

ARIS SUMMARY SHEET

District Geologist, Prince George

Off Confidential: 89.08.17

ASSESSMENT REPORT 18007

MINING DIVISION: Clinton

PROPERTY: Dil
LOCATION: LAT 51 16 00 LONG 123 15 00
UTM 10 5679291 482557
NTS 092006E 092006W

CLAIM(S): Dil 1-2
OPERATOR(S): Durfeld, R.M.
AUTHOR(S): McClintock, J.A.
REPORT YEAR: 1988, 24 Pages

COMMODITIES
SEARCHED FOR: Gold, Silver

GEOLOGICAL
SUMMARY:

Float rocks of banded and drusy quartz contain gold values up to 4600 ppb in an area of frost heaved felsenmeer. The bedrocks are presumed to be Cretaceous to Tertiary feldspar porphyry and Lower Cretaceous Taylor Creek siltstone, argillite and lesser greywacke.

WORK
DONE: Geochemical
ROCK 18 sample(s) ;AU,AG,SB,AS,HG,CU,PB,ZN
SOIL 30 sample(s) ;AU,AG,HG,AS,SB,CU,PB,ZN
Map(s) - 1; Scale(s) - 1:8000

RELATED
NOTES: 16879

U	1122	RD.
FILE NO:		

FILMED

Geological Report
on the
DIL CLAIM GROUP
Clinton Mining Division, British Columbia
Latitude 51°16' Longitude 123°15'
N.T.S. 920/3&6

by

John A. McClintock, P.Eng. (B.C.)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

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November 6, 1988

Vancouver, B.C.

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A. INTRODUCTION

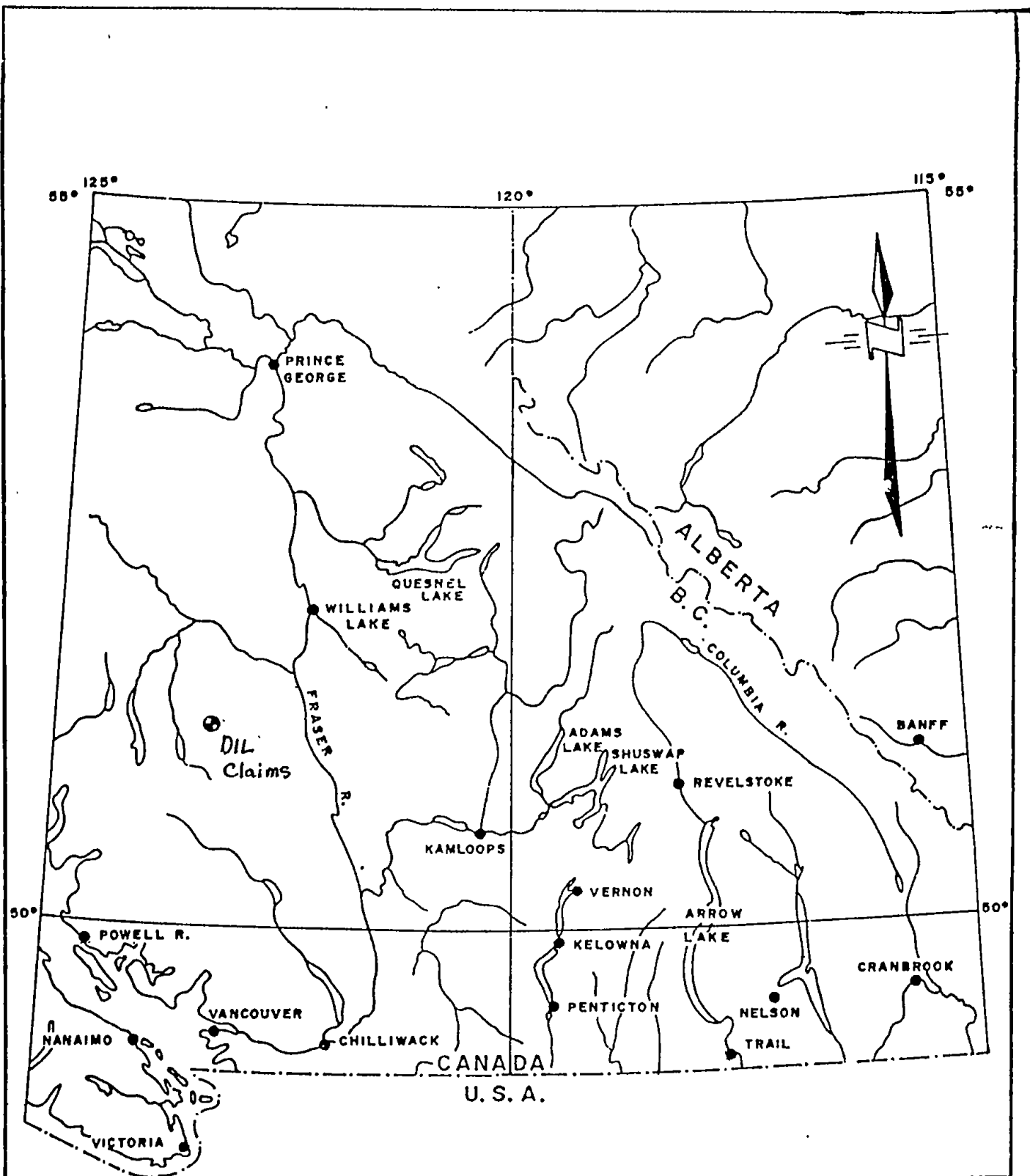
The DIL 1 and 2 mineral claims were staked in 1987 to acquire an occurrence of auriferous quartz float found by Barrier Reef Resources in 1980 while searching for the source of anomalous gold and arsenic in silt samples. Work carried out in 1980 included reconnaissance geological mapping, limited rock sampling and soil sampling on a 200 by 50 metre grid. Soil sampling showed large areas of the claims to be anomalous for gold (90 ppb) and rock sampling of quartz float obtained gold values in excess of 2,000 ppb. These rock and soil anomalies were apparently never followed up.

In 1987, after staking the DIL 1 and 2 claims, the writer, on behalf of the owner, R. Durfeld, remapped the property. While mapping, quartz float of vuggy, banded epithermal quartz containing minor fine-grained pyrite, lesser arsenopyrite, and stibnite was observed in northeasterly trending boulder trains.

Encouraged by the 1987 work, a limited program of rock and soil sampling was carried out during mid-August 1988. The purpose of this work program was two-fold. Firstly, additional rock sampling of the vein material was carried out to more comprehensively test the gold content of the quartz float. Secondly, four orientation soil sample lines were run to determine the optimal orientation of soil lines and to reconfirm values obtained by Barrier Reef. The earlier Barrier Reef soil sampling has been conducted along northeasterly oriented lines, a direction parallel to the quartz boulder trains. As part of the current survey, soil samples were collected along northwesterly oriented lines to determine if the boulder trains could be identified geochemically. The findings of the August 1988 work are discussed herein.

