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McGINN SYNDICATE - REPORT FROM

KLONDIKE PROSPECTIVE VENTURE

APRIL 17, 1978

KERR ADDISON MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

APR 19 1978

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| I.D.B. |
| A.H.C. |
| P.S.C. |
| W.J.   |
| S.P.   |
| M.O.R. |
| J.B.S. |
| DMH    |
| FILE   |

To D.A. Lowrie From W.M. Sirola

Subject REPORT FROM THE KLONDIKE PROSPECTING VENTURE, BY THE MCGINN SYNDICATE Date April 17, 1978

Enclosed is a dissertation on the origin of Klondike placer gold deposits by G.J. McGinn of Calgary.

Mr. McGinn & Associates did some fairly extensive research in 1977 and he has come to the conclusion that the Klondike placers are secondary deposits formed by groundwater dissolving the gold hydrothermal deposits in fault zones and re-depositing this dissolved gold in adjacent creeks. His arguments seem to revolve around the fact that he has found no primary gold in any of the rocks around the town of Dawson, and the fact that the nuggets he has examined in the polished section indicate that the gold is crystalline and hence chemically deposited.

Because of the above beliefs, he is trying to raise \$130,000 for the purposes of drilling beneath the alleged fault zones at Eldorado and Bonanza Creeks, and drilling for deeper buried channels.

Never having worked with placer deposits, I am scarcely in a position to agree with or to refute Mr. McGinn's premises, but in my state of ignorance, I do not understand why, if the fault zones were indeed mineralized with primary gold, simple erosion of these fault zones could not have mechanically distributed gold in alluvial placers. If primary gold is crystalline in form, then it would remain crystalline in form in the placer deposits.

YES most probable

While I recognize that there are some chlorides which, in desert environments appear to act as solvents for gold, I don't know that climate during the erosion period, when the placers were formed, was arid and hence I am not sure that adequate solvents were present.

My usual concept of the source of alluvial gold placers is that where no primary deposits are found, these have either been eroded or are so low grade that they could not possibly be mined as primary deposits. Be that as it may, I would think that the likelihood of finding mineable grades in fault zones in the Dawson area is very small indeed. If you agree, I will so advise Mr. McGinn.

YES! SO ADVISED DMH

McGinn's report discloses an almost complete lack of basic knowledge of Yukon Au PLACERS

W.M. Sirola W.M. Sirola

Encl. Report by G.J. McGinn, November 1977.

G. J. MCGINN, P.ENG.

ROOM 207 - 534 - 8TH AVENUE S.W.

CALGARY 2, ALBERTA

TELEPHONE ~~269-7090~~ 282-8362

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PER \_\_\_\_\_

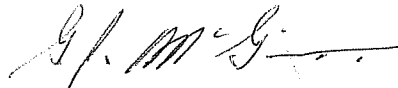
2615 - 11th Avenue N.W.,  
Calgary, Alberta,  
April 4th, 1978

Mr. W. Siroula,  
Kerr Addison Mines Ltd.,  
Suite 703,  
1112 West Pender Street,  
Vancouver, B.C.  
V6E 2S1

Dear Bill:

Enclosed please find a copy of my  
report on the Klondike district, as discussed by tele-  
phone on April 4th, 1978.

Sincerely yours,



G. J. McGinn

GJM:mm  
Encl.

A REPORT ON THE KLONDIKE  
PROSPECTING VENTURE UNDERTAKEN  
BY THE MCGINN SYNDICATE

November 18, 1977

G.J. McGinn, P.Eng.

## INTRODUCTION

The prospecting venture was undertaken in order to locate lode gold prospects in the Klondike District of the Yukon Territory. This grassroots exploration program was financed, partially by interests in the program through syndicate contracts to various financiers, and partially, by G. J. McGinn and R. Sevigny, who took the unsold portion of the syndicate financing issue as part of their remuneration for wages and equipment rental.

Exclusive of office time, financing, and reporting, the program fully occupied the writer for some 79 days.

As a result of the program, forty Quartz Claims were staked on or immediately adjacent to Eldorado Creek. In addition, one Placer Lease and one Placer Claim were staked on the upper end of Eldorado Creek.

## LOCATION AND ACCESS

The Klondike district may be reached by an all-weather road (Highway No.2) which begins at the Alcan Highway just west of Whitehorse, Y.T., and leads in a northerly direction until it joins the Klondike highway, which in turn leads in a westerly direction to Dawson City, Y.T.

