

# ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

1016-510 WEST HASTINGS STREET  
VANCOUVER, B. C. V6B 1L8

(604) 688-2568

120106

ARLINGTON PLACER GOLD PROSPECT

OPEN

situated at the confluence of  
HUNKER CREEK AND KLONDIKE RIVER  
DAWSON MINING DISTRICT, YUKON

JANUARY, 1983

120106

## INTRODUCTION

One of the main enigmas in the Klondike Placer District is why the rich paystreak at the mouth of Hunker Creek could not be traced into Klondike River valley. Early prospecting and subsequent Yukon Consolidated Gold Corp. (YCGC) dredging assumed that the paystreak swung west (downstream in relation to the present flow of the modern Klondike River) but was unsuccessful in following it in that direction.

The paystreak in modern Hunker Creek was quite rich at the mouth. Available records show that YCGC dredged about 2.24 million cubic yards there in 1939-40 and recovered about 35,000 oz of gold in 300 days (0.016 oz/cubic yard). The grade of the paystreak was much higher (at least 0.1 oz/cubic yard with local richer sections) since the overall average includes the dilution caused by a thick overlying blanket of barren glaciofluvial gravel. For comparison, the average grade of all gravel dredged in the Klondike District between 1905 and 1966 (342.5 million cubic yards) was about 0.013 oz/cubic yard.

Archer, Cathro's Arlington property has been assembled on the alternative theory that the Hunker Creek paystreak swings easterly up the modern Klondike River valley. If correct, it represents a unique opportunity to explore and mine a readily accessible virgin Klondike paystreak.

This brief description of the geology and previous exploration results is intended as a quick summary of the evidence supporting this idea. It has been compiled from a search of the published literature, including Geological Survey of Canada (GSC) data and Lew Green's 1977 book on Klondike dredging "The Gold Hustlers", and from interviews with oldtimers who worked on Hunker Creek for YCGC or are still active on Hunker Creek. In addition, it incorporates the results of two test holes drilled on the leases in 1982 by Archer, Cathro.

THE HUNKER CREEK PAYSTREAK

Prior to late Tertiary uplift and Pleistocene glaciation and subsequent downcutting of the drainage system, placer gold in the Klondike District occurred at the base of the White Channel Gravel, a blanket of unusually mature quartz gravel up to 300 feet thick that was deposited in Miocene or Pliocene time (between 1 and 20 million years ago). After downcutting, most of the gold was reconcentrated along the base of modern stream channels as much as 200 or 300 feet below the floor of the original valleys containing the White Channel Gravel. The former position of the White Channel Gravels and paystreak can be inferred from the few remnants that have been preserved from erosion on benches on the sides of Bonanza and Hunker Creeks. The best description of the White Channel Gravel was given by R.G. McConnell of the GSC in 1907 (Publication 979 - Report on Gold Values in the Klondike High Level Gravels). McConnell concluded that the former position of the White Channel paystreak was marked by a trail of gold in the modern valley, even when the White Channel Gravels were completely eroded away, and that the "horizontal movement of the gold in some instances scarcely exceeds the vertical movement" (page 15).

The distribution of gold in Klondike River valley is poorly documented and is best illustrated by the dredging pattern, which shows that most of the gold that was transported down ancient Bonanza Creek was deposited east of its mouth rather than west. An immense area of low grade gravels extending up to four miles east of the ancient mouth at Jackson Gulch was dredged in Klondike River valley. Bonanza Creek is the obvious source for this gold, which becomes increasingly lower in grade toward the east. The only other possible source, Bear Creek, was a relatively minor placer creek.

The distribution of gold in Klondike River valley suggests that the river originally flowed east, in the opposite direction to the modern flow. Some of the gold found west of the ancient mouth was probably carried there by reworking of the Klondike River paystreak after the flow reversed. Additional gold was carried there down modern Bonanza Creek itself, which enters Klondike River valley about one mile west of the ancient channel. The theory that Klondike River flowed east into either Stewart River or Twelvemile Creek during the White Channel period was first proposed by McConnell in 1907 (page 6) but has been subsequently ignored or forgotten.

