1

DRILLING INTERVAL	% CORE RECOVERED	BOX Number	SCALE 1:250 METER	ALTERATION: CHLORITE	CALCITE	ALBITE	SILICA	FRACTURING	MINERAL	GEOLOGY
71.32	102	11	71							ZM
72.85	100		72							
74.37	97		73							
75.89	101		74							
			75							
			76							
77.42	101	12	77							
78.94	97		78							
80.47	100		79							ZM
81.99	101		80							
83.51	93	13	81							
85.04	100		82							
86.56	103		83							
			84							
			85							
			86							
			87							
			88							
			89							
			90							

PURPOSE:

COMMENT:

INTERVAL from to

62.18 - 72.85 ZONE MATERIAL

72.85 - 78.70 CHLORITIC GREYWACKE - dark green grey massive unit. Minor veining however carbonate and chlorite alteration is very intense. Sulfides have decreased to less than 1% compared to zone material.

78.70 - 82.57 ZONE MATERIAL - grey, intensely quartz - carbonate and albite altered. Sulfides to 15% mainly pyrrhotite. Pyrite, chalcopyrite and arsenopyrite ~ 5%

82.57 - 85.16 CHLORITIC GREYWACKE - light apple green mottled by qtz - carbonate veining and alteration. Abrupt lower contact w/ siltstone at 85.16 m at 80° to C.A.

85.16 - 86.56 ARGILLACEOUS SILTSTONE - dark charcoal grey, well layered. Unaltered w/ calcite. Layering is at 55° to C.A. Chlorite altered

86.56 m E.O.H

SAMPLE NUMBER	METERS from	METERS to	LENGTH METERS	Au oz/ton
39958	69.68	71.18	1.50	0.119
39959	71.18	72.85	1.67	0.040
39960	72.85	74.35	1.50	0.034
39961	74.35	75.85	1.50	0.008
39962	75.85	77.35	1.50	< 0.003
39963	77.35	78.70	1.35	0.006
39964	78.70	80.20	1.50	0.068
39965	80.20	81.70	1.50	0.038
39966	81.70	82.57	0.87	0.032
39967	82.57	83.57	1.00	0.008


450 E
500 E
550 E
600 E
1050 m
1000 m
950 m
900 m
850 m
800 m
IU 75
IU 44
IU 74
VERY SHATTERED OVER ENTIRE LENGTH
IU 43
NOT TYPICAL ZONE
IU 45
766 X-C
TURBIDITE
Drill Stn 766
IDAHO DECLINE
IU 46
VERY CONTORTED BEDS TURBIDITE
quartz breccia
IU 47
IU 42
IU 109
F FAULT
IDAHO INTERCEPT
900 PW
900
IU 94
SUMP FAULT
VERY MAJOR FAULT
IU 73
875 ACCESS
875 REMUCK
875 BYPASS
875 PE
IU 92
IU 93
90-74 DECLINE
SCRAM ACCESS
IU 115
U 254
U 240
MINE FAULT
800
89-766-1 (-5)
E.O.H. 86.56 m
0.1036
4.50 m
LEGEND
SHEARING CLEAVAGE
FRACTURING
FAULT (defined)
FAULTING (assumed)
V.G. VISIBLE GOLD
gf GRAPHITE
SILTY ARGILLITE
TURB TURBIDITE
CHL GW CHLORITIC GREYWACKE
BOULDER CONGLOMERATE
PEB CONGL PEBBLE CONGLOMERATE
LW LITHIC WACKE
SS SILTSTONE
ZM ZONE MATERIAL
All drill holes relogged by J. T. Shearer, June 1982, April 1983
REFER TO FIGURE 3 for GOLD VALUES (overlay)
FIGURE 4 for TOTAL SULFIDES (overlay)
FIGURE 5 for PYRRHOTITE CONTENT (overlay)
FIGURE 6 for PYRITE CONTENT (overlay)
FIGURE 7 for ARSENOPYRITE CONTENT (overlay)
To accompany report by J. T. Shearer entitled: Preliminary Investigation on Sulfide Distribution, Idaho Orebody June 30 1982
GEOLOGICAL BRANCH ASSESSMENT REPORT
20,048
Scale: 1:250
0 5 10 15 metres
CAROLIN MINES LIMITED
LADNER CREEK SOUTH PROJECT
IDAHO MINE
Cross Section 766 N
GEOLOGY
SCALE 1:250
DATE 6-29-82
N.T.S. 92H/11W
BY J.Shearer
DWG No. FIG 14
FIGURE 14

VIEW LOOKING TOWARDS MINE NORTH

ELEVATION (m)

1050

1000

950

900

850

800

450E

500E

550E

600E

900 L

900 WP

900 EP

875 PW

875 PE

90-74 DECLINE

90-74 DECLINE

50-74 DECLINE

835 SCRAM ACC.

835 SCRAM SOUTH

800 L

0.125/0.50m

0.20/0.80m

89-776-1
Az. 090°
Incl. +5
86.56m E.O.H.

