YUKON TERRITORIAL GOVERNMENT
EXPLORATION INCENTIVES PROGRAM
PROJECT 97 - 056

TARGET EVALUATION
MARTEN CREEK

APRIL 27 - October 23, 1997

TRANSVERSE MERCATOR PROJECTION CO-ORDINATES
latitude 64^0 17' - longitude 140^0 40'
PLACER CLAIM SHEET 116C-7

prepared by
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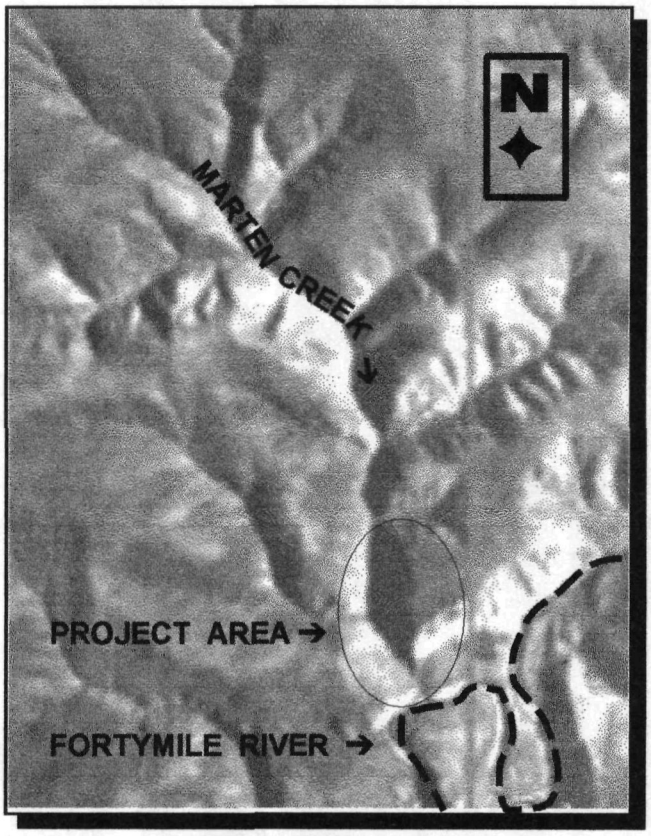
1. Property Description

The property which we investigated is located on the lower reaches of Marten Creek, a left-limit tributary of the Fortymile River. Marten Creek enters the Fortymile River approximately 15 miles upstream of the confluence of the Yukon and Fortymile Rivers. The co-ordinates are latitude 64^0 17' - longitude 140^0 40'.

The claims investigated on this project are placer claims P21203-P21217. These claims are shown on NTS map sheet and placer claim sheet 116C-7. See **Map 1** for the property location.

There is good summer-season road access to the property. A 10 mile bush road connects with the government-maintained Clinton Creek Road and Top of the World Highway. The property is approximately 70 road miles or 40 air miles from Dawson City.

Marten Creek has a mainstem of approximately 4½ miles in length. The Marten Creek drainage is shown on the aerial photo. The valley has steep walls and is fed by numerous small gulches and draws. The valley floor is approximately 150 to 250 feet wide in the area which we investigated. The width of the creek channel varies between 8 and 15 feet, depending upon rainfall. The grade of the creek is moderately steep. Much of the valley is in permafrost, although some areas in the creek are thawed. Vegetation is mainly moss and scrubby black spruce with alder and willow growing along the sides of the creek channel, and a few stands of larger spruce trees.



Air Photo of Marten Creek

There is little muck overburden, from 0 to 2 feet. A layer of crudely sorted angular gravel, primarily broken schist, overlays a bed of well-washed, rounded gravel with boulders to 1½ feet in diameter. Bedrock depth varies from 3 feet to 15 feet. Schist bedrock outcrops which can be seen in the steep valley walls are laced with fine quartz stringers.

Marten Creek in classified as a Type 4 (non-fish bearing) stream and an effluent discharge of 2 ml/l of settleable solids is permitted. A current water licence is in place for the property.

2. Summary of Previous Relevant Investigations

Marten Creek was mined using hand methods during the Fortymile gold rush, between 1886 and 1896, and again in the early 1900's, and in the 1930's. It was originally known as Log Cabin Creek because of the number of miners cabins on the creek. Marten Creek was well known as a coarse

gold stream, although the paystreak was reported to be narrow and difficult to follow. Reportedly, miners were unable to drift out from their shafts due to pockets of gas and to thawed ground which they encountered.

The ground was drilled in 1964 and some mining was done with a small cat by a propector from Whitehorse. Results of this work are unknown.

I have held the claims on the creek since 1974. Previous exploration work showed that the area has good potential. As a result of six 10 yard bulk samples which we processed in 1994, we estimated that there was 78,000 cubic yards of gravel with aproximately 100 yards of gravel required to produce one ounce of gold. We estimated that there woluld be approximately 766 ounces of gold in this section of the creek, which is three claims long. Gold particles larger than +14 mesh were found in some of the samples. The previous work was focused on excavations in and adjacent to the creek bed.