If Bonanza Creek flowed into an east-flowing Klondike River during the White Channel period, then so did Hunker Creek. Although most of the evidence for the position of the mouth of ancient Hunker Creek has been removed by subsequent downcutting, McConnell positioned the east side of the White Channel on Australian Hill. The nearest remnant of the White Channel coarse gold paystreak occurs on Dago Hill, about one mile upstream from the mouth, where a successful bench mining operation (both placer and underground in the frozen gravels) has been underway for several years by Miben Mining Ltd. Average grades of this paystreak are reported to be about 0.1 oz/cubic yard.

Two phases of dredging were conducted by YCGC at the mouth of Hunker Creek. A short interval between the two areas was not dredged but has since been mined with heavy equipment. The portion above Henry Gulch was mined with the medium-sized Dredge No. 11 between 1940 and 1966. This dredge was equipped with 7 cubic foot buckets, had a daily capacity of about 5,000 cubic yards, and could dig to a depth of about 25 or 30 feet.

A small area at the mouth of Hunker Creek, called the Arlington area, was dredged in 1939 and 1940 by Dredge No. 4, the largest in the Klondike. It had been floated east through barren gravel from the main Klondike River dredging area in 1937 and 1938. This dredge was later moved to Bonanza Creek, where it is now a National Historic Site. It was equipped with 16 cubic foot buckets, had a rated daily capacity of 10,000 cubic yards, and was capable of digging to depths of about 45 feet. Presumably, this larger dredge was required at the mouth of Hunker Creek because the gravels there were thicker, coarser or poorly thawed. The northern half of these tailings are composed mainly of glaciofluvial gravel, as are most tailings in the Klondike River valley, whereas the remainder of the Hunker Creek tailings consist of local schist fragments with no foreign components.

From the scanty data that is available, it appears that dredging of the modern gravels at the mouth of Hunker Creek was extremely successful. A total of 2,240,000 cubic yards was dredged in 298 days (7,500 yards per day average). According to Lew Green, Dredge No. 4 recovered about one-third of the total production from nine dredges in 1939. The average grade of the gravel treated by No. 4 that year was 0.015 oz/cubic yard compared to 0.006 oz/cubic yard for the other eight dredges.

If the paystreak made up 5% of the gravel dredged in 1939, it would have graded about 0.3 oz/cubic yard. However, parts of the paystreak may have been much richer. According to the Dawson Packet newspaper (August 24, 1982), Dredge No. 4 recovered up to 800 oz/day (at least 0.1 oz/cubic yard) at the mouth of Hunker Creek. Arthur Troberg recalled that this dredge recovered up to 1500 ozs in one eight hour shift, which would represent a grade of about 0.5 oz/cubic yard. This is supported by John Bowes, who recalls that cleanups were performed as often

as every second day in 1939, instead of the regular weekly schedule. Mike Stutter of Miben Mining has heard that a churn hole drilled by YCGC on Hunker Creek at the mouth of Rabbit Gulch returned about 18 oz/cubic yard, supposedly the richest hole ever drilled in the Klondike by YCGC.

Dredging operations near the mouth of Hunker Creek may have been terminated for reasons other than the end of the paystreak. Bowes recalled that the dredge had problems with large boulders, which sometimes knocked the bucket line off the pulleys and caused long delays. The large boulders could be an indication that the dredge was encountering coarse glaciofluvial drift and might explain the irregular dredging pattern. According to Benny Warmsby of Miben Mining, YCGC drilled two churn holes to depths of 140 to 180 feet in Rabbit Gulch without hitting bedrock. The location of the holes is not known but they confirm that thick gravels are present on the end of Australian Hill. Dredge No. 4 had been operating for almost thirty years and was in poor condition. In fact, it sprang a leak and sank in 1938 but did not suffer serious damage. When mining was suspended in 1940, this dredge was dismantled and the useable parts were salvaged and reused when it was rebuilt on Bonanza Creek. Because of the operating problems, YCGC may have decided that the reserves at Arlington did not justify a major refit.

No records have been found that show the exact location of the highgrade paystreak. The absence of a paystreak in the route traversed by the dredge in 1937-38 and in the two holes drilled by Archer, Cathro northwest of the radio tower in 1982 appears to confirm that the paystreak trends east. Both 1982 holes intersected 34 feet of frozen coarse glaciofluvial gravel lying on schist bedrock and recovered only traces of gold. The paystreak should be found lying on bedrock in a slightly deeper channel closer to Australian Hill. It was likely missed by YCGC because the deep, coarse gravel impeded both its standard churn drill exploration and cold water thawing. It is also probable that the outbreak of World War Two interrupted plans to resume work here at a later date.