I. **Location**

The DIL property, comprised of the DIL mineral claim group in the Clinton Mining Division, is situated approximately 120 kilometres southwest of the city of Williams Lake, B.C. (Figure 1). More precisely, it is located at 51



McCLINTOCK ENGINEERING	
LOCATION MAP	
DIL CLAIMS	
Nov. 1988	Scale: 1" : 64 Miles
J. McC	Fig 1

degrees, 16 minutes north latitude, and 123 degrees, 15 minutes west longitude (National Topographic System Map 920/3 and 920/6).

2. Access and Physiography

Access to the property is by helicopter from either Lilloet or Williams Lake. Road access exists to within 10 kilometres to the north and 20 kilometres to the southwest of the claims.

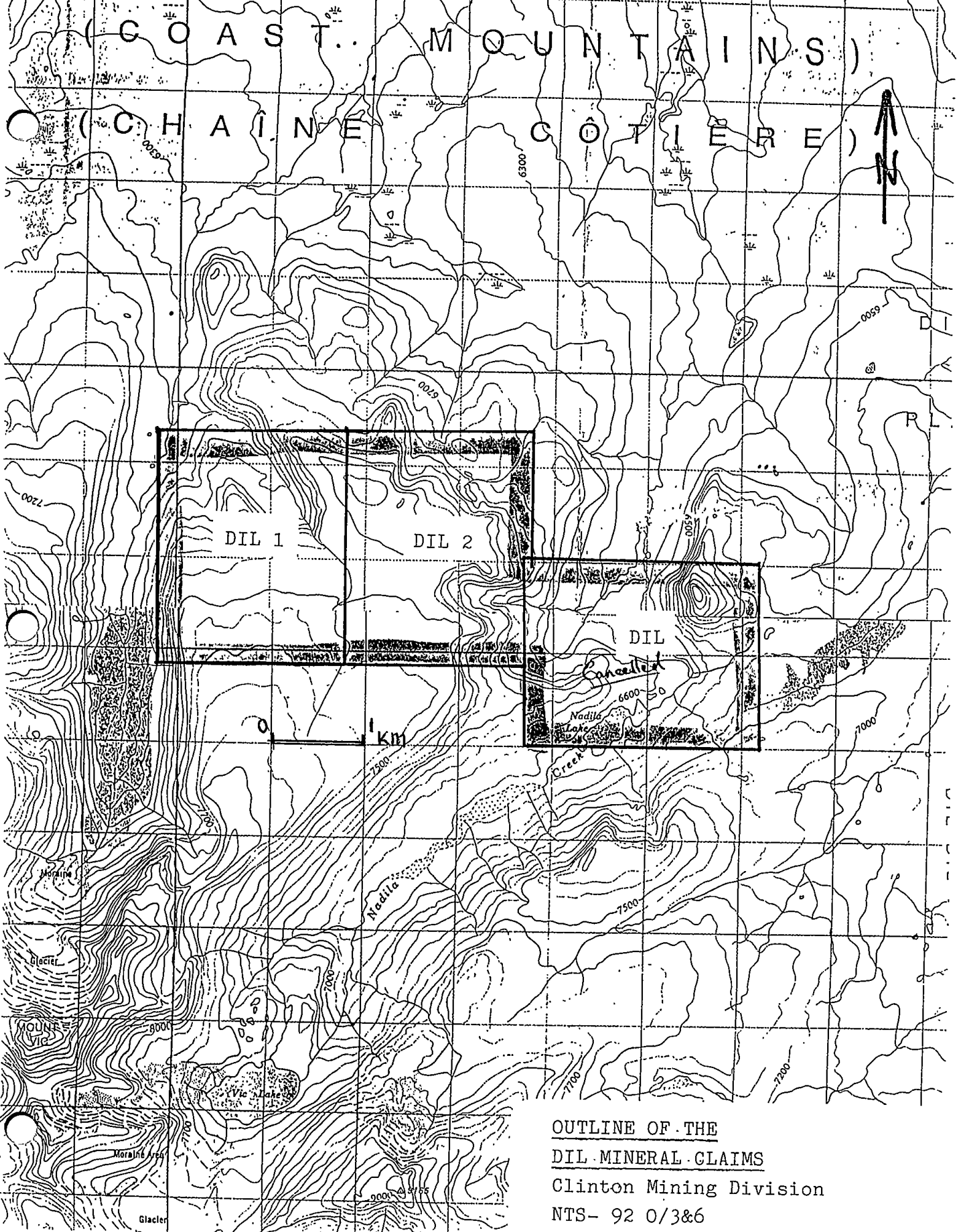
The northern portion of the claims overlie a northwest trending ridge while the southern portion covers a gently northeast sloping plateau. Elevations on the claims range from 1,900 to 2,350 metres a.s.l.

Tree line is at 2,000 metres, hence vegetation over most of the claims is limited to alpine grasses, lichen and mosses. The lower slopes are covered by scrubby alpine spruce and balsam.

3. Ownership

The DIL property is comprised of two contiguous modified grid mineral claims totalling 40 units. The status of these claims is summarized below and the relative claim locations are plotted on Figure 2.

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>
DIL 1	2320	20	August 18, 1987
DIL 2	2321	20	August 18, 1987



OUTLINE OF THE
DIL MINERAL CLAIMS
Clinton Mining Division
NTS- 92 0/3&6
Scale: 1:50,000

B. GEOLOGY

1. Regional Geology

The vicinity of the DIL property has been mapped by H.W. Tipper of the Geological Survey of Canada (92/0, Open File 534). Tipper shows the claim area to be underlain by Mesozoic-age clastic sedimentary and volcanic rocks of the Taylor Creek and Kingsvale groups. These Mesozoic-age rocks have been intruded by Eocene-age stocks and dyke-swarms of feldspar porphyry. Capping these older rocks, are flat-lying basalt flows of Miocene-age.

2. DIL Property Geology

The geology of the DIL claims was mapped by the writer in 1987. The results of this work are displayed on Figure 3 and described below.

The oldest rocks on the claims are lower Cretaceous grey to black, thinly bedded siltstone, argillite and lesser greywacke of the Taylor Creek group (Unit Tssh). These rocks are pyritic and hornfelsed where intruded by feldspar porphyry dykes. Rocks of the upper Cretaceous Kingsvale group occur in the west and south central areas of the claims. The contact between the Kingsvale and Taylor Creek groups is not exposed on the property, but has been mapped by H.W. Tipper as an unconformity.

