Geological and Geochemical Report
on the
BOLT Claims
located in the
Skeena Mining Division
N.T.S. 103-I-1W

(54°11' North and 128°26' West)

Owned and operated by
CANADIAN NICKEL COMPANY LIMITED
80 - 10551 Shellbridge Way
Richmond, British Columbia
V6X 2W8

Report by:

E.J. Debicki
August 5, 1982

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MAPS (Back Pockets)

1. INTRODUCTION

1.1 Summary

The BOLT claim (20 units) located 38 kilometres south-southeast of Terrace, B.C., in the Skeena Mining Division, was staked by Canadian Nickel Company Limited in June 1980 as follow-up of an anomalous drainage indicated by a B.C. Government Stream Sediment Geochemical release. Access to the property is by helicopter from Terrace, B.C.

Geologically, the BOLT claim is underlain by Cretaceous granite to granodiorite phases of the Coast Plutonic Complex. Quartz veins and veinlets contain abundant specular hematite, minor pyrite and lesser amounts of disseminated chalcopyrite and molybdenite. Porphyry mineralization has been located over an area 800 m by 800 m in the central portion of the claim and across a 5 metre wide quartz vein (0.07% Mo, 0.44% Cu, 0.21 oz/ton Ag) in the southern portion of the claim.

Previous work in 1980 and 1981 consisted of prospecting, geological and geochemical surveys. A three-day (July 1-3, 1982) programme in 1982 completed prospecting, geological and geochemical surveys on previously unexplored portions of the BOLT claim.

Porphyry Cu-Mo mineralization has been located on the BOLT claim. Future work will consist of gridding, rock chip geochemistry, a fracture/quartz vein density survey, geophysics (magnetometer and IP) and diamond drilling.

1.2 Location, Access, Physiography

The BOLT claim (20 units) is located 38 kilometres south-southeast of Terrace, B.C. or 20 kilometres northeast of Kitimat, B.C. (Figure 1). The property occurs in the Kitimat Ranges of the Central Coast Mountains, B.C.

The claim is accessible only by helicopter from Terrace, B.C. approximately 20 minutes flying time. A new logging road along the Kitimat River is within 8 km north of the property.

Elevations on the property range from 300 metres above sea level in the northeast to 1375 metres on the west. Much of the topography is rugged. Steep cliffs hinder access on foot on some portions of the claim. The higher elevations are above tree line. A north-easterly flowing tributary of Bolton Creek drains the property.

1.3 Property

The BOLT claim consists of 20 units staked on June 23, 1980 and recorded July 4, 1980.

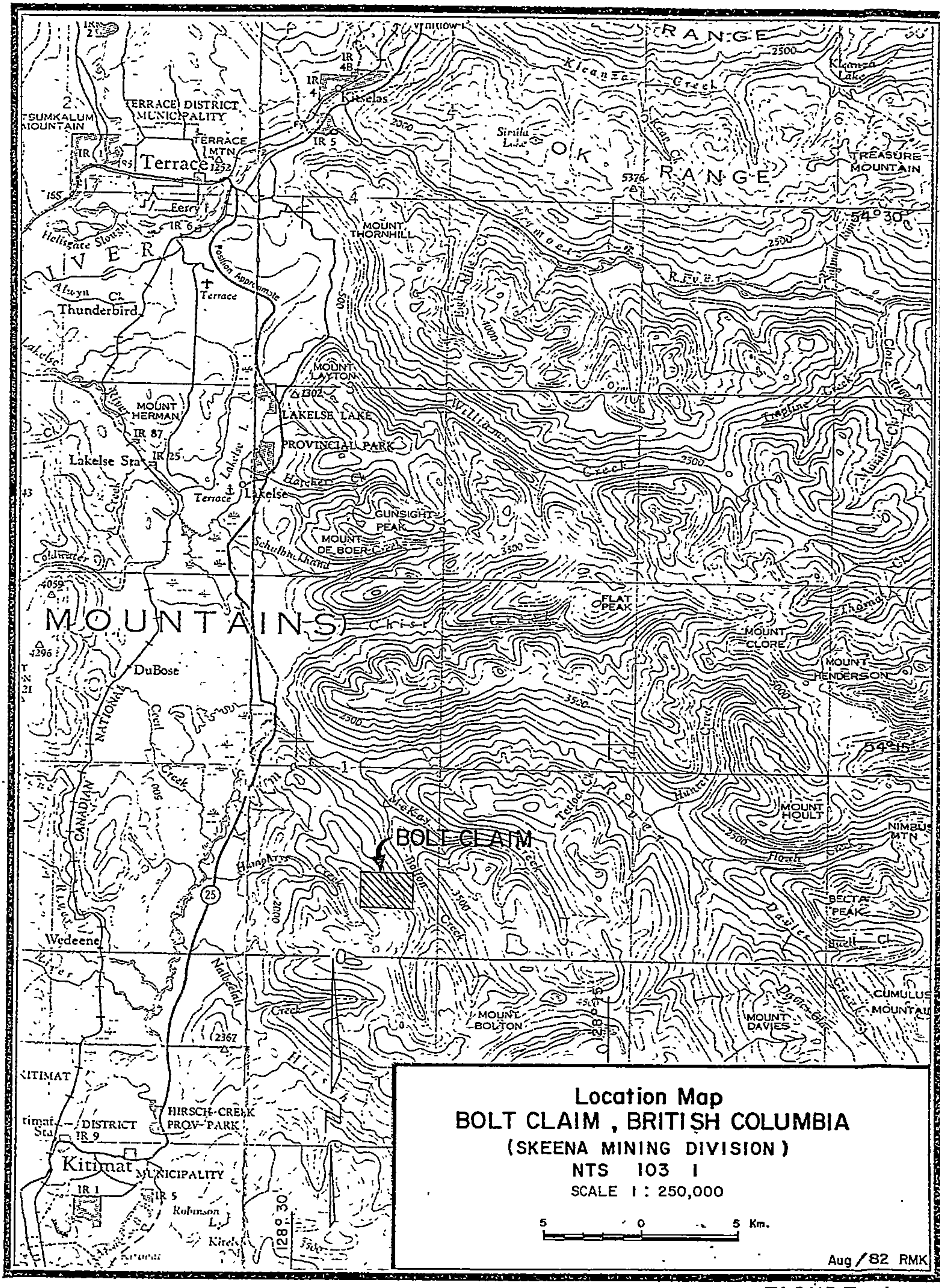

Location Map
BOLT CLAIM , BRITISH COLUMBIA
(SKEENA MINING DIVISION)
NTS 103 I
SCALE 1 : 250,000
5 0 5 Km.
Aug / 82 RMK
BOLT CLAIM
Terrace
TERRACE DISTRICT MUNICIPALITY
TSUMKALUM MOUNTAIN
TERRACE MTN
Kitselas
OK. RANGE
TREASURE MOUNTAIN
MOUNT THORNHILL
Thunderbird
MOUNT LAYTON
MOUNT HERMAN
LAKELSE LAKE
PROVINCIAL PARK
Lakelse Sta
Lakelse
GUNSIGHT PEAK
MOUNT DE BOER
MOUNTAINS
FLAT PEAK
MOUNT CLORE
MOUNT HENDERSON
DuBose
CANADIAN NATIONAL
MOUNT HOULT
NIMBUS MTN
BECTA PEAK
Wedeene
MOUNT BOLTON
MOUNT DAVIES
CUMULUS MOUNTAIN
KITIMAT
HIRSCH CREEK PROV. PARK
DISTRICT
Kitimat
MUNICIPALITY
54° 30'
54° 15'
128° 30'
128° 15'
25

FIGURE 1

Claim Name	Units	Record Number
BOLT	20	1561

The claim is located in the Skeena Mining Division. Figure 2 outlines the BOLT claim on NTS 103-I-1W. The HUMP 1 (2508) and 2 (2509) adjoin the BOLT claim to the south, otherwise all surrounding ground is open.

1.4 Previous History

The BOLT claim was staked on June 23, 1980 on the basis of an anomalous stream sediment result (7 ppm Mo, 46 ppm W and 56 ppb F in Water - sample 7050) reported by the B.C. Ministry of Energy, Mines and Petroleum Resources geochemical data release of June 6, 1980.

