REPORT ON THE 1992 EXPLORATION PROGRAM ON THE DOT COPPER PROJECT

Nicola Mining Division
N.T.S. 92I/7W

Latitude: 50° 20′ North
Longitude: 120° 51′ West

For

ZAPPA RESOURCES LTD.
1500 - 675 West Hastings Street
Vancouver, B.C.
V6B 1N2

By George Norman, P. Geo.
Norman Geological

January, 199

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LIST OF FIGURES

1.0 SUMMARY AND CONCLUSIONS

The Dot Project, consisting of 44 claim units comprising 1,100 ha. is located 15 km. southeast of the Highland Valley porphyry copper district in southern British Columbia. The claims lie 25 km. northwest of Merrit, B.C. at 50 20′ North latitude and 120 51′ West Longitude, NTS 92I/7W (See Figure 1 for location). Good road access and low snowfall allows exploration to proceed on a year-round basis.

The property is underlain by the Guichon Batholith which is host to numerous porphyry copper deposits including Lornex and Valley Copper.

The Dot copper deposit lies within a northwest trending zone of altered intrusive containing disseminated, fracture and vein controlled copper mineralization. The copper mineralization and related I.P. geophysical anomalies occur within an area measuring 150-300 metres wide by 800 metres in length.

Zappa Resources, may earn 100% interest in the Dot claims through an option agreement signed in November, 1992 with the owner of the claims, Larry Ovington. American Bullion Minerals Ltd., have the right to a 50% joint venture interest upon Zappa oompleting the first $2.0 million expenditure.

Zappa Resources Ltd. operated and funded the 1992 Exploration Program expending a total of $51,757 during the period of November 1 to January 31, 1993.

Zappa Resources Ltd. undertook a program of drilling with the completion of 6 reverse circulation drill holes totalling 638.5 metres. The program tested the copper zone over a 255 meter strike length and to a depth of 100 meters. All 6 holes were successful in intersecting copper mineralization. Some of the significant copper grade intercepts of the program include: 73.15 metres of 0.33% Cu in 92RCD-02, 76.2 metres of 0.91% Cu in 92RCD-03 and 64.01 metres of 0.37% Cu in 92RCD-04.

Surface trenches and drill holes have traced copper mineralization for a strike length of 270 metres, a depth of 100 metres to a width of 55 metres. The zone remains open along strike and to depth. Previous geophysical surveys have defined a large northwest trending I.P. anomaly that extends the target zone for an additional 500 metres southeast of the drill tested area. The I.P. anomaly expands from a width of 150 metres within the known copper zone to 300-400 metres in the area to the southeast.

The main copper zone is hosted within structurally controlled intensely hematite altered granodiorite located proximal to a north-northeasterly and northwesterly structural intersection. The zone contains disseminated, vein and fracture controlled native

sulphide and oxide copper mineralization. Primary copper minerals include bornite and minor chalcopyrite with secondary malachite, chalcocite and native copper.

Drill holes have outlined a preliminary geological resource of 2.93 million tonnes grading 0.5% Cu. The primary target for additional reserves occurs within an expanding I.P. chargeability Anomaly located southeast of the drill tested area.

Preliminary metallurgical testing of copper mineralization by Westcoast Biotech of Vancouver, B.C. suggests acceptable levels of acid consumption can be expected in a heap leaching circuit. Additional testing has been recommended by Westcoast to test acid consumption with coarser material (5 cm.) as well as biological leach tests.

Westcoast Biotech anticipates that a 4 month leaching cycle of copper with a 70% extraction rate could produce 8.25 million pound of copper for each million tonnes mined and treated. The cost of solvent extraction and electrowinning is expected to be less than $0.40 per pound. A mining operation of 1,400 t/d ore containing 0.5% copper would produce 10,000 pounds of cathode copper per day.

In summary, drilling programs have outlined a geological resource of 2.93 million tons grading 0.5% copper on the Dot Property. Potential to increase reserves lies within a large I.P. Anomaly, to the southeast. Preliminary metallurgical testing suggests that the Dot mineralization, which is a combination of oxide/sulphide and native copper, is amenable to heap leaching. If successful, cathode copper will be produced by solvent extraction/electrowinning (SX-EW) technology which eliminates conventional high cost milling and smelting.

Further drilling (500 metres) of three holes totalling 500 metres within the expanding I.P chargeability anomaly is recommended along with continued metallurgical test work to assure the leacheability of the copper mineralization. The recommended program is estimated to cost $56,000.00.

Respectfully submitted.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA GEOSCIENTIST

G.E. Norman, P. Geo.
January 21, 1992

2.0 INTRODUCTION

The 1992 Dot Exploration Program focused on confirmation drilling of the previously discovered main copper zone. The program was funded and operated by Zappa Resources Ltd. The field program was conducted during November and December, 1992.

2.1 LOCATION AND ACCESS

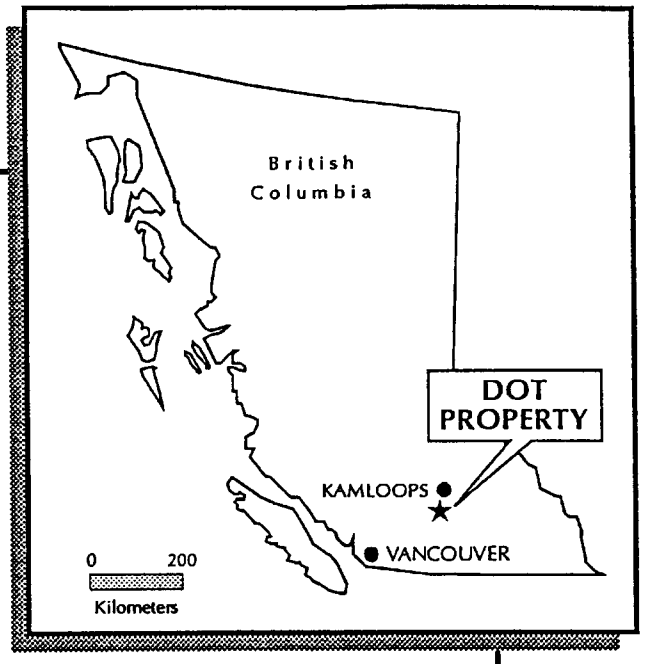
The Dot Property is located in south central British Columbia, approximately 25 kilometres northwest of Merrit, B.C., latitude 50° 20'N, longitude 120° 51'W, NTS 92I/7W. Access is via highway #8, 7 kilometres northwesterly from Merrit to Lower Nicola, then by good pavement 6 kilometres northerly to the Craigmont Mine site at which point the "Aberdeen Mine Road" gives way to an upgraded gravel road. At kilometre "marker 7" northwest from Craigmont, access to claims is gained by travelling northerly an additional 5 kilometres via a unmaintained dirt road.

2.2 PHYSIOGRAPHY

The area is gently undulating and moderated vegetated with pine conifers. Elevations range from 1000 metres in the southern portion of the property to 1375 metres in the northern extremities. The property is largely overburden covered terrain with variable thickness (up to 34 metres) of glacial drift. An esker ridge, located in the immediate vicinity of the drill area gives local relief of 10-15 metres. A tributary to Broom Creek traverses the southwestern portion of the claims.

2.3 CLAIM STATUS

The Dot property consists of 28 mineral claims, the DOT I to DOT X claims and DOT 11 to DOT 28 claims comprising a total of 44 units in 1100 hectares. The claims are currently in good standing until August/November 1993. The registered owner of the claims is Larry Ovington of Kamloops, B.C.. Refer to Table I for record numbers and specific expiry dates.



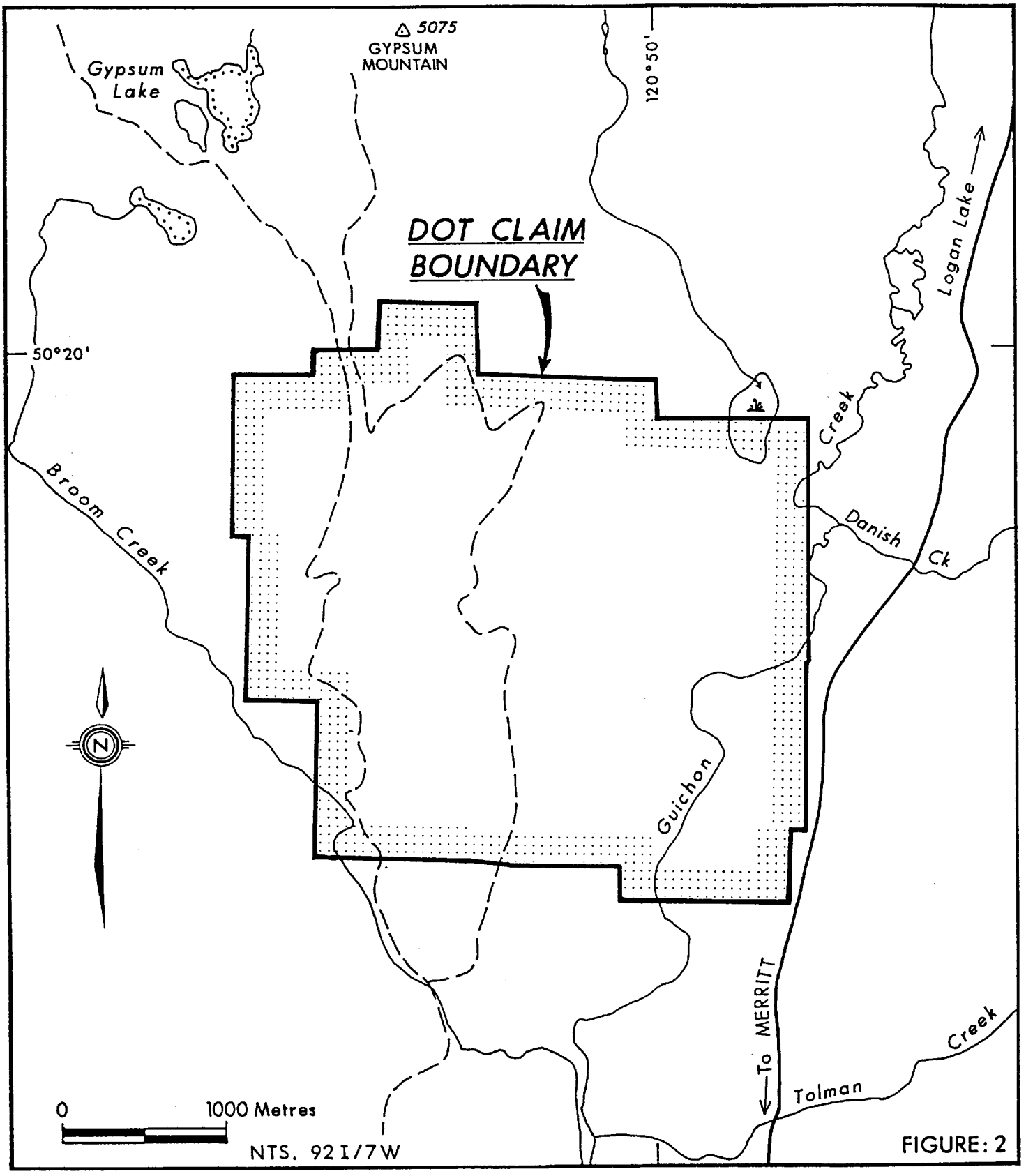
BETHLEHEM
LOGAN LAKE
VALLEY
COPPER
COPPER
J.A.
LORNEX
HIGHMONT
HIGHLAND VALLEY
DISTRICT
N
DOT PROPERTY
0
5
Kilometers
CRAIGMONT
8
MERRITT

DOT COPPER PROJECT

ZAPPA RESOURCES LTD.

Figure : 1

DOT PROPERTY
CLAIM MAP



ZAPPA RESOURCES LTD.

TABLE I

MINERAL CLAIM STATUS - DOT PROPERTY

CLAIM NAME	RECORD NUMBER	NO. of UNITS	RECORD YEAR	EXPIRY DATE	OWNERSHIP
DOT I	312518	12 (4Nx3W)	08/21/92	08/16/93	L. Ovington
DOT II	312519	6 (35x2W)	08/21/92	08/18/92	"
DOT III	312733	1 (2 POST)	09/1/92	08/24/92	"
DOT IV	312734	1 "	09/1/92	08/24/92	"
DOT V	312735	1 "	09/1/92	08/24/92	"
DOT VI	312736	1 "	09/1/92	08/24/92	"
DOT VII	312737	1 "	09/1/92	08/31/93	"
DOT VIII	312738	1 "	09/1/92	08/31/93	"
DOT IX	312739	1 "	09/1/92	08/31/93	"
DOT X	312740	1 "	09/1/92	08/31/93	"
DOT 11	314782	1 "	11/20/92	11/17/93	"
DOT 12	314783	1 "	11/20/92	11/17/93	"
DOT 13	314784	1 "	11/20/92	11/17/93	"
DOT 14	314785	1 "	11/20/92	11/17/93	"
DOT 15	314786	1 "	11/20/92	11/17/93	"
DOT 16	314787	1 "	11/20/92	11/17/93	"
DOT 17	314788	1 "	11/20/92	11/18/93	"
DOT 18	314789	1 "	11/20/92	11/18/93	"
DOT 19	314790	1 "	11/20/92	11/18/93	"
DOT 20	314791	1 "	11/20/92	11/18/93	"
DOT 21	314792	1 "	11/20/92	11/18/93	"
DOT 22	314793	1 "	11/20/92	11/18/93	"
DOT 23	314794	1 "	11/20/92	11/17/93	"
DOT 24	314795	1 "	11/20/92	11/17/93	"
DOT 25	314796	1 "	11/20/92	11/17/93	"
DOT 26	314797	1 "	11/20/92	11/17/93	"
DOT 27	314798	1 "	11/20/92	11/18/93	"
DOT 28	314799	1 "	11/20/92	11/18/93	"

2.4 HISTORY

The Dot property was previously known as the Vimy prospect which was located around the turn of the century. A minor amount of high grade copper ore was mined prior to 1927 from approximately 200 feet of underground workings. During 1956-57 Kennco Explorations completed various surveys including trenching and 3,652 metres of drilling in 30 holes.

From 1965 to 1981 exploration programs were completed on prior claims which are now covered by the present Dot property. This work is summarized below:

1. 1960-67 Chattaway - line cutting, trenching, approximately 50 diamond drill holes (3,658m)

2. 1960-67 Bralorne - Pioneer Mines - line cutting and magnetic surveys, trenching, geochemical surveys, 7 diamond drill holes (341 metres) and 20 percussion drill holes.

3.0 1970 Asarco - trenching, 148 percussion holes (5,166 m on a 610 metre grid)

4.0 1972 Aselo Industries - Induced Polarization survey

5.0 1979-81 Lawrence Mining - induced polarization, 30 BQ diamond drill holes (5,387 metres) and 30 percussion holes (2,288 metres)

6.0 1982 Lawrence Mining - 3 diamond drill holes of which the location, results and total metrage is unknown.

Drilling prior to 1981 indicated that 903,000 tons of 0.35% copper existed within the main copper zone on the Dot prospect. (Information taken from Assessment Report #9699).

2.5 1992 EXPLORATION PROGRAM

A total of 6 reverse circulation drill holes in 638.5 metres were completed on the Dot Property during November and December 1992. The drilling was confined to the previously known copper mineralization and was designed to confirm the continuity and grade of previously reported copper intersections.

3.0 REGIONAL SETTING

The Dot property occurs within the Highland Valley porphyry copper district within the Intermontane belt of southern British Columbia (Refer to Figure 3, General Geology). Copper deposits occur within the late Upper Triassic Guichon Creek batholith which has a surface area of approximately 1000 km2 and is a semi-concordant domal body that is elongated slightly west of north. The batholith intrudes sedimentary and volcanic strata of the Permian Cache Creek and late Triassic Nicola groups and is unconformably overlain by sedimentary and volcanic strata ranging in age from Early Jurassic to Middle Tertiary.

The oldest rocks exposed adjacent to the Guichon Creek batholith are Cache Creek Group sedimentary and volcanic rocks of Permo-Carboniferous age that outcrop west of the batholith and west of the Thompson River. The Cache Creek rocks appear to be deposited in two volcanic arcs, separated by a belt of oceanic rocks (Monger, 1972). These rocks include argillite, chert, conglomerate, greywache, tuff, quartzite and greenstone. Metamorphic rocks adjacent to the batholith include Nicola Group and include hornblende - plagioclase gneiss, schist, quartzite and hornfels that occur in a metamorphic halo up to 500 metres in width.

Upper Triassic Nicola Group rocks which envelope the batholith and locally form roof pendants, consist mainly of volcanic flows (basalt and basaltic andesite) and breccias in the north and sedimentary rock (chert, siltstone, sandstone, greywache, limestone and volcanic conglomerates) at the east, south and west edges.

The Guichon batholith is divisible into various concentric phases of related intrusions which have sharp contacts locally, but are generally gradational. The youngest phases form the core of the system although extensive K/Ar dating (Northcote, 1969) has shown that all phases report an approximate age of 198 +/- 8 m.y.

Copper mineralization is structurally controlled during emplacement within the Highland Valley deposits and is associated with copper enriched magma phases of the Guichon batholith. The Bethlehem and Bethsaida phases contain a much higher background copper value than other phases of the batholith. The Highland Valley ore deposits contain approximately 10 million tons of copper metal of which approximately 2 billion pounds of copper has been mined to date. The Dot property lies within the Guichon variety outer Highland Valley phase of the Guichon batholith.

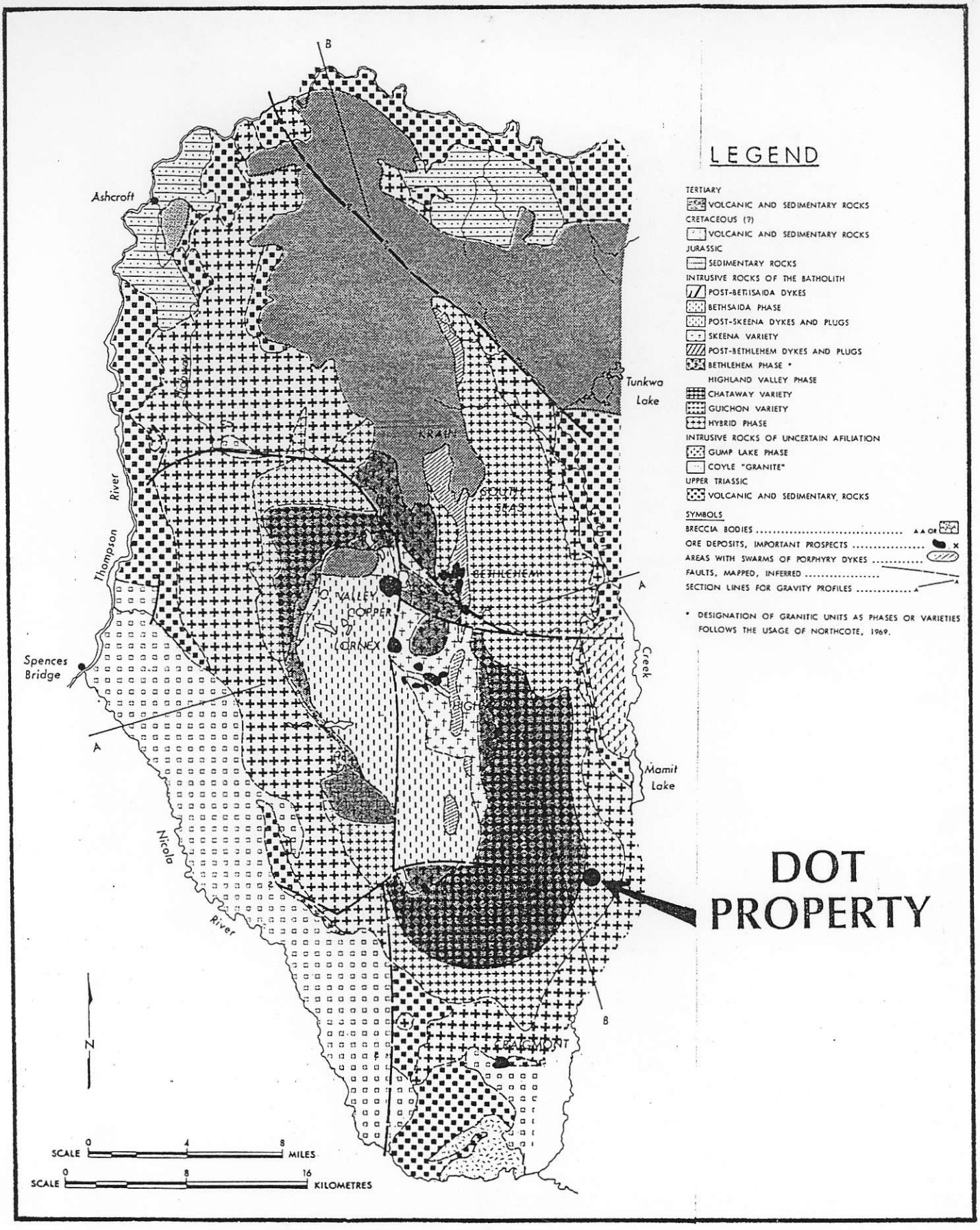


Figure 3 - GENERAL GEOLOGY

4.0 PROPERTY GEOLOGY

The Dot property is located within the eastern portion of the Upper Triassic Guichon Creek batholith. The property is underlain by the Guichon variety Highland Valley phase intrusive rock comprised of fine to medium grained hornblende monzodiorite to granodiorite. Outcrops of a coarser grained granodiorite possibly Chataway variety and younger porphyry intrusives are also noted in the literature. Refer to Appendix I Vancouver Petrographics report by J. Payne for detailed descriptions of several intrusive samples taken from the Dot copper zone.

4.1 MINERALIZATION, ALTERATION AND STRUCTURE

The copper zone within the Dot claims is found within a northwest trending structural zone of altered granodiorite containing disseminated, fracture controlled and vein hosted native copper, sulphide copper (chalcocite, bornite and chalcopyrite and oxide copper (predominately malachite). Better copper grades appear to exist near a north-north easterly trending cross structure which transects the area between 92RCD-03 and 92RCD-04; and 92RCD-05 and 81-11. The surface expression of the fault is exhibiting by a line of poorly drained swamps.

The main copper zone, explored by surface trenches and drill holes has been traced for an approximate length of 270 metres with a width of up to 55 metres and a depth of 100 metres. The deposit remains open along strike and to depth. The zone as depicted in cross sections, Figures 6 to 17, dips steeply at 80° to the northeast and appears in most instances to be fault bound on the hanging wall with unaltered and unmineralized granodiorite.

The main copper zone contains strong hematite alteration which produces a salmon-reddish coloration to the granodiorite. Main copper minerals present are malachite, bornite, native copper, chalcocite and minor chalcopyrite. Bornite and chalcopyrite are hypogene sulphides while malachite, chalcocite and native copper are believed to be supergene. Chalcocite occurs as coatings on bornite and chalcopyrite. The secondary nature of native copper has not been substantiated; although its disseminated nature and spatial proximity to chalcocite suggest a movement from one location to another (personal communication with J. Payne - Vancouver Petrographics). Native copper also occurs as thin platey fracture fillings and in quartz veins. Native copper occurring with quartz veins may either be remobilized or related to a second pulse of mineralization. Specular hematite is present in variable amounts and is usually abundant in high grade copper zones. Quartz and calcite veining is present sporadically throughout the zone. Spectacular high copper grades appear to be associated with silicification and quartz veining as seen in the interval 39.62 to 42.67 metres in hole 92RCD-03 that graded 6 to 10% copper.

TABLE II
1992 DOT PROJECT
DRILL HOLE TECHNICAL DATA

Reverse Circ. Drill Hole	Northing (m)	Easting (m)	Azimuth Degrees	Dip Degrees	Total Length(m)	Horz. Proj.(m)	Vertical Proj.(m)
92RCD-01	25+57	20+26	234	-50	120.4	77.39	92.23
92RCD-02	25+22	20+47E	230	-50	100.58	64.65	77.05
92RCD-03	24+81	20+81	230	-50	100.58	64.65	77.05
92RCD-04	24+43	21+20	230	-50	100.58	64.65	77.05
92RCD-05	23+77.5	20+96	50	-50	100.58	64.65	77.05
92RCD-06	23+69.5	21+92	230	-50	115.82	74.44	88.72
					638.5 (m)		

TABLE III
SUMMARY OF 1992 DOT PROJECT DRILL RESULTS

Reverse Circ. Drill Hole No.	From (m)	To (m)	Width (m)	Native Copper %	Nonsulphide Copper %Cu	Nonsulphide Copper % of Total	Total Copper %
92RCD-01	27.43	50.29	22.9		0.06	37.5	0.16
92RDC-02	10.67	83.82	73.15				0.33
	10.67	35.05	24.38				0.24
	35.05	80.77	45.72		0.08	20	0.40
	10.67	21.34	10.67		0.35	82	0.43
	21.34	35.05	13.72	NOT			0.09
	35.05	54.86	19.81	ASSAYED	0.10	15	0.68
	54.86	80.77	25.9				0.18
92RDC-03	24.38	100.58	76.2		0.20	22	0.91
	25.91	83.82	57.91		0.24	12	1.16
	83.82	100.58	16.76		0.06	46	0.13
	35.05	67.06	32.01	0.14	0.30	16	1.85
	35.05	48.77	13.72	0.32	0.53	17	3.05
92RCD-04	35.05	99.06	64.01		0.17	46	0.37
	36.58	45.72	9.14		0.57	54	1.05
	45.72	67.06	21.34		0.10	62	0.16
	67.06	99.06	32.0	NOT	0.11	33	0.33
92RCD-05	22.86	71.63	48.77	ASSAYED	0.16	76	0.21
	22.86	57.91	35.1		0.21	91	0.23
	57.91	71.63	13.72				0.16
	22.86	33.53	10.67		0.31	97	0.32
	33.53	57.91	24.38		0.16	89	0.18
92RCD-06	45.72	48.77	3.05		0.22	100	0.22
	82.30	99.06	16.76		0.20	77	0.26

The main copper zone also contains moderate to weak chloritic alteration of mafics and feldspars which becomes stronger near the narrowing ends of the zone. Sericite alteration is weak and sporadic. Thin section work by John Payne (Appendix I) suggests that K-feldspar is both secondary and primary. The reddish hematite coloration of the granodiorite in hand specimen hinders identification of K-feldspar.

Bulldozer trenching has exposed copper mineralization consisting of malachite and bornite in altered granodiorite at the northwestern end of the deposit. Surface sampling by Zappa Resources returned assays of 1.12% Cu over 32.9 metres. Drilling in this area via 92RCD-01 and 81-15 returned assays of only 0.16 over 22.9 metres and 0.37 over 14.0 metres. As section D-D', Figure 5 depicts, surface enrichment and or structural complexity has increased grade and width of the zone at surface.

Please refer to Section 5.0, Reverse Circulation Drilling Program, for results of 1992 program and Appendix II for a list of previous drill hole intercepts.

5.0 REVERSE CIRCULATION DRILLING 1992 PROGRAM

During the period November 27 to December 7, 1992, a total of 638.5 meters in 6 reverse circulation drill holes were completed within the known copper zone on the Dot property. Refer to Figure 4 for drill hole locations, Table II for a summary of drill hole technical data and Table III for a summary of assay results, Appendix III for Geologic Logs and Sample Drill Ledgers, and Appendix IV for Min En analytical results. The drilling was contracted to Dateline Contracting Ltd. of Kelowna, B.C. who supplied a track mounted self contained "Explorer" reverse circulation rig utilizing a 350 psi - 540 CFM compressor and 11.4 cm. diameter down-hole hammer. Conventional reverse circulation equipment was utilized which uses compressed air to force rock chips up the pipe centre via an interchange. All drill hole collars were located on previously built roads therefore minimizing any surface disturbance. No serious drilling problems were encountered. A minimal amount of water was used for wet drilling and was obtained from local small ponds. The average drill penetration rate for the 11 day period was 58 metres/day over an average 9 hour shift.

Drill moves were easily accomplished with the track-mounted rig and generally were completed within 3 hours.

Samples were collected beneath a cyclone and split using a Jones Splitter. Dry samples were collected in plastic bags while wet samples were collected in perforated Hubco bags to allow water drainage. A split sample of approximately 5 kilograms was shipped to Min-En Labs Ltd., North Vancouver, B.C. for assay purposes. Drill intersections, geologically recognized as copper bearing zones, were assayed for total copper and for nonsulphide copper. A limited number of samples were assayed for native copper. Drill intersections with no recognizable visual copper bearing minerals were geochemically analyzed for copper. See Appendix V for a description of analytical techniques.

RESULTS

A summary of the results of the 6 hole program is given below:

Drill hole 92 RCD-01 was drilled at the north end of the known copper mineralization to test beneath an area where surface trench samples returned an average of 1.12%Cu over 32.9 metres (samples taken by Zappa personnel during initial property exam) [Refer to location map Figure 3, and sections Figures 5 and 6]. 92RCD-01 tested ground previously tested by drill hole 81-5 that assayed 0.37% Cu over 14.0 metres. Hole 92RCD-01 intersected granodiorite throughout that contained a copper zone of native copper with minor bornite. The zone averaged 0.16% total copper over 22.9 metres from 27.43 to 50.29 metres. The

granodiorite within the zone is medium grained and stained by a pink-reddish coloration due to hematite alteration. Weak sericitization is also present within the zone. A strong clay altered zone from 26 to 28 metres is restricted to a fault zone that appears to bound the copper zone to the north.

Drill hole 92RCD-02 was drilled 45 metres to the southeast of hole 92RCD-01 (Refer to Figure 3 for location and Figures 7 and 8 sectional views). The hole was successful in intersecting a thick copper bearing zone approximately 55 metres in true thickness. The zone averages 0.33% Cu over 73.15 metres from 10.67 to 83.82 metres including 45.72 metres averaging 0.40% Cu from 35.05 to 80.77 metres. The zone contains bornite, native copper, malachite and cuprite and is strongly to moderately hematite stained and weak to strongly chloritized. Minor quartz veining was noted from 62.0-67.0 metres. A clay fault zone is again conspicuous near the upper end of the zone.

Drill hole 92RCD-03 was collared 53 metres southeast of 92RCD-02 along the strike of the copper zone. This hole encountered a thick high grade section of copper mineralization. The copper zone averages 0.91% Cu over 76.2 metres (55 metres true thickness) from 24.38 to 100.58 metres with 32.0 metres averaging 1.85% Cu (Refer to Figures 9 and 10). The hole was terminated in copper mineralization (0.106%Cu). The 76.2 metre thick zone averages 0.21% nonsulphide or approximately 22% of the total copper. Main copper minerals are bornite, native copper, chalcocite and malachite. The zone is contained within a very strongly hematite stained salmon-reddish coloured granodiorite. The zone also contains specular hematite and weak epidote alteration. Previous drilling within this area returned assays of 0.62% Cu over 53.9m in drill hole 81-1 and 22.0 metres of 0.36% Cu and 32.3 metres of 0.26% Cu in hole 81-11.

Drill Hole 92RCD-04 is located approximately 55 metres southeasterly from 92RD-03 along the strike of the copper zone. Refer to Figures 3, 11 and 12 for location and sectional views. This hole was successful in intersecting a thick copper zone that assayed 0.37% Cu over 64.01 metres from 35.05 to 99.06 metres including 9.14 metres of 1.05% Cu from 36.58 to 45.72 metres. The overall zone averages 0.17% nonsulphide copper or 45% of the total copper. Copper minerals include malachite, native copper and bornite. The zone is weakly chloritized and strongly hematite stained with some specular hematite noted. A fine grained chloritic rock was intersected from 34.0 to 42 metres and appeare to be a fine grained volcanic dyke or xenolith. Previous drilling results in this area include 81-13 with 30.2 metres of 1.32% Cu, 81-18 with 27.4 metres of 2.58% Cu and 81-19 with 20.1 metres of 0.57% Cu.

Drill hole 92RCD-05 was collared 70 metres southwest from 92RCD-04 drilled toward the northeast. (Refer to Figures 13 and 14 for sectional views). 92RCD-05, located adjacent to previous drill hole collars 81-13 and 14, was a 35 metre step out along strike of the copper zone from 92 RCD-04. The hole intersected a section from 22.86 to 71.36 metres averaging 0.21% Cu over 48.77 metres of which 0.16% Cu (76%) is nonsulphide copper. Copper minerals include malachite, native copper, chalcocite and traces of chalcopyrite. Malachite was the dominant copper mineral as shown by the increase in the nonsulphide copper assay. The zone is variably hematite altered and contains an increase in chlorite and epidote alteration. Minor specular hematite was noted.

Drill Hole circulation hole 92 RCD-06 was collared 70 metres along strike to the southeast of the zone from 92 RCD-05 (Refer to Figures 3, 15 and 16 for location and sectional views. Hole 92 RCD-06, collared on an esker penetrated 35 metres of overburden. No problems were encountered drilling the thick gravel/till overburden section. The hole intersected two narrow copper zones; an upper zone from 45.72 to 48.77 metres containing 0.22% Cu over 3.05 metres of which mineralization is all oxide copper and a lower zone from 82.3 to 99.0 metres, an interval of 16.76 metres of 0.26% copper of which 77% is nonsulphide copper. The lower zone contains a high percentage of malachite with some native copper, and bornite. The zone is again strongly hematized and displays weak to strong chlorite and epidote alteration of mafics and feldspars.

L E G E N D

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper

0.141	1330
% Cu	ppm Cu

AVERAGE GRADE
0.91 — % Total Copper
76.2 m — Total Length metres

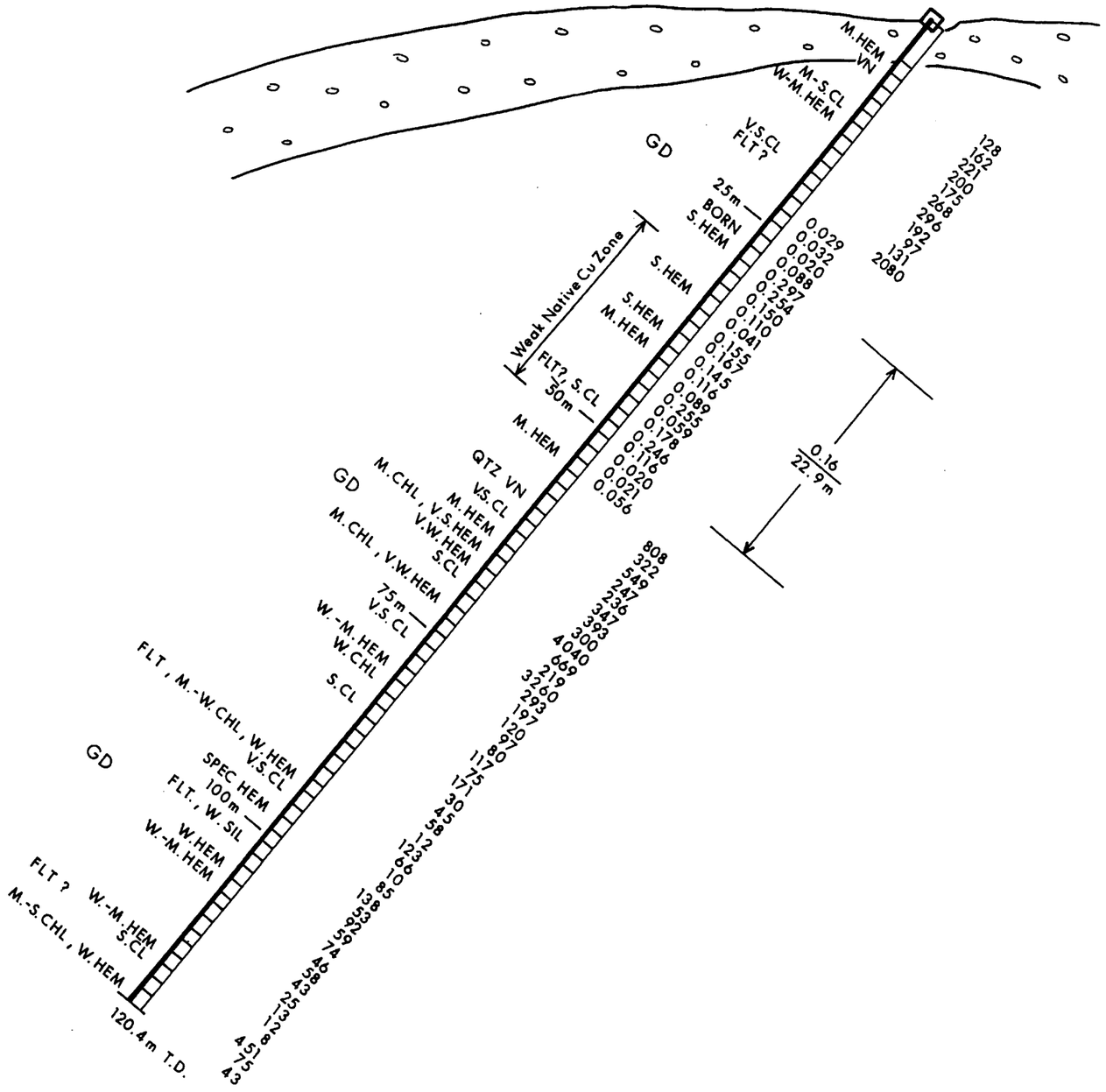
MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

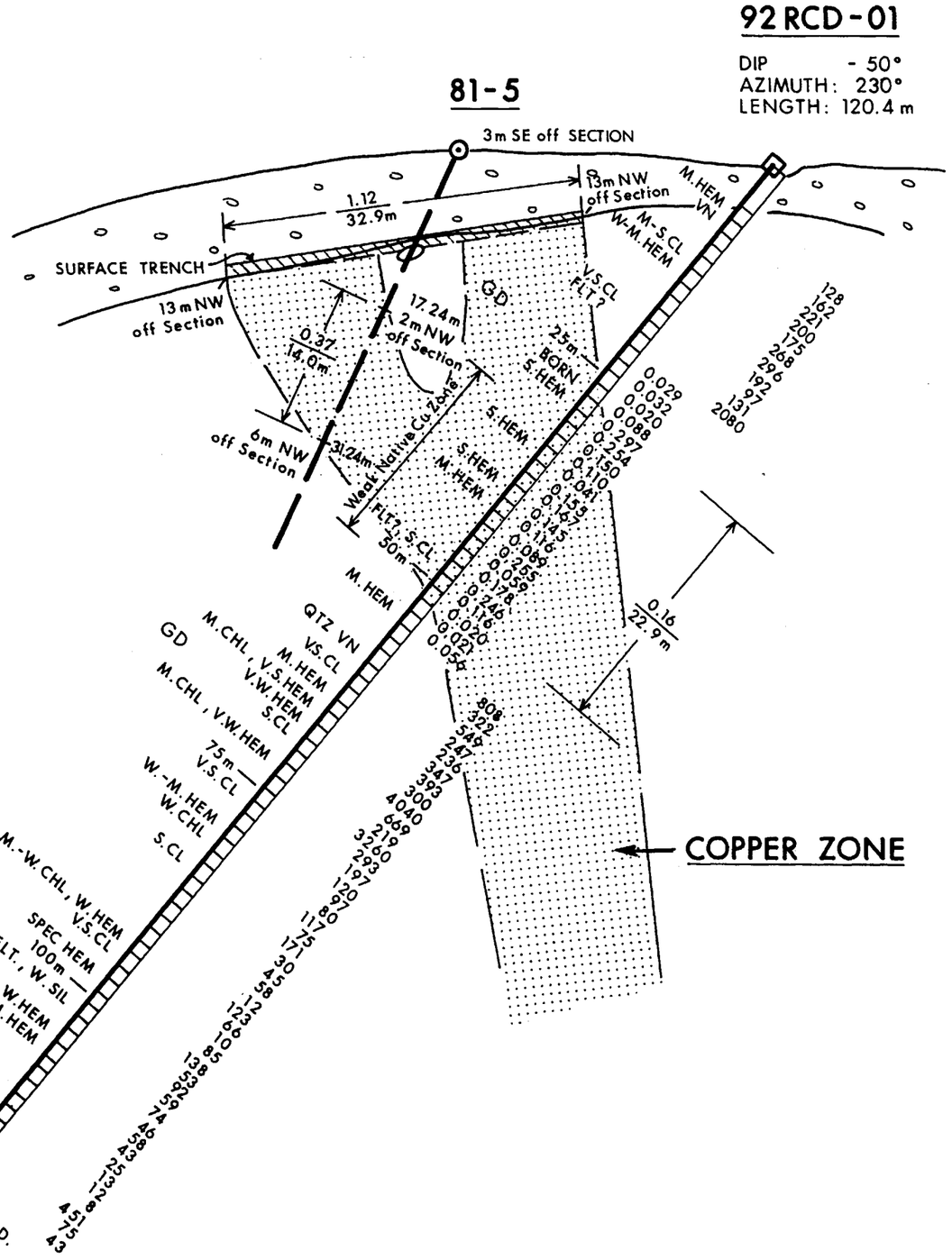
DOT PROPERTY

CROSS SECTION D-D'