On the claims, the Kingsvale group is divisible into a sedimentary unit (Ks) and a volcanic unit (Krd). The sedimentary unit consists of grey to reddishbrown greywacke, siltstone and lesser shale. The volcanic unit consists of tuffs, breccias and ash-flow tuffs of rhyodacitic composition.

Feldspar porphyry occurs in dykes and irregular masses up to 300 metres thick that occupy a 600 metre wide, northwesterly trending zone in the northern portion of the claims (Unit FP). The dykes cut siltstone and argillites of the Taylor Creek group at shallow angles to the bedding. The

feldspar porphyries are light tan to grey coloured and range in texture from a sparse to crowded porphyry with subhedral phenocrysts in a fine-grained felsic groundmass.

Much of the southern part of the DIL 1 and 2 claims are underlain by flat-lying Miocene-age basalt flows. On the claims the basalts are divisible into a lower vesicular flow (Unit Bv) and an upper massive flow (Unit Ba). These younger flows cap sedimentary rocks of the Kingsvale group.

The dominant structure on the claims is a northwesterly trending, steep-angle fault which has down-dropped the Miocene basalts against the feldspar porphyry dyke swarm and the Taylor Creek group rocks.

3. Mineralization

Quartz vein float occurs at several locations on the claims in areas of frost-heaved felsenmeer of feldspar porphyry and hornfelsed pyritic siltstone. The vein material is banded and vuggy epithermal quartz which locally forms pseudomorphs after calcite. Total sulphide content averages less than 1%. The predominant sulphide is fine to very fine grained pyrite with lesser amounts of arsenopyrite and stibnite.

Quartz float is scattered along two broad, northeasterly trending boulder trains which are traceable for over 600 metres (Figure 3). In the boulder trains, quartz fragments which form up to 10% of the float, range in size from pebbles to over 50 cm in thickness.

During the field examination, 18 samples of the quartz float were collected and analyzed for gold, silver, arsenic, antimony, copper, lead, zinc and mercury using the following procedure. At each sample site, approximately 2 kilograms of quartz chips were collected within a 2 metre radius of the sample site. The quartz chips were sent to Min En Laboratories Ltd. in North Vancouver where samples were dried and pulverized to -150 mesh. Analysis for gold was carried out on a half assay

ton sub sample utilizing a fire assay preparation and an atomic absorption spectrophotometre finish. Analysis for arsenic, antimony, silver, copper, lead and zinc was by induced coupled plasma (I.C.P.) method using a 1 gram subsample while mercury analysis was by vapour generated flameless atomic absorption technique. Results of the analyses are presented in Appendix IV with sample locations displayed on Figures 3, 4.1 and 5.1.

Analytical results showed gold to range from 1 ppb to 4,600 pb gold. In the eastern most of the two boulder trains, all of the samples collected contained anomalous levels of gold, thus highlighting a 500 metre length of the quartz-float zone as anomalous for gold.

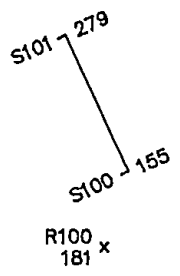
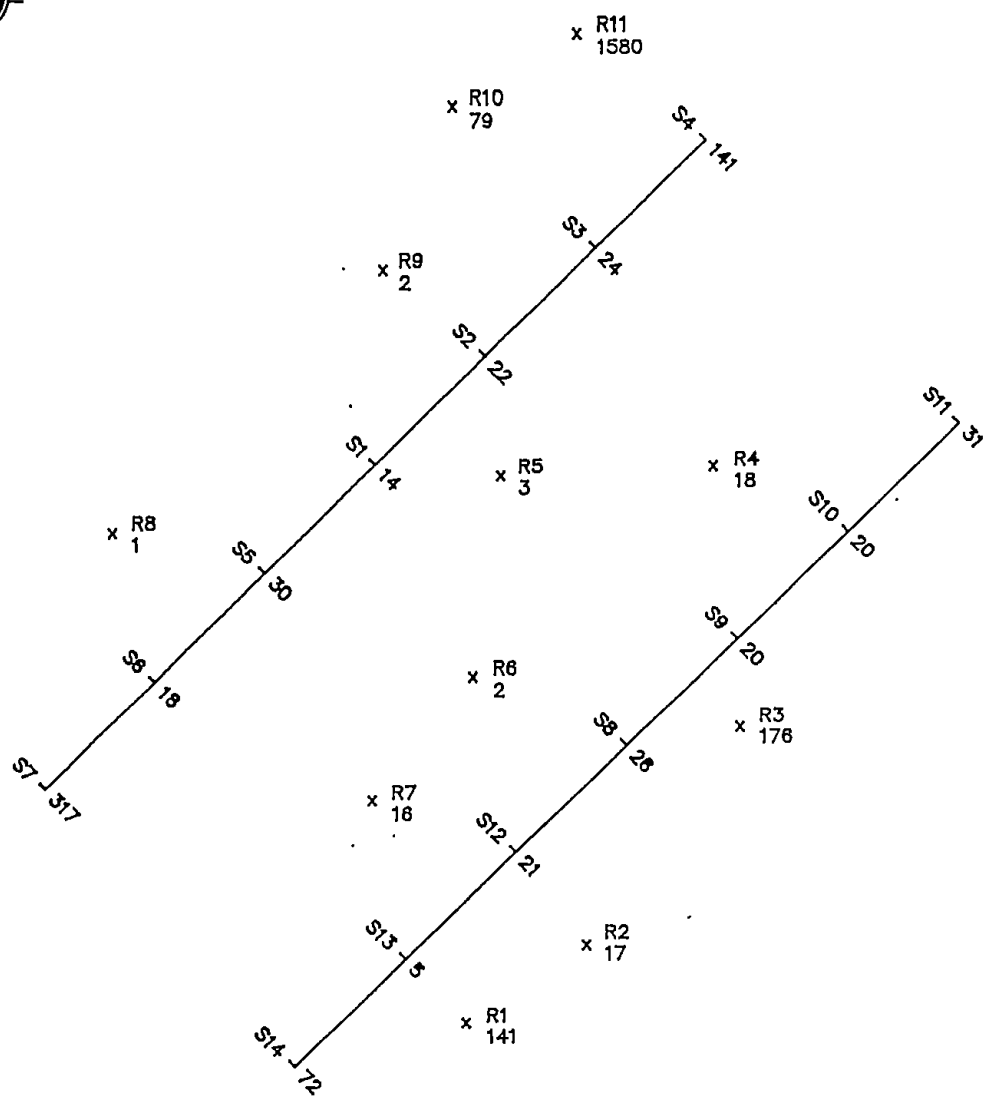
Quartz in the western boulder train generally has lower gold values, the best being 1,580 ppb in sample R-11.

Silver content of the quartz ranged from 1.0 ppm to 16.2 ppm. Again, the higher silver values are predominantly in quartz from the eastern boulder train.

