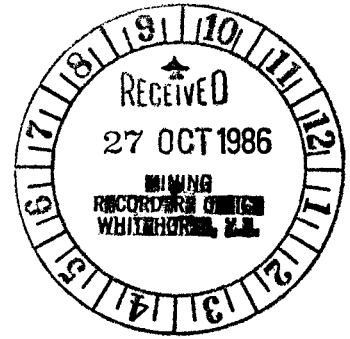


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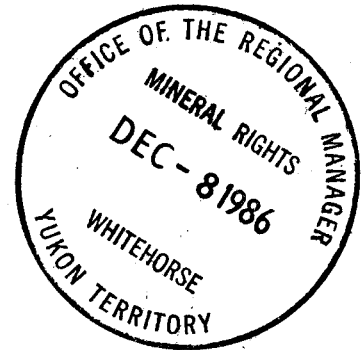
REPORT



ON

JOAN PLACER CLAIMS

1-21 GRANT NO'S 38421-38441 INCL.



TO

DUANE PFAFF

BY

L.J. SIEGA P. GEOL.

DATES: JULY 24 - AUG. 5, 1986

PLACER SHEET NO. 115-G-6

LOCATION: 188 miles N.W. of Whitehorse, along the Alaska Highway to M.P. 1104, thence 7 miles S.W. along Burwash Creek.

LATITUDE 61° 22'

LONGITUDE 122° 20'

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## SUMMARY

During the period 1949-1969 Burwash Creek in the Kluane District, Yukon Territory had a reported production of 25,212 oz. (crude 87%). All of the production to date may not have been recorded. Sporadic successes and failures have continued to this day.

The main channel of the Joan claims (11-21) contain upwards of one million cubic yards of easily accessible auriferous gravels. The writers data indicates that the volumes in free gold from sluiced stream gravels will be in the range of:

0.58 GRAMS/YD<sup>3</sup>

OR

0.0187 OZ/YD<sup>3</sup>

10.47/YD<sup>3</sup> OR 9.11/YD<sup>3</sup> (INCLUDE CRUDE DISCOUNT)

Note: Au. @ \$560.00/OZ.

The calculated cost of processing one yd.<sup>3</sup> is \$3.60 using contracted rental rates. At a net of (\$9.11 - \$3.60) \$5.51 per YD.<sup>3</sup> processing 2000. YD<sup>3</sup> per day strongly suggest a viable operation.

Although most of the recorded testing was completed on the lower portion of the claims, there are no significant physiographic features that suggests lower auriferous concentrations elsewhere. On a seasonal schedule of some 150-200,000 yds.<sup>3</sup> the property will sustain this type of operation upwards of 5 years.

## INTRODUCTION

The Kluane Lake map area is in the mountains of the southwest Yukon. Around the turn of the century (1903) the Jacquot brothers discovered gold on Burwash Creek. The area attracted the interest of placer miners many of whom passed through on their way to Alaska. The better access provided by the Alaska Highway enhanced activity by prospectors and mining companies. In 1945 the Burwash Mining Co. Ltd. (Henry Besner) mined from the lower canyon to the mouth of the Tatamagouche or 500' below the Joan No. 1 (1973). Total production from 1948 to 1960 inclusive was nearly 10,700 ounces of gold or an average of 823 ounces per year. The concentrates included coarse and fine gold as well as small amounts of platinum, native silver and native copper. Since then sproadic successes and failures have continued to the present day.

In June of '86 the writer contracted to complete certain assessment work and a report on the Joan claims (1-21) or Grant Numbers 38421 to 38441 inclusive for the present owner Duane Pfaff. At the end of the 1985 season sluicing ended approximately 300' north of the No. 1 Post on Claim No. 11. For the record, a serious effort was made to locate the posts but none were located and using Placer Claims Map 115-G-6 the approximate location of all the claims was flagged. Subsequent trenching, pits, sampling and assessment work was completed and filed. No reliable records of the 1985 seasons work was available.