During 1980, property evaluation consisted of follow-up stream sediment geochemical sampling and prospecting. A total of 14 rock chip, 17 stream sediment, and 1 soil sample were collected. In 1981, the central portion of the claim was explored by a two-man crew camped on the property. Work consisted of gridding (800 m east-west base line with north-south cross-lines at 200 m interval), prospecting and geological mapping. A total of 28 rock chip and 45 soil samples were collected and analyzed for Cu and Mo. Cretaceous granodiorite and granite intrusive phases underlie the gridded area. Quartz veinlets containing abundant specular hematite, minor pyrite and lesser amounts of disseminated chalcopyrite and molybdenite cut the granite and to a lesser extent, the granodiorite. An 800 m by 800 m (open to the east) area roughly coincident with the granite boss contains values in rocks up to 590 ppm Mo and 245 ppm Cu and in soils up to 120 ppm Mo and 260 ppm Cu. Aplite veins and diabase dikes are also present.

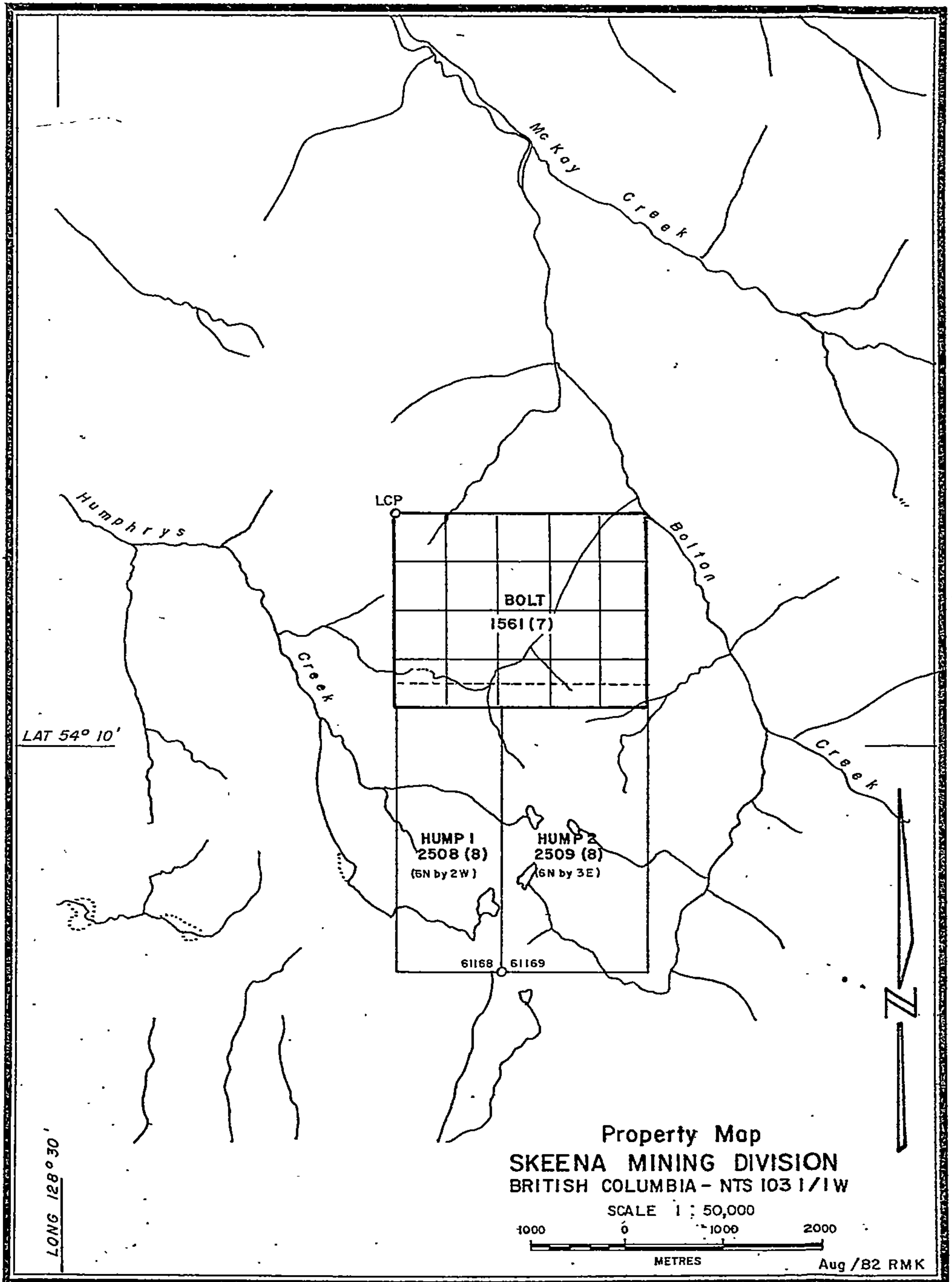
The results of the 1980 and 1981 programmes were filed as assessment reports.

No other record can be located of previous work having been performed by foreign companies on the ground now staked as the BOLT claim.

1.5 1982 Exploration Programme

The 1982 exploration programme on the BOLT claim consisted of limited prospecting, soil and rock chip geochemistry on those portions of the claim not previously explored in 1980 and 1981. A two-man crew (Jeff Scouten and Craig Ravnaas) completed field work during the period July 1-3, 1982. An Okanagan Helicopters Jet Ranger 206-B helicopter based in Terrace was utilized for daily access to and from the property.

A total of 43 rock chip and 25 soil samples were collected during the programme.



Mc Kay Creek
Humphrys Creek
Bolton Creek
LCP
BOLT
1561 (7)
HUMP 1
2508 (8)
(6N by 2W)
HUMP 2
2509 (8)
(6N by 3E)
61168
61169
LAT 54° 10'
LONG 128° 30'
N
Property Map
SKEENA MINING DIVISION
BRITISH COLUMBIA - NTS 103 I/1W
SCALE 1 : 50,000
1000
0
1000
2000
METRES
Aug /82 RMK

FIGURE 2

2. REGIONAL GEOLOGY

The regional geology of the Terrace area, B.C. is covered by Carter and Kirkham (1969), Carter and Grove (1971) and Duffell and Souther (1964).

Upper Cretaceous to early Tertiary granite to granodiorite phases of the Coast Plutonic Complex underlies the entire area.

3. PROPERTY GEOLOGY

3.1 Rock Types

The central portion of the BOLT claim is occupied by a leucogranite boss approximately 700 m by 500 m in size with the eastern contact not defined. The leucogranite is pink and fine to medium grained. Bordering the leucogranite and occupying the remainder of the claim, is a white to grey granodiorite, locally mapped by various Canadian Nickel personnel as quartz monzonite and granite. The granodiorite is fine to medium grained, generally equigranular with varying amounts of biotite and lesser amounts of hornblende. Border phases of the granodiorite, particularily where intruded by quartz veining is fine grained, mouse grey and equigranular. Within the granodiorite phase, locally minor isolated outcrops of quartz porphyry and feldspar porphyry have been noted.

Veining and dikes on the claim include quartz veins which are usually mineralized with the largest one (5 m) located to date, occurring on the southern portion of the property, aplite dikes, and roughly trending northwest-southeast unmineralized diabase dikes also mapped as mafic dikes and diorite. One dacite dike was noted in the southeast corner of the claim. The veins and dikes cross-cut both the leucogranite and granodiorite phases.

The geology of the BOLT claim is outlined on Map 1.

3.2 Fracture/Quartz Vein Density Measurements

As an indication of the possible development of a porphyry system fracture and quartz vein density measurements were carried out on those portions of the property evaluated in 1982. At each measurement site, the number of fractures and quartz veins were noted across a one metre width in both the north-south and east-west directions. The fracture density measurements are plotted on Map 2 and tabulated in Appendix D. Additional measurements will be taken in future work programmes. Fracture densities are generally low but there is an increase in the southwest corner of the claim where a 5 metre wide quartz vein with adjacent parallel and cross-cutting quartz veinlets occupying up to 50% of the host rock was noted. Exploration in 1980 and 1981 did not include fracture quartz vein density surveys.

3.3 Alteration

Secondary alteration minerals such as pyrite, limonite, hematite, kaolinite and chlorite are widespread particularily within the granodiorite phase of the batholith complex.

3.4 Mineralization

Mineralization consisting of varying proportions of specular hematite, magnetite, pyrite, and lesser amounts of disseminated chalcopyrite and molybdenite are restricted to the quartz veins which cut both the leucogranite and the granodiorite phases. Pyrite and specular hematite content are up to 10% in some quartz veins. Chalcopyrite and molybdenite content varies from 0% to 10% within any quartz vein with a maximum of 10% within portions of the 5 metre wide quartz vein on the southern border of the claim. Here chalcopyrite occurs as clots up to 4 mm in size throughout the quartz vein. Molybdenite is very finely disseminated, barely visible to the naked eye but forming a bluish-gray dusting throughout the more heavily mineralized portions of the quartz vein.

