GEOLOGICAL AND GEOCHEMICAL REPORT ON THE SAND CLAIMS YUKON TERRITORY

Sand 1-16 Grant No's YA69254 - YA69269
By: Placer Development Limited

Watson Lake Mining District
62°45'N 129°30'W
N.T.S. 105-I-12+13

August 19-21, 1983

By: P. Pacor

January 1984

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This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 2000.00.

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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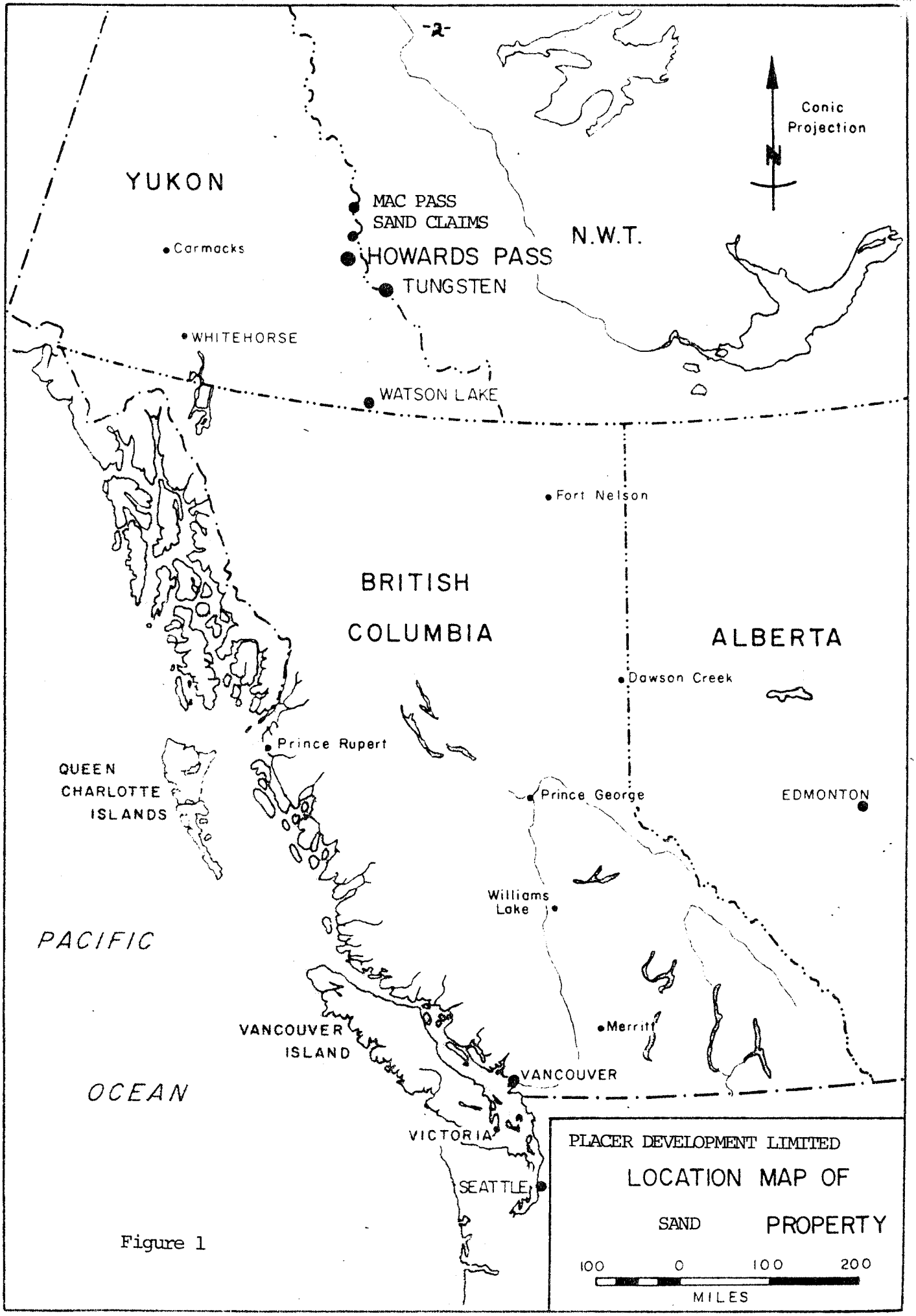
Conic Projection
N
YUKON
MAC PASS
SAND CLAIMS
HOWARDS PASS
TUNGSTEN
N.W.T.
Carmacks
WHITEHORSE
WATSON LAKE
Fort Nelson
BRITISH
COLUMBIA
ALBERTA
Dawson Creek
Prince Rupert
QUEEN
CHARLOTTE
ISLANDS
Prince George
EDMONTON
Williams
Lake
PACIFIC
OCEAN
VANCOUVER
ISLAND
Merritt
VANCOUVER
VICTORIA
SEATTLE
PLACER DEVELOPMENT LIMITED
LOCATION MAP OF
SAND PROPERTY
100 0 100 200
MILES