Other than panning selective areas, most of the sampling consisted of running selective measured quantities, from pits and trenches, through the Flying Dutchman concentrator. A recent mining graduate and 2nd year student were employed for two weeks processing samples.

The writer has worked on Burwash Creek in 1973 to 1975 and '85 and '86. The following data is from published and unpublished reports, personal data and observations.

#### PROPERTY, LOCATION, ACCESS

The property consists of twenty-one (21) placer claims (Joan 1-21 incl.) on Burwash Creek seven miles southwest off the Alaska Highway or 188 miles northwest of Whitehorse. From M.P. 1104 access to the property is along a rough rocky trail parallel to Burwash Creek. See Figure I. The claims were staked along the central portion of Burwash Creek (valley distance-18 miles) at an average elevation of 4500 feet. Burwash Creek is a typical swift mountain stream with an extremely variable seasonable flow and in time of high water becomes a dangerous torrent. In general, the forest cover is light (mostly scrub brush) with an upper limit at about 4700

feet. Permafrost does occur close to the surface and stripping of scrub brush is not a problem. Normally, this is usually completed early in the season to allow for thawing during the warmer summer months.

The nearest comfortable roadhouse with outside communications is located at Burwash Landing (M.P. 1093) at Kluane Lake. With regard to operational emergencies, an 8000 foot air strip is located two miles north of the Burwash Lodge and pontoon aircraft are able to land on Kluane Lake.

#### PHYSIOGRAPHY AND GENERAL GEOLOGY

The Kluane Lake map area contains two major physiographic divisions. These include the Yukon Plateau to the N.E., and the St. Elias Mountains to the S.W. separated by the Shawkak Trench. Kluane Lake (El. 2575) is the lowest feature of the trench separation.

The information on the glacial history of this area has been compiled by assuming three progressively less extensive ice-sheets. (J.E. Muller, Memoir 340, 1967 (See Photo). The Nisling (oldest) and Ruby ice sheets advanced N.W. across the Burwash area whereas the St. Elias was restricted to the headwaters of Burwash Creek. Locally, a distinct physiographic feature of the Nisling advance is the glacial upland tract along the

extreme edge of the central (present mining area) portion or southern edge of the Burwash Valley. At the upper end of Burwash creek, within two miles of the glacier, some very large erratics - 10' x 12', coarse grained granitic boulders and pillow lavas, may be evidence of the Elias advance.

In the immediate area known mineral deposits include placer gold, copper nickel-platinum sulphides, (Quill Creek-Hudson Bay Mining) and two coal outcrops. The writer has examined the low grade scattered copper nickel sulphides associated with ultra-basic intrusives near the mouth of Tatamagouche Creek, and seen the narrow bony 4-1/2' irregular coal outcrop immediately below the upper Burwash Canyon. In this regard, additional coal (reported-Sub Bituminous C) exposures on Amphitheatre Mountain were not examined.



## BURWASH CREEK

Burwash Creek is a glacial stream with headwaters in the Burwash Glacier. The stream flows through a wide open valley in the upper portions and from below the upper canyon, forms a deep V shaped valley. (present mining area). Here, the creek flows across a plain of the front range and is bounded on the north by steep rocky (to 1000') cliffs of the Elias Range, whereas the southern edge is a distinct smooth glacial remanent of the Nisling advance. (E1. 4500').

In the immediate claims area boulders, gravel, sand silt and clays bands (8"-16") in total range from 20' at the lower end of the claims to 38' near the campsite or No. 11 claim. The stream has exposed sedimentary and more commonly blocky igneous, basic to semi-basic rocks throughout the claims area. These include shales, argillite, schists, conglomerate, gabbro, peridotite and rhyolite. Many of these beds are fragmented, sharply folded and overturned. Particularly in the upper portion of the claims (10-21) it is interesting to note that in the process of deepening this ever shifting channel, the stream in most places has shifted to the north side of the valley. At the present time the south side exposes an intermittent series of (low rock bluffs) elevated old stream channels

varying in height from 10' to 30'. Neither the values nor the amount of glacial covered material associated with these benches is considered significant relative to the material in the main channel. Fine gold has been recovered from these benches.