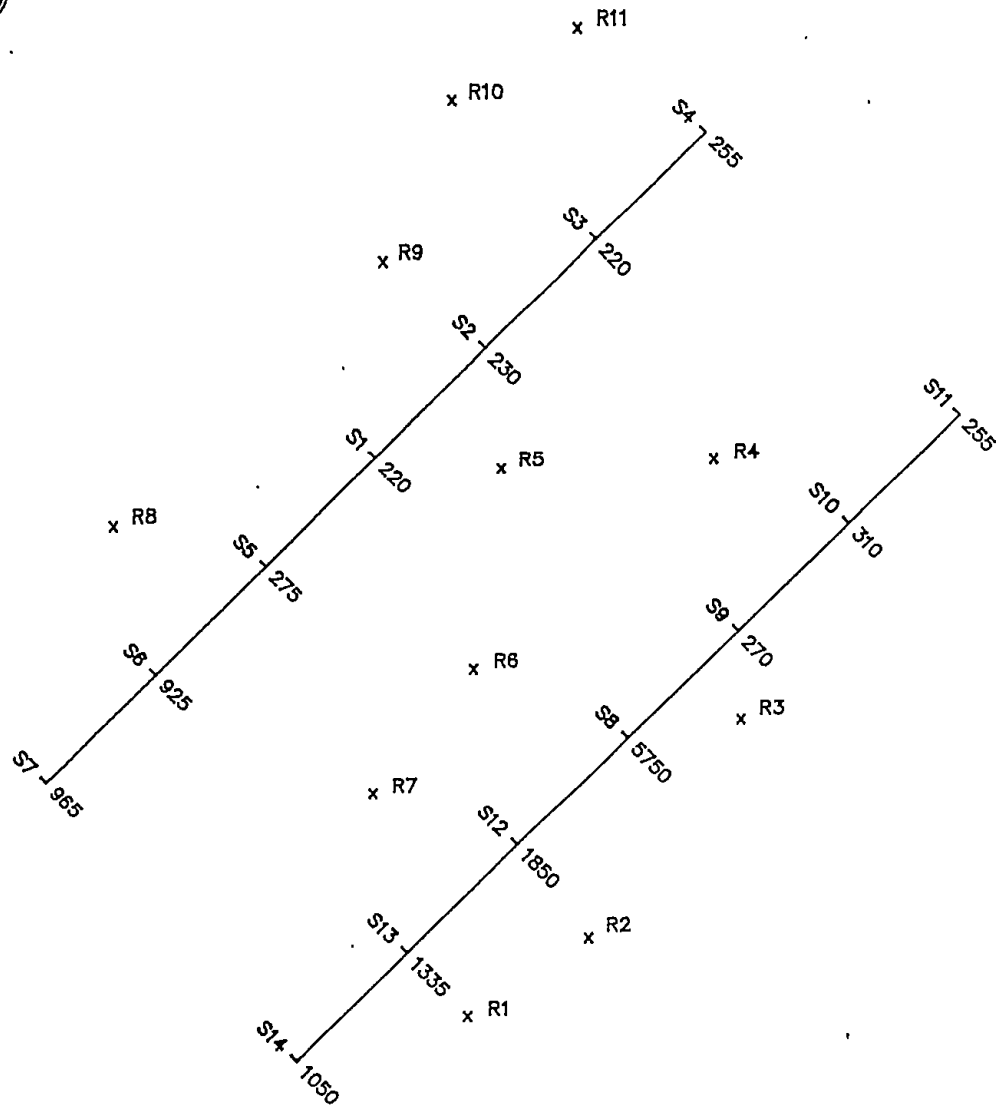
With the exception of zinc and copper, the quartz shows anomalous levels in all of the analyzed trace elements. Although none of the trace elements are directly correlatable with gold, the best correlation occurs with antimony with poorer correlations occurring with arsenic, lead and mercury.

C. GEOCHEMISTRY

As part of the program, four lines of soil samples were collected in areas of quartz float. Two northwesterly oriented soil lines were placed across the trend of the float in the eastern boulder train near where Barrier Reef reported quartz float having 1,300 ppb gold. The purpose of these two soil lines was to determine if, by re-orienting the lines, the northwesterly trending quartz float zones could be detected. Two soil lines were also run over the northern part of the western



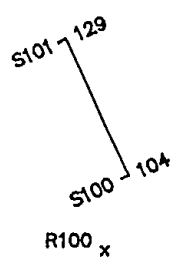
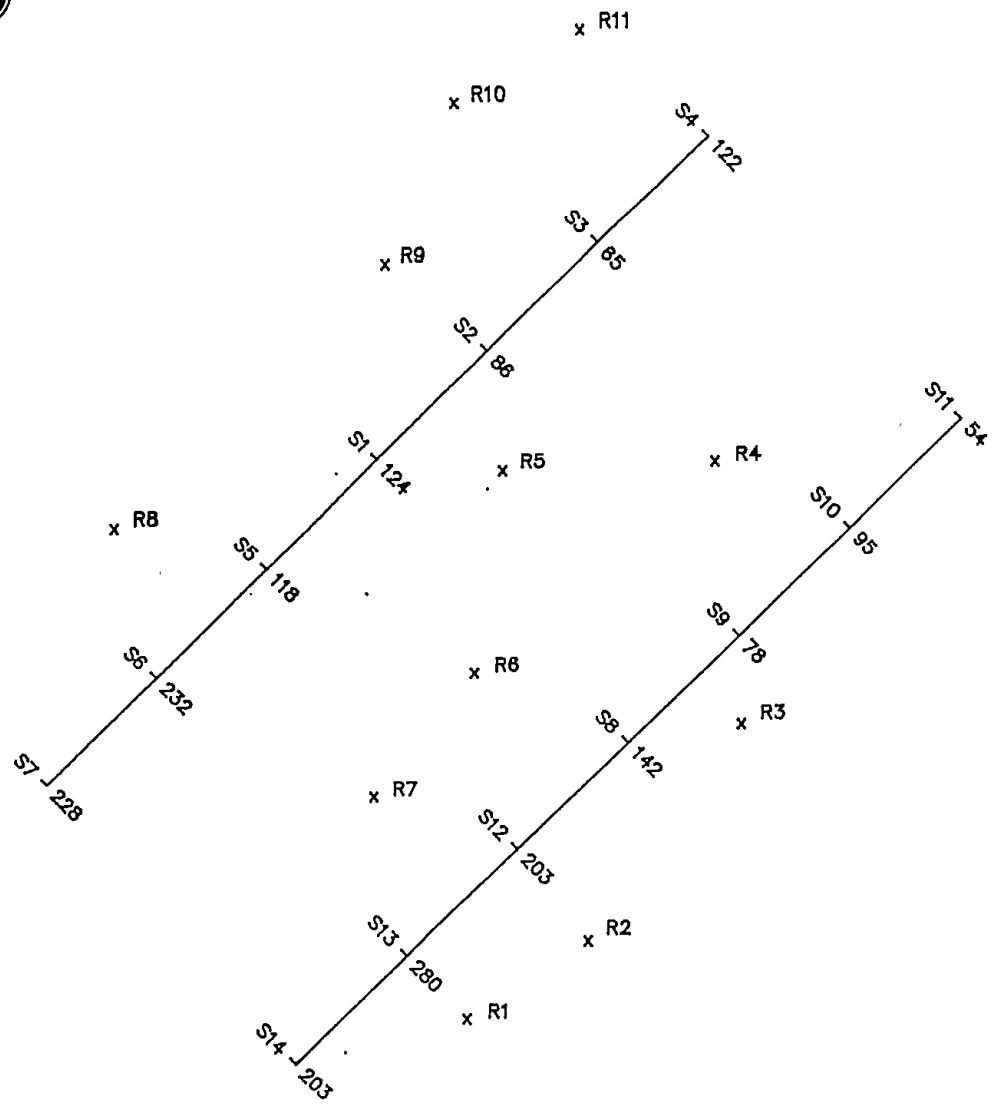
McCLINTOCK ENGINEERING LTD.	
DIL CLAIMS	
CLINTON MINING DIVISION, B.C.	NTS: 92 0/3, 8
GEOCHEMISTRY SURVEY	
GOLD RESULTS	
SCALE 1:1000	
DATE: NOVEMBER, 1988	
BY: J.A.M./rwr	
FIGURE No. 4.1	



