

LOG NO:	DEC 30 1991	RD.
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FILE NO:		

**ASSESSMENT REPORT on the  
DIAMOND DRILLING on the BOOT 5, 7-10 CLAIMS**

**Duckling Creek Area**

**Omineca Mining Division  
NTS: 93N/14W**

**Latitude 55°54', Longitude 125°25'**

**SUB-RECORDER  
RECEIVED**  
DEC 20 1991  
M.R. # ..... S.....  
VANCOUVER, B.C.

**BPVR 91-15  
December, 1991**

**N. Humphreys**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**21,979**

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## 1. SUMMARY

The BOOT-STEELE claims cover a copper-gold prospect in the Duckling Creek area of north-central B.C.. The claims are near the Lorraine property that hosts an alkalic porphyry copper-gold deposit of 10 million tons grading 0.7% copper and 0.34 g/t gold.

A diamond drill hole, BD-91-1, tested an IP anomaly in an area underlain mainly by medium-grained equigranular monzonite. The hole intersected massive, generally unaltered monzonite to a depth of 96.0 metres. Systematic sampling of the core shows that no significant zones of mineralization are present.

The cause of the weak-moderate chargeability high is probably disseminated magnetite in the monzonite. No further exploration is recommended for the area of the drilling.

## **2. INTRODUCTION**

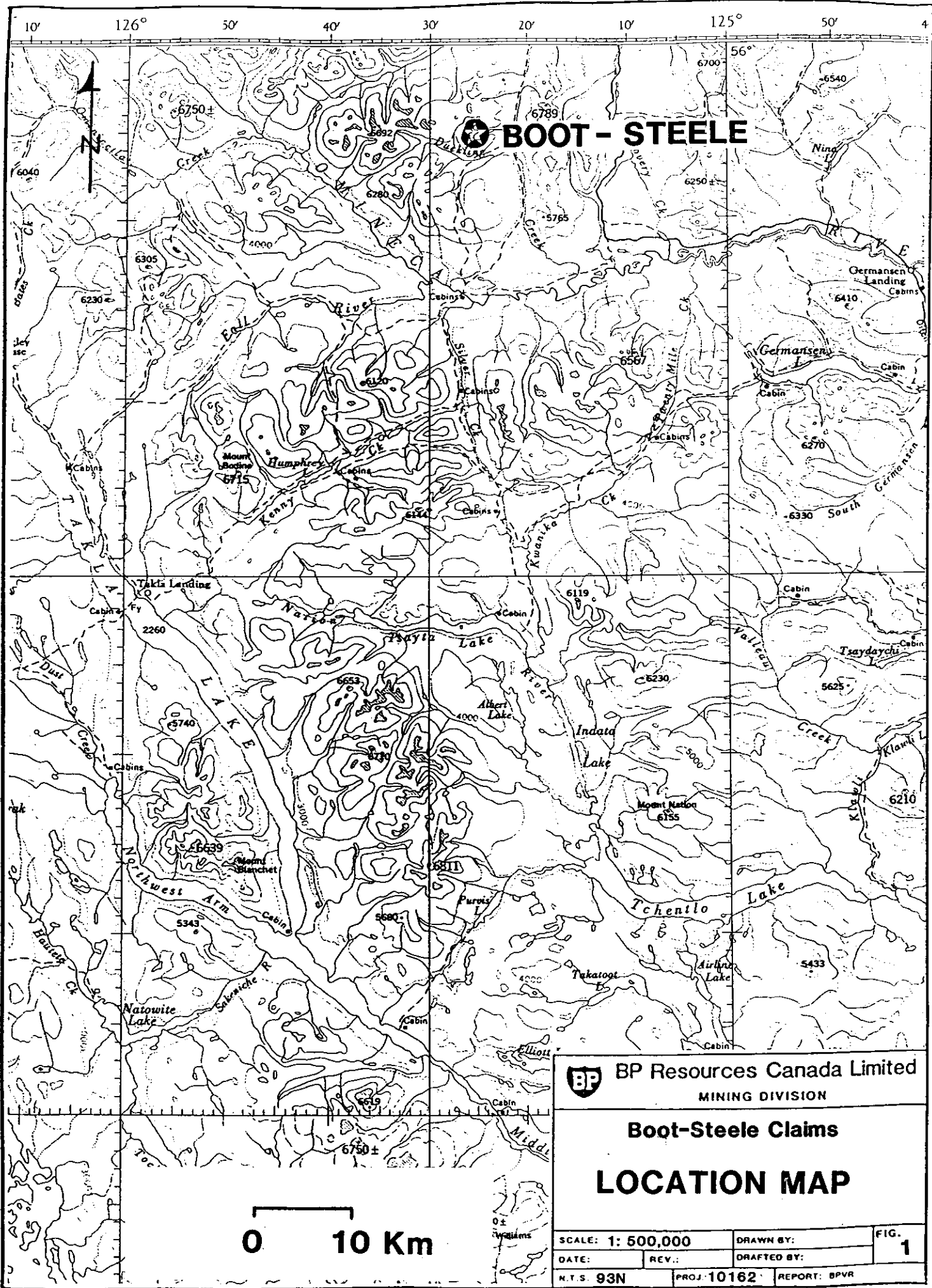
This report summarizes the results of a diamond drill hole on the BOOT claims located in the Duckling Creek area of north-central British Columbia. The claims are just south of the Lorraine property of Kennecott Canada Ltd. that covers an alkalic copper-gold porphyry deposit with reported reserves of 10 million tons grading 0.7% copper and 0.34 g/t gold. The drill hole tested a zone of moderately high chargeability found by a reconnaissance IP survey. The hole was drilled between September 27 - 28, 1991.

## **3. LOCATION AND ACCESS**

The claims are located about 45 km west-northwest of Germansen Landing in the Duckling Creek area of north-central, B.C. The Lorraine property access road crosses the southern part of the Boot-Steele property. This road, constructed many years ago, was rehabilitated by Kennecott in 1990. It leaves the Omineca Mining Road at a point approximately 45 km north of Germansen Landing. Travelling time from the property to Germansen Landing is approximately two hours.

The central and northern sections of the claims require helicopter access. Machines are usually based at Germansen Landing during the summer months.

Drill hole BD-91-1 was drilled near the Lorraine property access road. A trail about 200 metres long was constructed to the drill site which was in a swampy area at the base of a prominent hill.



# BOOT - STEELE

0 10 Km

**BP** BP Resources Canada Limited  
 MINING DIVISION  
**Boot-Steele Claims**  
**LOCATION MAP**

SCALE: 1: 500,000	DRAWN BY:	FIG. 1
DATE:	REV.:	DRAFTED BY:
N.T.S. 93N	PROJ. 10162	REPORT: BPVR

#### 4. TOPOGRAPHY and VEGETATION

The property is located in the moderately rugged Swannell Ranges of the Omineca Mountains. Elevations on the claims range from 1250 m in the Duckling Creek valley to over 1950 m near the top of the east-west trending ridge at the north end of the claim block. South of Duckling Creek, the terrain is much flatter with thick overburden present in most places.

