

YEMIP  
01 043  
2001

**YUKON MINING INCENTIVES PROGRAM**

**YMIP PROJECT 01 043**

**BRUIN CREEK (LOWER REACH)  
TARGET EVALUATION  
FOR PLACER GOLD**

**JUNE 1 2001 DECEMBER 31 2001**

**TRANSVERSE MERCATOR PROJECTION CO ORDINATES**

**latitude 64° 21' - longitude 140° 46'**

**PLACER CLAIM SHEET 116C 7**

**Placer Claims P28268 28287**

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## **1 Property Description and Access**

I evaluated a placer deposit located in the lower reach of Bruin Creek a right limit tributary of the Fortymile River. In this project I investigated 20 placer claims on Bruin Creek P28268 through P28287 this two mile section of Bruin Creek starts approximately 3/4 of a mile above the mouth. The area is located in the Dawson mining district. The map co ordinates for the property are latitude 64°22' and longitude 140°46'. The attached topographic **Map 1** shows the location of the property. **Map 2** is an aerial photograph of the area showing the project location.

There is access to the property via a cat trail into Bruin Creek which takes off from the Clinton Creek Highway following the ridge separating Bruin and Maiden Creeks and then dropping into the Bruin Creek valley. The property can also be reached by river. Bruin Creek is located approximately 3½ miles downstream of Marten Creek which is accessible by the Fortymile mining road. A spur of the Fortymile road terminates at a ford of the Fortymile River approximately 1 mile upstream of Bruin Creek. Access to the property is shown on **Map 1** and also on **Map 3**.

This deposit consists of the auriferous placer gravels located in the bed of the creek which extends into the bank ground on either side of the creek and then up onto the adjacent low lying terraces. The gravel in the creekbed and adjacent banks is thawed. The terraces are generally permanently frozen with occasional thawed sections particularly along the rim. Further back from the creek and on the bench ground the gravel reserves are frozen. The width of the valley varies from 300 feet to 1 000 feet over this two mile section in the lower reach of Bruin Creek.

Bruin Creek drains a large area approximately 80 square miles. The main stem of the creek is approximately 10 miles long. The headwaters split into 2 forks each approximately 5 miles in length. There are numerous feeder creeks and gulches entering into Bruin Creek along its length. The wetted channel is approximately 50 to 60 feet wide in the lower reach with a reliable flow of water throughout the summer season.

## **2 Geology**

The bedrock geology of Bruin Creek is typical of the Fortymile it consists of a metamorphic unit composed mainly of schist. It has been proposed that the metamorphic bedrock is the source of most of the placer gold in the Fortymile. However in my mining experience I have found gold with quartz adhering to it indicating that at least some of the gold is derived from the numerous quartz veins and stringers in the bedrock. Quartz veins can be seen in bedrock outcrops along the valley.

The placer gravels consist of rounded to sub rounded aggregates in the lower reach of the creek. The gravel is coarse boulders to 12 inches in diameter are common and larger boulders to 3 feet are encountered occasionally. The gravel is sandy in nature with little clay content. Depth to bedrock at the confluence of the creek is approximately 16 feet with approximately 5 ft of overburden and 10 to 12 ft of gravel.

The overburden in the banks on the claims being examined, flanking the creek channel on either side, is from 6 inches to 6 feet deep. It is thawed close to the mouth of the creek with frozen sections further upstream in this reach. It is sandy, with the thawed areas supporting growth of willows, poplars, and other vegetation common to flood plains. Vegetation capping the frozen overburden consists of scrub spruce and moss.

The placer gold found in Bruin Creek consists mainly of fine to medium sized flakes, ranging from less than 100 mesh to approximately 14 mesh. The gold is bright yellow in colour, its purity is 84%, typical of gold found in the Fortymile drainage. Reportedly, occasional pockets of coarse gold have been found at bedrock depth.

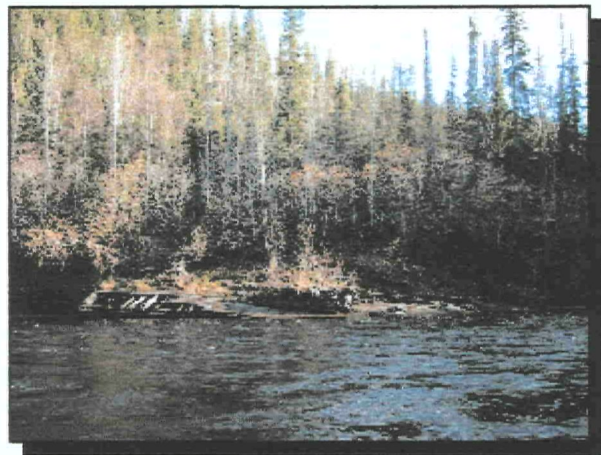
### 3. Summary of Previous Relevant Investigations

Bruin Creek was known to be a gold producing creek in the early days. There are numerous pits, shafts, and creek diversions further upstream. The remains of several camps and cabins are evident along the creek. A summary of previous work is outlined below:

- From 1886 there were prospectors and miners in the drainage and, while there is still evidence of their old workings and dwellings, the results of their work are unknown.
- In 1934, a dredging operation was initiated at the confluence of the Fortymile River and Bruin Creek. This venture was operated by Harold Blankman, well known in the Yukon as the chief financial controller for the Yukon Consolidated Gold Corporation. The late Fred Caley of Dawson City told me 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 region 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 to provide fuel for the operation. A permanent camp with extensive shop facilities was built at the Kink Roadhouse on the Fortymile, approximately ½ mile



*Cabin ruins from early day mining in Bruin Creek.*



*Remains of the Blankman dredge at the mouth of Bruin Creek.*

upstream of the mouth of the creek. Knowing that Blankman was a seasoned placer mining man and judging from the amount of work which was performed, I conclude that his group was confident that the ground would support dredging for some time.