92 RCD-01-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 5
DRAWN BY: J. Serwin	SCALE: 1 : 500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL — Chloritization
EP — Epidote
KSP — Secondary KSP
SIL — Silification
HEM — Hematite
CL — Clay
SER — Sericite
CA VN — Calcite Veins
QTZ VN — Quartz Veins
VZ — Vein Zone

DEGREE OF ALTERATION

S — Strong
M — Moderate
W — Weak
V — Very
T — Trace

MINERALIZATION

SPEC HEM — Specular Hematite
N Cu — Native Copper
BORN — Bornite
MAL — Malachite
CHAL — Chalcocite
CPY — Chalcopyrite
CUP — Cuprite

Total Copper

0.141 | 1330 — % Cu | ppm Cu

AVERAGE GRADE
% Total Copper
0.91
76.2 m
Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole - On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

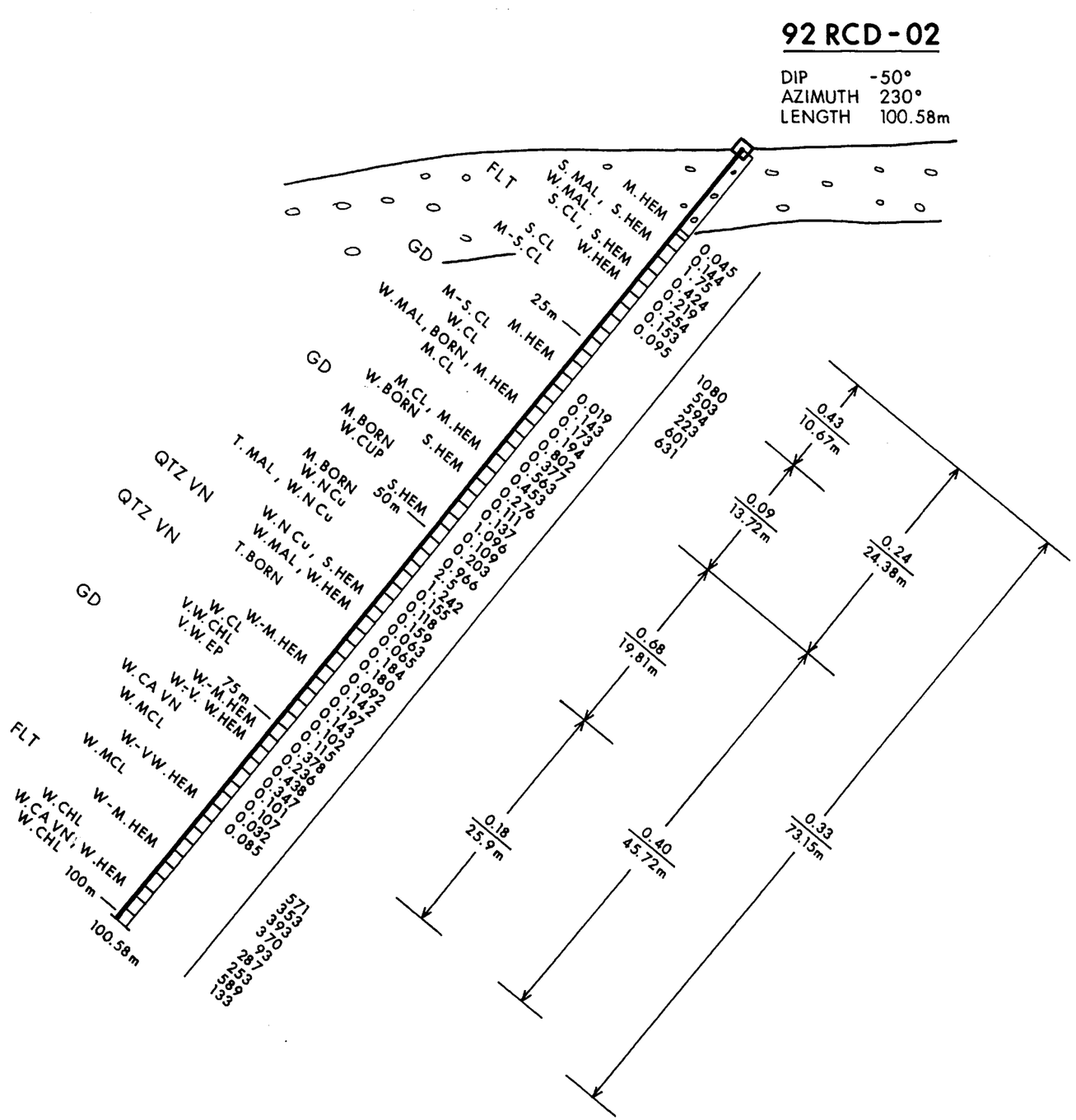
DOT PROPERTY

CROSS SECTION D-D'

COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No.
DRAWN BY: J. Serwin	SCALE: 1 : 500	6
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

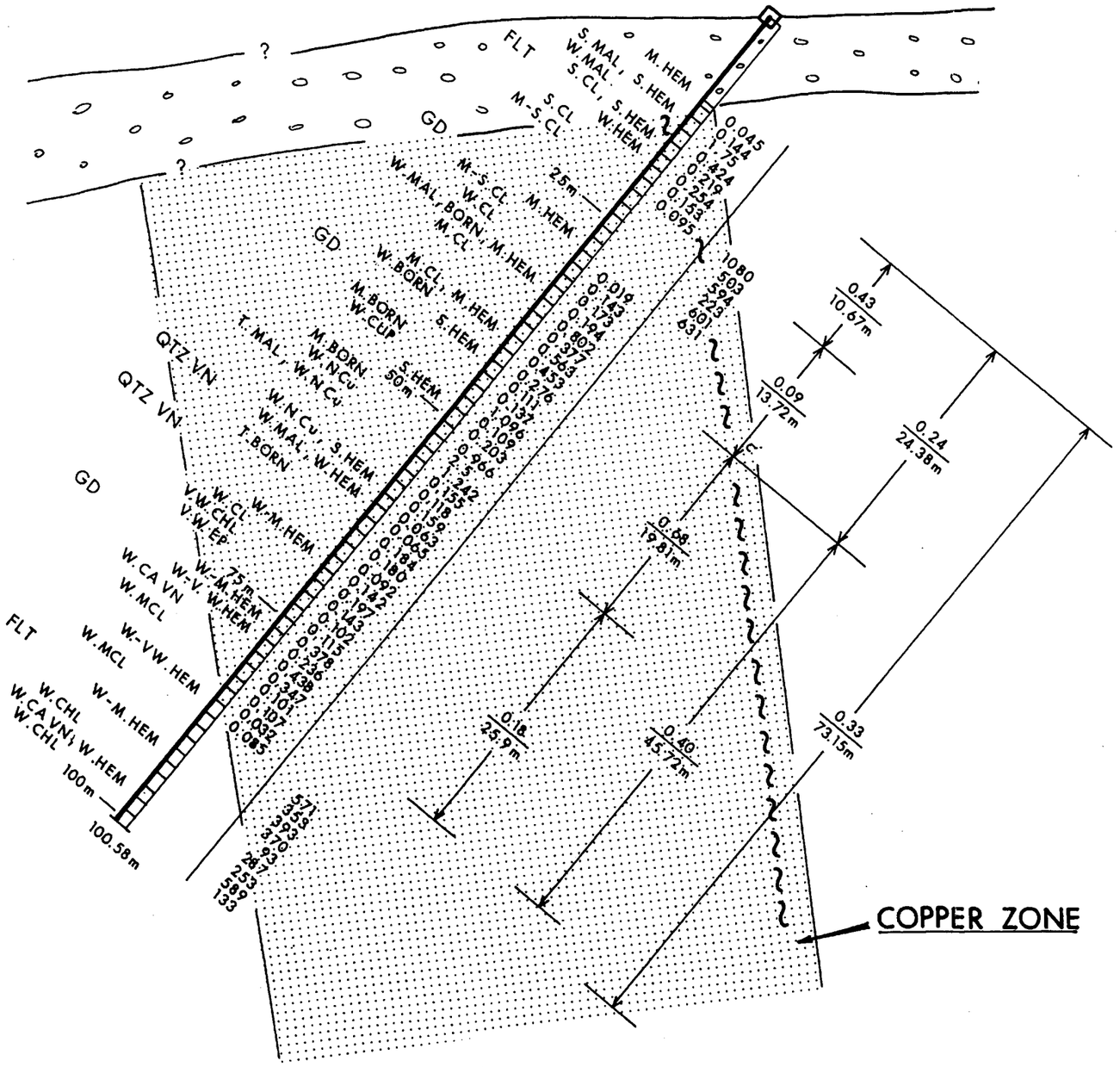
DOT PROPERTY

CROSS SECTION E-E'

92RCD-02-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 7
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION E-E'

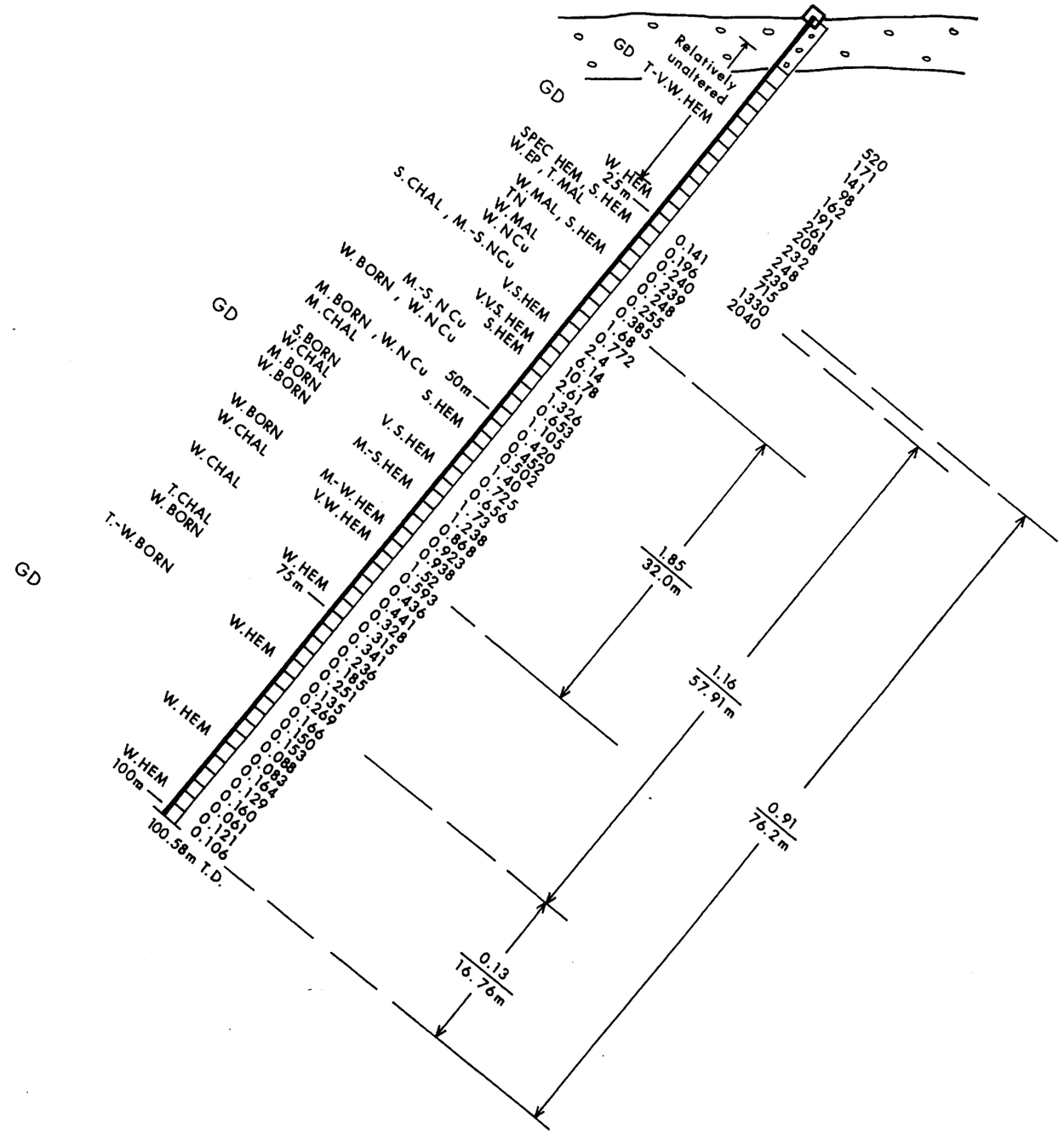
COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No.
DRAWN BY: J. Serwin	SCALE: 1:500	8
DATE: Jan./1993	NICOLA M.D.	

92 RCD-03

DIP -50°
AZIMUTH 230°
LENGTH 100.58m



L E G E N D

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper

0.141 | 1330 — % Cu | ppm Cu

AVERAGE GRADE
0.91 — % Total Copper
76.2 m — Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

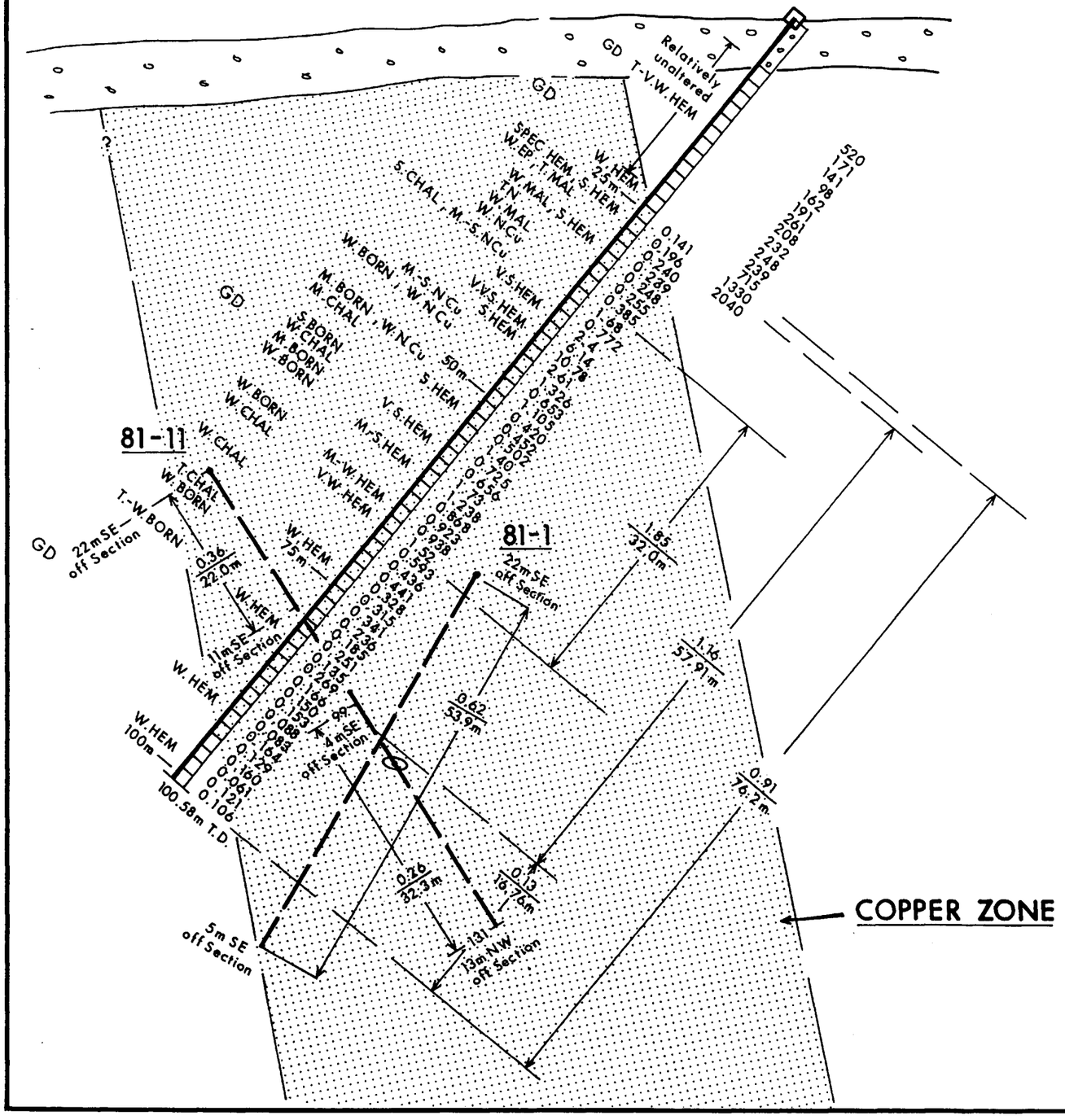
DOT PROPERTY

CROSS SECTION F-F'

92RCD-03-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 9
DRAWN BY: J. Serwin	SCALE: 1 : 500	
DATE : Jan. /1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

- CHL — Chloritization
- EP — Epidote
- KSP — Secondary KSP
- SIL — Silification
- HEM — Hematite
- CL — Clay
- SER — Sericite
- CA VN — Calcite Veins
- QTZ VN — Quartz Veins
- VZ — Vein Zone

DEGREE OF ALTERATION

- S — Strong
- M — Moderate
- W — Weak
- V — Very
- T — Trace

MINERALIZATION

- SPEC HEM — Specular Hematite
- N Cu — Native Copper
- BORN — Bornite
- MAL — Malachite
- CHAL — Chalcocite
- CPY — Chalcopyrite
- CUP — Cuprite

Total Copper

0.141 | 1330 — % Cu | ppm Cu

AVERAGE GRADE

0.91 — % Total Copper

76.2 m — Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole - On Section, Off Section

Pierce Point Of Section

SCALE 1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION F-F'

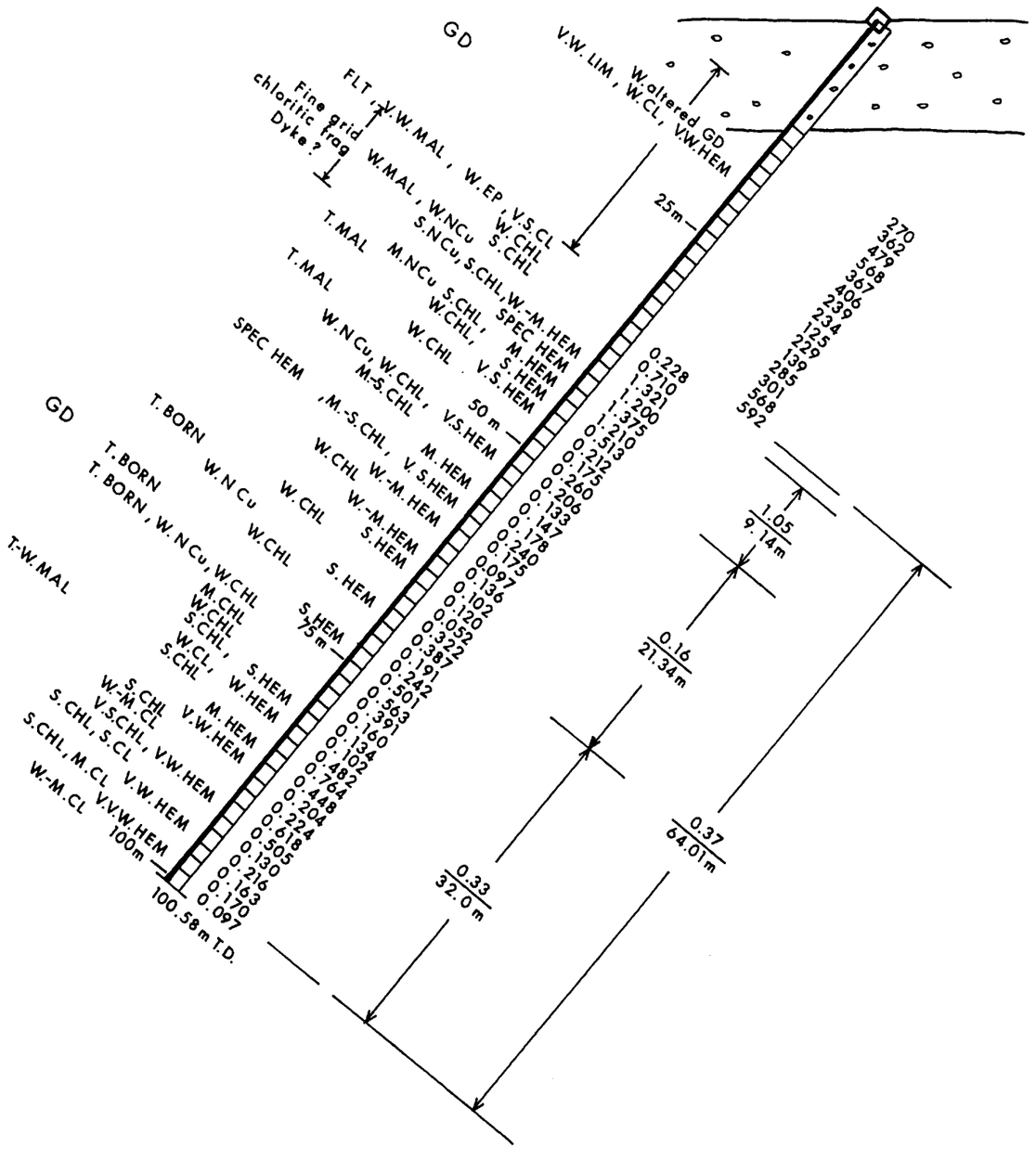
COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 10
DRAWN BY: J. Serwin	SCALE: 1 : 500	
DATE : Jan. /1993	NICOLA M.D.	

92RCD-04

DIP -50°
AZIMUTH 230°
LENGTH 100.58m



L E G E N D

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL — Chloritization
EP — Epidote
KSP — Secondary KSP
SIL — Silification
HEM — Hematite
CL — Clay
SER — Sericite
CA VN — Calcite Veins
QTZ VN — Quartz Veins
VZ — Vein Zone

DEGREE OF ALTERATION

S — Strong
M — Moderate
W — Weak
V — Very
T — Trace

MINERALIZATION

SPEC HEM — Specular Hematite
N Cu — Native Copper
BORN — Bornite
MAL — Malachite
CHAL — Chalcocite
CPY — Chalcopyrite
CUP — Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole - On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

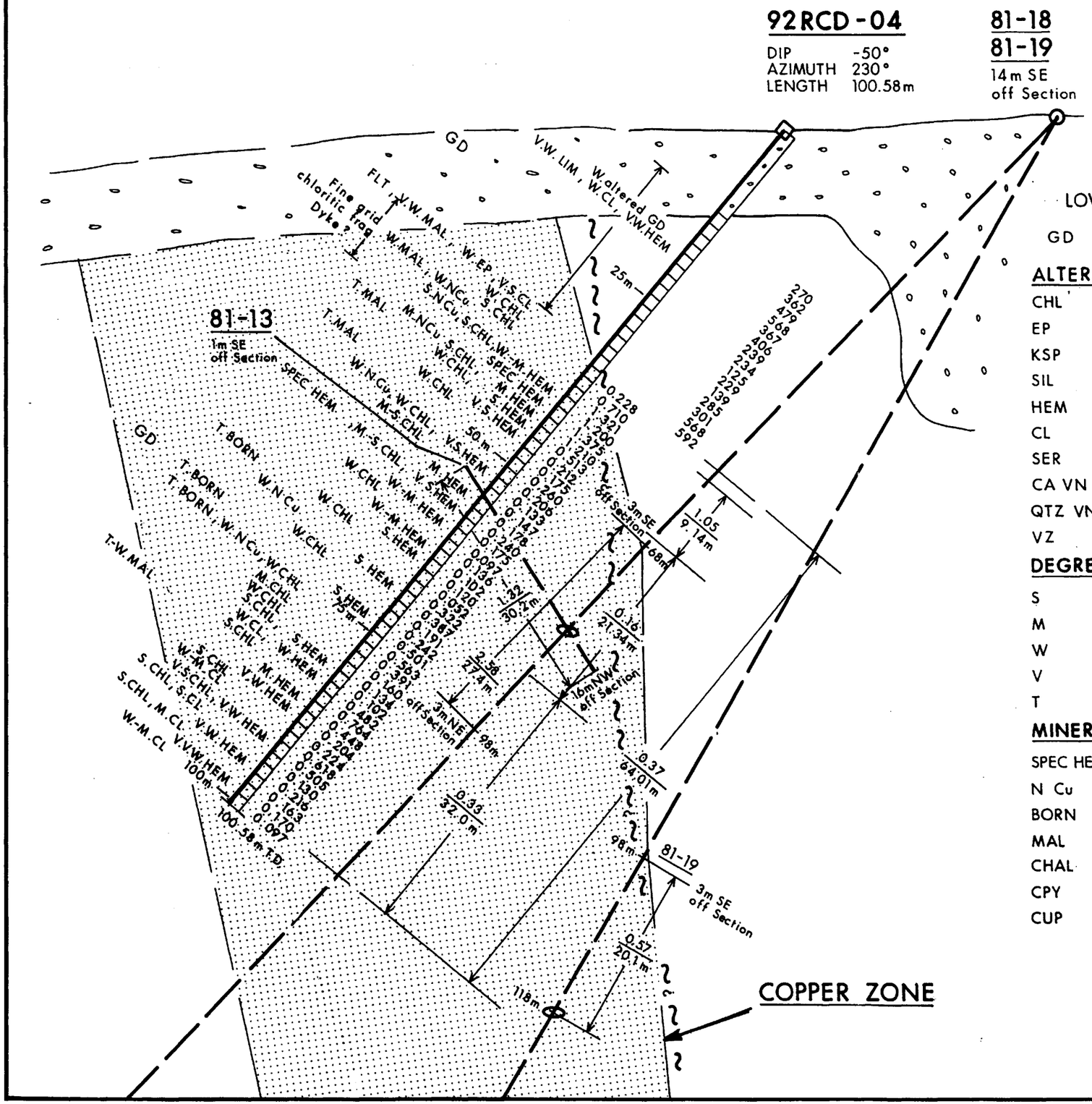
DOT PROPERTY

CROSS SECTION G-G'

92RCD-04-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 11
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

- CHL — Chloritization
- EP — Epidote
- KSP — Secondary KSP
- SIL — Silification
- HEM — Hematite
- CL — Clay
- SER — Sericite
- CA VN — Calcite Veins
- QTZ VN — Quartz Veins
- VZ — Vein Zone

DEGREE OF ALTERATION

- S — Strong
- M — Moderate
- W — Weak
- V — Very
- T — Trace

MINERALIZATION

- SPEC HEM — Specular Hematite
- N Cu — Native Copper
- BORN — Bornite
- MAL — Malachite
- CHAL — Chalcocite
- CPY — Chalcopyrite
- CUP — Cuprite

Total Copper

0.141 | 1330 — % Cu | ppm Cu

AVERAGE GRADE

0.91 / 76.2 m — % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION G-G'

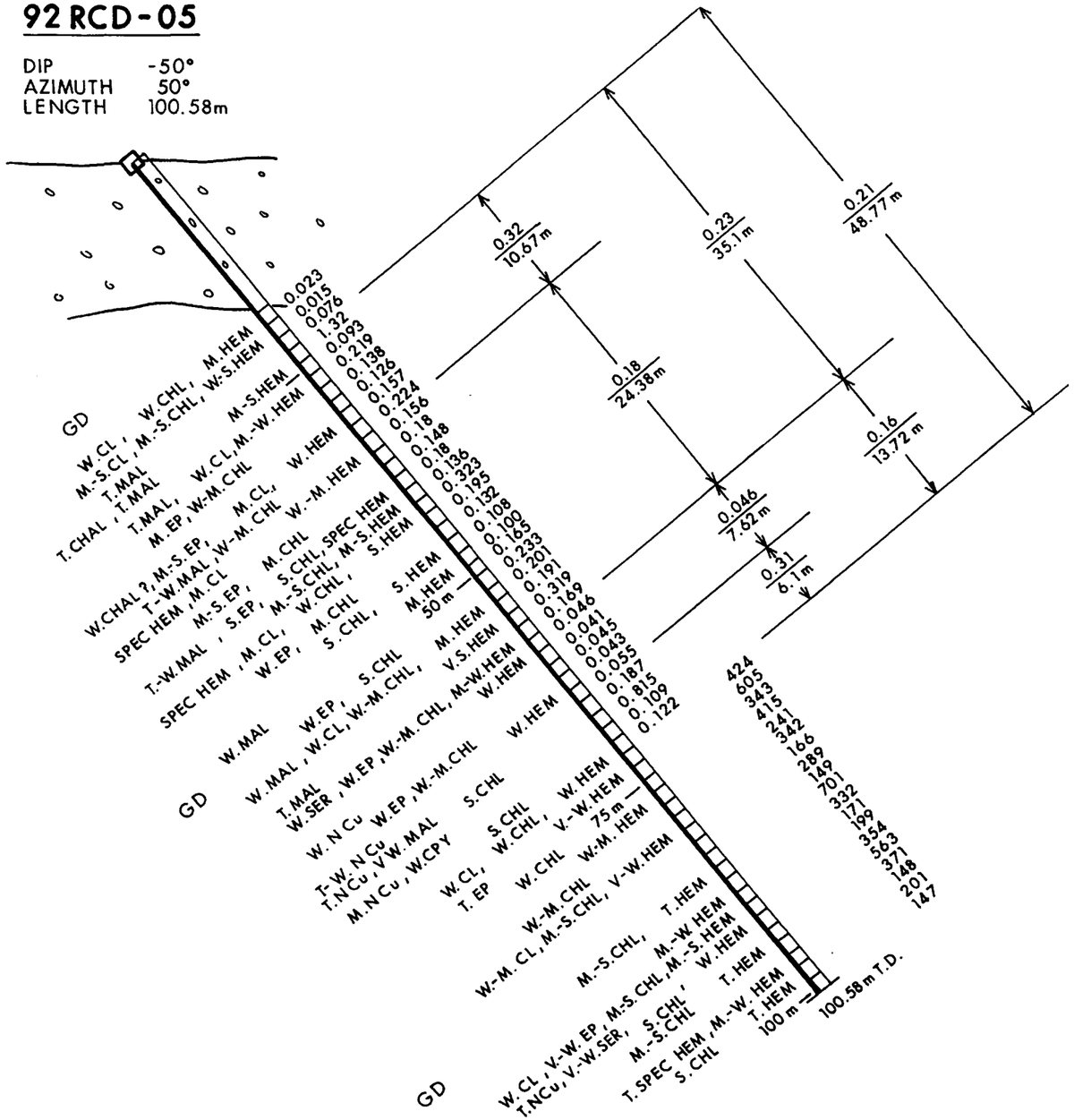
COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 12
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	

92 RCD-05

DIP -50°
AZIMUTH 50°
LENGTH 100.58m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION H-H'

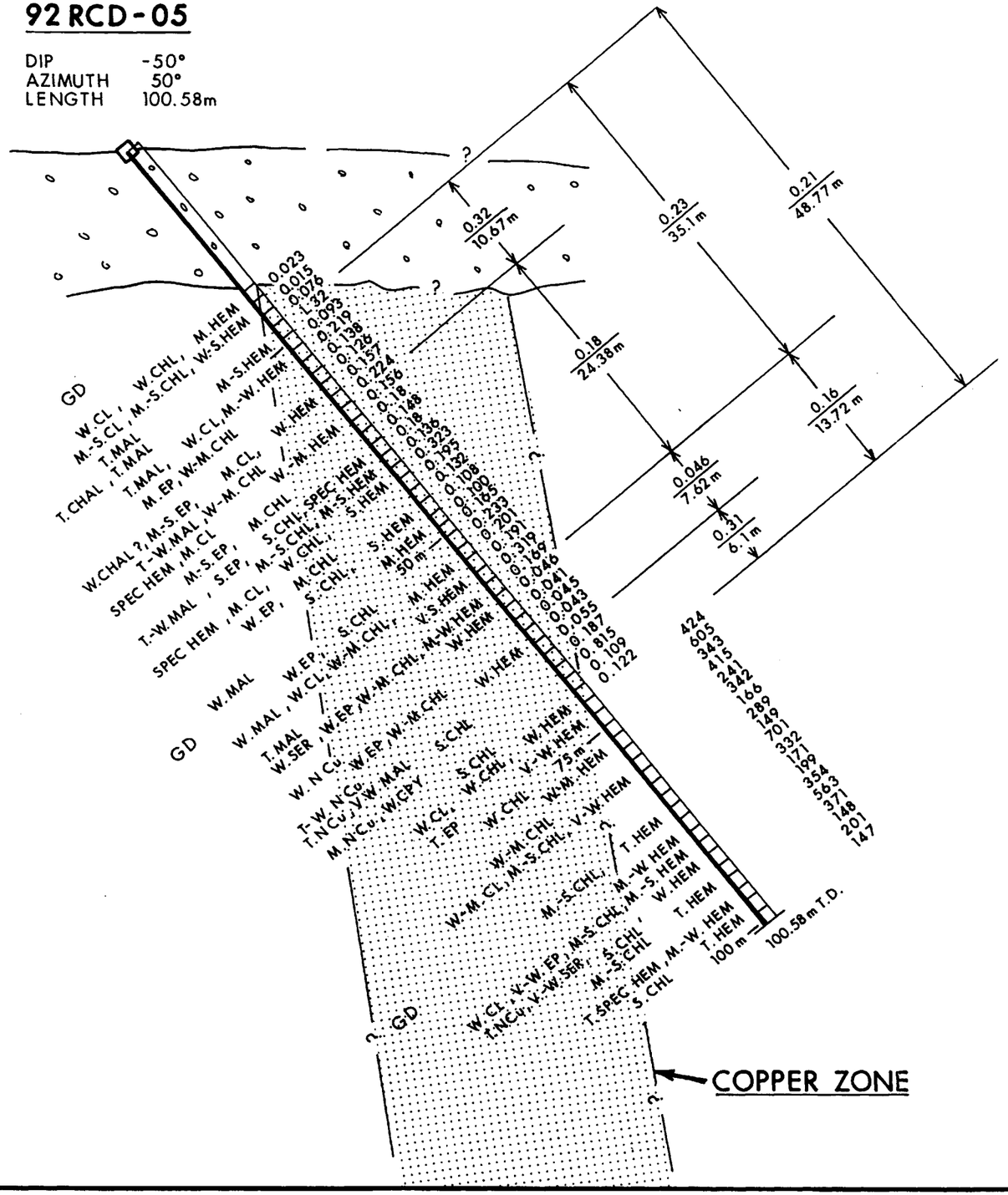
92RCD-05-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 13
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	

92 RCD-05

DIP -50°
AZIMUTH 50°
LENGTH 100.58m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

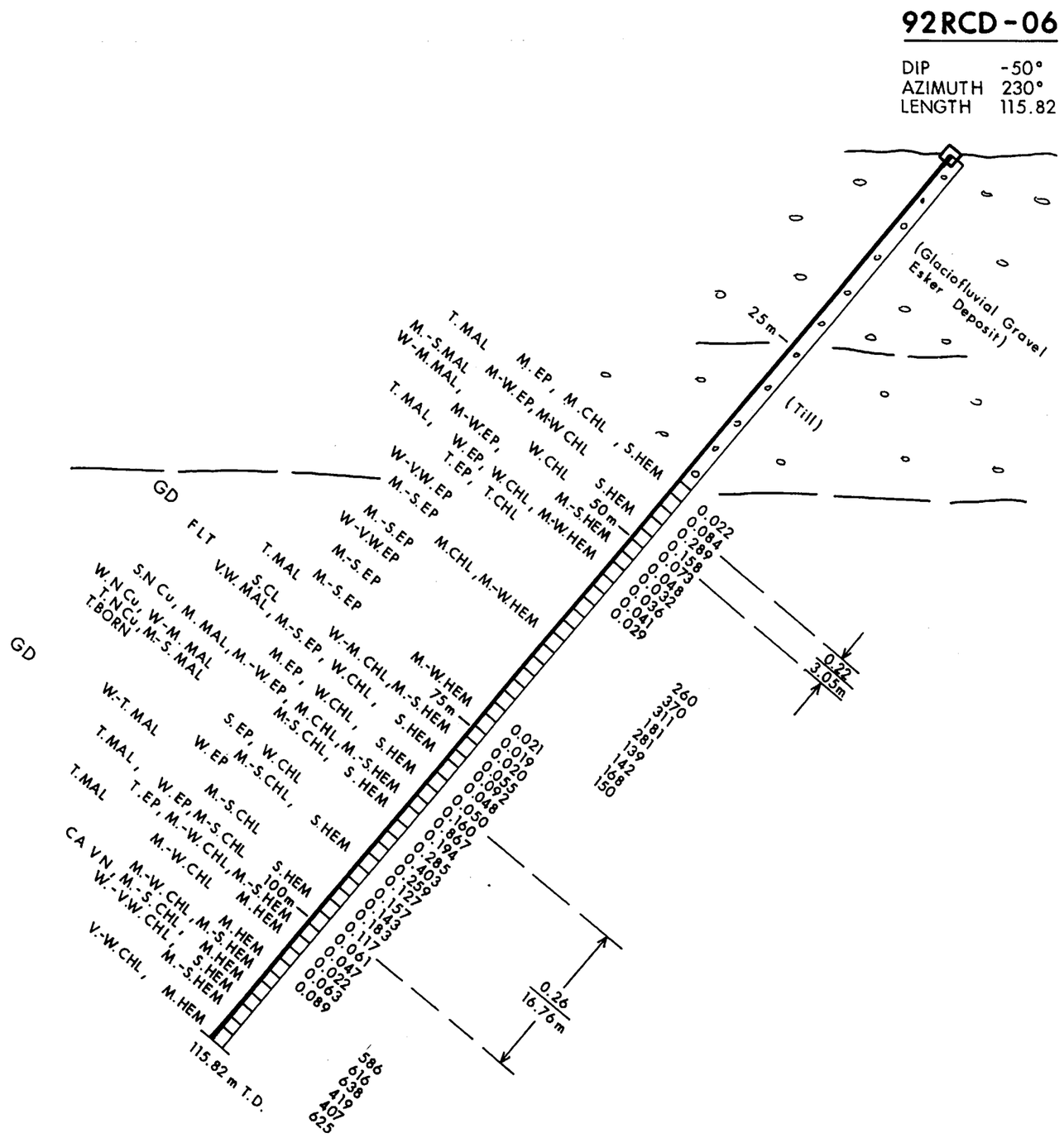
DOT PROPERTY

CROSS SECTION H-H'

COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 14
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

- CHL — Chloritization
- EP — Epidote
- KSP — Secondary KSP
- SIL — Silification
- HEM — Hematite
- CL — Clay
- SER — Sericite
- CA VN — Calcite Veins
- QTZ VN — Quartz Veins
- VZ — Vein Zone

DEGREE OF ALTERATION

- S — Strong
- M — Moderate
- W — Weak
- V — Very
- T — Trace

MINERALIZATION

- SPEC HEM — Specular Hematite
- N Cu — Native Copper
- BORN — Bornite
- MAL — Malachite
- CHAL — Chalcocite
- CPY — Chalcopyrite
- CUP — Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole - On Section, Off Section