4. GEOCHEMISTRY

4.1 Rock Geochemistry

A total of 43 rock chip samples were collected during the 1982 exploration programme. At each sample site, an area, approximately one metre diameter, was chip sampled. Samples were analyzed by normal ICP geochemical analysis procedure for Mo, Cu, Ag, As, W and Au by Acme Analytical Laboratories Ltd., Vancouver, B.C. A 0.5 gram sample is digested with 3 ml of 3:1:3 HCl to HNO_3 to H_2O at 90°C for 1 hour and then diluted to 10 mls with H_2O.

Rock chip sample locations and results are plotted on Maps 3 and 4. Analytical results and sample descriptions are included as Appendix A and B, respectively.

Rock chip geochemistry confirmed the presence of potentially significant porphyry type Mo-Cu mineralization associated with the 5 metre wide quartz vein on the southern border of the claim (Map 4). The results of the three, one metre diameter chip samples collected at two metre centres across the vein are tabulated below:

	ppm				ppb
Sample No.	Mo	Cu	Ag	W	Au
RX 42969	69	2210	3.3	6	5
RX 42970	1533	9168	10.1	15	40
RX 42971	428	1846	6.4	70	10
Average	677	4408	6.6	30.3	18.3
	(0.07%)	(0.44%)	(0.21 oz/t)		

4.2 Soil Geochemistry

A total of 25 soil samples were collected on the southern and eastern portions of the claim. The samples were taken from areas of extensive overburden cover. Samples were analyzed for Mo and Cu by the normal ICP geochemical analysis procedure by Acme Laboratories with sample preparation identical to that for rocks described in Section 4.1, Rock Geochemistry. The soil sample locations and results are plotted on Maps 3 and 4. Analytical results and sample descriptions are included as Appendix A and B, respectively.

Highest soil sample values for Mo and Cu from the samples collected were 46 ppm Mo and 49 ppm Cu.

5. CONCLUSIONS AND RECOMMENDATIONS

The BOLT claim is underlain by leucogranite and granodiorite phases of the Coast Plutonic Complex intrusives. Quartz veins containing chalcopyrite and molybdenite mineralization cut both phases and are indicative of a potential porphyry Mo-Cu system. To date, two areas of anomalous mineralization have been located on the claim. Within the central portion of the claim a primary dispersion halo 800 m by 800 m, underlain by the leucogranite has returned rock chip values up to 590 ppm Mo and 245 ppm Cu and in soils up to 120 ppm Mo and 260 ppm Cu. In the southern portion of the claim, a 5 metre wide quartz vein cutting granodiorite returned an average value across the vein of 677 ppm Mo, 4408 ppm Cu, 6.6 ppm Ag and 30.3 ppm W. Much of the claim has not been thoroughly evaluated because of the limited programmes carried out to date and the rugged topography reducing accessibility.

Future work on the BOLT claim will consist of gridding, rock chip geochemistry and fracture/quartz vein density surveys, geophysics (magnetometer and I.P.) followed by diamond drilling, if warranted.

6. REFERENCES

Carter, N.C. and Kirkham, R.V., 1969; Geological Compilation Map of the Smithers, Hazelton and Terrace Areas; B.C. Dept. Mines and Pet. Resources Map 69-1.

Carter, N.C. and Grove, E.W., 1971; Geological Compilation Map of the Stewart, Anyox, Alice Arm, and Terrace Areas; B.C. Dept. of Mines and Pet. Resources Prelim. Map No. 8.

Duffell, S. and Souther, J.G., 1964; Geology of the Terrace Map Area, B.C. (103-I-E 1/2); G.S.C. Memoir 329 with G.S.C. Map 1136A.

Peto, P., 1980; Reconnaissance Geochemical Survey of the BOLT Claim; B.C. Assessment Report, July 17, 1980.

Peto, P., 1981; Geochemical and Geological Survey of the BOLT Claim; B.C. Assessment Report, July 25, 1981.

7. AUTHOR'S QUALIFICATIONS

I, EDWARD J. DEBICKI, of the City of Richmond, in the Province of British Columbia, HEREBY CERTIFY:

1. THAT I reside at 11351 Seahurst Road, Richmond, British Columbia, V7A 3P3.

2. THAT I am a graduate of McMaster University, Hamilton, Ontario, with a degree of Bachelor of Science (1971).

3. THAT I am District Geologist, B.C. and Yukon, with Canadian Nickel Company Limited (subsidiary of Inco Limited) of Copper Cliff, Ontario, POM 1NO.

4. THAT I have practised my profession as a geologist since 1971, having worked in Ontario, Quebec, the Northwest Territories, Yukon Territory and British Columbia.

5. THAT the work described in this report was carried out under my supervision on behalf of Canadian Nickel Company Limited.

6. THAT I am a Associate Member of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.

DATED at Richmond, British Columbia, this 5th day of August, 1982.

E. J. Debicki

Edward J. Debicki

8. STATEMENT OF EXPENDITURES - 1982

BOLT CLAIM

WAGES			
E.J. Debicki	2 days @ $250.	$ 500.	
J. Scouten	6 days @ $81.	486	
C. Ravnaas	4 days @ $76	304	
D. Walsh	2 days @ $155	310	$1,600.00
PERSONNEL EXPENSES			
Accommodation (Town & Travel)		232.14	
Meals (Town & Travel) 10 man days @ $20 per day		200.00	432.14
TRANSPORTATION			
Truck Rental 6 days @ $23 per day		138.00	
Gasoline		138.33	
Helicopter		2,338.50	2,614.83
ANALYTICAL			
43 rock analyses (Cu, Mo) @ $6.95 each		298.85	
25 soil analyses (Cu, Mo) @ $4.95 each		123.75	422.60
MISCELLANEOUS			
Field Supplies			27.43
		TOTAL:	$5,097.00

E.J. Debicki
July 4, 1982

APPENDIX A

ANALYTICAL RESULTS

APPENDIX A

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS, VANCOUVER B.C. PH:253-3158 TELEX:04-53124

ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
THIS LEACH IS PARTIAL FOR: Ca,P,Mg,Al,Ti,La,Na,K,W,Ba,Si,Sr,Cr AND B. Au DETECTION 3 ppm.
SAMPLE TYPE - SOIL AND ROCK

DATE RECEIVED JULY 13 1982 DATE REPORTS MAILED July 20/82 ASSAYER D. Toye DEAN TOYE, CERTIFIED B.C. ASSAYER

CANADIAN NICKEL CO LTD PROJECT # 60829-14030 BOLT FILE # 82-0582 PAGE# 1

SAMPLE #	MO ppm	CU ppm
SX 90001	1	1
SX 90002	1	2
SX 90003	26	7
SX 90004	1	4
SX 90005	1	1
SX 90006	1	1
SX 90007	1	1
SX 90008	1	1
SX 90009	1	4
SX 90010	1	1
SX 90011	1	1
SX 90012	1	1
SX 90013	2	9
SX 90014	5	1
SX 90015	1	1
SX 90016	1	6
SX 90017	4	2
SX 90018	27	49
SX 90019	5	6
SX 90020	11	27
SX 90021	7	19
SX 90022	10	3
SX 90023	20	6
SX 90024	17	4
SX 90025	32	8
STD A-1	1	29

CANADIAN NICKEL CO LTD PROJECT # 60029-14030 BOLT FILE # 82-0582

SAMPLE #	MO ppm	CU ppm	AG ppm	AS ppm	W ppm	Au* ppb
RX 42950	47	10	.3	199	48	5
RX 42951	3	18	.1	24	5	5
RX 42952	1	1	.2	69	2	5
RX 42953	1	5	.2	27	2	5
RX 42954	1	5	.1	2	2	5
RX 42955	1	8	.1	8	2	5
RX 42956	12	56	.2	2	4	5
RX 42957	3	33	.3	2	21	5
RX 42958	7	150	.4	2	2	5
RX 42959	2	79	.3	2	2	5
RX 42960	26	78	.3	7	2	5
RX 42961	4	212	.6	2	8	5
RX 42962	3	97	.5	2	73	5
RX 42963	30	46	.3	2	2	5
RX 42964	2	9	.1	2	2	5
RX 42965	1	31	.2	96	2	5
RX 42966	15	29	.1	26	2	5
RX 42967	1	4	.1	2	2	5
RX 42968	1	40	.1	2	2	5
RX 42969	69	2210	3.3	2	6	5
RX 42970	1533	9168	10.1	2	15	40
RX 42971	428	1846	6.4	2	70	10
RX 42972	9	72	.3	3	2	5
RX 42973	12	121	.4	3	15	5
RX 42974	1	28	.2	2	2	5
RX 42975	1	6	.1	2	2	5
RX 42976	1	44	.3	6	2	5
RX 42977	8	20	.2	2	2	5
RX 42978	1	12	.1	2	2	5
RX 42979	1	11	.2	2	2	5
RX 42080	4	76	.2	2	2	5
RX 42981	7	112	.2	2	2	5
RX 42982	3	123	.4	2	2	5
RX 42983	1	6	.1	2	2	5
RX 42984	1	2	.2	2	2	5
RX 42985	1	5	.1	2	2	5
STD A-1	1	30	.4	9	2	5
RX 42986	1	15	.2	2	2	5
RX 42987	1	19	.1	2	2	5
RX 42988	1	22	.2	3	2	5