In 1981 I had a hole drilled with a 6 inch diameter Sonic drill at the mouth of the creek. From the gold recovered in the drill hole, I estimated that the gravel would yield approximately 1 ounce of gold per 100 yards. We drilled this hole to test the drill which was brought in to carry out a project on the Fortymile River. (We brought the Nodwell mounted drill down the access trail which terminates at the mouth of the creek and this was the first location suitable for testing the drill.)

I knew a miner who was working in the headwaters of the creek on a fork known as Falls Creek (named because of a waterfall near the mouth of the creek). He showed me a tobacco can which was half full of flaky gold (approximately 20 mesh) which he had obtained from one of his cleanups. This fork was active for about 5 years in the mid 1980s.

In 1993 I carried out an exploration program about 4 miles up the creek from its confluence. This project consisted primarily of excavator trenching over a block of 5 claims containing in excess of 1 million cubic yards. I concluded that this deposit would be viable at a gold price of US\$400 per ounce or better, although there are some specific areas which grade higher. In 1996 I performed evaluation work in a Bruin Creek tributary, Herbert Creek, and encountered paying gold values in this area.

In 1995 the Fortymile Pacific Joint Venture, a mining company in which I held a minor interest, carried out an evaluation of Bruin Creek downstream from Herbert Creek (over a distance of 4½ miles). This project consisted of digging shafts over a length of approximately 4 miles. The work showed that most of the gravel contained gold colours with marked concentration and somewhat coarser gold on bedrock. A subsequent drop in the price of gold precluded the venture performing further work on the property.

- In the 2000 season, I examined a block of 8 claims immediately upstream of the confluence. I carried out a bulk sampling program by trenching using a pick and shovel. I recovered gold from all of my excavations, both in the dredging reserves located in the valley bottom and on adjacent benches. My best trench indicated a grade of 49 yd<sup>3</sup> per oz of gravel, this translates to approximately \$6.75 per yd<sup>3</sup> at a gold price of \$260US per oz. The average value of the ground taken from all of the pits and trenches is lower than this, however, I believe that the reason for this is that most of my excavations did not sample gravel at bedrock depth.

#### **4 Work Description**

I began this project by hiring a team to help me carry out my work plan. We first examined access to the property from the top end to determine if this would be a viable

route to use for carrying out the project. Access can be gained to the upper limit of the claim block via the Bruin Creek access trail. This trail, approximately 20 km in length, takes off from the Clinton Creek Road and terminates in Bruin Creek, approximately 4 miles upstream from its mouth. We found that the road had deteriorated since we had last used it. Numerous trees which had been burned in a forest fire had fallen across the road and there were several wash outs which would require heavy equipment to repair before it could be used by 4 wheel drive traffic. For this reason I decided that it would be best to gain access to the property at the lower end of the claim block using the Fortymile Access Road and a riverboat to travel to Bruin Creek.

We graded and ditched the spur road which provides access to the river for launching the boat and supporting the project. The ditches had washed out on this road and required stabilizing.

The next phase of the project was preliminary evaluation and familiarization with the ground in this reach Bruin Creek. During this time we took samples using pick, shovel and gold pan in exposed bank gravels upstream of the claims which we had evaluated the previous season. We performed rough yardage estimates of the gravel contained in the benches and determined approximate overburden depths by measuring the muck exposed in banks along the rims of the benches. We also took pans where there was exposed gravel along the rims of the bench ground. My objective was to confirm a minable block of ground which could be put into production cost effectively and relatively quickly with enough volume to make a project worthwhile. The current price of gold makes it challenging to bring a new mine into profitable production.

Based on this preliminary analysis I decided to concentrate on the valley bottom gravels. My rationale for this approach is as follows:

*While my previous investigations have shown that the benches carry good values these gravels are capped by a layer of overburden ranging up to 12 feet in depth. Additionally the bench ground is frozen. These factors add significantly to mining costs.*

The bench reserves are held in a series of discontinuous flats making it necessary to mine each bench independently, establishing separate settling facilities in each location.

Bruin Creek is a type 2 stream which supports rearing salmon. Regulations for the creek are stringent for example the water discharge standard is 200 mg/l which would make it necessary to recycle process water. Leave strips would be required which would reduce the volume of minable ground. Establishing access to each bench would require stringent permitting as creek crossings are necessary.