3. Objectives

When we began this project our objective was to examine 14 claims, to extend the known probable reserves from previous investigations. We planned to drill holes on survey lines cross-cutting the valley. The purpose was to determine the depth of the gravel in the valley bottom and to establish rough grade figures for the deposit of creek gravel.

Once the drilling program was underway, we discovered that we had been incorrect in assuming the creek gravel deposit extended across the width of the valley floor. In fact there is a very low bench which is cut by the creek channel meandering across it. What we had thought was a wide valley bottom was actually a much narrower valley floor with frozen low benches on either side.

We decided that we should concentrate the drilling work in order to better define the bedrock profile of the creek. We wanted to determine where within the valley bottom the gold is concentrated; that is, is the pay located only in the creek channel or are there deposits on the shallow benches as well?

4. Equipment Used

- To gain access to the property over the course of the project we used a 4x4 truck, and a 4x4 ATV.
- To drill the property we used a 6" auger drill mounted on a Nodwell carrier.
- To prepare and clear the trail on the property and to cut access ramps at creek crossings, we used a Caterpillar D6C dozer with angle blade and ripper.
- To transport drill samples and for general support we used a Caterpillar 920 Loader.
- To support the drill and heavy

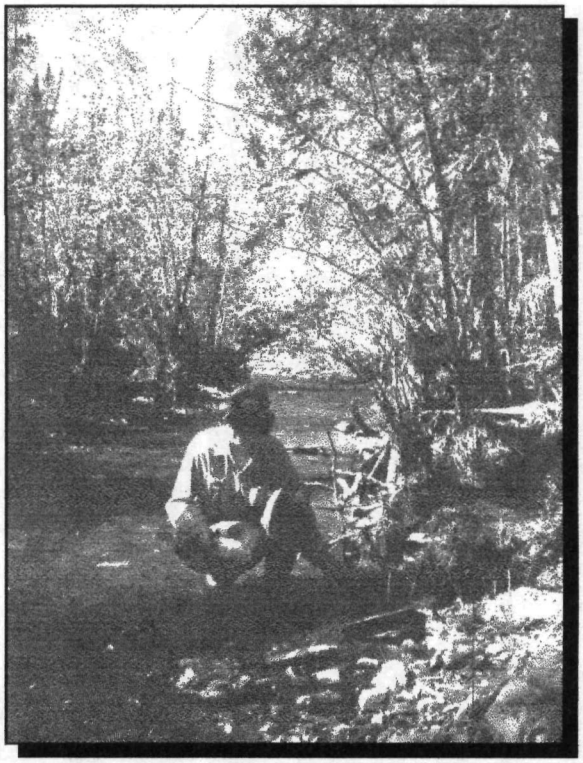
A D6 Cat dozer was used to prepare access ramps and drill sites for the 6 " auger drill, mounted on a Nodwell.

equipment we used a fuel truck and a 4x4 service/welding truck with a complete compliment of tools.

- To process the drill samples we used an 8 inch Tyler screen, a 1" gas powered portable water pump, a 1 ft x 4 ft long tom equipped with rubber matting, an 18" electrically powered spiral gold wheel, and various tubs, pails and gold pans.

5. Work Performed

The first phase of the project was to prepare the access trail, using the dozer to cut the ramps down at the creek crossings and to clear the trail. At this time we undertook a preliminary sampling program collecting samples from cut-banks and places where the dozer work exposed gravel. We panned these samples on site. The locations where we obtained these grab samples are shown on **Map 2**, and the results of the samples are tabulated in **Table 1**.



We took pan samples in the creek valley to help plan the drilling program.

Using the results of the preliminary sampling work, we planned the drill program. We laid out a series of survey lines, cross-cutting the creek valley, on which to locate the drill holes.

We had the drill trucked from Dawson City to Clinton Creek. We walked the Nodwell from Clinton Creek to the property, approximately 10 miles.

We began the work by drilling a series of holes, **M1- M5**, through the first narrow canyon, located approximately 750 feet above the confluence of Marten Creek with the Fortymile River. We reasoned that, because we had previously found the pay streak to be narrow and spotty, and because the alluvial material would be concentrated in this narrow gorge, there should be pay in this section of the creek. See **Map 3** for the location of all the drill holes.

After drilling through the gorge we reached the first wider section of the valley; here we drilled across the first cross-cut laid out across the valley, holes **M6**, **M7** and **M8**. The purpose of this first drill line was to define the extent of thawed ground adjacent to the creek channel, to establish bedrock depths and (hopefully) to determine pay gravel limits. We found, as result of drilling this first cross cut, that the valley profile included a low bench or terrace through which the creek bed cut. The bedrock of the bench is located approximately 2 to 3 feet above the water level in the creek channel. This bedrock is overlain with 4 to 8 feet of frozen, loosely sorted angular gravel capped with a thin layer of frozen muck from 6 inches to 2 feet thick.

Based on this first cross-cut, we reassessed our objectives and decided to redesign the project to consist of a series of cross-cuts at closer intervals, from 150 to 300 feet apart, with the holes along the cross-cut spaced at 20 to 30 foot intervals. We hoped that this work would enable us to accurately define the limits of the creek channel ground as opposed to the lower level terrace

ground adjacent to the creek. The close spacing of the drill holes along the line would also help us to define a pay channel in the terrace ground if there was one.