89-776-2
Az. 090°
Incl. 0°
85.34 E.O.H.

ABBREVIATIONS

ALT'D	ALTERED
CHL	CHLORITIC
CONGL.	CONGLOMERATE
GW	GREYWACKE
LW	LITHIC WACKE
SS	SILTSTONE
TB	TURBIDITE
	FAULT ZONE

DRILL HOLE WITH ASSAY INTERVAL IN OZ/TON GOLD

0 5 10m

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,048

SCALE 1:250 | APPROVED BY:
DATE Dec 8/89 | REVISED:
DRAWN BY: W.S.L.

GEOLOGY CROSS-SECTION - 776N
1989 DRILL HOLES 89-776-1, 89-776-2
LOCATION-800 LEVEL FIGURE 15
DRIFT

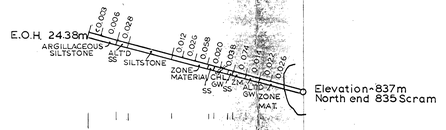
LOOKING TOWARDS AZIMUTH 060°
(Based on Mine North)

ELEVATION(m)

900

850

NEX-15
Az. 330°
Inclination +15°



Elevation~837m
North end 835 Scram

10932N
491.5E

800

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,048

ABBREVIATIONS

ALT'D	ALTERED
CHL.	CHLORITIC
GW	GREYWACKE
SS	SILTSTONE
ZM	ZONE MATERIAL

FAULT ZONE

0.012 DRILL HOLE WITH ASSAY VALUES IN OZ/TON GOLD

0 5 10m

SCALE: 1:250	APPROVED BY:	DRAWN BY W.B.L.
DATE: Dec. 8/89		REVISED:

GEOLOGY CROSS-SECTION
DDH. NEX 15 Azimuth 330°
LOCATION - North End of 835 Level Scram Drift

FIGURE 12

ELEVATION (m)

1050

1000

950

900

850

800

650E

600E

550E

500E

0.002

0.003
0.008
0.035
0.135
0.107
0.004
0.042
0.093
0.103

0.004
0.008
0.035
0.038

835 SOUTH EXPL. DRIFT

E SUB

ORE PASS & ACCESS

1 SUB

2 DP

START OF 1900 ACCESS DECLINE

90-74 DECLINE

93-70 INCLINE

72 PILLAR ACCESS

ABBREVIATIONS

ALT'D ALTERED
CHL CHLORITIC
GW GREYWACKE

DRILL HOLE WITH ASSAY INTERVAL IN OZ/TON GOLD

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,048

0 5 10m

SCALE: 1:250	APPROVED BY:	DRAWN BY: W.B.L.
DATE: Dec. 8/89		REVISED:

GEOLOGY CROSS-SECTION - 683N
DRILL HOLE 89-683-1
LOCATION - 835 SOUTH Exploration Drift

FIGURE 13

LOOKING TOWARDS AZIMUTH 120.5°
(Based on Mine North)

ELEVATION (m)

900

850

800

NEX-3 E.O.H. 178.92 m
Az. 032°
Incl. +29°

NEX-2 E.O.H. 241.1m
Az. 031°18' 44"
Incl. +13°

NEX-7 Az. 030.5
E.O.H. 24.38m
Incl. +17°

NEX-8 E.O.H. 24.38m
Az. 030.5°
Incl. +8°

NEX-9 E.O.H. 45.72m
Az. 030.5°
Incl. 0°

NEX-10 E.O.H 23.47m
Az. 030.5°
Incl. -6°

SUMP FAULT

11000N

10950N

◎ ELEVATION 837m North End 835 Scram
NEX-2 0 to 1.00m of 0.173 oz/ton Au
1.00m to 2.50m of 0.258 oz/ton Au
NEX-8 0 to 14.00m of 0.077 oz/ton Au - (46ft.)
NEX-9 1st zone 1.50 to 11.53m (10.03m) of 0.100 oz/ton Au (32.90 ft.)
} Major mineralized zone
0 to 16m of 0.273 oz/ton Au -16m (52.49ft.)