- The valley bottom gravels consist mainly of thawed material. Much of the ground is located in large gravel bars with little or no overburden, making it much easier and cheaper to put into production.
- The valley bottom gravel consists of a contiguous unit. The volume held in these reserves is immense. A mining operation could be commissioned at the mouth of the creek and work continuously to the upper limit of the claim block. The settling pond is carried with the operation as it progresses upstream.
- Dredging is an extremely cost-effective mining method because both pay gravel and tailings hauling distances are kept to a minimum. Minimum preparation work is required to initiate the dredging cut. Stripping costs are low, and settling facilities can be quickly established (the dredge pond acts as both the water acquisition reservoir and effluent settling pond).
- Reclamation costs associated with a dredging operation are low. Tailings piles left by the stacking conveyor can be levelled quickly and capped with a layer of overburden to promote quick revegetation. The operation is self-contained and there is no effluent release to the watercourse because the process is 100% recycle. From an environmental stand point, dredging is advantageous.



***Bruin Creek is considered to be a salmon rearing stream; exploration and mining work must be carried out with minimal environmental impact.***

My original intent was to bring a drill into the property to gain information on the depth of ground and the pay grade of the gravels. However, because I had made the decision to focus my efforts specifically on the dredging reserves, I decided that drilling would not be effective. I have learned from discussions with drilling contractors, and from my own experience, that auger drilling in wet ground is problematic; it is difficult to complete holes due to the sloughing of the hole and a reliable grade calculation can not be made. (It is difficult to retrieve gold particles from wet gravel as they slip off the auger flutes and make their way to the bottom of the hole where they are lost). Additionally, I foresaw problems gaining approval to make creek crossings using the Nodwell because of the Type Two classification of the stream. Possibly drilling in late winter, February and March when the creek bed and creek gravels are frozen, would make drilling viable.

My approach in evaluating the claims which I examined in Bruin Creek last season was to sluice a series of bulk samples using hand methods. This work was followed up after the ground was frozen by drifting into the ground at a downward angle, using a portable propane fired thawing unit. I decided to use the same approach again for this project, continuing my work upstream of where I left off. My objective was to extend the reserve block which I confirmed in my work on Bruin Creek in 2000.

We began the bulk sampling phase of the project early in the fall when the water levels in the creek were relatively low, but when the weather was still above freezing at night. We sluiced a total of 30 bulk samples ranging in volume from 1 to 15.5 cubic feet. The results of this work are given in **Table 2**. The bulk samples were taken over the entire claim block, and are plotted on **Map 3**.



Gravel excavated from the trenches was shovelled into a long tom and washed with water provided by a 1½ inch pump. We cleaned up the box after each excavation was complete. As the bulk samples were sluiced, pans were taken occasionally to obtain a rough estimate of the grade of the ground being sampled. Upon completion of each sample run, the mats from the sluice box were rinsed into a tub and the concentrates saved in sample bags and stockpiled. Our intent was to gather the samples up after the creek had frozen and haul them to the Fortymile Placers mining camp so that they could be processed and evaluated in a lab environment. Picking up the samples with a snowmobile after the creek was frozen eliminated the need to pack them down the creek in the fall, and also allowed us to concentrate on the field work while the weather was good.



*We used two different sluiceboxes to sample the gravel. the above box was used in locations where access was easy and large samples were sluiced. The smaller, more portable box below was used for processing smaller samples, or where access was more difficult; this sluice was set up in the creek channel and did not require a pump.*

After the creek had frozen, we hauled the bags of concentrates from the bulk samples out of Bruin Creek on the ice, using snowmobile, to our camp at the mouth of Marten Creek, approximately 3½ miles upstream of Bruin Creek.

We assembled cleanup equipment indoors and processed each bag of concentrate in the following manner:

- The concentrate, consisting of 1 large pan full of -3/8" mesh material, was stored indoors and allowed to thaw. It was then sieved through a 10 mesh screen.
- The plus 10 mesh material was panned into to a panning tub, and the resulting concentrate inspected for coarse gold. Any gold in this fraction was picked out with tweezers and saved.
- The minus 10 mesh fraction was process through a 4 lead spiral gold wheel. The



concentrate was processed through the gold wheel to separate out the gold and black sand. The remaining black sand and gold was again processed through the wheel at a slower speed, at a steeper angle and using less water to separate the gold (and small amount of black sand) from the concentrate. The gold and small amount of black sand associated with it was dried and spread on a porcelain plate. A magnet was run over the gold to lift off the magnetic black sands. Non magnetic black sand particles were picked out of the gold with tweezers.

The gold was weighed with a gunpowder scale and the weight was recorded (where there was sufficient gold to be weighed).

We returned to the location where the best two bulk samples were taken and used the thawing unit to drive two drifts into the frozen bank gravel. We worked on two drifts at the same time, alternately heating a drift then letting it thaw back further while we moved the equipment to the other drift. We then returned to the first drift and mucked out the thawed gravel. We used fibreglass batt insulation to keep the hole from refreezing overnight. We worked down at an angle to get below the water level of the creek. Ground water problems were eliminated by working in the frost; the water didn't seep into the drift because the frozen gravel around the perimeter of the drift kept it sealed from seepage. Additionally, sloughing which normally occurs with wet, thawed ground was eliminated, allowing us to obtain an effective sample excavating far less gravel than if we had been digging into thawed material. We completed the two drifts as deep as a long handled shovel could effectively reach, a length of approximately 5 feet. We collected a total of 12 five gallon pails of gravel from the two drifts, each pail weighed approximately 100 lbs. We hauled the pails by snowmobile to the Marten Creek camp. We ran the gravel through a long tom and then processed the concentrate from the long tom as described above for the concentrate from the bulk samples.