In general, over the past 13 years intermittent sluicing has progressed from the Joan I to Joan II. No serious mining has disturbed the ground Joan II to to 21. Here, the stream gravels are generally free from brush and varies in width between 180 and 250 feet. The gradient of the stream in this area is approximately 125 feet per mile and water in the by-pass channel is estimated at 24,000 gals/minute.

#### HISTORY - STATISTICAL PRODUCTION

Mining activities on Burwash Creek date back to 1904 and evidence of sniping operations (hand piled stones) on the south bank of the Joan claims is quite clear. Similar sporadic attempts continued until 1945

when the Burwash Mining Co. successfully mined from the lower canyon past the mouth of the Tatamagouche (3-1/2 mi.). The recorded production is as follows:

<u>PERIOD</u>	<u>VOLUME YDS.</u>	<u>CRUDE 87% Au.</u>
1945 - 1959 incl.		approx. 17,000
1960 - June 9 - Oct. 10 2 Shifts	70,000	1,430
1961 - June 4 - Oct. 5	78,000	1,500
1962 - June 21 - Oct. 22	60,000	1,637
1963 - June 6 - Oct. 10	50,000	1,060
1964 - ? ?	?	946
1965 - ? ?	50,000	695
1966 - ? late Sept.	?	695
1967 - ? ?	?	325
1968 - ? ?		342
1969 - ? ?	?	800

\*Note: This production is taken from 500' past the junction of Burwash Creek and Tatamagouche Creek.

The production statistics quoted here are those only of the Burwash Mining Co. Ltd. as recorded in G.S.C. memoirs. The words "approximate and about" are quoted in all the references in regards to volume and crude ozs. respectively.

A. Production and values from references quoted:

Note: Using gold at \$560.00/oz. Crude discount not taken into account since the producers may enjoy higher prices.

<u>PERIOD</u>	<u>VOLUME YDS.</u>	<u>Au. OZ'S CRUDE 87%</u>	<u>Au/OZ CU.YD</u>	<u>\$VALUE/ CU.YD</u>
1960	70,000	1,430	0.0204	\$11.20
1961	78,000	1,500	0.0192	10.66
1962	60,000	1,637	0.0272	15.10
1963	50,000	1,060	0.0212	11.78
1965	50,000	695	0.0139	7.84
1967	42,000	325	0.0077	4.32

Average yearly production = 58,333 cu. yds.-say-60,000.

The weighted average of 350,000 yds. is:

0.0190 oz/cu.yd.or \$10.66/cu.yd.

Note: 15 oz. Pt. was reported in 1963.

B. Using the total reported gold production for the years 1945 - 1959 incl., 1964, 1968 - '69 incl. and introducing an average yearly production of 60,000 cu. yds/yr. from (A) above:

The average values on a production of 1,080,000 cu. yds. would be as follows. (TOTAL VALUE)

<u>VOLUME</u> <u>CU.YDS.</u>	<u>Total Au.</u> <u>CRUDE OZ.</u>	<u>Au.OZ/</u> <u>CU.YD.</u>	<u>VALUE/</u> <u>CU.YD.</u>
1,080,000	19,783	0.0180	\$10.08

Note: The writer was in Burwash in 1973 when Besner (Burwash Mining Co. Ltd.) was operating and is acquainted with the productive and excavating capacity of his machines (3/4 YD<sup>3</sup>-22B and 2 old D8'S)

#### SAMPLING DATA

Four pits, one connected drain, and two benches were excavated as noted in the sampling data. In total, approximately 7,280 yards were removed with

the 40H and the D'8. Selected samples were extracted and processed through the Flying Dutchman.