ARLINGTON PROPERTY

Archer, Cathro holds five prospecting leases covering an irregular-shaped area of about 600 acres. They are recorded at the Dawson Mining Records office as follows:

<u>Lease</u>	<u>Expiry Date</u>
6346	17 December, 1983
6571	20 September, 1983 (? probably 1984?)
6572	20 September, 1983
A	January, 1984 (not issued yet)
B	January, 1984 (not issued yet)

These leases cover the projected position of the Hunker Creek paystreak for a length of about 8,000 feet. Two 500 foot by 1000 foot placer claims owned by individuals cover a possible unmined portion of the paystreak on the south edge of lease 6572.

PROPOSED OPTION TERMS

Archer, Cathro is seeking an aggressive corporate partner willing to finance sufficient exploration drilling, sampling and engineering studies to locate the paystreak, determine its grade and prepare a mining plan, in return for a controlling interest in the leases. This is estimated to cost \$200,000 to \$400,000 over two years. The minimum work commitment sought is sufficient drilling to extend the lease expiries to 1985 dates and convert them to claims, estimated at about \$40,000.00.

In order to maintain the option and earn its interest, the optionee should perform the following:

FIRST YEAR

- (a) Cash payment of \$20,000 on signing to reimburse Archer, Cathro for expenses incurred to date.

- (b) Sufficient drilling and other work to satisfy assessment requirements (estimated at \$50,000).

SECOND YEAR

- (a) Cash payment or stock option.
- (b) Complete the exploration work.

Some combinations of royalty, stock options and/or profit sharing must be negotiated to provide Archer, Cathro with a fair return if the project is successful.