The next group of holes, **M9**, **M10**, **M11** and **M12**, was drilled on the next wider section of creek valley. These holes where located on a low bench 3 to 4 feet above the water level in the creek.

We continued the cross-cut line up onto an adjacent higher bench, drilling 3 holes, **M13**, **M14**, and **M15**. Holes on this line where located approximately 30 ft. apart. Bedrock on this bench was approximately 25 feet above the water level of the creek. On this bench we had found an old wheelbarrow in a small excavation from an oldtimers handmining operation. The bench is outlined on **Map 3**.

We drilled 2 holes, **M16** and **M17**, 50 feet apart, adjacent to an area which had previously been stripped.

We proceeded upstream to the next section of the creek where the valley widened. We drilled a line of 3 holes, **M18, M19**, and **M20**. Again we found a low terrace approximately 2 feet above the water level of the creek.

We drilled another hole, **M21**, 30 feet upstream along the terrace close to a bedrock outcrop. We found remains of oldtime miners workings between this bedrock outcrop and the creek. These workings consisted of pole cribbing approximately 4 feet above the creek level. We also found an old steam boiler.

We found this old steam boiler complete with steam point and hose, used by hand miners to sink shafts.

Our last drill hole, **M22**, was near the mouth of Marten Creek. This hole was 35 feet deep. There was approximately 6 feet of sand overburden and 23 feet of gravel. We drilled into the bedrock approximately 6 feet.

The drill holes varied from 6 feet to 35 feet deep. The depth of the drill holes are tabulated in **Table 2**. The entire contents of each hole was bagged in woven plastic sample bags, and the bags were numbered to key them to the hole. Each drill site was labelled on site, and was also mapped and the depth of the hole was logged.

Samples were transported back to camp and stored for processing later. We panned samples of the drill cuttings while drilling was underway to get an indication of gold presence. The number of colours obtained from the panning of drill cuttings were added to the number of colours obtained from later processing of the samples, and the total number of colours obtained are shown in the results in **Table 2.**

Samples were processed using the following method:

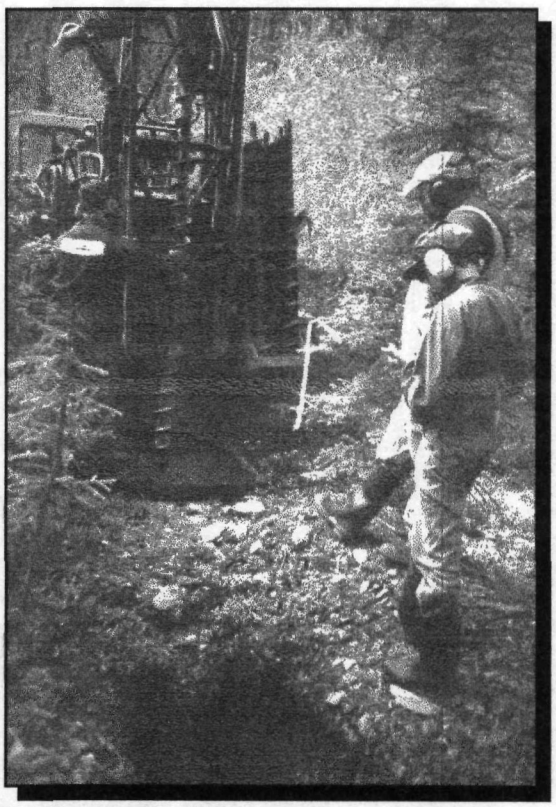
- The sample bag containing the gravel was weighed.
- The gravel from the sample bag was screened using a 8 mesh Tyler screen.
- Oversized material from the screening was panned to check for coarse gold.
- Fines from the screening were processed through a long tom.
- The long tom mats were washed in a small tub.
- The material from the long tom mats was processed through a spiral gold wheel to extract the concentrate consisting of black sand, heavy minerals, and gold colours.
- The concentrate saved by the gold wheel was dried and the gold colours were counted, picked out with tweezers, and examined with a magnifying glass.
- If sufficient colours were obtained, the gold was weighed using a scale accurate to 0.1 grain.
- The sampling equipment was cleaned thoroughly in preparation for treating the cuttings from the next drill hole, to avoid contamination of samples.

6. Results

We found gold in our drill holes in the creek channel. We did not recover enough gold from the drilling to weigh accurately with our gold scale, so we didn't attempt to assign grade figures. A number of the holes which we drilled in the creek channel filled rapidly with ground water; water in an auger drill hole makes it difficult to bring gold particles to the surface because, being heavy, they tend to slip off the auger flutes.

We did not find any gold in our drill holes located on the low bench ground adjacent to the creek channel. The absence of gold in these drill holes leads us to believe that this low bench ground is either very low grade or barren. The gravel consisted of angular, poorly sorted material with a maximum size of 6 inches in diameter. It did not look old enough to be gold bearing gravel.