## **5 Equipment Used**

We used the following equipment to carry out the project:

- D6C dozer
- 12E grader
- 920 loader
- service truck including welding equipment and tools
- 4 wheel drive ATV
- 4 wheel drive truck
- 16 ft riverboat with 30hp motor
- two snowmobiles
- two snowmobile sleds
- sample processing equipment including
  - a long tom sluice 1 ft wide by 4 ft long for processing bulk samples in the field with a 1½ inch Honda pump to supply process water
  - an aluminum sluice 1 ft wide by 4ft long was also used for processing bulk samples
  - a small cleanup sluice 6 inches wide by 2½ ft long for sluicing samples indoors equipped with ¾ inch submersible electric pump
  - 4 lead spiral gold concentrating wheel

- various gold pans, tubs, shovels etc.
- gold analysis equipment including powder scale, sieves, magnets, etc.
- propane fired gravel thawing unit
- chainsaw

## 6. Results

The results from the preliminary panning which we carried out during the reconnaissance phase of the project are shown on **Table 1**. Where gravel samples were taken below the surface in exposed banks and other accessible areas, we usually recovered fine gold particles. Samples which we took from the surface of gravel bars, were less consistent; some of the gravel yielded gold and some did not.

The surface gravel on the bars is scoured annually by spring runoff; because of the flakey nature of the gold, I believe that much of the gold which would normally be present in this surface gravel is washed away with annual spring flooding. Bulk sampling work performed last year on the bars showed that better gold values were present below the water-gravel contact, where the gravel matrix is tighter.

Results from the bulk sampling phase of the project are shown in **Table 2**. It can be seen from this table that gold was recovered in all but one of the bulk samples.

Consistent with the preliminary panning results, and as I expected, in-place gravels, particularly those overlying exposed bedrock, produced better results than samples taken from bar gravels exposed in the creek channel. However, the bar gravels contained gold as well, although in less quantity.

In the better yielding excavations, I was able to weigh the gold which was recovered. These weights are given in the comments section. The grade in ounces per yard can be calculated in the following manner:



**Excavations in the creek banks allowed us to sample in-place gravels, without the need to remove the overburden. The gravel is sandy and rounded, with coarse cobbles. Occasional boulders are also present.**

For example, in excavation 29-01 (where the best results where obtained), 1.6 grains of gold was recovered from 8 cubic feet of material.

- If 1.6 grains of gold are recovered from 8 ft<sup>3</sup>, then x grains of gold are recovered in 27 ft<sup>3</sup> (1 yd<sup>3</sup>)  

$$1.6 \text{ gn}/8 \text{ ft}^3 = x \text{ gn}/27\text{ft}^3 \quad x= 5.4 \text{ gn}/\text{yd}^3$$
- Because there are 480 grains in a troy ounce, the grade in ounces per yard is calculated as follows:

$$5.4 \text{ gn/yd}^3 - 480 \text{ gn/troy oz} = 0.011 \text{ troy oz/yd}^3$$

The value in dollars per yard of the sample can be calculated as follows

If the price of gold is US\$285/oz and the Canadian dollar is worth US\$0.625 and the gold is 0.84 pure the value per yard is determined by the following formula

$$0.011 \text{ oz/yd}^3 \times \text{US\$285} \times 0.84 \text{ purity} - 0.625 \text{ exchange rate} = \text{CAN\$4.21 per yd}^3$$

The drifts which we drove into the bank in the winter confirmed the grade which we obtained from the bulk sample sluicing at these locations these results are shown on **Table 3** Both of the drifts yielded coarse gold colours as well as fines. A small nugget weighing 0.4 grains was retrieved from drift 32.01. We calculated the grade of the gravel in the drifts. **Drift 31.01** translates to **0.005 oz/yd<sup>3</sup>** or **\$1.91/yd<sup>3</sup>** at US\$285 gold. **Drift 32.01 has been calculated at 0.012 oz/yd<sup>3</sup>** or **\$4.60/yd<sup>3</sup>** at US\$285 gold.

## 7 Conclusions

The fact that the surface bar gravels contained some gold was encouraging because with dredging the entire gravel section from surface to bedrock is usually mined as a unit. While the grade of surface gravels is low it is not barren. Some of the samples taken beneath the surface yielded good results showing mineable values. Some of the gold in these samples was coarse in nature indicating that grade at bedrock depth should be richer than this. Generally when coarse gold is encountered in a small sample such as this pockets of coarse gold would be present over a larger mined area adding to the value of the deposit.