Pierce Point Of Section

SCALE 1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

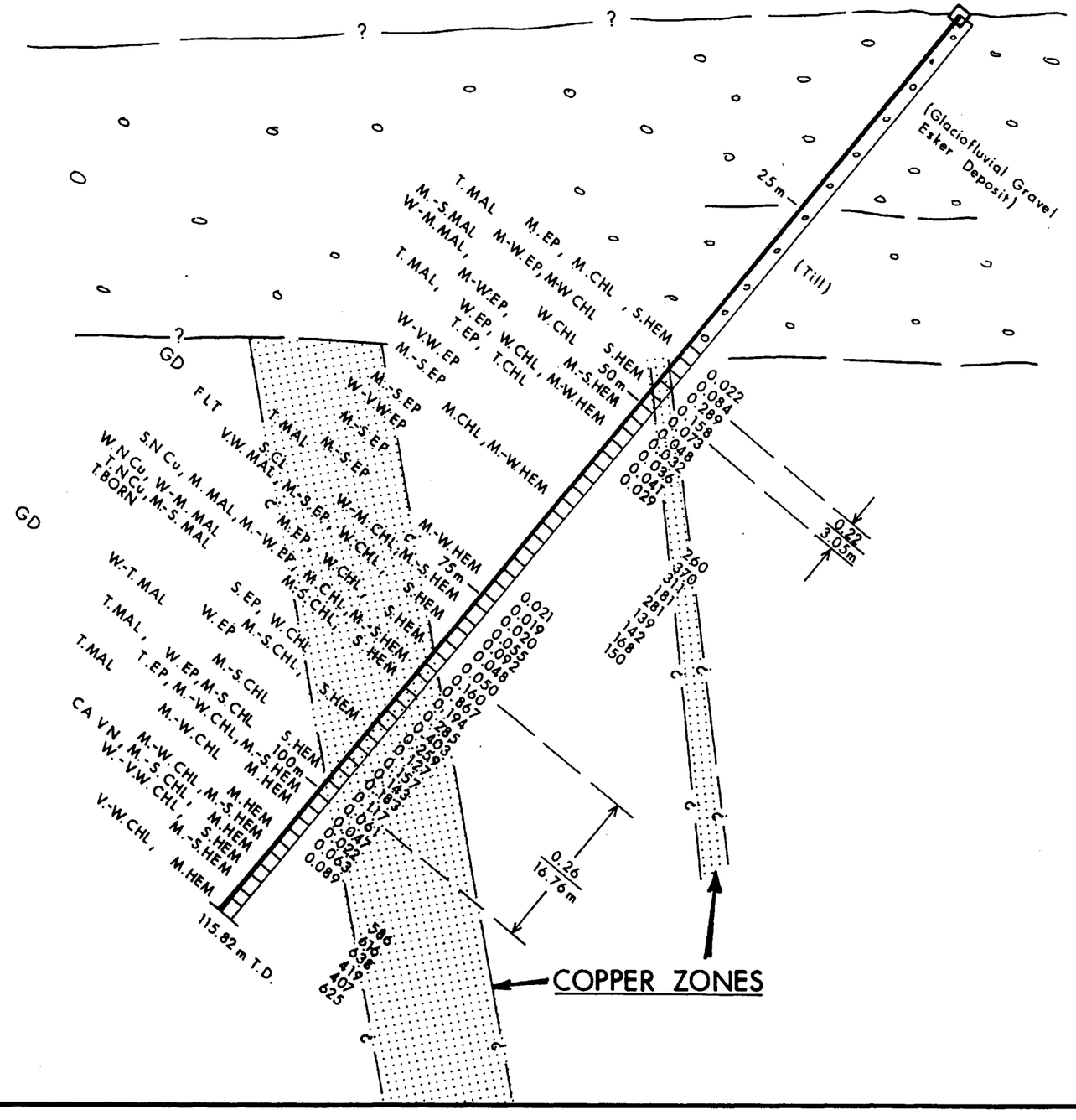
DOT PROPERTY

CROSS SECTION I-I'

92RCD-06-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 15
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

- CHL – Chloritization
- EP – Epidote
- KSP – Secondary KSP
- SIL – Silification
- HEM – Hematite
- CL – Clay
- SER – Sericite
- CA VN – Calcite Veins
- QTZ VN – Quartz Veins
- VZ – Vein Zone

DEGREE OF ALTERATION

- S – Strong
- M – Moderate
- W – Weak
- V – Very
- T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite

- N Cu – Native Copper
- BORN – Bornite
- MAL – Malachite
- CHAL – Chalcocite
- CPY – Chalcopyrite
- CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE 1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION I-I'

COPPER ZONE

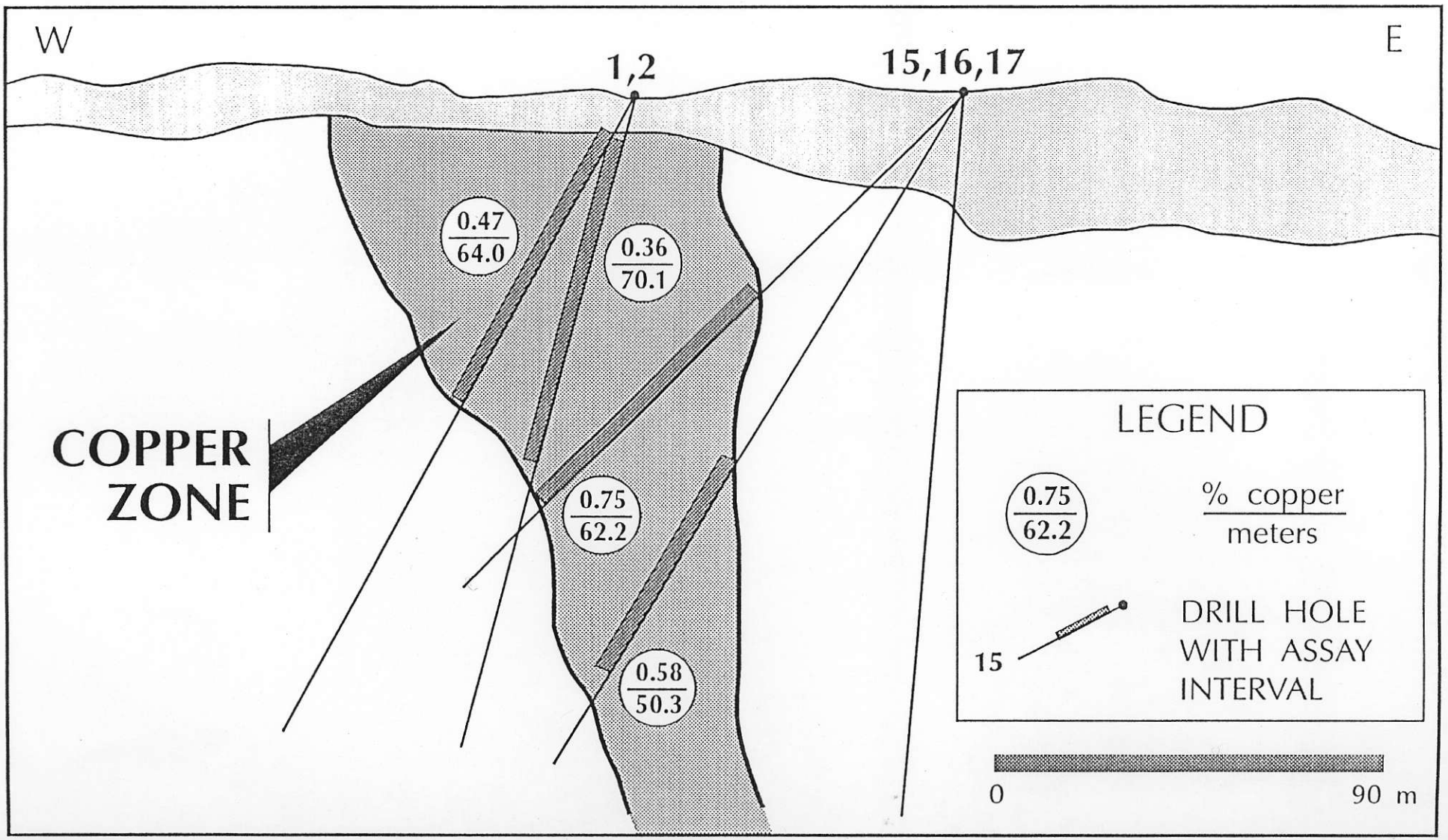
VIEW AZIMUTH 320°

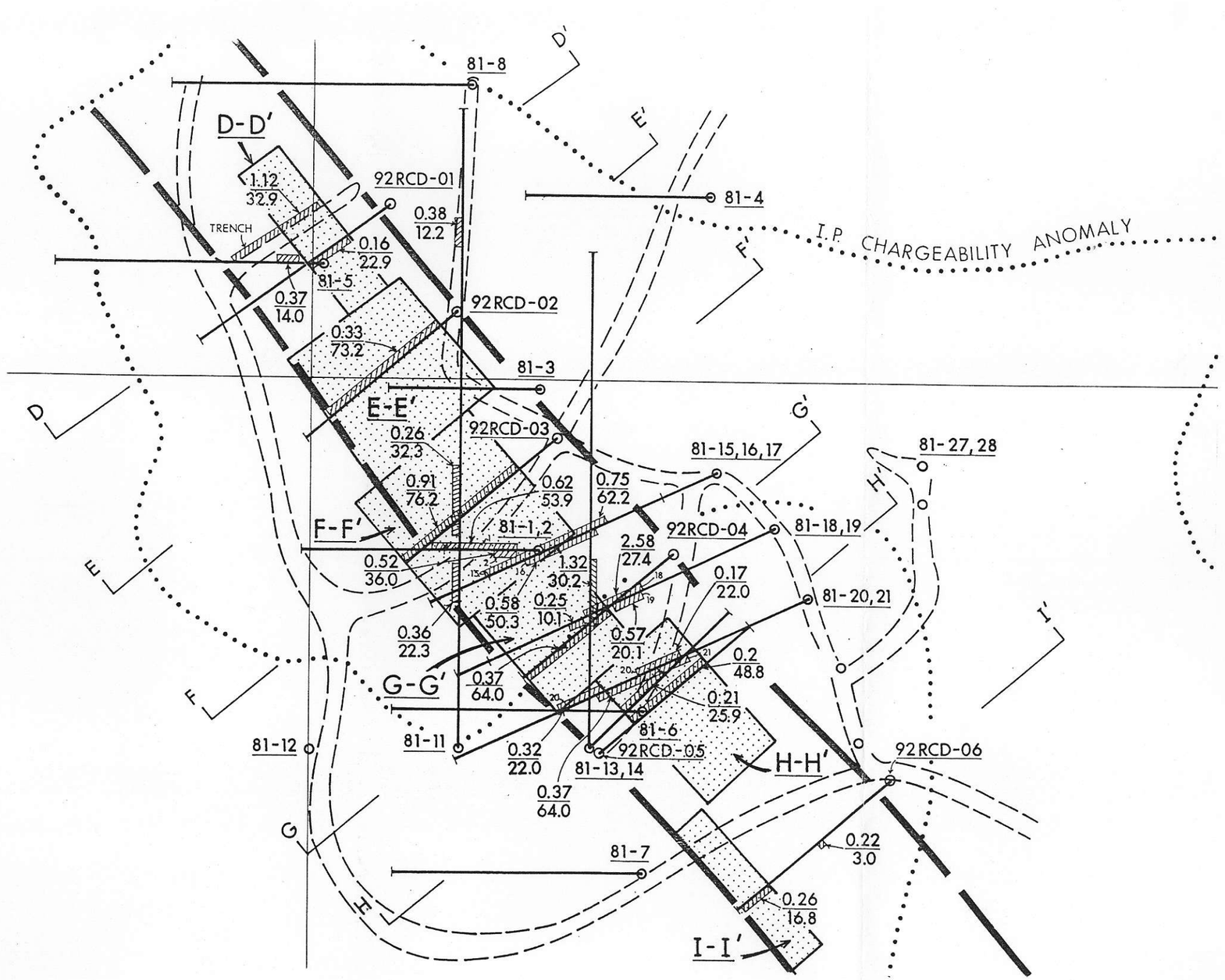
GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 16
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	

ZAPPA RESOURCES LTD.

DOT PROPERTY
CROSS SECTION
COPPER ZONE

Figure 17





LEGEND

2.58 / 27.4 – % COPPER / INTERVAL (Meters)

81-18,19 — DRILL HOLE

81-18 DIAMOND DRILL HOLE

P 81-9 PERCUSSION DRILL HOLE

92 RCD-01 REVERSE CIRCULATION DRILL HOLE

HOLE COLLAR - UNIDENTIFIED

E — E' SECTION LINES

E-E' TONNAGE BLOCK

SCALE
1:1,540

METERS 0 10 20 50 100 METERS

ZAPPA RESOURCES LTD.

DOT PROPERTY

TONNAGE BLOCKS

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 18
DRAWN BY: J. Serwin	SCALE: 1:1540	
DATE: Jan./1993	NICOLA M.D.	

6.0 METALLURGICAL TESTING

The Dot Copper deposit contains both primary and secondary copper mineralization. Metallurgical testing was initiated to test for the viability of copper extraction by leaching techniques. Initial acid bottle roll test completed by MinEn Labs on samples from drill hole 92RCD-03 indicated that approximately 12% of the copper is nonsulphide copper. (Refer to Table V).

Further metallurgical testing of Dot mineralization was initiated to determine if biological leaching would be a viable method of low cost copper extraction. Gibraltar Mines located 60 km. north of Williams Lake is currently biochemical leaching a stock pile of low-grade sulphide/oxide copper mineralization. At Gibraltar, 5,000 tons per year of high-purity copper cathode is produced from rock containing grading 0.15% copper. The process consists of heap leaching with sulphuric acid coupled with a solvent extraction plant and use of electro-winning to yield saleable copper cathodes grading 99.99% copper. The leaching process relies on bacteria (thiobacilus ferro-oxidans) that break down the sulphides within the rock. These bacteria occur naturally in sulphide mine waters and flourish under conditions of low acidity and moderate temperatures. The organisms eat away at the iron sulphides in the rock to liberiate the copper by oxidation.

A. Bruynesteyn of Westcoast Biotech was commissioned to assess the chemical and biological leaching characteristics of the Dot oxide-sulphide-native copper bearing rock from the Dot property. Refer to Appendix VI Report by A. Bruynesteyn, Westcoast Biotech - "Preliminary Evolution of the Leacheability of Ores from the Dot Property". Testing by Westcoast Biotech was completed on a composite sample obtained from mixing -200 mesh pulp material (25 mg.) from 25 samples taken throughout the Dot Copper Zone. Refer to Appendix VII for the listing of samples used. The average head grade of the sample was o.48% total copper. The amount of copper leached with initial acid leaching tests was 0.187% or 39% which compares well with 38% average as shown in Table V for total nonsulphide copper within the deposit.

Initial testing of the Dot copper material indicates that acid consumption of the ore in a dump/heap leach will be in the order of 17 kg/t. The 18.7 mg. of copper leached from the 10.0 gram sample is probably readily acid soluble copper such as copper oxide but also may be partly chalcocite and native copper. The sulphide copper minerals include chalcocite-bornite and minor chalcopyrite. Thin section work by Vancouver Petrographics (Refer to Appendix I) on samples taken from 92RCD-03 (ore block F-F') shows that sample 48410 (41.14 - 42.67 metres) assaying 10.78% total copper contains at least 3-5% chalcocite (4.5% Cu) and 0.3% bornite/chalcopyrite where as sample 48421 (57.91-59.44 metres) assaying 1.73% total copper and 0.145% nonsulphide copper contains 5-7% bornite. 0.3% chalcocite and 0.1% chalcopyrite. The wide range of percentages

TABLE IV
ACID BOTTLE ROLL TESTS - Dot Project
By Min En Labs

Drill Hole	Sample No.	*Cu %	**Cu %	Nonsulph Cu %	Total Cu %	Native Cu %	% Oxide Leached	% Leached of Total
92RCD-03	48410	0.905	.908	1.123	10.78	0.628	80	8.4
92RCD-03	48412	0.266	0.263	0.395	1.326	0.366	67	20
92RCD-03	48421	0.112	0.115	0.145	1.730	.008	77	6.5

* 10 gram sample, 100 ml. of 3% H2SO4-Leached for 3 hours
** 10 gram sample, 100 ml. of 10% H2SO4-Leached for 3 hours

TABLE V
1992 DOT PROJECT
Approximate Percent Oxide Within Tonnage Blocks

Sectional Block	Approx. % Oxide in Block	x1000 (metric) Tonnage of Block	x1000 (metric) Tonnes Oxide/Block
D-D′	37%	286.2	105.89
E-E′	20%	701.9	140.38
F-F′	20%	758.43	151.686
G-G′	45%	601.02	270.459
H-H′	76%	378.95	288.002
I-I′	77%	206.7	
	Totals	2,933.2	1,115.57

Average % Oxide of Deposit = 38%

indicate the variable content of the different sulphides, chalcocite and bornite, in the more sulphide rich portion of the deposit. Bruynesteyn states that chalcocite leaches rapidly (70-80% extraction in a 120 day period) but chalcopyrite leaches slowly. Bruynesteyn suggests bornite would leach relatively easily.

Westcoast Biotech concludes the Dot ore will be highly amenable to dump/heap leach process with reservations about acid consumption. To that end Bruynesteyn has recommended an inexpensive column test to be carried out to determine acid consumption of 5cm. material. If acid consumption is favourable after 1-2 months, further testing of the column with bacteria leaching will commence. Column testing will require procurement of a representative sample of the deposit through further drilling.

7.0 TONNAGE RESOURCE CALCULATION

A preliminary tonnage calculation of the geological resource outlined on the Dot property has been calculated to be 2.933 million tons grading 0.5% Cu. Refer to Table VI for details of the calculation and Figure 18 for location of tonnage blocks. The parameters of reserve calculations include:

1. Section lines are determined by 1992 drill hole section lines

2. Tonnage Blocks are defined by half distances between drill holes and 25 meter sphere of influence from drill holes at ends of deposit

3. Average copper grade of block is determined by weighted average of drill intersections within block.

TABLE VI
PRELIMINARY GEOLOGICAL RESOURCE
DOT PROPERTY

Section	Drill Hole	Grade Intersection % Cu/meters	Average Grade of Section % Cu	Dimensions Block Meters Length	Width	Depth	X1000 M3 Volume	2.65+M3 X1000 Tonnes/Section	Ave. Grade/ Block x Tonn (x1000)
D-D'	92RCD-01	.16/22.9	0.24	60	18	100	108	286.2	64.688
	81-5	.37/14							
E-E'	92RCD-02	.33/73.2	0.33	48	54	100	264.6	701.9	231.627
F-F'	81-11	.36/22.3							
	81-11	.26/32.3							
	81-1	.62/53.9							
	81-2	.52/36.0	0.64	53	54	100	282.2	758.43	485.4
	81-15	.75/62.2							
	81-16	.58/50.3							
	92RCD-03	0.91/76.2							
G-G'	81-15	.75/62.2							
	81-16	.58/50.3							
	81-13	1.32/30.2							
	81-18	2.58/27.4	0.87	42	54	100	226.8	601.02	522.89
	81-19	.57/20.1							
	92RCD-04	.37/64.0							
H-H'	81-20	.32/22							
	81-20	.17/22							
	81-21	.37/64.0							
	81-14	.21/25.9	0.27	55	26	100	143.0	378.95	102.317
	92RCD-05	.2/48.8		60	13	100	78.10	206.7	53.74
							TOTALS	2,933.2	1460.662

8.0 SUMMARY OF EXPENDITURES, DOT PROPERTY

FOR THE PERIOD

NOVEMBER 1, 1992 TO JANUARY 31, 1993

EXPLORATION FUNCTION	EXPENDITURE
ANALYSIS - ASSAYS	$5,660.00
ACCOMODATION	970.72
CONSULTING - GEOLOGICAL	10,837.50
DRAFTING, MAPS & PRINTS	1,438.22
EXPEDITING	128.35
DRILLING	21,635.00
EQUIPMENT - CONSUMABLES	1,436.04
FUEL	241.57
SALARY & WAGES	3,250.00
TRANSPORTATION - AIRLINES	614.18
TRANSPORTATION - VEHICLE	170.03
TRANSPORTATION - FREIGHT	656.78
MISCELLANEOUS - INDIRECT	14.25
PROJECT MANAGEMENT FEES	4,704.44
TOTAL EXPLORATION EXPENDITURES	$51,757.08

9.0 PROPOSED 1993 EXPLORATION PROGRAM
1993 DRILL PROGRAM

The 1992 exploration program focused on confirmation drilling within the main copper zone. It is recommended that the 1993 program be directed to reserve expansion by drill testing the large I.P anomaly which extends the target zone 500 metres to the southeast. Three angle holes (approximately 150 metres in length) would be required to drill a fence across the central portion of the anomaly. Refer to Compilation Map, Figure 4 for location of proposed drill holes. An airphoto lineament interpretation of the area is recommended to locate any significant cross-structures to the general northwesterly trend. Placement of the fence of holes proximal to a cross structure would enhance the probability of discovering additional copper reserves.

1993 Metallurgical Testing

Continued metallurgical testing to ensure leacheability of the Dot copper mineralization is recommended in accordance with work proposed by Westcoast Biotech. In order to procure a proper sample for column testing several large diameter holes will be necessary if insufficient quantity of core can be obtained from previous drilling. Because of the variability of oxide/sulphide, more than one column test is warranted. Additional polished thin section work is required within the sulphide rich zones to quantify percentages of chalcocite and bornite, chalcocite being leacheable.

MISCELLANEOUS

It is recommended that the drill locations and assay information for diamond drill holes 81-21 to 81-30 and 82-31 to 82-33 completed by Lawrence Mining Corporation be acquired before additional drilling is initiated on the Dot property. This information will be important for locating future drill holes.

10.0 PROPOSED 1993 EXPLORATION BUDGET

A. DRILLING PROGRAM

1.	Reverse Circulation Drilling	500m @ $40.00/meter	$20,000.00
2.	Analytical Costs Geochemical/Assays	300 samples @ $15/ea.	$4,500.00
3.	Geological Consulting	20 days @ $250.00/day	$5,000.00
4.	Accommodation Hotels and Meals	10 days @ $50.00/day	$500.00
5.	Drafting Maps Prints		$1,500.00
6.	Expediting-Telephone		$500.00
7.	Equipment-Consumables Field Equipment, Sample Bags		$1,000.00
8.	Fuel	10 days @ $20.00/day	$200.00
9.	Salaries and Wages	20 days @ $200.00/day	$4,000.00
10.	Truck Rental	2 wks. @ $250.00/wk.	$500.00
11.	Transportation Freight	2000 lbs. @ $0.50/lb.	$500.00
12.	Miscellaneous		$500.00
		Subtotal	$39,200.00
13.	Management Fee @ 10%		$3,920.00
		TOTAL ESTIMATED BUDGET	$43,120.00

B. METALLURGICAL TESTING

1.	Phase I Acid Leach		$2,250.00
2.	Phase II Biological Leach		$6,250.00
3.	Metallurgical Consulting	5 days @ $500.00/day	$2,500.00
4.	Thin Section Work	5 thin sections @ $125.00 ea.	$625.00
5.	Salaries and Wages	10 days @ $200.00/day	$2000.00
		Subtotal	$11,825.00
6.	Management Fee @ 10%		$1,180.00
		TOTAL ESTIMATED COSTS	$13,000.00
		TOTAL OF PROPOSED EXPLORATION AND METALLURGICAL PROGRAMS	$56,120.00

11.0 STATEMENT OF QUALIFICATIONS

I, George E. Norman of 12252 North Park Crescent, Surrey, B.C. certify that:

1. I am a graduate of the University of Alberta with a B.Sc. in Honours Geology, 1973.

2. I am a self-employed geologist d.b.a. Norman Geological

3. I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of B.C. and a Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) as well as a Fellow with the Geological Association of Canada (FGAC).

4. I have actively practised my profession as a geologist for the past 19 years.

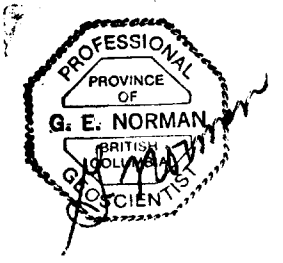
5. I have personally supervised the fieldwork on the Dot Property for Zappa Resources Ltd. between November 27 and December 7, 1992 and under the supervision of Wayne J. Roberts, Vice-President Exploration.

6. I have no interest or future interest either directly or indirectly in the Dot Property or in Zappa Resources Ltd..

7. I consent to the use of this report in or in connection with a prospectus related to raising of funds.

G. Norman

George Norman, P. Geol., P.Geo.



REFERENCES

12.0 REFERENCES

Anderson, J.A. (1982): Characteristics of Leached Capping and Techniques of Appraisal, Advances in geology of the Porphyry Copper Deposits, Southwestern North America

Bruynesteyn, A. (1993): Preliminary Metallurgical testing on Dot Ore, Report prepared by Westcoast Biotech fro Zappa Resources Ltd.

Canadian Mines Handbook (1990-91): Teck Corporation, Highland Valley Copper Project.

Cross, G. (1981-82): Various news releases by Lawrence Mining Corporation, 1981 - No's 79, 80, 119, 157, 163, 179, 181, 203: 1982 No's 7, 142

Gower, S.C. (1986): Reconnaissance Geology and Silt and Rock

Geochemistry on the Chataway 1-A. Mineral Claim, Assessment Report No. 14,978.

Lindsay, D. (1988): Pure Copper from Rought Weste Published in CIM

McMillan, W.J. (1976): Geology and Genesis of the Highland Valley Ore Deposits and Guichon Creek Batholith, Porphyry Deposits of the Canadian Cordilleran, CIM Special Volume 15.

MINFILE, (1972): Vimy, Vimy Mine, Upper Vimy, Lower Vimy, IXL, Vimy Ridge, Mine file No. 0921SE023

Payne, J.G. (1992): Vancouver Petrographics Report on Samples from DOT PROPERTY, Report prepared for Zappa Resources Ltd.

Roberts, W. (1992): The Dot Copper Project, In-house Report prepared for Zappa Resources Ltd.

Wells, R.A. (1981): Assessment Report for the Vimy Property Mineral claims in the Nicola Mining Division, Percussion and Diamond Drilling Reports, Assessment Report No. 9699

APPENDIX I

Report on Dot Project Rock Samples

by J. Payne

Vancouver Petrographics Ltd.

Vancouver Petrographics Ltd.

8080 GLOVER ROAD, LANGLEY, B.C. V3A 4P9
PHONE (604) 888-1323 • FAX (604) 888-3642

Report for: George Norman,
Zappa Resources Ltd.,
1500 - 675 West Hastings Street,
VANCOUVER, B.C., V6C 2X8

Job 920096
December 1992

Samples: 48410, 48421
48576 (reference)

Summary:

Sample 48576 is a hornblende monzodiorite composed of medium to coarse grained, subhedral plagioclase and ragged fine to medium grained hornblende with interstitial grains and patches of medium to coarse grained K-feldspar and patches of acicular tremolite. Quartz forms minor interstitial patches, commonly intergrown intimately with K-feldspar. In a few patches, extremely fine grained K-feldspar replaces plagioclase. Accessory minerals include minor magnetite and sphene and trace zircon.

The percussion drill samples contain relatively fresh fragments of quartz diorite and granodiorite moderately similar to Sample 48576. K-feldspar is in part of primary and in part of secondary origin, and in many fragments its origin is uncertain.

In **Sample 48140** fragments are of two main types: slightly altered quartz diorite to granodiorite and moderately to strongly altered rocks. The fresher rocks are dominated by plagioclase with interstitial quartz and K-feldspar and much less hornblende and magnetite and locally minor biotite. The altered rocks are dominated by quartz with patches of K-feldspar, chlorite and sericite. Several fragments are dominated by aggregates of platy grains of specular hematite. Some fragments contain patches of Cu-sulfides: original bornite-(chalcopyrite) is replaced slightly in a few fragments and completely in many to intergrowths of chalcocite and another secondary Cu-sulfide of similar composition.

In **Sample 48421** fragments are of slightly and strongly altered quartz diorite to granodiorite. The fresher fragments are similar to those in Sample 48410. The altered fragments are dominated by quartz with less abundant K-feldspar, chlorite and sericite/muscovite. Bornite, in part with minor chalcopyrite, forms disseminated patches which are altered slightly to chalcocite. Specular hematite forms scattered clusters of platy grains.

John G. Payne

John G. Payne
Tel:(604)-986-2928
Fax:(604)-983-3318

Sample 48421 **Slightly and Strongly Altered Quartz Diorite to Granodiorite; Alteration: Quartz-Chlorite-Sericite-Bornite-(Chalcopyrite-Specular Hematite-Rutile) Minor Secondary Chalcocite**

host rock (40% of sample)			
plagioclase	60-65%	magnetite	1- 2%
quartz	20-25	sphene	1- 2
K-feldspar	5- 7(?)	apatite	trace
hornblende	2- 3	zircon	trace
biotite	1- 2		

The sample contains fragments of slightly altered host rock dominated by fine to medium grained, subhedral plagioclase with interstitial fine to medium grained quartz and minor hornblende, magnetite, and sphene. Plagioclase is altered slightly to sericite. In a few fragments, plagioclase is replaced by patches of very fine grained, interlocking K-feldspar grains. Epidote forms a few irregular patches averaging 0.1-0.2 mm in size as a replacement of plagioclase.

K-feldspar occurs in a few fragments as anhedral, interstitial grains up to 1.5 mm in size. Some of it may be of replacement origin.

Hornblende forms a few subhedral grains up to 0.7 mm in size.

Biotite forms a few flakes up to 0.4 mm in size; alteration is complete to pseudomorphic chlorite and lenses of Ti-oxide parallel to cleavage. Magnetite forms equant grains up to 0.4 mm in size; alteration is slight to moderate to hematite, mainly along grain borders. Sphene forms patches up to 0.8 mm long; it is altered completely to extremely fine grained aggregates of Ti-oxide. Apatite forms a few subhedral prismatic grains up to 0.2 mm long. Zircon forms a prismatic grain 0.07 mm long. A few brecciated zones contain aggregates of strongly interlocking, extremely fine grained quartz.

secondary assemblage (60% of sample)			
quartz	60-65%		
chlorite	10-12	specular hematite	0.5
sericite/muscovite	8-10	chalcocite	0.3
bornite	5- 7	chalcopyrite	0.1
K-feldspar	5- 7 (?)	rutile	0.1

In altered fragments, plagioclase is replaced strongly to completely by aggregates of very fine grained sericite/muscovite and minor to moderately abundant patches of calcite.

Chlorite forms anhedral patches of extremely fine to very fine grains. A few fragments are dominated by intergrowths of very fine grained quartz and extremely fine grained chlorite. In some of these, quartz forms euhedral grains enclosed in chlorite.

Bornite forms irregular patches averaging 0.05-0.3 mm in size. In many fragments it is free of chalcopyrite, and is altered slightly to moderately in irregular patches to chalcocite. A few grains of bornite are rimmed by thin zones of hematite. In a few fragments it contains irregular, exsolution(?) patches and lenses of chalcopyrite, which are concentrated mainly along grain borders of bornite.

Specular hematite forms patches up to 0.6 mm in size of platy grains averaging 0.05-0.15 mm long.

Rutile forms a few clusters of subhedral grains up to 0.15 mm in size enclosed in a patch of muscovite.

Late veinlets are of calcite. In several fragments, they are more abundant in plagioclase than in quartz. The largest fragment of bornite, 2 mm across, is cut by a few intersecting veinlets up to 0.1 mm wide of carbonate.

Sample 48410 **Fresh and Altered Quartz Diorite/Granodiorite: Alteration: Quartz-Chlorite-K-feldspar-Sericite-Specular Hematite-Bornite/Chalcopyrite Secondary Chalcocite-Mineral X-(Native Copper)**

Fragments are of two main types: slightly altered quartz diorite to granodiorite and moderately to strongly altered rocks. The former are dominated by plagioclase with interstitial quartz and much less hornblende and magnetite and locally minor biotite. The latter are dominated by quartz with patches of K-feldspar, chlorite and sericite. A few fragments are dominated by specular hematite. Some contain patches of Cu-sulfides: original bornite-(chalcopyrite) is replaced moderately to completely by intergrowths of chalcocite and another secondary Cu-sulfide of similar composition.

host rock	
plagioclase	50-55%
quartz	12-15
K-feldspar	5- 7 (?)
hornblende	1- 2
magnetite	1
biotite	0.2
Ti-oxide	0.2

Several fragments of less altered, fine to medium grained quartz diorite are dominated by subhedral plagioclase grains and interstitial patches of quartz and much less hornblende. Plagioclase is altered slightly to disseminated, dusty to extremely fine grained sericite and moderately abundant dusty hematite. One fragment was brecciated moderately.

Magnetite forms disseminated equant grains averaging 0.1-0.2 mm in size; larger grains are altered completely to hematite; a few small grains are preserved within quartz grains.

One fragment contains a flake of biotite 0.4 mm long replaced completely by pseudomorphic chlorite.

Ti-oxide forms patches averaging 0.05-0.15 mm in size and a few up to 0.3 mm across.

secondary mineralogy	
quartz	60-65%
K-feldspar	10-12
chlorite	5- 7
sericite	4- 5
chalcocite, Mineral X	3- 5
bornite/chalcopyrite	0.3
calcite	minor

Altered fragments are dominated by fine grained aggregates of quartz and less commonly K-feldspar. It is uncertain how much of the K-feldspar is primary and how much is secondary. Sericite forms patches of subradiating flakes, in part secondary after plagioclase grains. Other, more strongly altered fragments contain intimate intergrowths of sericite and chlorite more coarsely intergrown with very fine grained quartz grains; in these original textures were destroyed.

Chlorite (2-3%) forms patches averaging 0.05-0.2 mm in size of extremely fine to very fine gained flakes. In a few fragments chlorite forms extremely fine grained aggregates. Pleochroism is from light to medium green.

(continued)

Deep red to opaque, specular hematite forms aggregates of slender, platy to tabular grains averaging 0.1-0.3 mm long, and locally up to 0.5 mm long. These are concentrated in several of the fragments, in which they comprise from 20-90% of the fragment. Interstitial to hematite are patches of very fine grained quartz and muscovite. In one fragment, the interstitial material (20%) is mainly chalcocite with minor quartz.

One fragment dominated by extremely fine grained chlorite contains several replacement? patches up to 1 mm across of bornite-quartz in which bornite patches average 0.05-0.15 mm in size. Some bornite patches contain minor to moderately abundant, slender exsolution lenses of chalcopyrite oriented in two nearly-orthogonal crystallographic directions. Bornite is altered slightly to moderately along borders of patches to chalcocite and covellite.

One fragment 2 mm long is dominated by extremely fine grained chalcocite containing 10-20% grains of slightly lower reflectivity and slightly deeper purplish grey color. It probably is a secondary Cu-sulfide with a composition similar to that of chalcocite. The fragment also contains a patch 0.5 mm across of radiating clusters of sericite flakes. A few fragments contain patches up to 0.5 mm in size of the two secondary Cu-minerals. Textures suggest that both Cu-minerals were formed by replacement of bornite or bornite-chalcopyrite; the variation in color may reflect incomplete replacement.

Native copper occurs in a few fragments as grains and clusters of a few grains averaging 0.01-0.03 mm in grain size. Only in one fragment is it associated with a patch of chalcocite.

Calcite forms scattered ragged grains averaging 0.05-0.1 mm in size.

APPENDIX II

List of Pre-1992 Drill Hole Copper Intercepts

LIST OF PRE-1992 DRILL HOLE COPPER INTERCEPTS

DOT PROPERTY

Drill Hole	Thickness	Grade % Cu
81-1	53.9	.62
81-2	36.0	.52
81-5	14.0	.37
81-11	22.3	.36
81-11	32.3	.26
81-13	30.2	1.32
81-14	25.9	.21
81-15	62.2	.75
81-16	50.3	.58
81-17	10.0	.37
81-17	10.0	.35
81-18	27.4	2.58
81-19	20.1	.57
81-20	22.2	.32
81-21	64.0	.37

APPENDIX III

1992 Drill Hole Geologic Logs

and

Sample Ledgers

PROPERTY DOT D.D.H. 92RCD-01 Page 1 of

AREA

CLAIM

GRID CO-ORDS — Line / Station

SURVEY CO-ORDS — Northing 25+57N / Easting 20+26E

ELEVATION

SECTION

AZIMUTH (T) 234°

INCLINATION -50°

DEPTH — Hole 120.4 / Casing — / Overburden 4.57

~~CORE~~ Hole SIZE 4.5"

CORE RECOVERY

DATE — Started NOV 27, 1992 / Completed NOV 28, 1992

CONTRACTOR Dateline Drilling

LOGGED BY George Norman

LOGGED BY

SCALE

~~CORE~~ Chip STORED AT Property - rejects, chiptrays in office

COMMENTS

SURVEY DATA

DEPTH	INCL.	AZ (T)	TYPE	DEPTH	INCL.	AZ. (T)	TYPE

GEOLOGY

FROM	TO	UNIT	INT.	I.W.