CANADIAN NICKEL CO LTD PROJECT # 60829-14030 BOLT FILE # 82-0582

SAMPLE #	MO ppm	CU ppm	AG ppm	AS ppm	W ppm	Au* ppb
RX 42989	3	13	.2	2	2	5
RX 42990	2	108	.3	2	2	5
RX 42991	1	10	.3	2	2	5
RX 42992	1	13	.2	2	2	5
STD A-1	1	31	.5	8	2	5

APPENDIX B

ROCK AND SOIL SAMPLE DESCRIPTIONS

ROCK SAMPLE DESCRIPTIONS

APPENDIX B

TRAVERSE NUMBER

N.T.S. 103I/1W

PROJECT Bolt Claim

AREA Terrace, B.C.

GEOLOGIST(S) J. Scouten; C. Raynaas

DATE July 1982

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and / or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	Cu ppm	Mo ppm	Ag ppm	As ppm	W ppm	Au ppb
RX 042950			chip	1x1=1m^2		Leucocratic granitic phaneritic, abundant dissem. py, py in "stringers" and in fracture frostings (5-10%), (Bio-qtz. monz.)	10	47	.3	199	48	5
951			chip	1x1=1m^2		Leucocratic granite, med. grained, phaneritic unaltered. 0.5 cm wide rhyolite dikes. No visible sulphides (Qtz-monz.)	18	3	.1	24	5	5
952			chip	1x1=1m^2		Fine -- med. grn. mesocratic granite Unfractured. No visible sulphides. Apparently near granodiorite contact. Weathers grey.	1	1	.2	69	2	5
953			chip	1x1=1m^2		Fine grained granite with dissem.py. Intruded by diabase dikes. Weathers grey to rusty, (dacite dike).	5	1	.2	27	2	5
954			chip	1x1=1m^2		Med. grained leucocratic granite. No visible mineralization (Qtz. monz.)	5	1	.1	2	2	5
955			chip	1x1=1m^2		Coarse grained, phaneritic granite. Diabase dike intruding parallel to orientation of prominent fracturing. Weathers grey -- buff. Very fine quartz veinlets of random strike and chlorite "veinlets".	8	1	.1	8	2	5
956			chip	1x1=1m^2		Coarse grained, phaneritic granite. Weathers grey. No visible sulphides.	56	12	.2	2	4	5
957			chip	1x1=1m^2		Coarse grained phaneritic granite. No sulphides. (Biotite qtz. monz.).	33	3	.3	2	21	5
958			chip	1x1=1m^2		Fine grained phaneritic granite. Occasional fragment (?) of coarser granite. Dissem. py (Fg. qtz. monz.).	150	7	.4	2	2	5
959			chip	1x1=1m^2		Contact between coarse & fine granites (both phaneritic). Small qtz. stringers of random orientation. Visible py. Rusty weathering along fractures.	79	2	.3	2	2	5

TRAVERSE NUMBER ______ PROJECT Bolt Claim GEOLOGIST(S) J.Scouten; C. Ravnaas

N.T.S. 103I/1W AREA Terrace, B.C. DATE July 1982

SAMPLE NUMBER	SAMPLE TYPE: RX Rock, Talus	SAMPLE TYPE: SX Stream Silt, Soil	SAMPLE TYPE: Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and / or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	Cu ppm	Mo ppm	Ag ppm	As ppm	W ppm	Au ppb
RX 042960			chip	1x1=1m^2		Fine grained leucocratic granite. Dissem. py. Occasional small (2 mm wide) quartz veinlets (1% of rock). Rusty weathering along fracture faces. Mildly porphyritic.	78	26	.3	7	2	5
961			chip	1x1=1m^2		Coarse granite, phaneritic. Abundant dissem. py in leaves (secondary py?). Buff -- rusty weathering.	212	4	.6	2	8	5
962			chip	1x1=1m^2		Coarse phaneritic granite. Abundant dissem. py. Rusty weathering. Narrow dikes of aplite (1 cm across). Rock highly fractured.	97	3	.5	2	73	5
963			chip	1x1=1m^2		Grey, fine grained granite. Abundant small (3 mm) qtz. stringers. Mo along planes of weakness, also cpy. Rock is light weight. (Mineralized f.g. qtz. monz.).	46	30	.3	2	2	5
964			chip	1x1=1m^2		Grey, fine grained granite. Mildly porphyritic Dissem. py. Rusty weathering along fracture faces. Weathers grey.	9	2	.1	2	2	5
965			chip	1x1=1m^2		Fine grained, dark, heavy rock. Intermediate (diabase) dike. No visible mineralization.	31	1	.2	96	2	5
966			chip	1x1=1m^2		Fine grained leucocratic granite. No visible mineralization.	29	15	.1	26	2	5
967			chip	1x1=1m^2		Coarse, phaneritic granite. No visible sulphides.	4	1	.1	2	2	5
968			chip	1x1=1m^2		Med. -- coarse grained granite, phaneritic. No visible sulphides.	40	1	.1	2	2	5
969			chip	1x1=1m^2		Thick (5m wide) qtz. vein. Dissem. py, cpy, Mo(?), hem. Qtz. stringers intrude wallrock (coarse granite) of random orientation, but pinch out within 1m of vein.	2210	69	3.3	2	6	5
970			chip	1x1=1m^2		As 042969	9168	1533	10.1	2	15	40

TRAVERSE NUMBER ______ PROJECT Bolt Claim GEOLOGIST(S) J. Scouten, C. Ravnaas

N.T.S. 103I/1W AREA Terrace, B.C. DATE July 1982

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and / or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	Cu ppm	Mo ppm	Ag ppm	As ppm	W ppm	Au ppb
RX 042971			chip	1x1=1m^2		Western boundary of vein described in 042969. 1 cm wide qtz. stringers intrude wallrock (running parallel to the main vein) Sample composed of 50% vein, 50% wallrock. (Bio-qtz. monz.) - 2-3% cpy, 5% py.	1846	428	6.4	2	70	10
972			chip	1x1=1m^2		Coarse grained, phaneritic granite. No visible mineralization.	72	9	.3	3	2	5
973			chip	1x1=1m^2		As 042972	121	12	.4	3	15	5
974			chip	1x1=1m^2		As 042972 intruded by diabase dike, 0.5 wide S: 145° D:55°N	28	1	.2	2	2	5
975			chip	1x1=1m^2		As 042972. 50% of sample = diabase dike.	6	1	.1	2	2	5
976			chip	1x1=1m^2		Coarse, phaneritic granite. No visible sulphides.	44	1	.3	6	2	5
977			chip	1x1=1m^2		Coarse grained, phaneritic granite 1-3 cm qtz. vein S:160° D:45°E Py(?).	20	8	.2	2	2	5
978			chip	1x1=1m^2		Coarse, phaneritic granite. Intruded by diabase dike.	12	1	.1	2	2	5
979			chip	1x1=1m^2		Med. grained intermediate -- mafic intrusive. Diorite. No visible mineralization. (Diorite)	11	1	.2	2	2	5
980			chip	1x1=1m^2		Very fine grained felsic rock. Greyish brown. Aplite dike? Chilled margin of leucogranite? Weathers grey -- brown. Dissem. Py.	76	4	.2	2	2	5
981			chip	1x1=1m^2		Grey, fine grained, very siliceous rock. Granite. Weathers grey. Dissem. Py.	112	7	.2	2	2	5
982			chip	1x1=1m^2		Med. -- coarse grained, mesocratic intrusive rock. Granite? Quartz monzonite? Also including adjacent rock; grey, fine grained siliceous rock. Dissem. Py.	123	3	.4	2	2	5

TRAVERSE NUMBER

N.T.S. 103I/1W

PROJECT Bolt Claim

AREA Terrace, B.C.