I feel confident that based on the testing work which we performed a grade of at least 0.005 ounces per cubic yard could be expected over the area investigated. Methodical testing to bedrock would add confidence to my estimate however conventional auger drilling in wet ground is not reliable. Possibly other drilling methods could be used which can drive casing as the hole progresses (Even this is problematic because of the water encountered.) Churn drilling was used in the early days and possibly this could be implemented effectively. However churn drilling is time consuming labour intensive and therefore expensive (probably the reason it is not used much today). Possibly auger drilling during the winter would be feasible if the ground water beneath the gravel freezes to bedrock depth. Excavator trenching could be implemented however this evaluation method tends to disturb the ground causing problems with sloughing of the cut face when dredging. My approach would be to implement a small to medium scale floater dredging operation to confirm the viability of the ground. If the ground proved viable large scale dredging could then be initiated.

I calculated the minable volume of gravel assuming a 10 ft depth and 200 ft minable width over the 20 claims investigated to be approximately 741,000 bank yd<sup>3</sup>. Given that floater dredging costs typically run less than \$1 per cubic yard this ground could be mined profitably. This volume is sufficient to keep a dredging venture operating for several years.

**Table 1 Preliminary Pan Samples**

<b>sample #</b>	<b># of colours</b>	<b>comments</b>
Br 1	0	from gravel bar very little black sand
Br 2	1	very fine colour behind boulder on bar
Br 3	0	from left limit bank
Br 4	0	from gravel bar fine pea gravel little black sand
Br 5	2	1 very fine & 1 small flakey colour in bank on left limit
Br 6	0	from gravel bar head end
Br 7	0	from gravel bar tail end
Br 8	0	from gravel bar middle
Br 9	1	very fine colour bank material
Br 10	2	flakes from behind boulder in channel (1/2 pan)
Br 11	0	from shaft tailings under moss
Br 12	16	very fine colours bank near exposed bedrock
Br 13	0	under sand in willow adjacent to bar
Br 14	0	in bank right limit
Br 15	2	bank gravel right limit black sand & garnets in cons
Br 16	1	very fine colour from bar gravels head end
Br 17	1	fine colour from under boulder on bar
Br 18	0	from bank ground right limit good black sand
Br 19	1	flake scraped from crevice in boulder 1/4 pan
Br 20	0	bank ground right limit
Br 21	0	bank ground right limit

**Table 2 Results from Bulk Samples**

Samp #	excav dim/vol	Type of material	# colours	Comments
1 01	2 x 2 x 2 = 8ft <sup>3</sup>	moss roots sand gravel	7	2 colours are flakey
2 01	1 x 1 x 1 = 1ft <sup>3</sup>	in creek	7	very fine colours
3 01	1.5 x 2 x 2.5 = 7.5ft <sup>3</sup>	grass sand gravel water @2 bottom end of bar	8	1 large flake
4 01	3.5 x 2 x 2 = 14 ft <sup>3</sup>	dug in bank first 1½ roots & sand thrown aside then sluiced gravel and sand mixed Fair amount of quartz @ 2½ 3½ level some rust stain	55 60	3 are heavy flakes gold weights 0.35 grains
5 01	2.5 x 4 x 2 = 20 ft <sup>3</sup>	3 ft overburden top of bank not sluiced gravel & sand sluiced till hit water	90	a few colours are flakey rest are small to very small gold weights 0.5 grains
6 01	1.5 x 5 x 2 = 14 ft <sup>3</sup>	moss roots then fine gravel & sand no rock just stained fine sand & gravel	1	small gravel
7 01	2.5 x 2.5 x 1 = 6.25 ft <sup>3</sup>	2½ 3 overburden not sluiced 1 gravel & sand occasional large rock sluiced hit water	8	1 is large heavy looking flake
8 01	2.5 x 3 x 2 = 15 ft <sup>3</sup>	1 ft overburden not sluiced sluiced sand gravel a few larger rocks a bit of stain on rocks	7	all small colours
9 01	2 x 1 x 1 = 2 ft <sup>3</sup> 1 x 1 x 1 = 1 ft <sup>3</sup> total vol = 3 ft <sup>3</sup>	sand & gravel with rock on small bar 5 x 10 yds	10	small colours very fine
10 01	2 x 2 x 1.5 = 6 ft <sup>3</sup>	bedrock gravel & a bit of sand mostly gravel & decomposed bedrock red orange stain and yellow white stain on bedrock	2	both are small flakes
11 01	6 x 1 x 1.5 = 9 ft <sup>3</sup>	on creek bar rock & gravel bar is approx 10 x 30 yds	6	small colours