We found gold in the drill holes on the higher elevation bench which we drilled. One of the holes contained a small nugget. The gravel on this bench was overlain with typical permafrost muck capped with a layer of moss and scrubby spruce vegetation. The gravel was generally coarse with occasional boulders and large cobbles which had been rounded from the action of water. We uncovered a large rounded quartz boulder under the moss which had fallen away from the edge of the bench. We believe that this gravel is from the remains of a very old channel since it is much different than the gravel found in the creek. The gold recovered from the three drill holes on this bench weighed 0.97 grains. We calculated the value per yard of the gravel recovered from the drill holes to be approximately 1 ounce of raw gold per 34 cubic yards of gravel. We estimated the size of the bench to be approximately 120 feet wide by 300 feet long. We figured the sluicing section depth to be an average of 4 feet of gravel plus 2 feet of bedrock, a total depth of 6 feet.



Drilling on the high bench. An old hand miner's shaft can be seen in the foreground.

We calculated the minable yardage in this bench to be approximately 8,000 bank cubic yards. Preliminary projections indicate that this bench could yield approximately 235 ounces of gold, using the grade and yardage figures which we calculated.

We drilled one hole at the confluence of the Fortymile River and Marten Creek where the valley widens; we had originally thought that this area was too wide, approximately 3,000 feet, to contain a significant pay streak, but decided to test this theory. We drilled a total of 35 feet in this hole. The overburden consisted of a layer of thawed sand 6 feet deep overlain with vegetation consisting of poplar mixed with raspberries and rose bushes. The gravel was sandy and thawed and contained large very round cobbles; we had to drill through occasional large boulders. We expect that this gravel is of river origin. We drilled approximately 6 feet into the bedrock which is schist, typical of the Fortymile region. This hole yielded one of the best results of the drill program, with 0.7 grains of gold recovered from a 35 foot hole. If the layer of overburden and the excess bedrock depth is discounted, this hole yielded a pay value of approximately 1 ounce in 100 yards of gravel.

7. Conclusions and Recommendations

The drilling work which we did in the gravel deposits of the lower reaches in the Marten Creek valley is summarized as follows:

- **Creek Channel Gravel**
  The drilling work confirmed gold presence in the creek channel of the lower reach of Marten Creek. Values obtained by drilling were not as good as those resulting from previous sampling from pits dug with an excavator. Not enough gold was recovered from the drilling to project grade figures. (This could be due to the wet nature of the ground and/or spotty distribution of gold.) Previous bulk sampling work has indicated a grade figure of approximately 1 ounce per 102 loose cubic yards.

  The drilling allowed us to better delineate the actual gold bearing valley bottom . Based on previous exploration work, we had determined that the creek channel was approximately 75 feet in width. The drilling work which we performed in this project suggests that the channel is, on average, only approximately 40 feet in width. We recalculated the gravel volume contained in the valley bottom of the first three claims to be approximately 47,000 loose cubic yards. (We had previously estimated this to be approximately 78,000 cubic yards) Using previously obtained grade figures and the revised yardage figures, we estimate that the valley bottom over the lower 1500 feet will yield approximately 460 ounces of raw placer gold. (The purity of Marten Creek gold has been assayed at 0.84.) We assume that the remaining 4 miles of the creek are similar, although further testing would be required to project grade and yardage figures with confidence.

- **Low Bench Ground**
  Closely spaced drill holes along lines cross-cutting the valley bottom revealed the presence of low bench ground flanking the pay channel. See **Figure 1** for a cross section of the valley. This bench ground proved to be barren of both gold and any heavy concentrates associated with placer deposition. This low lying bench ground can be considered waste, leaving the pay concentrated in a channel in the valley bottom of approximately 40 feet in width. While the down side to discovering these barren low benches is a reduction in the estimated yardage of pay gravel, there are also benefits; the pay channel has now been well defined, and the barren

sections of the valley bottom can be used to stack tailings and overburden waste.

- **High Bench Deposit**
  We carried one of our drill lines cross-cutting the valley up onto a flat terrace approximately 25 feet above the level of the creek. This bench contains a placer deposit consisting of the remains of a very old stream bed. We estimated that there are approximately 8,000 bank cubic yards containing approximately 235 ounces of gold on this particular high bench. The limits of the bench are outlined on **Map 3**. This deposit, while small, would be very easily mined because the muck is shallow, and waste and tailings could be deposited over the side of the bench onto the barren low bench ground below. More drilling would be necessary to confirm the preliminary grade estimates we have made based on only three drill holes. However, because is limited in size and because initial set up costs to mine the deposit would be small, we recommend that the deposit be put into production. The cost of setting up and starting to mine the deposit would not be any more than it would be to perform more drill work. We also recommend that any other bench ground in the valley at this elevation be examined.