Eldorado Creek lies some 25 miles south-southeast of Dawson City, and may be reached by an all-weather gravelled road leading up Bonanza Creek to the former site of the town of Grand Forks. A passable secondary road leads up Eldorado Creek to within two miles of its uppermost limits.

## TOPOGRAPHY

The Klondike region is an upland that forms part of the Yukon Plateau. The plateau has been deeply dissected by streams and rivers and has a relief of approximately 1500 feet.

The Klondike district has not been glaciated; the rocks have been deeply weathered and the surface is generally mantled by decomposed bedrock. Bedrock is exposed occasionally on ridges, and has been exposed frequently in the valleys by trenching, pitting, and placer mining.

Permafrost to various depths is common throughout the district.

## HISTORY

The Klondike district has a history dating back to the famed goldrush (stampede) of 1897-98. The reader is referred to Pierre Burton's recent book "Klondike" for background information on this momentous event.

The district developed an early and sustained reputation for being unpredictable. Eventually, it became clear that relatively few creeks (or parts of creeks) were rich, while the vast majority of the small watercourses contained little or no gold. Moreover, the pay zone of rich creeks tended to vary widely from claim to claim in both the coarseness and the quantity of gold per lineal foot of stream channel. This ore habit was noted to be in direct contrast to most gold placer deposits, which tend to be rich and coarse near the upper reaches of the pay zone and to become progressively poorer and finer downstream.

SHOWS  
LACK OF  
KNOWLEDGE

Eldorado and Bonanza Creeks have the reputation of being, mile for mile, the richest gold placer creeks ever discovered. However, accurate production statistics are not available.

Eldorado Creek gravels were originally mined by underground methods. Subsequently, the lower part of the creek was dredged, and, still later, the upper part was re-mined with earth moving equipment. Today, small operators are again re-mining portions of the creek with earth moving equipment. The creek is completely covered by placer claims,

and, in the past few years, parts of the creek have been overstaked by quartz claims. Little work and no diamond drilling has been reported on any of these quartz claims, which were, for the most part, allowed to lapse quickly. However, a recent attempt (1973) was made to churn drill the stream bed of lower Eldorado Creek ("false bedrock") and into buried placers reported on (pp. 36-37, The Western Miner & Oil Review, July 1955) by A. Baird (see Appendix I), who published a section drawn by Dr. A. T. Hayden of a shaft sunk to a depth of 221 feet in 1902 (J. B. Tyrell, Eng. & Min. J., 75, (5), Jan. p. 188). The section shows two more gravel pay zones below the "false bedrock". According to Baird, the shaft struck artesian water at 221 feet and was lost due to flooding. In the recent work (1974), three churn drill holes were drilled by W. Janner (pers. com.). The first hole was lost at 23 feet, the second at 65 feet, and the third at 41 feet. He states that the second hole stuck in wood at 65 feet (some 50 feet below "bedrock"), and, upon loosening the tool, pieces of wood floated to the surface. Janner considered that churn drilling was not practical for this drilling because surface water tended to flow down the outside of the well casing and flood the drill hole, and thus eliminate meaningful sampling via bailing. He suggested that future trials should employ a rotary drill.

#### BEDROCK GEOLOGY

The Klondike gold fields are underlain in part by the Nasina Series and in part by the Klondike Series.

The Nasina Series consists of a structurally complex meta-sedimentary series consisting of dark grey rocks that grade from quartzites through micaceous quartzites to quartz mica schist. Occasionally, these rocks are intermingled with green chlorite schists, locally graphitic, and bands of crystalline limestones, phyllite, and shale.

The Klondike meta-sedimentary Series consists principally of schists ranging from white to light grey and green; where chloritic they are medium to dark green. The Series is described as sericite schist, but all gradations exist from hard flaggy, quartzitic varieties to very soft, strongly sheared, sericitic types. ? NO

Both the Masina Series and the Klondike Series are cut by numerous barren quartz veins. Both Series have been repeatedly intruded by large masses of foliated granite.

Here and there, tertiary sediments composed of shale, arkose, sandstone, tuffaceous sandstone and agglomerates to conglomerates overlie the sandstone.

Other rocks in the area include diabase dikes and occasional serpentized ultrabasic rocks.

Placer gold deposits have been found in streams underlain by both the Masina and the Klondike Series.

*Yukon placers are extensively reworked so source*  
STRUCTURAL GEOLOGY *are not necessarily directly related to economic deposits*

The Tintina Trench is the topographic expression of a huge dextral northwest trending fault with a net horizontal throw of some 250 miles. The movement commenced in Paleozoic time and continued into tertiary time with some 32 miles of throw during that era.