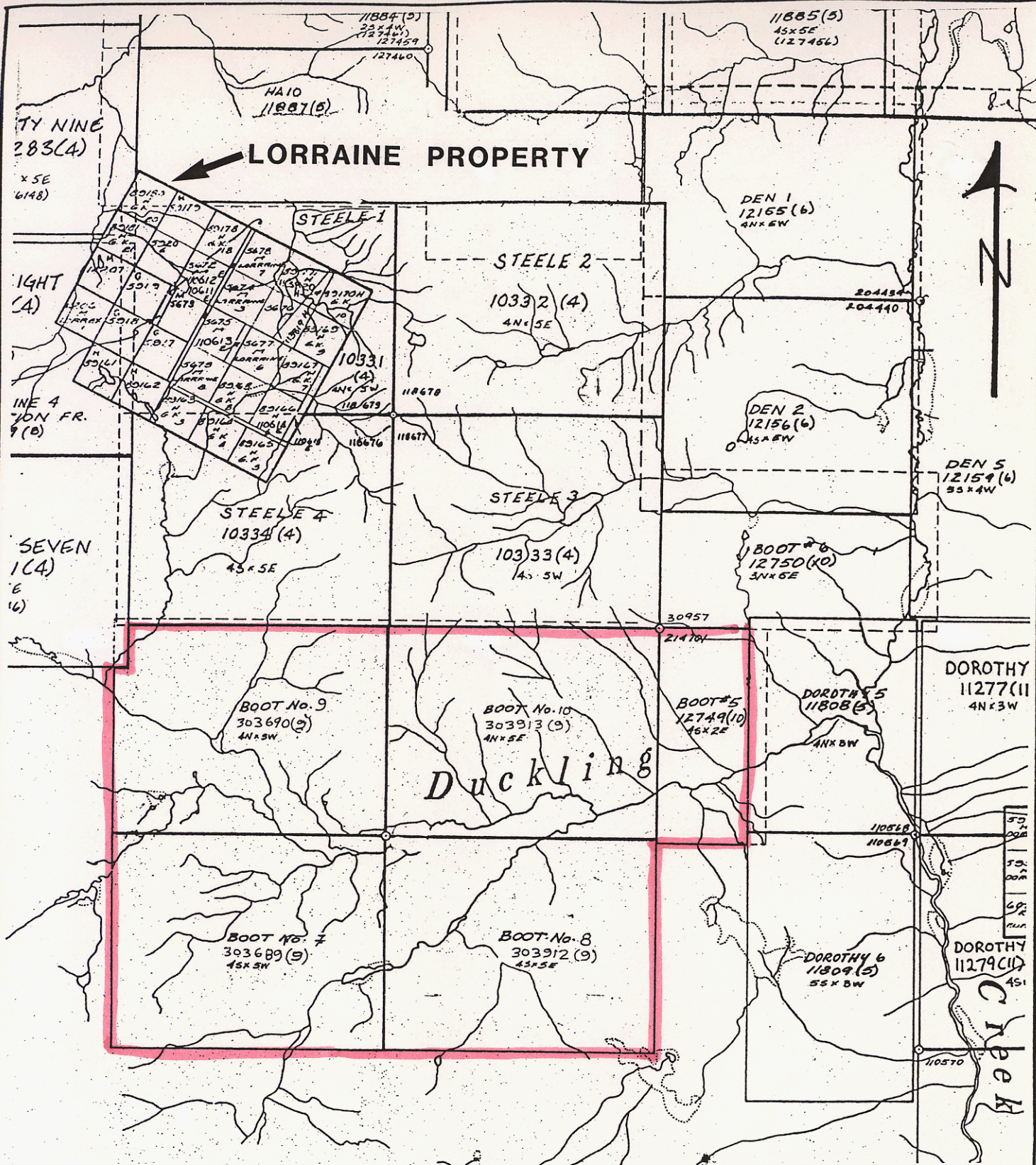
Vegetation ranges from thick pine-dominated forests at the lower elevations to alpine grasses and shrubs in the far north.

#### 5. CLAIM STATUS

<u>Claim</u>	<u># of Units</u>	<u>Record #</u>	<u>Staking Date</u>	<u>Expiry Date*</u>
BOOT 5	8	12749	28 Oct./90	28 Oct./95
BOOT 7	20	303689	6 Sept./91	6 Sept./94
BOOT 8	20	303912	6 Sept./91	6 Sept./94
BOOT 9	20	303690	5 Sept./91	5 Sept./94
BOOT 10	20	303913	5 Sept./91	5 Sept./94

**\* Includes credits for the work reported herein**

**Note:** The position of the Lorraine property as shown on the government map is incorrect. The position as shown on Figure 3 and 4 is much more accurate.