SIGNIFICANT ASSAY AVERAGES

Pb %	Zn %	Ag oz/t	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-01 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	Hem	PY	CP	AS	PO	VG	MG		
0	1.52		0 - 4.57 OVERBURDEN Glacial Till material w/ ~ 40% brn clay : 60% rock material - pebbles-3cms to boulders, Rock frag mainly rel. unaltered granodiorite - diorite.																	
1.52	3.05		- as above.																	
3.05	4.57		- bldrs up to .4m. , ~ ~ 20% bldrs of reddish altered intrusive - 30% brn clay, 50% bldrs fresh grd																	
4.57	6.10	48251	4.57 - GRANODIORITE: - med gr'd reddish-pinkish mod hem altered - granodiorite w/. some coarse calcite stk's.								M→									
6.10	7.62	48252	- very similar to above.								M→									
7.62	9.14	48253	beig coloration w/ ~ 40% grey granod frag. ~ 60% red. hem. altered particles. ~10% clay altered frag.																	
9.14	10.67	48254	- 90% wk-mod hem altered. grand ~ 20% clay altered frags. - overall pink coloration ~15% frag. chloritic.																	
10.67	12.19	48255	- similar to above most frag w/ pinkish hem. coloration. ~10% frag w/ str clay alteration.																	
12.19	13.72	48256	- v. pale pinkish color. ~ ~ ~ 40% of frag hem. altered fsp → clay mod., ~ 10% bio., 50% of frag lt. grey - rel. fresh.				M to S.				wk→ to M									
13.72	15.24	48257	- v str clay ~ 50% of sample ~ 30% frag w/ hem. altn, odd qtz frag.	wk			S				wk→ to M									

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RC0-01 — LITHOLOGIC LOG — PAGE 2 of 8

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	Hem	PY	CP	AS	PO	VG	MG	bor	
15.24	16.76		Granodiorite Cont'd.									M								
		48258	- similar to above ~ 30% clay altn. 80% frag are hem. stained.							M		M.								
16.76	18.29	48259	- as above w/ ~ <5% calc. vnlt (~1-2mm) material, ~ 20% clay altered, 80% hem. altered frag.				M to Str			M.		Str.								
18.29	19.81	48260	- as above w/ ~ 5% calc. - mod-Str hem. altn of all frag.																	
19.81	21.34	48261	- V. Str clay altn (~60%) w/ some ser. ~ 20% frag w/ hem. staining.				←	V Str				M to Str								
21.34	22.86	48262	- wk clay altered - stronger hem. altn, h/l. fr fills of hem? (95% frag w/ hem.				←	wk				S								
22.86	24.38	48263	- V. similar to above, w/ odd qtz. frag	wk.			←	wk				S								
24.38	25.91	48264	- mod-Str clay altered ~ 30%, 70% frag w/ mod-Str hem. altn., odd qtz frag.	wk			←	M to S				M to Str								
25.91	27.43	48265	- V. Str clay altn'd granodorite ~ 80% of sample, 20% mod hem. stained frag.				←	V Str				M to wk								
27.43	28.96	48266	- mod-wk. clay - stronger hem. altn - couple pieces w/ brn sulph - bornite?				← ←	M to wk				M to Str								2L/2
28.96	30.48	48267	- ~ 5% dk chloritic w/ hem, ~ <5% calc. frag, ~ 90% frag hem altn., wk clay altn				wk.					Str								

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RC D-01 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	barite	MG	Native Cu	
30.48	32.0	48268	GRANODIORITE CONTD.			wk						Str.								
			- med gr'd. reddish - hematitically altered intrusive wk - sericite on fr.																tr.	
32.0	33.53	48269	- Str hem. altered granod. w/ v. fine pin head specks - native copper, bornite?									Str							tr.	
33.53	35.05	48270	- similar to above w/ numerous frags w/ pin head native copper, str. hem. or bornite.									Str							wk.	
																	:		M.	
35.05	36.58	48271	- 5-10% frag w/ copper colored dia, native copper? bornite.									Str.							† Str	
36.58	38.10	48272	1-2% of frag w/ Cu. colored specks. - mod - Str hem. altered frag.									Str							1-2%	
38.10	39.62	48273	- 3-5% frag w/ Cu colored specks - appears to be native Cu, w/~ 15% calcite frag. - rest of frag hem. stained granodior.								15%	M & Str.							M.	
39.62	41.15	48274	1-2% frags w/ plately native Cu, ~5% calcite frags, - wet sample.																wk.	
												M							wk.	
41.15	42.67	48275	- 2-3% of frag w/ Copper colored specks (Native Cu), weaker hem. alt'n in ~30% of frag. altered.									M to wk								
												M.							wk	
42.67	44.20	48276	v. similar to above. Slight stronger hem. ~3% copper colored frag.																wk to M	
44.20	45.72	48277	~1% of frag w/ copper color. mineral. (Native Cu) ~40% of frag hem. stained - decrease in hem. / Copper.									M							wk	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-01 — LITHOLOGIC LOG — PAGE 4 of 8

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	Hem.	PY	CP	AS	PO	VG	MG	Mod Cu	
45.72	47.24	48278	GRANODIORITE cont'd - no visible Cu colored minerals, mod-hem. stain, some clay on fract., frag w/ no hem stain									M to wk							—	
47.24	48.77	48279	- < 1% of frag w/ Cu colored mineral. mod. hem stained., some frag w/ clay on fr's.									M.							wk	
48.77	50.29	48280	- odd frag w/ copper colored mineral, strong clay altern ~ 40%, ~ 20% frag w/ no hem st. ~ 40% of frag w/ hem stain				str.					M							V wk	
50.29	51.82	48281	- No frag w/ copper colored mineral, most frag w/ mod-wk hem. stain. wk clay altern				wk.					M							—	
51.82	53.34	48282	- lt. pinkish mod hem. stained granod. w/. wk clay altern on fr's, visible biot. no copper colored minerals.									M							—	
53.34	54.86	48283	- weaker hem. altern ~ 20% frag w/ no hem. stain, no copper minerals.									M							—	
54.86	56.39	48284	- hem staining becoming weaker w/ ~ 30% of frag w/ mod-wk stain, biot is becoming easier to see, rock is less altered No Cu minerals									wk to M							—	
56.39	57.91	48285	- similar to above w/ ~ 40% wk hem. frag. - ~ 5% qtz frag - qtz vnlts.									wk to M							—	
57.91	59.44	48286	- str clay altered granod. w/ ~ mod hem. stain, odd qtz frag. NO copper minerals.									M							—	
59.44	60.96	48287	- 15% qtz frag - vein 30% hem. frag, - no copper minerals visible,	str vein								M							—	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-01 LITHOLOGIC LOG PAGE 5 of 8

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	copper minerals	
60.96	62.48	48288	GRANODIORITE CONT'D. mod- clay altered, mod-wkly hem altered. no visible copper minerals.									M.								
62.48	64.0	48289	v. str clay altern - fault? (5%) some grey qtz ~ 10%, ~30% hem altered frag.				v str					wk to M.							—	
64.0	65.53	48290	20% str clay particles (fault) - <5% qtz frag ~ 40% mod hem. frag.,				str.					M.							—	
65.53	67.06	48291	~5% clay frag, strongly hematitic reddish granodiorite, no visible copper minerals.				wk					str.								
67.06	68.58	48292	- str clay ~ 40%, <5% fragments are hematitic 95% of rock is lt grn wk chl. granodior.				str	M				v wk.							—	
68.58	70.10	48293	- mod-str clay. - lt grn mod-wk chl granod w/ v. wk. hem. altern - <5%.				M	M.				v wk							—	
70.10	71.63	48294	- str clay - 60% Fault?, ~10% calcite frag. - 10% wk hem. frag, 20% dirty chl. granodiorite				v str	M				v wk							—	
71.63	73.15	48295	- 30% clay - most frags are chl. granodior. w/ <5% hem. (wk) frag.				M str	M				v wk							—	
73.15	74.68	48296	- 10% clay altered frag, increase in hem altern ~ 30-40% of frag, ~5% frag chl. granod - 10% qtz frag.				wk to M.	M to wk				M							—	
74.68	76.20	48297	~30-40% clay balls fault?, 80% of rock is hematitic granod. frag ~.				str	wk				M to str							—	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RC0-01 | LITHOLOGIC LOG | PAGE 6 of 8

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	cpy	
76.20	77.72	48298	GRANODIORITE CONTD - str clay - 50% - fault?, weaker hem, ~ 20% - 80% of frag is chl. granodiorite.	wk			str	M str				M to wk M wk.							—	
77.72	79.25	48299	- str clay - 20-30%, frag w/ ~ 30-40 hem frag w/ ~ 1% qtz, ~ 3% chl. granod. frag.				V str	M str											—	
79.25	80.77	48290	- mod-str clay altered - chl. granodiorite. w/ wk. hem (5-10% of frag).				str	M				wk							—	
80.77	82.30	48301	- lt pink colored, str clay ~ 40-50% of sample. w/ ~ 75% of frag mod-str hem altered ~ 25% lt grn chl. granod.				str	wk				M str							—	
82.30	83.82	48302	- str clay altered. granod. w/ ~ 15% wk hem. altered frag. ~ 5% blk. bio.				V str	wk				wk to M							—	
83.82	85.34	48303	as above w/ ~ 3% hem. frag.				V str	V wk.				M.							—	
85.34	86.87	48304	v. similar to above w/ ~ 15% wk hem frag ↓ with water from the point ↓				str	wk				wk							—	
86.87	88.39	48305	- pink granodio., mod hem. stain w/. fine biot.									M.							—	
88.39	89.92	48306	- pinkish granodiorite, mod-wk. hem altered most frag w/ chl. biot. ; wk perv. chlorite				—	M				M & wk							—	
89.92	91.44	48307	- as per above w/ ~ 75% mod-wk hem frag w/ ~ 25% frag w/ chlorite (after biot?)				—	M & wk				M							—	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-01 LITHOLOGIC LOG PAGE 7 of 8

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	copper ox
91.44	92.96	48308	GRANODIORITE CONT'D med grd pinkish grey biot granod. w/ mod-wk pink-org hem. staining ~30% of frag.									wk to M.							—
92.96	94.49	48309	- very similar to above - w/ ~ 40-50% of frag wkly hematized.									wk to M							—
94.49	96.01	48310	Fault? - 50% grey-clay & clay altered g'd w/ wk hem. alteration ~ 5% f-g blk frag - dyke?.				V Str					wk							—
96.01	97.54	48311	- mod-chloritic (80% of frag w/ wk. chl.), wkly hematitic w ~ 15% of frag w/ wk hem, & 5-10% calc frag - calc. vnlts.				wk	M.		wk		wk							—
97.54	99.06	48312	- mod chloritic biot gndior. w/ wk chl alter of bio ~ 20% of frag w/ wk hem. altern.					M				wk							—
99.06	100.58	48313	Fault - 80% lt grey clay w/ 20% rk frags of which ~ 80% are wk hem. poss. some speck hem				V Str	wk.				wk	spec hem?						—
100.58	102.11	48314	Fault-Cont - v. str clay - 50% of sample - gndior. str clay altern of fsp - ~ 40% of frag/ mod-wk hem. staining				V Str	-				wk to M							—
102.11	103.63	48315	Faulted gndiorite w/ 50% whit-grey clay gouge ~ 15% hematitic (wk) frag, ~ 20% blk f-g. siltc. frag (vein?) 15, str clay altered. grd frags.	wk to M.			V Str					wk.							—
103.63	105.16	48316	Str clay alter'd again ~ 50-60% of sample is clay, wk chl & mod-wk hem stain				V Str	wk				M to wk							—
105.16	106.68	48317	wk mod. hem. altern ~ 45% of frag w/ wk stain ~ 55% of frag w/ wk chl. altern.					wk				wk to M							—

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-01 | LITHOLOGIC LOG |

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem.	PY	CP	AS	PO	VG	MG	copper os.	
106.68	108.20	48318	GRANODIORITE CONT'D Pinkish-orange – mod hematic. med gr'd biot. gndior. ~ 50% of frag w/ pink-org hem stain,									M.							–	
108.20	109.73	48319	wkly chloritic (~10% frag w/ per. chl), biot not altered ~ 30% of frag w/ wk hem - some frag str hem. –					wk.				M to wk.							–	
109.73	111.25	48320	v. similar to above w/ ~ 40% wk salmon colored wkly hem. frag, 1-2 dkr reddish hem altered frag bio, unaltered, chlorite v. wk					v wk.				wk.							–	
111.25	112.78	48321	as above w/ ~5-10% blk aphan. rock, appears to dyke/sill of basalt.?, wk chl. of bio ! on fr. & pinkish-orange colored,					wk.				wk							–	
112.78	114.3	48322	stronger hem. altern w/ 95% of frag w/ wk-mod. salmon color hem altern. – ~1% basalt frag. v. wk chl altern perv., biot unaltered. –					v wk				M to str							–	
114.3	115.82	48323	med-grn-pinkish, mod chloritic gndior. w/ (60% of frag) w/ wk-mod hem altern (salmon colored). w/ ~ 40% of frag.					M.				wk to M							–	
115.82	117.35	48324	Fault? – 30% of sample – hematitic stained clay. – 35% of +10 is mod-hematitic, rest of frag are moderately chloritic.				v str	M				M to str							–	
117.35	118.87	48325	– mixed med grn-orange-pink colored w/ ~ 80% frags w/ chl. altern (bio → chl ! fsp). & ~ 20% wk pink-salmon hem stain of fsp. 1% dk marroon hem altered.				–	M				wk							–	
118.87	120.4	48326	becoming more chloritic w/ ~ 80-85% of frag mod. chl. bio → chl, ~ 20% of frag wkly hem salmon colored old dike one.					M to str				wk							–	
			End of hole @ 120.4m																	

DOT PROPERTY

DIAMOND DRILL LEDGER

DDH No. 92RCD-01

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total copper ppm.	Non sulph copper %	Total Copper Assay %	DESCRIPTION
									0 - 4.57 OVERBURDEN.
48251	4.57	6.10	1.52	5.0'		128			4.57 - 120.4 GRANODIORITE
48252	6.10	7.62	"	"		162			4.57 - 13.72 med grd. reddish - pinkish
48253	7.62	9.14	"	"		221			mod hematized granodiorite, minor calc.
48254	9.14	10.67	"	"		200			mod-wk chl.
48255	10.67	12.19	"	"		175			
48256	12.19	13.72	"	"		268			
48257	13.72	15.24	"	"		296			- 13.72 - 27.43 - Strong clay altered grd.
48258	15.24	16.76	"	"		192			
48259	16.76	18.29	"	"		97			
48260	18.29	19.81	"	"		131			
48261	19.81	21.34	"	"		2880			- 19.81 - 21.34 Very strong clay minerals.
48262	21.34	22.86	"	"			0.014	0.029	
48263	22.86	24.38	"	"			.016	.032	
48264	24.38	25.91	"	"			.008	.020	
48265	25.91	27.43	"	"			.029	.088	
48266	27.43	28.96	"	"			.079	.297	27.43 - 50.29 Copper Zone -
48267	28.96	30.48	"	"			.102	.254	- str hematized w/up to 3-5%/frag w/native copper & minor bornite, becoming weaker in hem. alteration from. 38.10 - 50.29.
48268	30.48	32.0	"	"			.082	.150	
48269	32.0	33.53	"	"			.052	.110	
48270	33.53	35.05	"	"			.030	.047	

DIAMOND DRILL LEDGER

DDH No. 92 RCD-C

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph Cu %	Total Cu %	DESCRIPTION
									GRANODIORITE CONT'D
48271	35.05	36.58	1.52	5.0'			.072	.155	35.05 - 36.58 w/ upto 5-10% of drag w/.
48272	36.58	38.10	"	"			.067	.167	native copper or bornite.
48273	38.10	39.62	"	"			.064	.145	
48274	39.62	41.15	"	"			.046	.116	
48275	41.15	42.67	"	"		.06 / 22.9	.045	.089	0.166 / 22.9m (27.43 - 50.29m).
48276	42.67	44.20	"	"			.087	.255	
48277	44.20	45.72	"	"			.031	.059	
48278	45.72	47.24	"	"			.060	.178	
48279	47.24	48.77	"	"			0.10	.246	
48280	48.77	50.29	"	"			.055	.116	50.29. - 67.06 - mod - str less altered
48281	50.29	51.82	"	"			.015	.020	granodior. w/ strong clay altern
48282	51.82	53.34	"	"			.011	.021	
48283	53.34	54.86	"	"			.036	.056	
48284	54.86	56.39	"	"		808			
48285	56.39	57.91	"	"		322			
48286	57.91	59.44	"	"		549			
48287	59.44	60.96	"	"		247			
48288	60.96	62.48	"	"		236			
48289	62.48	64.0	"	"		347			
48290	64.0	65.53	"	"		393			

DIAMOND DRILL LEDGER

DDH No. 92RCD-01

SAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non-Sulph. o/s Au	Total Cu %	DESCRIPTION
48291	65.53	67.06	1.52	5.0'		300			GRANODIORITE CONT'D
48292	67.06	68.58	"	"		4040			67.06 - 73.15 - v.wk hem. alt'd, relative
48293	68.58	70.10	"	"		669			unox. gndior. w/ mod-str clay. altn
48294	70.10	71.63	"	"		219			and mod chloritic altn. Possible
48295	71.63	73.15	"	"		3260			fault at. 70.1 - 71.63.
48296	73.15	74.68	"	"		293			73.15 - 86.87 - v.wk & Mod. hem. altn,
48297	74.68	76.20	"	"		197			str - v.str clay altn 'wk & v.str.
48298	76.20	77.72	"	"		120			chl. altered gndiorite.
48299	77.72	79.25	"	"		97			
48300	79.25	80.77	"	"		80			
48301	80.77	82.30	"	"		117			
48302	82.30	83.82	"	"		75			
48303	83.82	85.34	"	"		171			
48304	85.34	86.87	"	"		30			
48305	86.87	88.39	"	"		45			86.87 - 120.4 - mod - wk chlorite altn
48306	88.39	89.92	"	"		58			mod-wk hem. altn, v. Str clay altn
48307	89.92	91.44	"	"		12			from 94.49 - 96.01 & 99.06 - 105.16 these
48308	91.44	92.96	"	"		123			could be faulted zones.
48309	92.96	94.49	"	"		66			
43310	94.49	96.01	"	"		10			

DIAMOND DRILL LEDGER

DDH No. 92 RCD-01

SAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non-Solph Cu %	Total Cu %	DESCRIPTION
43311	96.01	97.54	1.52	5.0		85			Granodiorite Contact
43312	97.54	99.06	"	"		138			— see previous page.
43313	99.06	100.58	"	"		53			
43314	100.58	102.11	"	"		92			
43315	102.11	103.63	"	"		59			
43316	103.63	105.16	"	"		74			
43317	105.16	106.68	"	"		46			
43318	106.68	108.20	"	"		58			
43319	108.20	109.73	"	"		43			
43320	109.73	111.25	"	"		25			
43321	111.25	112.78	"	"		13			
43322	112.78	114.30	"	"		12			
43323	114.30	115.82	"	"		8			
43324	115.82	117.35	"	"		451			
43325	117.35	118.87	"	"		75			
43326	118.87	120.4	"	"		43			
				end of hole 120.4m.					

PROPERTY DOT D.D.H. 92RC0-02 Page 1 of

AREA

CLAIM

GRID CO-ORDS — Line / Station

SURVEY CO-ORDS — Northing 25+22N / Easting 20+47E

ELEVATION

SECTION

AZIMUTH (T) 230°

INCLINATION -50°

DEPTH — Hole 100.58 / Casing — / Overburden 10.06m.

~~CORE~~ Hole SIZE 4.5"

CORE RECOVERY —

DATE — Started Nov 28, 1992 / Completed Nov 30, 1992

CONTRACTOR Dateline Drilling

LOGGED BY George Norman

LOGGED BY

SCALE

CORE STORED AT rejects stored on property, chip trays in office.

COMMENTS

SURVEY DATA							
DEPTH	INCL.	AZ (T)	TYPE	DEPTH	INCL.	AZ. (T)	TYPE

GEOLOGY					SIGNIFICANT ASSAY AVERAGES			
FROM	TO	UNIT	INT.	T.W.	Pb %	Zn %	Ag oz/t	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-02 — LITHOLOGIC LOG — PAGE 1 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	copper ox	
0	1.52		OVERBURDEN - Glaciofluvial Gravel.- coarse grnitic sand w/ pebbles & cobbles (3cm → 6cm) - grey brn.																	
1.52	3.05		- similar to above w/ some clay coming in. - pebbles & cobbles of grnodiorite. grey brn																	
3.05	4.57		- Glacial Till - ~30% clay, 30% coarse sand 10% silt, 30% - 40% pebbles & cobbles to .5cm. - as per last sample. somewhat more clay ~50%, - grey brn																	
4.57	6.10		as per last sample. grey brn.																	
6.10	7.62		- as per last sample. Change in coloration - to. reddish brn - still lots of pebbles some bedrx? of. hem. grnodiorite & biotite just above bed																	
7.62	9.14		→																	
9.14	10.06		- glacial till as above.																	
10.06	10.67	33	GRANODIORITE																	
		48327	- med gr'd biot grndior. w/ mod hem. altn. - red tinge ~75% frag									M						-		
10.67	12.19	48328	- reddish - pinkish colored bio granod. w/ ~ 60 frag w/ hem stain, ~15% bio., - dry sample is lt brn w/ pinkish tinge.									M						-		
12.19	13.72	48329	- dry sample - reddish brn, 60% of frag w/ mal. - mod - str hem,									Str						Mal str		
13.72	15.24	48330	- 45% of frag w/ mal., all frag str hem - reddish coloration									V Str						Mal mk		

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RC D-02 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	Hem	PY	CP	AS	PO	VG	MG	Mal.	
15.24	16.76	48331	GRANODIORITE. pink-reddish oxidized intrusive - str hem staining on all frag, w/ ~<5% of frag w/ mal. <5% hem clay				Str					wk							wk	
							Str					wk							—	
16.76	18.29	48332	~30-40% grey clay - str clay altered frag - Fault - rest of frag w/ wk hem alter - grey brn - clay is unoxidized.				Str					wk							—	
18.29	19.81	48333	65% of sample is lt grey unoxidized clay frag - Fault 35% is. mod hematized, red-pink. grndio frag. - lt grey - w/brn tinge - dry sample coloration.				V Str					M to S							—	
19.81	21.34	48334	60% of sample is lt grey unoxidized v.str clay altered - clay frag, ~10% frag unox grodior ~20% of frag w/ hem. stain - Sample colr dry is lt grey.				V Str					wk.							—	
21.34	22.86	48335	lt grey dry sample - ~10% of sample w/ unox. clay frag - 30% of frag w/ wk pinkish hem, 60% frag bio granodiorite rel. unaltered - mod-wk. clay altered.				wk to M.					wk.							—	
22.86	24.38	48336	similar to prev. sample w/ ~<5% qtz frag (str fol) - 30% of frag w/ wk hem, mod - clay altered granodiorite ~70%., 5% of frag str clay alter.				M					wk							—	
24.38	25.91	48337	lt grey dry sample color. ~20% of frag w/ str unox grey clay ~60% of frag w/ lt pink hem. stain,				wk					M to wk							—	
25.91	27.43	48338	lt grey dry sample color - mod-str clay altered granodiorite w/ wk. hem stain (30% of frag)				M Str					wk.							—	
27.43	28.96	48339	lt grey as befor, str clay altered g dior. w/ ~35% of frag w/ wk pinkish hem. stain.				V Str					wk to M							—	
28.96	30.48	48340	red-lt grey 80% of frag w/ red-orange hem stain, wk clay altern				wk					M to Str							—	

ZAPPA RESOJRCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-02 LITTHOLOGIC LOG

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	bornite BS	PO	VG	MG	ctp	approx.
30.48	32.0	48341	GRANODIORITE CONT'D.																	
			- mod hem, w/~ 40% of frag w/ mod-wk hem stain,					wk				M							—	
			- rest of frag w/ wk chl altern																	
32.0	33.53	48342	- mod-chloritic & mod hemitized w/~ 50% of					M.				M							—	
			frag w/ orange hem stain.																	
33.53	35.05	48343	- most frag - 85% w/ mod-wk orange hem stain									M.							—	
			- dry color - med grey, wash. orange-grey																	
35.05	36.58	48344	- 60% of frag w/ orange hem stain, 1 frag of bornite,					wk to M.				M.			wk				wk	
			- 30% of frag w/ wk-mod chl altern																	
36.58	38.10	48345	- grey-orange colored granod. (w-s leuc) - dry lt grey					M				M.			—				—	
			- w/~ 70% mod-wk orange hem stained frag.																	
			- mod-wk chloritized w/ ~ 40% of frags.																	
38.10	39.62	48346	- very similar to previous sample					M				M			—				—	
			we ↓ -																	
39.62	41.15	48347	- orange grey. med grd granodior., all frag w/									M to S			wk to tr.				—	
			orange hem. stain (m-str overall), trace of																	
			bornite (2 fragment.																	
41.15	42.67	48348	- v. similar to prev. sample trace of bornite,							spec hem		M to St			wk				—	
			some frag w/ spec. hem as well. ~ most frag																	
			w/ orange hem stain.																	
42.67	44.20	48349	- brighter orange coloration of frags., most frag							spec hem.		Str			tr				—	
			w/ orange hem stain ~ 1% of frag w/ spec hem																	
			spots, trace bornite (1 frag)																	
44.20	45.72	48350	bright salmon colo hem stain granod w/							spec hem		Str			—				—	
			speck spec. hem. No visible copper minerals																	

ZAPPA RESOJRCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-02 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	Bornite AG	PO	Cuprite	MG	mal	
45.72	47.24	48351	GRANODIORITE CONT'D									Str			wk to M.			Native copper		
			mod-str hem stained, not as brightly colored last. - w/~ 5% clay altered frag. - noticable increase in copper ~2.5% of frag w/ bornite / chalcocite.																	
47.24	48.77	48352	v. similar to prev. sample - no visible bornite, but frags of cuprite appear to be present, str hem stain of most frags									Str					wk			
48.77	50.29	48353	similar to above w/~ 95% of sample w/ orange hem. stain, odd frag w/ visible spec hem. No visible copper minerals									Str			—		—			
50.29	51.82	48354	similar to above w/ numerous frags w/ bornite, possible some chalcocite., hem. altern somewhat less w/~ 60% of frag w/ hem stain.									Str			wk to M.					
51.82	53.34	48355	Unoxidized. mod-str clay altered - mod chloritized. granodiorite - numerous frags w/ bornite.									—			M.					
53.34	54.86	48356	50% of frag w/ hematite stain, numerous frags w/ spec. hem. (~3mm wire of Native Copper)									Str						Native Copper		
54.86	56.39	48357	~ 85% of frags w/ hem stain - salmon coloration odd speck native copper. — minor specks of specular hematite									Str.						tr native		
56.39	57.91	48358	v. similar to above, w/ str hem altern of most frag., color of water is reddish brn, specs of specular hem.									V Str								
57.91	59.44	48359	- Quartz vein - 30% of frag are qtz, numerous Grd. frag. w/ native copper ; mal. (wk) staining									Str					wk	wk	mal	
												M						tr		
59.44	60.96	48360	~ 5% of frag. aff qtz, ~ 50% frag w/ hem staining. ~ 1 frag w/ possible native copper. - water color hem. stained.									M						tr		

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-02 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	Hem	PY	CP	AS	born/cc	VG	MG	Mal.	
60.96	62.48	48361	GRANODIORITE CONT'D	M-H																
			~ 10% qtz frag, ~ 40% of frags w/ hem. stain, 2 frag w/ wk possible mal.	M								M.							V wk	
62.48	64.0	48362	QUARTZ VEIN ~ 80% of frag are qtz, 20% hematite Gdior.	V Str								wk							—	
64.0	65.53	48363	~ 25% qtz frag. (vein cont'd), 40% frag w/ wk salmon colored hem, trace of bornite & native cu. ~ 35% Gdior frag no hem stain.	Str								M to wk.				tr.			—	
65.53	67.06	48364	Quartz Vein? ~ 80% wht qtz w/ minor sericite 10% wk hem Gdior, 10 Gdio/no hem stain	V Str								V wk				—			—	
67.06	68.58	48365	Quartz Vein ~ 10-15% coarse frag (1.5cm) of qtz. some wk hem (wk) stain, 85% wk hem Gdior frag. Interclange plugged w/ rock (coarse grain material)	M								wk to M				—			—	
68.58	70.10	48366	~ 10% wht coarse qtz frag ≈ 2cm, 10% fresh gdior ~ 80 lt pink wk hem., wkly clay altered gdior. ~ odd f-g. volc frag (dyke?) mod- epidotized, bleached wkly chl wk wk wk.	M.								wk				—			—	
70.10	71.63	48367	90% of frag gdior wk hematized & pinkish hue. wk clay altered, bio → chl wkly.					wk.				wk. to M.				—			—	
71.63	73.15	48368	as per prev. sample.				wk	wk				wk. to M.				—			—	
73.15	74.68	48369	as per prev. sample.				wk	wk.				wk to M				—			—	
74.68	76.20	48370	v. similar to above w/ ~ 80% frag w/ mod-wk hem stain salmon color ~ 20% w/ none to v. little hem stain.									W to M				—			—	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92-RCD-02 LITHOLOGIC LOG

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	cuprite	
76.20	77.72	48371	GRANODIORITE as per last sample.									wk							—	
77.72	79.25	48372	80% of frag v. light pink tinge w/ v. wk. hem stain ~20% of frag w/ NO hem stain									v wk							—	
79.25	80.77	48373	60% w/frag w/ wk hem. stain, 40% of frag. w/ none or v. little hem. stain ~5% qtz frag.									wk					—		—	
80.77	82.30	48374	40% w/ wk salmon hem. stain ~60% w/ none ~ <5% wht calc. frag. -vnlts.							wk		wk							—	
82.30	83.82	48375	Lt green w/orange hue, 80% of frag wkly chl. unoxid w/ no hem stain, 20% of frag w/ wk. hem stain					w. to m				v wk							—	
83.82	85.34	48376	~40% w/ wk hem stain, 60% of frag w/ mod chl. altern, somewhat dk chloritization than prev sample					M				wk							—	
85.34	86.87	48377	mod green-grey. w/ wk orange tinge - 85% of sample unoxid. chl. gndior. w/ ~ 15% wk hem stained frag. <5 qtz frag.	wk				M to Str				v wk								
86.87	88.39	48378	med grey - wkly chl. and w v. wk hem stain. ~5-10% of frag w/ hem.					wk				v wk								
88.39	89.92	48379	similar to above mod- chl. gndior. w/ 5% hem frag.					M				v wk								
89.92	91.44	48380	Similar to prev. w/ ~ 15 wk hem. frag, - 5% qtz - xHs indigenous to gndiorite.																	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RC-D-02 — LITHOLOGIC LOG — PAGE 7 of 7

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG			
91.44	92.96	48381	GRANODIORITE CONT'D. - wk orange tinged beige colored gdior. med grn w/ v wk clr of mafics w/~ 40% w/ wk salmon hem stain									wk								
92.96	94.49	48382	w/ 70% of frag w/ wk salmon colored hem. stain. - wk clr of mafics (biot ~ 10-15%), 20% of sample grey clay balls — Fault.									wk to M.								
94.49	96.01	48383	~ 30% of frag w/ wk hem, odd frag w/ spec. hem?, trace of dk lim frag. most frag are wk clr.					wk				wk to M						hr	—	
96.01	97.54	48384	40% of frag w/ v. wk hem (salmon colored), odd lim frag 60% of frag. wkly - mod clr. ~ bio → clr. wkly					wk		wk		wk to M						his	—	
97.54	99.06	48385	v. similar to above w/ thin 1mm calc. vnlts.					wk to M.		wk		wk						—	—	
99.06	100.58	48386	25% wk hem frag - salmon colored, 2% dk frag (clr.?) 75% frag. wkly chloritic.					wk to M		wk		wk						—	—	
			End of Hole at 100.58 11:30 AM. Nov 30/92																	

DIAMOND DRILL LEDGER

DDH No. 92RCD-02

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non-Sulph Cu %	Total Cu %	DESCRIPTION
									0 - 10.06 OVERBURDEN.
48327	10.06	10.67	0.61	2.0'			.039	.045	10.06 - 100.58 GRANODIORITE
48328	10.67	12.19	1.52	5.0'			.131	.144	10.06 - 12.19 reddish - pinkish med grd.
48329	12.19	13.72	"	"			1.66	1.75	granodior. w/ mod hem. stain, 15% bio.
48330	13.72	15.24	"	"			.386	.424	12.19 - 16.76 - reddish brn, str hem altered w/
48331	15.24	16.76	"	"			.133	.219	mod stain on frag (12.19 - 13.72. 60% of frags.
48332	16.76	18.29	"	"			.068	.254	w/ mal.
48333	18.29	19.81	"	"			.051	.153	16.76 - 21.34 - unoxidized grey clay zone - Fault Zone.
48334	19.81	21.34	"	"		1080		.095	
48335	21.34	22.86	"	"		503			21.34 - 39.62 - mod hem stained granodior., traces
48336	22.86	24.38	"	"		594			of bornite at 35.05 - 36.58., mod-wk
48337	24.38	25.91	"	"		223			chlorite altern.
48338	25.91	27.43	"	"		601			
48339	27.43	28.96	"	"		631			
48340	28.96	30.48	"	"			.008	.019	
48341	30.48	32.0	"	"			.057	.143	
48342	32.0	33.53	"	"			.083	.173	
48343	33.53	35.05	"	"			.096	.194	
48344	35.05	36.58	"	"			.105	.802	
48345	36.58	38.10	"	"			.106	.377	

DIAMOND DRILL LEDGER

DDH No. 92RCD-04

BAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph Cu	Total Cu %	DESCRIPTION
48346	38.10	39.62	1.52	5.0'			.120	.563	Granodiorite cont'd.
48347	39.62	41.15	"	"			.133	.453	39.62 - 51.82 - Str hematized w/ bornite ; poss.
48348	41.15	42.67	"	"			.116	.276	some bornite & cupurite
48349	42.67	44.20	"	"			.061	.111	
48350	44.20	45.72	"	"			.068	.137	
48351	45.72	47.24	"	"			.097	1.096	
48352	47.24	48.77	"	"			.046	.109	
48353	48.77	50.29	"	"			.068	.203	
48354	50.29	51.82	"	"			.099	.966	
48355	51.82	53.34	"	"			.101	2.5	51.82 - 53.34 relatively unoxidized w/ str clay.
48356	53.34	54.86	"	"			.177	1.242	-mod chloritic - numbrous frags w/ bornite.
48357	54.86	56.39	"	"			.069	.155	53.34 - 60.96 - Str - v.str hem. alteration w/
48358	56.39	57.91	"	"			.054	.118	native copper. - 3mm vein at 53.34 - 54.86.
48359	57.91	59.44	"	"			.055	.159	wk mal 56.39 - 57.91 ; qtz veining 56.39 - 57.44
48360	59.44	60.96	"	"			.032	.063	
48361	60.96	62.48	"	"			.031	.065	60.96 - 62.48 mod hem granodiorite w/ wk mal.
48362	62.48	64.0	"	"			.060	.184	62.48 - 68.58 Quartz Veining - upto 80% of sample
48363	64.0	65.53	"	"			.049	.180	traces bornite 64 - 65.53.
48364	65.53	67.06	"	"			.031	.092	
48365	67.06	68.58	"	"		1430	.066	.142	

DIAMOND DRILL LEDGER DDH No. 92RCD-02

SAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non-Sulph Cu %	Total Cu %	DESCRIPTION
48366	68.58	70.10	1.52	5.0		1960	.095	.197	Granodiorite Cont'd.
48367	70.10	71.63	"	"		1690	.066	.143	68.58. - 100.59. granodiorite w/ wk - mod
48368	71.63	73.15	"	"		1000	.052	.102	hem staining & wk - mod. chlorite
48369	73.15	74.68	"	"		1120	.055	.115	alteration.
48370	74.68	76.20	"	"		3950	.125	.378	
48371	76.20	77.72	"	"		2290	.102	.236	
48372	77.72	79.25	"	"		4530	.074	.438	
48373	79.25	80.77	"	"		3430	.088	.347	
48374	80.77	82.30	"	"		948	.038	.101	
48375	82.30	83.82	"	"		1050	.043	.107	
48376	83.82	85.34	"	"		308	.012	.032	2.164 / 15.9802
48377	85.34	86.87	"	"		1000	.031	.085	
48378	86.87	88.39	"	"		571			
48379	88.39	89.92	"	"		353			
48380	89.92	91.44	"	"		393			
48381	91.44	92.96	"	"		370			
48382	92.96	94.49	"	"		93			
48383	94.49	96.01	"	"		287			
48384	96.01	97.54	"	"		253			
48385	97.54	99.06	"	"		589			
48386	99.06	100.58	"	"		133			

PROPERTY DOT D.D.H. 92RC0-03 Page 1 of

AREA
CLAIM
GRID CO-ORDS Line / Station
SURVEY CO-ORDS Northing 24+81N / Easting 20+81E
ELEVATION

SECTION
AZIMUTH (T) 230°
INCLINATION -50°
DEPTH Hole 100.58 / Casing — / Overburden 6.10 m.
~~Hole~~ ~~CORE~~ SIZE
CORE RECOVERY —

DATE Started Nov 30, 1992 / Completed Dec 1, 1992
CONTRACTOR Dateline Drilling
LOGGED BY George Norman
LOGGED BY
SCALE
~~rejects~~ ~~CORE~~ STORED AT the property.
chip trays in office - Vancouver.

COMMENTS

SURVEY DATA							
DEPTH	INCL.	AZ (T)	TYPE	DEPTH	INCL.	AZ. (T)	TYPE

GEOLOGY					SIGNIFICANT ASSAY AVERAGES			
FROM	TO	UNIT	INT.	T.W.	Pb %	Zn %	Ag oz/t	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-03 LITHOLOGIC LOG start Nov 29 2:15 PM Finish. PAGE 1 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	copper	
0	1.52		OVERBURDEN																	
			← Glacial Till - med brn w/ coarse grid sand matrix w/ minor clay; w/ bldrs & cobbles up to .5 meters.																	
1.52	3.05		— v. similar to above, main rock chips relat. fresh bio granodiorite; increase in clay content.																	
3.05	4.57		as above w/ bldrs up to .5 meters, bldrs and cobbles of granodiorite; f-g dk vdc.																	
4.57	6.10		as per above. w/ 1% frag w/ hem stain									V wk								
			6.10 – 100.58 GRANODIORITE																	
			lt beige w/ pink tinge, rel. fresh biotite granodior.																	
6.10	7.62	48387	w/ 5% v. lt pink hematitic stain, ~15 blk biot.				wk					V wk							—	
			w/ wk altd. - beige wk clay altered fsp.																	
7.62	9.14	48388	relatively fresh biot. granodiorite, whitish w/ speckled black (biot ~15%). most. fsp. not altered									V								
9.14	10.67	48389	— as per prev. sample w/ ~1% w/ lt pink hem tinge.									V wk.								
												V wk.								
10.67	12.19	48390	— as above w/ ~5% v wk pink. hem. stain																	
			wet sample.																	
12.19	13.72	48391 reject.	— v. similar to above. - rel. unaltered biot granodiorite w/ 5% of frag w/ v. wk hem.									V wk								
13.72	15.24	48392 no reject.	— as per above – moist sample have to start drilling w/ water.									V wk								

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RC D-03 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	lim	lim	PY	CP	AS	PO	VG	MG		
15.24	16.76	48393	GRANODIORITE wht-beige w/ blk speckles (bio). - relatively unaltered bio, granodio < 5% of frag w/ v. wk hem stain									Tr									upper ot
16.76	18.29	48394	- as per above - ~ 15% ±20% blk bio, < 5% frag w/ v. wk hem. stain									Tr									
18.29	19.81	48395	- as per above. with less greenish-brn color/lim									V wk.									
19.81	21.34	48396	- 1% frag w/ limonite, 2% clay (pinkish tinge hematitic) most frag relatively unaltered gradin.									V wk	V wk								
21.34	22.86	48397	- as per above w/ ~ 5% frag w/ wk hem-lim. stain									V wk	V wk								
22.86	24.38	48398	- increase in hematite alteration w/ ~ 30% of frag w/ wk hem./lim. altern.									wk.	V wk								
24.38	25.91	48399	- similar to above w/ ~ 15-20% wk hematitically stained frag.									wk									
25.91	27.43	48400	- v. str biotitic section w/ 40% blk-grn bio & 30% wk hematitic frag.									wk.									
27.43	28.96	48401	- str increase in hem, 5% of frag spec hem, odd frag w/ mal; 30-40% of frag w/ salmon color hem stain, 2% w/ ep - rest of samples brot gnd rel unaltered						wk			w/ spec str hem.							Mal Tr		
28.96	30.48	48402	- 55% of frag w/ salmon colored hem stain, traces mal.									M								Mal Tr	

ZAPPA RESOJRCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-03 LITHOLOGIC LOG PAGE 3 of 7

FROM	TO	ASSAY NO.	LITHOLOGY (401-404 core reject. samples split.)	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	hem	MINERALIZATION bornite	CP	AS	PD	VG	wulf	native copper	ZONE
30.48	32.0	48403	GRANODIORITE CONT'D															vwk	wk	
			~ 70% of frag of salmon-reddish hem stain, numerous frag w/ native Cu (5), odd frag w/ mal., 1% frag w/ ep						wk			str.								
32.0	33.53	48404	~ 2% of frag w/ spec hem, ~ numerous frag w/ native copper <1%, odd frag w/ mal. often clotted? ~ 50% of frag w/ salmon colored hem stain, odd frag w/ ep						Tr			str				?		vwk	wk	
33.53	35.05	48405	~ v. similar to above w/ native copper, speck. hem & mal. ~70-80% frag w/ salmon colored hem.									v str						wk	wk	
35.05	36.58	48406	~ 80-90% of frags of salmon colored hem, some frag w/ native copper (4), <1% frag of spec. hem. possible frag of cuprite									v str			Tr			—	wk	
36.58	38.10	48407	~ 70% bright salmon colored hem stained frag <1% spec. hem in frag, traces Native Cu., minor frag w/ ep.						wk			v str							tr	
38.10	39.62	48408	~ 70% bright salmon colored hem stain frag, ~5% frag of spec. hem, 10% dk black frag (clotted?). ~ 1% ep altered frag.						wk			v str				M			—	
39.62	41.15	48409	~ Str hem. alt & wisps, 30-40% frag w/ spec. hem, traces bornite, 20% frag w/ salmon colored hem 50% clean-gtz w/ minor ksp. Vein?	v str								v v str	tr							
41.15	42.67	48410	~ similar to above w/ 30% spec. hem frag, <5% gtz, 1% frag w/ native copper, 20% salmon colored hem stained frag.	wk								v str							str	
42.67	44.20	48411	~ 20% of frag w/ spec hem, ~1% w/ native Cu. 30% of frag w/									v str							str	
44.20	45.72	48412	1-2% native copper (+2mm chunks), decrease in hem → ~5% of frag, 60% of frag w/ salmon colored hem									str							str	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-03 LITHOLOGIC LOG PAGE 4 of 7

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE CONT'D	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	hem	MINERALIZATION bornite	CP	covellite	PO	MoS	Native Copper	ZONE
45.72	47.24	48413	<5% of frag. w/ spec. hem, 60% frag w/ salmon colored hem stain, wk native copper (2 frags).				M.					Str				Chalcocite		wk	
			- 5% of frag hem - whitish clay gouge - fault.																
47.24	48.77	48414	- 20% whitish clay balls - fault, 60% of frag w/ 1-5% spec hem. salmon colored hem stain, odd frag w/ native copper, also 1-2mm plates of Native Copper, traces bornite, copper				M Str					Str.	wk		wk			wk	
48.77	50.29	48415	- 60% strclay altered frags, 30-40 hem stained salmon colored, <1% spec hem, no visible copper minerals				Str-					M to Str							
50.29	51.82	48416	- 60-70% salmon colored hem stained frag, 30% clay altered frag, odd frag w/ native copper. - <1% spec hem frag., possible some chalcocite?				M to Str					M to Str						wk	
51.82	53.34	48417	- 5% clay altered frag., 80% salmon colored frag. - traces bornite, <1% grey blk frag (chalcocite?).									Str	tr					—	
53.34	54.86	48418	- 80% of frag bright salmon colored hem stained, - 3% of frag w/ bornite, 17% of frag w/ v. wk or no hem stain.									Str	M.					—	
54.86	56.39	48419	- 3-5% blk frag (chalcocite?), 60% salmon colored hem stained frag. 1-2% clay altered frag	wk								Str	—		—	M	M		—
56.39	57.91	48420	numerous frag w/ bornite, chunk of massive spec hem <1%, 3-5% blk frag as before (chalcocite). as fr. fills 60% salmon color hem stained frag.									V Str	wk.		F	M			
57.91	59.44	48421	3-5% frag w/ bornite, <1% blk frag chalco., 50% of frag w/ salmon colored hem stain.									Str	Str			wk			
59.44	60.96	48422	- 2% of frag w/ bornite - 1% blk. frag (chalco?). - 50% salmon colored hem stained frag.									Str	M to Str			wk.			