In the district southwest of the Trench there are numerous major faults and structurally controlled lineaments (see fig.1, courtesy of M. W. Milner, 1975) striking sub-parallel to parallel to the Tintina Trench. The writer was able to check a number of Milner's lineaments, as well as a number of other apparent lineaments. Evidence in the form of fracturing, brecciation and fault gouge indicated that these were also faults. These structures have traceable strike lengths of from five to fifty miles.

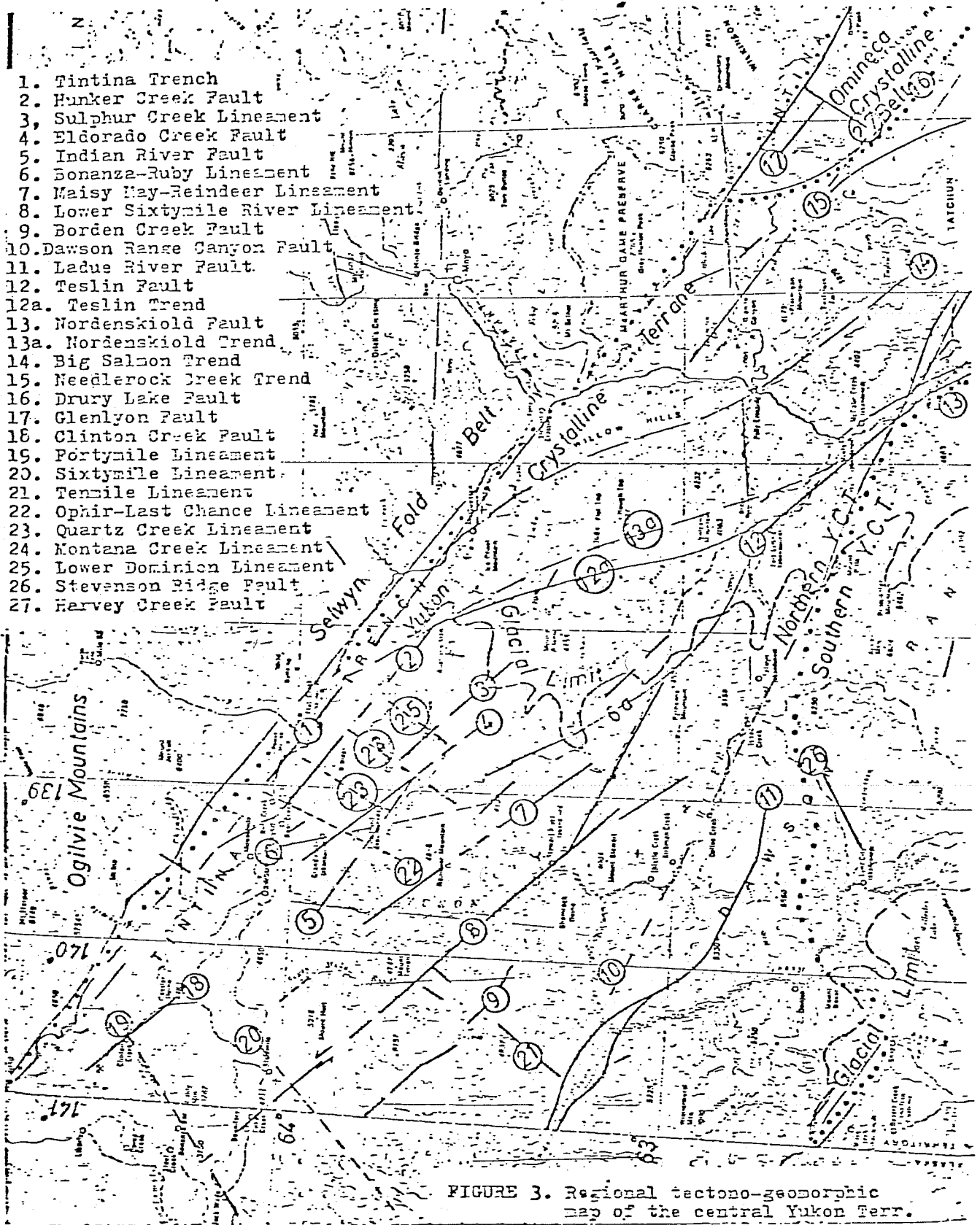


Figure 1.  
 Courtesy M.W. Milner

Not all of the northwestern trending structures are known to have developed profitable gold placer deposits, but the converse is true. All of the really profitable creeks either; a) Follow a fault for part or all of their course, or; b) Are profitable below the point at which they cross such a structure. These include the following;