**93N/14W**

Scale 1 : 50 000



KILOMETRES

**BP** BP Resources Canada Limited  
MINING DIVISION

BOOT-STEELE PROPERTY

**CLAIM MAP**

SCALE: 1:50,000	DRAWN BY:	FIG. 2
DATE: DEC 1991	DRAFTED BY:	
N.T.S. 93N/14 PROJ. 10162 REPORT: BPVR		

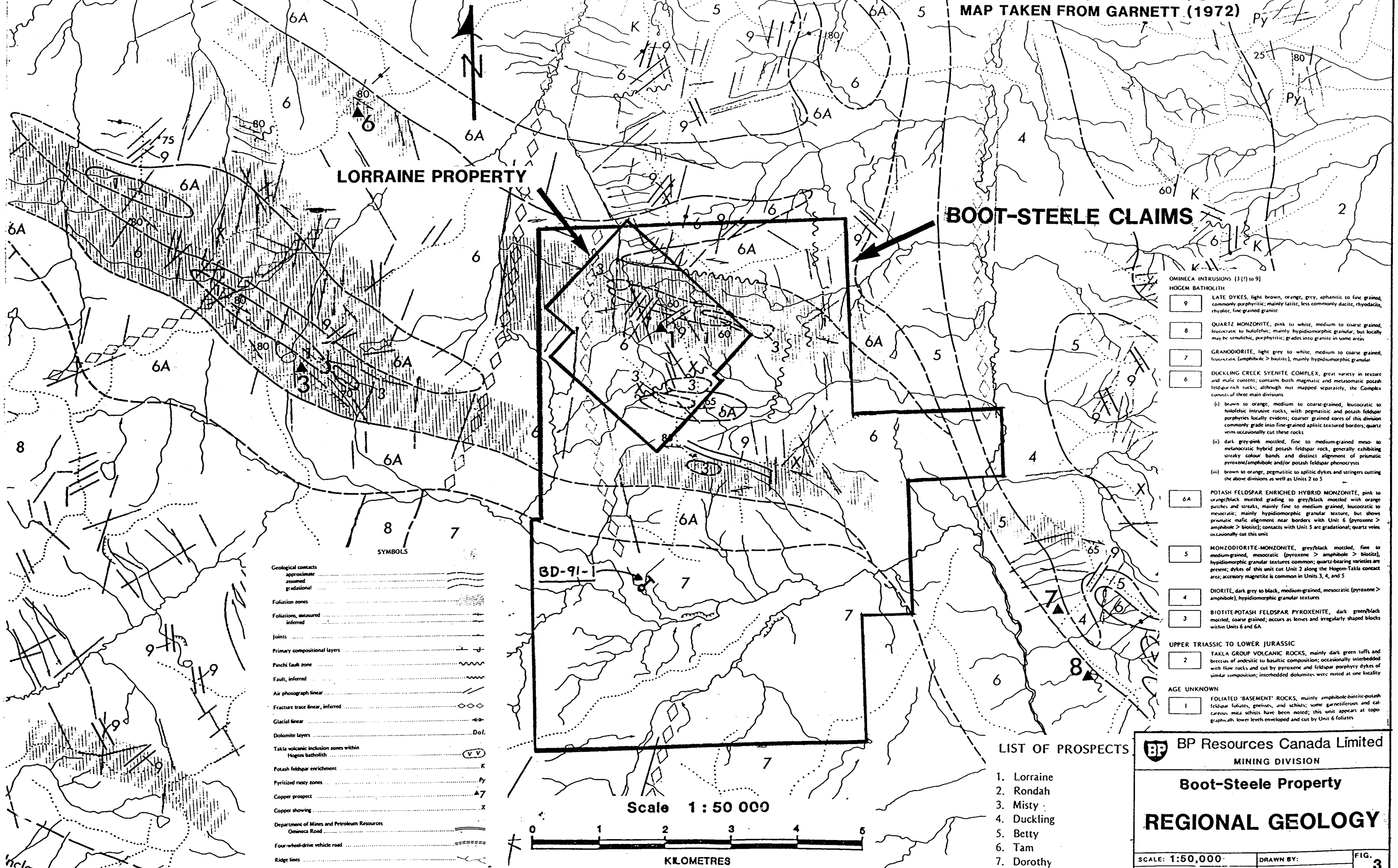


## 6. GEOLOGICAL SETTING (Figure 3)

The Boot-Steele claims cover a portion of the Hogem batholith, a northwesterly-trending, composite intrusion of Early Jurassic to Early Cretaceous age. The intrusion is 160 km long and up to 40 km wide and is bounded on the west by the Pinchi fault. To the east, the batholith intrudes volcanic rocks of the co-magmatic Takla Group of the Quesnel Trough.

In the area of the claims, the Hogem batholith can be divided into three rock suites. Of principal importance is the Duckling Creek Syenite Complex (DCSC) that hosts the Lorraine deposit. Northeast of the Complex is a group of older mafic monzonites and diorites. To the south are younger phases of quartz monzonite and granodiorite. Drill hole BD-91-1 was drilled in this southern area. Most outcrop near the drill hole is quartz deficient. Late dykes of mainly latitic composition cut all three rock suites and mark the youngest intrusive event.

The DCSC forms a northwesterly-trending elliptical body about 5 km wide and 32 km long. The rocks within the Complex are highly variable in texture and mafic content but they have been sub-divided by Wilkinson et al (1976) into two main types: 1) syenite migmatite, interpreted to have formed by a syenite magma intruding and metasomatizing layered monzonite-diorite-pyroxenite; and 2) pink leucocratic syenite, varying in texture from aplitic to pegmatitic. A hybrid zone of variably potassium-metasomatized monzonite marks much of the contact of the DCSC.



LORRAINE PROPERTY

BOOT-STEELE CLAIMS

**SYMBOLS**

Geological contacts	.....	.....
approximate	.....	.....
assumed	.....	.....
gradational	.....	.....
Foliation zones	.....	.....
Foliations, measured	.....	.....
inferred	.....	.....
Joints	.....	.....
Primary compositional layers	.....	.....
Pinchi fault zone	.....	.....
Fault, inferred	.....	.....
Air photograph linear	.....	.....
Fracture trace linear, inferred	.....	.....
Glacial linear	.....	.....
Dolomite layers	.....	Dol.
Takla volcanic inclusion zones within Hogen batholith	.....	(VV)
Potash feldspar enrichment	.....	K
Pyritized rusty zones	.....	Py
Copper prospect	.....	A7
Copper showing	.....	X
Department of Mines and Petroleum Resources	.....	
Omineca Road	.....	
Four-wheel-drive vehicle road	.....	
Ridge lines	.....	

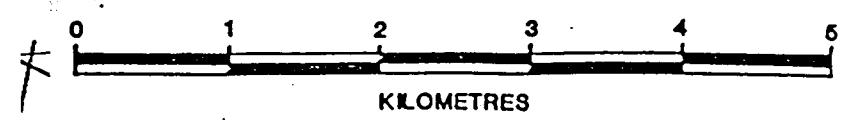
**OMINECA INTRUSIONS [3(?) to 9]**

**HOGEM BATHOLITH**

9	LATE DYKES, light brown, orange, grey, aphanitic to fine grained, commonly porphyritic; mainly latic, less commonly dacitic, rhyodacitic, rhyolitic, fine-grained granite
8	QUARTZ MONZONITE, pink to white, medium to coarse grained, leucocratic to holofelsic; mainly hypidiomorphic granular, but locally may be xenolithic, porphyritic; grades into granitic in some areas
7	GRANODIORITE, light grey to white, medium to coarse grained, leucocratic (amphibole > biotite), mainly hypidiomorphic granular
6	DUCKLING CREEK SYENITE COMPLEX, great variety in texture and mafic content; contains both magmatic and metasomatic potash feldspar rich rocks; although not mapped separately, the Complex consists of three main divisions (i) brown to orange, medium to coarse-grained, leucocratic to holofelsic intrusive rocks, with pegmatitic and potash feldspar porphyries locally evident; coarser grained cores of this division commonly grade into fine-grained aplitic textured borders; quartz veins occasionally cut these rocks (ii) dark grey-pink mottled, fine to medium-grained meso- to melanocratic hybrid potash feldspar rock, generally exhibiting streaky colour bands and distinct alignment of prismatic pyroxene/amphibole and/or potash feldspar phenocrysts (iii) brown to orange, pegmatitic to aplitic dykes and stringers cutting the above divisions as well as Units 2 to 5
6A	POTASH FELDSPAR ENRICHED HYBRID MONZONITE, pink to orange/black mottled grading to grey/black mottled with orange patches and streaks, mainly fine to medium grained, leucocratic to mesocratic; mainly hypidiomorphic granular texture, but shows prismatic mafic alignment near borders with Unit 6 (pyroxene > amphibole > biotite); contacts with Unit 5 are gradational; quartz veins occasionally cut this unit
5	MONZODIORITE-MONZONITE, grey/black mottled, fine to medium-grained, mesocratic (pyroxene > amphibole > biotite), hypidiomorphic granular textures common; quartz-bearing varieties are present; dykes of this unit cut Unit 2 along the Hogen-Takla contact area; accessory magnetite is common in Units 3, 4, and 5
4	DIORITE, dark grey to black, medium-grained, mesocratic (pyroxene > amphibole), hypidiomorphic granular textures
3	BIOTITE-POTASH FELDSPAR PYROXENITE, dark green/black mottled, coarse grained; occurs as lenses and irregularly shaped blocks within Units 6 and 6A
<b>UPPER TRIASSIC TO LOWER JURASSIC</b>	
2	TAKLA GROUP VOLCANIC ROCKS, mainly dark green tuffs and breccias of andesitic to basaltic composition; occasionally interbedded with flow rocks and cut by pyroxene and feldspar porphyry dykes of similar composition; interbedded dolomites were noted at one locality
<b>AGE UNKNOWN</b>	
1	FOLIATED 'BASEMENT' ROCKS, mainly amphibole-biotite-potash feldspar foliites, gneisses, and schists; some garnetiferous and calcareous mica schists have been noted; this unit appears at topographically lower levels enveloped and cut by Unit 6 foliites