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RC D-03 — LITHOLOGIC LOG — PAGE 5 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
			GRANODIORITE CONT'D.	SI	QV	SE	CY	CH	EP	CB	KF	Lem	bornite PY	CP	AS	PD	VG	MG	native cu	
60.96	62.48	48423	~40-50% salmon colored hem. stained frag. ~½% bornite frag (2 frag visible), odd frag frag (choked. 50% gradional frag rel. fresh w/ blk biot., 10% grey clay				wk					M to Str.	wk		calcite	wk				
62.48	64.0	48424	~2-3% bornite frag, 20% grey clay balls Fw/H, 30% frag w/ salmon colored hem. Str.				Str					M to wk	M.							
64.0	65.53	48425	med grn coloration w/ 05% of frag mod chl vitreal, 2 frag w/ bornite ~1%, ~5% frag w/ wk hem Str most of sample is unalt.					M to Str				V wk	V wk							
65.53	67.06	48426	V. similar to prev. sample ~85% chl frag, 1-3% blk sulph rich frag, minor bornite frag, ~5% v. wk hem/lim stained frag.					M to Str.				V wk	wk			? wk				
67.06	68.58	48427	~18 blk frag w/ sulphide, 60% frag w/ mod chl alt'n ~20% frag w/ wk. hem stain, ~5% qtz frag.	wk.				M to Str				wk				wk.				
68.58	70.10	48428	1-2% frag w/ hem. stain, 30% chloritic frags ~40-50 frag (qtz fsp) w/ no hem stain. Traces frag w/ blk sulph, micro fr. fills.					M to wk				V wk				wk.				
70.10	71.63	48429	minor traces of frag w/ blk sulph, 30% frag w/ wk hem stain, mainly unox. fsp-qtz. from gradn. v. wk chl. of frag.					V wk.				wk				tr				
71.63	73.15	48430	~1% frag w/ blk sulphides, 30% frag w/ chloritic bio 35% of grd rel. fresh w/ blk bio, 30% frag w/ wk hem (salmon colored) staining.					wk to M.				wk				tr				
73.15	74.68	48431	60-70% grd frag rel. fresh w/ blk bio, 30% frag w/ salmon colored hem stain, traces sulphide.									wk				tr				
74.68	76.20	48432	40% frag w/ chl, 40% qtz-fsp-no chl or hem str. 20% of frag w/ wk. hem stain, ~1% frag of sulphide, traces bornite.									wk	tr			tr				

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-03 | LITHOLOGIC LOG | PAGE 6 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION						ZONE
			GRANODIORITE CONT'D.	SI	QV	SE	CY	CH	EP	CB	KF	lem	born/PY	CP	cuprite/MB	PD	VG	MB native Copper	
76.20	77.72	48433	~15-20 v. wk hem. frag, 10% w/ chl. altern. ~ 70% rel. fresh bio granodiorite.					wk				v wk			chalcocite.				
77.72	79.25	48434	~30% frag w/ mod-str chl. 30% of frag w/ wk hem st. ~5% frag of bornite? (sulphide). 30% frag of bio / unalt granodiorite.					M.				wk	wk.						
79.25	80.77	48435	~ traces of sulph / bornite?, 20% frag of chl, 50% frag of wk hem stain salmon colored ~ 30% of frag of bio unaltered.					M to wk M				wk	tr						
80.77	82.30	48436	~ 50% of frag w/ chl, 40% frag w/ wk hem stain 10% frag in unaltered w/ blk bio.					M M to str				wk to M.	—						
82.30	83.82	48437	20% frag w/ mod-str chl, 30% frag of salmon colored hem, odd frag w/ v. fine sulphide. ~50% frag unaltered w/ blk bio. ~ pebble ~ contam.					M				M.	tr						
83.82	85.34	48438	~ 10% chl. frag., 10% hem frag, 80% unaltered bio granodiorite					wk to v				v wk.							
85.34	86.87	48439	40-50% v. lt pink hem. frag (v. wk), 10% wk chl frag, 40% unaltered frag. ~ 2 pebble ~ contam.					wk				wk	—						
86.87	88.39	48440	as per previous sample / 2cm pebble ~ contamin.					wk				wk	—			.			
88.39	89.92	48441	~ 25% v. lt pink. hem stained frag, 30% wk chl. frag 45 relatively fresh bio granod.					wk to M				wk.	—						
89.92	91.44	48442	~ 50% lt pink. hem. stained, 30% chl. frag, 20% unaltered bio granod.					wk				wk to M							

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-03 LITHOLOGIC LOG

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
			GRANODIORITE CONT'D	SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG		
91.44	92.96	48443	~10% frag w/ mod-wk chl, 40% lt pink. wk hem. stain, 50% relatively fresh bio grndior.					wk				wk.	—							
92.96	94.49	48444	15-20% chl. frag, 40% lt pink. wk hem frag. 40% relative fresh bio granodior., some frag of fsp → clay mod.				wk	M to wk				wk								
94.49	96.01	48445	~5-10% chl. frag, 50% lt pink-to salmon colored hem. stained frag. odd frag w/ ep alt'n					wk.	wk			wk to M								
96.01	97.54	48446	55% salmon colored hem stained frag, 20% chl. frag. 25% bio granodior unaltered., 1% qtz frag, odd	wk				wk.	wk.			M.								
97.54	99.06	48447	30% wk-mod chl. frag, 30% lt pink hem stained frag, 40% unaltered biot grndior.					wk.				wk								
99.06	100.50	48448	~10% mod-chl, 30% lt pink. hem stained. — water is lt-mod green colr.					wk				wk.								
			End of Hole @ 100.58.																	

DIAMOND DRILL LEDGER

DDH No. 92 RCD-03

SAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non-Sulph Cu %	Total Cu %	DESCRIPTION
									0 - 6.10 OVERBURDEN.
48387	6.10	7.62	1.52	5.0'		520			6.10 - 100.58 GRANODIORITE
48388	7.62	9.14	"	"		171			6.10 - 27.43 relatively fresh biotite
48389	9.14	10.67	"	"		141			granodiorite w/v. wk hematite staining
48390	10.67	12.19	"	"		98			
48391	12.19	13.72	"	"		162			
48392	13.72	15.24	"	"		191			
48393	15.24	16.76	"	"		261			
48394	16.76	18.29	"	"		208			
48395	18.29	19.81	"	"		232			
48396	19.81	21.34	"	"		248			
48397	21.34	22.86	"	"		239			
48398	22.86	24.38	"	"		715			
48399	24.38	25.91	"	"		1330	.130	.141	
48400	25.91	27.43	"	"		2040	.175	.196	
48401	27.43	28.96	"	"			0.226	0.24	27.43 - 30.48 - mod strong hematite
48402	28.96	30.48	"	"			.210	.239	alteration, traces of mal
48403	30.48	32.0	"	"			.202	.248	30.48 - 51.82 Zone of very strong hematite
48404	32.0	33.53	"	"			.208	.255	alteration, native copper, malachite
48405	33.53	35.05	"	"			.295	.385	chalcocite ! poss. cuprite

DIAMOND DRILL LEDGER

DDH No. 92RCD-0_

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet		Total Cu ppm.	Non-Sulph Cu %	Total Cu %	DESCRIPTION
48406	35.05	36.58	1.52	5.0'	.392		.734	1.68	
48407	36.58	38.10	"	"	.127		.397	.772	
48408	38.10	39.62	"	"	.209		.557	2.4	
48409	39.62	41.15	"	"	.345		.779	6.14	- 39.62 - 41.15 - 30-40% frag w/ specular hematite
48410	41.15	42.67	"	"	.628		1.123	10.78	- 50% frag w/ quartz - vein material
48411	42.67	44.20	"	"	.585		.399	2.61	- native copper
48412	44.20	45.72	"	"	.366		.395	1.326	
48413	45.72	47.24	"	"	.160		.266	.653	
48414	47.24	48.77	"	"	.028		.153	1.105	
48415	48.77	50.29	"	"	.009		.113	.420	
48416	50.29	51.82	"	"	.008		.098	.452	
48417	51.82	53.34	"	"	.012		.135	.502	51.82 - 67.06 v.str hematite stained andesite
48418	53.34	54.86	"	"	.007		.097	1.400	with 1-5% specular hematite with
48419	54.86	56.39	"	"	.012		.114	.725	bornite (upto 2-3% of frag). and chalcocite
48420	56.39	57.91	"	"	.007		.111	.656	
48421	57.91	59.44	"	"	.008		.145	1.73	
48422	59.44	60.96	"	"	.012		.143	1.238	
48423	60.96	62.48	"	"	.024		.154	.868	
48424	62.48	64.0	"	"	.014		.115	.923	
48425	64.0	65.53	"	"	.012		.107	.938	

DIAMOND DRILL LEDGER

DDH No. 92RCD-05

SAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu %	Non Sulph Cu %	Total Cu %	DESCRIPTION
48426	65.53	67.06	1.52	5.0'		.078	.131	1.52	Granodiorite Cont'd
48427	67.06	68.58	"	"			.163	.593	67.06 - 76. wk hematite altern with
48428	68.58	70.10	"	"			.085	.436	mod - str chlorite altern, trace -
48429	70.10	71.63	"	"			.142	.441	wk blk oxide? on fracs. (clabarite)
48430	71.63	73.15	"	"			.094	.328	
48431	73.15	74.68	"	"			.156	.315	
48432	74.68	76.20	"	"			.078	.341	
48433	76.20	77.72	"	"			.100	.236	76.20 - 100.58. - wk - mod chlorite altern
48434	77.72	79.25	"	"			.057	.185	and wk hem. altern.
48435	79.25	80.77	"	"		2410	.121	.251	
48436	80.77	82.30	"	"		1190	.058	.135	
48437	82.30	83.82	"	"		2560	.116	.269	
48438	83.82	85.34	"	"		1570	.068	.166	
48439	85.34	86.87	"	"		1320	.082	.150	
48440	86.87	88.39	"	"		1340	.083	.153	
48441	88.39	89.92	"	"		769	.044	.088	
48442	89.92	91.44	"	"		783	.034	.083	
48443	91.44	92.96	"	"		1480	.081	.164	
48444	92.96	94.49	"	"		1260	.048	.129	
48445	94.49	96.01	"	"		1530	.091	.160	

DIAMOND DRILL LEDGER

DDH No. 92RCD-03

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph. Cu %	Total Cu %	DESCRIPTION
48446	96.01	97.54				564	.031	.061	
48447	97.54	99.06				1010	.061	.121	
48448	99.06	100.58				982	.045	.106	
			End of Hole 100.58.						

PROPERTY DOT D.D.H. 92RCD-04 Page 1 of

AREA

CLAIM

GRID CO-ORDS — Line / Station

SURVEY CO-ORDS — Northing 24+43N / Easting 21+20E

ELEVATION

SECTION

AZIMUTH (T) 230°

INCLINATION -50°

DEPTH — Hole 100.58 / Casing / Overburden 12.19

~~CORE~~ Hole SIZE

~~CORE~~ RECOVERY

DATE — Started Dec 2, 1992 / Completed Dec 3, 1992

CONTRACTOR Dateline Drilling

LOGGED BY George Norman

LOGGED BY

SCALE

~~CORE~~ Rejects STORED AT the property

COMMENTS

SURVEY DATA							
DEPTH	INCL.	AZ (T)	TYPE	DEPTH	INCL.	AZ. (T)	TYPE

GEOLOGY					SIGNIFICANT ASSAY AVERAGES			
FROM	TO	UNIT	INT.	T.W.	Pb %	Zn %	Ag oz/t	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-04 | LITHOLOGIC LOG |

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION						ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	Hem	PY	CP	AS	PO	VG	MG	
0	1.52		OVERBURDEN																
			Med brn. sandy glacial till w/ coarse sand and cobbles / blders of relative fresh biot granodior up. 5m.																
1.52	3.05		– as above																
3.05	4.57		– similar to above, becoming more pebbly. – 10% dk f-g vole. pebbles / cobbles.																
4.57	6.10		– as above.																
6.10	7.62		– as above																
7.62	9.14		– Pebble – Till, pebbles – 1-2cm of f-g vole. & granodior. w/ sandy matrix of c sand (granodiorite)																
9.14	10.67		– Sandy pebble cobble till, pebbles <1cm – 2cm some cobbles – sand clay matrix.																
10.67	12.19		– as above																
			GRANODIORITE.				wk.					V wk							
12.19	13.72	48449	– Beige – whitish w/ speckled blk., med grnd biotite granodiorite, w/ ~ 15% blk. bio., fsp altered wkly to clay v. wk hem. stain 1% frac																
13.72	15.24	48450	– v. similar to above, dry sample beige w/ greenish tinge				wk					V wk							

ZAPPA RESOJRCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-04 LITHOLOGIC LOG

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	lim	PY	CP	AS	PO	VG	MG		
15.24	16.76	48451	GRANODIORITE									v wk									
			as per prev. sample, some pebbles from overburden covering ~1%.																		
16.76	18.29	48452	similar to above v. H yell.-beigh w/speckled blk colored med. grnd biot granodio. relatively fresh w/ ~15% blk bio, fsp wkly clay altered, wk lim stain										v wk								
							wk					v wk	v wk								
18.29	19.81	48453	as above w/ a few fsp vlts (frag) str. clay altered ~5% w/ wk lim/hem.																		
19.81	21.34	48455	~5% clay lumps, fsp are mod-wkly. clay altered ~5% wkly lim frag <1% hem altered (reddish).				M to wk					v wk	v wk								
21.34	22.86	40456	wkly clay altered, v. wkly chloritic of some frag <1% ~5% wk hem frag,				wk	v wk				v wk	—								
							—	v wk				—	—								
22.86	24.38	48457	relatively fresh bio granodiorite w/ v. wk. chl. of some biot.																		
24.38	25.91	48458	similar to above ~1% w/ frag str. clay altered				wk	v wk				v wk	v wk								
							v wk	wk				v wk	v wk								
25.91	27.43	48459	v. similar to above.																		
27.43	28.96	48460	v. similar to prev. samples.				v wk	v wk				v wk	v wk								
28.96	30.48	48461	~decrease in biot → 10% fsp/ser., 1% v. wk hem frag. 1% lim frag, wk chl. of bio. -				v wk	v wk				v wk	v wk								

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-04 | LITHOLOGIC LOG | PAGE 3 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
			GRANODIORITE CONT'D.	SI	QV	SE	CY	CH	EP	CB	KF	hem	lim	PY	CP	AS	PO	VG	native Cu	Cu Mal.	
30.48	32.0	48461	- similar to before wk chl. of bio, 5% wk hem frag. 5% wk lem frag. - lt green colr. to water.					wk				v wk	v wk								
32.0	33.53	48462	- str bio st section w/ upto 30 med-coarse bio, wk chl. - 20% frag wkly lim <5° pink-wkly hem.					v wk				v wk	w to M								
33.53	35.05	48463	mod-str clay alter (fault?) 30% clay clasts, 20% hem. stained frag, wk ep alt'n of bio.				M to Str		wk			wk to M	wk								
35.05	36.58	48464	- 40% hem-(pinkish) stain clay clasts fault or clay alter gdior? - 5% hem frag, wk chl of bio, odd frag w/ mod-strep. - odd frag of fspar/ mal stain. 1% lim frag.				v. Str	wk	wk			M	wk								v wk	
36.58	38.10	48465	- 30% grey blk f-g-aphan frag - mostly w/ mal ~20% hem frag, 10% w/ hem, ~10% clay clasts, water has str limonitic colr. ~1% of frags w/ mal.				wk to M.	wk				wk & M.	M to Str								wk	
38.10	39.62	48466	- 60% dk chl. f-g frag (part of gdior? or another fx? (Bal gdior) - fr coating - platey native copper on numerous frag, 1 leafy wire of native copper, odd frag w/ mal., heavy brn colr to water, 20% frags of lim, 5% hem.					M to Str				wk	M to							wk & M.	v wk	
39.62	41.15	48467	- 80% f-g chl. frag, 5% native copper as chunks, fr. fill coating ~5% qtz, 5% f-g brn frag some w/ qtz	High Barren				Str				wk	wk							Str 5%.		
41.15	42.67	48468	- 10% f-g sugar qtz rich frag, 80% dk chl frags. - 30% of frag w/ lim stain, 2% of frag w/ mal. ~1-2% native copper as plates fr. fills, <5% of frags hem,					Str				M.	wk				.			Str 1-2.	bwk to M.	
42.67	44.20	48469	- 75% of frag m-str chl, ~5% spec. hem frag, ~.5% frags of native copper, minor mal frag, rock appears to have grained than gdior? alt'n? 20% of frag w/ lim.					Str			spot M to Str	M.								M .5	wk	
44.20	45.72	48470	- definite gndior w/ 85% of frag. Salmon colored hem stain ~5% f-g chl frag., ~ traces of native copper/ mal str 1-2% frag w/ spec. hem.					wk				Str spec. hem	—							tr	tr	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-04 LITHOLOGIC LOG PAGE 4 of 7

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem		PY	CP	AS	PO	VG	native Cu MG	native Cu EP	
45.72	47.24	48471	pinkish-red colored rx w/ 75% of frag bright pink red hem. stained, wk chl. of bio, odd frag w/ mal & tr's native copper.									V Str						tr	U wk		
47.24	48.77	48472	- similar to above w/ 100% of frag pink-red w/ hem stain - bio only wkly chl. - no visible copper minerals.					V wk				V Str						—	—		
48.77	50.29	48473	- v. similar to prev. sample. w/ minor frag w/ mal stain					wk.				V Str.							Tr tr		
50.29	51.82	48474	- v. similar to above w/ slight weakening of hem stain. - numerous frags w/ native copper (hard to see) odd frag w/ mal ↳ 5 frag in hand sample.					wk.				V Str						wk	tr		
51.82	53.34	48475	- most frag w/ pinkish-red-(salmon) colored hem stain, native copper more visible w/ 4 frag., traces Mal. - red brn. color to water.									V Str.						wk	tr		
53.34	54.86	48476	- somewhat weaker hem, ~70% of frag not as bright as prev. ~7 frag w/ native copper, ~30% of frag w/ chl. after bio. <1% of frag. w/ epidote alteration red-brn color to water.					wk to M				Str						wk	-		
54.86	56.39	48477	- decrease in hem again ~30% of frag w/ salmon colored hem stain, 70% frag w/ bio & wk chl, 1-2% of frag w/ native copper. brn color to water					M.				M.						wk.			
56.39	57.91	48478	- 20% of frag of salmon colored hem, 80% of frag w/ wk - mod chl., 7 frag w/ native copper. brn. color to water.					M to Str				wk. to M						wk to M			
57.91	59.44	48479	- purple - brn color to water w/. 20% of frag blk. spec. hem frag, 2 frag w/ native copper, 2 chunks of native copper., wk chl, minor tr ep					wk	V wk.			V Spec. Str						wk			
59.44	60.96	48480	10% frag blk w/ Spec hem, 60% frag w/ salmon colored hem stain, numerous frag w/ native & chunks up to 2mm (platy - fr blk)									Spec. V Str						wk to M			

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RC0-04 LITHOLOGIC LOG

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION						ZONE
			GRANODIORITE CONT'D	SI	QV	SE	CY	CH	EP	CB	KF	hem	BN	CP	AS	PO	VG	native copper	
60.96	62.48	48481	~1-2% of frag w/ fine specks of native copper (12 frags) ~30% of frags of salmon colored hem stain, 1% of frag of spec. hem., odd frag of ep. bio → wkly. to chl.					wk.				M spec hem.						M.	
62.48	64.0	48482	~4 frag of native copper, odd spec hem frag, 20% of frag of salmon colored hem stain, most frag are wk chl odd frag of ep.					wk to M	wk			wk.						wk.	
64.0	65.53	48483	~60% of frag of salmon colored hem stain, odd frag of spec. ~numerous frag of native copper specks, (4 counted). ~wk chl alteration of bio.									M						wk	
65.53	67.06	48484	~70% med hem frag - salmon colored, 3 frag of salmon colored native copper, 5% frag of spec. hem.									str spec.						wk.	
67.06	68.58	48485	~1 frag of native copper 1-2% of frag of spec. hem, 70% of frag of salm. colored hem stain, 30% of frag of chl alteration					M				str						V wk	
68.58	70.10	48486	~1 frag of native copper or bornite (light getting bad). ~80% of frag of salmon colored hem.					wk.				str	Tr					V wk	
70.10	71.63	48487	as per above w/ 1 frag of bornite, 20% frag of chl.					wk to M.					Tr						
71.63	73.15	48488	numerous frag of spec hem., 90% frag of salmon colored hem stain, 1 frag of bornite or native copper, 20% frag of chl.					wk.				str.	Tr?					Tr?	
73.15	74.68	48489	~60% of frag salmon colored hem stn., odd frag of spec. hem as fracture coating, traces bornite & cpy.									str.	Tr	Tr					
74.68	76.20	48490	~80% of frag w/ redbed stn - purple hem staining - numerous frags (4) w/ native copper - specks some up to 1mm. ~20% of frag of chl odd frag of ep.					wk	Tr to wk.			str						wk.	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-04 LITHOLOGIC LOG

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE CONT'D -	ALTERATION SI	QY	SE	CY	CH	EP	CB	KF	hem		MINERALIZATION ~~PY~~ bornite	CP	AS	PO	VG	MG	native copper	ZONE
76.20	77.72	48491	80% salmon colored hem stained frag, 20% chl. frag. 1 frag of native copper, odd frag of blk sulph ≈ pebbles. contamin (4-5).					wk to M				Str								v wk	
77.72	79.25	48492	70% of frag - salmon colored hem stained - 30% of frag w/ chloritic bio. - No visible copper minerals.					M.				M Str		—						—	
79.25	80.77	48493	all frag of salmon colored hem, odd frag w/ spec, ~10% frag of chl, <1% frag of ep.					wk	v wk			Str		—						—	
80.77	82.30	48494	-80% of frag of salmon colored hem. 20% of frag of chl-bio, odd frag w/ ep, numerous (3) frag of blk mineral oxide/sulphide? prob - spec hem.					wk to M	v wk			Str		—						—	
82.30	83.82	48495	-70% of chl bio, 20% frag of salmon color hem, 1 frag of spec hem, ~10% frag. w/ wk clay				v wk	M to Str				wk trace spec.		—						—	
83.82	85.34	48496	-85% of frag of chl., 5% hem frag (wk) <5%. hem alter, traces bornite & spec. hem. 10%. -poss some contam?																		
85.34	86.87	48497	-5% of frag of salmon colored hem, several frag of blk oxide/sulph (spec hem?) 1 chunk (1mm) of native copper. 20 other frag of spec of native copper, 5% frag w/ ep., 5% w/ hem, 5% frag of clay clasts.				wk	Str	wk			wk	wk							wk	
86.87	88.39	48498	Several frag of mal, <1% frag of black oxide/sulph? 30% of frag str-mod clay altered 50% frag of salmon colored hem, 10% frag of chl, - sample clean.					wk				M								mal wk to str	
88.39	89.92	48499	70% salmon colored hem altered frag, several w/ spec. hem, 20% whitish clay clasts (fault,) minor ep alt frag, several frag of wk mal. - samples appear clean				M to wk		wk			M.								mal str to wk	
89.92	91.44	48500	5% hem stain frag, 95% chl-clay alter frags (50:50) several frag of blk oxid/sulph?				Str	Str				v wk								—	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-04 LITHOLOGIC LOG PAGE 7 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	lim	PY	CP	AS	PO	VG	MG		
			GRANODIORITE.																		
91.44	92.96	48501	10% wht-grey clay altd (fault?), 5% lim/hem stained frag, 85% clay-chl. altd frag, odd frag of blk oxide/sulph.				Str	Str				U uk	blk								
92.96	94.49	48502	~80% frag red-green-str chl, ~20% hem-clay altern			H → uk	Str	U Str				U uk									
94.49	96.01	48503	95% lt grey-chl-clay altered frag. 5% frag w/ hem/lim. odd frag w/ blk-oxide/sulph.				Str	Str				U uk									
96.01	97.54	48504	lt green colored sample w/ 95% frag. mod-str chl. w/ uk clay, 5% of frag w/ hem, traces blk oxide/sulph				uk to M.	U Str				U uk									
97.54	99.06	48505	98% frag lt green chl-clay altered 2% frag w/ lim/hem (goethite?).				M	Str				U U uk	U U K								
99.06	100.58	48506	intrus. rock basically as per prev. Sample				uk to M	Str				—	—								
			End of Hole 100.58m. 11:30 AM. Dec 3/92.																		

DIAMOND DRILL LEDGER DDH No. 92RC0-04

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet		Total Cu ppm	Non Sulph Cu %	Total Cu %	DESCRIPTION
									0 - 12.19 OVERBURDEN
48449	12.19	13.72	1.52	5.0'		270			12.19 - GRANODIORITE
48450	13.72	15.24	"	"		362			12.19 - 33.53 Relatively unaltered beige -
48451	15.24	16.76	"	"		479			whitish med grained biotite granodiorite
48452	16.76	18.29	"	"		568			15% blk bio, fsp altered wkly to clay
48453	18.29	19.81	"	"		367			v. wk hem stain ~1% of frag.
48454	19.81	21.34	"	"		406			
48455	21.34	22.86	"	"		239			
48456	22.86	24.38	"	"		234			
48457	24.38	25.91	"	"		125			
48458	25.91	27.43	"	"		229			
48459	27.43	28.96	"	"		139			
48460	28.96	30.48	"	"		285			
48461	30.48	32.0	"	"		301			
48462	32.0	33.53	"	"		568			
48463	33.53	35.05	"	"		592			33.53 - 35.05. - Str clay altered - Fault?
48464	35.05	36.58	"	"			.223	.228	wkep alteris of bio.
48465	36.58	38.10	"	"			.582	.710	35.05 - 38.1 - Str clay - mod hem., mod-Str
48466	38.10	39.62	"	"			.582	1.321	limonite - weak malachite
48467	39.62	41.15	"	"			.363	1.20	

DIAMOND DRILL LEDGER

DDH No. 92 RCD-04

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph %Cu	Total Cu %	DESCRIPTION
48468	41.15	42.67	1.52	5.0'			.749	1.375	GRANODIORITE CONT'D
48469	42.67	44.20	"	"			.740	1.210	38.1 - 51.82. Zone of strong native copper.
48470	44.20	45.72	"	"			.407	.513	mod-wk malachite - High grade
48471	45.72	47.24	"	"			.167	.212	Sample 39.62 - 44.5 up to 5% native Cu.
48472	47.24	48.77	"	"			.146	.175	38.1 - 44.20 .5% - 5% Cu.
48473	48.77	50.29	"	"			.206	.260	- str hem and str clh
48474	50.29	51.82	"	"			.170	.206	
48475	51.82	53.34	"	"			.096	.133	51.82 - 67.0 Zone of weaker native
48476	53.34	54.86	"	"			.085	.147	Copper., mod-wk chlorite altern
48477	54.86	56.39	"	"			.101	.178	V. Str specularite hematite
48478	56.39	57.91	"	"			.104	.240	
48479	57.91	59.44	"	"			.086	.175	
48480	59.44	60.96	"	"			.050	.097	
48481	60.96	62.48	"	"			.080	.136	
48482	62.48	64.0	"	"			.063	.102	
48483	64.0	65.53	"	"			.069	.120	
48484	65.53	67.06	"	"			.034	.052	67.06 - 77.72 Traces of native copper,
48485	67.06	68.58	"	"			.163	.322	bornite / chalcopyrite - str hem
48486	68.58	70.10	"	"			.137	.387	stain / wk - mod chlorite altern
48487	70.10	71.63	"	"			.096	.191	

DIAMOND DRILL LEDGER

DDH No. 92RCD-04

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm.	Non sulph. %Cu	Total Cu %	DESCRIPTION
48488	71.63	73.15	1.52	5.0			.122	.242	GRANODIORITE
48489	73.15	74.68	"	"			.118	.501	
48490	74.68	76.20	"	"			.162	.563	
48491	76.20	77.72	"	"			.137	.391	
48492	77.72	79.25	"	"			.077	.160	77.72 - 85.34 - Str lem. altern, mod-str
48493	79.25	80.77	"	"			.076	.134	chlorite v. wk ep., No visible
48494	80.77	82.30	"	"			.052	.102	copper minerals
48495	82.30	83.82	"	"			.119	.482	
48496	83.82	85.34	"	"			.105	.764	
48497	85.34	86.87	"	"			.134	.448	85.34 - 89.92 - Str chlorite, wk to
48498	86.87	88.39	"	"			.077	.204	str clay altern and weak-trace
48499	88.39	89.92	"	"			.112	.224	of malachite
48500	89.92	91.44	"	"			.104	.618	89.92 - 100.58. Str chlorite, mod-str.
48501	91.44	92.96	"	"		4850	.146	.505	clay altern, & very weak hematite
48502	92.96	94.49	"	"		1220	.052	.130	altern - No visible copper mineraliz-
48503	94.49	96.01	"	"		2200	.117	.216	ization.
48504	96.01	97.54	"	"		1560	.065	.163	
48505	97.54	99.06	"	"		1490	.078	.170	
48506	99.06	100.58	"	"		884	.046	.097	

PROPERTY DOT D.D.H. 92RCD-05 Page 1 of

AREA

CLAIM

GRID CO-ORDS — Line — Station

SURVEY CO-ORDS — Northing 23+77.5N — Easting 20+96E

ELEVATION

SECTION

AZIMUTH (T) 50°

INCLINATION -50°

DEPTH — Hole 100.58 — Casing — — Overburden 18.29

~~Hole~~ ~~CORE~~ SIZE

CORE RECOVERY

DATE — Started Dec 3, 1992 — Completed Dec 6, 1992

CONTRACTOR Dakline Drilling

LOGGED BY George Norman

LOGGED BY

SCALE

~~Hole~~ ~~CORE~~ Rejects STORED AT the property.

COMMENTS

SURVEY DATA							
DEPTH	INCL.	AZ (T)	TYPE	DEPTH	INCL.	AZ. (T)	TYPE

GEOLOGY					SIGNIFICANT ASSAY AVERAGES			
FROM	TO	UNIT	INT.	T.W.	Pb %	Zn %	Ag oz/t	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RC D-01 | LITHOLOGIC LOG | Start 2:30 Dec 3/92 | PAGE 1 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF			PY	CP	AS	PO	VG	MG		
0	1.52		OVERBURDEN. Glacio fluvial Gravel - med brn c grd sand. ~ 60% w/ 40% pebbles cobbles & boulders of g'dior.																		
1.52	3.05		as per above sample.																		
3.05	4.57		Pebble - Boulder Till - 30% brn clay, 40% c-g sand, 30% cobbles - pebbles & blders, mostly granodior. material w/ 10% f-g blk chl vdc.																		
4.57	6.10		similar to above w/ 10% brn clay, 50% c-g sand 40% pebbles / cobbles.																		
6.10	7.62		Pebble Clay Till - 50% brn clay, 10% c-g sand., 40% pebbles & cobbles.																		
7.62	9.14		v. similar to prev. sample.																		
9.14	10.67		as per last sample																		
10.67	12.19		Granodiorite Boulders, - relatively fresh med gr'd. brot grdior. w/ wk lim, minor pebbles / sand.																		
12.19	13.72		Clay Pebble Till - 60% brn clay, 40% blk f-g volc pebbles. w/ minor g'dior. pebbles																		
13.72	15.24		Pebble Till - 75% 1cm pebbles (mainly volc) 25% clay matrix																		

ZAPPA RESOJRCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-05 — LITHOLOGIC LOG — PAGE 2 of 7

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	lim	PY	CP	AS	PO	VG	MG	Tr Hal	
15.24	16.76		OVERBURDEN CONT'D Brn - CLAY PEBBLE TILL w/ ~60% brn sticky clay 40% r cm f-g blk. vdc. pebbles.																		
16.76	18.29		→ Start drilling wet - - similar to above possibly somewhat less clay ≈40% 60% pebbles - cobbles - some lam. frag, possibly chert bdrx.																		
18.29	19.81	48507	GRANODIORITE - 20% pebbles, 80% gradion. frag, w/ 50% hematitic. 30% limonitic w/ clay.				wk					M.									
19.81	21.34	48508.	- 1-2% blk pebbles, 98% gnodiorite, orange. yell. - w/ 80% of frag limonitic & 20% w/ wk hem stain, ~ tsp have altered to clay. (~40%)				M & Str					wk	Str								
21.34	22.86	48509	- 30% fg dk grytk chl². frag odd one w/ mal. 70% salmon colored hem stained grd. - mod clay altern				M.					M & Str	wk							tr	
22.86	24.38	48510	- 95% of frag - w/ salmon colored hem stain, ~3% of frag w/ mal., odd blk frag (oxide) w/ mal stain. 2% w/ no hem stain chalcocite?									Str								M.	
24.38	25.91	48511	- 60% of frag are fsp qtz w/ no hem stain, 40% of frags w/ salmon colored hem stain 1% w/ lim., tsp are wk clay altered - dk chl frag.				wk.					M.									
25.91	27.43	48512	- v. similar to above w/ mod. clay altern of fsp. & frag. mal.				M.					M to wk								tr.	
27.43	28.96	48513	- 1% of sample is 3mm - 8mm small pebbles contam. - 60% of frags w/ wk pink hem stain, 40% frag w/ no stain, 60% is relatively fresh.									wk & M									
28.96	30.48	48514	- 30% of frag: w/ epidote altern, 20% frags w/ salmon colored hem, ~1% blk frag - oxide/sulphide? chalcocite?						M.			M									

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RC0-05 | LITHOLOGIC LOG | PAGE 3 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
			GRANODIORITE	SI	QV	SE	CY	CH	EP	CB	KF	hem	lim	PY	CP	AS	PO	chal.	MG	mal	
30.48	32.0	48515	greenish-orange colored rx, 30% frag w/ wk chl. bio, 20% frags of ep. 50% frags of Salm. colored hem stain, mnr traces mal, odd chert of clay altered w/ hem.					wk to M	M			M to wk								tr	
32.0	33.53	48516	15% of frags w/ wk pink hem stain, 75% frags of clay altn (md) Lsp/ chl altered bio (wk) 1% of frag w/ wk pale colored mal., 5-10% frag w/ ep.				M		M			wk									V wk	
33.53	35.05	48517	60% of frag w/ M-Str ep altn, 20% of frags of salmon colored hem, 2-3% frags w/ wk mal, several frags w/ Spec hem, one of mal. 20% frags of chl bio					M	Str			wk. Spec.								wk.	
35.05	36.58	48518	40% of frag of prev. ep, 20% frag w/ wk salmon colored hem, 30% frag. w/ chl. bio, ~2-3% of frag w/ mal, ~1/2 frag w/ Spec of which some have mal. 1% clay	}	4 small pebbles contam.							Spec									
36.58	38.10	48519	40% dk grn chloritic frag, 30% ep altered frag, 20% salmon colored hem. stained frag, no visible spec hem. or copper minerals, 10% Lsp frag wk-Mod clay altered	class			wk	M. to M	M Str			wk & M								wk	
							wk	SP	M Str			M								—	
							Str	Str	Str			wk & M								Tr	
38.10	39.62	48520	70% of frag w/ ep-chl (40:30), 30% of frag w/ Salmon colored hem staining, traces spec hem & mal								Spec hem.										
39.62	41.15	48521	40% ep altered frag 20% chl. altered frag, 40% w/ pink-reddish hem stain, mnr traces spec hem. no visible Cu minerals, odd frag - blk Cu oxide?/Chalcocite?				M & Str	Str				M & Str					wk				
41.15	42.67	48522	- increase in hem (water color change to purple) - 60%, 30% w/ chl. Salm colored hem stained frag 2% frags w/ Spec hem, 1% frag w/ mal, ~1% dk blk frags (Cu oxide?), 15% frag w/ ep.				M	wk				Str Spec					wk			M	
42.67	44.20	48523	- V. strong contam. w/ 13 small pebbles in sample - 10% ep altered frag 40% salmon colored hem, 2-3% frags w/ Spec hem. 30% of frag w/ chl; no visible Cu minerals.				M	wk			Spec hem	Str					wk			—	
44.20	45.72	48524	40% ep altered frag, 60% salm - hem stained w/ chl. - weaker contam. 4 pebbles noted., no visible copper.				M	M				Str									

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-05 LITHOLOGIC LOG

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	hem	MINERALIZATION PY	CP	AS	PO	VG	HG	mal	ZONE
45.72	47.24	48525	80% frag w/ salm-hem stain & chl (30%) ~ 20% of frag w/ ep. - is sample is clean					M	wk			Str							—	
47.24	48.77	48526	40% frag w/ salmon colored hem stain, 55% frag w/ chl altern after bio, 15% frag w/ ep. altern - trace of spec! no visible copper minerals, clean sample					Str	N			M	—						—	
48.77	50.29	48527	15% frag w/ ep ~ 40% w/ salmon colored hem. 45% frag w/ chl - some of which w/ hem stain, numerous frag w/ mal., odd blk frag - oxide?					Str	wk			M							wk	
50.29	51.82	48528	most frags w/ chl / salmon-hem stain (60% - 40%) ~ numerous frag w/ mal (5 counted), odd frag w/ spec. - < 5% ep altered frag.					Str	Blk.			M Spec							wk to M	
51.82	53.34	48529	5% ep altered frag, 45% frag - mod-str. chl, 40% frag w/ pervas - bright salmon hem stain odd frag w/ spec., 10% wht.-fsp.					Str	wk.			M Spec hem	—						—	
53.34	54.86	48530	50% blk frag w/ bio → wk chl., 3-5% ep, 45% frag w/ salmon colored hem. fsp altered wkly → clay. odd frag w/ spec. hem.				wk	wk	wk			M. Spec hem							—	
54.86	56.39	48531	water color - reddish brn coloration - all frag w/ salm-hem stain / many w/ blk oxide coating (oxide). minor qtz frag (vnlt), numerous frag w/ mal.									U Str							wk wk.	
56.39	57.91	48532	50% frag w/ fsp / bio ~~chl~~ altered bio, 30% frag w/ salmon colored hem stain, traces native copper 2 frags / traces mal. (2-3 frags)., < 5% ep alt'd frag					M	wk			M.						Tr	Tr	
57.91	59.44	48533	40% wk salmon colored hem stained frag, 2% ep altered frag, 58 frag fsp/bio w/ bio → chl & wk sericite (silver colored). 2% blk frag oxide? chl.			wk		M & wk	wk			M & wk.								
59.44	60.96	48534	numerous frag of native copper (4-5), 40% frag w/ wk salmon hem. stain, ~~bi~~ 50% frag w/ bio fsp - bio → ep/chl - ser - wkly			wk		wk	wk.			wk						wk		