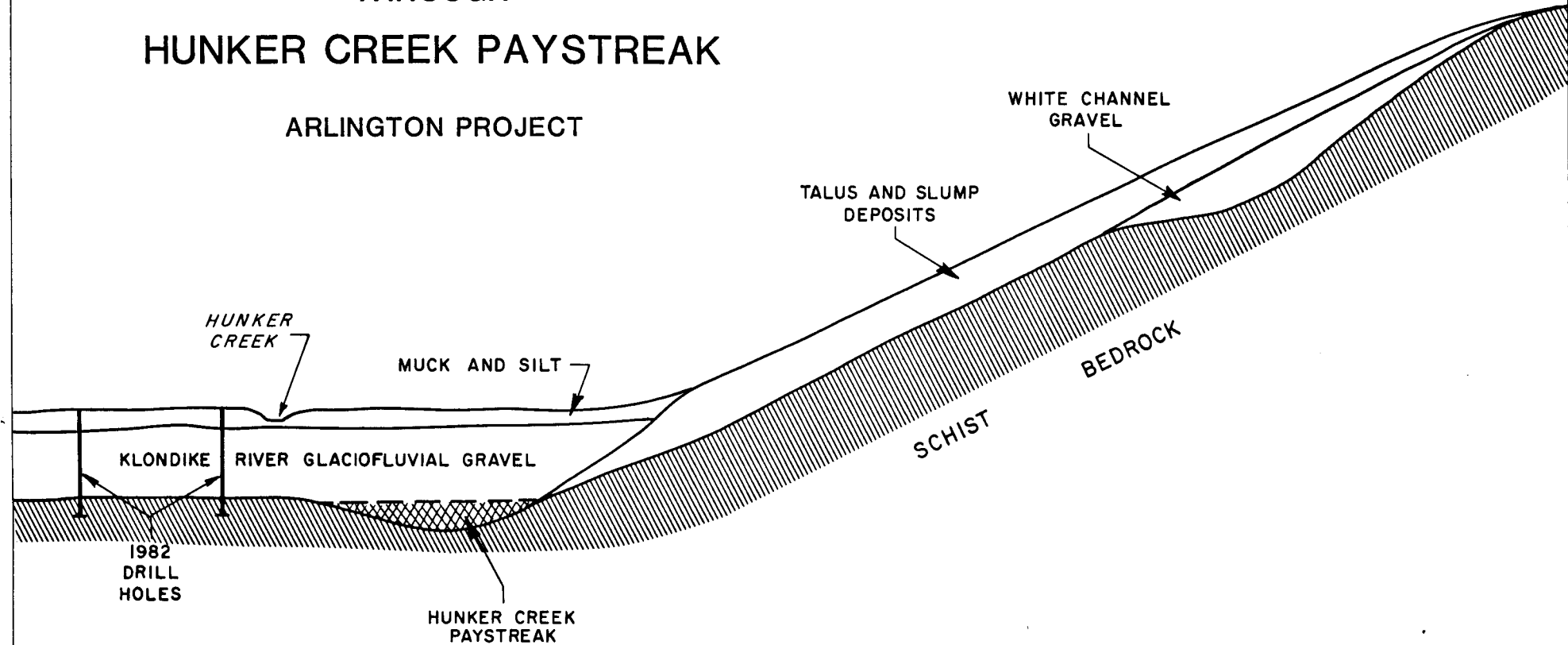
NORTHWEST

SOUTHEAST

# DIAGRAMMATIC SECTION THROUGH HUNKER CREEK PAYSTREAK

ARLINGTON PROJECT

AUSTRALIAN  
HILL



elevated position is due to an uplift which affected the whole region bordering the Yukon from the Stewart river northwest to the Alaskan boundary and for a considerable distance beyond. This uplift, and a small depression which preceded it, produced many notable changes in the topography of the country.

→ It is probable, although not conclusively proved, that during the White Channel period the lower portion of the Klondike valley, the portion into which the principal gold-bearing creeks discharge, was occupied by a small local stream and that the Klondike itself flowed either into the Stewart or into Twelve-mile river. The White Channel deposits are remarkable in this respect that even when completely destroyed their former position is marked by a trail of gold. They are traceable in this manner from the present mouth of Hunker, Bear and Bonanza creeks far out into the present valley of the Klondike, showing that the old valley was small, smaller than that of Hunker creek and unlikely to have contained a large rapid river such as the Klondike.

At the close of the White Channel period the district was depressed, and it was during this depression that the Klondike is considered to have broken into its present valley. It brought down an immense quantity of material from its upper reaches, and rapidly built up a wide gravel bed fully 150 feet in depth. These gravels at the mouth of Hunker and Bonanza creeks rest on the White Channel deposits and at other points, where not destroyed, are distributed along the hill sides at the same level. They are composed principally of well-rounded pebbles of quartzite, hard slate, diorite and occasionally granite, all, unlike the other gravels, foreign to the district, and so far not proved to be of much economic importance.

The depression was followed by an uplift of approximately 700 feet, which gave new life to all the streams by increasing their grades, and they immediately commenced to deepen their channels. This process was continued not only through the old gravel deposits but down into the bedrock to a depth of from 150 to 300 feet. The new valleys are sunk, as a rule, through the bottom of the old ones, but in a few places, as at the mouth of Bonanza creek, they deviate from them and have carved out independent courses.

The difference in character between the old and new valleys is striking. The old ones represent the product of long continued stable conditions, and are characterized by wide flats and gently sloping sides, from which all traces of angularity have been smoothed away. The flats of the old Hunker Creek valley have a width in places of over a mile. The new

# KLONDIKE NATIONAL HISTORIC SITES

## Dredge No. 4: Silent Sentinel

On claim No. 17 below Discovery Dredge No. 4, the largest wooden hull dredge in North America sits in the silted-over pond exactly where she was left at her last shift. Parks Canada now owns the dredge.

This dredge has a long history, originally built in 1912 it was used until it sank in 1924 in the Klondike River Valley. Refloated in 1927 it was moved to Hunker Creek where the rich mouth of Hunker yielded up to 800 ounces of gold a day until 1940. In 1941 the dredge was rebuilt on Bonanza Creek by the Yukon Consolidated Gold Corporation and continued working its way up the creek until 1959.

During the dredge period of Klondike Mining History these huge boats (they have hulls and displace 3,000 tons of water) operated from late April to late November and ran 24 hours a day, seven days a week.

There were 35 dredges in all built in the Klondike area from about 1906. Most operated on electricity supplied by the North Fork hydro plant (6 miles up the Dempster Highway). Water was brought to the creeks from the Ogilvie mountain range by the mammoth Yukon Ditch. Constructed in 1908, using hundreds of men to do the job, this complex system of flumes, pipes and ditches ran a length of 70 miles.

Today visitors have access to the dredge 24 hours a day with a tour guide available (who actually worked on dredges) 9 a.m.

to 5 p.m. daily June to September.

The dredge has been repainted and a display at the Parks Canada trailer across the road gives the visitor detailed information on how the dredge extracted the gold. In the movie "Frozen Gold", shown at the Palace Grand Theatre in Dawson, visitors can actually see footage of the dredges in operation.