- **Confluence Area Deposit**
  The most interesting result which we obtained was from the last hole which we drilled in the wide flat at the mouth of Marten Creek. Because we had thought that the creek valley was too wide to have concentrated a paystreak in the confluence area, we were surprised at obtaining very good values from this hole; 0.7 grains of gold was recovered, representing a value of 1 ounce of gold 100 per bank cubic yards of gravel. The gold was coarse, consisting of large thick flakes and small chunks in excess of 20 mesh. The yardage in this creek mouth area is large; there are at least 1/2 million cubic yards in this area covering both sides of the creek. This confluence area deposit is shown on **Map 3**. Preliminary (and speculative at this stage) calculations based on the values obtained from the 1 drill hole and the rough yardage estimates indicate that this deposit could contain approximately 5,000 ounces of gold. It should be noted that information is far too sketchy at this stage to assign a value to this gravel deposit. We recommend that more drilling and trenching be undertaken in the confluence area of the creek to establish grade figures over a larger area. The deposit is large enough to sustain mining for several years, if it proves to be viable. Because the deposit is flat and much of it is thawed, it would suitable for floater dredging.

This exploration project has been useful in adding to our understanding of gold deposition in Marten Creek. The drilling work, consisting of tightly spaced drill holes cross cutting the valley, has delineated the pay channel accurately. This coupled with previous grade projections based on sampling of pits has allowed us to make reserve estimates with confidence. The drilling also established gold presence on the high bench and also at the mouth of Marten Creek.

We recommend the following further work be undertaken:

- A combination of drilling and excavation of test pits at the mouth of Marten Creek to obtain an accurate analysis of both grade and volume of gravel.
- A small bulk sample/mining operation on the high bench be initiated on the bench to confirm grade. The operation could be expanded to mine the bench deposit if initial results are favourable.
- Exploration work be continued into the upper reaches of the creek, using a combination of drilling and excavating to add to the proven reserves.

TABLE 1
Results from Grab Samples
Pan Samples in 12" Gold Pan - approx. 7 lb.

Sample #	# of Colours/Comment
P1	0, angular gravel
P2	0
P3	0
P4	1 small chunk
P5	0, lots of black sand
P6	0
P7	0
P8	2 fine colours
P9	1 thick flake
P10	0
P11	0
P12	0
P13	0
P14	0
P15	1 colour, large garnets
P16	0
P17	0
P18	0
P19	0
P20	0
P21	0
P22	1 good sized colour
P23	3 colours, 1 is flake
P24	0
P25	0

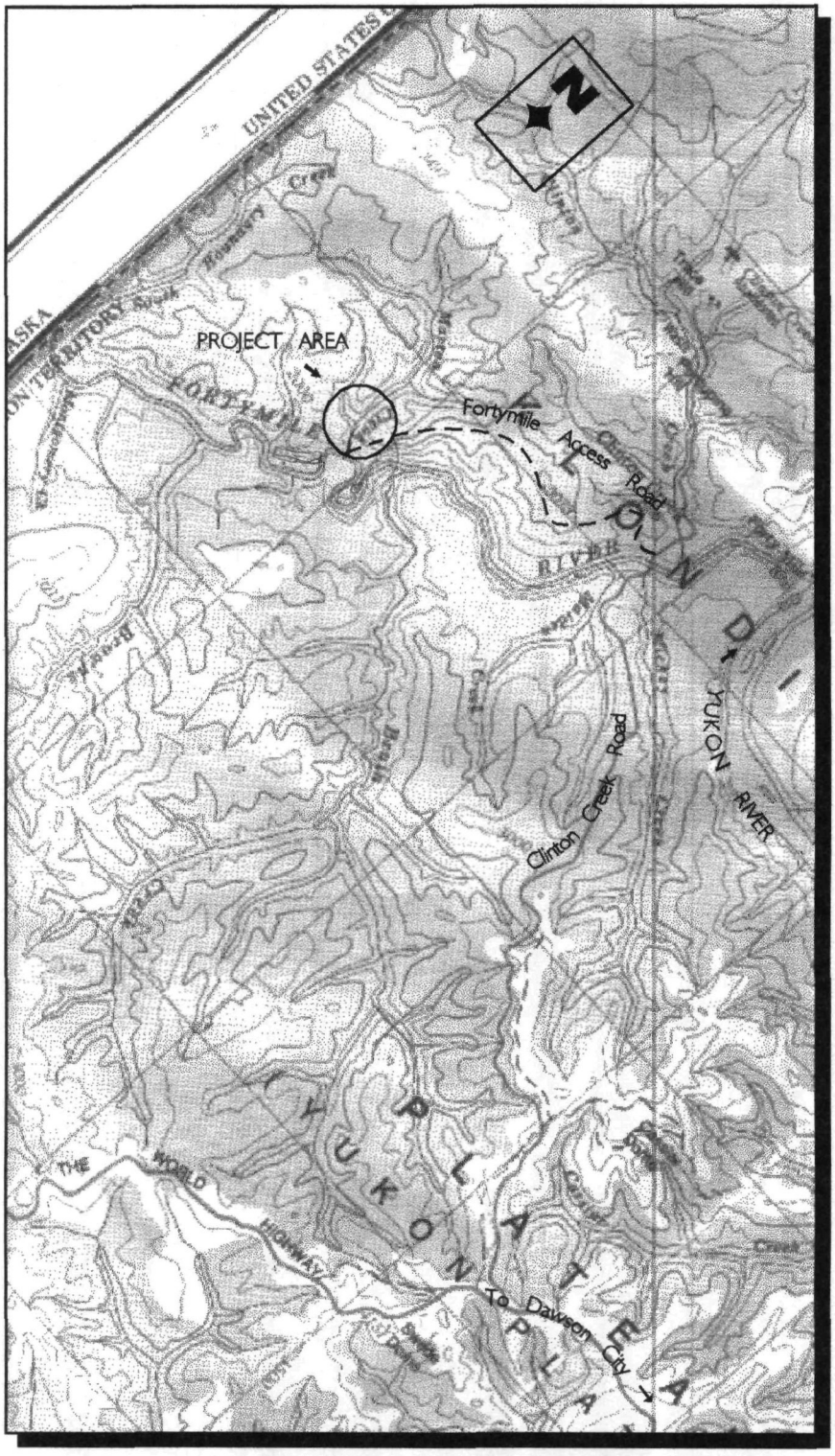
Sample #	# of Colours/Comment
P26	0
P27	0
P28	0
P29	1 fine colour
P30	0
P31	0
P32	0
P33	0
P34	0
P35	0
P36	0
P37	5 large colours
P38	2 colours, garnets
P39	1 colour
P40	0
P41	0
P42	1 fine colour
P43	1, lots of black sand
P44	0
P45	0
P46	0
P47	0