~10932 N
491.5 E

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,048

0 5 10m

ABBREVIATIONS

ALT'D	ALTERED
ARGL.	ARGILLITE
Bx	BRECCIATED
CHL.	CHLORITIC
GW	GREYWACKE
SIL	SILICIFIED
SS	SILTSTONE
ZM	ZONE MATERIAL
10cm	FAULT ZONE
	DRILL HOLE WITH ASSAY VALUES IN OZ/TON GOLD

ABOUT MINES LIMITED

SCALE: 1:250	APPROVED BY:	DRAWN BY: W.B.L.
DATE: Dec. 8/89		REVISED:

GEOLOGY CROSS-SECTION
(D.H. NEX-2 & 3 (1988), NEX-7, 8, 9 & 10 (1989) Az. 030.5°
Az. 031°18' & 032°
LOCATION - North End of 835 Level Scram Drift

FIGURE 9

LOOKING TOWARDS AZIMUTH 143°
Based on Mine North

NEX-1 E.O.H. 156.67m
Azimuth 043°
(off section)

CONTINUATION OF
NEX-1 PAST NEX-11

NEX-11 E.O.H. 35.05m
Inclination +20°
Az. 053°

NEX-12 E.O.H. 37.45m
Inclination +10°
Az. 053°

NEX-13 E.O.H. 27.43m
Inclination 0°
Az. 053°

ELEVATION
900 meters
890
880
870
860
850
840
830

400 E
500E
500E
11,050N
11,000N
10,950N
10,932N
400E
10,900N

ABBREVIATIONS

ALT'D	ALTERED
ARGL.	ARGILLACEOUS
CHL.	CHLORITIC
GW	GREYWACKE
LW	LITHIC WACKE
SS	SILTSTONE
Z.M.	ZONE MATERIAL

FAULT
DRILL HOLE - ASSAY INTERVAL oz/ton gold

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,048

0 1 2 3 4 5 10 15 METERS
0 10 20 30 40 50 60 FEET
SCALE - 1: 250

NOTE HOLE LOCATION SUBJECT TO CHANGE PENDING TRO-MAR RESULTS.
CONSULT DIAMOND DRILL RECORD FOR DETAILS.

CAROLIN MINES LIMITED

SCALE - 1: 250	IDAHO	DRAWN BY - J. SHEARER
DATE - SEPTEMBER 19/87	NORTH EXPLORATION	WORK BY - J.D.
VERTICAL SECTION ALONG DRILL HOLES		NEX-1 NEX-11,12, 13
GEOLOGY		FIGURE 10


LOOKING TOWARDS AZIMUTH 100°
(Based on Mine North)
ELEVATION(m)
900
850
800
NEX-14
Az-010°
Inclination +15°
32.92 m
0.008
0.010
0.006
0.026
0.048
0.038
0.028
0.018
0.085
0.044
ZM
SS
ALT'D GW
ZONE MATERIAL
ARGL.&SS
GW
SS
ALT'D SS
SS.&ARGL
SIL GW
0.016
0.026
0.012
0.062
0.040
0.032
0.052
0.020
Elevation ~ 837m
North end 835 Scram
NEX-6
81.5m
Az~ 350°
Inclination -5°
Off section
0.022
9.68m
0.019
3.74m
0.036
5.82m
0.096
1.53
0.067
4.67m
0.135
3.68m
0.058
5.69m
0.041
4.13m
10932N
491.5E
GEOLOGICAL BRANCH
ASSESSMENT REPORT
20,048
ABBREVIATIONS
ALT'D ALTERED
ARGL. ARGILLITE
GW GREYWACKE
SIL. SILICIFIED
SS SILTSTONE
ZM ZONE MATERIAL
DRILL HOLE WITH ASSAY INTERVAL & ASSAY VALUES IN OZ/TON GOLD
0.012
0 5 10m
CAROLIN MINES LIMITED
SCALE: 1:250
APPROVED BY:
DRAWN BY WBL
DATE: Nov.29/89
REVISED:
GEOLOGY CROSS SECTION
DDH. NEX-6 Azimuth 350° NEX-14 Azimuth 010°
LOCATION - North End of 835 Level Scram Drift
FIGURE 11