BD-91-1

Scale 1 : 50 000



LIST OF PROSPECTS

1. Lorraine
2. Rondah
3. Misty
4. Duckling
5. Betty
6. Tam
7. Dorothy
8. Elizabeth

**BP Resources Canada Limited**  
 MINING DIVISION

**Boot-Steele Property**

**REGIONAL GEOLOGY**

SCALE: 1:50,000	DRAWN BY:	FIG. 3
DATE: DEC 1991	DRAFTED BY:	
N.T.S 93N/14	PROJ: 10162	REPORT: 8PVR

Lenses up to 2500 m long of pyroxenite and schistose 'basement' rocks are enveloped by the DCSC. The pyroxenites are not generally true ultramafic rocks but are composed of variable amounts of pyroxene, biotite, potassium feldspar and magnetite. Often they display large porphyroblasts of potash feldspar. The pyroxenites are thought to have formed as sill-like cumulates within the monzonites and diorites and were subsequently potassium metasomatized by the invading syenite magma.

The dominant regional structures are west to northwest foliation zones within the DCSC that parallel the general trend of the Complex. These zones contain the lenses of pyroxenite and basement schists and display structures ranging from the alignment of phenocrysts to gneissic layering and migmatitic banding.

Garnett (1973) recognized three steeply dipping fracture patterns on the Lorraine property. The youngest and strongest pattern is at 105° and cross-cuts northeasterly-trending dykes and fractures and a northerly-trending fracture set.

## **7. EXPLORATION HISTORY**

Copper showings at Lorraine have been known for many years and have been investigated by a number of individuals and companies since the early 1930's.

Drilling by Kennco in 1949 and 1961-1963 and by Granby Mining Corp in 1970-71 outlined two zones of disseminated chalcopyrite and bornite in syenite migmatite. The

two zones have reported reserves of 10 million tons grading 0.7% copper and 0.34 g/t gold. A detailed review of the Lorraine geology is provided by Wilkinson et. al., (1976).

Compared to the extensive exploration carried out on the Lorraine property, little work appears to have been done on what is now the Boot-Steele claims. The earliest work was probably done on the Jeno showing. The exact location of the showing is not known but according to a map in the 1949 BCDM Annual Report it is located on the east-southeasterly trending ridge crossed by the southeastern Lorraine property claim line.

According to the BCDM Minfile description of the Jeno Showing, copper mineralization occurs over a 150 by 550 m area in specks and stringers parallel to a north-striking gneissosity.

In 1966 Belcarra Explorations Ltd. did a reconnaissance soil survey southeast of "Jeno Ridge" (BCDM assessment report 1012). An area with enhanced copper values (to 280 ppm) was outlined over what is now the northeastern corners of BOOT 10. This area is 700 m long, up to 250 m wide and open to the east and west.

In 1972, Noranda explored the PIK claim group immediately west of the Lorraine property (assessment report 4522). They found a northwesterly-trending copper soil anomaly (values greater than 357 ppm) that is 1280 m long, open to the northwest and

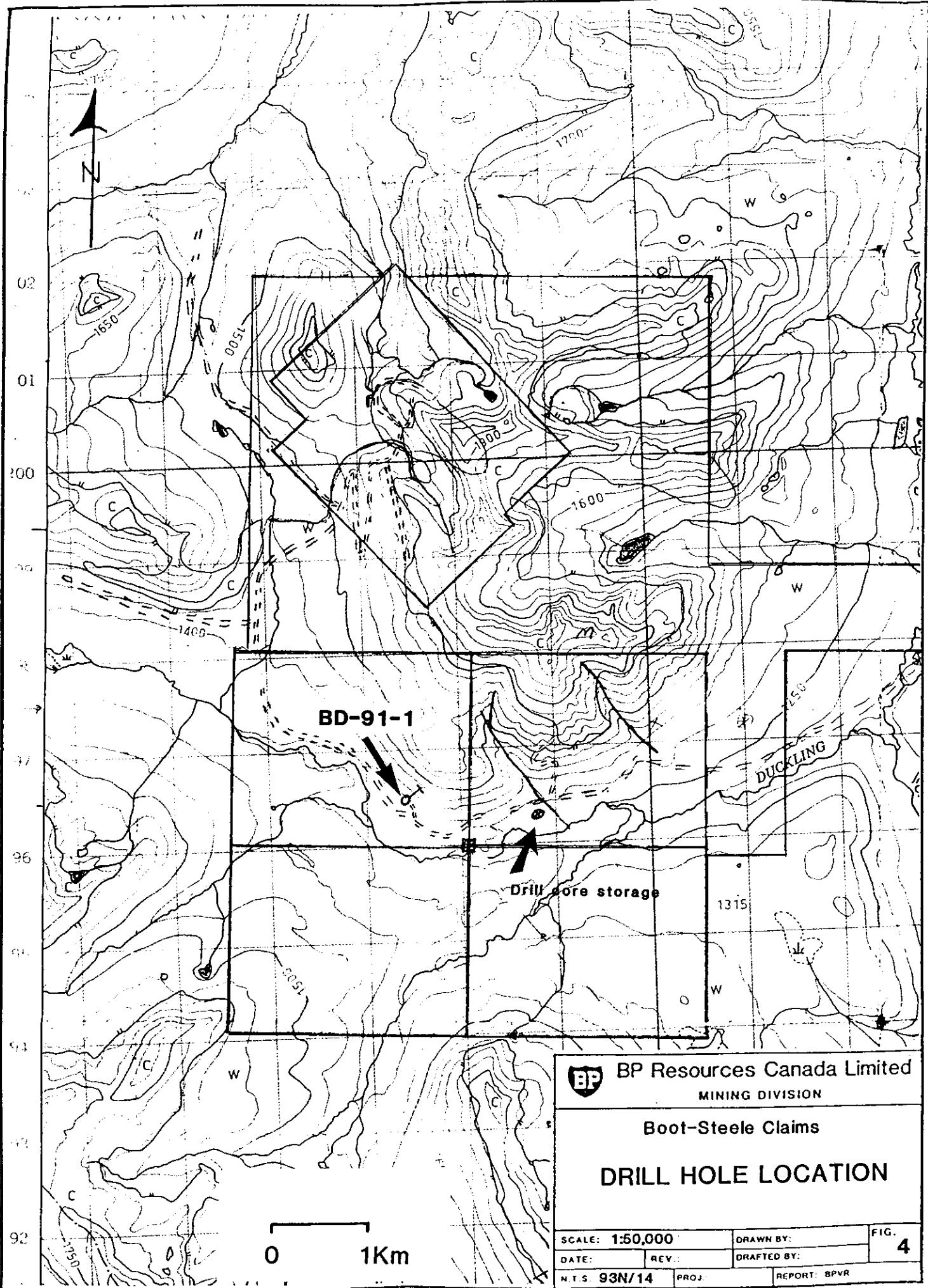
southeast and up to 500 m wide. The highest copper value is 3300 ppm while a weak Mo soil anomaly occurs within the copper zone. The anomaly is located in the northwestern corner of the STEELE claims, northwest of the present Lorraine property boundary.