- 1) Eldorado Creek with its coincident Eldorado Creek Fault underlying the most prolific claims.
- 2) Hunker Creek with its Hunker Creek Fault.
- 3) Sulphur Creek with its Sulphur Creek lineament.
- 4) Upper Dominion Creek with its northwestern linearity throughout its productive zone.
- 5) Bonanza Creek with its Bonanza Creek lineament on lower Bonanza and the Victoria Gulch shear zone crossing upper Bonanza at McKay Gulch.
- 6) Adams Creek crossing the Eldorado Creek fault.
- 7) All Gold Creek crossing the Hunker Creek fault.
- 8) Quartz Creek crossing the Eldorado Creek fault extension.
- 9) Henderson Creek crossing the huge Maisy May - Reindeer Creek lineament.
- 10) Miller, Glacier and Little Gold Creeks on line with the lengthy Lower Sixty Mile River Fault.
- 11) Bear Creek with its own short lineament and accompanying breccia and gouge.
- 12) Clear Creek with its 5 miles lineament which is proving so productive in recent years.
- 13) Gold Run Creek with its northwest lineament.
- 14) Indian River with its Indian River Fault.

Many more minor placer showings could be explained if one takes into account that all of the major structures are almost certainly accompanied by minor parallel faults, cross faults, and fracture and joint systems.

It appears extremely likely that this system of faults has acted as mineralizing hydrothermal plumbing system for the whole district.

??  
WHY

It has long been known (McConnell, 1903) that a section of the Klondike River and the area immediately south of it, including Bonanza Creek and Lower Hunker Creek, was "uplifted" some 50,000 years ago. This "uplift" caused rapid downcutting of the respective stream channels and resulted in isolating parts of the old stream channel (the famous White Channel) as benches as high as 150' - 300' above the present channel. A new structural interpretation was made possible when Gleeson (1970, P.9) reported a thrust fault on the left limit (Adams Hill) of Bonanza Creek striking N 35 E and dipping 20° northwest with 30' to 40' of movement, and a similar thrust fault on the left limit (Paradise Hill) of Hunker Creek. This new information was augmented by Milner (1975, P.13) when he reported on a series of narrow bands of Nasina Series phyllite in Klondike schists on lower Bonanza Creek, which he suggests are "fault slices". Since thrust faults are normally repetitive, it would appear that the explanation of the local "uplift" is that it was due to crustal thickening as a result of repeated thrust faulting.

If the above conclusion is correct, then it would indicate that since thrust faulting caused the rapid elevation of the White Channel and subsequent rapid downcutting in lower Bonanza Creek, immediately above the last of the elevated bench gravels and above the zone of thrust faulting (i.e. in lower Eldorado Creek), there should have been a period of infilling while a deeper channel was being cut in Bonanza Creek. Using this concept as a working model, it would not be surprising if the 1902 shaft (Baird 1955) sunk in this locale did indeed intersect buried placers as reported by Dr. Hayden (see Appendix I). AFTER ?

#### PLACER GOLD SOURCE

The source of Klondike placer gold has remained undiscovered despite persistent exploration efforts

over the past 80 years. Most attempts to find lode gold, over the years, have been to look for mineralized quartz veins. The reason for this is obvious, because many of the creeks carry an abundance of vuggy, coarsely crystalline, fractured and often iron stained quartz sand, quartz pebbles, and quartz boulders. 20% to 30% of the Eldorado gravel is quartz. The percentage is higher in Bonanza Creek, where it probably averages 30% to 40% and increases locally to as high as 80% to 90%. There are, however, several objections to assuming that the placer gold was derived from quartz. These are as follows;

*very high Qtz in "white pay zone" on Bonanza*

1) The quantity of quartz in a given stream seems to bear no relationship to the amount of gold in that stream. As an example, Quartz Creek, as the name implies, has an immense amount of alluvial quartz in its valley. Estimates could go as high as hundreds of millions of tons, yet the gravels of this stream were very poor in gold above the point where it crossed the extension of the Eldorado Creek fault. On the other hand, Clear Creek, with considerably less than 1% quartz in its gravels, was a rich creek.

2) It is virtually impossible to find visible free gold in creek boulders. The writer personally broke thousands of such boulders during the field season and examined all of them with a lens, and many were re-examined with a microscope, without finding so much as a fleck of free gold. Moreover, in checking with a number of miners in the district, this absence of gold in quartz boulders is apparently universal.

3) The record for quartz veins is scarcely better. While occasional individual assays have been obtained from district veins, it is seemingly never possible to repeat such assays with check samples, and this suggests assaying errors, sample contamination (from eluvial or alluvial gold), or both.