Figure 1

Introduction

The SAND claims consist of 16 claims covering an area of Tungsten (WO_3) mineralization.

The claims are located on map sheet 105-I in the eastern Yukon. Access is by helicopter from Watson Lake. During the summer a helicopter is available from MacMillan Pass with accommodations at Howards Pass (Figure 1).

The SAND claims were staked in 1982 based on results from heavy mineral sampling program completed by Placer Development Ltd. - U.S. Steel joint venture during August 1982.

The 1983 follow up program, an account of which is given here, was aimed at following the original geochemical program with a more detailed survey and to geologically map the area on and near, the Sand Claims to ascertain the potential for W mineralization.

Location

The SAND claims are located in the Yukon Territory (Figure 1), approximately 15 km south of Mt. Wilson, just west of the border with the Northwest Territories. The claims are situated on map sheets 105-I-12 and 105-I-13.

Topography

A west facing glacial cirque occupies the centre of the claim block. Elevations range from 1,370 to 1,980 meters on the property.

Access

Access is exclusively by helicopter, either from MacMillan Pass or from Placer Development Limited's Howards Pass camp.

History

In November 1982 sixteen claims (Table 1, Figure 2) were staked to cover the possible source of anomalous tungsten values obtained from Heavy Mineral samples taken by Placer personnl in August of that year. This sampling was a follow up to the Geological Survey of Canada regional silt sampling program of the Nahanni sheet done in 1981.