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-05 | LITHOLOGIC LOG | PAGE 5 of 7

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE CONT'D.	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	hem.	MINERALIZATION PY	CP	AS	PO	VG	Native Au	Native Cu	Mal	ZONE
60.96	62.48	48535	~60% lt green upsly chl fsp grns, 15-20% siten-green colored chloritic? -blk bio (wk serecite?) 20% wk hem stained frag. ~ traces native Cu (2-3 frags), <1% frag a/ep					wk & M.	wk			wk.						tr & wk.			
62.48	64.0	48536	lt green coloration to sample. 80% of frag w/ fsp-bio -w/ lt green chloritic altern, 20% frag w/ v wk pervh hem stain, numerous frag (4) w/ Native Cu, calc frag.					str	v wk	wk								wk			
64.0	65.53	48537	70% fsp/bio frag bio blk chuky chl. altn, 30% wk hem altn frag, odd frag w/ mal, traces native copper, numerous calc frag (unlth)					M to wk	v wk	wk								Tr	v wk.		
65.53	67.06	48538	mod frag lt greenish blue, bio → chl/(ser), ~30% of frag are maroon colored hem stained -~1% of frags w/ native copper, odd frag of cpy, Text. obscured.					M				wk		v wk				M	—		
67.06	68.58	48539	lt green colored sample w/ 95% frag mod-str perv. chl (bio & fsp)., 5% frag w/ wk hem, several frag w/ cpy; 1-1-2mm clunky cpy.					str				v wk		wk.							
68.58	70.10	48540	30% of frag w/ salmon colored hem. Stain: 70% of frag fsp-bio -mod-str chl. some blk bio, no visible copper minerals.					str				wk						—	—		
70.10	71.63	48541	20% whitish clay clasts, 20% salmon colored hem stained frag. 70% fsp ± bio w/ bio only wkly chloritized mainly blk.				wk	wk				wk.						—	—		
71.63	73.15	48542	<5% clay clasts, 20% wk hem frag. 75% of frag fsp w/ bio, bio only wkly chl., fsp relatively fresh.				wk	wk				v wk						—	—		
73.15	74.68	48543	10% frag w/ wk. pale salmon. hem stain, 90% of frag were fsp/bio w/ wk chlorite altn traces ep altern.					wk	tr			v wk						—	—		
74.68	76.20	48544	wk-mod chloritized granodiorite w/ 15-20% bio, ~5% qtz ~75% fsp, ~15% of frag w/ wk hem stain.					wk & M				v wk						—	—		

ZAPPA RESOJRCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-05 LITHOLOGIC LOG PAGE 6 of 7

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE CONT'D.	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	Hem	MINERALIZATION PY	CP	AS	PO	VG	MG	ZONE
76.20	77.72	48545	Upper last sample w/ ~ 10% v. wk hem. frag. 90% frag fsp-bio w/ bio → chl wk-mod					wk to M.				V wk						—	—
77.72	79.25	48546	Similar to last w/ increase in hem altern w/ 30% of frag w/ reddish brn hemstain, 70% of frag fsp/bio w/ bio altered wkly-mod-chl.					wk to M				M to wk						—	—
79.25	80.77	48547	V. similar to last w ~ 20% frag w/ reddish-pinkish hemstain 80% of frag fsp-bio bio → chl wk-to mod ~ 1-2% str clay altered frag.				wk	wk to M				wk to M.							
80.77	82.30	48548	~ 15% clay clasts - whitish (fault?), 30% of frag w/ salmon colored hemstain, 30% whitish fsp, 25% frag fsp-bio bio → mod-str.				M.	M to Str				wk.						—	—
82.30	83.82	48549	~ 5% of frag wk hem-pinkish tinge, ~ 20% bio w/ 80% rel. fresh ~ 20% are wk chl, 75% fsp w/ pinkish. mod-wk chl., odd calc frag.				M	M to Str		wk		V wk						—	—
83.82	85.34	48550	25% blk bio - rel. unaltered, ~ 5% frag w/ wk hem. 75% frag w/ fsp w/ wk chl. alter giving lt green overall coloration					M.				V wk							
85.34	86.87	48551	lt green minty minor. groudm. w/ 25% blk bio, 75% fsp - fsp → wk-mod chl, specks of sulphide (py. ~ 5 frag w/ v. minor hem stain					M				Tr	Tr						
86.87	88.39	48552	30% salmon-maroon hem. altered frag, 70% chloritic fsp-bio frag., minor calc frag, calc. veins					str				M							
88.39	89.92	48553	25% wk hem. altered frag., 2% clay altered frag. - minor calcite frag (calc. veins). 73% fsp-bio. frag mod. chl., odd sp altered frag.				V wk	M to Str	V wk			wk to M.	—					—	—
89.92	91.44	48554	Slight increase in hematite altern - w/ 40% of frag. mod-str hemstain. 60% of frag chl. fsp/bio some grey bio (sec?)			V wk		Str	wk			M to Str							

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-05 | LITHOLOGIC LOG | PAGE 7 of 7

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
			GRANODIORITE CONTD	SI	QV	SE	CY	CH	EP	CB	KF	lim	lim	PY	CP	AS	PO	VG	MG	Native copper	
91.44	92.96	48555	first sample of shift is pretty contam. - 20% pebbles taken out of hand sample - mainly chl bio gradior, 15 hem frag, 5 lim.					Str				wk.									
92.96	94.49	48556	60% frag mod chl - fsp-bio, 15% lim. frag 10% hem frag - traces native copper (2 frags), trace spec hem (2 frags). - looks fairly clean - no pebbles.					M to Str				wk	wk						TR		
94.49	96.01	48557	relatively unmin. mod chl bio gnodiorite, lt green in color, 2% lim/hem frag, bio → chl wkly (80% blk bio, ~50% of fsp wkly chl ; lt grn — Sample clean					M to Str				V wk to tr	V wk to tr								
96.01	97.54	48558	- 10% frag w/ v.v wk hem stain - similar to above w/ stronger chl. alteration of bio w/ 20% of bio chloritized. - no sulphides or other copper minerals.					Str				V wk	-								
97.54	99.06	48559	- 25% of frag w/ mod-wk hem-stain - rusty maroon colorations, 75% of frag bio-fsp - mod-str chl. - traces hem (Specularite) odd calc. frag (unit).					Str		V wk		M. & wk.									
99.06	100.58	48560	5% of frag w/ v. wk partial hem stain 95% frag. unmin. & mod-str chl. -					Str				Str Spec. tr									
			End of hole 100.58.																		
			Finish 9:00 AM Dec 6/92.																		

DIAMOND DRILL LEDGER DDH No. 92RCD-05

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph %Cu	Total Cu %	DESCRIPTION
									0.- 18.29 OVERBURDEN
48507	18.29	19.81	1.52	5.0'			.018	.023	18.29 – GRANODIORITE
48508	19.81	21.34	"	"			.013	.015	18.29-39.62 mod-wk hem staining
48509	21.34	22.86	"	"			.070	.076	w/some spec. hem. (33.5 – 36.6).
48510	22.86	24.38	"	"			1.256	1.32	- mod clay. alteration, and w/ traces
48511	24.38	25.91	"	"			.086	.093	to wk. malachite staining
48512	25.91	27.43	"	"			.204	.219	22.86-24.38 3'/frag w/ mal., odd frag
48513	27.43	28.96	"	"			.126	.138	w/ blk oxide w/ mal.
48514	28.96	30.48	"	"			.117	.126	
48515	30.48	32.0	"	"			.146	.157	
48516	32.0	33.53	"	"			.211	.224	
48517	33.53	35.05	"	"			.139	.156	
48518	35.05	36.58	"	"			.161	.18	
48519	36.58	38.10	"	"			.132	.148	
48520	38.10	39.62	"	"			.157	.18	39.62 – 56.39 mod-str hem. Stained.
48521	39.62	41.15	"	"			.123	.136	mod-str chloritically altered, wk-mod.
48522	41.15	42.67	"	"			.284	.323	clay altered w/ wk-trace malachite
48523	42.67	44.20	"	"			.173	.195	staining, wk spec. hematite, & some frag
48524	44.20	45.72	"	"			.119	.132	w/ blk oxide? or chalcocite?
48525	45.72	47.24	"	"			.096	.108	
48526	47.24	48.77	"	"			.092	.100	

DIAMOND DRILL LEDGER DDH No. 92 RCD-05

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph % Cu	Total Cu %	DESCRIPTION
48527	48.77	50.29	1.52	5.0			.151	.165	GRANODIORITE CONT'D.
48528	50.29	51.82	"	"			.207	.233	
48529	51.82	53.34	"	"			.182	.201	
48530	53.34	54.86	"	"			.173	.191	
48531	54.86	56.39	"	"			.283	.319	
48532	56.39	57.91	"	"			.142	.169	56.39-68.58 Zone w/ traces - wk native
48533	57.91	59.44	"	"			.034	.046	copper, mod-wk hematite alteration
48534	59.44	60.96	"	"			.031	.041	wk-strong chlorite altern and wk.
48535	60.96	62.48	"	"			.027	.045	epidote, wk chalcopyrite from
48536	62.48	64.0	"	"			.027	.043	65.5-68.6.
48537	64.0	65.53	"	"			.038	.055	
48538	65.53	67.06	"	"			.066	.187	
48539	67.06	68.58	"	"			.095	.815	68.58-86.9 - weakly hematitically
48540	68.58	70.10	"	"			.026	.109	altered and weakly chloritized
48541	70.10	71.63	"	"			.041	.122	no visible copper minerals.
48542	71.63	73.15	"	"		424			
48543	73.15	74.68	"	"		605			
48544	74.68	76.20	"	"		343			
48545	76.20	77.72	"	"		415			
48546	77.72	79.25	"	"		241			

DIAMOND DRILL LEDGER DDH No. 92RCD-05

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non sulp %Cu	Total Cu %	DESCRIPTION
48547	79.25	80.77	1.52	5.0'		342			GRANODIORITE CONT'D
48548	80.77	82.30	"	"		166			
48549	82.30	83.82	"	"		289			
48550	83.82	85.34	"	"		149			
48551	85.34	86.87	"	"		701			
48552	86.87	88.39	"	"		332			86.87 - 91.44 mod-str hem. altern,
48553	88.39	89.92	"	"		171			mod-str chl.
48554	89.92	91.44	"	"		199			
48555	91.44	92.96	"	"		354			91.44 - 100.58 wk hem. altern, str
48556	92.96	94.49	"	"		563			chl. altern, traces of native
48557	94.49	96.01	"	"		371			Cu at. 92.96 - 94.49
48558	96.01	97.54	"	"		148			
48559	97.54	99.06	"	"		201			
48560	99.06	100.58	"	"		147			

PROPERTY DOT D.D.H. 92 RCD-06 Page 1 of

AREA

CLAIM

GRID CO-ORDS | Line | Station

SURVEY CO-ORDS | Northing 23+69.5N | Easting 21+92E

ELEVATION

SECTION

AZIMUTH (T) 230°

INCLINATION -50°

DEPTH | Hole 115.82m | Casing — | Overburden 42.67m.

~~CORE~~ Hole SIZE 4.5"

CORE RECOVERY ———

DATE | Started Dec 6, 1992 | Completed Dec 7, 1992

CONTRACTOR Dateline Drilling.

LOGGED BY George Norman

LOGGED BY

SCALE

~~CORE~~ Rejects STORED AT the property

COMMENTS

SURVEY DATA							
DEPTH	INCL.	AZ (T)	TYPE	DEPTH	INCL.	AZ. (T)	TYPE

GEOLOGY					SIGNIFICANT ASSAY AVERAGES			
FROM	TO	UNIT	INT.	T.W.	Pb %	Zn %	Ag oz/t	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-06 LITHOLOGIC LOG

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF			PY	CP	AS	PO	VG	MG		
0	1.52		OVERBURDEN Glaciofluvial Gravel – 30% c grd brn sand w/ 50% pebbles, cobbles, boulders (to .75m).																		
1.52	3.05		minor clay content. → higher % of pebbles/cobbles w/ ~30% sand matrix, mainly gndiorite matrial relatively fresh.																		
3.05	4.57		– as per last sample.																		
4.57	6.10		– Pebble Glacio Fluvial Gravel – w/ ~ 50 pebbles to 2-3cm; 50 c-g brn sand.																		
6.10	7.62		– similar to above w/ ~20% clay coming in at expense of c-g sand.																		
7.62	9.14		– c-g brn sand ~40%, 10% clay, 50% pebbles of which 60% are ~ 5-6mm.																		
9.14	10.67		– 50% c-g brn sand: 50% pebbles –																		
10.67	12.19		– ~~40%~~ c-med grd brn sand 35% ~~brn~~ clay – 35% pebbles up to 2.5cm. wet ↓																		
12.19	13.72		– 30% clk – chl vole. frag – from cflgs – 30% clay. 30% c-g sand. ~~40~~ pebbles/cobbles																		
13.72	15.24		– 30% pebbles – 40% c-g sand (mainly g'd frag). – 30% g'dior frag from bldrs?																		

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-06 LITHOLOGIC LOG

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION										MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF			PY	CP	AS	PO	VG	MG		
			OVERBURDEN:																		
15.24	16.76		Glaciofluvial Gravel contd - 40%-60% c-g sand 50% pebbles cobbles of gradio ! volc.																		
16.76	18.29		- gravel as per last sample - mainly gradio. material.																		
18.29	19.81		- Similar to above w/ .4 m bldrs of gdiorite.																		
19.81	21.34		- 30% pebbles, 40% c-g sand, 30% cobbles ! bldrs - material is mainly fresh bio granodiorite. - unmineralized.																		
21.34	22.86		- 30% volc. pebbles ! cobbles, 20% gradio. of the 50% pebbles ! cobbles ! ~ 50 c-g sand!																		
22.86	24.38		- gravel as above																		
24.38	25.91		- gravel as above																		
			PEBBLE CLAY TILL.																		
25.91	27.43		- 30% - 40% brn clay coming in 70% sand, pebbles ! cobbles.																		
27.43	28.96		- 50% med brn clay ~ 50% pebbles, some cobbles mainly gd. w/ some dk & f-g volc frag.																		
28.96	30.48		- increase in pebbles & 60%, mainly dk blk volc. - 40 silt-clay.																		

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RC0-06 | LITHOLOGIC LOG |

FROM	TO	ASSAY NO.	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	VG	MG	mx	
30.48	32.0		OVERBURDEN CONT'D. — COBBLE PEBBLE TILL.																	
			— high % of rock frag - Aant frag up to 3cm.																	
			— ~20% silt cobble / pebbles variety / textures																	
32.0	33.53		— as per last sample.																	
33.53	35.05		— as per prev. sample																	
35.05	36.58		— as per prev. sample																	
36.58	38.10		— as above																	
38.10	39.62		— as above																	
			as above																	
39.62	41.15		similar to above w/ ~10% hem ltsp grn's possibly close to bedrock.																	
41.15	42.67																			
42.67	44.20	40561	GRANODIORITE — 30% pebbles contam?, 70% - reddish hem altered gdior.									5tr								
			— 2% ep altered frag.																	
44.20	45.72	40562	— reddish - salmon colored gndior. w/ most frags w/ salmon colored hem stain, of those ~80% w/ all alteration ~1-2% ep altered frag.					M				St							tr	
			— traces of mal - 2 frag., trace of spec hem.									tr sp?c.								

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-06 LITHOLOGIC LOG PAGE 4 of 8

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	hem	MnO2	MINERALIZATION PY	CP	AS	PO	VG	MG	Mal	ZONE
			GRANODIORITE.																		
45.72	47.24	48563	~ 60% of frag w/ hem stain - salmon color, of which ~30% have blk stn ~30% of frag are ep altered, 1-2% of frag w - mod-str mal stain clean sample.					M	M			Str								M to S	
47.24	48.77	48564	~ 20% frag w/ ep alteln, ~ 55% of frag (fsp) salmon colored - hem stain, 25% of frag blk/sh - manganese, 7 frag w/ Mal stained - prev. samples (all altered are possible Mn stained)					wk	M to wk			Str	M							wk to M	
48.77	50.29	48565	~ 95% fsp w/ mod - wk pink - salmon colored hem stain many frag w/ bio altered to chl-ep. ~ 1-2% frags w/ prev. ep, NO visible copper minerals. add 3 samples.					M to wk	M			M to St								—	
50.29	51.82	48566	~ 15% blk - 1-2 aphan frag - possible Mn stained, 85% fsp w/ specks of bio, fsp pink hem stained bio altered to chl / ep - NO copper minerals.					wk	wk			M								—	
51.82	53.34	48567	~ 1-2% frags w/ ep, bio is more retrained, less altered (blk) wk chl ~ 15%, all frag fsp / bio w/ wk salmon colored hem st., odd rose colored qtz frag - Vein	wk				wk	wk			M								—	
53.34	54.86	48568	~ bio is predom blk only wk chl altered (15%) - most frags 99% have mod - wk salmon colored hem stain ~3% of frag w/ ep. - possibly some frag w/ MnO2, tr mal w/ ep / MnO.					wk	wk			H	wk							tr	
54.86	56.39	48569	~ v. sim. to prev. sample w/ ~ 3% fspr - bio frag w/ no hem stain, 97% frags w/ wk salmon colored hem stain ~ 5% blk/sh frag - MnO2 stained ?. bio are pred. blk.					tr	tr			M to wk	wk								
56.39	57.91	48570	~ as per last sample.					tr	+			M to wk	wk								
57.91	59.44	48571	~ similar to prev. samples w/ ~60% frag w/ salmon colored hem stain ~20% wk v. wk stain - pink ~ ~20% w/ no stain 1-2% frag w/ ep, odd blk frag MnO2 ?,					—	wk			M to wk	tr								
59.44	60.96	48572	~ wk salmon colored sample w/ blk speckles, ~ 15-20 blk bio w/ 80% fsp, 80% frag w/ salmon colored hem stain, ~ 20% frag w/ none or partial stain 1% of frag w/ ep. (4 frag blk aphan - contain pebbles)						wk			M.									

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-06 — LITHOLOGIC LOG — PAGE 5 of 8

FROM	TO	ASSAY NO.	LITHOLOGY (GRANODIORITE)	ALTERATION: SI	QY	SE	CY	CH	EP	CB	KF	hem	lim	MINERALIZATION: PY	CP	AS	PO	VG	Pot/Hg	Mal	ZONE
60.96	62.48	48573	~45% of frag w/ ep altern of bio & fsp, 60% of frag w/ salmon colored hem stain, 1% of frag w/ str lim.						M to St			M	V wk						—	—	
62.48	64.0	48574	mod green-orange colored rock w/ 60% of frag w/ ep & chl-altering bio & fsp, 40% of rock w/ salmon colored hem stains, a few blk frag appears contam (some appear like rock),					M	M & Str			M to wk	V. wk						—		
64.0	65.53	48575	75% of frag w/ mod hem-salmon colored, 30% of frag w/ ep-chl altered bio/fsp, 5% of frag w/ wk partial lim. — a few blk frag-hnbl (contam?).					M	M to St			M	V wk								
65.53	67.06	48576	dramatic decrease in ep/chl altern, 20% bio most all is blk from speck-1mm size, all frag have partial wk-mod salmon colored hem stain, only tr-v.wk ep-some contain w/ 7 pebble frags.						tr to V wk			M to wk								—	—	
67.06	68.58	48577	v.sim. to prev. sample w/ 15-20% fresh blk bio, 50% frag w/ wk hem stain-½ are only partially stained, odd pebble frag (2.), 1-2% frag w/ wk partial lim						—	—		wk	V wk								
68.58	70.10	48578	~1% str clay altered fsp frag, 90% salmon colored hem stained frag, 10% ep altered frag-fr's! prev. bio most blk w/ v wk ep altern.						wk			M	V wk								
70.10	71.63	48579	20% blk bio, 70% pink v.wk hem stained frag 1-2% ep altered frag.						V wk			M to wk	-tr								
71.63	73.15	48580	v. similar to above, 50% frag w/ wk salmon colored hem stain, 3-5% ep altered frag, 15-20% blk bio, never tr of mal.						wk			wk to M									Tr
73.15	74.68	48581	as per last sample., no visible copper minerals v.wk lim clay on some frag.				V wk		wk			wk to M	V wk								
74.68	76.20	48582	all frag w/ partial or complete salmon hem. stain, ~40% frag w/ ep altern prev. / altern of bio.						M to Str			M to Str.									

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-06 — LITHOLOGIC LOG —

FROM	TO	ASSAY NO	LITHOLOGY	ALTERATION									MINERALIZATION							ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	hem	PY	CP	AS	PO	DK Sph	native copper	native copper Mal	
76.20	77.72	48583	55% frag w/ brighter salmon colored hem stain, 45% frag w/ ep alter, ~5% blk-dk frag (MnO stain?). 2 frags w/ mal stain.						Str			M.							U wk	
77.72	79.25	48584	~35% clr. - ep alter frag, text gone, 45% bright hem-red clay clasts, 30% salmon-red hem altered frag - 2 mal. stained frag., 1% blk frag (oxide?)	wet & over ag brn			S	wk to M.	M to Str			V Str					wk		U wk	
79.25	80.77	48585	~1-2% lim-clay clasts, 30% frags w/ clr - ep - 60% frag w/ reddish-salmon colored hem stain, no visible copper minerals., 1% blk frag (oxide?).				wk	wk	M to Str			Str							—	
80.77	82.30	48586	~80% salmon colored hem stain frag, most frags w/ bio altered wkly to chl.					wk				Str								
82.30	83.82	48587	50% dk-clr. frag - altered bio, 40% salmon colored frag, 1% bright red hem frag, 2% lim clay clasts, several frags w/ mal. (some w/ lim.) - text. gone.					M.				Str							wk	
83.82	85.34	48588	~30% blk frag (oxide) of w/ 50% have native copper 1-2% frag w/ mal. 40% frag w/ salmon colored hem stain ~30% frag w/ chl.					M.				Str to M				Str	Str		M	
85.34	86.87	48589	~< 1/2% blk frag (oxide) of which ~25% w/ native copper - several frag w/ mal, 40% frag w/ salmon colored hem stain, 50-60% of frag w/ chl. bio.					M to Str				M to Str					wk		wk	
86.87	88.39	48590	~1% of frag mal on w/ mal, 50% of frag w/ chl. bio, 49% frag w/ salmon colored hem.					M to Str				M					—		wk to M	
88.39	89.92	48591	~3-5% frag w/ mal. (mal on some frag w/ blk oxide) ~30% of frag w/ blk. oxide, 60% frag w/ bright salmon hem stain, speck of native copper									Str				Str	tr		M to Str	
89.92	91.44	48592	~95% frag w/ salmon colored hem. stain, several frags w/ Mal, 15% frag of ep, bio wk chl-ep. textures coming back bio xtls visible.					wk	M to Str			Str							wk	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92RCD-06 LITHOLOGIC LOG PAGE 7 of 8

FROM	TO	ASSAY NO.	LITHOLOGY GRANODIORITE	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	hem	MINERALIZATION ~~bor~~ PY	CP	AS	PO	VG	MG	mal	ZONE
91.44	92.96	48593	30% ep altered frag, 70% salmon colored hem stained frag w/ cbl bio, 1 frag w/ bornite.									str	tr						—	
92.96	94.49	48594	20% ep altered frag, 80% frag w/ salmon colored hem stain, w/ bio → cbl. ~ 3 frag w/ mal.					H to str	str			str							wk to tr	
94.49	96.01	48595	45% frag w/ ep, 95% frag w/ salm colored hem, most w/ wk cbl - ep altered bio, some blk bio, 3 frags w/ mal. 2% clay clasts				wk	H	wk			str							wk to tr	
96.01	97.54	48596	dk grn to salmon colored vf 100% frag w/ salmon colored hem stain (complete or partial) ; w/ cbl bio frags spec hem.					str				str spec							—	
97.54	99.06	48597	contaminated sample 15 pebble frag. 95% of rocks salmon colored hem stain w/ cbl bio (lost some on pump)					H to str				H str							-	
99.06	100.58	48598	10% wht clay clasts 1-3% ep alter frag, 85% salmon colored frag w/ cbl bio, 1 odd pebble.				wk	H	wk			str							-	
100.58	102.11	48599	wkly contam. 4 pebble frag, 25% frag ssp-bio (-cbl wkly, 75%/frag w/ salmon hem stain, 1 frag w/ mal					H				H							tr	
102.11	103.63	48600	3 small pebble frag, 90% frag salmon colored hem w/ bio (some blk most wkly chloritic) all ep altered frag, 1 odd calc frag.					wk to H	tr			M								
103.63	105.16	48601	15% blk frag (oxide?) 85% salmon colored frag w/ bio altered wkly to sericity; cbl.			wk		wk				M.								
105.16	106.68	48602	odd pebble - 95% frag salmon colored w/ wk cbl bio - musc ser, 1 frag w/ mal.			V wk		H to wk				H to str							tr	

ZAPPA RESOURCES LTD.

DOT PROPERTY

DRILL HOLE No. 92 RCD-06 LITHOLOGIC LOG

FROM	TO	ASSAY NO	LITHOLOGY GRANODIORITE CONT'D	ALTERATION SI	QV	SE	CY	CH	EP	CB	KF	Hem	MINERALIZATION PY	CP	AS	PO	VG	blk ox. HG		ZONE
106.68	108.20	48603	3% lt grey clay altered frag, 90% salmon colored hem altered frags, 5% frag fsp! blk bio, bio overall is wkly chl to/some blk.				wk	wk				M.								
108.20	109.73	48604	100% of frags of salmon colored hem, bio, mod-str altered feld not clear - altn chl., some calc frag - vnlts.					M to Str		wk		Str								
109.73	111.25	48605.	95% wk-mod hem stained frag., bio - starting to become blk w/ only wk chl., odd calc. frag.					wk		✓wk		M.								
111.25	112.78	48606	v. similar to above sample 100% of frag w/ hem stain. bio - relat blk w/ v. wk chl.					wk				M & Str								
112.78	114.3	48607	95% frag v. w/light salmon colored hem stained frag (fsp) w/ few blk - lt green wkly chl. fsp)					wk				M								
114.3	115.82	48608	v. similar to above w/ 100% frag wk-mod lt pink hem stain w/ black bio ~ 15%, some blk oxide? on frag fis					✓wk				M				•	wk			
			End of hole 115.82.																	

DIAMOND DRILL LEDGER DDH No. 92RCD-06.

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non Sulph Cu %	Total Cu %	DESCRIPTION
									0 – 42.67 OVERBURDEN
48561	42.67	44.20	1.52	5.0			.019	.022	42.67 GRANODIORITE
48562	44.20	45.72	"	"			.079	.084	42.67 – 51.82. reddish-Salmon colored.
48563	45.72	47.24	"	"			.28	.289	↑ Str. hem. stained granodiorite w/ traces
48564	47.24	48.77	"	"			.151	.158	.22(.22) / 3.05 ↓ to mod malachite staining.
48565	48.77	50.29	"	"			.069	.073	
48566	50.29	51.82	"	"			.045	.048	
48567	51.82	53.34	"	"			.030	.032	51.82 – 77.72 – mod. hem. stained gdiorite
48568	53.34	54.86	"	"			.034	.036	subly chloritized w/ wk to strong
48569	54.86	56.39	"	"			.037	.041	epidote altern – trace of malachite
48570	56.39	57.91	"	"			.028	.029	at. 53.34 – 54.86.
48571	57.91	59.44	"	"		260			
48572	59.44	60.96	"	"		370			
48573	60.96	62.48	"	"		311			
48574	62.48	64.0	"	"		181			
48575	64.0	65.53	"	"		281			
48576	65.53	67.06	"	"		139			
48577	67.06	68.58	"	"		142			
48578	68.58	70.10	"	"		168			
48579	70.10	71.63	"	"		150			

DIAMOND DRILL LEDGER DDH No. 92RCD-06

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm	Non. Sulph Cu%	Total Cu %	DESCRIPTION
48580	71.63	73.15	1.52	5.0'			.021	.021	GRANODIORITE Cont'd.
48581	73.15	74.68	"	"			.019	.019	
48582	74.68	76.20	"	"			.020	.020	
48583	76.20	77.72	"	"			.050	.055	
48584	77.72	79.25	"	"			.086	.092	77.72-79.25 Fault - 45% clay clasts w/str.
48585	79.25	80.77	"	"			.043	.048	lem. - w/ 2% of frag w/ malachite and.
48586	80.77	82.30	"	"			.044	.050	1% of frag w/ blk oxide or chalcocite.
48587	82.30	83.82	"	"			.14	.160	79.25-82.30 strongly hematitic ; wkly
48588	83.82	85.34	"	"			.663	.867	chloritized ~1% blk frag (oxide-chalcocite)
48589	85.34	86.87	"	"			.177	.194	82.30-89.92 Zone of native copper,
48590	86.87	88.39	"	"			.264	.285	malachite, blk fragments (oxide-chalcocite
48591	88.39	89.92	"	"			.358	.403	with mod-strong chlorite, wk-strong.
48592	89.92	91.44	"	"			.187	.259	hematite
48593	91.44	92.96	"	"			.088	.127	89.92.- 96.01 - strong lem. stain,
48594	92.96	94.49	"	"			.097	.157	mod-strongly chloritized w/ wk-traces
48595	94.49	96.01	"	"			.106	.143	.26 (.20) 16.76 of malachite stain. traces of bornite
48596	96.01	97.54	"	"			.095	.183	at 91.44-92.96
48597	97.54	99.06	"	"			.056	.117	96.01- 112.78. mod- str lem. stain, wk-mod.
48598	99.06	100.58	"	"			.027	.061	chlorite altern, traces of mal to
48599	100.58	102.11	"	"			.032	.047	106.68.

DIAMOND DRILL LEDGER

DDH No. 92RCD-06

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Total Cu ppm.	Non Sulph Cu %	Total Cu %	DESCRIPTION
48600	102.11	103.63	1.52	5.0			.013	.022	GRANODIORITE
48601	103.63	105.16	"	"			.039	.063	
48602	105.16	106.68	"	"			.046	.089	
48603	106.68	108.20	"	"		586			
48604	108.20	109.73	"	"		616			
48605	109.73	111.25	"	"		638			
48606	111.25	112.78	"	"		419			112.78 - 115.82 wk chloritic altern
48607	112.78	114.30	"	"		407			moderately hematitically altered,
48608	114.3	115.82	"	"		625			some blk oxide?

APPENDIX IV

1992 Min En Analytical Results

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1304-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-08-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 22 RC CORE samples submitted DEC-03-92 by G.NORMAN.

Sample Number	NON-SUL CU%	TOTAL CU%
48262	.014	.029
48263	.016	.032
48264	.008	.020
48265	.029	.088
48266	.079	.297
48267	.102	.254
48268	.082	.150
48269	.052	.110
48270	.030	.047
48271	.072	.155
48272	.067	.167
48273	.064	.145
48274	.046	.116
48275	.045	.089
48276	.087	.255
48277	.031	.059
48278	.060	.178
48279	.100	.246
48280	.055	.116
48281	.015	.020
48282	.011	.021
48283	.036	.056

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1304-RG1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-08-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 24 RC CORE samples submitted DEC-03-92 by G.NORMAN.

Sample Number	TOTAL-CU PPM
48251	128
48252	162
48253	221
48254	200
48255	175
48256	268
48257	296
48258	192
48259	97
48260	131
48261	2080
48284	808
48285	322
48286	549
48287	247
48288	236
48289	347
48290	393
48291	300
48292	4040
48293	669
48294	219
48295	3260
48296	293

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1304-RG2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-08-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 24 RC CORE samples submitted DEC-03-92 by G.NORMAN.

Sample Number	TOTAL-CU PPM
48297	197
48298	120
48299	97
48300	80
48301	117
48302	75
48303	171
48304	30
48305	45
48306	58
48307	12
48308	123
48309	66
48310	10
48311	85
48312	138
48313	53
48314	92
48315	59
48316	74
48317	46
48318	58
48319	43
48320	25

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1304-RG3

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-08-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 6 RC CORE samples submitted DEC-03-92 by G.NORMAN.

Sample Number	TOTAL-CU PPM
48321	13
48322	12
48323	8
48324	451
48325	75
48326	43

Certified by _____

MIN-EN LABORATORIES

MINERAL
• ENVIRONMENTS
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1306-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-10-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-04-92 by G.NORMAN.

Sample Number	NON-SUL CU %	NON-SUL CU %	TOTAL CU %	TOTAL CU %
48327	.039		.045	
48328	.131		.144	
48329	1.660		1.750	
48330	.386		.424	
48331	.133		.219	
48332	.068		.254	
48333	.051	.048	.153	.157
48340	.008		.019	
48341	.057		.143	
48342	.083		.173	
48343	.096		.194	
48344	.105		.802	
48345	.106		.377	
48346	.120		.563	
48347	.133		.453	
48348	.116		.276	
48349	.061	.058	.111	.108
48350	.068		.137	
48351	.097		1.096	
48352	.046		.109	
48353	.068		.203	
48354	.099		.966	
48355	.101		2.500	
48356	.177	.172	1.242	1.251

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1306-RA2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-10-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 8 RC CORE samples submitted DEC-04-92 by G.NORMAN.

Sample Number	NON-SUL CU %	NON-SUL CU %	TOTAL CU %	TOTAL CU %
48357	.069		.155	
48358	.054		.118	
48359	.055		.159	
48360	.032	.030	.063	.060
48361	.031		.065	
48362	.060		.184	
48363	.049		.180	
48364	.031		.092	

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1306-RG1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-10-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 24 RC CORE samples submitted DEC-04-92 by G.NORMAN.

Sample Number	TOTAL-CU PPM
48334	1080
48335	503
48336	594
48337	223
48338	601
48339	631
48365	1430
48366	1960
48367	1690
48368	1000
48369	1120
48370	3950
48371	2290
48372	4530
48373	3430
48374	948
48375	1050
48376	308
48377	1000
48378	571
48379	353
48380	393
48381	370
48382	93

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1306-RG2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-10-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 4 RC CORE samples submitted DEC-04-92 by G.NORMAN.

Sample Number	TOTAL-CU PPM
48383	287
48384	253
48385	589
48386	133

Certified by _____

MIN-EN LABORATORIES

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1306-PA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 15 RC CORE samples submitted DEC-04-92 by G.NORMAN.

Sample Number	CU TOTAL %	NON-SUL CU %
48334	.095	.042
48365	.142	.060
48366	.197	.095
48367	.143	.066
48368	.102	.052
48369	.115	.055
48370	.378	.125
48371	.236	.102
48372	.438	.074
48373	.347	.088
48374	.101	.038
48375	.107	.043
48376	.032	.012
48377	.085	.031

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1307-PA3

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-16-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 3 PULP samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	* CU %	** CU %
48410	.905	.908
48412	.266	.263
48421	.112	.115

* 10 GRAM SAMPLE, 100 ML OF 3% H2SO4 LEACHING FOR 3 HOURS.
**10 GRAM SAMPLE, 100 ML OF 10% H2SO4 LEACHING FOR 3 HOURS.

Certified by _____

MIN-EN LABORATORIES

DEC 29 1992

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1307-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-04-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	NON-SUL CU %	TOTAL CU %	TOTAL CU %
48401	.226		.240	
48402	.210		.239	
48403	.202		.248	
48404	.208		.255	
48405	.295		.385	
48406	.734	.718	1.680	1.690
48407	.397		.772	
48408	.557		2.400	
48409	.779		6.140	
48410	1.123		10.780	
48411	.399		2.610	
48412	.395		1.326	
48413	.266		.653	
48414	.153		1.105	
48415	.113	.107	.420	.417
48416	.098		.452	
48417	.135		.502	
48418	.097		1.400	
48419	.114		.725	
48420	.111		.656	
48421	.145		1.730	
48422	.143	.142	1.238	1.227
48423	.154		.868	
48424	.115		.923	

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1307-RG1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-10-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 24 RC CORE samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	TOTAL-CU PPM
48387	520
48388	171
48389	141
48390	98
48391	162
48392	191
48393	261
48394	208
48395	232
48396	248
48397	239
48398	715
48399	1330
48400	2040
48435	2410
48436	1190
48437	2560
48438	1570
48439	1320
48440	1340
48441	769
48442	783
48443	1480
48444	1260

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1307-RG2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-10-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 4 RC CORE samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	TOTAL-CU PPM
48445	1530
48446	564
48447	1010
48448	982

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1307-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	NON-SUL CU %	TOTAL CU %	TOTAL CU %	NATIVE CU %
48401	.226		.240		
48402	.210		.239		
48403	.202		.248		
48404	.208		.255		
48405	.295		.385		
48406	.734	.718	1.680	1.690	.392
48407	.397		.772		.127
48408	.557		2.400		.209
48409	.779		6.140		.345
48410	1.123		10.780		.628
48411	.399		2.610		.585
48412	.395		1.326		.366
48413	.266		.653		.160
48414	.153		1.105		.028
48415	.113	.107	.420	.417	.009
48416	.098		.452		.008
48417	.135		.502		.012
48418	.097		1.400		.007
48419	.114		.725		.012
48420	.111		.656		.007
48421	.145		1.730		.008
48422	.143	.142	1.238	1.227	.012
48423	.154		.868		.024
48424	.115		.923		.014

Certified by _____

MIN-EN LABORATORIES

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1307-RA2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 10 RC CORE samples submitted DEC-04-92, by GEORGE NORMAN.

Sample Number	NON-SUL CU %	NON-SUL CU %	TOTAL CU %	TOTAL CU %	NATIVE CU %
48425	.107		.938		.012
48426	.131	.140	1.520	1.510	.078
48427	.163		.593		
48428	.085		.436		
48429	.142		.441		
48430	.094		.328		
48431	.156		.315		
48432	.078		.341		
48433	.100		.236		
48434	.057		.185		

Certified by _____

MIN-EN LABORATORIES

MIN
•EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1307-PA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 12 RC CORE samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	CU TOTAL %	NON-SUL CU %
48399	.141	.130
48400	.196	.175
48435	.251	.121
48436	.135	.058
48437	.269	.116
48438	.166	.068
48439	.150	.082
48440	.153	.083
48441	.088	.044
48442	.083	.034
48443	.164	.081
48444	.129	.048

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1307-PA2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 4 RC CORE samples submitted DEC-04-92 by GEORGE NORMAN.

Sample Number	CU TOTAL %	NON-SUL CU %
48445	.160	.091
48446	.061	.031
48447	.121	.061
48448	.106	.045

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1327-RG1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-18-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 21 RC CORE samples submitted DEC-14-92 by GEORGE NORMAN.

Sample Number	TOTAL-CU PPM
48449	270
48450	362
48451	479
48452	568
48453	367
48454	406
48455	239
48456	234
48457	125
48458	229
48459	139
48460	285
48461	301
48462	568
48463	592
48501	4850
48502	1220
48503	2200
48504	1560
48505	1490
48506	884

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1327-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-18-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-14-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	TOTAL CU %
48464	.223	.228
48465	.582	.710
48466	.582	1.321
48467	.363	1.200
48468	.749	1.375
48469	.740	1.210
48470	.407	.513
48471	.167	.212
48472	.146	.175
48473	.206	.260
48474	.170	.206
48475	.096	.133
48476	.085	.147
48477	.101	.178
48478	.104	.240
48479	.086	.175
48480	.050	.097
48481	.080	.136
48482	.063	.102
48483	.069	.120
48484	.034	.052
48485	.163	.322
48486	.137	.387
48487	.096	.191

Certified by _____

MIN-EN LABORATORIES

DEC 29 1992

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1327-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-18-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-14-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	TOTAL CU %
48464	.223	.228
48465	.582	.710
48466	.582	1.321
48467	.363	1.200
48468	.749	1.375
48469	.740	1.210
48470	.407	.513
48471	.167	.212
48472	.146	.175
48473	.206	.260
48474	.170	.206
48475	.096	.133
48476	.085	.147
48477	.101	.178
48478	.104	.240
48479	.086	.175
48480	.050	.097
48481	.080	.136
48482	.063	.102
48483	.069	.120
48484	.034	.052
48485	.163	.322
48486	.137	.387
48487	.096	.191

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1327-RA2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-18-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 13 RC CORE samples submitted DEC-14-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	TOTAL CU %
48488	.122	.242
48489	.118	.501
48490	.162	.563
48491	.137	.391
48492	.077	.160
48493	.076	.134
48494	.052	.102
48495	.119	.482
48496	.105	.764
48497	.134	.448
48498	.077	.204
48499	.112	.224
48500	.104	.618

Certified by _____

MIN-EN LABORATORIES

DEC 29 1992

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1327-RA3

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-21-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 6 RC CORE samples submitted DEC-18-92 by GEORGE NORMAN.