**Table 2 Results from Bulk Samples**  
continued

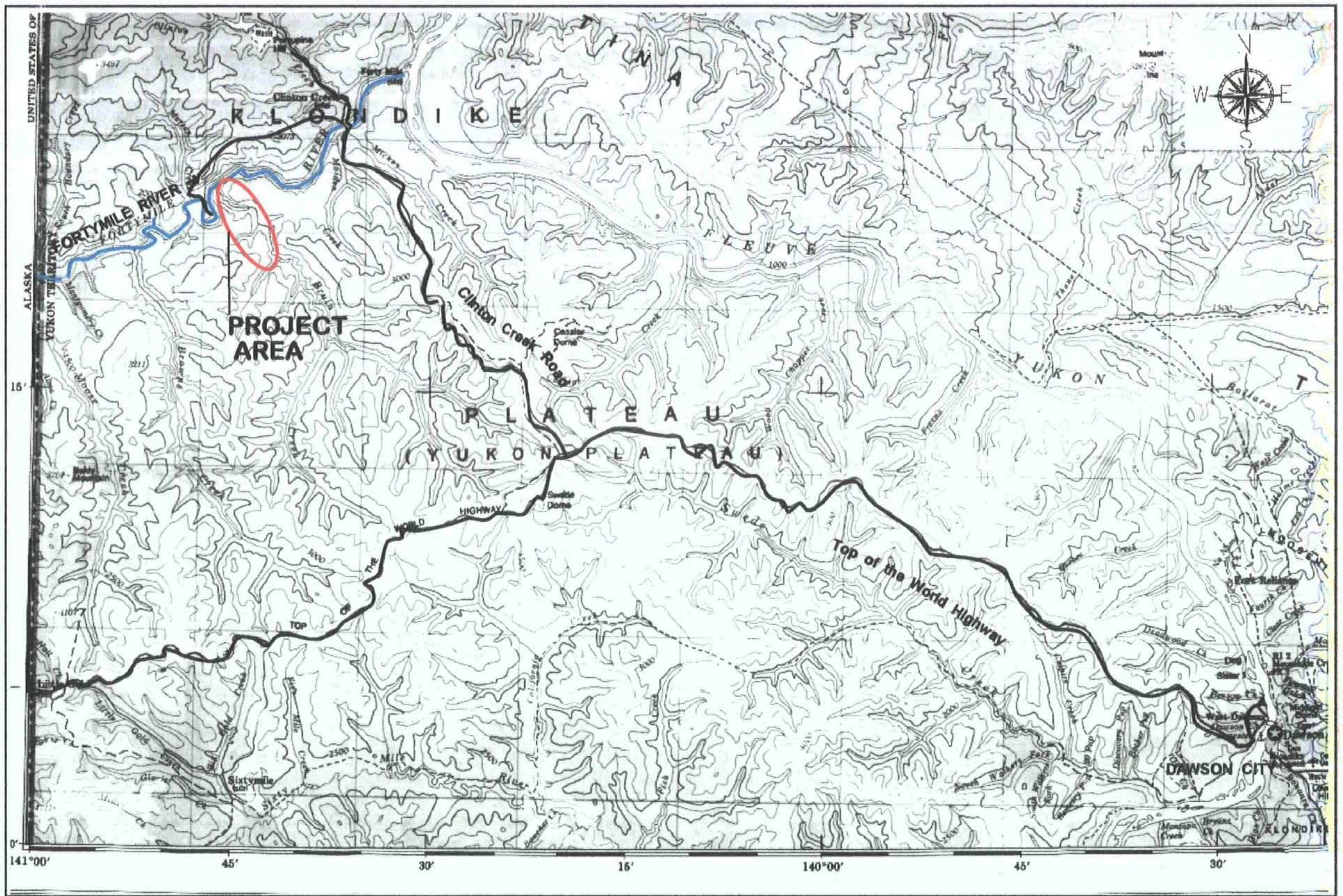
Samp #	excav dim/vol	Type of material	# colours	Comments
13 01	1 x 1 x 1 = 1 ft <sup>3</sup>	sluice box in creek in front of bedrock regular creek gravels	4	1 pan off bedrock w/ 1 colour part of total
14 01	1 x 1 x 1 = 1 ft <sup>3</sup>	sluiced on bar in creek sand & gravel bar 10 x 30 yds	1	
15 01	1.5 x 2 x 2.5 = 11.25 ft <sup>3</sup>	sand muck roots rock gravel 1 ft of rock & gravel then under more sandy mucky clay	4	very small
16 01	1 x 1 x 1.5 = 1.5 ft <sup>3</sup> 1 x 2 x 2 = 4 ft <sup>3</sup> total = 5.5 ft <sup>3</sup>	roots moss earth dirt gravel rock all off bedrock	10	7 are small flakes
17 01	3 x 1.5 x 1.5 = 6.75 ft <sup>3</sup>	moss roots dirt & mud only 1/2 of gravel sluiced it all	2	both good sizes flakes
18-01	3.5 x 1.5 x 3 = 15.75 ft <sup>3</sup> less 2 slab rock = 13 ft <sup>3</sup> 1.5 x 1.5 x 1.5 = 3.375 ft <sup>3</sup> was total sluiced	hit big slab of bedrock only able to sluice 3.375 ft <sup>3</sup> sand pea gravel rock	89	15 are small flakes gold weights 0.4 grains
19-01	3 x 1 x 1 = 3 ft <sup>3</sup>	gravel bar top of bar inside curve small amount grass & sand pea gravel	37	15 small flakes gold weights 0.17 grains
20 01	3 x 1 x 1 = 3 ft <sup>3</sup>	gravel bar approx 10 x 30 yds sand & gravel only near old cabin with shaft	44	15 small flakes gold weights 0.15 grains
21 01	3 x 1.5 x 1.75 = 7.8 ft <sup>3</sup>	gravel bank sluiced gravel pea gravel rock	20	small
22 01	1 x 1 x 4 = 4 ft <sup>3</sup>	gravel bar 150 yd long x 10-20 yds wide	10	1 large flake largest so far gold weights 0.05 grains
23 01	1 x 1 x 5.5 = 5.5 ft <sup>3</sup>	gravel bar 100 yds long x 5-20 yds wide	10	1 flake