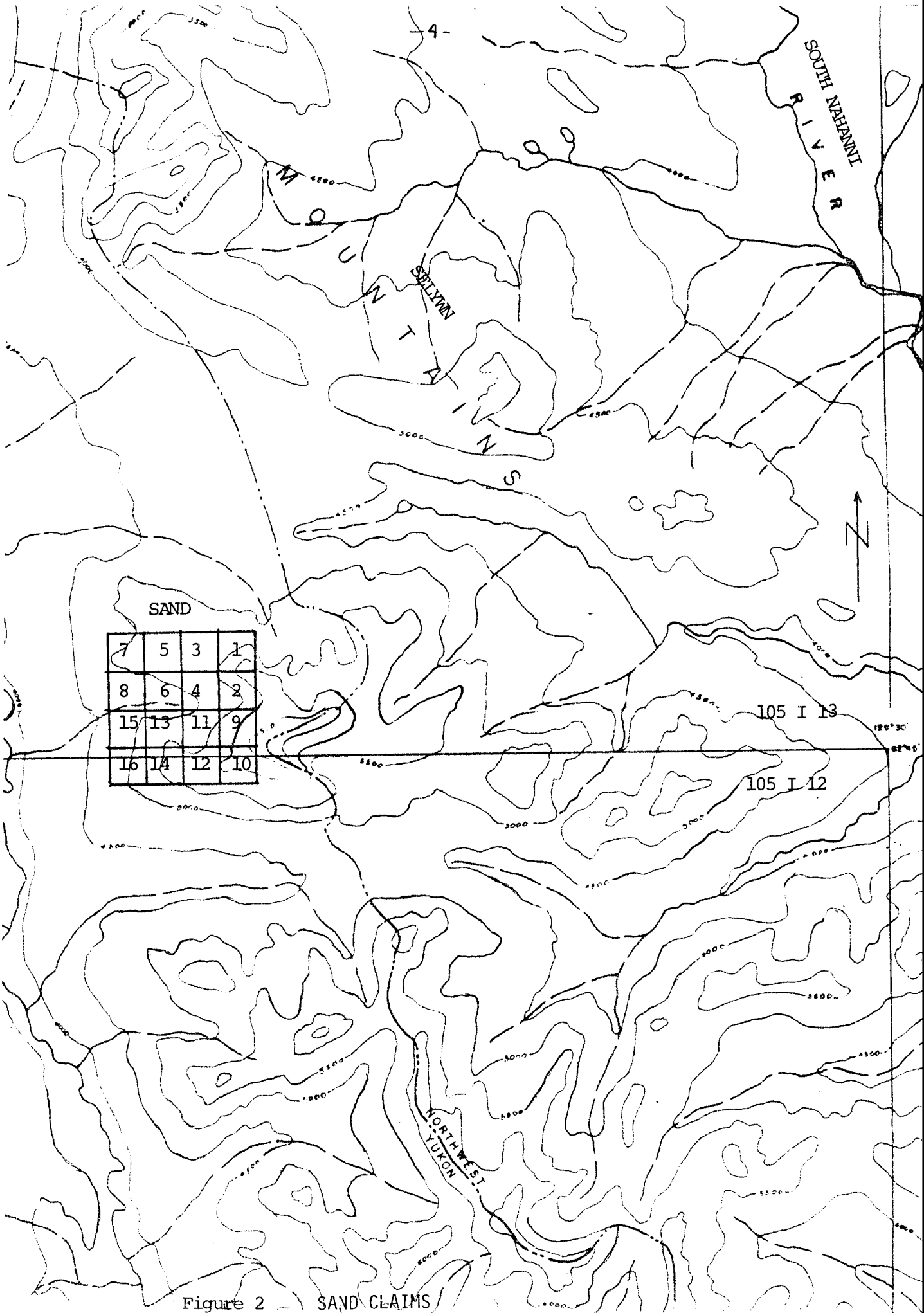

Figure 2 SAND CLAIMS

TABLE 1

Claim Name	Grant No	Record Date	Anniversary
Sand 1	YA 69254	Nov. 17-1982	Nov. 17
2	55	" "	" "
3	56	" "	" "
4	57	" "	" "
5	58	" "	" "
6	59	" "	" "
7	60	" "	" "
8	61	" "	" "
9	62	" "	" "
10	63	" "	" "
11	64	" "	" "
12	65	" "	" "
13	66	" "	" "
14	67	" "	" "
15	68	" "	" "
Sand16	YA 69269	" "	" "

Geology

The geology of the SAND Claims presented here is based on mapping by Morganti, 1983, 1976.

The main intrusive rock in the area of the SAND Claims is the Pelly River Pluton. This pluton is a composite, generally equigranular granodiorite to granite body which is basically circular in plan (Figure 3). The contact between the hornfelsed sediments and the intrusive is sharp and near vertical, indicating that the apex of the intrusive has been eroded away.

Hornfels consists of fine-grained dark grey to black equigranular very indurated sediments with obvious relic bedding. The hornfels ranges from 100 m to 500 m across. An apparent wider hornfels to the northeast of the intrusive suggests that the intrusive contact may flatten slightly in this area.

Away from the hornfelsed zone, fine-grained clastic sediments from the Earn Group show open folds typical of the Nahanni map-sheet. In contrast, the closed syncline mapped to the northeast of the intrusive may relate to magma emplacement.

The only non-geochemical evidence for WO_3 mineralization found during the 1983 exploration programme are two grains of scheelite occurring in the hornfels and epidote-calc-silicate float occurring as an apparent xenolith. This evidence was found along the western side of the intrusive.

Geochemistry

Eight Heavy Mineral, four bulk and twelve silt samples were collected from streams draining the area around the claims. Standard silt samples were collected from each site, while bulk samples were obtained from sites where heavy mineral samples could not be taken due to an insufficient amount of finer material. Sample sites are noted on Figure 4 and analytical results are presented in Appendix I.

Sample Collection, Preparation and Analysis

For stream silt samples, fine clastic material was collected into kraft paper bags using a plastic spoon. Heavy mineral samples were collected by wet sieving clastic material through a -20 mesh stainless steel screen. A steel shovel was used to obtain the raw material. The sieved fraction was retained in a large plastic bag. Approximately 7-8 kg of sieved material was collected for each heavy mineral sample. Bulk samples were obtained in the same manner except that only 2-3 kg were collected. Sample sites were chosen to take advantage of natures concentration of heavy minerals (i.e., native gold, tungsten, sulphides) within specific flow regimes of the active streams.

PELLY R.

YUKON

N.W.T.

105 I 13

105 I 12

LEGEND

Granodiorite to Granite
Pelly River Pluton

Dark Coloured Hornfels

Fine-Grained Earn Group

Syncline

Traverse Lines

½ mile

FIGURE 3
GEOLOGY MAP

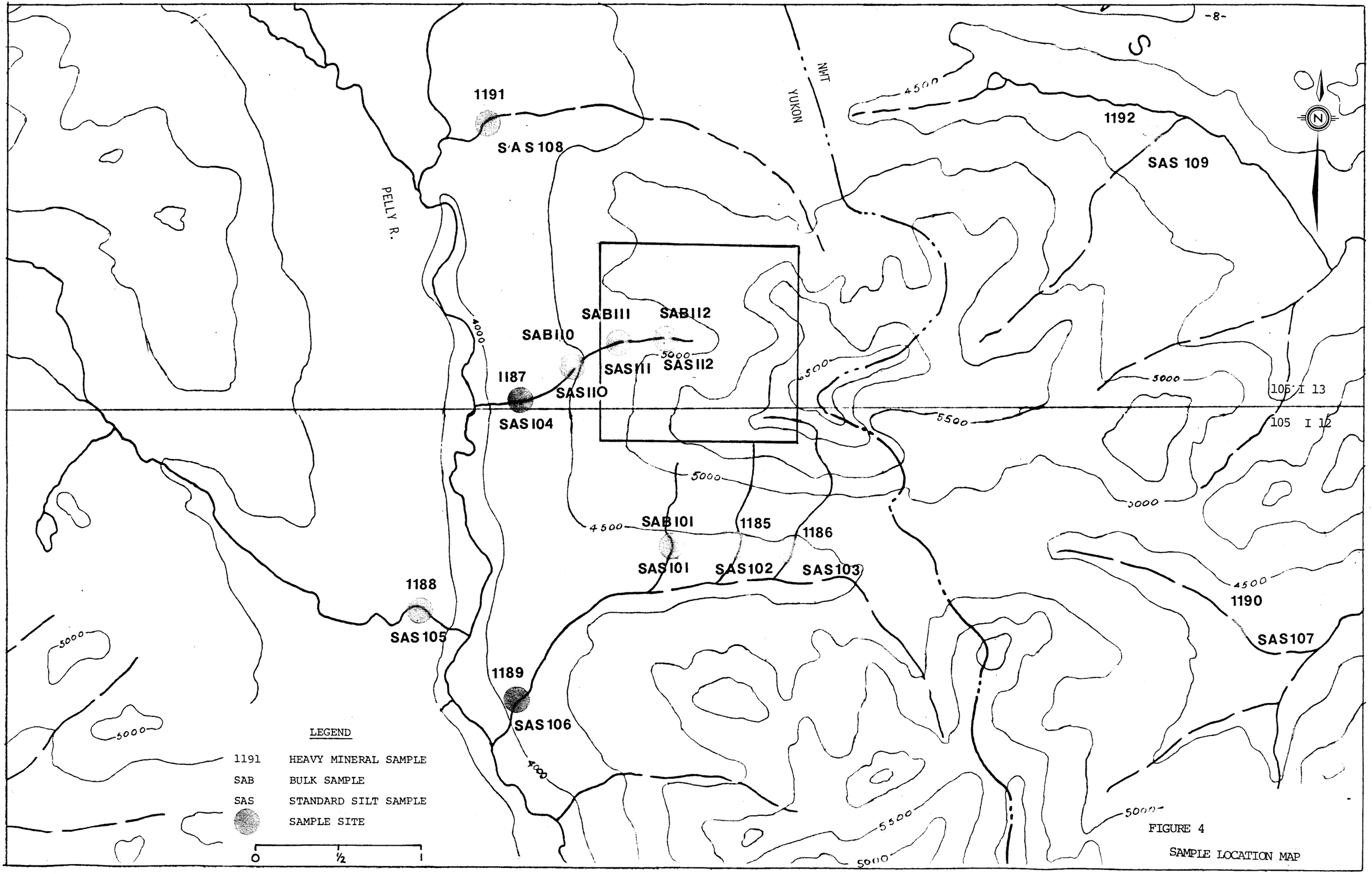

FIGURE 4

SAMPLE LOCATION MAP

The silt and bulk samples were forwarded to Placer's analytical laboratory in Vancouver where they were oven-dried and then sieved to a -80 mesh size fraction for analysis. The heavy mineral samples were shipped to C.F. Minerals in Kelowna, B.C. for preparation of different fractions for each sample. These fractions were made from the original sample by separation; first on size (sieving), second on specific gravity (heavy liquid) and finally on magnetic susceptability (electro magnetic separator). Explanation of the code for the heavy mineral separates is given with results in Appendix I. The heavy mineral fractions were returned to Placer's Laboratory for analysis.

The silt and bulk samples and fine heavy mineral fractions were treated similarly at the laboratory where a subsample was weighed, digested and analyzed. The coarse heavy mineral fractions must be crushed prior to weighing. Silt and Bulk samples were analyzed for Cu, Zn, Pb, Au, W, As, Sn, Sb.

Partly due to the small sample size, the heavy mineral fractions were analyzed only for W and Sn. From past experience, only the fine heavy non magnetic and coarse heavy non magnetic fractions were analyzed.

Digestion and detection procedures used by Placer's laboratory are given in Table 2.

Results

Of the heavy minerals collected, only the coarse (that is from -35 to mesh to +150 mesh in size) fraction was sent for analysis. The fine fraction (less than -150 mesh in size) was not analyzed as there was an insufficient amount (less than 1.00 gm in all cases), for proper W and Sn determination. One of the coarse-fractions did not have a sufficient quantity for analysis, while two more only had enough sample for one analysis.

Five of the seven coarse heavy non magnetic fractions returned values greater than 500 ppm W. An exact value was not obtained due to very small sample size. These values were obtained from streams draining the Sand claims area (Figure 4). Sample 1188, which drains the Ohmo cirque of the Clea tungsten property, was taken as a control sample. Its W and Sn values are comparible to those obtained from the streams around the Sand claims.

No interpretation can be made on these results except that they are anomalous in terms of W and Sn.

TABLE 2

EXTRACTION AND ANALYTICAL METHODS

Element	Units	Weight (grams)	Extraction Procedure Attack Used	Time	Analytical Method	Detection Range
Cu	ppm	0.5	Conc. $HClO_4/HNO_3$	4 hrs.	Atomic Absorption	2-4000
Zn	ppm	0.5	Conc. $HClO_4/HNO_3$	4 hrs.	Atomic Absorption	2-3000
Pb	ppm	0.5	Conc. $HClO_4/HNO_3$	4 hrs.	A.A. Background Corrected	2-3000
Au	ppm	10.0	Aqua Regia	3 hrs.	A.A. Solvent Extraction	0.2-4.0
As	ppm	0.5	Conc. $HClO_4/HNO_3$	4 hrs.	A.A. Background Corrected	2-1000
W	ppm	1.0	Conc. $HF/HNO_3/HCL/H_2SO_4$	4 hrs.	A.A. Solvent Extraction	5-5000
Sb	ppm	0.5	Conc. $HCLO_4/HNO_3$	4 hrs.	A.A. Background Corrected	2-1000
Sn	ppm	1.0	NH_4I Fusion	15 min.	A.A. Solvent Extraction	5-5000

The bulk samples did not return W and Sn values comparible to those of the heavy mineral samples. Tin values were below detection limits while Tungsten values ranged from <5 to 28 ppm. However, tungsten values from the samples taken from the creek draining the west part of the Sand claims (Figure 3) show an increase going up stream. Values of 5, 15 and 28 ppm W were obtained (indicating an increase in tungsten content) as one approaches the intrusives.

Of the other elements analyzed for, (Appendix I) only arsenic shows any trend in this limited number of bulk samples. The arsenic follows the same pattern as the tungsten in the bulk samples from the Creek draining the west side of the property. Again this may reflect the proximity of the sample to the intrusive.

The results of the standard silt analysis do not show any discernable pattern other than a perceivable increase in arsenic in samples taken in the creek draining the west cirque of the property. Tungsten values are generally low except for the sample draining the Ohmo cirque, which contained 19 ppm W, and the sample on the creek draining the north side of the Sand claims, which contained 66 ppm W.

The copper, lead and zinc results do not appear anomalous as the surrounding country rocks mapped as Devonian and Mississippian shales by S. Gordey in 1981 (Anderson 1982) can contain high levels of these elements. Gold values are all below detection limit while antimony values are low and erratic.

Conclusions and Recommendations

Mapping done by J.M. Morganti in 1983 on and around the Sand claims shows the existence of a contact aureole surrounding the intrusive. The host rocks of this contact aurole are composed of Mississippian and Devonian argillites and shales. The majority of the larger tungsten-bearing skarns in the region (i.e., Cantung and Mactung) are found in much older limestone units. This would seem to indicate that the potential for any significant skarn formation is not very great in the area of the Sand claims.

A follow up should, however, be undertaken to identify any skarn and limestone units in the area, as well as to identify the source for the anomalous tungsten values. This will entail a small prospecting and sampling program.

SAND CLAIMS - Statement of Costs

Camp Operations (Howards Pass Camp)	
6 man days @ $75.00/man day (August 19th-21st)	$450.00
Labour (August 19-21)	
J. Morganti (Senior Geologist) @$290.00/day	
H. Goddard (Field Technician) @$200.00/day	
B. Ott (Field Technician) @$200.00/day	$1,380.00
Travel (Howards Pass Camp To/From Sand Claims)	
Northern Mountain Helicopter	
Invoice 23538 4.1 hrs. @ 500/hr.	
Invoice 23540 3.9 hrs. @ 500/hr.	$4,000.00
Assay Costs	
Sample Preparation	
(1) Heavy mineral preparation by C.F. Minerals Ltd. (8 samples @ $47.00/sample)	376.00
Preparation by Placer Development Ltd. (7 samples at $5/sample)	35.00
(2) Bulk sample preparation by Placer Development Ltd. (4 samples @ $10.00/sample)	40.00
Assay Cost (Elements analyzed for: W, Au, Sb, As, Zn, Pb, Sn, Cu)	
4 bulk and 12 silt samples @ $21/sample	336.00
Analyzed I fraction of 7 heavy mineral samples for W, Sn, 7 samples @ $8/sample	56.00
TOTAL COST	$6,673.00

STATEMENT OF QUALIFICATIONS

I, P. Pacor, with a business address of 1600-1055 Dunsmiur Street, Vancouver, B.C., do hereby certify that I have assessed and interpreted the data from geological mapping and geochemical sampling done on or near the Sand claims.

I also certify that:

1. I am a graduate of the University of British Columbia, Vancouver (B. Sc., Geological Sciences, 1978).

2. I have engaged in mineral exploration seasonally since 1976, in British Columbia, Yukon Territory and the Northwest Territories.

Respectfully submitted,

PLACER DEVELOPMENT LIMITED

Percy Pacor

PP/cs
01:16:84

APPENDIX I

Analytical Results - ppm

Sample No.	Cu	Zn	Pb	Au	W	As	Sn	Sb
SAB 101	18	46	9	<0.02	<5	68	<5	5
SAS 101	29	59	24	<0.02	5	80	19	7
1185 CHN					>500		NSS	
SAS 102	18	87	23	<0.02	8	140	7	<2
1186 CHN					NSS		NSS	
SAS 103	12	35	19	<0.02	<5	40	8	<2
1187 CHN					>500		NSS	
SAS 104	44	140	19	<0.02	8	310	10	32
1188 CHN					>500		>500	
SAS 105	53	339	17	<0.02	19	40	6	<2
1189 CHN					113		35	
SAS 106	51	295	16	<0.02	<5	38	NSS	<2
1190 CHN					410		92	
SAS 107	27	103	14	<0.02	5	80	11	<2
1191 CHN					>500		>500	
SAS 108	45	590	34	NSS	66	304	NSS	<2
1192 CHN					>500		153	
SAS 109	58	200	22	<0.02	<5	120	7	4
SAB 110	47	108	13	<0.02	5	400	<5	68
SAS 110	28	90	24	<0.02	5	106	12	5
SAB 111	175	440	32	<0.02	15	1000	<5	32
SAS 111	128	390	34	<0.02	NSS	0.19%	NSS	18
SAB 112	139	400	23	<0.02	28	1120	<5	27
SAS 112	110	329	24	<0.02	8	800	NSS	17

SAB - Bulk Sediment Sample
SAS - Standard Sediment Sample
CHN - Coarse Heavy Non-magnetic Fraction
NSS - Not Sufficient Sample

REFERENCES

Anderson, R.G. 1982
Geology of the Mactung Pluton in Niddery Lake Map Area and Some of the Plutons in Nahanni Map Area, Yukon Territory and District of Mackenzie.
In Current Research, Part A, G.S.C. Paper 82-1A,, p. 299-304, 1982.