*promise is not correct*  
If, as indicated above, the placer gold is not directly related to quartz, and is related to the district fault structures, exactly what does one look for when seeking

*on the other hand many nuggets are composed of Au + quartz!! He admits this on page 8*

lode gold? To answer this question, the author began a lengthy study of placer gold itself. Using a Leitz 200X stereoscopic microscope, a considerable number of nuggets, as well as coarse gold and fine gold from various creeks, were examined. Further information was obtained from published literature.

The most common form of nugget is an irregular shape, sometimes travel worn, showing rounded protuberances similar to botryoidal structure. Practically all nuggets carry a nucleous or nuclei of alien material within them. Materials observed include quartz, goethite, limonite, black chert, rose quartz, and mica schist. In addition, nuggets were examined in which the nucleous was an unconsolidated blue mud, thought to be fault gouge. More rarely, octahedral crystals of gold have been reported (P. Monfette, 1977; D. Johnson, 1975), and, still more rarely, wire gold has been reported. Occasionally, all of these types may be stained, and, in some cases, heavily encrusted with limonite. Nuggets from Clear Creek, where quartz is scarce, tend to be pancake shaped and to have nuclei composed of schist. In most creeks, the nuclei of nuggets is predominantly quartz. In a few cases, the form of the quartz nucleous is angular or (more frequently) subangular. In some nuggets the nucleous is a rounded pebble, or, even more distinctively, several rounded pebbles held together by gold.

A second important type of particles is in the form of flakes, having a diameter to thickness ratio of approximately 10:1. They do not have a nucleous, and are seldom larger than 3/8" in diameter, although occasionally much larger. The surface of these particles is occasionally laminated and often hackly, and does not suggest that the particles acquired their shape by hammering.

The coarse fraction (2 - 5mm) of concentrates carries both flakes and nuggets in a recognizable form. The

fine fraction (-2mm) contains 10% - 30% of recognizable particles, with the remainder being detrital particles. The relative proportions of the two types of particles tend to vary from one creek to another. Dominion Creek gold is principally flakes, while other creeks tend to produce principally nugget forms.

The fineness ratio ( $\frac{Au}{Au + Ag}$ ) of Klondike placer gold is fairly uniform and varies from 0.7 to 0.85. In a given creek this variation is much less, and is generally within  $\pm 3\%$  of the mean average.

Nuggets carrying detrital sand particles, as well as those carrying rounded pebbles, have caused many workers to suggest that nugget growth must have occurred in the streams, and they suggested that small gold particles had agglomerated in the gravels. Others pointed to delicate wire gold samples and octahedral crystal forms as proof that nuggets were the result of chemical solutional deposition. Recently, Mustart (1965) and Milner (1975) have shown that nuggets, when examined in polished section, have an internal crystalline structure which is continuous to the weathered margins, thus proving that ordinary nuggets are the result of chemical deposition. This evidence appears to be irrefutable, and may be extended to the smaller particles and flakes, since a common fineness ratio in any given locale almost rules out more than one population of gold particles, despite their diversity of form. Moreover, there is evidence that flakes are the result of the chemical deposition of gold in schist. Gleeson (1970, P.50) reported that gold from Victoria Gulch shear zone is "fine grained, yellow, flaky and commonly occurs attached to or intergrown with the sericite grains". Similarly, Eldorado Creek miners E. Gilmer and E. Vandehey reported that although Eldorado gravels tend to yield nugget type particles, ripping and sluicing schist bedrock yielded flake type particles. Here, as elsewhere, gold yields from bedrock ripping ceased after the first few feet had been removed. *Weathered BED ROCK ACTED AS*

*WHY?*

*A RIFFLE!!*

?

The writer regards it to be a proven fact that there is one population of placer gold particles in any given creek and that these particles were originally deposited by chemical solutional means. However, the writer most emphatically disagrees with those workers who have concluded that this proves that the gold particles are primary gold particles that have been released from primary hydrothermal gold deposits by the physical erosion of such deposits. It has long been known that bio-chemical weathering processes can generate solutions capable of leaching ore minerals from a weathered zone and of transporting and redepositing them in a secondary enrichment zone, although usually in a different mineralogical form. This process is believed to occur as a result of the consumption of sulphides by anerobic sulphur oxidizing bacteria in which iron oxides (commonly associated with gold in all of the placer creeks) and sulphuric acid are produced. The acid combines with ground water and dissolves the minerals. Ordinarily, these waters descend until they encounter the water table, where precipitation of the metallic ions occurs. However, in the pre-glacial tropical conditions known to have existed in the Klondike district, it appears likely that leaching water weathering a fault zone at high altitude would, in all probability, flow through the sometimes permeable fault zones and re-emerge as springs (pingos) in the fault controlled creeks. Such artesian spring waters would probably drop their metallic ion load in the gravels and the bedrocks of the creeks as a result of surface water dilution, just as they do in secondary enrichment zones when encountering the water table. The writer believes that this is exactly what happened and that the placer deposits are, accordingly, secondary deposits. This interpretation not only explains all of the known facts, it also explains why the decades of searching for coarse free gold deposits in this district have been so completely fruitless. Primary free gold quite possibly does not exist in this district. From a chemical point of view, it appears more likely that the primary gold would