TABLE 2
Samples from 6" Auger Drill Holes

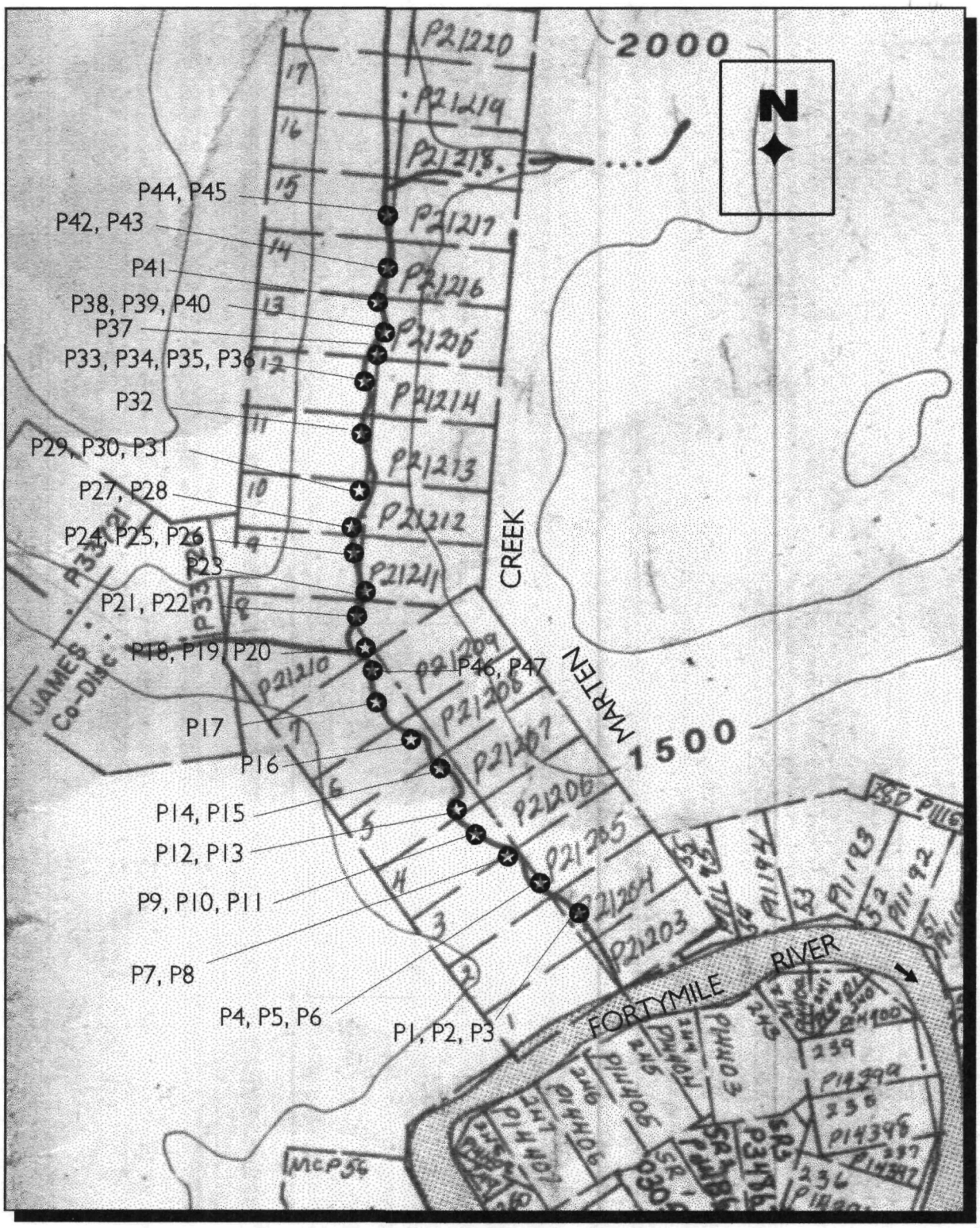
Drill Hole #	Total Depth	Depth Drilled of Muck / Gravel / Bedrock			# of Colours	Comments
M1	8'	0'	6'	2'	1	large colour
M2	8'	0'	7'	1'	0	black sand & garnets
M3	12'	3'	6'	3'	7	overburden is sandy, angular colours, 2 large flakes, 3 medium, 1 needle shaped, 1 very fine
Me	10'	3'	0'	7'	2	broken bedrock, medium sized colour, lots of black sand
M5	8'	5'	0'	3'	0	broken bedrock, little black sand
M6	10'	2'	0'	8'	1	broken bedrock, lots of garnets, colour is small & angular
M7	18'	3'	0'	15'	0	broken bedrock
M8	12'	5'	0'	7'	0	broken bedrock
M9	9'	0'	8'	1'	0	
M10	8'	0'	5'	3'	0	
M11	10'	0'	3'	7'	0	greasy bedrock
M12	10'	3'	5'	2'	0	
M13	10'	0'	6'	4'	1	sandy coloured bedrock, large thick flake
M14	6'	2'	2'	2'	0	
M15	12'	5'	2'	5'	3	1 is small nugget, the 2 colours are large & angular
M16	8'	8'	--	--	0	hit water after 8' muck
M17	12'	3'	4'	5'	1	good sized colour, lots of black sand in concentrate
M18	8'	2'	4'	2'	0	
M19	3'	3'	--	--		hit water