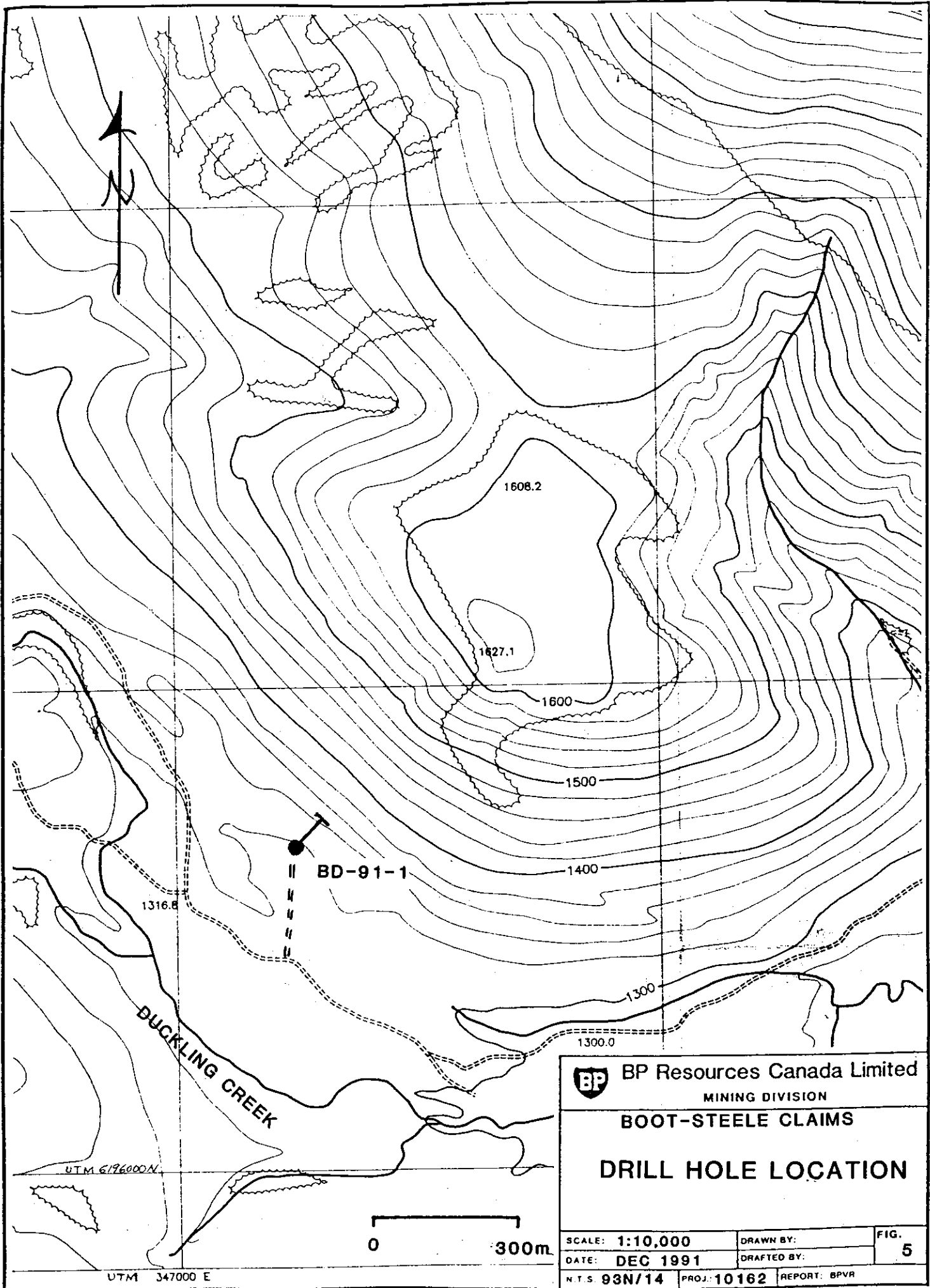
The Ted claims, explored by Tupco Mines Ltd. in 1972 (assessment reports 4151,4152), covered what is now the eastern edge the STEELE 2 and 3 claims. Numerous small copper showings and areas of potassium feldspar alteration were found and spotty copper soil anomalies (values to 790 ppm) outlined. An IP survey over the same area showed zones of weak to moderate IP responses that were recommended for drilling.


The Col claim group, explored in 1972 by the LUC syndicate, (assessment reports, 3610, 3995), straddled what is now the northern boundary of the STEELE claims. Bornite and chalcopyrite showings were mapped on the ridges within and adjacent to the STEELE claims. Extensive copper and molybdenum soil anomalies extend into the valley northeast of the Lorraine property. According to assessment report 3610, the molybdenum anomaly covers an area 360 m wide by 700 m long and averages 17 ppm Mo.