be a constituent either of sulphide or telluride compounds or both.

During the field season, almost every rock type in Eldorado Creek valley was repeatedly assayed in an attempt to find unweathered primary ore, with negative results. Many hundreds more were examined by microscope with similar results. Particular emphasis was placed on sulphide bearing samples, but, aside from some sedimentary pyrite, the bulk of the iron sulphide samples from within the fault zone were found to be marcasite. Since, according to Dana, this variety is only formed under cold water acid conditions, it tended to reinforce the conviction that the placer gold is secondary.

*Prior work confirms little or low Au in Yukon Schist*  
CONCLUSIONS *the more likely inference is that Au origin was from overlying R.*

- Bull
1. The writer concluded that the Klondike district gold in general and Eldorado Creek gold in particular was originally introduced into the district by a system of northwest trending faults by hydrothermal processes.
  2. Gold was leached from the faults and associated fractures and subsequently redeposited in the gravels and bedrocks of the creeks as secondary placer gold.
  3. There should be primary lode gold deposits in the fault zones below the weathered zone (i.e. at 200 feet or more below the surface).
  4. There are probably buried gold placers underlying lower Eldorado Creek.

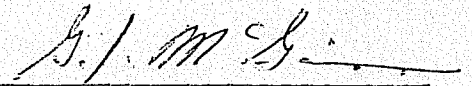
#### RECOMMENDATIONS

It is recommended;

- 1) That a baseline and crosslines be cut and surveyed at 400 foot intervals on all quartz claims;
- 2) That the grid be surveyed using 1000-5000 cycle vertical-loop McPhar electromagnetic equipment;
- 3) That a contract for 3000 feet of BQ diamond drilling be

let to drill a series of holes through the Eldorado fault below the weathered zone;

- 4) That a contract should be let for 800 feet of rotary tricone drilling to explore for buried placers on lower Eldorado Creek;
- 5) That further deep pitting should be done on the placer lease;
- 6) That the sum of \$130,000.00 should be provided for this work.



---

G. J. McGinn;  
Prof. Eng.

REFERENCES

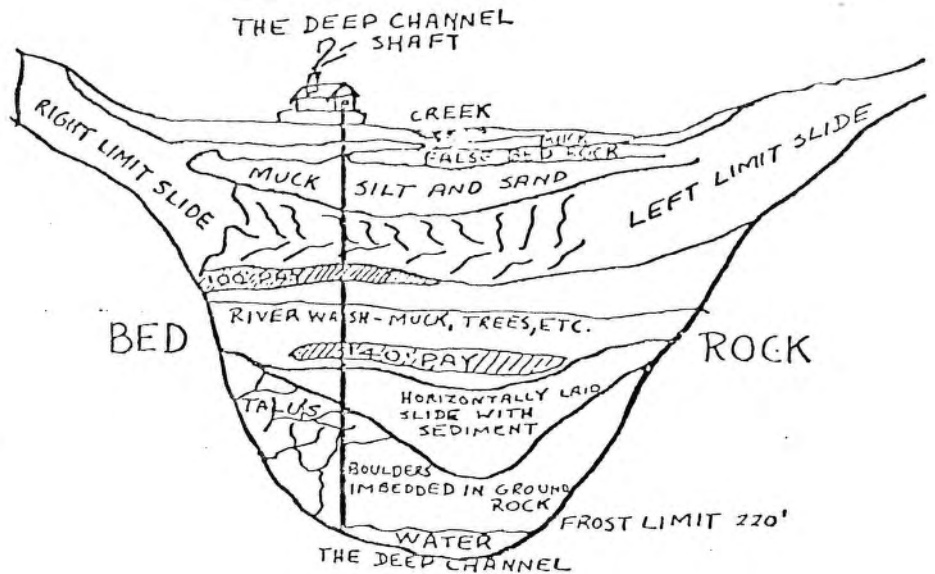
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APPENDIX I



# The Yukon

Looking up Eldorado Creek where the shaft was put down on 3A claim.



blasted. The character of the different formations is systematically reproduced on the accompanying chart and with his notes make an impressive exhibit. Unfortunately an unmanageable flow of water was struck at a depth of 220 feet and the only result of the hard work of the two prospectors is the interesting record which Dr. Hayden fortunately preserved.