GEOLOGIST(S) J.Scouten; C. Ravnaas

DATE July 1982

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and / or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	Cu ppm	Mo ppm	Ag ppm	As ppm	W ppm	Au ppb
RX 042983			chip	1x1=1m^2		Fine grained, mesocratic granite. No visible sulphides.	6	1	.1	2	2	5
984			chip	1x1=1m^2		Coarse grained, phaneritic granite. No visible sulphides. Rusty weathering along fracture faces.	2	1	.2	2	2	5
985			chip	1x1=1m^2		Aphanitic -- fine grained, pink, siliceous rock. Rhyolite dike. No visible sulphides.	5	1	.1	2	2	5
986			chip	1x1=1m^2		Fine grained, leucocratic granite (aplite?) No visible sulphides. Rusty weathering along fracture faces. (F.g. granite border phase)	15	1	.2	2	2	5
987			chip	1x1=1m^2		Fine grained, mesocratic granite. No visible sulphides. Rusty weathering along fracture faces.	19	1	.2	2	2	5
988						Fine grained mesocratic felsic -- interm. rock. Some qtz. Granodiorite? Float. Large angular boulder. Dissem. Py & Cpy (?). (Hornfelsed f.g. granodiorite).	22	1	.2	3	2	5
989			chip	1x1-1m^2		As 042988. No visible qtz., but several resistant "ghost" veinlets on weathered surface of outcrop, suggesting hairline veinlets.	13	3	.2	2	2	5
990			chip	1x2-2m^2		Coarse grained, phaneritic granite. 3 mm wide qtz. veins of random orientation. Visible Py & hem. Sericite = 2% of rock. (Bio-qtz., monz.)	108	2	.3	2	2	5
991			chip	1x1=1m^2		Coarse grained qtz. rich rock. Granite? Quartz diorite. Dissem. Py.	10	1	.3	2	2	5
992			chip	1x1=1m^2		Coarse, grained phaneritic intrusive. Granite? Quartz monzonite? Dissem. py.	13	1	.2	2	2	5

SOIL SAMPLE DESCRIPTIONS

APPENDIX B

TRAVERSE NUMBER ______ PROJECT Bolt - Terrace, B.C. GEOLOGIST(S) J. Scouten, C. Ravnaas

N.T.S. 103I/1W AREA Bolt Claim DATE July 1982

SAMPLE NUMBER	SAMPLE TYPE: RX Rock, Talus	SAMPLE TYPE: SX Stream Silt, Soil	SAMPLE TYPE: Grab, Chip, Channel	~~SAMPLE LENGTH, WIDTH, AREA~~	~~LATITUDE, LONGITUDE and / or U.T.M.~~ Elevation	SAMPLE DESCRIPTION: Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc. % Organic/% Sand/% Gravel/% Soil	RESULTS (ppm. / % /oz. per ton): Cu ppm	Mo ppm					
SX 090001					3600'	Dark brown to black, 10/30/30/30, dry sample, open highland, slightly n'ly slope downhill	1	1					
002					3400'	Dark brown to black, 20/10/10/60, dry sample open highland, slightly n'ly slope downhill	2	1					
003					3290'	Black, 50/15/5/30, dry sample, open highland slightly n'ly slope downhill	7	46					
004					3175'	Red to dark brown, 10/10/20/60, water saturated sample, open highland, slightly n'ly slope downhill	4	1					
005					3100'	Greyish brown, 10/20/10/60, dry sample, open highland, slightly n'ly slope downhill	1	1					
006					3000'	Light brown 10/20/20/50, dry sample. Sparse trees, slightly n'ly slope downhill	1	1					
007					2993'	Light brown, 20/10/10/60, wet sample, sparse trees, slightly n'ly slope downhill	1	1					
008					2850'	Light brown, 10/20/20/40, dry sample, sparse trees, slightly n'ly slope, downhill	1	1					
009					2770'	Black, 40/5/5/50, wet sample, entering tree line (Pine Grove), slightly n'ly slope downhill	4	1					
010					2670'	Grey, 10/20/20/50, dry sample, Pine Grove, gentle n'ly slope downhill	1	1					
011					2560'	Grey, 10/20/20/50, dry sample, Pine Grove, gentle n'ly slope downhill	1	1					
012					2460'	Grey-brown, 20/50/10/20, dry sample, Pine Grove, gentle n'ly slope downhill	1	1					
013					2380'	Black, 60/05/05/30, very humus and wet sample Pine Grove, gentle n'ly slope donwhill	9	2					

TRAVERSE NUMBER ____________ PROJECT Bolt, Terrace, B.C. GEOLOGIST(S) J.Scouten, C. Ravnaas

N.T.S. 103I/1W AREA Bolt Claim DATE July 1982

SAMPLE NUMBER	SAMPLE TYPE: RX Rock, Talus	SAMPLE TYPE: SX Stream Silt, Soil	SAMPLE TYPE: Grab, Chip, Channel	~~SAMPLE LENGTH, WIDTH, AREA~~	~~LATITUDE, LONGITUDE and / or U.T.M.~~ Elevation	SAMPLE DESCRIPTION: Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc. % Organic/% Sand/% Gravel/% Soil	RESULTS (p.p.m. / % /oz. per ton): Cu ppm	Mo ppm				
SX 090012					2460'	Grey-brown, 20/50/10/20, dry sample, Pine Grove, gentle n'ly slope downhill	1	1				
013					2380'	Black, 60/05/05/30, very humus and wet sample Pine Grove, gentle n'ly slope downhill	9	2				
014					2320'	Black, 50/30/10/10, very humus, dry sample, Pine Grove, gentle n'ly slope downhill	1	5				
015					2250'	Greyish brown, 10/20/20/50, dry sample Pine Grove, gentle n'ly slope downhill	1	1				
016					2040'	Light brown, 10/50/0/40, dry sample, tall pine, little undergrowth, mod. n'ly slope downhill	6	1				
017					1880'	Greyish brown, 25/30/10/35, dry sample, Pine Grove, mod. n'ly slope downhill	2	4				
018				100 m N of creek	?	Reddish brown to black, 20/10/0/70, water saturated sample, open highland, gentle e'ly slope downhill	49	27				
019				50m N of creek		Greyish, 10/20/10/60 wet sample, open high-land, gentle e'ly slope downhill	6	5				
020				50m S of creek		Brown 10/20/20/50, dry sample, numerous rounded boulders in an open area, slight e'ly slope downhill	27	11				
021				100m S of creek		Brown, 10/20/20/50, dry sample, numerous rounded boulders in an open area, slightly e'ly slope downhill	19	7				
022						Light brown, 30/30/30/10, moderate westerly rising slope, dry sample	3	10				
023						Brown 30/30/30/10, moderate w'ly rising slope, dry sample.	6	20				
024						Brown 30/30/30/10, mod. s'ly rising slope, dry sample	4	17				
025						Brown, 30/30/30/10, mod. w'ly rising slope, adj. to creek, wet sample.	8	32				

APPENDIX C

GEOLOGICAL FIELD REPORT

Form CN-106

APPENDIX C

CANADIAN NICKEL COMPANY LIMITED

GEOLOGICAL FIELD REPORT

Area: Terrace, B.C.
N.T.S.: 103I/1W
Lat. ______ Long ______
U.T.M. ______ N ______ E
Project/Traverse No.: Bolt Claim

Province: British Columbia
Mining Division: Skeena M.D.
Township/County:
Date: July 1 -- 3 1982
Geologist: J. Scouten
Assistant(s): C. Ravnaas
Topography: Steep

Means of Access: Helicopter (Ex Terrace)
% Overburden: 80%
Timber: 95% below 3500' 0% above 3500'
Water Supply: Abundant fast flowing creeks
Air Photo Nos.:
Gov't Map or Report No.:

Claim Names and Nos.: Bolt Claim (20 units)

SUPERVISION REMARKS

Status:

Recommendations:

Purpose: To prospect and chip sample to delimit the extent of known mineralization and to prospect previously unexamined areas of the Bolt claim.

Interpretation of Results:

Recommendations: Further prospecting should be done along the northern claim boundary. Outcropping rock in this area is relatively highly fractured and contains quartz veinlets and sulphide mineralization. Future follow-up should involve recording of fracture/qtz. vein density, so that general trends over the claim as a whole can be determined.

SAMPLE SUMMARY

Sample Nos.	Number	Type	Assayed For	Results (Anomalous Values)
SX090001-090025	25	Soil		See sample description forms
RX042950-042992	43	Rock chip		See sample description forms

This is a summary of the samples taken and the results obtained. Complete assay result sheets and sample description forms must be attached.