TABLE 2 - continued
Samples from 6" Auger Drill Holes

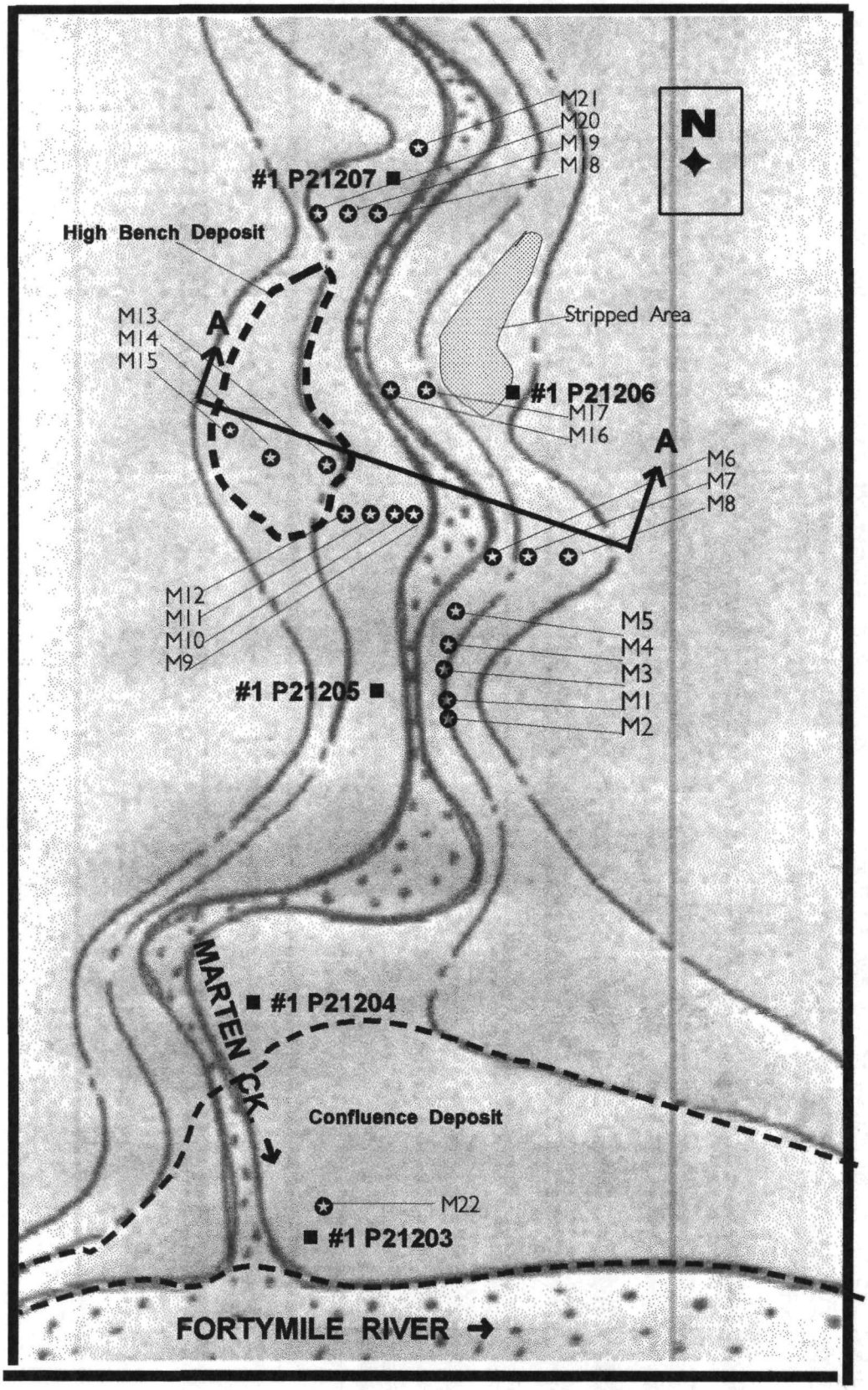
Drill Hole #	Total Depth	Depth Drilled of Muck / Gravel / Bedrock			# of Colours	Comments
M20	6'	0'	0'	6'	0	broken bedrock
M21	5'	1'	0'	4'	0	
M22	35'	6'	23'	6'	13	overburden is sand, colours are very large, thick pieces