S101 - 680
 S100 - 370
 R100 x

SOIL SAMPLE, MERCURY IN p.p.b.
 ROCK SAMPLE

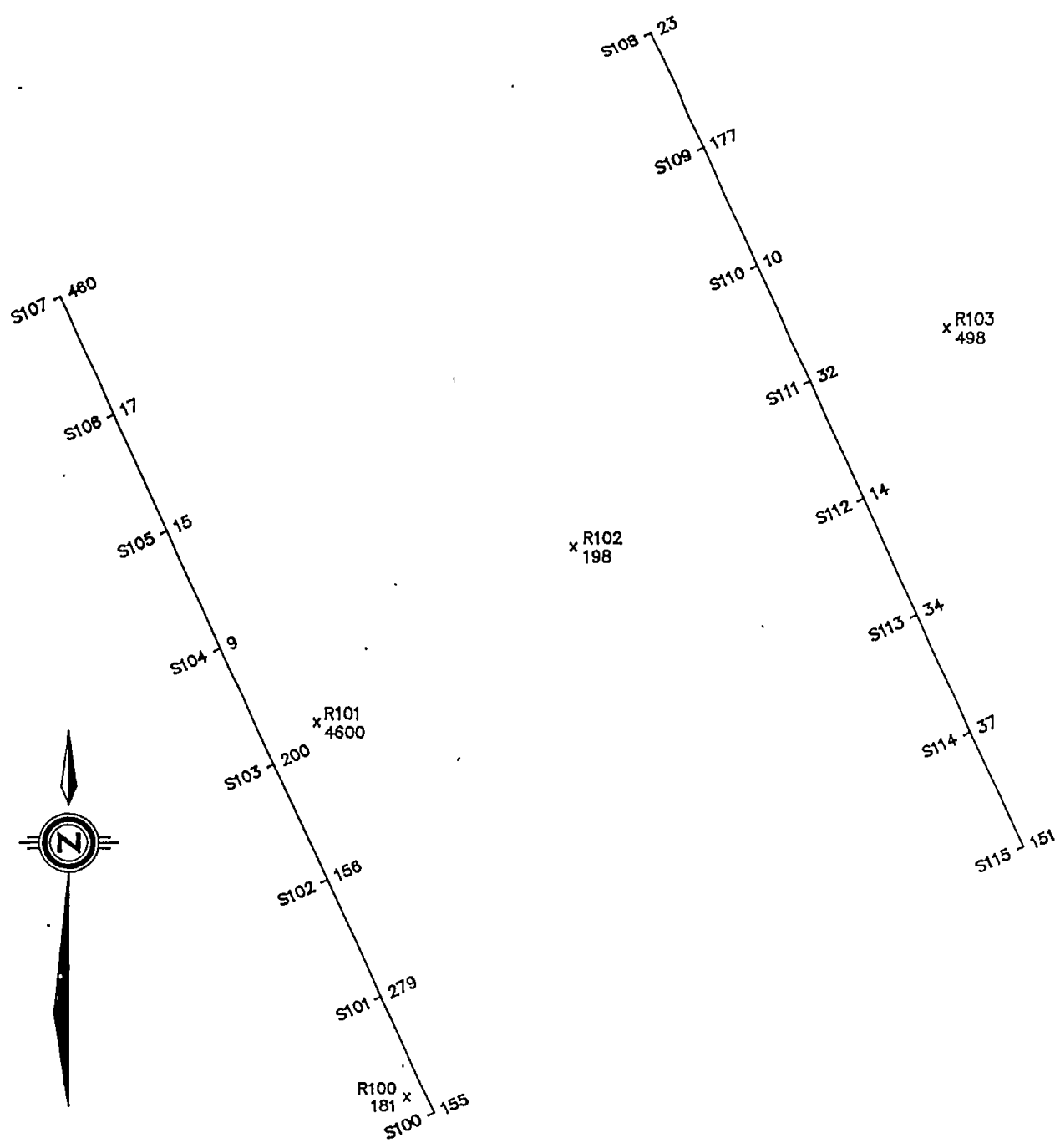
McCLINTOCK ENGINEERING LTD.	
DIL CLAIMS	
CLINTON MINING DIVISION, B.C.	NTS: 92 O/3, 6
GEOCHEMISTRY SURVEY	
MERCURY RESULTS	
SCALE 1:1000	
DATE: NOVEMBER, 1988	
BY: J.A.M./rwr	
FIGURE No. 4.2	



SOIL SAMPLE, ARSENIC IN p.p.m.