GEOLOGY

Regional, local, mineralization (modes of occurrence), geological interpretation (envirmment etc.)

Investigation of Anomalies

The creek to the southwest corner of the claim was prospected to relocate 1980 rock sample anomaly DLD 29-R (Cu: 3400 ppm, Mo: 230 ppm). Two locations of Cu/Mo mineralization were discovered:

RX 042963 is a grey, fine grained aplitic granite with abundant 3 mm wide qtz stringers. Molybdenite and chalcopyrite form a thin veneer along hairline fractures. The area was systematically chip sampled over an 8 metre area centred about the mineralization.

RX 042969 - 042971 is a 4 to 5 m wide quartz vein with abundant disseminated pyrite, chalcopyrite, molybdenite, and hematite. Quartz stringers, generally of random orientation but predominantly running parallel to the main vein, intrude the wallrock (coarse grained granite or quartz monzonite), but pinch out within 1 metre of the vein. The vein was systematically sampled at 2 m (1x1 metre area samples) intervals across the vein and within 16 m, either side of the vein at wider spaced intervals.

Two short soil sample lines were also run perpendicular to the creek to help determine whether the mineralized area extends laterally. Exposure of outcrop is poor in the area surrounding these showings apart from outcrop along the creek.

Prospecting of Previously Unexamined Areas

The ridge along the Eastern edge of the claim was prospected. Slope is gentle here, and there is very little exposed rock, so a soil sample line was run down the ridge at 100 m intervals.

The Northwestern area of the claim was also unsampled prior to 1982. Prospecting and chip sampling was performed in this area. No significant mineralization was located. Fracture density is fairly high, however, in the area of RX 042990, and there is stock works quartz. Further prospecting is recommended along the remainder of the North boundary of the claim.

NOTE: Submit a map showing traverse routes, topography, contours, outcrops, strike / dips, sample locations and numbers, contacts, rock types, formations, cultural features and appropriate legend. Geological sections and, or profiles may also be useful.

Date: July 10, 1982 Signed: Jeff Scouten

APPENDIX D

FRACTURE/QUARTZ VEIN DENSITY

MEASUREMENTS

APPENDIX D

BOLT CLAIM

FRACTURE/QUARTZ VEIN DENSITY SURVEY (1982)

Location Number	Fractures per metre N/S	Fractures per metre E/W	Prominent Fractures; no's. per metre; orientation	Quartz number, % of rock orientation per metre	Remarks
Loc. 1	14	4	10 fractures S : 20° D : 45°W	None	Leucocratic granite
Loc. 2	5	12	10 fractures S : 0° D : 50°E	3 veins/metre in direction of prom. fractures 2% of rock	Granite
Loc. 3	6	4	None	None	Med. Grn. granite
Loc. 4	3	3	None	None	Fine -- Med. Grn. granite
Loc. 5	6	6	6 fractures S : 125° D : 72°W	None	Fine grained phaneritic granite with diabase dikes
Loc. 6	9	4	None	None	Med. grn. leucogranite
Loc. 7	4	1	None	None	Med.--coarse grn. granite
Loc. 8	7	4	7 fractures S : 120° D : 80°S	None	Prominent fractures run parallel to diabase dikes
Loc. 9	3	5	None	None	Coarse, phaneritic granite
Loc. 10	2	4	None	None	Coarse phaneritic granite
Loc. 11	4	10	None	None	Coarse phaneritic granite
Loc. 12	1	11	None	None	Coarse phaneritic granite
Loc. 13	10	9	None	None	Fine, phaneritic granite
Loc. 14	8	15	7 fractures S : 20° D : 60°W	7 veinlets in dir. of prom. 2 mm wide veinlets fractures <1% of rock	At coarse/fine granite contact
Loc. 15	8	7	None	4 veinlets S:55°, D:90° 2 mm wide <1% of rock	Coarse, phaneritic granite

S = Strike
D = Dip
< = Less Than

Loc. 16	5	18	18 fractures S : 160° D : 75°E(?)	9 veinlets (2mm-1 cm wide) S : 140° D : 54°E(?) $<$1% of rock	Fine grn, grey, phaneritic granite. Visible cpy, mo
Loc. 17	17	10	15 fractures S : 60° D : 75°N	None	Fine grained phaneritic granite
Loc. 18	12	12	None	None	Fine grained, phaneritic granite
Loc. 19	5	17	None	None	Coarse granite, phaneritic
Loc. 20	4	9	None	None	Coarse granite, phaneritic
Loc. 21	7	9	None	None	Med. -- Coarse grn. granite
Loc. 22	19	43	None	1 lge. vein; 100% of rock S : 20° D : 65°W	Quartz, Cpy, Mo, Py
Loc. 23	15	50	None	As for Loc. 22	Quartz, Cpy, Mo, Py
Loc. 24	12	18	None	As for Loc. 22	Quartz; Cpy, Mo, Py
Loc. 25	8	16	6 fractures S : 60° D : 80°N	None	Coarse granite, phaneritic
Loc. 26	16	12	None	None	Coarse granite, phaneritic
Loc. 27	23	16	None	None	Coarse granite, phaneritic
Loc. 28	13	10	None	None	Coarse granite, phaneritic
Loc. 29	6	9	None	None	Coarse granite, phaneritic, Py
Loc. 30	13	16	None	1 vein, 3 cm wide S : 160° 2% of rock D : 45°E	Coarse, phaneritic granite
Loc. 31	10	10	3 fractures S : 190° D : 45°W	None	Coarse, phaneritic granite
Loc. 32	6	7	None	None	Diorite?
Loc. 33	6	12	None	None	?

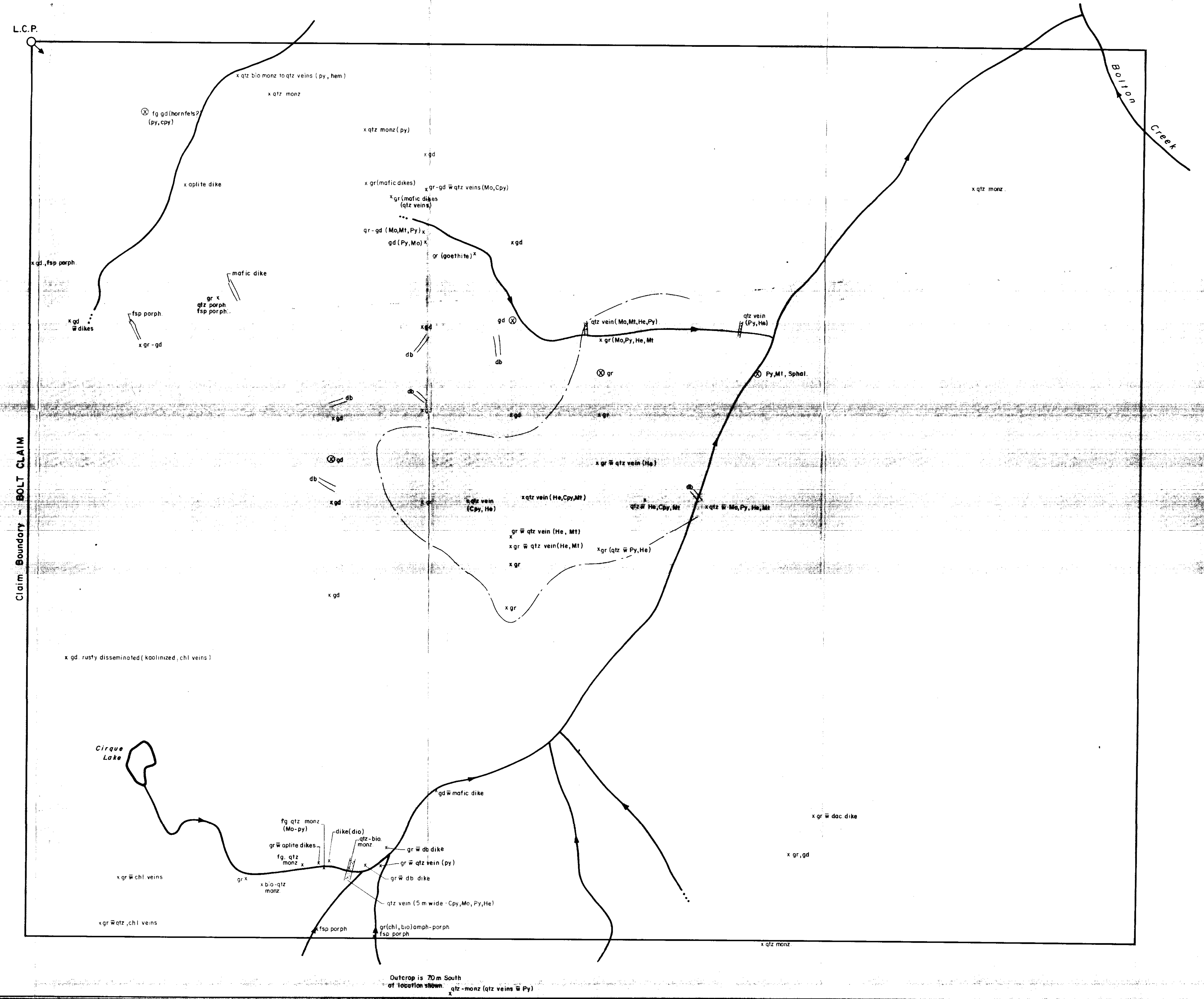
Loc. 34	1	1	None	None	Coarse, phaneritic granite
Loc. 35	9	4	None	None	Coarse, phaneritic granite
Loc. 36	30	25	None	None	Aphanitic felsic dike (rhyolite)
Loc. 37	5	6	None	None	Fine grn. granite (aplite dike?)
Loc. 38	9	8	None	None	Fine grn. granite, phaneritic
Loc. 39	2	5	None	Hairline vein- lets (6/metre) S : 20° <1% of rock D : 20°W	Granodiorite?
Loc. 40	20	10	None	3 mm wide vein- lets in stock- works, random orientation 2% of rock	Coarse granite, phaneritic
Loc. 41	16	12	None	None	Coarse granite, phaneritic (Quartz Diorite?) Py