Sample Number	CU TOTAL %	CU TOTAL %	NON-SUL CU %	NON-SUL CU %
48501	.505		.146	
48502	.130		.052	
48503	.216	.221	.117	.112
48504	.163		.065	
48505	.170		.078	
48506	.097		.046	

Certified by _____

MIN-EN LABORATORIES

DEC 2 9 1992

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1318-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-10-92 by GEORGE NORMAN.

Sample Number	N-SULP CU%	TOTAL CU%
48507	.018	.023
48508	.013	.015
48509	.070	.076
48510	1.256	1.320
48511	.086	.093
48512	.204	.219
48513	.126	.138
48514	.117	.126
48515	.146	.157
48516	.211	.224
48517	.139	.156
48518	.161	.180
48519	.132	.148
48520	.157	.180
48521	.123	.136
48522	.284	.323
48523	.173	.195
48524	.119	.132
48525	.096	.108
48526	.092	.100
48527	.151	.165
48528	.207	.233
48529	.182	.201
48530	.173	.191

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1318-RA2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 11 RC CORE samples submitted DEC-10-92 by GEORGE NORMAN.

Sample Number	N-SULP CU%	TOTAL CU%
48531	.283	.319
48532	.142	.169
48533	.034	.046
48534	.031	.041
48535	.027	.045
48536	.027	.043
48537	.038	.055
48538	.066	.187
48539	.095	.815
48540	.026	.109
48541	.041	.122

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1318-RG1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-15-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 19 RC CORE samples submitted DEC-10-92 by GEORGE NORMAN.

Sample Number	TOTAL-CU PPM
48542	424
48543	605
48544	343
48545	415
48546	241
48547	342
48548	166
48549	289
48550	149
48551	701
48552	332
48553	171
48554	199
48555	354
48556	563
48557	371
48558	148
48559	201
48560	147

*Certified by*_____

MIN-EN LABORATORIES

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2V-1319-RG1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-17-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 15 RC CORE samples submitted DEC-10-92 by GEORGE NORMAN.

Sample Number	TOTAL-CU PPM
48571	260
48572	370
48573	311
48574	181
48575	281
48576	139
48577	142
48578	168
48579	150
48603	586
48604	616
48605	638
48606	419
48607	407
48608	625

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1319-RA1

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-17-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 24 RC CORE samples submitted DEC-10-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	TOTAL CU %
48561	.019	.022
48562	.079	.084
48563	.280	.289
48564	.151	.158
48565	.069	.073
48566	.045	.048
48567	.030	.032
48568	.034	.036
48569	.037	.041
48570	.028	.029
48580	.021	.021
48581	.019	.019
48582	.020	.020
48583	.050	.055
48584	.086	.092
48585	.043	.048
48586	.044	.050
48587	.140	.160
48588	.663	.867
48589	.177	.194
48590	.264	.285
48591	.358	.403
48592	.187	.259
48593	.088	.127

Certified by _____

MIN-EN LABORATORIES

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2V-1319-RA2

Company: **ZAPPA RESOURCES LTD.**
Project: DOT
Attn: WAYNE ROBERTS

Date: DEC-17-92
Copy 1. ZAPPA RESOURCES LTD., VANCOUVER, B.C.

We hereby certify the following Assay of 9 RC CORE samples submitted DEC-10-92 by GEORGE NORMAN.

Sample Number	NON-SUL CU %	TOTAL CU %
48594	.097	.157
48595	.106	.143
48596	.095	.183
48597	.056	.117
48598	.027	.061
48599	.032	.047
48600	.013	.022
48601	.039	.063
48602	.046	.089

Certified by _____

MIN-EN LABORATORIES

APPENDIX V

Min En Analytical Techniques

MINERAL
• ENVIRONMENTS
LABORATORIES

Division of Assayers Corp. Ltd.

AG, CU, PB, ZN, NI, AND CO ASSAY PROCEDURE

Samples are dried @ 95 C and when dry are crushed on a jaw crusher. The -1/4 inch output of the jaw crusher is put through a secondary roll crusher to reduce it to -1/8 inch. The whole sample is then riffled on a Jones Riffle down to a statistically representative 300-400 gram sub-sample (in accordance with Gy's statistical rules.) This sub-sample is then pulverized in a ring pulverizer to 95% minus 120 mesh, rolled and bagged for analysis. The remaining reject from the Jones Riffle is bagged and stored.

A 2.200 - 3.000 gram sub-sample is weighed from the pulp bag for analysis. Each batch of 70 assays has a natural standard and a reagent blank included. The assays are digested using a HNO3 - KCLO4 mixture and when reaction subsides, HCL is added to assay before it is placed on a hotplate to digest. After digestion is complete the assays are cooled, diluted to volume and mixed.

The assays are analyzed on atomic absorption spectrometers using the appropriate standard sets. The natural standard digested along with this set must be within 2 standard deviations of its known or the whole set is re-assayed. If any of the assays are >1% they are re-assayed at a lower weight.

OFFICE AND LABORATORIES:
705 WEST FIFTEENTH STREET, NORTH VANCOUVER, B.C.
CANADA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

MINERAL
• ENVIRONMENTS
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

PROCEDURE FOR 31 ELEMENT TRACE ICP

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu,
Fe, K, Li, Mg, Mn, Mo, Na, Ni P, Pb, Sb,
Sr, Th, Ti, V, Zn Ga, Sn, W, Cr and Geochemical Analysis

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer or ring mill pulverizer.

0.5 gram of the sample is digested for 2 hours with an aqua regia mixture.

After cooling samples are diluted to standard volume. The solutions are analysed by computer operated Jarrell Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers. Reports are formatted and printed using a laser printer.

For Geochemical Analysis samples are tested by Atomic Absorption (A.A.) techniques rather than the above I.C.P. method.

MINERAL
• ENVIRONMENTS
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 16TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

ASSESSMENT WORK FOR ZAPPA RESOURCES

NON-SUL CU %
- 3% sulphuric acid
- boil 30 minutes
- then AA finish

COPER OXIDE
- 20% ammonium acetate hot leaching
- AA finish

NATIVE COPER
- 25% ammonium sulphate
- cold leaching for 3 hours
- then 20% ammonium acetate hot leaching
- AA finish

The result of the solution - Copper Oxide = Native Copper.

SPECIAL CU LEACHING
- using 3% and 10% of H_2SO_4
- leach for 3 hours
- AA finish

APPENDIX VI

Preliminary Evolution of the Leachability of Ores from the Dot Property of Zappa Resources

A. BRUYNESTEYN AND ASSOCIATES
MINERAL LEACHING CONSULTANTS

PHONE (604) 987-3183
FAX (604) 987-5124

2175 GREYLYNN CRESCENT
NORTH VANCOUVER, B.C.
CANADA V7J 2X6

PRELIMINARY EVALUATION OF THE LEACHABILITY OF ORES FROM THE DOT PROPERTY OF ZAPPA RESOURCES.

Prepared for:

Zappa Resources Ltd.
1500-675 West Hastings Street
Vancouver, V6B 1N2

Prepared by:

A. Bruynesteyn & Associates
2175 Greylynn Crescent
North Vancouver, V7J 2X6

January 19, 1993

EXECUTIVE SUMMARY

1. The ore, when finely pulverized, is a relatively high acid consumer, but practical experiences shows that the ore, when dump/heap leached in -3" or -2" particle size, will probably consume only approximately 27 kg acid per tonne. Any sulphide in the ore can decrease this consumption at a rate of 30 kg/t for every 1% of sulphide present. With acid cost at $20/t delivered at mine site, it is estimated that acid cost will amount to $0.04-$0.06 per pound of copper produced.

2. During the acid leach, 1.87 kg of copper was extracted per tonne of ore (4.1 lb/t)

3. This ore body is unique in that the sulphide ores consist mainly of chalcocite, a copper mineral that leaches hundreds of times faster and better than chalcopyrite.

4. It is anticipated that a properly designed heap leach operation will yield 70% extraction at operational costs of less than 37 cents per pound of cathode copper produced.

5. It is anticipated that a 2,800 t/d mining operation will produce 10 t/d cathode copper

INTRODUCTION

Zappa Resources has engaged Westcoast Biotech to assess the chemical and biological leaching characteristics of a sample of ore from the DOT property. As a first stage in this assessment, the acid consuming characteristics of the ore were assessed. This report details the results of this assessment and disousses the potential viability of the proposed dump/heap leaching operation.

RESULTS

1. ACID CONSUMPTION

To determine the acid consumption of this ore under typical dump/heap leach conditions, 10 gram of finely pulverized sample was suspended in 100 ml of neutral pH water. This suspension was stirred continuously while 1N sulphuric acid was added automatically. The addition of acid was stopped when the solution pH reached a value of 3.0 and the amount of acid added was noted. Subsequently, the acid addition was continued to pH 2.5 and 2.0, and the amounts of acid consumed noted.

ACID CONSUMPTION AS A FUNCTION OF ACIDITY

Suspension pH	Acid consumed ml 1N H_2SO_4	Acid consumed kg/t
pH 3.0	11.25	67.3
pH 2.5	13.75	82.2
pH 2.0	16.20	96.9

2. EXPECTED COMMERCIAL ACID CONSUMPTION

It must be kept in mind that these tests were performed on finely pulverized material, providing optimum contact between ore and acid. In practise, acid consumption from -2" ore will be significantly less, probably only 27 kg/t when operating at pH 2.5. This amount will be further reduced by any acid produced biologically from the sulphides present. If the ore contains 0.5% copper as chalcocite, then this copper is associated with 0.13% sulphur. Any pyrite will add to this sulphur balance. When sulphur is oxidized, every 1% sulphur produces 30 kg of sulphuric acid per tonne. Therefore, the reported 0.5% sulphur content of the ore can produce up to 15 kg/t acid. Assuming that only 10 kg/t will be produced in practise, the acid consumption of the ore in a dump/heap leach will be 27-10 = 17 kg/t. Since acid can probably be supplied at mine site for $20-$30 per tonne, acid cost will be $0.34-$0.51 per tonne of ore treated.

The ore contains 0.5% copper, or 5 kg/t. Assuming that we can extract 75% of this, or 3.75 kg/t, the acid cost per kg of copper produced will be approximately 9.1-13.6 cents, equivalent to 4.1-6.2 cents per pound of copper.

ANTICIPATED METALLURGICAL PERFORMANCE

1. CHEMISTRY AND BIOLOGY

When chalcocite is leached, there are two typical extraction phases. In the first phase, the chalcocite is converted into copper sulphate and covelite.

$$Cu_2S + H_2SO_4 \text{ ----- } CuSO_4 + CuS$$

This reaction is mildly oxidative and involves the oxidation of the cuprous copper to cupric copper. Small amounts of ferric iron in the leach solution will readily accomplish this. The acid required for this reaction will be recovered in the solvent extraction plant.

The subsequent oxidation of the covelite into copper sulphate requires a much stronger oxidant and here is where the leaching bacteria play an important role. They readily oxidize the sulphide into sulphate, using oxygen from the air. Therefore, a properly designed heap leach operation, using DOT ores, should give 70-80% extraction in 34 months.

2. ANTICIPATED EXTRACTION

In the acid consumption test described, the acid added did extract 18.7 mg of copper from the 10.00 grams of ore tested. This is probably readily acid soluble copper, such as copper oxide, but it can also partly be from the chalcocite. Most B.C ores contain the primary mineral chalcopyrite, which leaches very slowly and, when treated in dumps, typically will give only 2-5% extraction per year. Chalcocite on the other hand leaches rapidly. At the Miami Globe mine of the Cyprus Copper Company, a chalcocite/chalcopyrite ore is heap leached at a rate of 75,000 t/d in 150,000 tonnes heaps over a 120 day period. During that period, 60% copper extraction is obtained from the chalcocite, while a further 8% is obtained subsequently. The unleached residual copper is present mainly as chalcopyrite and will not leach to any extent in this short time period. Since the DOT sulphide ore is mainly chalcocite, it is expected that 70-80% extraction should be possible over a 120 day period.

3. ANTICIPATED PLANT PERFORMANCE

It is anticipated that the DOT ore, containing 0.5% copper, will give at least 70% extraction in 4 months. This is equivalent to a production of 8,250,000 pounds of copper per million tonnes mined and treated.

A small mining operation of 1,400 t/d ore containing 0.5% copper, would produce 5 t/d cathode copper and a 2,800 t/d operation would produce 10 t/d. With 75% extraction, the size of the mining operation would be reduced to 2,615 t/d.

4. ANTICIPATED CAPITAL AND OPERATING COST

Based on the anticipated metallurgical performance of the DOT ore, the following capital and operating cost are estimated for a 10 t/d cathode copper plant with the following specifications:

Capacity 10 t/d cathode copper
Leach ore: 10,000,000 tonnes
Ore grade 0.6% copper as chalcocite & bornite
Extraction: 70% Acid requirement: $0.06/lb Copper
Extractable copper: 84,000,000 lb.
Yearly production: 7,000,000 lb.
Life of leach plant: 12 years

Operating days: 350/year
Power cost: $0.08/Kwh

Capital cost

SX-EW plant	$3,500,000
Buildings	400,000
Site preparation	300,000
Pumps & Piping	200,000
Laboratory & Offices	100,000
TOTAL	$4,500,000

Operating costs:

1. LABOUR

	No.
Labour 2/shift	8
Maintenance	2
Warehouse	1
Supervisor	1
Accounting/sales	1
Manager	1
TOTAL	14

Yearly cost @$40,000 each = $560,000		8.0
2. Water	$40,000 per year	0.6
3. Electricity	1.5 Kwh/lb copper	12.0
4. Sulphuric acid		6.0
5. Reagents	$160,000 per year	2.3
6. Freight	$160,000 per year	2.3
7. Laboratory	$100,000 per year	1.4
8. Office & O/H	$150,000 per year	2.1
9. Abandonment	$150,000 per year	2.1
Total operating cost		36.8 c/lb

If the $4.5 million capital is to be repaid over 3 years, at 20% interest, the project must repay 7.7 million. Production over the three years will be 21 million pounds, so that the capital cost

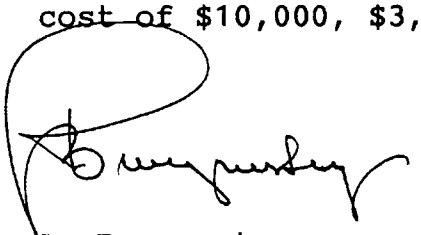
will be 36.6 c/lb. The total of operating and capital cost will be 36.8 + 36.6 = 73.4 c/lb. To this must be added the mining cost.

RECOMMENDATIONS

It is my opinion that the ore from the DOT property will be highly amenable to the dump/heap leach process. The only possible severe restriction may be associated with the ore's acid consumption. Practical experience has shown that such acid consumption from commercial sized material is often only a fraction of the consumption of pulverized ore. It is therefore recommended that a simple, inexpensive column test be carried out to determine the acid consumption of -2" ore. To do this, 50-100 pounds of ore is charged to a column and treated continuously with a solution of pH 2.0. When the acid consumption stabilizes, probably after 1-2 months, the ore will be inoculated with an active culture of the leaching bacteria and the progress of the subsequent biological copper extraction will be followed closely until maximum extraction has been reached. In the unlikely case that the acid consumption turns out to be unrealistically high, the test will be terminated before the biological phase is introduced.

We will be pleased to carry out this testing program for you. The cost of the first phase, representing the acid leach, will be $3,500. TAP, the Technical Assistance Program of the Government, will pay $1,250 of this cost, so Zappa's cost will be only $2,250.

If the second biological phase is justified, we will do this at a cost of $10,000, $3,750 of which will again be paid by TAP.



A. Bruynesteyn
President

A. BRUYNESTEYN AND ASSOCIATES
MINERAL LEACHING CONSULTANTS

PHONE (604) 987-3183
FAX (604) 987-5124

2175 GREYLYNN CRESCENT
NORTH VANCOUVER, B.C.
CANADA V7J 2X6

C E R T I F I C A T E

I, Albert Bruynesteyn do hereby certify that I am an independent Consultant in Mineral Leaching, with offices at 2175 Greylynn Crescent, North Vancouver, B.C. V7J 2X6.

I FURTHER CERTIFY THAT

1. I am a chemical engineer with 25 years of experience in mineral biotechnology, 17 of which were with the B.C. Research Corporation were I was Head of the Division of Extractive Metallurgy. I have three patents on biological treatment processes for sulphide ores and have been an independent consultant since 1984 specializing in the commercial application of mineral biotechnology. I have consulted on most major biological leaching operations world wide.

2. I have based this report on the results of test work carried out on the DOT ore and on my experience with mining operations where ores with similar mineralogy are being treated.

3. I have no interest in the DOT property, nor do I expect to receive any sort of interest.

Dated this 19th day of January 1993 in Vancouver, B.C.

A. Bruynesteyn, Ph.D.

APPENDIX VII

Composite Sample

Listing of Component Samples

LIST OF SAMPLES FOR COMPOSITE SAMPLE

Drill Hole	Assay No.	Assay % Cu	Average % Cu
92RCD-02	48330	.424	
	48341	.143	
	48351	1.096	
	48362	0.184	
	48372	0.438	.46
92RCD-03	48405	0.385	
	48414	1.105	
	48424	0.923	
	48432	0.341	
	48443	0.164	.5066
92RCD-04	48466	1.321	
	48474	0.206	
	48481	0.136	
	48489	0.501	
	48497	0.448	.5224
92RCD-05	48510	1.32	
	48516	0.224	
	48522	0.323	
	48528	0.233	
	48534	0.041	.4282
		Average of Total	.48

20+00 E.

25+00 E.

25+00N.

20+00N.

81-8

81-4

92RCD-01

1.12 / 32.9

TRENCH

0.38 / 12.2

0.16 / 22.9

81-5

0.37 / 14.0

92RCD-02

0.33 / 73.2

81-3

92RCD-03

0.26 / 32.3

0.91 / 76.2

0.62 / 53.9

0.75 / 62.2

81-15,16,17

81-27,28

81-1,2

92RCD-04

2.58 / 27.4

81-18,19

0.52 / 36.0

1.32 / 30.2

0.17 / 22.0

81-20,21

0.58 / 50.3

0.25 / 10.1

0.36 / 22.3

0.57 / 20.1

0.2 / 48.8

0.37 / 64.0

0.21 / 25.9

81-12

81-11

81-6

92RCD-05

81-13,14

0.32 / 22.0

0.37 / 64.0

92RCD-06

81-7

0.22 / 3.0

0.26 / 16.8

EXPLORATION TARGET

COPPER ZONE

P81-12

P81-28

P81-31

P81-10

0.33 / 30.0 P81-25

0.42 / 9.14

P81-29

P81-27

P81-11

93RCD-A

93RCD-B

93RCD-C

P81-13

P81-9

P81-30

I.P. CHARGEABILITY ANOMALY

P81-8

P81-26

LEGEND

2.58 / 27.4 – % COPPER / INTERVAL (Meters)

81-18,19 DRILL HOLE

81-18 DIAMOND DRILL HOLE

P 81-9 PERCUSSION DRILL HOLE

92 RCD-01 REVERSE CIRCULATION DRILL HOLE

HOLE COLLAR - UNIDENTIFIED

E — E' SECTION LINES

PROPOSED DRILL HOLE 93RCD-A

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,839

COMPILATION MAP

DOT COPPER PROJECT

ZAPPA RESOURCES LTD.

SCALE 1:1,000

METERS 0 10 20 50 100 METERS

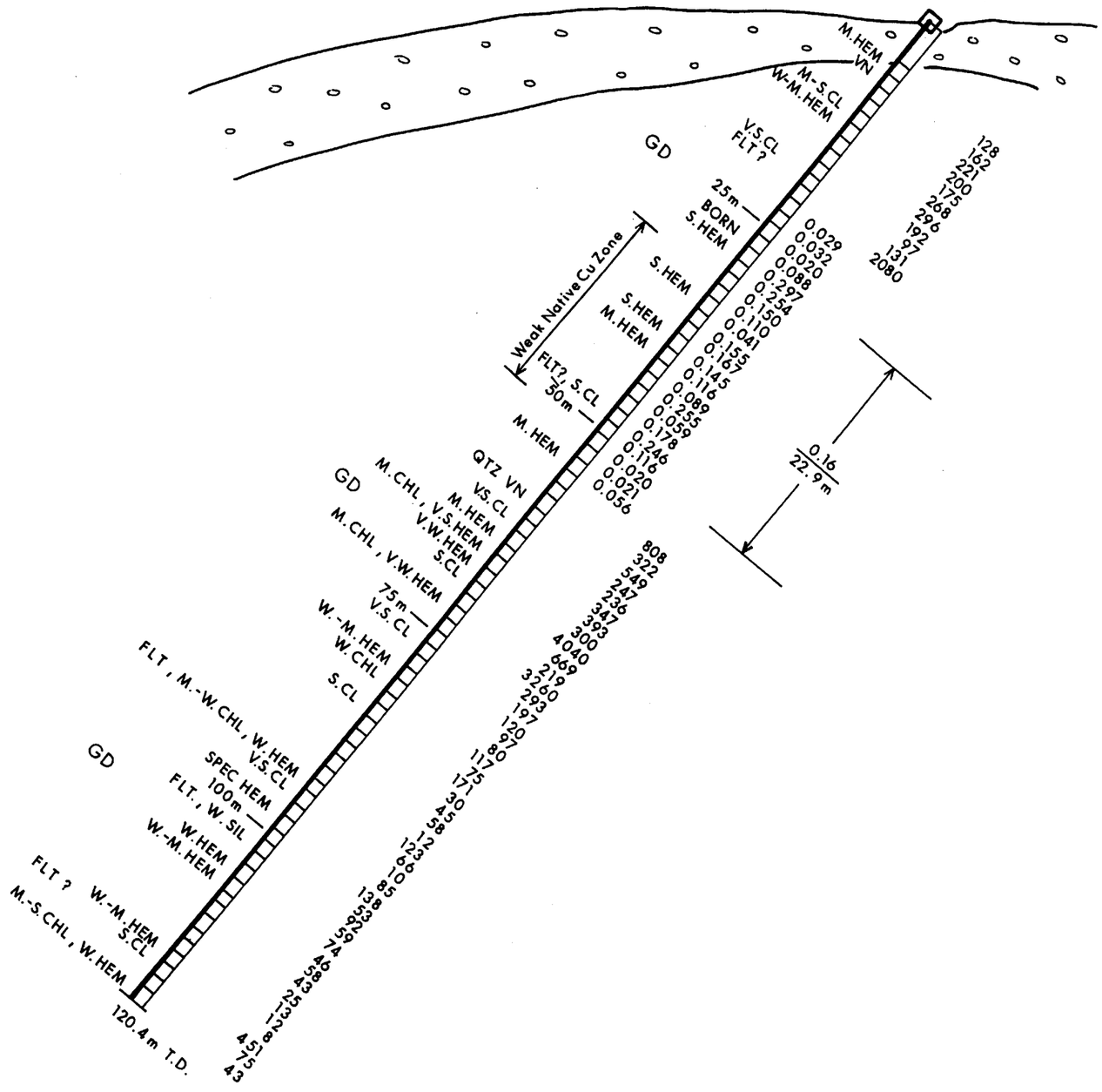
FIGURE 4

FIGURE 4

J. SERWIN / 1992

92 RCD-01

DIP - 50°
AZIMUTH: 230°
LENGTH: 120.4 m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

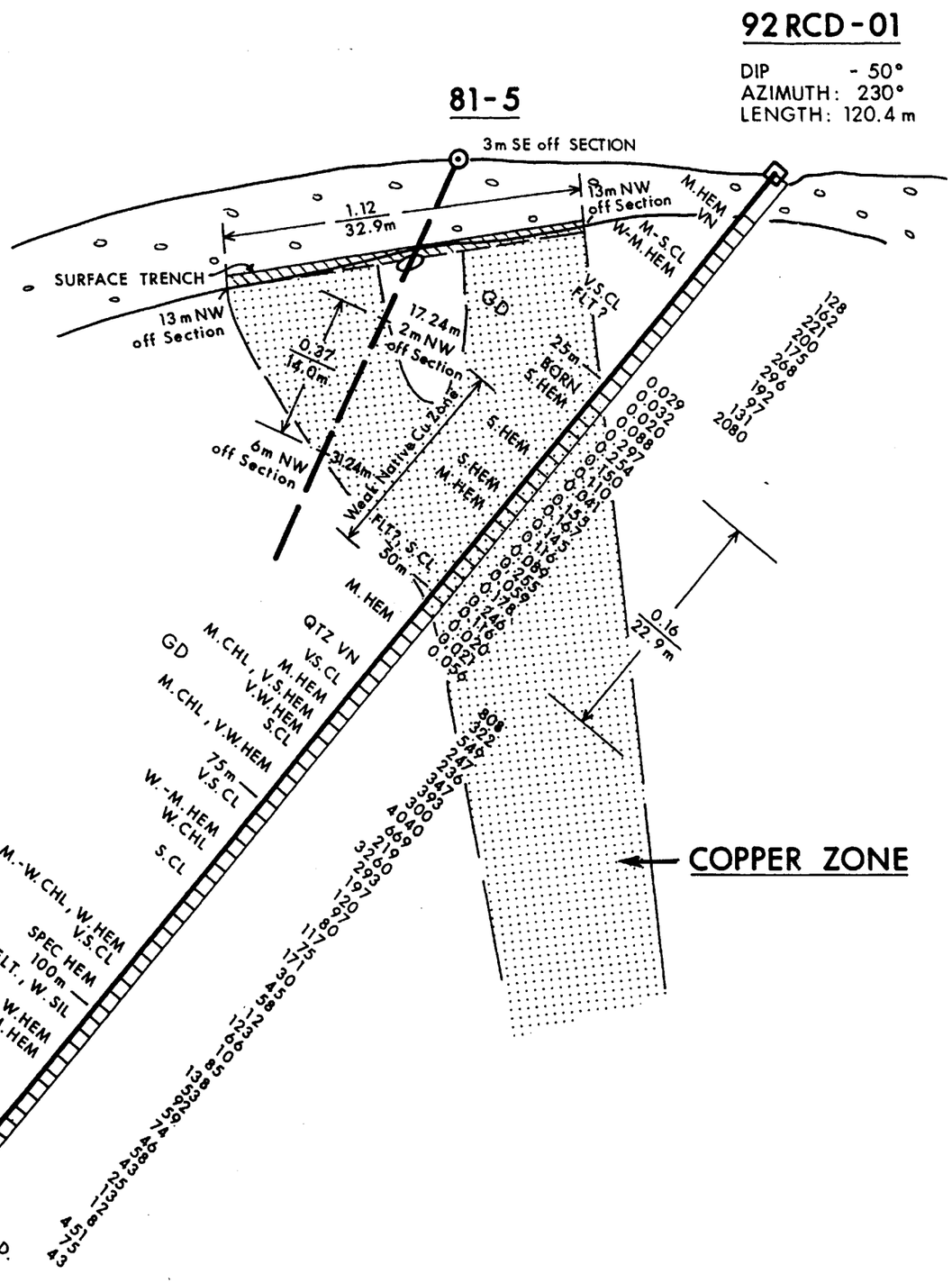
DOT PROPERTY

CROSS SECTION D-D'

92 RCD-01-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No.
DRAWN BY: J. Serwin	SCALE: 1 : 500	5
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

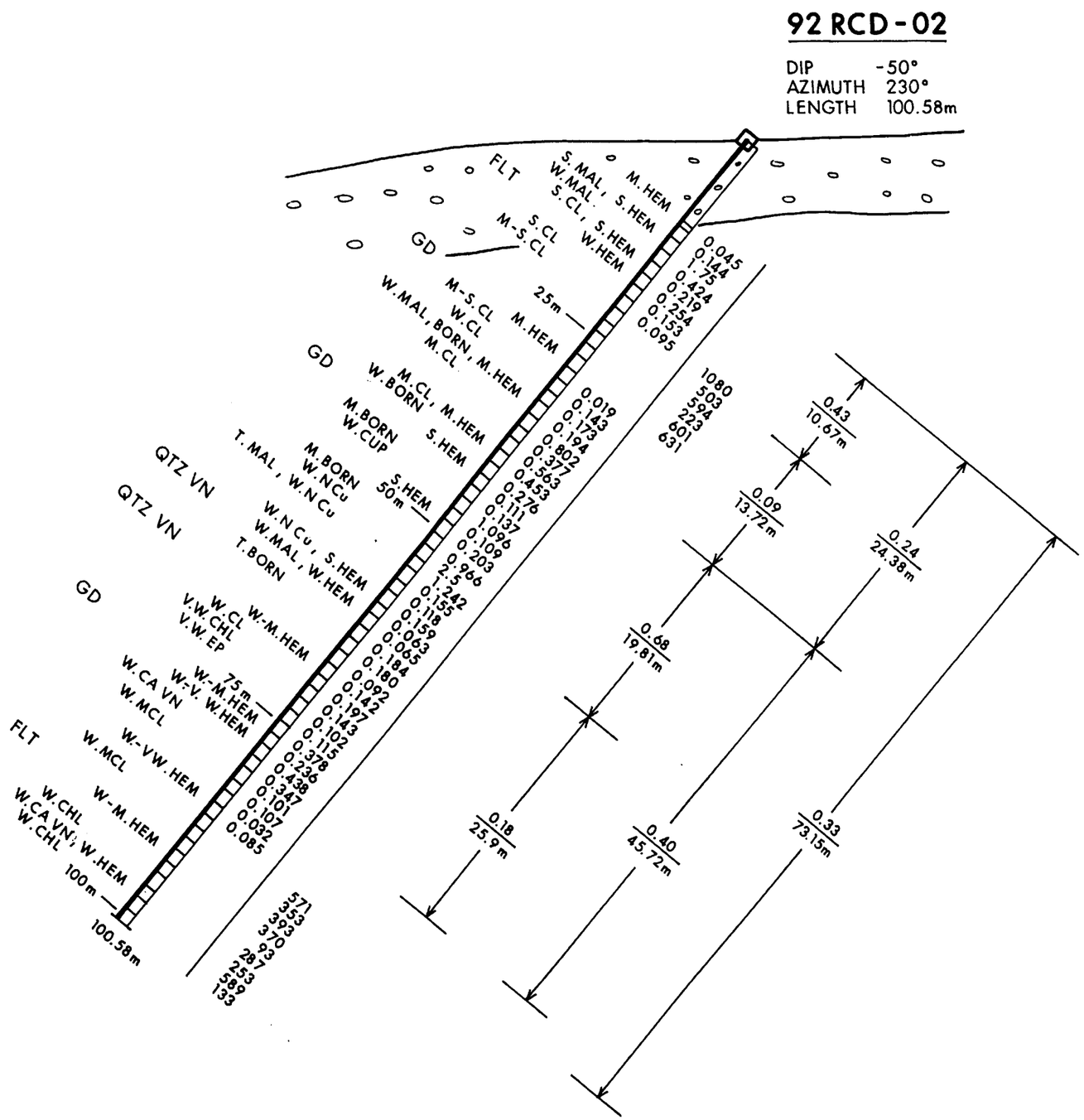
DOT PROPERTY

CROSS SECTION D-D'

COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 6
DRAWN BY: J. Serwin	SCALE: 1 : 500	
DATE: Jan./1993	NICOLA M.D.	



L E G E N D

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

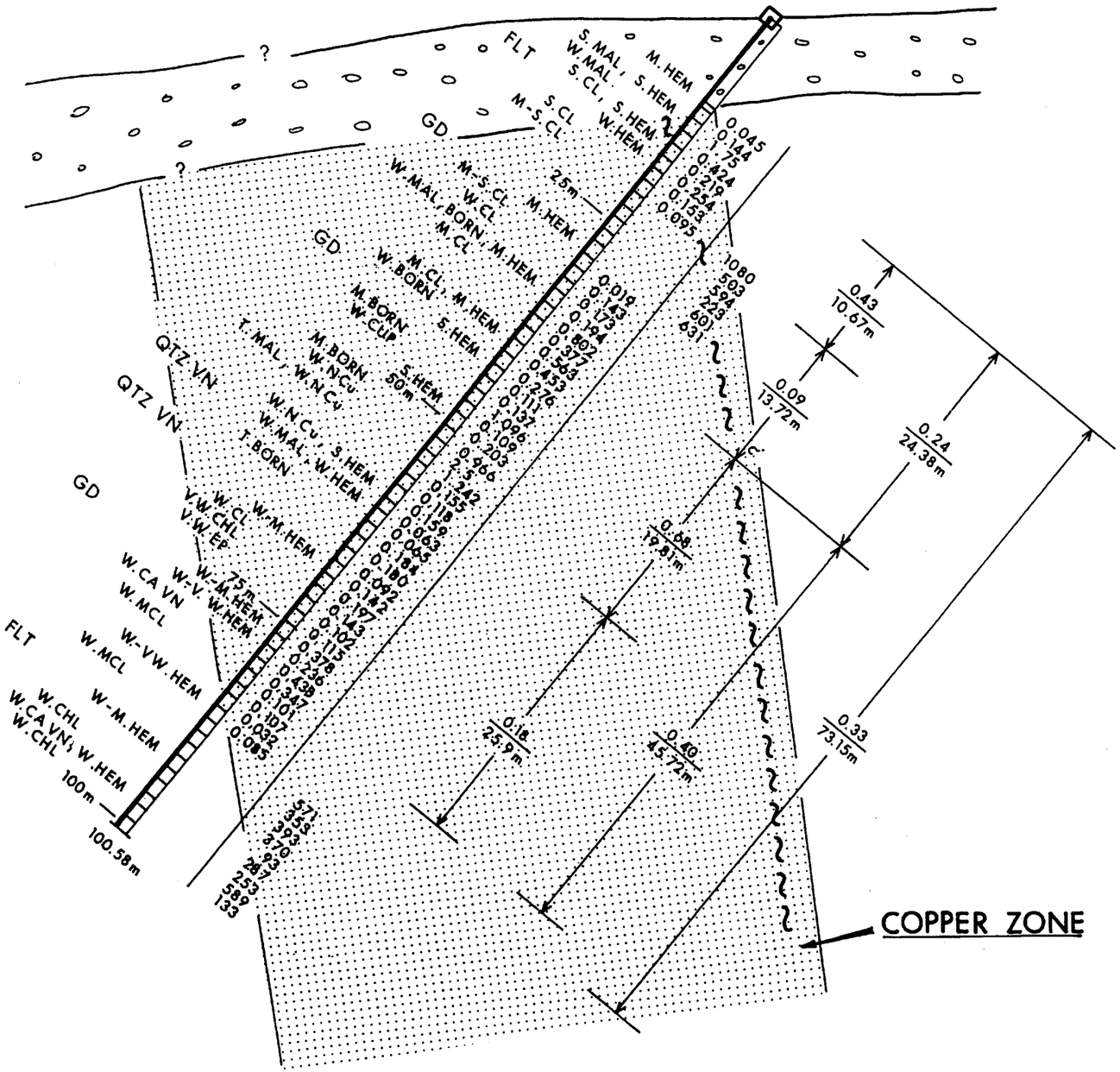
DOT PROPERTY

CROSS SECTION E-E'

92RCD-02-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 7
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE 1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION E-E'

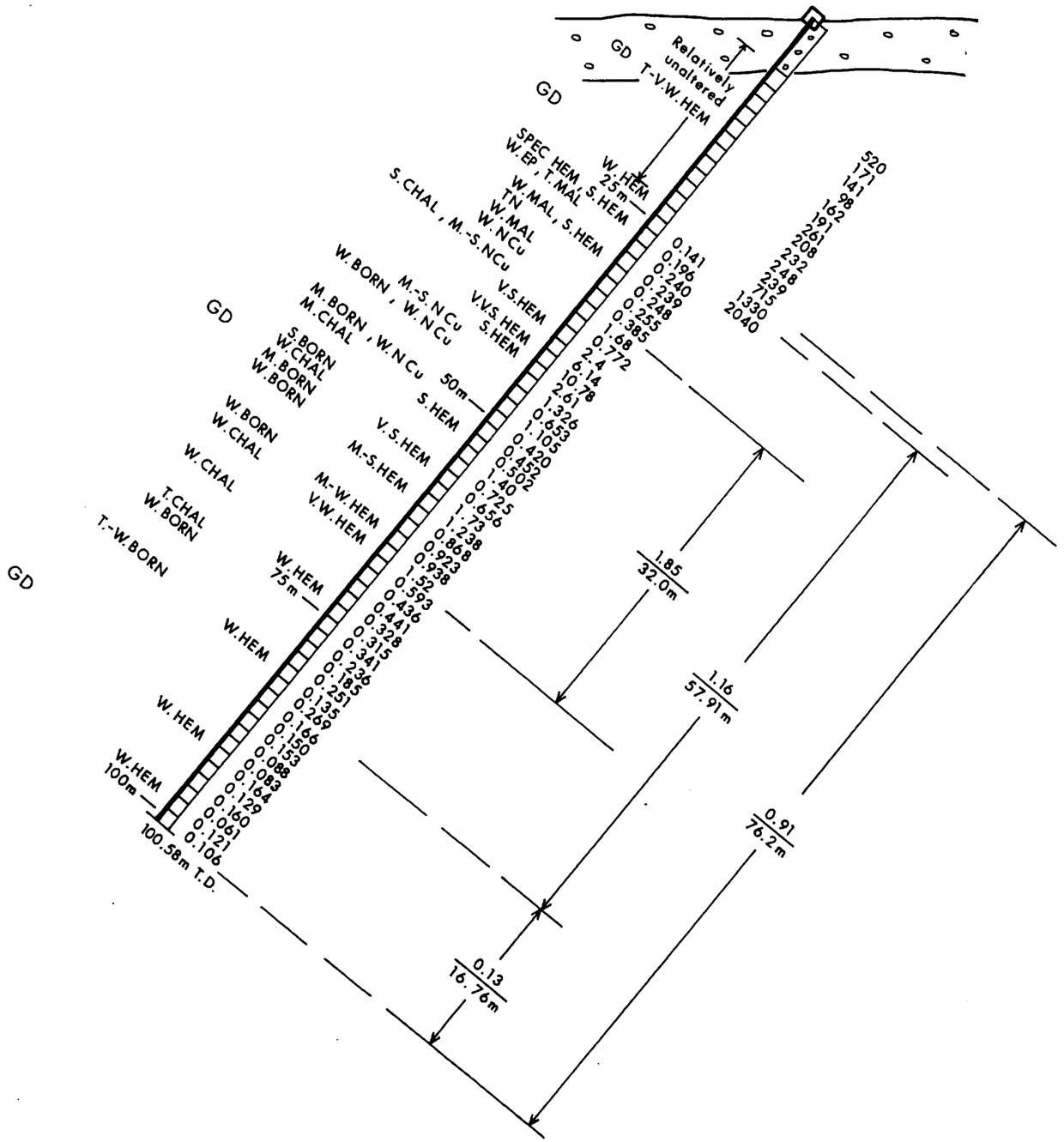
COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 921/7W	FIGURE No. 8
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	

92 RCD-03

DIP -50°
AZIMUTH 230°
LENGTH 100.58m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

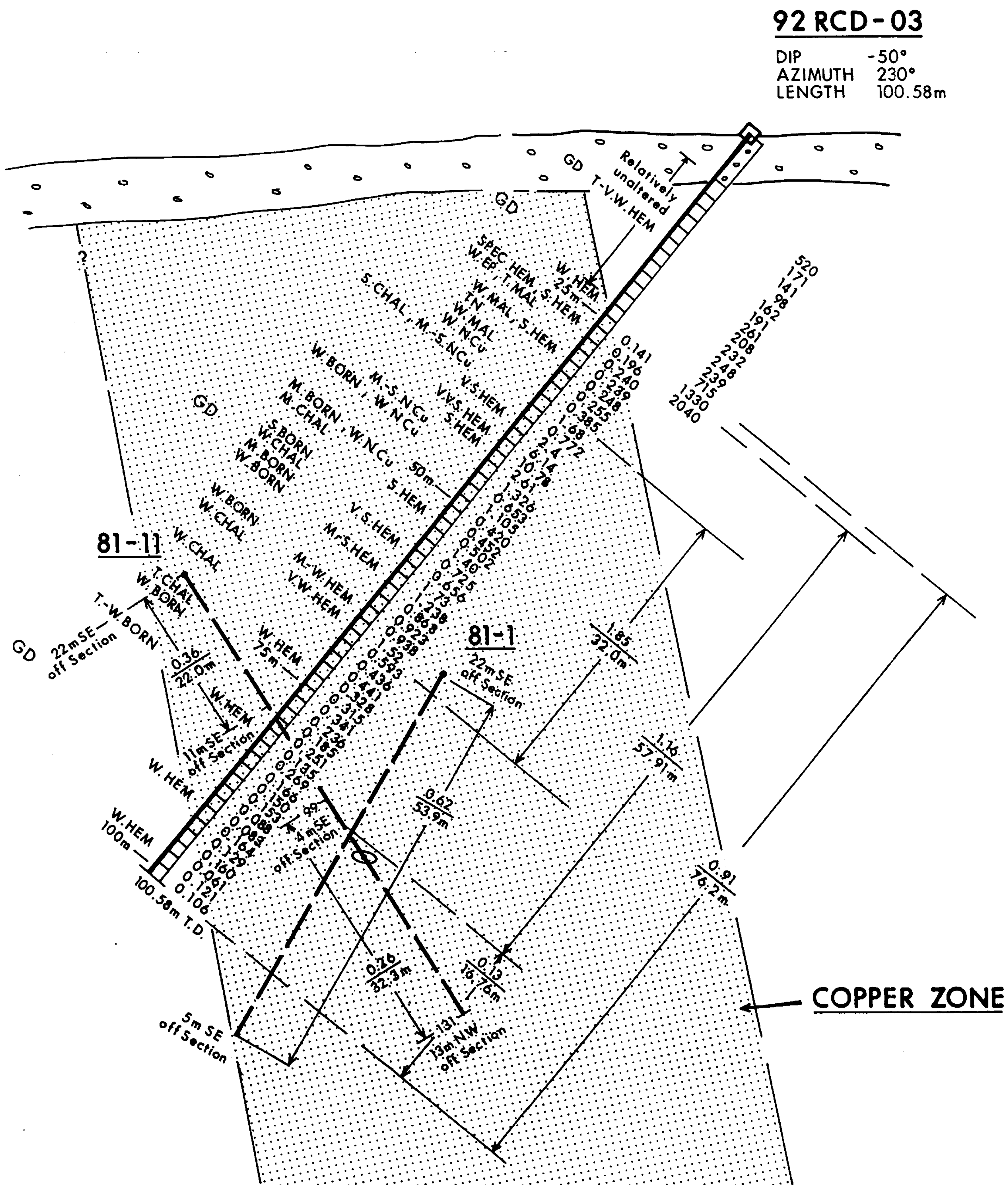
DOT PROPERTY

CROSS SECTION F-F'

92RCD-03-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No.
DRAWN BY: J. Serwin	SCALE: 1 : 500	9
DATE : Jan. /1993	NICOLA M.D.	