CROSS SECTION C - C₁
SCALE 1:500

C

C₁

COLOUR	UNIT	SYMBOL	DESCRIPTION
	7	BAR	BLACK ARGILLITE: POORLY BEDDED, UNIFORM
	6	TG	GREEN TURBIDITE: THICK TO THINLY LAMINATED BEDS, GRADED & CROSS BEDDED, SLUMP STRUCTURES
	6a	TB	BROWN TURBIDITE: IDENTICAL TO GREEN TURBIDITES
	5	SILT	SILTSTONE: MINOR THINLY BEDDED THAN UNITS 6,4,3B WITH FEWER COARSE LAYERS, SLUMP STRUCTURES, WELL DEVELOPED GRADING & COARSE BEDDING
	4	LITHIC WACKE	MAIN CONSTITUENTS ≥ 2mm IN DIAMETER TEND TO BE ANGULAR - CLASTS
	3	MCAR	MULTI-COLOURED ARGILLITE: GREEN, BLACK, BROWN LAMINATED COMMONLY HIGHLY FOLDED
	2		BOULDER CONGLOMERATE: COARSE GRAINED METAVOLCANIC
LAVENDER	1		PEBBLE CONGLOMERATE: ≥ 2mm FRAGMENTS, SUBROUNDED, GRADING OCCASIONAL COARSER LENSES
	8	SAR	SILTY ARGILLITE: INCLUDES ARGILLACEOUS GREYWACKE, VERY WELL BEDDED, THIN BEDDED TO LAMINATED, ALTERNATIVE LIGHT GREY SILTY ASPECT WITH BLACK ARGILLACEOUS LAYERS
	9	GW	GREYWACKE: UNIFORM, FINE GRAINED, COMMONLY POORLY BEDDED
E 741 E 745			ZONE MATERIAL: QUARTZ-ALBITE-CARBONATE ROCK
	5		SULPHIDE MINERALIZATION
			SHEARING
			FAULTING, assumed
			FAULTING, observed
			BEDDING
			JOINTING
			FOLDING
			BRECCIA
			LINEATION
			QUARTZ

ALT'D ALTERED
CONGL CONGLOMERATE
CHL CHLORITIC
SS SILTSTONE
TB TURBIDITE

89-776-2
Incl. 8° Not plotted (SEE X-SECT)

EOH 88-776-1
Incl. 45° CORRECTED TO HORIZONTAL

EOH 89-776-1
(Incl. 59° Not plotted (SEE X-SECT)

Detail of B

Detail of A

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,048

SCALE 1:250	APPROVED BY:	DRAWING NUMBER:
DATE DECEMBER 21 1989		REVISED DEC. 14, 1989
800 TRACK LEVEL 700N TO 967N		
GEOLOGY		DRAWN BY WORK BY: J.T. SHEARER

FIGURE 8


E.O.H
NEX-2
Incl. +13
projected to horizontal
NEX-4
Incl. +21°
Az-010°
Projected to horizontal
← E.O.H. 192.2m
89 NEX-7 Incl. +17°
89 NEX-8 Incl. +13°
89 NEX-10 Incl. -6°
89-NEX-9 E.O.H. 45.72m
Incl. 0°
Az 030.5°
89-NEX-11
Incl. +20°
Az. 053°
89-NEX-12
Incl. +10°
Az. 053°
89-NEX-13 E.O.H. 27.43m
Incl. 0° Az.-053°
89 NEX-14 E.O.H.
Incl. +15°
Projected to horizontal
Az - 010°
89-NEX-15 E.O.H.
Incl. +15°
Projected to horizontal
Az - 330°
E.O.H. 89-683-1
Incl. +046°
Az. 090°
Projected to horizontal
N
MINE
10600E
10550E
10500E
10450E
11,100N
11,050N
11,000N
10,950N
10,900N
10,850N
10,800N
10,750N
10,700N
10,650N
10,600N
0 5 10m
ABBREVIATIONS
ARGL. ARGILLITE
ALT'D ALTERED
Bx BRECCIA
CONGL. CONGLOMERATE
CHL. CHLORITIC
GW GREYWACKE
LW LITHIC WACKE
SIL. SILICIFIED
SS SILTSTONE
ZM ZONE MATERIAL
GEOLOGICAL BRANCH
ASSESSMENT REPORT
20,048
SCALE 1: 250
DATE 81-07-20
DRAW BY. JTS, WBL
REVISED Dec 1989
PLAN of 837.5 ELEVATION
FIGURE 7