#### 8. DIAMOND DRILLING PROGRAMME

BD-91-1 was drilled on September 27-28, 1991 from a set up at the base of an isolated hill just north of the Lorraine property access road. The location of the hole is shown

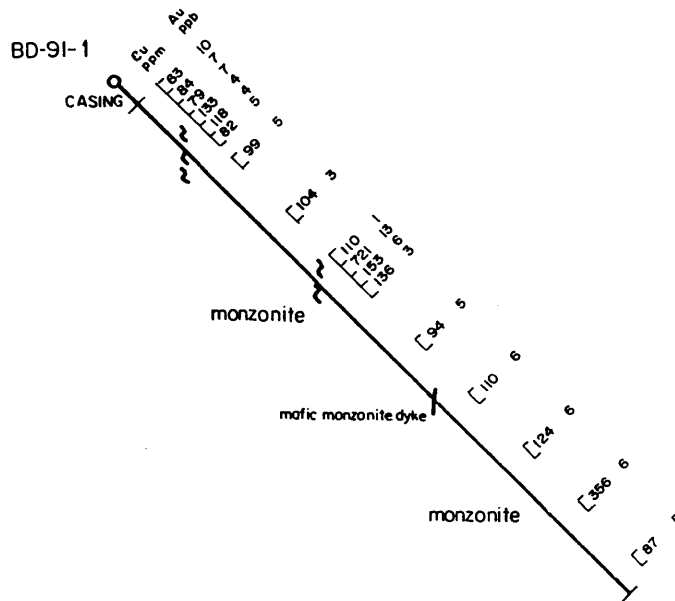




 <b>BP Resources Canada Limited</b> MINING DIVISION		
<b>BOOT-STEELE CLAIMS</b>		
<b>DRILL HOLE LOCATION</b>		
SCALE: 1:10,000	DRAWN BY:	FIG. <b>5</b>
DATE: DEC 1991	DRAFTED BY:	
N.T.S. 93N/14	PROJ. 10162	REPORT: BPVR


SW

NE



Looking NW (az. 310°)



 <b>BP Resources Canada Limited</b>			
MINING DIVISION			
<b>BOOT - STEELE PROPERTY</b>			
<b>CROSS SECTION</b>			
<b>BD-91-1</b>			
SCALE: 1:1000	DRAWN BY: NH		FIG. <b>6</b>
DATE: DEC. '91	REV	DRAFTED BY: Chong	
N.T.S. 93N-14	PROJ.: 10162	REPORT: BPVR 91-13	



on Figures 4 and 5, and a cross-section with copper-gold values is on Figure 6.

The hole was drilled to a depth of 96.0 m and recovered NQ-sized core. The overburden depth was three metres. Core recoveries were good, averaging 96% over the length of the hole.

BD-91-1 intersected mainly fresh, medium-grained monzonite. Minor narrow, weakly FeOx-stained shear zones near the top were the only evidence of hydrothermal activity. Only traces of pyrite and rare specks of chalcopyrite are present in the monzonite.

A total of 17 samples were collected from split core, each taken over a 2 m interval. The sample density was one per 10 m section except at the top of the hole where the first 16 m were sampled. The samples were sent to Acme Analytical Laboratories Ltd. in Vancouver where they were analysed for geochemical gold and 30 other elements by ICP.

The results showed low metal values throughout the hole. The highest copper and gold values are 721 ppm and 13 ppb from one 2 m interval.

## 9. CONCLUSIONS

The drill hole adequately tested the moderate chargeability high. The sources of the IP anomaly is probably disseminated magnetite as the sulphide content seen in the core is insufficient to explain the anomaly.

Most of the drill core is very fresh and there is little evidence of significant hydrothermal alteration or sulphide mineralization. The weakly iron-stained shears near the top of the hole are not a viable exploration target.

Based on the poor drill results from hole BD-91-1, no further work is recommended for this part of the Boot-Steele property.

**10. REFERENCES**

BCDM Assessment Reports 1012, 4522, 4151, 4152, 3610, 3995.

1949 BCDM Annual Report, Duckling Creek Area; p. A28.

Garnett, J.A. (1972): Preliminary geological map of Duckling Creek area, BCDM Prel. Map No. 9

Garnett, J.A. (1973): Lorraine, Lorrex; from the BCDM GEM Report, 1973 pp. 370-378.

Wilkinson, W.T. et al (1976): Lorraine, from the CIM Special Volume No. 15, Porphyry Deposits of the Canadian Cordillera.

**APPENDIX 1**

**Statement of Qualifications**

## Statement of Qualifications

I, Neil Humphreys of 3028 West 14th Avenue, in Vancouver in the province of British Columbia, do hereby state:

1. That I have received a B.Sc degree in geology from the University of Saskatchewan in 1976 and an M.Sc degree in mineral exploration from Queen's University in 1982.
2. That I have been active in mineral exploration since 1975 in Canada and the United States.
3. That I have been employed by major mining companies until 1988. From 1988 until the present I have been a consulting geologist directing exploration projects in British Columbia.

  
Neil Humphreys

**Vancouver, B.C.  
December, 1991**

**APPENDIX 2**

**Statement of Costs**

Statement of Costs

BOOT 5,7-10 Drilling Costs

Diamond Drilling and Tractor costs \$ 8,690.00

Sample Assays - 17 samples x \$12.33/sample 209.00

Sample Shipping 60.00

Vehicle - 6 days at \$50/day 300.00

Wages:

Geologist - Neil Humphreys September 25-30  
6 days @ \$275/day 1,650.00

Assistant - J.P. Loiselle September 25-30  
6 days at \$100/day 600.00

Camp Costs:

Drillers - September 26-28  
15 man/days @ \$75/day 1,125.00

BP Personnel - 12 man days @ \$50/day 600.00

Flights/Transportation 445.00

**TOTAL:** **\$13,679.00**  
=====

**APPENDIX 3**

**Diamond Drill Log BD-91-1**



PCXPLORE DRILL LOG CODING

ALTERATION (Mineral/Habit/Intensity)

A: prominent  
 B: subordinate  
 C: minor

Intensity 1=weak 5=moderate 10=extremely intense

<u>Minerals</u>		<u>Habit</u>
AB	albite	D disseminated
BL	bleaching	DB dissem. blebs
BT	biotite	FE fracture envelope
CA	calcite	FF fracture fill
CB	carbonate	HF hornfels
CH	chlorite	P pervasive
EP	epidote	PA patchy
FeOx	iron oxide	PP patchy pervasive
K	kspar	V vein
SER	sericite	
SI	silicification	
ZE	zeolite	

\*\* eg. A: K+EP/FE/6 \*\*

MINERALIZATION (Mineral/Habit/Intensity)

A: prominent  
 B: subordinate  
 C: minor

<u>Minerals</u>	
PY	pyrite
CP	chalcopyrite
HEM	hematite
PO	pyrrhotite
MAL	malachite
MnO <sub>2</sub>	manganese oxide (WAD)
MoS <sub>2</sub>	molybdenite
MT	magnetite

\*\* eg. A: CP/FF/2% \*\*

STRUCTURE (Type/Angle/Development)

Type FLT fault BD bedding FR fracture SHR shear  
 UCTC upper contact LCTC lower contact VN vein