L E G E N D

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite, Guichon Batholith

ALTERATION

CHL	– Chloritization
EP	– Epidote
KSP	– Secondary KSP
SIL	– Silification
HEM	– Hematite
CL	– Clay
SER	– Sericite
CA VN	– Calcite Veins
QTZ VN	– Quartz Veins
VZ	– Vein Zone

DEGREE OF ALTERATION

S	– Strong
M	– Moderate
W	– Weak
V	– Very
T	– Trace

MINERALIZATION

SPEC HEM	– Specular Hematite
N Cu	– Native Copper
BORN	– Bornite
MAL	– Malachite
CHAL	– Chalcocite
CPY	– Chalcopyrite
CUP	– Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole; Year, Hole Number

81-5 — Diamond Drill Hole - On Section, Off Section; Pierce Point Of Section

SCALE 1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION F-F'

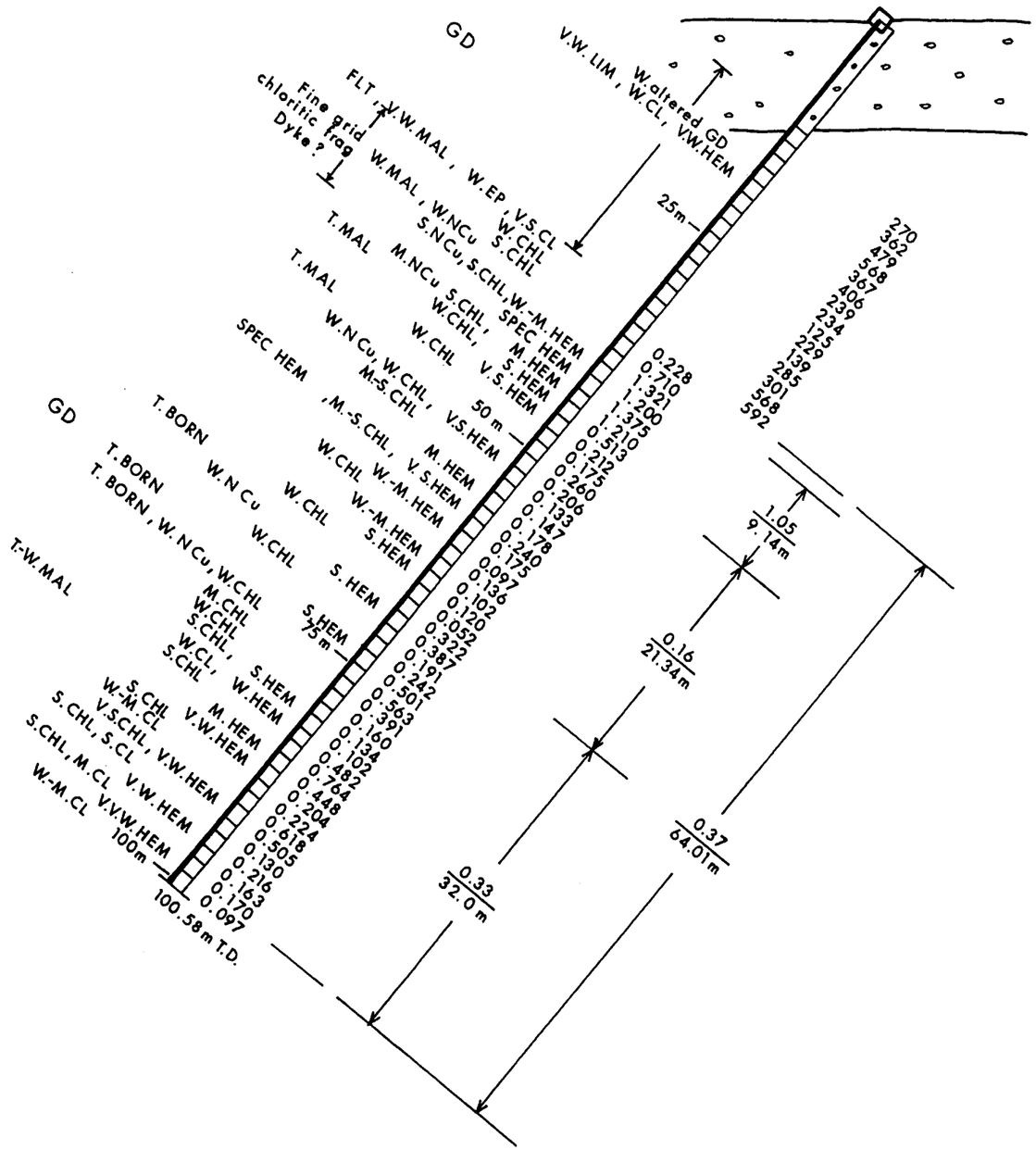
COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 10
DRAWN BY: J. Serwin	SCALE: 1 : 500	
DATE: Jan./1993	NICOLA M.D.	

92RCD-04

DIP -50°
AZIMUTH 230°
LENGTH 100.58m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91 / 76.2 m
% Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

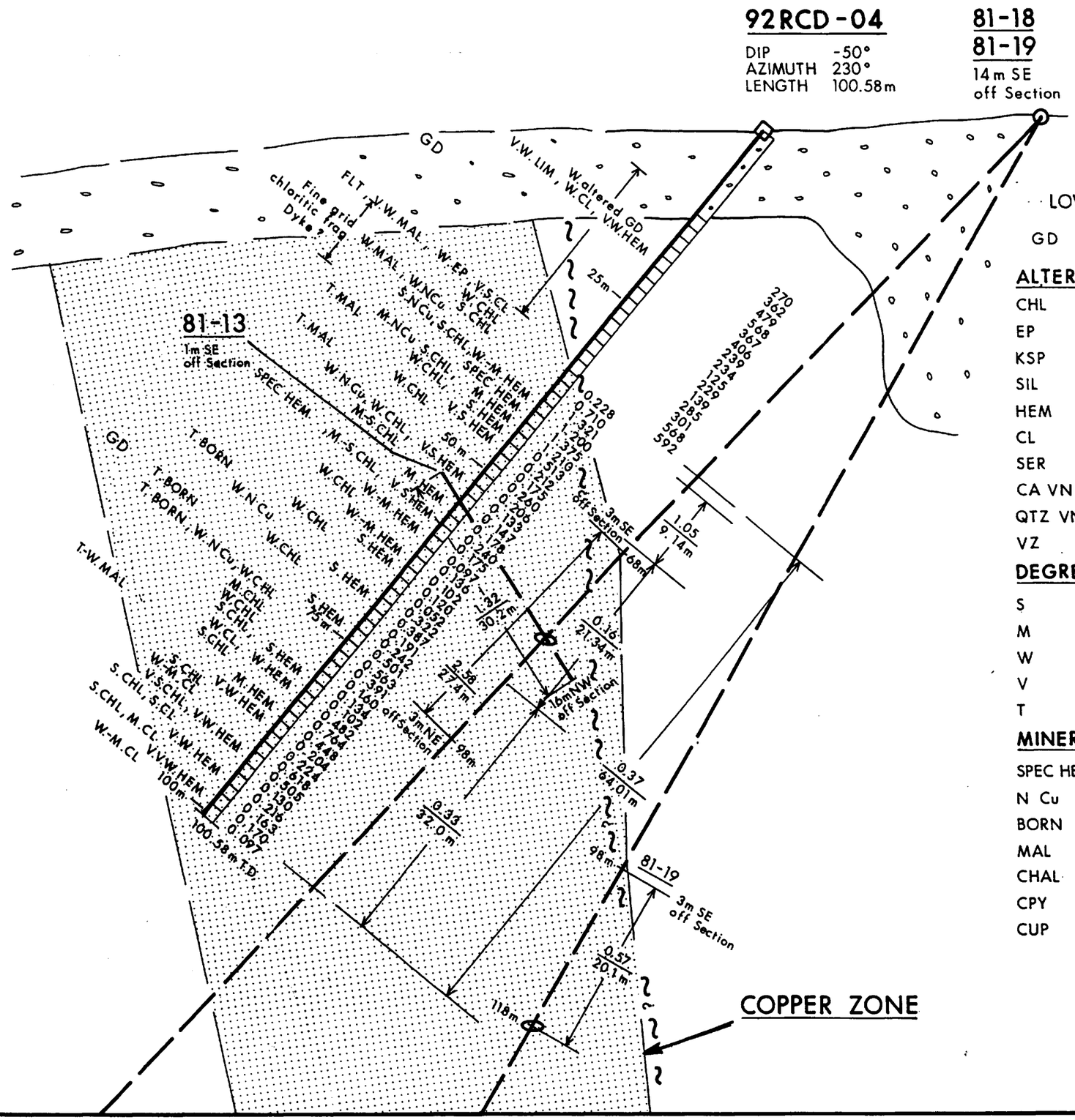
DOT PROPERTY

CROSS SECTION G-G'

92RCD-04-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY : George Norman	N.T.S. 92I/7W	FIGURE No. 11
DRAWN BY : J. Serwin	SCALE: 1:500	
DATE : Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL	– Chloritization
EP	– Epidote
KSP	– Secondary KSP
SIL	– Silification
HEM	– Hematite
CL	– Clay
SER	– Sericite
CA VN	– Calcite Veins
QTZ VN	– Quartz Veins
VZ	– Vein Zone

DEGREE OF ALTERATION

S	– Strong
M	– Moderate
W	– Weak
V	– Very
T	– Trace

MINERALIZATION

SPEC HEM	– Specular Hematite
N Cu	– Native Copper
BORN	– Bornite
MAL	– Malachite
CHAL	– Chalcocite
CPY	– Chalcopyrite
CUP	– Cuprite

Total Copper

0.141 | 1330 — % Cu | ppm Cu

AVERAGE GRADE

0.91 — % Total Copper

76.2 m — Total Length metres

MISCELLANEOUS

FLT ~~ — Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION G-G'

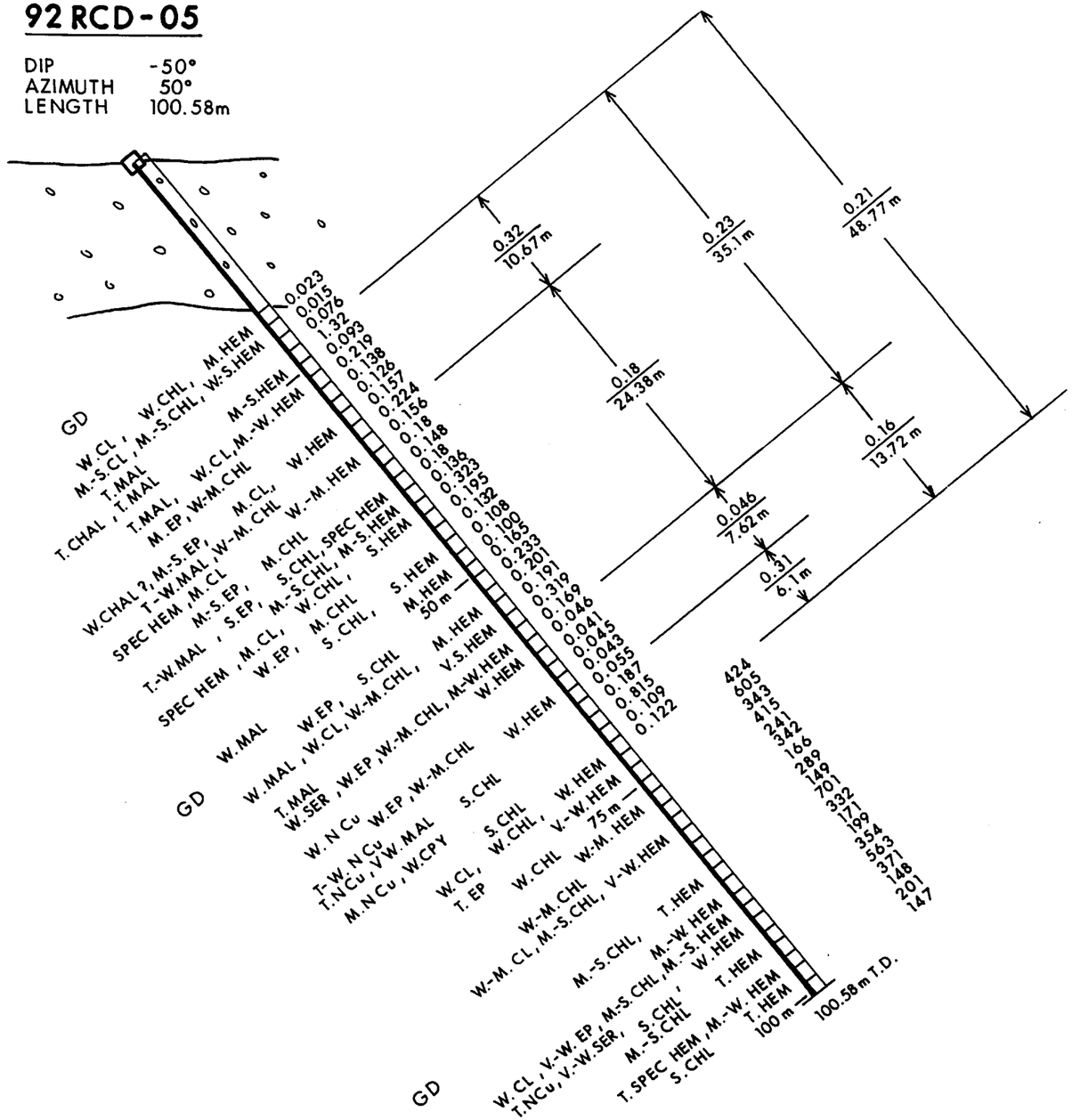
COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 12
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	

92 RCD-05

DIP -50°
AZIMUTH 50°
LENGTH 100.58m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION H-H'

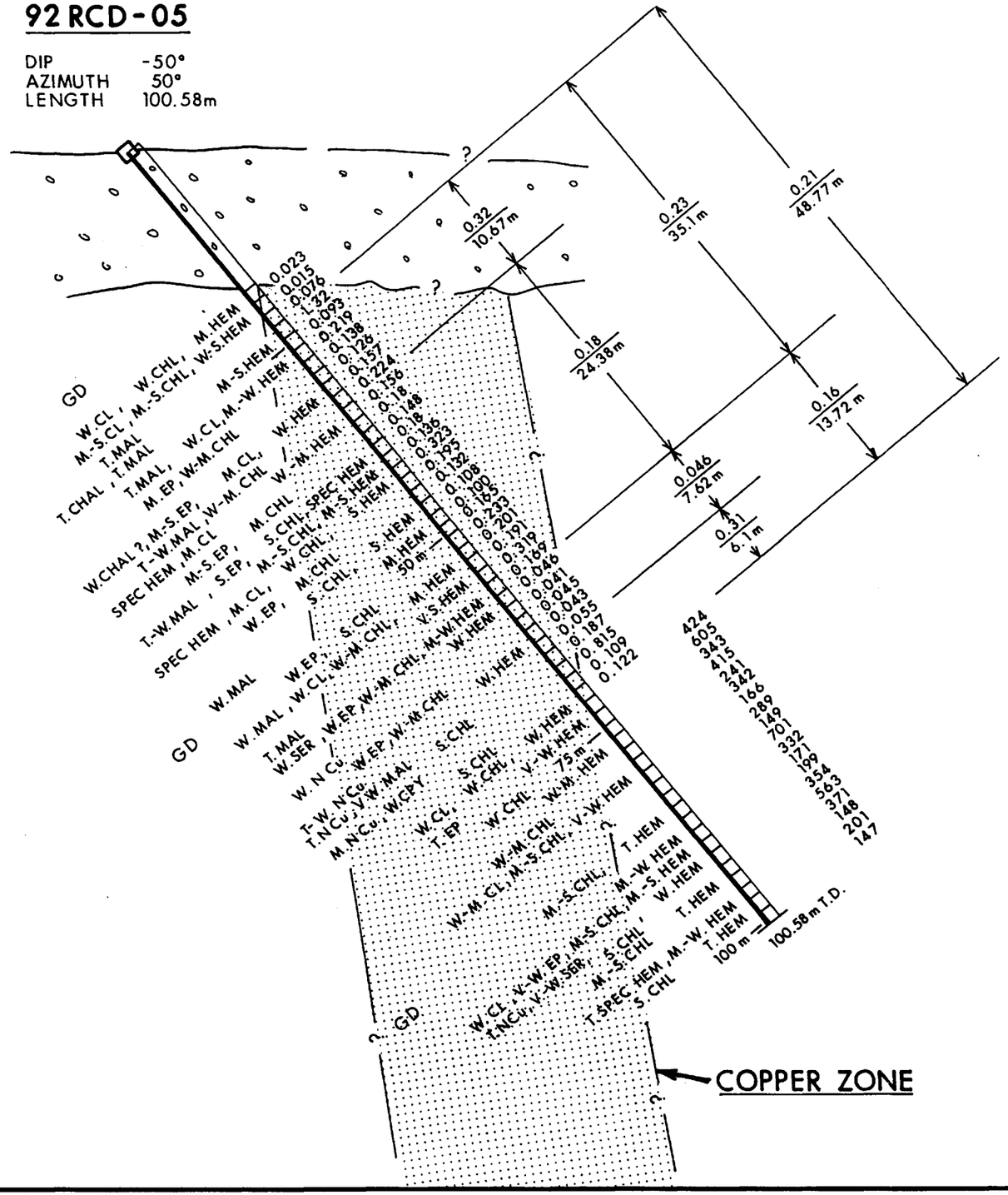
92RCD-05-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 13
DRAWN BY: J. Serwin	SCALE: 1:500	
DATE: Jan./1993	NICOLA M.D.	

92 RCD-05

DIP -50°
AZIMUTH 50°
LENGTH 100.58m



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

0.141 | 1330 — Total Copper: % Cu | ppm Cu

0.91 / 76.2 m — AVERAGE GRADE: % Total Copper / Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

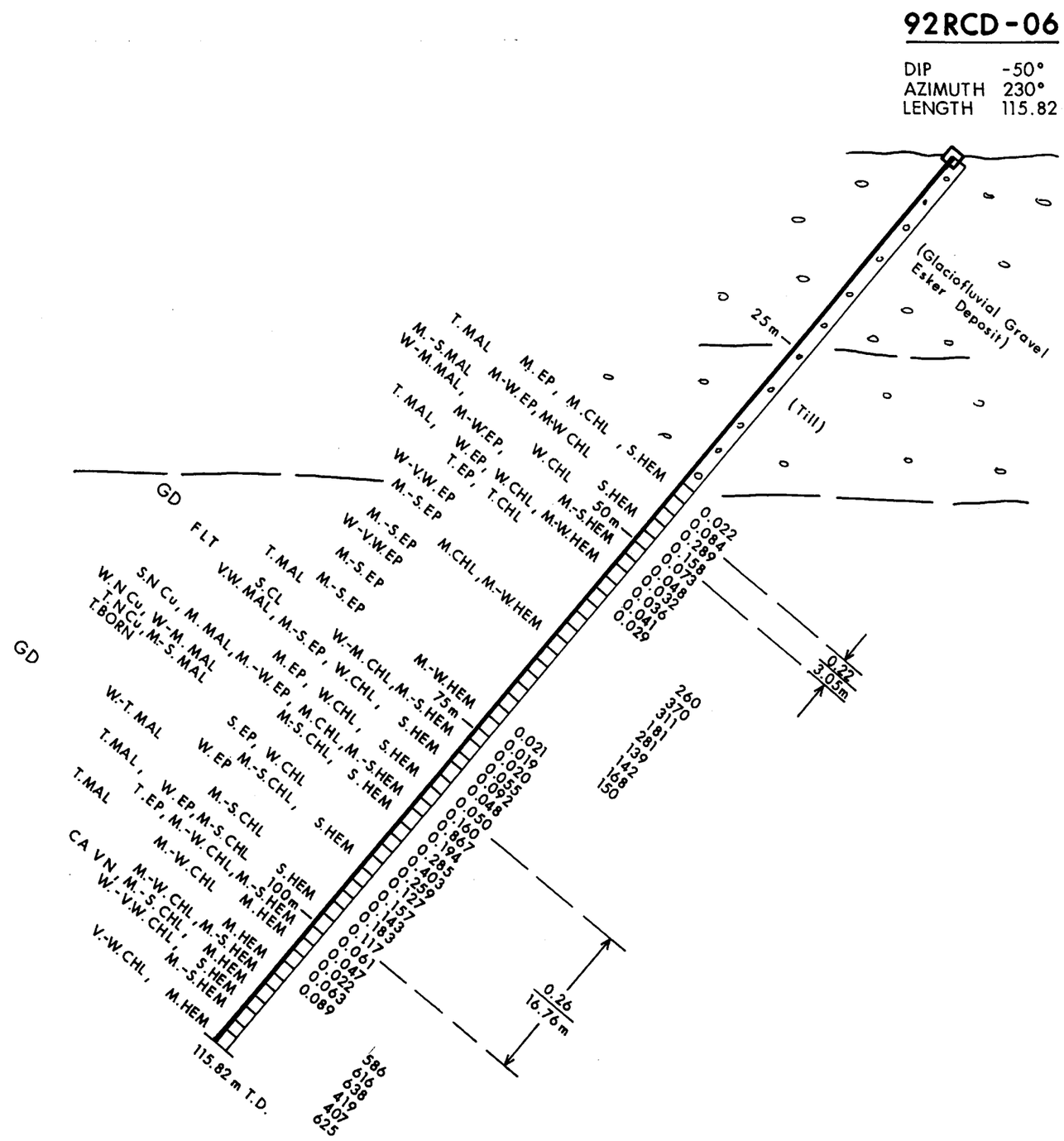
DOT PROPERTY

CROSS SECTION H-H'

COPPER ZONE

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No.	14
DRAWN BY: J. Serwin	SCALE: 1:500		
DATE: Jan./1993	NICOLA M.D.		



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

- CHL – Chloritization
- EP – Epidote
- KSP – Secondary KSP
- SIL – Silification
- HEM – Hematite
- CL – Clay
- SER – Sericite
- CA VN – Calcite Veins
- QTZ VN – Quartz Veins
- VZ – Vein Zone

DEGREE OF ALTERATION

- S – Strong
- M – Moderate
- W – Weak
- V – Very
- T – Trace

MINERALIZATION

- SPEC HEM – Specular Hematite
- N Cu – Native Copper
- BORN – Bornite
- MAL – Malachite
- CHAL – Chalcocite
- CPY – Chalcopyrite
- CUP – Cuprite

Total Copper

0.141 | 1330 — % Cu | ppm Cu

AVERAGE GRADE
% Total Copper
0.91 / 76.2 m
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500

Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

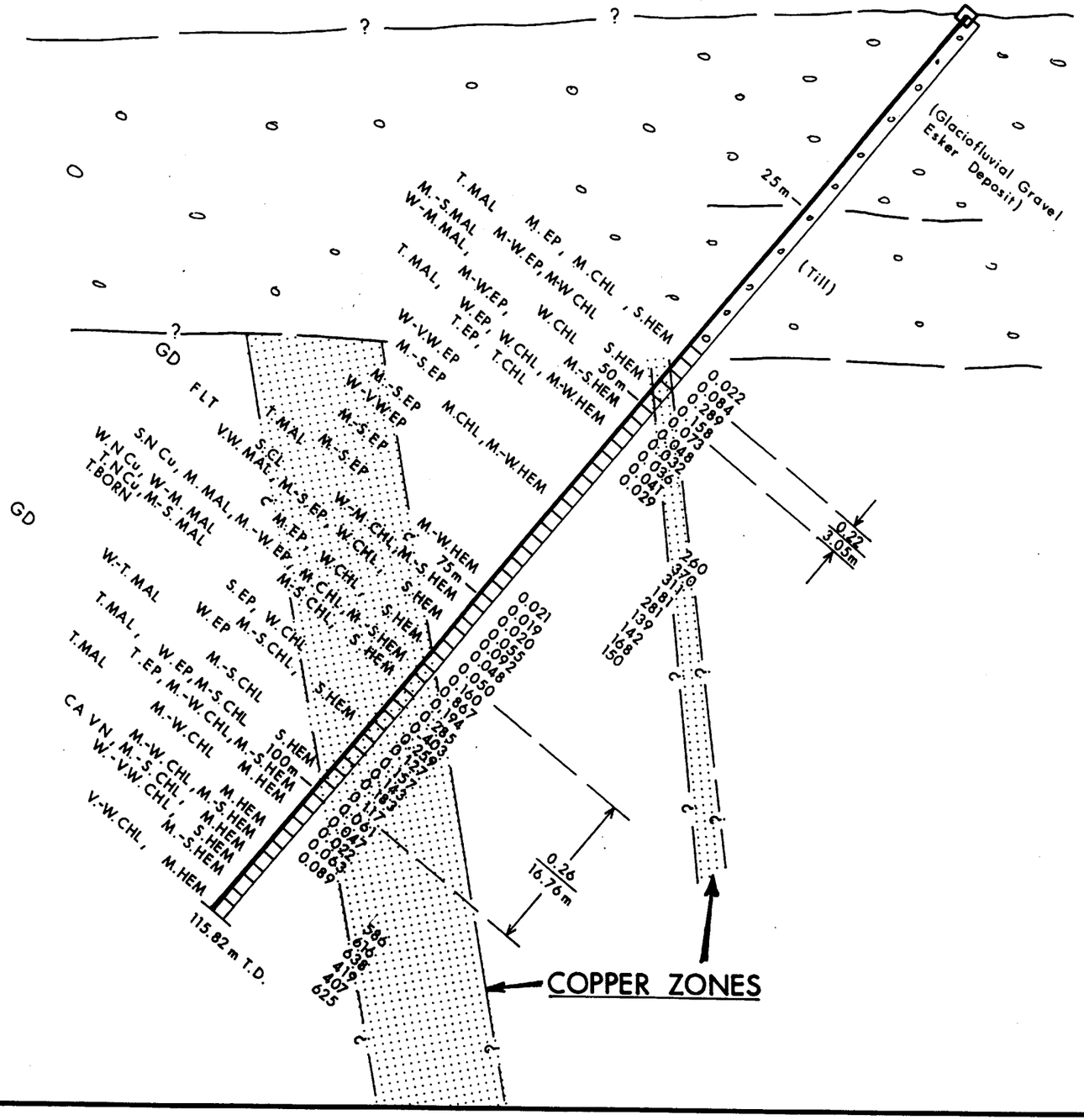
DOT PROPERTY

CROSS SECTION I-I'

92RCD-06-GEOLOGY-ASSAYS

VIEW AZIMUTH 320°

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 15
DRAWN BY: J. Serwin	SCALE: 1 : 500	
DATE: Jan./1993	NICOLA M.D.	



LEGEND

LITHOLOGIC UNITS

Overburden

LOWER JURASSIC

GD — Granodiorite Guichon Batholith

ALTERATION

CHL – Chloritization
EP – Epidote
KSP – Secondary KSP
SIL – Silification
HEM – Hematite
CL – Clay
SER – Sericite
CA VN – Calcite Veins
QTZ VN – Quartz Veins
VZ – Vein Zone

DEGREE OF ALTERATION

S – Strong
M – Moderate
W – Weak
V – Very
T – Trace

MINERALIZATION

SPEC HEM – Specular Hematite
N Cu – Native Copper
BORN – Bornite
MAL – Malachite
CHAL – Chalcocite
CPY – Chalcopyrite
CUP – Cuprite

Total Copper
0.141 | 1330
% Cu | ppm Cu

AVERAGE GRADE
0.91
76.2 m
% Total Copper
Total Length metres

MISCELLANEOUS

FLT ~~ Fault Zone

92RCD-01 — Reverse Circulation Drill Hole ; Year , Hole Number

81-5 — Diamond Drill Hole – On Section, Off Section

Pierce Point Of Section

SCALE
1:500
Meters 0 5 10 20 30 Meters

ZAPPA RESOURCES LTD.

DOT PROPERTY

CROSS SECTION I-I'

COPPER ZONE

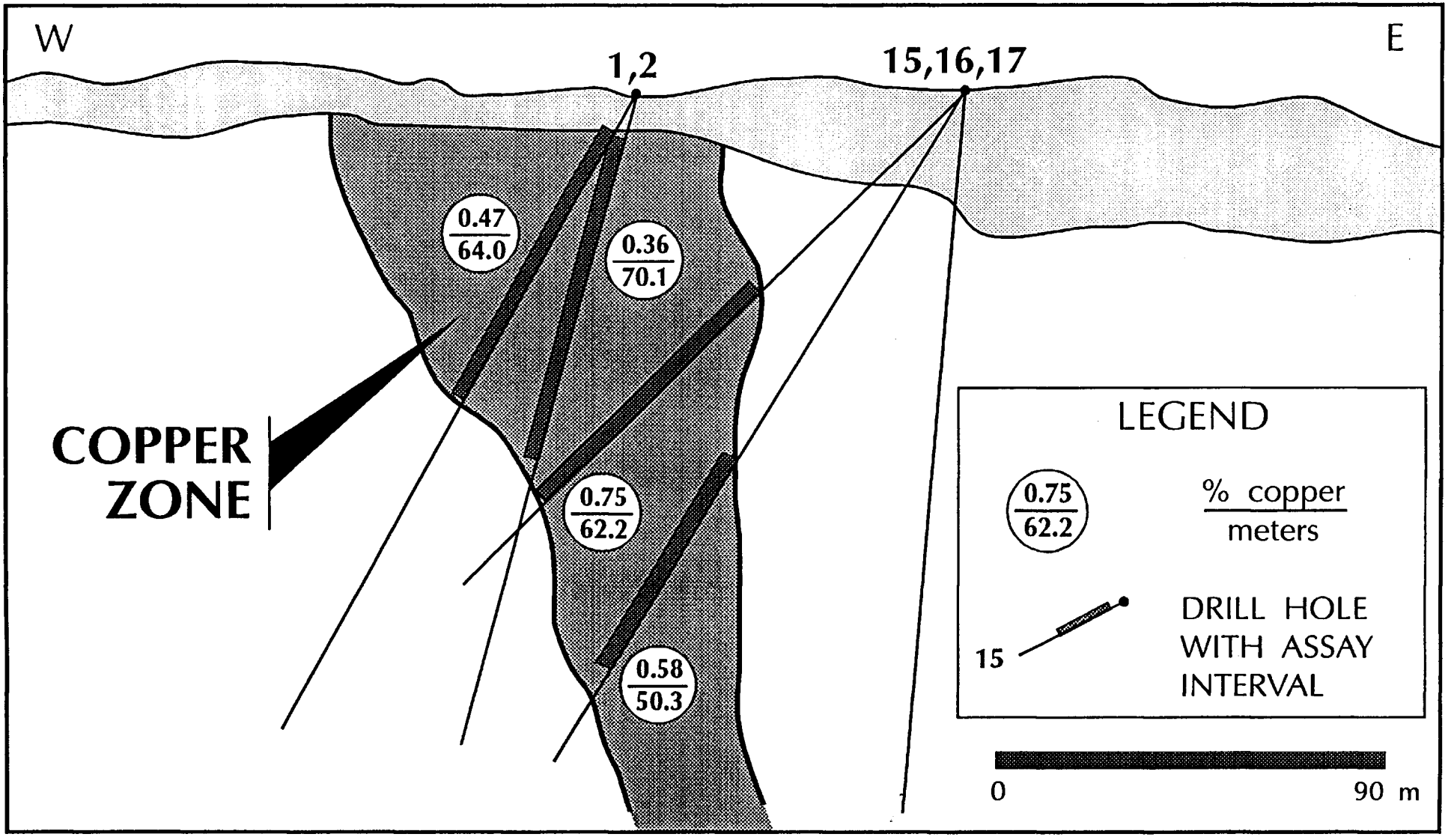
VIEW AZIMUTH 320°

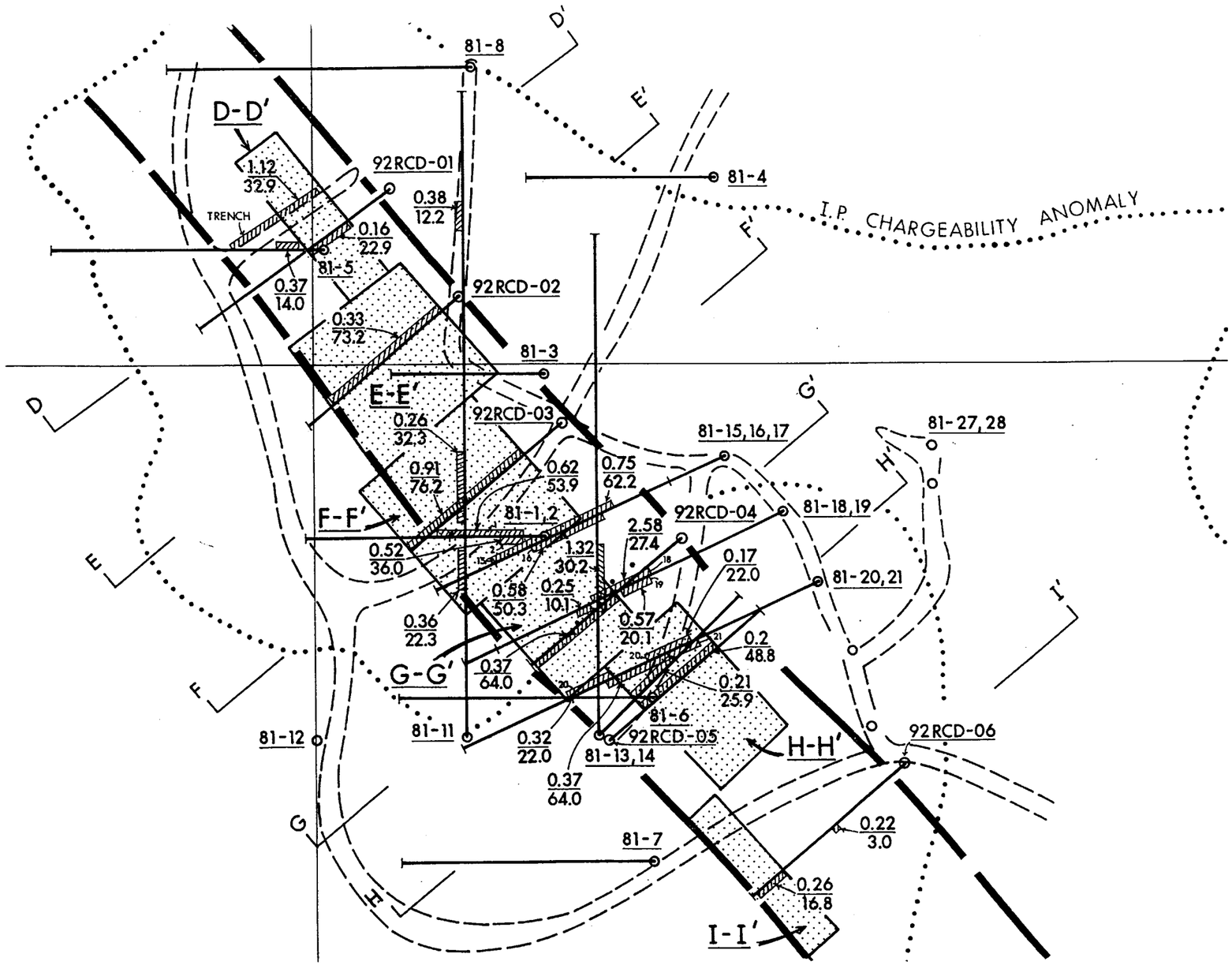
GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No.
DRAWN BY: J. Serwin	SCALE: 1 : 500	16
DATE: Jan./1993	NICOLA M.D.	

ZAPPA RESOURCES LTD.

DOT PROPERTY
CROSS SECTION
COPPER ZONE

Figure 17





LEGEND

2.58 / 27.4 — % COPPER / INTERVAL (Meters)

81-18,19

DRILL HOLE

81-18 DIAMOND DRILL HOLE

P 81-9 PERCUSSION DRILL HOLE

92 RCD-01 REVERSE CIRCULATION DRILL HOLE

HOLE COLLAR - UNIDENTIFIED

E — E' SECTION LINES

E-E' TONNAGE BLOCK

SCALE
1:1,540

METERS 0 10 20 50 100 METERS

ZAPPA RESOURCES LTD.

DOT PROPERTY

TONNAGE BLOCKS

GEOLOGY BY: George Norman	N.T.S. 92I/7W	FIGURE No. 18
DRAWN BY: J. Serwin	SCALE: 1:1540	
DATE: Jan./1993	NICOLA M.D.	