Parks Canada also owns a portion of the gold fields and plans eventually to develop hiking trails throughout this historic area, with self-guided walks and display areas.

Dredge No. 4 is one of the most visited attractions at Klondike National Historic Sites and to appreciate the size of this monster one must see it. Its size dwarfs the trees around it yet 20 feet of this dredge is covered by about 20 feet of silt brought by the annual spring and summer runoff.

When you visit Dawson don't miss this incredible historic resource located 17 km up the Bonanza Creek Road.

The Dawson Packet is published bi-weekly by Miriam Jean Evans and Kathy Jones-Gates. Photos and stories by Evans and Gates.

The Dawson Packet is distributed free at Visitor Information Centers in Yukon and Alaska; on the ferries of the Alaska Marine Highway system; and the advertisers.

Mailing and handling charge is 50 cents per issue, if you wish to have The Dawson Packet mailed to your home address (Canada and U.S.).

Mailing address: P.O. Box 245, Dawson City, Yukon.

## Fashion Show 1900s Style

A recent Parks Canada Interpretive Program drew a large crowd of visitors and residents. Guide Danielle Thorington served as narrator of a 1900s fashion show organized and researched by Guide Jeanne Bertrand.

Several local residents participated, wearing their own costumes, period ball gowns and typical afternoon streetwear.



Above: Lenore Jenkins, wife of Mayor Peter Jenkins, models ball gown and accessories. Right: Kathy O'Donovan, mother and seamstress for seven children, tends to the youngest. Namiko Saito, in ribboned hat, joins the group.

# PARKS CANADA'S SUMMER SCHEDULE

### Palace Grand Theatre

Open daily, scheduled tours 11 a.m., 1, 3 and 5 p.m.

### Sternwheeler Keno

Open daily, scheduled tours 10 a.m., 2 and 4 p.m.

### Old Post Office

Open 2 to 5:30 p.m. weekdays; 10 a.m. to 1 p.m. and 2 to 5:30 p.m. weekends. Limited first class mail drop and stamp sales and commemorative stamp.

### Post Office Annex

Open 2 to 5:30 p.m. weekdays; 10 a.m. to 1 p.m. and 2 to 6 p.m. weekends. Parks Canada Information.

### Dredge No. 4

Open 24 hours a day. Guided tours 9 a.m. to 5 p.m.

### Harrington's Store

Open daily 10 a.m. to 1 p.m. and 2 to 6 p.m.

### Robert Service Cabin

Open daily 9 a.m. to noon and 1 to 6 p.m. Robert Service Poetry Readings daily, 10 a.m. and 4 p.m.

### Special Attractions


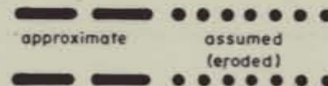



- Government Reserve Tours, leaving from St. Paul's Church 11 a.m. and 3 p.m.
- Palace Grand Theatre slide show, daily 11:15 a.m. and 1:15 p.m.
- Monday afternoon movie, 2:30 p.m., the new Sternwheeler film, or the new film on alternate Monday.
- Mme. Tremblay's Store - Window displays and private historic dress shop, daily.
- K.T.M. Store - Window displays.

All Parks Canada sites, tours and special attractions are FREE!





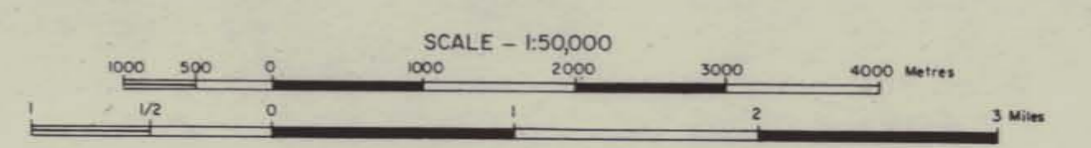
**LEGEND**

-  Areas of creek gravels mined with dredges
-  Approximate limits of creeks in White Channel time
-  Assumed (eroded)
-  Preserved remnants of coarse gold paystreaks in White Channel gravel
-  Lode gold occurrence

**INTERPRETED POSITION OF  
WHITE CHANNEL PAYSTREAKS  
KLONDIKE PLACER CAMP**

DAWSON M. D., YUKON  
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

JANUARY, 1983



120106