The flow of water was so great that inhabitants of Grand Forks, at the junction of Eldorado and Bonanza, feared that a glacier might form during the winter which would completely engulf the entire town site. In consequence the Government of the Yukon Territory had the shaft capped at an expense approximating \$6,000. D. A. Mathieson was in charge of the crew which did the capping.

Dr. Hayden appeared to have implicit faith in a doodlebug which he used to locate the points where he searched for a submerged channel of gold-bearing gravel. His second attempt was on Sulphur Creek where he worked alone sinking a deep shaft until the funds which he could persuade his associates to furnish for the necessary powder and provisions were exhausted. At that point he struck neither a second channel of gravel nor water.

His third attempt was on a creek on the left limit of the Yukon some distance below Dawson. This venture, which was financed by a new group of associates, was also a failure.

Although he was a strong man and capable workman he had several idiosyncrasies. For years he never trimmed his hair nor beard. He occasionally told the story of Samson who lost his strength and his unusual endowments, when his hair and beard were trimmed. Although he was an almost tireless walker when

on a journey he invariably carried a staff in the manner of the patriarchs of old.

Among his many and varied capabilities was an uncommon endowment which enabled him to relieve those who were suffering intense pain. While he was working on Sulphur Creek my daughter when about a month old had for a time a severe attack of colic about 8 p.m. each evening. The pain was so great that she would gather herself in a knot and scream. My wife and I were helpless. Nothing we could do would bring relief. Dr. Hayden heard of our trouble and one evening, when I was walking the floor with the child in my arms, he came. The door was open and he heard her screams. He walked in and without saying a word

took her from me, balanced her small body on the palm of his hand and walked around humming a tune. In a few minutes she was asleep and slept peacefully until morning. For two weeks, the duration of the trouble, he came every evening and never failed to relieve the pain and put her to sleep.

His work was eight miles from our operation and he walked sixteen miles every evening to relieve suffering which he alone of all the people on the creek had the power to alleviate.

That is only one of his many acts of helpfulness and we who reaped the benefit from his unusual power think of him in the role of the Good Samaritan rather than that of a prospector searching for a submerged channel of gold-bearing gravel.

## Alcan Plant Expansion

THE largest single expansion of primary aluminum capacity in the world is under way in Canada, Nathanael V. Davis, president of Aluminium Limited, parent company of the Aluminium Company of Canada, Limited, testified on May 19th.

Mr. Davis made the statement in testimony prepared for delivery before a United States House of Representatives small business sub-committee investigating the aluminum supply situation.

The present capacity of the new aluminum smelter at Kitimat, British Columbia which went into operation last August, is 91,500 tons. An expansion programme now underway there and expected to be completed in 1959 will bring Kitimat capacity to 330,000 tons, Mr. Davis said.