ROCK SAMPLE

McCLINTOCK ENGINEERING LTD.	
DIL CLAIMS	
CLINTON MINING DIVISION, B.C.	NTS: 92 O/3, 6
GEOCHEMISTRY SURVEY ARSENIC RESULTS	
<p>SCALE 1:1000</p>	
DATE: NOVEMBER, 1988	FIGURE No. 4.3
BY: J.A.M./rwr	

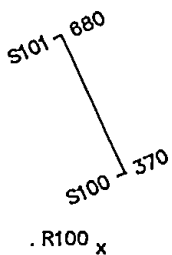
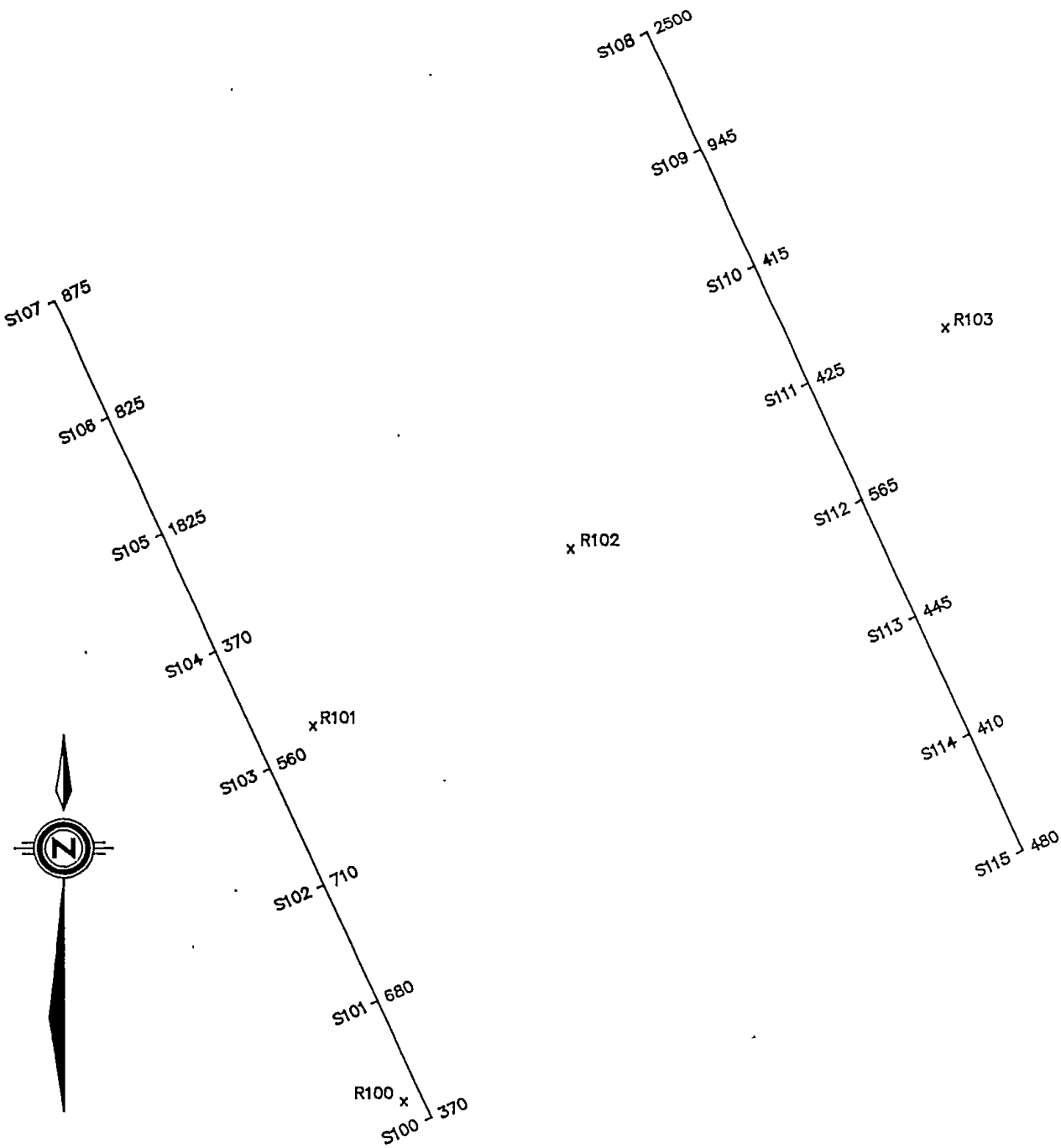


S101 - 279
S100 - 155
R100
181 x

SOIL SAMPLE, GOLD IN p.p.b.

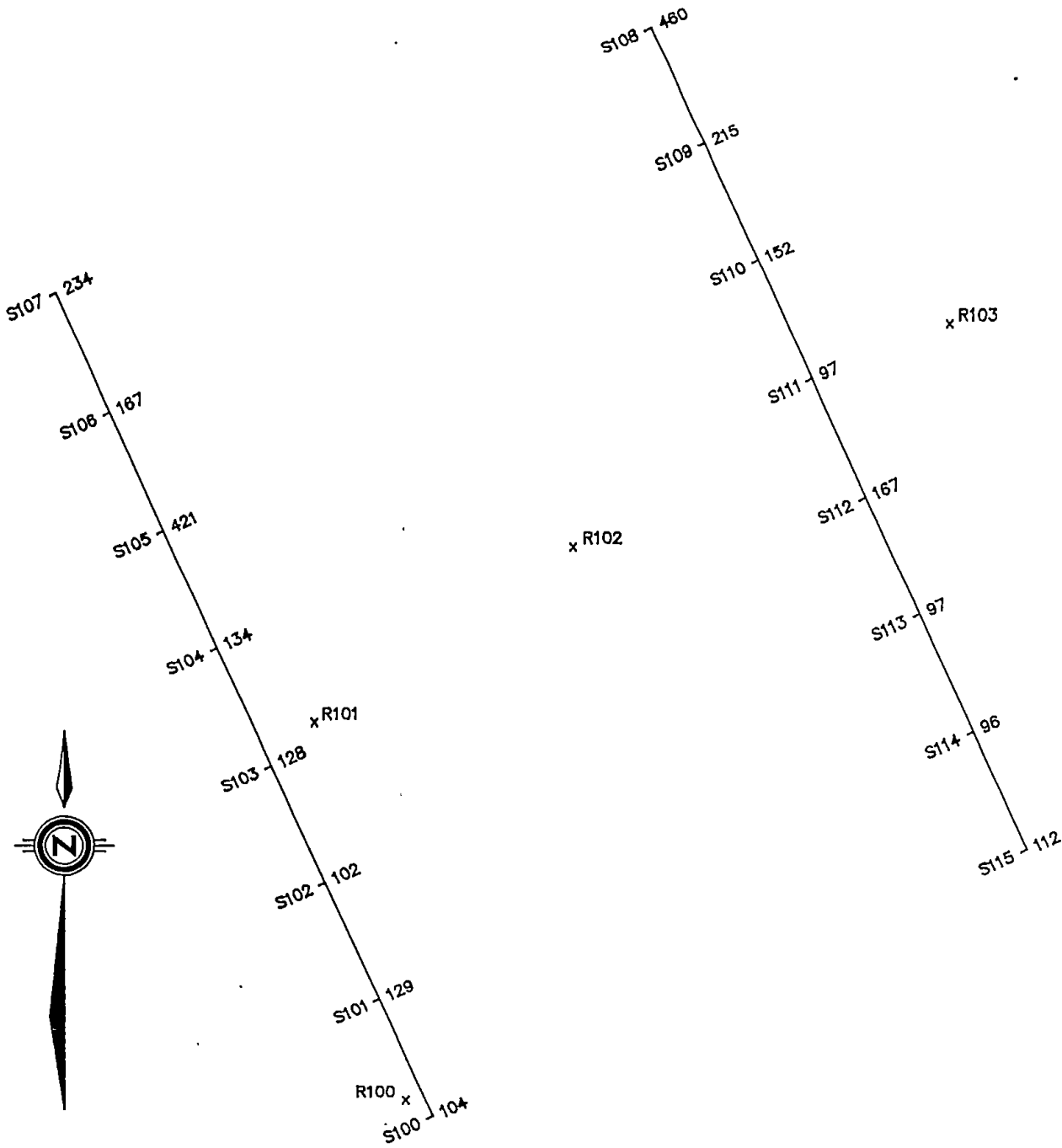
ROCK SAMPLE
GOLD IN p.p.b.