**Table 2 Results from Bulk Samples  
continued**

Samp #	excav dim/vol	Type of material	# colours	Comments
24-01	2 x 1 x 1.5 = 3 ft <sup>3</sup>	edge of bank in willow grass sand gravel rock	10	small flake pump failed
25 01	4 pans	bank gravel	1	small colour garnets some black sand
26 01	1.5 x 1 x 1 = 1.5 ft <sup>3</sup>	sand gravel rock grass dug in bank & water	10	4 small flakes
29 01	1.5 x 1.5 x 2 = 4.5 ft <sup>3</sup> 1.5 x 1.5 x 1.5 = 3.475 ft <sup>3</sup> total 7.975 ft <sup>3</sup>	sluiced on bedrock gravel rock bit of bedrock roots moss	85	several very large flakes (1 goes ping in pan) gold weighed 1.6 grains
30 01	1 x 2 x 1 = 2 ft <sup>3</sup> 2 x 1.5 x 1.5 = 4.5 ft <sup>3</sup> total 6.5 ft <sup>3</sup>	sluiced on bedrock gravel rock some bedrock roots	105	some large flakes (again 1 goes ping in pan) gold weighed 0.5 grains

**Table 3 Results from Drifts**

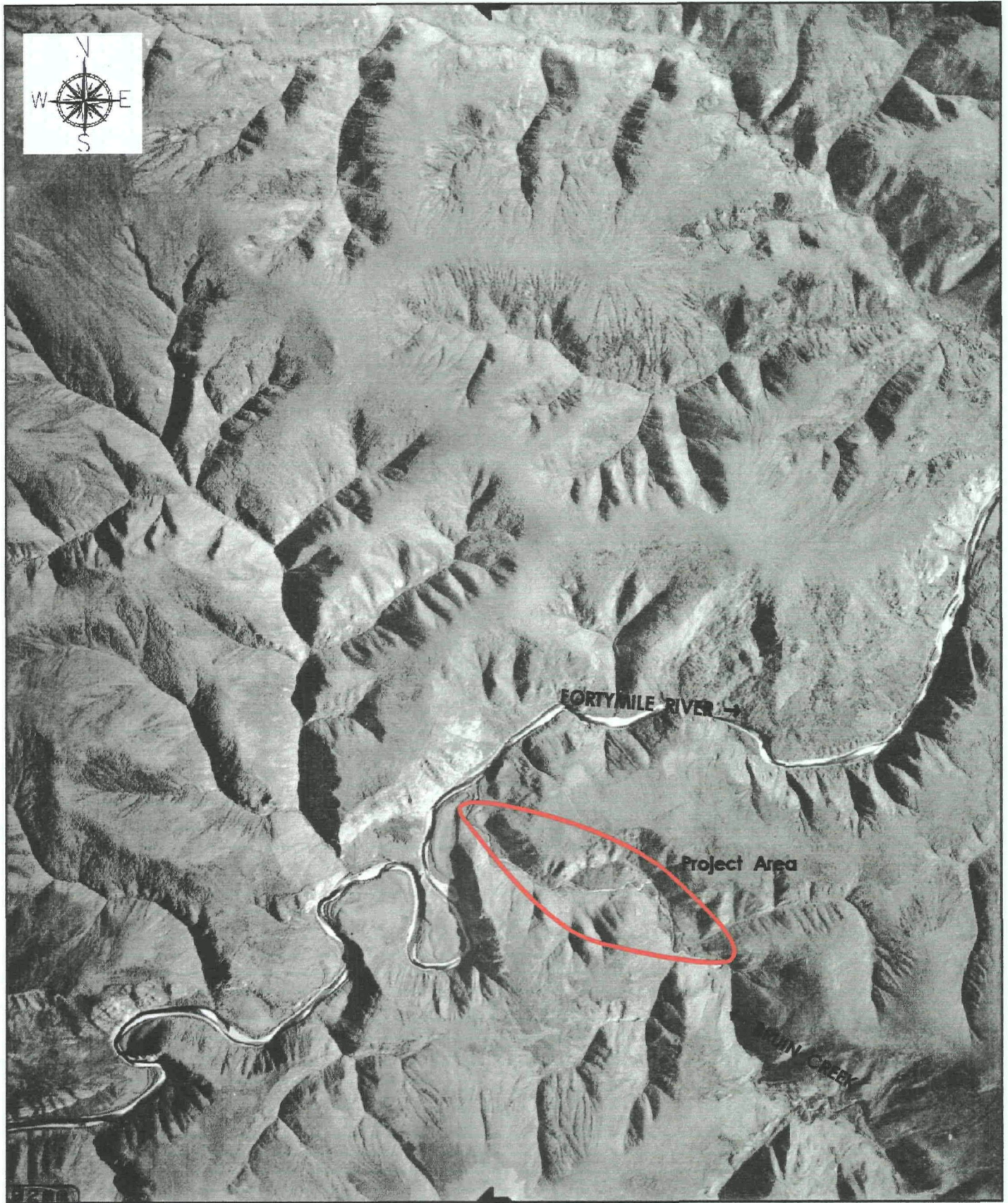
Samp #	excav dim/vol	Type of material	# colours	Comments
31 01	1.5 dia x 5 = 9 ft <sup>3</sup>	gravel bedrock	130	drifted near bulk sample 30-01 some large flakes & 1 chunk weighing 0.4 grains total gold weight for sample is 0.8 grains
32-01	1.5 dia x 5 = 9 ft <sup>3</sup>	gravel bedrock	90	drifted near bulk sample 29-01 10 very large flakes total weight of the sample is 1.9 grains