Eventually Aluminium Limited con-

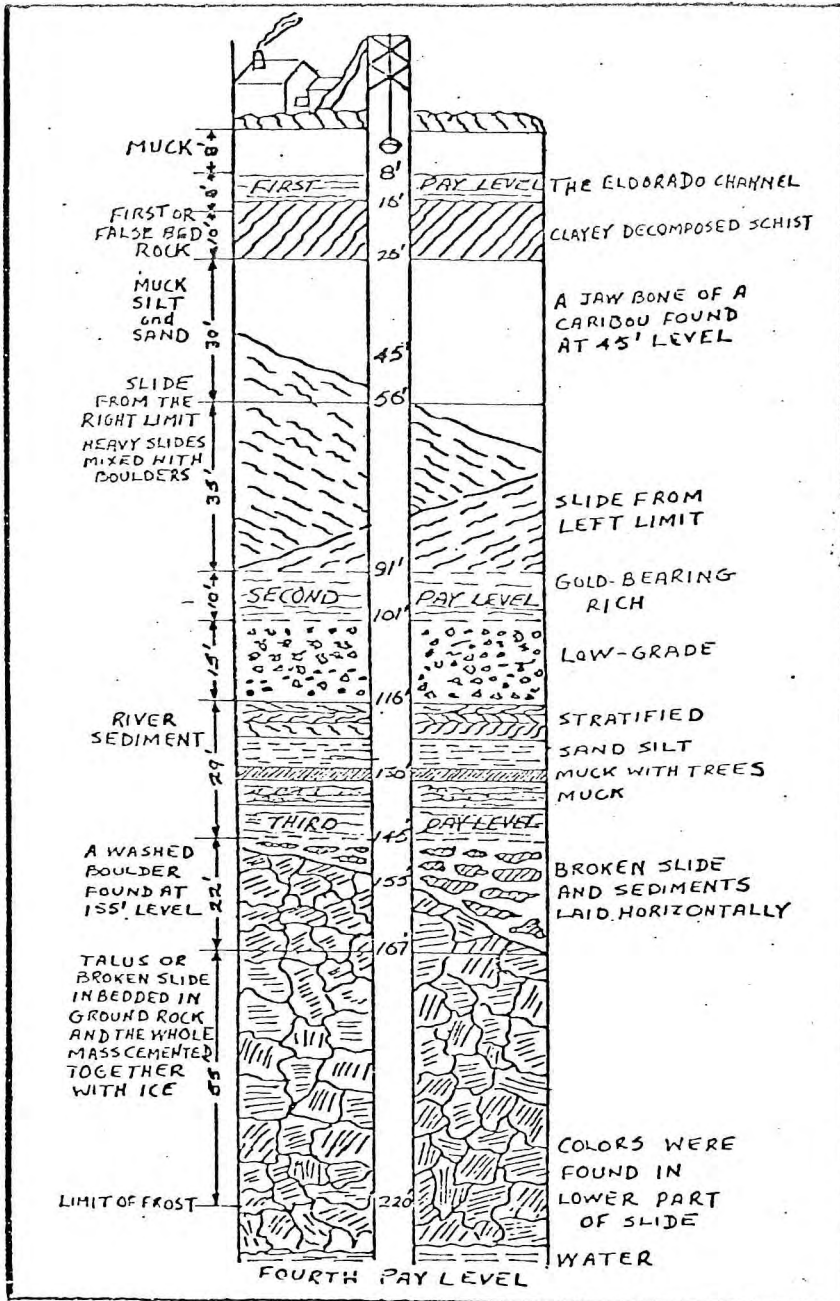
templates expanding Kitimat to 550,000 tons of annual capacity, which is expected to make it the largest aluminum smelter in the world. Mr. Davis noted that the number of independent United States fabricators — those with no smelting facilities of their own — who buy aluminum from Canada, has risen from seven in 1946 to more than one hundred today. Aluminum Limited in 1953 voluntarily began to set aside 110,000 tons of primary metal a year for these fabricators.

Mr. Davis said that aluminum production based on "abundant low cost hydro-electric power, such as is available in Canada, offers the best opportunity for holding the line against increases in aluminum prices which would work to the detriment of all aluminum fabricators large and small."

# Search for a Submerged Channel

By A. BAIRD

CHIEF ACCOUNTANT, THE YUKON CONSOLIDATED GOLD CORP. LTD.



Cross-section of the ground below Eldorado Creek showing the different formations through which Dr. Hayden's shaft was sunk.

**A**N interesting episode in the history of placer mining in the Dawson area was the sinking of a deep shaft on Claim No. 3A on Eldorado Creek. The project was inspired by Dr. Asa Thurston Hayden, who had in former years been a professor in the University of Hawaii. He had as a partner a Mr. Thompson, commonly called "Deephole Thompson." Dr. Hayden, in the course of his studies in geology, had learned of the immensely rich deposits of placer gravel in the Clunes and Allendale districts in the State of Victoria, Australia, lying beneath a stratum of basalt varying in depth from two to five hundred feet.

Substantial profits were made from mining these. One company, the "Madam Berry" named for the wife of a premier of the State, with a capital expenditure of 15,875 pounds sterling, disbursed in dividends 885,450 pounds sterling. The major difficulty was the immense flow of water which had to be discharged from the mines, and pumps in those days weren't nearly as efficient as they are today. In the same area there were rich deposits of gravel at a depth varying from twenty to thirty feet, second only in their gold content to the famous gravels at Ballarat and Bendigo.

Dr. Hayden often spoke of these rich deposits of placer gravel lying on what he called a second bedrock and was obsessed with the idea that similar conditions might exist in the Klondike district. He chose No. 3A on Eldorado Creek as the scene of his first experiment because it was the centre of one of our rich placer areas.

He was a highly educated and capable man, well versed in geology and he kept a careful record of the different strata through which the shaft was