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D



LEGEND

Geological Contact :- defined, assumed
x Outcrop
Ⓧ Float
Dike
Stream showing direction of flow

Abbreviations

gr	granite	porph	porphyry
gd	granodiorite	amph	amphibole
monz	monzonite	chl	chlorite
dac	dacite	qtz	quartz
db	diabase	bio	biotite
dio	diorite	fsp	felspar

w̄ with fg fine grained strs stringers

Cpy	chalcopyrite
Mo	molybdenite
He	hematite
Mt	magnetite
Py	pyrite
Sphal.	sphalerite.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 10,625

SCALE

100 0 100 200 300 400 500

METRES

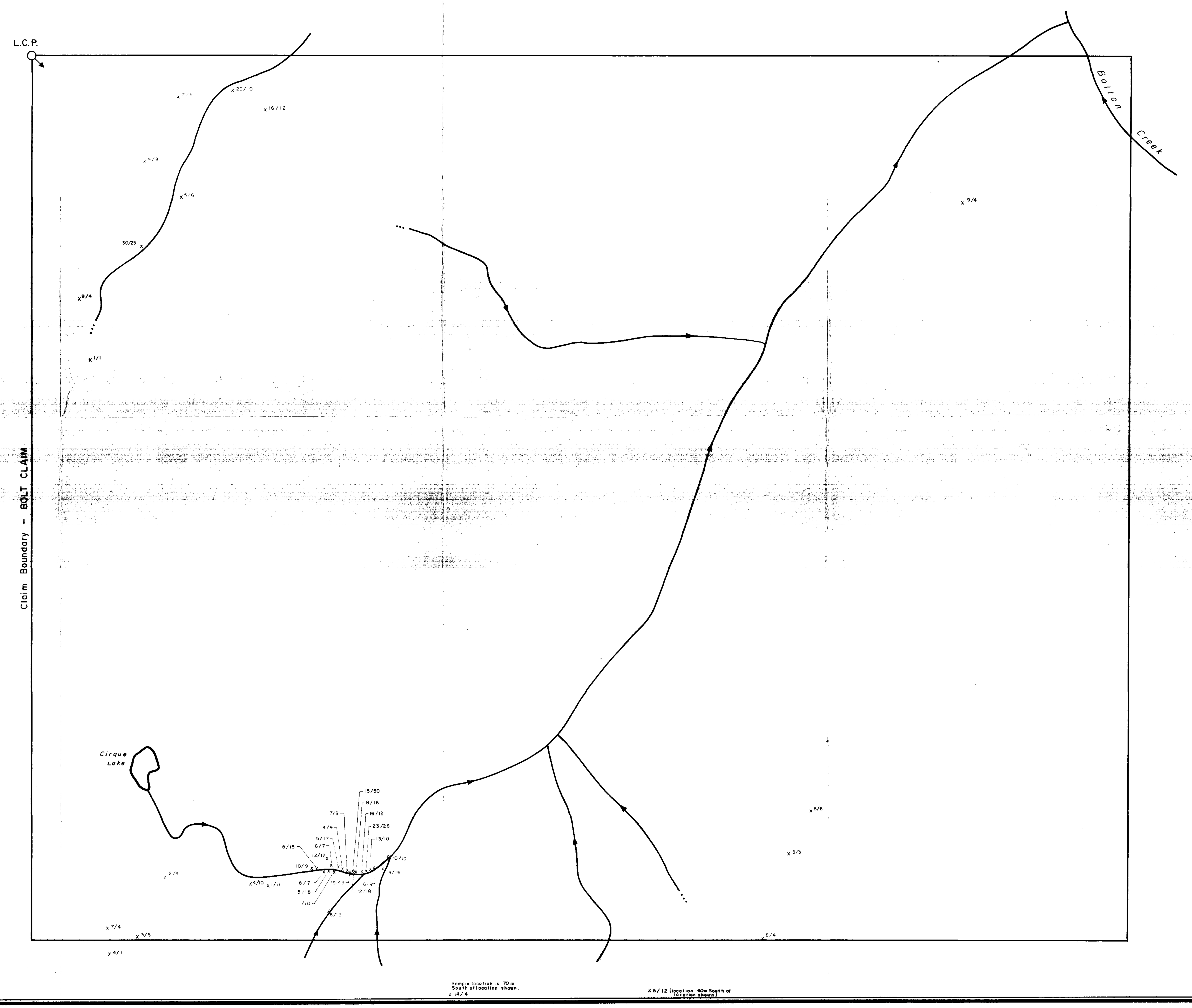
Canadian Nickel Company Limited
Copper Cliff, Ontario
POM 1NO

GEOLOGICAL MAP
(1980-82 Compilation)

SHEET
MAP 1

Project: BOLT CLAIM
Area: SKEENA MINING DIVISION, B.C.

Supervisor: E.J. DEBICKI	Instrument:	Survey date: July / 82
Compiled by: J. Scouten, C. Ravnaas	Drawn by: RMK.	Date drawn: Aug / 82 · Revised:
Scale: 1:5000	File:	N.T.S. 103 I / 1W



LEGEND

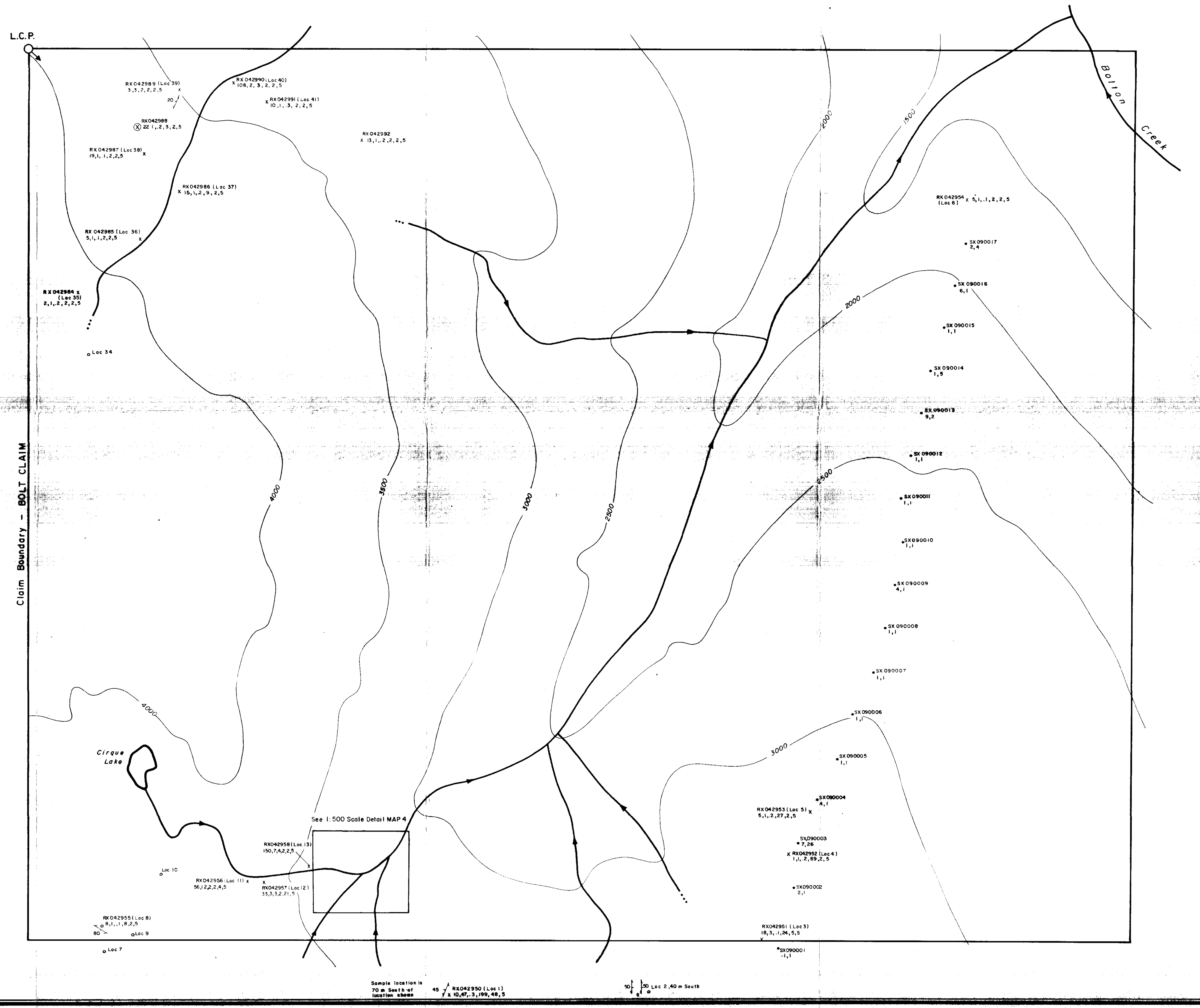
x 2/4 Fracture Density Measurement Location;
Fractures per meter North - South/East - West