MAP 1 - PROPERTY LOCATION (from "DAWSON" Map Sheet 116B & C)

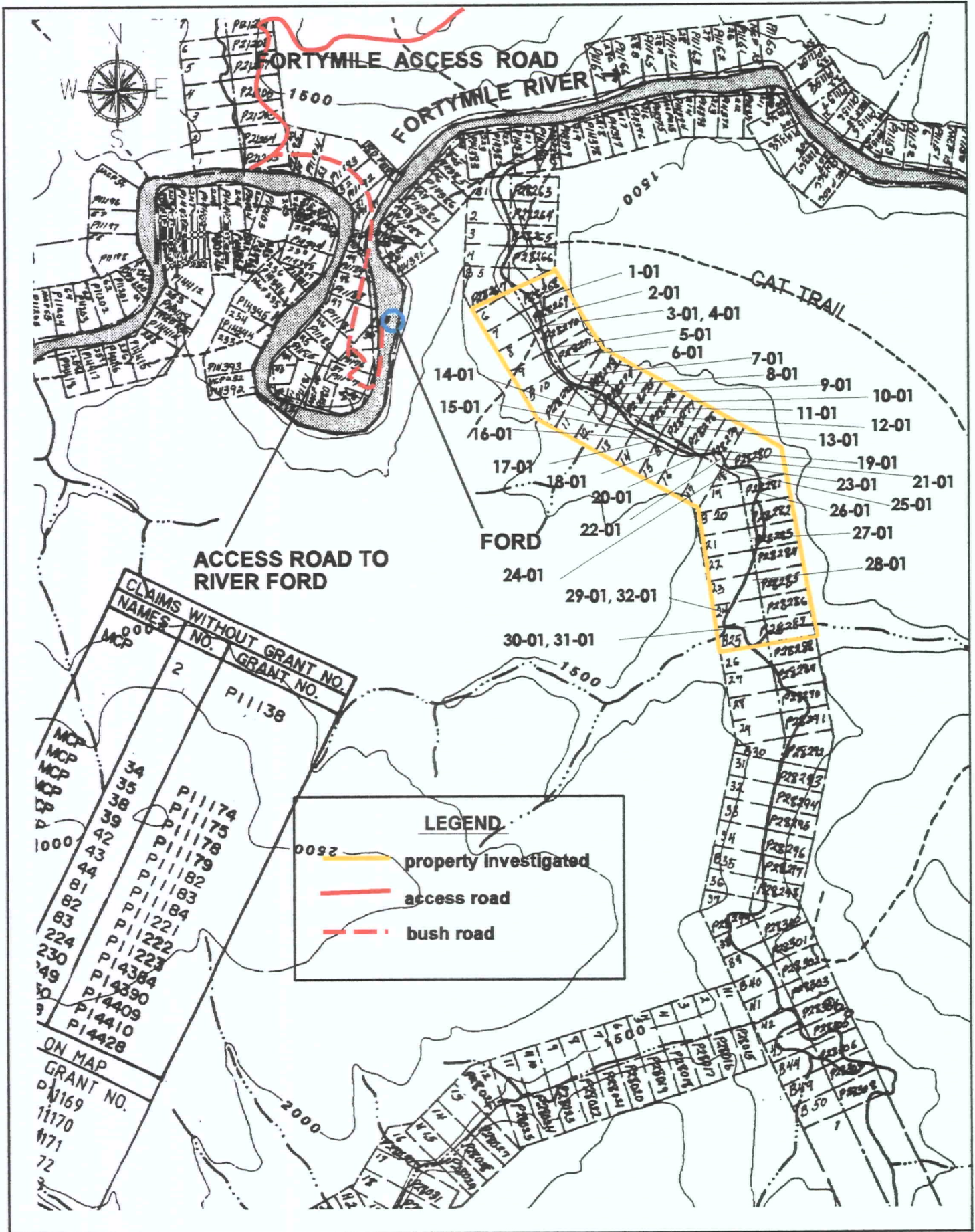
scale: 1 cm = 4 km (approx) pg 14





MAP 2 - Aerial Photograph of Project Area in Bruin Creek

scale: 1" = 1 mile



Map 3 - Sample Locations (from Placer Claim Sheet 116C-7)

**Additional Information**

**People who worked on the Project**

Leslie Chapman

Dawson City

Ron Barrett

Dawson City

Bill Claxton

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Larry Remple

Dawson City

**Claims Investigated**

Placers claims P28268 through P28287

**This report was prepared by**

Leslie Chapman and Bill Claxton prepared this report in 4 man days

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