McCLINTOCK ENGINEERING LTD.	
DIL CLAIMS	
CLINTON MINING DIVISION, B.C.	NTS: 92 0/3, 6
GEOCHEMISTRY SURVEY	
GOLD RESULTS	
SCALE 1:1000	
DATE: NOVEMBER, 1988	FIGURE No. 5.1
BY: J.A.M./rwr	



SOIL SAMPLE, MERCURY IN p.p.b.
 ROCK SAMPLE

McCLINTOCK ENGINEERING LTD.	
DIL CLAIMS	
CLINTON MINING DIVISION, B.C.	NTS: 92 0/3, 6
GEOCHEMISTRY SURVEY	
MERCURY RESULTS	
SCALE 1:1000	
DATE: NOVEMBER, 1988	
BY: J.A.M./rwr	
FIGURE No. 5.2	



S101 - 129
 S100 - 104
 R100 x

SOIL SAMPLE, ARSENIC IN p.p.m.
 ROCK SAMPLE

McCLINTOCK ENGINEERING LTD.	
DIL CLAIMS	
CLINTON MINING DIVISION, B.C.	NTS: 92 0/3, 6
GEOCHEMISTRY SURVEY	
ARSENIC RESULTS	
SCALE 1:1000	
DATE: NOVEMBER, 1988	FIGURE No. 5.3
BY: J.A.M./rwr	

boulder train. These lines were oriented parallel to the Barrier Reef soil lines to determine if the Barrier Reef gold anomalies were continuous between lines.

On each line, soil samples were collected at 20-metre intervals and placed into carefully marked kraft paper envelopes. Because soil on the claims is poorly developed, samples consisted of a mixture of talus fines and soil developed from residual weathering. Sample sites were marked with flagging.

These samples were analyzed for gold, silver, arsenic, copper, lead, antimony, zinc and mercury in the North Vancouver laboratories of Min En Laboratories Ltd. Gold analysis was by fire assay preparation and atomic absorption finish on a 10 gram subsample of the -80 mesh fraction. Because of the poorly developed soil present at some sites, it was necessary at some locations to use a coarser fraction. Where this occurred, the -20 or -40 mesh fraction was used. (Samples S-104, S-110, S-112.) Analyses for silver, arsenic, copper, lead, antimony and zinc was by induced coupled plasma after a Lefort Aqua Regia digestion. Mercury analysis was by vapour generated flameless atomic absorption. Analytical results are presented in Appendix I with those collected over the eastern boulder train plotted on Figures 4.1 to 4.3 and those over the western boulder train plotted on Figures 5.1 to 5.3.

As the total number of samples collected was small (30), statistical manipulations of the results were not carried out. Anomalous levels of copper, gold and arsenic chosen were based on those calculated by Barrier Reef. Anomalous levels for antimony, silver and mercury were arbitrarily chosen based on the writer's experience on geologically similar properties in the Chilcotin area. A summary of anomalous levels for each element follows:

<u>Element</u>	<u>Anomalous Level</u>
Gold	90ppb
Arsenic	170ppm
Antimony	10ppm
Copper	100ppm
Lead	30ppm
Zinc	150ppm
Silver	1.0ppm
Mercury	450ppb

Plotting of the results from the eastern boulder train showed 7 of the 16 samples to be anomalous for gold. Although sampling was not extensive enough to contour, the anomalous values indicate two northeasterly trending zones, a direction parallel to the trend of quartz float. It is interesting to note that earlier sampling by Barrier Reef showed gold values in this area to be in the order of 65 ppb. Values for antimony, with one exception, were all anomalous. Anomalous arsenic indicates a northeasterly trend that is roughly coincident with the western gold anomaly. Mercury values were similarly either anomalous or elevated in all cases. Copper, silver, lead and zinc content of the soil was generally below anomalous levels.

Soil sampling over the western boulder train showed two samples with anomalous gold, one of which was coincidentally anomalous for arsenic, mercury and silver. With the exception of copper, trace element values were lower over the western boulder train compared with the eastern train. Copper-in-soil values over the western quartz float zone are all anomalous and twice the level of those samples collected over the eastern zone.

The lower levels of arsenic, antimony and mercury in soils from the western quartz float area also occur in the quartz samples from that zone. Quartz samples from the western area are significantly lower in antimony, gold and mercury and to a lesser extent lower in arsenic compared with quartz samples from the eastern zone. The higher values in these elements in soils therefore appear to be good indicators of the levels present in the quartz float. Copper in the quartz is at low-levels compared to the soil results. This suggests that the copper in soils is derived from a source other than the quartz. Both lead and silver, with few exceptions, are higher in quartz from the eastern zone than the western zone. Despite this, no similar difference was noted in the soil results. The cause of this discrepancy may be accounted for by the chemical conditions present in the soil.

D. CONCLUSIONS

This year's program, in conjunction with the 1987 program has confirmed the presence of widespread auriferous quartz vein float having gold values to 4,600 ppb. The float, which consists of drusy and banded quartz, forms two northeasterly-trending boulder trains which are traceable for over 600 metres. Analyses of the quartz indicates the easternmost quartz train to have the highest gold values and to be anomalous for silver, antimony, lead, mercury and arsenic. The style of quartz veining, encouraging gold values and trace element content makes the DIL claims an excellent target for a vein-gold deposit similar to the nearby Blackdome deposit.

Orientation soil sampling found that northwesterly oriented lines highlighted the gold-bearing quartz float as anomalous for gold, antimony, mercury and arsenic. Despite the auriferous quartz being anomalous in lead and silver, these values were not anomalous in the soils. Further soil sampling should, therefore, be carried out at 20-metre intervals along northwesterly oriented lines spaced 100 metres apart. Soil samples should be analyzed for gold, antimony, mercury and arsenic.