SCALE

100 0 100 200 300 400 500

METRES

Canadian Nickel Company Limited	Copper Cliff, Ontario POM 1NO	
FRACTURE DENSITY MEASUREMENTS	SHEET	MAP 2
Project: BOLT CLAIM	Area: SKEENA MINING DIVISION, B.C.	
Supervisor: E. J. DEBICKI	Instrument	Survey date: July / 82
Compiled by: J. Scouten, C. Ravnaas	Drawn by: RMK.	Date drawn: Aug / 82 — Revised:
Scale: 1:5000	File	N.T.S. 103 I / 1W



LEGEND

ⓧ	Float
• SX 090005 1, 1	Soil sample location ; number and Cu, Mo values in ppm
X RX042951 18,3,.1,24,5,5	Rock chip sample location ; number and values for Cu, Mo, Ag, As, W in ppm, Au in ppb.
o Loc 15	Fracture / quartz vein density count station
50	Prominent fracture strike dip known, vertical.
20 q	Quartz veining ; prominent strike and dip.

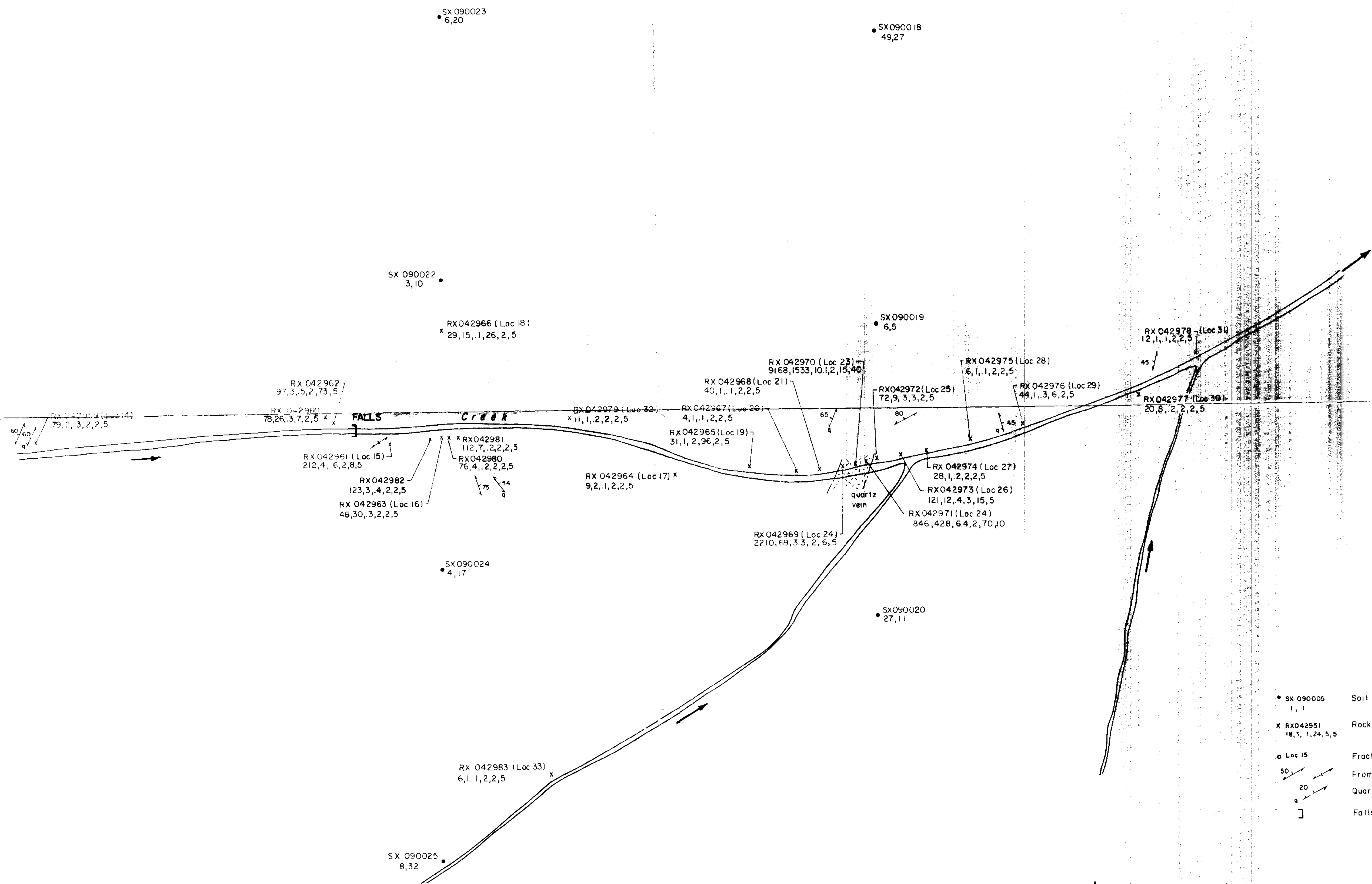
Note : Elevations are shown in Feet.

SCALE

100 0 100 200 300 400 500

METRES

Canadian Nickel Company Limited	Copper Cliff, Ontario POM 1NO	
ROCK CHIP & SOIL SAMPLE LOCATION MAP	SHEET	MAP 3
Project: BOLT CLAIM	Area: SKEENA MINING DIVISION, B.C.	
Supervisor: E. J. DEBICKI	Instrument:	Survey date: July / 82
Compiled by: J. Scouten C. Ravnaas	Drawn by: RMK.	Date drawn: Aug / 82 Revised:
Scale: 1:5000	File:	N.T.S. 103 I / 1W



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 10,625

LEGEND

- • SX 090005 1, 1 — Soil sample location ; number and Cu, Mo values in ppm
- x RX042951 18,1,.1,24,5,5 — Rock chip sample location ; number and values for Cu, Mo, Ag, As, W in ppm, Au in ppb.
- o Loc 15 — Fracture / quartz vein density count station
- 50 — Prominent fracture strike : dip known, vertical
- 20 q — Quartz veining, prominent strike and dip
-] — Falls

SCALE

10 0 10 20 30 40 50

METRES

Canadian Nickel Company Limited	Copper Cliff, Ontario POM 1NO	
DETAILED ROCK CHIP & SOIL SAMPLE LOCATION MAP	SHEET	MAP 4
Project: BOLT CLAIM	Area: SKEENA MINING DIVISION, B.C.	
Supervisor: E. J. DEBICKI	Instrument:	Survey date: July / 82
Compiled by: J. Scouten, C. Ravnaas	Drawn by: RMK	Date drawn: Aug / 82 — Revised:
Scale: 1 : 500	File:	N.T.S. 103 I / 1 W