<u>SAMPLE NO.</u>	<u>CLAIM NO.</u>	<u>PIT NO.</u>	<u>DESCRIPTION &amp; VOLUME, YDS.<sup>3</sup></u>	<u>Au./87% MILLIGRAMS/YD<sup>3</sup></u>	<u>VALUE/ CU.YD</u>
4-39	11	1	@ 8', 0.5	181	\$ 3.26*
4-17	11	1	@36', 0.33	1086	\$19.55
1-J	11	1	@ 5', 0.5	165	\$ 2.97*
1-H	12	2	@ 8', 1.0	196	\$ 3.52*
1P0	12	2	@14', 1.0	362	\$ 6.52
1-A	12	2	@34', 0.5	724	\$13.03
1I	12	2	@36', 0.5	740	\$13.32
1TPD	11	1	@35', 1.0	543	\$ 9.77
PD8C	8	On Bedrock, Mined OUT area, .16		2172	\$39.10*
1-K	12	2	@16', 0.5	271	\$ 4.87
PD9	14	3	@ 9', 1.0	346	\$ 6.23
P3CR	16	Bench	Bedrock 5', 1.0	161	\$ 2.89*
5A	18	4	Bench Bedrock 4',1.0	110	\$ 1.98*

Note: The value/cu.yd is calculated using a gold price of \$560.00/oz.  
Crude discount has not been included here.

Heavy minerals in the concentrate include magnetite with minor amounts of native copper, hematite, garnets and galena. No platinum was recovered.

\* Values and samples not included in calculating a reasonable dollars value of the auriferous gravels.

## DISCUSSIONS

The sampling data indicates low values on gravels near the surface and on remanent benches of the south shore. Where mining ceased in 1985 (CLAIM NO. 11.) bedrock is at 38' and between claims 11 to 14 will probably vary between 34 and 38 feet. The drain must be established (500' of trenching) where the deepest channel hugs the north bank and will probably continue as such through Claims 11 to 14. Lower mangetometer readings though not definitive support this contention.

In order to calculate a dollar value per yd.<sup>3</sup>, the writer has elected to discard all values followed the asterisk (\*) as noted in the sampling data. Most of these lower values will be excluded by the recommended surface stripping. Alternately, as for the bedrock sample PD8C taken on grey fine grained iron stained porphrite rhyolite which was logged at \$39.10 per yd.<sup>3</sup>, it is felt that it is an anomolus reading which more probably indicates that there are areas of high auriferous concentrations. In this respect the writer has a photo of two nuggets (16-1/2 oz. and 9-1/2 oz.) which were recovered by Burwash Mining.

The calculated dollar value of mineable auriferous gravels to be sluiced will be in the order of \$10.47 per yd<sup>3</sup> or \$9.11 per yd<sup>3</sup> taking into account the crude discount. Between claims 11 to 21 there is no apparent physiographic feature which may dramatically alter the said values.

At this time it should be noted that some 60 to 70% of the recovered gold will range from 1 to 10 milligrams in weight and include flour gold from 1/100" to 6/100". Coarse gold in the range of 100 to 200 milligrams will amount to between 20 and 40% of the total recovered. This necessitates prudent care and judgement in so far as sluicing equipment, clean-ups and operational expertise is concerned.

Whereas the creek bed varies between 180 and 250 feet in width, sluicing of the main channel will most probably be in the order of 80 to 100 feet with an average depth of 25 feet. Between 10 and 12 feet of surface gravels will be stripped and pushed to the south shore. A conservative estimate of mineable reserves on the said claims Joan 11 to 21 would be 1,000,000 yd<sup>3</sup>. These reserves will support a viable operation for at least 5 years and more probably 8 years considering the fact that it has taken 13 years to mine from the Joan 1 to 11.