The encouraging results of preliminary rock sampling and orientation soil sampling fully justify ongoing work. It is recommended that a comprehensive program of grid-soil sampling, rock sampling and hand-excavated trenching be undertaken. In conjunction with soil sampling, it is also recommended that a VLF EM survey be done. The VLF EM survey would be used to locate structures which might host the quartz veins.

Appendix I

ITEMIZED COST STATEMENT

TECHNICAL STAFF

Geologist

J. McClintock - August 15, 16, 17 - 3 days @ \$350/day \$ 1,050.00

Prospector

J. McCaffrey - August 15, 16, 17 - 3 days @ \$175/day 525.00

ACCOMMODATION

2 men for 3 days @ \$40/day 240.00

TRANSPORTATION

Truck - 3 days @ \$50/day 150.00

Fuel 100.00

Helicopter (Highland Helicopters) 867.00

ANALYSES

Min-En Labs: 30 soils, 18 rocks 847.50

REPORT

J. McClintock - 1 day @ \$350/day 350.00

Drafting - RWR Mineral Graphics 260.00

Report preparation and assembly 160.00

TOTAL

\$ 4,549.50

Appendix II

STATEMENT OF QUALIFICATIONS

I, John A. McClintock, do hereby certify:

1. That I am a consulting geologist with offices at 32841 Ashley Way, Abbotsford, b.C.
2. That I am a graduate of the University of British Columbia with a B.Sc. (Honours) Geology 1973, and have practised my profession with various mining and/or exploration companies and as an independent geological consultant since graduation.
3. That I am a Professional Engineer registered with the Association of Professional Engineers in the Province of British Columbia.
4. That I am author of this report that is based on geological mapping and geochemical sampling conducted on the DIL property from August 15 through August 17, 1987.

Dated at Abbotsford, British Columbia, this 10 day of November, 1988.



John A. McClintock, P.Eng.

Appendix III

BIBLIOGRAPHY

Dawson, J.M., 1981, Geological and Geochemical Report on the NAD Claims, Clinton Mining Division British Columbia, Assessment Report No. 8891.

Tipper, N.W., Geological Survey of Canada Open File 534.

Appendix IV

GEOCHEMICAL RESULTS

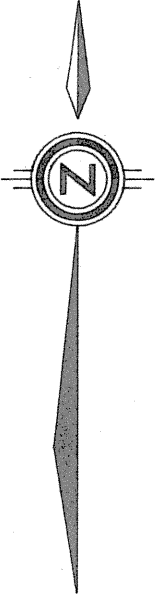
(VALUES IN PPM)	AS	AR	CU	FE	SS	ZN	AL-PPB	MG-PPB
R-01	1.0	77	22	180	23	59	141	765
R-02	1.1	98	58	107	26	33	17	915
R-03	5.4	131	29	214	45	84	176	2125
R-04	2.4	63	18	74	24	11	18	1405
R-05	2.0	72	18	57	29	9	3	1190
R-06	1.8	122	18	51	27	17	2	2500
R-07	2.0	98	24	117	27	21	16	965
R-08	1.0	102	26	124	29	29	1	1625
R-09	1.5	62	18	107	31	7	2	950
R-10	1.2	158	55	275	35	85	79	1275
R-11	12.3	89	57	218	66	97	1560	2375
R-100	3.7	107	38	173	65	25	19	1750
R-101	3.3	113	35	166	108	35	4600	1780
R-102	1.8	229	41	125	339	33	198	2125
R-103	3.1	109	25	167	2419	21	486	1825
R-104	9.6	279	88	169	143	27	4500	11250
R-105	16.2	120	74	857	80	17	859	1500
R-106	7.4	68	59	747	78	35	775	1890

western boulder train

eastern boulder train

(VALUES IN PPM)	AG	AS	CU	PN	SB	ZN	AU-PPB	HG-PPB
S-01	1.0	124	131	18	1	37	14	220
S-02	.7	86	182	17	3	42	22	230
S-03	.9	65	110	15	1	39	24	220
S-04	.8	122	100	13	1	44	141	255
S-05	.9	118	138	19	1	41	30	275
S-06	.8	232	110	20	1	49	18	925
S-07	1.0	228	109	18	1	44	317	965
S-08	.8	142	118	18	4	43	26	5750
S-09	1.0	78	200	14	1	46	20	270
S-10	.8	95	122	17	1	39	20	310
S-11	.9	54	225	20	1	43	31	255
S-12	1.0	203	125	16	2	46	21	1850
S-13	.5	220	92	15	1	51	5	1335
S-14	.7	263	112	14	4	43	72	1050
S-100	.8	104	35	16	35	57	155	370
S-101	.5	129	35	16	31	63	279	680
S-102	.9	102	40	15	34	53	156	710
S-103	.6	128	41	18	33	58	200	560
S-10420M	.7	134	37	16	4	55	9	370
S-105	.9	421	51	14	23	60	15	1825
S-106	.8	167	55	14	21	52	17	825
S-107	.9	234	55	13	23	47	460	875
S-108	.9	460	62	15	14	48	23	2500
S-109	.9	215	66	14	7	49	177	945
S-11020M	.6	152	49	14	10	55	10	415
S-111	.7	97	50	14	53	51	32	425
S-11240M	1.0	167	43	15	22	65	14	565
S-113	.7	97	51	16	44	50	34	445
S-114	1.0	96	51	13	38	56	37	410
S-115	1.0	112	40	22	36	81	151	480

✓



GEOLOGICAL BRANCH
ASSESSMENT REPORT

18-007

LEGEND:

- | | | | |
|------------|-------------------------|-------|--|
| TERTIARY | | FAULT | |
| Ba | BASALT FLOW (MASSIVE) | | FAULT |
| Bv | BASALT FLOW (VESICULAR) | | GEOLOGICAL CONTACT |
| FP | FELDSPAR PORPHYRY | | QUARTZ VEIN BOULDER TRAIN |
| CRETACEOUS | | | QUARTZ FLOAT |
| Ks | SANDSTONE, SHALE | | OUTCROP |
| Krd | RHYODACITE | | BARRIER REEF SOIL SAMPLE LOCATIONS WITH GOLD IN p.p.b. |
| Tsh | HORNFELSEL SILTSTONE | | QUARTZ SAMPLE WITH GOLD IN p.p.b. |
| | | | >20000 BARRIER REEF SAMPLE |
| | | | CONTOUR INTERVAL = 100 FEET |

McCLINTOCK ENGINEERING LTD.

DIL CLAIMS

CLINTON MINING DIVISION, B.C. NTS: 92 0/3, 6

COMPILATION MAP

0 200 400 600

SCALE 1:8000

DATE: NOVEMBER, 1988

BY: J.A.M./rwr

FIGURE No. 3