Angle in degrees to core axis

Development 1=weak 2=moderate 3=well

\*\* eg. FLT/45/3 \*\*

BP

HOLE NO. BD-91-1

DRILLING CO. <u>Britton Bros</u>	LOCATION SKETCH 	DEPTH	TESTS DIP ANGLE	AZIMUTH	DATE STARTED: <u>27 SEPT. 1991</u>	PROJECT: <u>BOOT- STEELE</u>
		COLLAR	<u>-45°</u>	<u>040°</u>	DATE COMPLETED: <u>28 SEPT 1991</u>	N.T.S.: <u>95N/14W</u>
		<u>84m</u>	<u>-46°</u>	<u>—</u>	COLLAR ELEV.: <u>1320m</u>	LOCATION: <u>~ 200 M WEST OF IP LINE</u>
					NORTHING:	<u>1800 E</u>
					EASTING:	UTM : <u>NORTH 6196680</u>
					AZIMUTH: <u>040°</u>	<u>EAST 347250</u>
HOLE TYPE				DEPTH: <u>96.0</u>	DATE LOGGED: <u>29 SEPT. 1991</u>	
				CORE SIZE: <u>NQ</u>	LOGGED BY: <u>N. HUMPHREYS</u>	

INTERVAL		ROCK TYPE (composition, colour, texture, grain size)	ALTERATION	MINERALIZATION	Firm	STRUCTURE (fractures, faults, folding, bedding, etc.)	REMARKS Mineralization, type, age relations
FROM	TO						
<u>0</u>	<u>4.0</u>	<u>CASING</u>					
<u>4.0</u>	<u>96.0</u>	<u>MONZONITE: Med grey, med. grained, med. foliated weakly porphy. texture w/ larger fspas Xlc. 15-20% mafics: pyx ~ hbl, &lt;5% biot - 1-2% diss mag, usually w/ mafics - to yellowish-brownish sphene. - some pinker sections may be syeno-monzonite.</u>	<u>chl/diss/1</u>	<u>mag/diss/1</u>		<u>Foliation 45° C/A</u>	
			<u>gyp/v/1</u>				
			<u>calc/v/1</u>				
			<u>hem/ff/1</u>				
			<u>ep:il/diss/2</u>				
		<u>- 4.0 ~ 15.0m pinker rock prob. due to K metasom.</u>					

INTERVAL		ROCK TYPE (composition, colour, texture, grain size)	ALTERATION	MINERALIZATION	Firm	STRUCTURE	
FROM	TO					(Fractures, faults, folding, bedding, etc.)	Mineralization, type, age, relations
4.0	96.0 (cont)	~7.0 - 15.5 Common rubbly zones w/ mod. hem., minor clay and greenish grunge (after epid.) +/- sericite (?)					
		37.5 - 41.3 Shear w/ gouge, strong chl and hem in fract; 1-3mm "X's" of pale greenish gypsum or sulhd					
		From 41.3 to 42.0 Stronger foliation finer gr. mafics, more distinctly porphyritic, minor pegm veins to 2cm					
		52.0 - 53.0 Slight increase in pink colour, minor chl in fract. w/ Ti. Pg.		py / <sup>pp</sup> / Ti			
		59.0 - 59.7. dk grey. f. gr. dyle, weakly porph, prob similar comp. but not magnetic				45° lower contact, X-cut foliation	





# DRILL LOG

## sample data

SAMPLE					CORE RECOVERY		VISUAL ESTIMATES (% ORE MINERALS)	ASSAY RESULTS					
NUMBER	FROM	TO	TOTAL METRES	M.S.	%	AMT. LOST							
107001	4.0	6.0	2.0	1.2	69%								
107002	6.0	8.0	2.0	0.9	70%								
107003	8	10		0.4	97%								
107004	10	12		0.6	92%								
107005	12	14		1.0	83%								
107006	14	16		0.8	90%								
N/S	16	18		0.5	92%								
107007	18	20		0.9	98%								
N/S	20	22		1.4	98%								
N/S	22	24		0.7	98%								
N/S	24	26		0.3	98%								
N/S	26	28		0.4	98%								
107008	28	30		0.3	98%								
N/S	30	32		0.4	98%								
N/S	32	34		0.4	99%								
N/S	34	36		0.4	91%								
107009	36	38		0.3	85%								
107010	38	40		0.3	66%								
107011	40	42		0.3	75%								
107012	42	44		0.4	98%								
N/S	44	46		0.9	98%								
N/S	46	48		1.7	98%								
N/S	48	50		1.1	98%								
N/S	50	52		1.0	98%								
107013	52	54		0.6	98%								
N/S	54	56		0.4	98%								



# DRILL LOG

## sample data

SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% ORE MINERALS)	ASSAY RESULTS						
NUMBER	FROM	TO	TOTAL METRES	M.S.	%		AMT. LOST						
N/S	56	58		0.5	99%								
N/S	58	60		0.3	99%								
N/S	60	62		1.1	97%								
107014	62	64		1.3	98%								
N/S	64	66		0.6	99%								
N/S	66	68		0.9	99%								
N/S	68	70		1.3	98%								
N/S	70	72		1.5	90%								
107015	72	74		0.9	99%								
N/S	74	76		0.9	99%								
N/S	76	78		1.0	98%								
N/S	78	80		0.7	98%								
N/S	80	82		0.9	98%								
107016	82	84		0.8	98%								
N/S	84	86		0.8	99%								
N/S	86	88		0.6	98%								
N/S	88	90		0.8	98%								
N/S	90	92		0.6	99%								
107017	92	94		0.7	99%								
N/S	94	96		0.7	98%								

**APPENDIX 4**

**List of Geochemical Results**



~~DRILLING~~

## GEOCHEMICAL ANALYSIS CERTIFICATE

Boat

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700 - 890 W. Pender St., Vancouver BC V6B 4W3