## RECOMMENDATIONS

Notwithstanding the projections of the Aden Gold Study, both the historical and recent data warrants a viable mining operation. At the present time a comfortable 20 man camp (complete with showers cookhouse and dining area) is established on site. The Bucyrus 40H, S/N.135268 needs a thorough complete qualified servicing, repairs to the undercarriage, (drivers and idlers) and repacking of all boom cylinders. (Wilmac-quoted est. \$25,000.00) The D'8 S/N 46A3673 must be replaced with a newer model and a 980 loader as a back-up. The Ross box below camp can be repaired and there is sufficient material on site to complete a new grizzly. The writer does not recommend the use of the floating sluice presently on site. Some 500' of 16" galvanized pipe (on site) can be used to supply water. Two 4 x 4's and a 3 ton flat deck with cherry-picker, welder and 500 gal. fuel tank with pump are required. Since capital costs and repairs of the suggested requirements vary dramatically with the condition and purchasing opportunities, these costs are not included in the production costs.

However, new or near new cost estimates of the said equipment would be in the order of:

D'8K	-	\$275,000.00
235 Backhoe (2 YD) <sup>3</sup>	-	300,000.00
980 Loader (5 YD) <sup>3</sup>	-	275,000.00
2 (4 x 4's)	-	40,000.00
3 ton Flat Deck & Welder tank and pump	-	<u>50,000.00</u>
		<u>\$940,000.00</u>

It is conceivable that with the present economic situation (surplus equipment) reliable used equipment could probably be purchased for one-half the quoted estimate.

In regards to production costs where applicable the writer has elected to use heavy equipment rental rates. The recommended equipment is capable of processing 200 cu.yds/hr, per 10 hr shift or 50,000 yds/month. (83% job efficiency factor). Normally 100 operating days per season is anticipated.

COST ESTIMATES/MONTH OPERATION

D'8K	-	\$ 21,000.00
235 Backhoe	-	19,800.00
980 Loader	-	22,500.00
Ross Box-Welding, Repairs & Hoses	-	3,000.00
2 (4 x 4's)	-	3,000.00
Service Truck	-	4,000.00
Fuel - 9000 gal/M @ 60¢/L	-	24,300.00
Camp supplies - Food		9,000.00
Wages & Supervision (7 men)	-	36,600.00
Mobilization and Demob. equipment out of Whitehorse	-	8,000.00
Maintenance and Repairs	-	14,000.00
Contingencies		<u>15,000.00</u>
		<u>\$180,200.00</u>

On this basis the cost to sluice the said gravels would be \$180,000.00 or  
50,000

\$3.60/yd<sup>3</sup>.