Map 1 - Property Location
scale: 1 inch = 4 miles



MAP 2 - scale 1" = 700'
Grab Sample Locations



MAP 3 - scale 1" = 300'
Drill Hole Locations

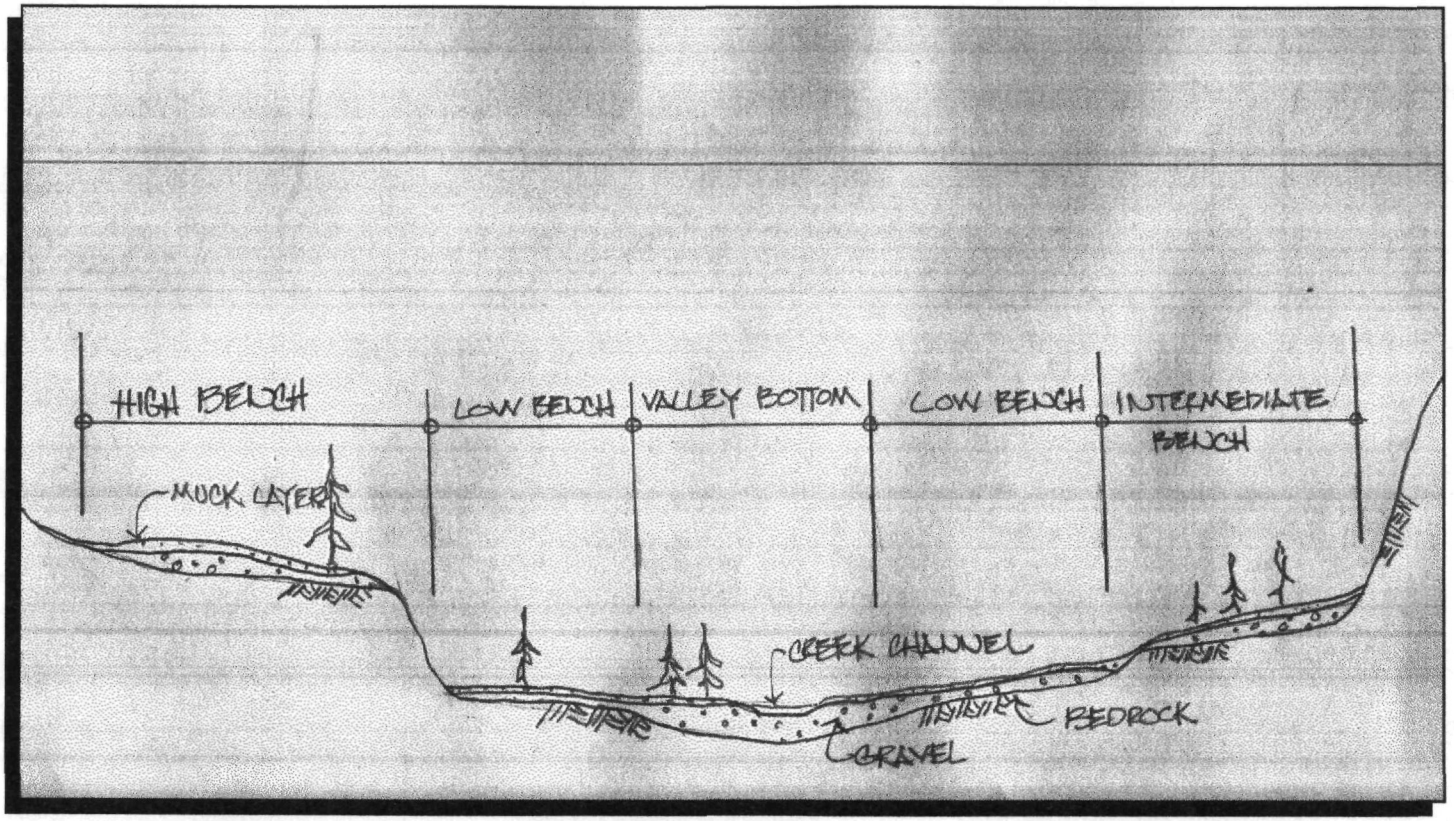


Figure 1 - Valley Profile Section AA Showing Bench Elevation
scale: 1 inch = 50 feet