## DRILL HOLE

BD-91-1

	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppb	
A 107001	6	63	9	58	.1	11	9	676	3.24	3	5	ND	1	164	.2	2	2	100	1.75	.058	10	31	.37	123	.15	3	.91	.19	.33	1	10
A 107002	6	84	20	79	.7	11	13	682	3.52	4	5	ND	1	240	.6	2	2	100	1.69	.071	11	34	.44	139	.14	2	1.00	.13	.38	1	7
A 107003	1	79	4	62	.1	5	11	590	2.86	4	5	ND	1	280	.3	2	2	90	1.52	.074	13	9	.45	111	.09	2	.88	.09	.37	1	7
A 107004	1	133	4	59	.1	4	11	636	2.60	3	5	ND	1	358	.3	2	2	95	1.75	.058	11	7	.41	98	.09	2	.75	.06	.36	1	4
A 107005	6	118	2	59	.1	12	12	813	3.50	2	5	ND	1	419	.4	2	2	104	2.17	.080	11	32	.53	94	.14	4	.97	.13	.35	1	4
A 107006	4	82	4	67	.1	10	13	851	3.55	3	5	ND	1	447	.3	2	2	106	2.57	.094	11	26	.64	67	.12	2	1.08	.13	.35	1	5
A 107007	1	99	6	59	.1	4	10	727	2.82	2	5	ND	1	674	.2	2	2	93	2.56	.087	11	7	.57	44	.10	5	1.15	.11	.28	1	5
A 107008	1	104	5	62	.1	5	12	797	2.98	2	5	ND	1	527	.4	2	2	106	2.56	.097	12	8	.67	62	.15	4	1.44	.31	.39	1	3
A 107009	4	110	4	85	.1	10	17	1168	4.38	4	5	ND	1	634	.7	2	2	129	2.79	.130	17	25	.75	141	.14	2	1.50	.25	.54	1	1
A 107010	2	721	6	101	.6	8	21	1509	5.28	10	5	ND	2	1162	.6	2	2	145	.76	.206	23	12	.61	74	.05	5	1.27	.04	.54	1	13
A 107011	1	153	2	82	.1	4	16	907	3.84	8	5	ND	1	880	.7	2	2	123	1.79	.128	18	5	.63	50	.09	3	1.24	.08	.50	1	6
A 107012	1	136	5	84	.1	6	16	1664	3.71	6	5	ND	1	653	.8	2	2	122	4.34	.127	17	8	.86	68	.16	3	1.46	.13	.79	1	3
A 107013	5	94	3	72	.1	11	15	861	3.91	3	5	ND	1	792	.7	2	2	114	2.78	.119	13	26	.71	107	.14	3	1.93	.63	.70	1	5
A 107014	4	110	4	66	.1	9	12	846	3.68	5	6	ND	1	958	.4	2	2	124	2.63	.095	11	23	.61	43	.20	6	1.70	.55	.62	1	6
A 107015	1	124	5	71	.1	3	11	818	3.02	4	5	ND	1	1250	.6	2	2	101	2.27	.078	12	8	.62	64	.16	5	1.86	.59	.67	1	6
A 107016	1	356	4	60	.3	5	11	731	2.78	2	5	ND	1	910	.7	2	2	90	2.19	.086	11	6	.58	47	.15	3	1.73	.69	.55	1	6
A 107017	5	87	2	79	.1	12	16	1030	4.36	6	5	ND	1	669	.5	2	2	148	3.23	.138	15	29	.87	102	.22	4	1.94	.59	.80	1	5
A 107018	2	45	2	69	.1	33	31	655	6.93	2	5	ND	1	319	.9	2	2	188	1.93	.422	17	46	1.19	140	.17	3	1.62	.26	1.04	1	2
A 107019	1	138	2	76	.1	33	33	657	7.05	4	5	ND	2	539	1.0	2	2	191	1.96	.432	18	30	1.19	165	.17	2	2.37	.68	1.10	1	3
A 107020	1	255	2	70	.1	40	27	555	5.69	5	5	ND	2	745	1.1	2	2	148	1.95	.428	19	59	1.17	180	.16	5	2.30	.67	1.03	1	5
A 107021	3	87	5	71	.1	34	28	603	6.67	4	5	ND	2	702	.9	2	2	181	1.96	.304	14	54	1.11	77	.19	3	2.49	.68	.95	1	1
RE A 107017	5	86	2	77	.1	13	15	1003	4.30	6	5	ND	1	644	.8	2	2	145	3.15	.139	14	29	.86	97	.22	2	1.87	.57	.77	1	3
A 107022	5	236	10	82	.1	35	26	593	6.05	2	5	ND	1	475	.8	2	2	170	1.93	.311	15	67	1.16	82	.19	12	2.05	.62	.91	1	11
A 107023	2	550	23	187	.4	43	22	599	5.61	4	5	ND	1	388	1.6	2	2	182	1.96	.384	18	99	1.36	134	.16	4	1.96	.45	1.04	1	7
A 107024	3	105	3	86	.1	39	22	549	5.64	2	5	ND	2	477	1.0	2	2	196	2.14	.435	19	110	1.25	194	.14	5	1.96	.48	.89	1	4
A 107025	7	1829	26	88	.8	44	36	695	6.38	4	5	ND	2	479	1.3	2	8	170	2.38	.330	14	79	2.02	192	.24	4	2.39	.33	1.30	1	6
A 107026	3	190	4	85	.1	52	33	760	7.53	2	6	ND	4	317	1.0	2	2	181	2.44	.343	17	80	1.62	118	.17	4	1.76	.23	1.21	1	2
A 107027	4	41	20	77	.1	58	32	717	6.34	4	5	ND	1	332	.8	2	2	143	2.47	.251	13	99	1.93	174	.23	4	1.60	.16	1.32	1	2
A 107028	1	45	2	63	.1	52	27	632	4.31	4	5	ND	2	321	.8	2	2	103	2.36	.118	9	136	2.13	238	.25	6	1.58	.14	1.34	1	3
A 107029	3	191	4	80	.1	43	24	743	4.27	2	5	ND	3	393	.7	2	2	94	3.41	.184	12	98	2.12	105	.18	3	1.36	.12	.85	1	6
A 107030	7	92	6	43	.2	36	15	610	3.43	3	5	ND	1	162	.6	2	2	80	2.98	.095	7	82	1.08	87	.11	3	.88	.05	.57	1	3
A 107031	5	89	4	33	.1	29	13	399	2.86	2	5	ND	1	238	.3	2	2	55	1.65	.078	5	62	.87	134	.11	2	.87	.06	.62	1	4
A 107032	1	22	2	64	.1	63	33	594	6.66	3	5	ND	3	136	1.0	2	2	156	1.48	.281	15	131	1.40	46	.22	8	1.08	.06	.97	1	5
A 107033	1	28	4	59	.1	67	33	589	6.85	5	5	ND	2	105	.8	2	2	166	1.30	.265	14	147	1.35	43	.24	8	1.02	.08	.90	1	3
A 107034	3	30	6	62	.1	59	31	623	6.80	2	5	ND	2	124	.8	2	2	155	1.51	.231	13	154	1.32	58	.21	5	1.01	.09	.87	1	4
A 107035	2	18	2	69	.1	69	34	657	7.23	4	5	ND	2	133	.9	2	2	162	1.51	.257	14	164	1.51	55	.23	3	1.09	.08	.97	1	4
A 107036	2	21	7	66	.1	57	29	648	5.82	2	5	ND	1	166	.4	2	2	130	1.85	.236	13	129	1.49	54	.22	6	1.03	.06	.87	1	3
STANDARD C/AU-R	19	45	39	132	7.6	74	32	1080	4.04	40	18	7	40	54	19.0	15	22	59	.49	.093	41	59	.91	185	.09	35	1.90	.07	.17	12	420
STANDARD C	19	50	45	134	7.3	70	31	1051	4.01	40	20	7	39	52	18.2	15	18	55	.48	.091	39	58	.90	179	.09	32	1.92	.06	.15	11	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
- SAMPLE TYPE: CORE AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: OCT 17 1991

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SIGNED BY: D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS