YUKON TERRITORIAL GOVERNMENT
EXPLORATION INCENTIVES PROGRAM
PROJECT 95 - 081

TARGET EVALUATION
BRUIN CREEK

APRIL 1 - NOVEMBER 14, 1995

TRANSVERSE MERCATOR PROJECTION CO-ORDINATES
140°46" longitude - 64°22' latitude
PLACER CLAIM SHEET 116C-7

prepared by
Fortymile Pacific Joint Venture

Box 460, Dawson City
Yukon, Y0B-1G0

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1. Property Description

Bruin Creek is a left limit tributary of the Fortymile River. The confluence of Bruin Creek and the Fortymile River is located approximately 12 miles upstream from the mouth of the Fortymile River. The co-ordinates are latitude 64°22' and longitude 140°46'. The area which we investigated begins at the mouth of the creek and extends up the valley approximately three miles. See the attached topographic map, **Map 1**, for the property location.

Bruin Creek is a relatively large creek drainage. The main stem of the creek is approximately 15 miles long. The creek channel is approximately 50 feet wide. The valley varies in width from 200 feet to 2000 feet. There are two canyons in the 1st 3 mile section of the creek. One canyon is located approximately 2000 feet above the confluence, and the other is about 3 miles upstream. Depth to bedrock in the creek varies between 8 and 20 feet, with an estimated average depth of 16 feet. Much of the creek valley is frozen, although the creek bed and adjacent banks are thawed. Meanders formed by the creek often have large areas of thawed ground as well. Overburdenis not deep, generally varying from 1 to 6 feet.

The upper limit of the property can be accessed by an 8 mile long bush road. This mining road takes off from the Clinton Creek road, which is maintained by the government. It is a good road, although 4 wheel drive is required in wet weather. The lower limit of the property can be reached by a bush road on the other side of the Fortymile River which takes off from the Clinton Creek townsite. This road is approximately 10 miles long. To get to the lower portion of the property, the Fortymile River must be forded or a boat must be used to cross the river.

2. Summary of Previous Relevant Investigations

Bruin Creek was worked by hand methods in the early days of the Fortymile gold rush. There are numerous pits and mining camps throughout the creek valley.

In 1934 a dredging operation was initiated at the confluence of the Fortymile River and Bruin Creek. This venture was operated by Harold Blankman. He was well known in the Yukon as the chief financial controller for the Yukon Consolidated Gold Corporation during its formative years between 1917 and 1920. In conversations with the late Fred Caley of Dawson City, who ran Caley's Store, he told us that a significant quantity of gold was taken out of the mouth of the creek by this dredge. Mr. Caley was familiar with the Fortymile area and had grubstaked some prospecting ventures in the area, including the Clinton Creek asbestos find. Unfortunately the dredge was destroyed by ice and high water the year after it commenced working. The remains of the dredge can be seen at the mouth of Bruin Creek; its digging ladder is still embedded in the bank. This dredging venture was a well organized effort. The ground was prospected in advance and two thousand cords of wood were cut up Bruin Creek to provide fuel for the operation. A permanent camp with extensive shop facilities was built on the Fortymile close to the creek. Knowing that Blankman was a seasoned placer mining man, and from the amount of work which was done, we conclude that his group was confident that the ground would support dredging for some time.

In 1981 we drilled a hole with a 6 inch diameter Sonic drill at the mouth of the creek and estimated that the ground ran approximately 1 ounce per 100 yards. Work which we executed

in 1993 about 4 miles up the creek, partially funded by the Target Evaluation Program, delineated gold reserves in this area.

There have been several, reportedly successful, mining ventures in Bruin Creek over the past 15 years, although none of these is currently operating. These operations were located further up Bruin Creek and no mechanized work has been done in the lower reach.

3. Objectives

The purpose of this project was to identify viable placer reserves in the lower reach of the creek. We are interested primarily in reserves which would be suitable for mining by the floater dredging method, which requires thawed ground with a high water table. We also wanted to estimate grade figures from the samples which we took.

4. Method

We started the project in April to take advantage of the access to the property on the ice before breakup. This allowed us to transport significant quantities of gravel by snowmachine and sled to our camp for analysis. We took twenty-one samples in 2 1/2 gallon buckets. These samples weighed approximately 50 pounds each.

We screened these samples to -10 mesh. We then processed them with 2 passes through a spiral gold clean-up wheel to obtain a concentrate of black sand and gold. The black sand was removed from the concentrate using a magnet. The non-magnetic material was removed by hand panning. The resultant gold particles were counted and saved so that they could be weighed together. We examined the gold colours using a magnifying glass.

Later in the season, we travelled from our camp on the Fortymile River to the mouth of Bruin Creek by river boat. We walked the property and determined sites for further investigation, based on the samples which we had taken earlier, and upon the appearance and vegetation in the area (in order to determine if the ground was likely to be frozen).

We used pick and shovel to dig 18 pits into the gravel over approximately 2 1/2 miles of the creek valley. See **Map 2** for the location of the excavations. We panned samples from the excavations as work was proceeding. We also took 43 samples of seven pounds each from the excavations for processing in camp with the gold wheel. We returned to these excavations in the late fall after the river was frozen. We collected sixteen 50 lb. samples from the material excavated from the pits. These samples were transported by snowmachine to our camp. We processed these samples in the same manner as we processed the previously collected samples described above.

5. Results

Results of the sampling which we did are given in the following tables, **Tables 1 - 5.**

We found gravel in all but 2 of our excavations, thus overburden was less than 6 feet in most areas. We encountered some areas of permafrost, but much of the property was not frozen. Most of the gravel we located yielded some colours. The excavations which produced the best results were those which we dug in shallow ground close to bedrock outcrops. Samples from

bedrock gravels yielded large flakes and colours. Our work indicates that there is coarser gold on bedrock, and that depth to bedrock ranges from about 4 feet to an estimated depth of 20 feet. The upper gravel layers also contain gold, although the colours were smaller and less numerous than the samples from bedrock gravels. Grade figures look good in the areas where bedrock was reached; they were in the less than 100 yards per ounce range. While grade figures from samples in other areas were lower, it is probable that deeper excavation which would allow sampling of gravel close to bedrock, would improve the grade figures.

6. Conclusions and Recommendations

It appears that the grades of gravel near bedrock are good, and that the upper gravels contain some gold. Because all the gravel section is processed when floater mining, it is encouraging to find gold in the upper gravels as well as near bedrock.

The property appears to be suitable for floater mining with a good proportion of thawed ground. The gravel deposits in the creek meanders are not high above the creek level, so the water table is high enough to support floater dredging.

We found that the gold particles which we recovered from our samples were, on average, fairly course in size. This is encouraging; work in the Fortymile district in the past has shown that prospects in which colours have a large average size, yield better results when they are mined than do areas with smaller average size of the colours, regardless of the average number of colours per sample.

We recommend more work be done on the property to further delineate reserves, and to confirm that bedrock and bedrock gravels have good gold content in areas where the gravels are deeper.

7. Information for the Interpretation of Tables

We weighed a sample of Bruin Creek gold and counted the colours in the sample. We determined that there are approximately 3,900 colours per gram or 121,300 colours per ounce of Bruin Creek gold.

The weight of one bank cubic yard of gravel was assumed to be 3,200 lb.

Small samples were assumed to have a weight of 7 lb. because experience has shown that to be the average weight of a 9" by 12" sample bag full of river gravel. Larger samples were taken in 2.5 gallon pails. This size of sample has an approximate weight of 50 lbs. The larger the sample taken, the more accurate is the grade estimate.

Grade figures have been calculated in terms of the number of bank yards required to produce one troy ounce of unrefined gold. These calculations were made from the samples as follows:

1. **number of samples per yard =**
   3,200 lb. per yard ÷ X lb. per sample
2. **number of colours per yard =**
   number of colours per sample x samples per yard
3. **number of yards per ounce =**
   121,300 colours per ounce ÷ number of colours per yard

For example, if a 7 lb. sample of gravel contains four colours, then the number of bank yards required to produce one ounce of gold is calculated as follows:

1. 3,200 lb. ÷ 7 lb. = 457 samples/yd.
2. 4 colours x 457 samples = 1,828 colours/yd.
3. 121,300 colours per oz. ÷ 1,828 colours per yard = 66 yd. per oz.

Because the Bruin Creek gold looks very similar to Fortymile gold: fine, flaky and bright yellow, we assume that it would have a similar purity to Fortymile gold, which is .835.

Table 1
2½ Gallon Grab Samples Processed with Gold Wheel

Sample #	Weight in Lb.	# Colours	Grade yds/oz	Comments
G1	48	15	121	flakey colours
G2	51	26	74	lots flakes, black sand
G3	50	4	474	light coloured gravel
G4	46	12	145	black sand and garnets
G5	49	32	58	included 2 small chunks
G6	45	0	–	fine, sandy gravel
G7	50	18	105	some slabby bedrock in sample
G8	44	41	40	most are fine colours
G9	49	6	309	pea gravel
G10	50	17	111	flakey colours
G11	48	0	–	
G12	50	20	95	3 large orange coloured flakes
G13	46	61	28	some bedrock
G14	51	16	121	fine colours
G15	48	28	65	chunks and flakey pieces
G16	49	19	98	lots of black sand
G17	45	0	–	light gravel
G18	48	9	202	flakes
G19	47	0	–	
G20	49	14	132	garnets and heavy sands
G21	47	26	68	flakey colours

Table 2
Dimensions of Excavations

Excavation	Overburden Depth	Width	Length	Depth
1	4½' sand	3'	5'	6'
2	7½' no gravel	3'	5'	7½'
3	1', high bench	3'	5'	4'
4	1', frozen at 1'	3'	5'	2'
5	3' sandy gravel	3'	5'	5'
6	3' to frozen clay	3'	5'	3'
7	2' sand	3'	5'	6'
8	1'	3'	5'	5'
9	3' sand	3'	5'	6'
10	no overburden	3'	5'	4'
11	1' sand	3'	5'	3'
12	1'	3'	5'	5'
13	1'	3'	5'	4'
14	2' sand/gravel layers	3'	5'	6'
15	1½' sand	3'	5'	5'
16	2' sand	3'	5'	5'
17	none	3'	5'	2½'
18	gravel on surface	3'	5'	3'

Table 3
7 lb. Samples from Excavations - Panned on Site

Excav	Sample #	# Colours	Grade Yds/oz	Comments
BC1	BC1.1	0		
	BC1.2	1	265	fine colour from 5' down
	BC1.3	0		
	BC1.4	0		
	BC1.5	2	132	fine colours
	BC1.6	0		
BC2	–	–		7½ sandy overburden, no gravel found
BC3	BC3.1	0		
	BC3.2	0		
	BC3.3	1	265	small flake
	BC3.4	1	265	fine colour
	BC3.5	0		
BC4	BC4.1	0		
	BC4.2	0		
	BC4.3	0		
	BC4.4	0		
BC5	BC5.1	1	265	medium sized colour, red gold
	BC5.2	0		
	BC5.3	2	132	fine colours
	BC5.4	0		
	BC5.5	0		
BC6	–	–		no gravel found, frozen clay at 3'

Table 3 - continued
7 lb. Samples from Excavations - Panned on Site

Excav	Sample #	# Colours	Grade Yds/oz	Comments
BC7	BC7.1	0		
	BC7.2	1	265	fine colour
	BC7.3	1	265	*fine colour, lots black sand*
	BC7.4	3	88	1 is flake
	BC7.5	1	265	garnets and black sand
	BC7.6	0		
BC8	BC8.1	0		
	BC8.2	0		
	BC8.3	1	265	fine colour, black sand and garnets
	BC8.4	0		
	BC8.5	1	265	
BC9	BC9.1	6	44	3 are flakes
	BC9.2	2	132	
	BC9.3	3	88	
	BC9.4	1	265	
	BC9.5	3	88	1 flake
BC10	BC10.1	1	265	fine colour
	BC10.2	0		
	BC10.3	1	265	
	BC10.4	0		
	BC10.5	0		
BC11	BC11.1	0		
	BC11.2	0		
	BC11.3	0		
	BC11.4	0		

Table 3 - continued
7 lb. Samples from Excavations - Panned on Site

Excav	Sample #	# Colours	Grade Yds/oz	Comments
BC12	BC12.1	0		taken at 2' down from surface
	BC12.2	0		taken at 3' down from surface
	BC12.3	0		
	BC12.4	0		
	BC12.5	1	265	fine clr in coarser gravel at 5'
BC13	BC13.1	0		taken 2' from surface
	BC13.2	0		taken at 3½' from surface
	BC13.3	3	88	fine colours from 4'
	BC13.4	1	265	fine colour
	BC13.5	0		
BC14	BC14.1	1	265	in sandy gravel overburden
	BC14.2	0		
	BC14.3	0		
	BC14.4	0		taken from 5' from surface
	BC14.5	1	265	fine colour
	BC14.6	0		
BC15	BC15.1	2	132	fine colours
	BC15.2	0		from 1½' down from surface
	BC15.3	0		
	BC15.4	1	265	lots of black sand
	BC15.5	0		lots of black sand
BC16	BC16.1	0		
	BC16.2	1	265	flake
	BC16.3	0		
	BC16.4	4	66	fine colours, coarser gravel
	BC16.5	1	265	from 5' down from surface, coarser gravel

Table 3 - continued
Samples from Excavations Panned on Site

Excav	Sample #	# Colours	Grade Yds/Oz	Comments
BC17	BC17.1	2	132	coarse colours, shale & gravel on bedrock
	BC17.2	3	88	all flakes
	BC17.3	2	132	1 is flake
	BC17.4	3	88	1 is flake
	BC17.5	5	53	coarse colours, graphitic schist clay
	BC17.6	1	265	
	BC17.7	3	88	1 flake , bedrock
BC18	BC18.1	3	88	coarse colours
	BC18.2	1	265	large flake
	BC18.3	0	–	
	BC18.4	2	132	1 is flake
	BC18.5	1	265	

Table 4
7 lb. Samples from Excavations Processed with Gold Wheel

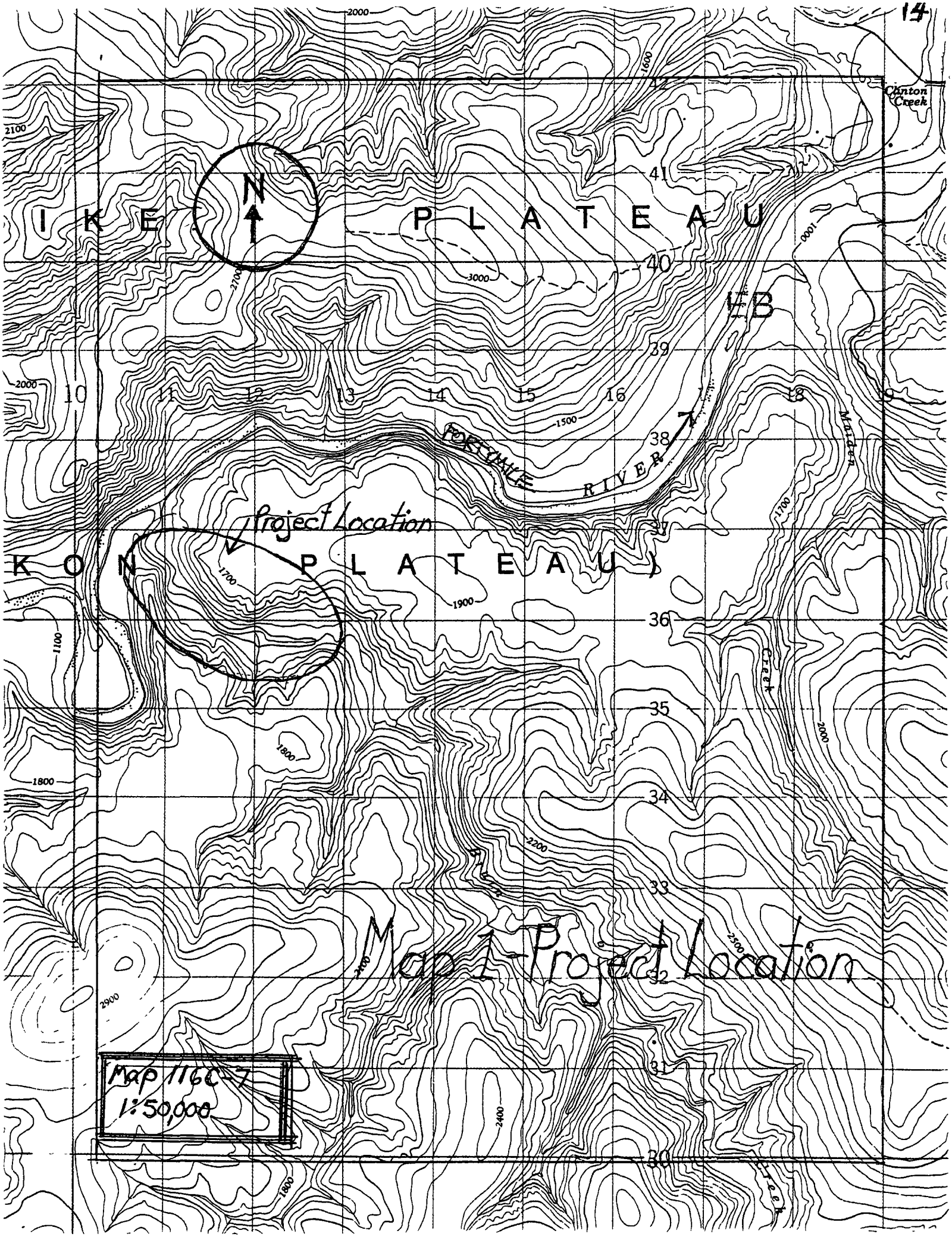
Excav	Sample #	# Colours	Grade Yds/Oz	Comments
BC1	BC1.7	0	–	
	BC1.8	2	132	garnets
	BC1.9	1	265	coarse gravel
BC3	BC3.6	3	88	lots of black sand
	BC3.7	1	265	
BC4	BC4.5	0	–	
	BC4.6	0	–	
BC5	BC5.6	0		
	BC5.7	4	66	large colours
BC7	BC7.7	1	265	flake
	BC7.8	0	–	
	BC7.9	3	88	large colours
BC8	BC8.6	0	–	
	BC8.7	1	265	fine colour
	BC8.8	0		
BC9	BC9.6	5	53	2 are flakes
	BC9.7	3	88	
	BC9.8	1	265	large flake
	BC9.9	9	29	3 are flakes, large colours
BC10	BC10.6	0	–	
	BC10.7	0	–	little black sand
	BC10.8	0	–	sandy gravel
BC11	BC11.5	0	–	
	BC11.6	1	265	fine colour
BC12	BC12.6	2	132	1 is a flake
	BC12.7	0	–	

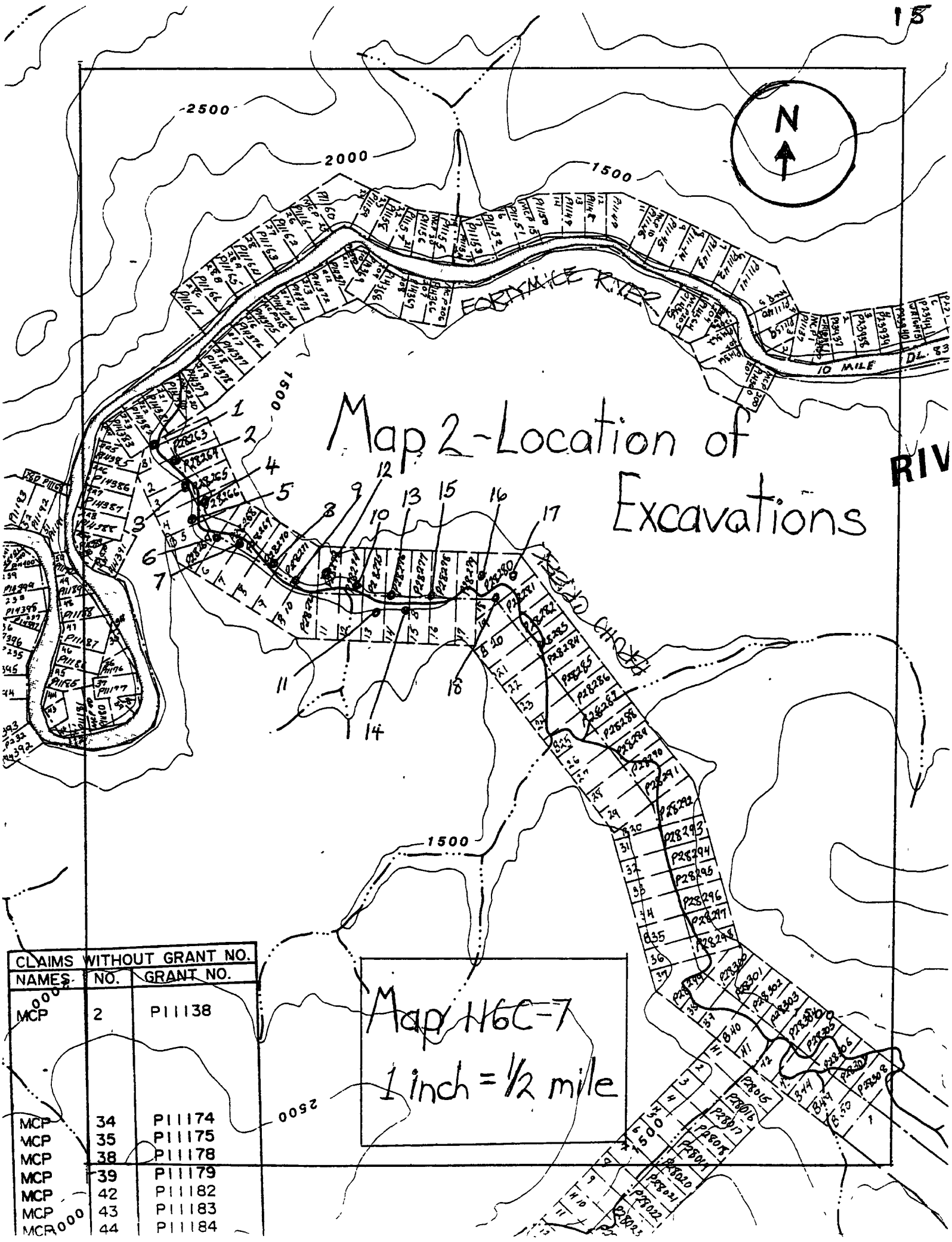
Table 4 - continued
7 lb. Samples from Excavations Processed with Gold Wheel

Excav	Sample #	# Colours	Grade Yds/Oz	Comments
BC13	BC13.6	2	132	fine colours
	BC13.7	1	265	
	BC13.8	0	--	
BC14	BC14.7	1	265	fine gravel
	BC14.8	1	265	
BC15	BC15.6	1	265	coarse gravel
	BC15.7	1	265	
BC16	BC16.6	3	88	lots of black sand
	BC16.7	1	265	
BC17	BC17.8	7	37	2 flakes
	BC17.9	4	66	large colours
	BC17.10	2	132	both are flakes
	BC17.11	3	88	large colours
BC18	BC18.6	3	88	
	BC18.7	4	66	2 large flakes
	BV18.8	1	265	
	BC18.9	2	132	flakes

Table 5
2½ Gallon Samples from Excavations Processed with Gold Wheel

Excav	Sample #	Weight in Lb.	# Colours	Grade Yds/Oz	Comments
BC1	BC1.10	49	8	233	1 flake
BC3	BC3.8	50	3	631	fine colours
BC4	BC4.7	46	5	345	
BC5	BC5.8	44	9	187	fine colours
BC7	BC7.10	50	12	178	lots of black sand
BC8	BC8.9	49	6	311	
BC9	BC9.10	49	29	64	orange-red gold
	BC9.11	51	51	38	garnets, lots of flakes
BC10	BC10.9	48	9	204	
BC11	BC11.7	47	2	891	pea gravel
BC12	BC12.8	45	13	131	coarse gravel
BC13	BC13.9	48	18	102	fine colours
BC14	BC14.9	50	8	236	
BC15	BC15.8	48	21	87	all fine colours
BC16	BC16.8	49	16	116	lots of black sand
BC17	BC17.12	48	54	34	12 are flakes
	BC17.13	46	36	48	red coloured gold
BC18	BC18.13	50	25	75	large colours
	BC18.14	47	19	93	small chunky piece


IKE PLATEAU
KON PLATEAU
N
Project Location
Clinton Creek
Fortymile River
Marden
Creek
Map 116C-7
1:50,000
Map 1 - Project Location



CLAIMS WITHOUT GRANT NO.		
NAMES	NO.	GRANT NO.
MCP	2	P11138
MCP	34	P11174
MCP	35	P11175
MCP	38	P11178
MCP	39	P11179
MCP	42	P11182
MCP	43	P11183
MCP	44	P11184

Additional Information

People who worked on the project:

Leslie Chapman	Dawson City
Bill Claxton	Dawson City
Eric Nelson	Dawson City

Preparation of the report:

Leslie Chapman

Property investigated:

Placer Claims P28263-P28281on Bruin Creek, Fortymile drainage, Map 116C-7

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Northern Affairs Program
Programme des affaires du Nord

Mineral Rights Droits miniers

Canada

03 NOV 90
22 OCT 90
04 OCT 90
06 SEPT 90
23 JULY 90
09 JULY 90
04 JUNE 90
28 FEB 89.
4 OCT 89.
6 SEPT 89
23 JUNE 89.
13 JUNE 89.
20 APR 89
20 MAR 89.
7 MAR 89
17 OCT 88
29 SEPT 88.
6 SEPT 88.
11 JULY 88
8 JUNE 88.
26 MAY 88.
17 MAY 88.
4 MAY 88.
20 APR 88.
4 MAR 88
30 DEC 87
4 NOV 87
11 SEPT 87.
24 AUG 87.
10 AUG 87.
2 JULY 87.
19 MAY 87.
6 FEB 87.
20 NOV 86.
8 OCT 86
1 OCT 86
12 SEPT 86.
25 AUG 86.

13 JAN 92
11 OCT 91
09 JULY 91
24 JUNE 91
17 DEC 90
21 NOV 90

DAWSON 23 JULY 86

116C-7 95-081

PLACER

LATITUDE 64° 15' TO 64° 30'
LONGITUDE 140° 30' TO 141° 00'

ISSUED UNDER THE AUTHORITY OF THE MINISTER OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

SCALE 1:30,000

METRES 1000 0 1000 2000 METRES
FEET 1500 0 1500 3000 4500 6000 7500 9000 10500 FEET

N
MAGNETIC NORTH N 30° 12' E

NOTE:

THIS MAP IS ISSUED AS A PRELIMINARY GUIDE FOR WHICH THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WILL ACCEPT NO RESPONSIBILITY FOR ANY ERRORS, INACCURACIES OR OMISSIONS WHATSOEVER.

TOPOGRAPHY COMPILED FROM 1:50,000 NATIONAL TOPOGRAPHIC SERIES. CONTOUR INTERVAL 500 FEET. SURVEY INFORMATION COMPILED FROM LEGAL SURVEYS, BY DRAFTING SERVICES.

Note: Entry on certain lands is withdrawn from staking in cross-hatched areas to facilitate the settlement of Native Land Claims without prejudice to Existing Surface and Subsurface Rights.

FOR QUARTZ SEE 116C-2

ALASKA		
	116C-10	116C-9
	116C-7	116C-8
	116C-2	116C-1

141° 00' 55' 50' 45' 40' 35' 140° 30'
64° 30' 25' 20' 64° 15'

UNITED STATES OF AMERICA
ETATS-UNIS D'AMERIQUE
CANADA
ALASKA
YUKON

Mon.116 2801
Mon.117 2946
Mon.118 3272
Mon.119 2542
Mon.120 2316
Mon.121
Mon.122 1701
Mon.123 1814

Liberty Fork
Clinton Creek
Marten Creek
Boundary Creek
South Fortymile River
Montgomery Creek
Moose Creek
Alma Creek
Browns Creek
Mahden Creek
Bruin Creek
Mickey Creek

.3075 .3497 .3073 .3011 .3211 .3121

R-9
S-52
S-91
R-4
LOT 102
LOT 103
LOT 14
LOT 1
FORTY MILE
YUKON RIVER
FLEUVE YUKON
BRUIN CREEK PROPERTY

CLAIMS WITHOUT GRANT NO.		
NAMES	NO.	GRANT NO.
MCP	2	P11138
MCP	34	P11174
MCP	35	P11175
MCP	38	P11178
MCP	39	P11179
MCP	42	P11182
MCP	43	P11183
MCP	44	P11184
MCP	81	P11221
MCP	82	P11222
MCP	83	P11223
MCP	224	P14384
MCP	230	P14390
MCP	249	P14409
MCP	250	P14410
MCP	268	P14428

CLAIMS NOT ON MAP		
NAMES	NO.	GRANT NO.
MCP	29	P11169
MCP	30	P11170
MCP	31	P11171
MCP	32	P11172
MCP	33	P11173