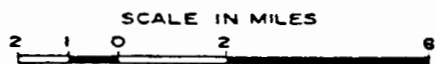
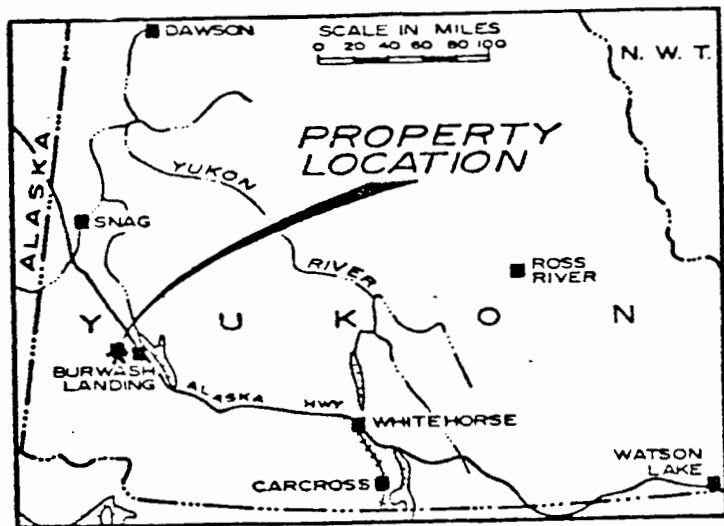
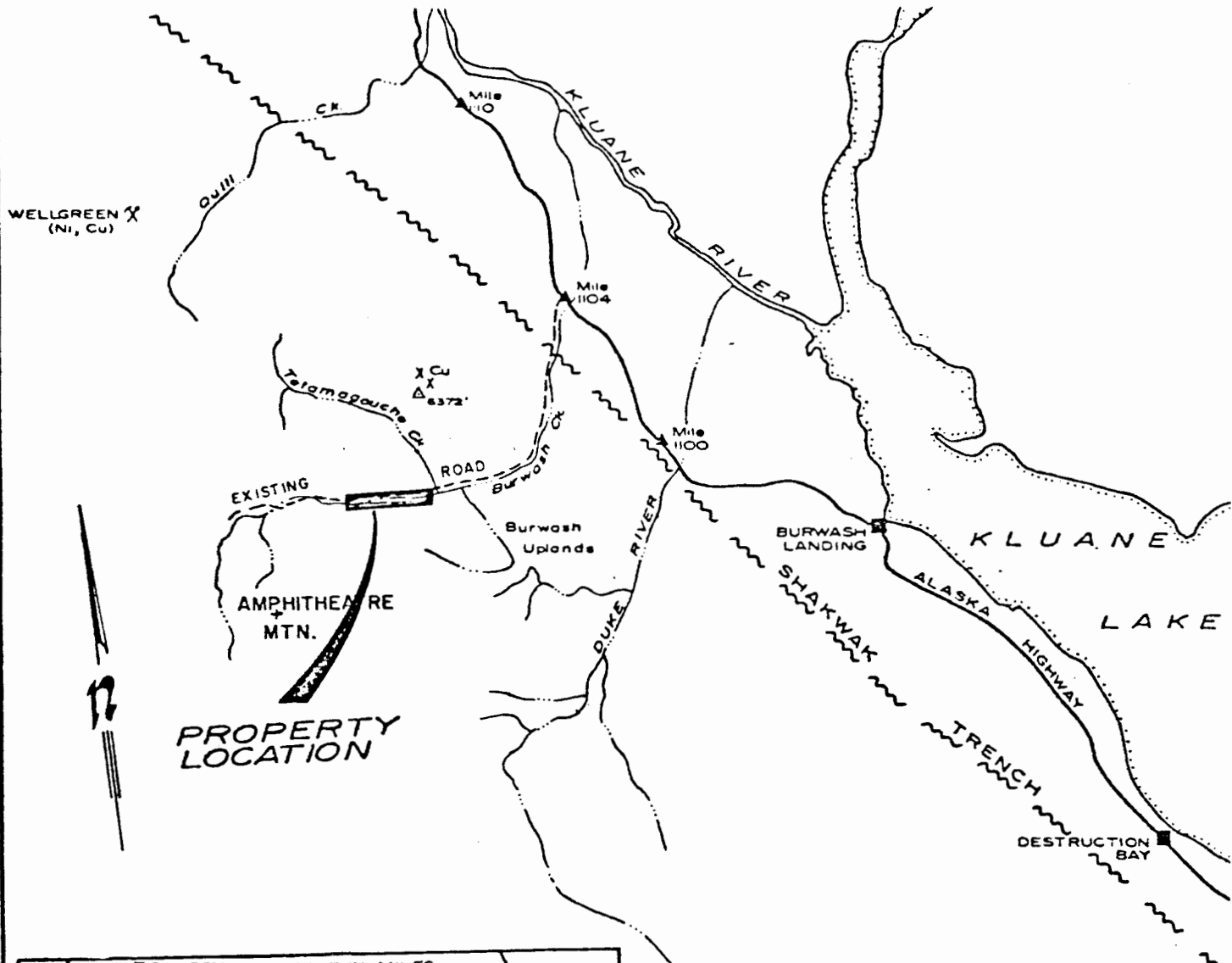
Relative to an efficient operation, loss of production or inefficient recoveries these costs may vary considerably but should stabilize between \$3.00 and \$4.00/yd<sup>3</sup>.



- A. A general view of the property looking westerly down the Burwash Creek Valley. The Danjek Range of mountains can be seen in the background.



- B. A view of Burwash Creek and benches which is quite typical of the entire length of claims.



— JOAN LEASES —

CLAIM Nos. 1-21

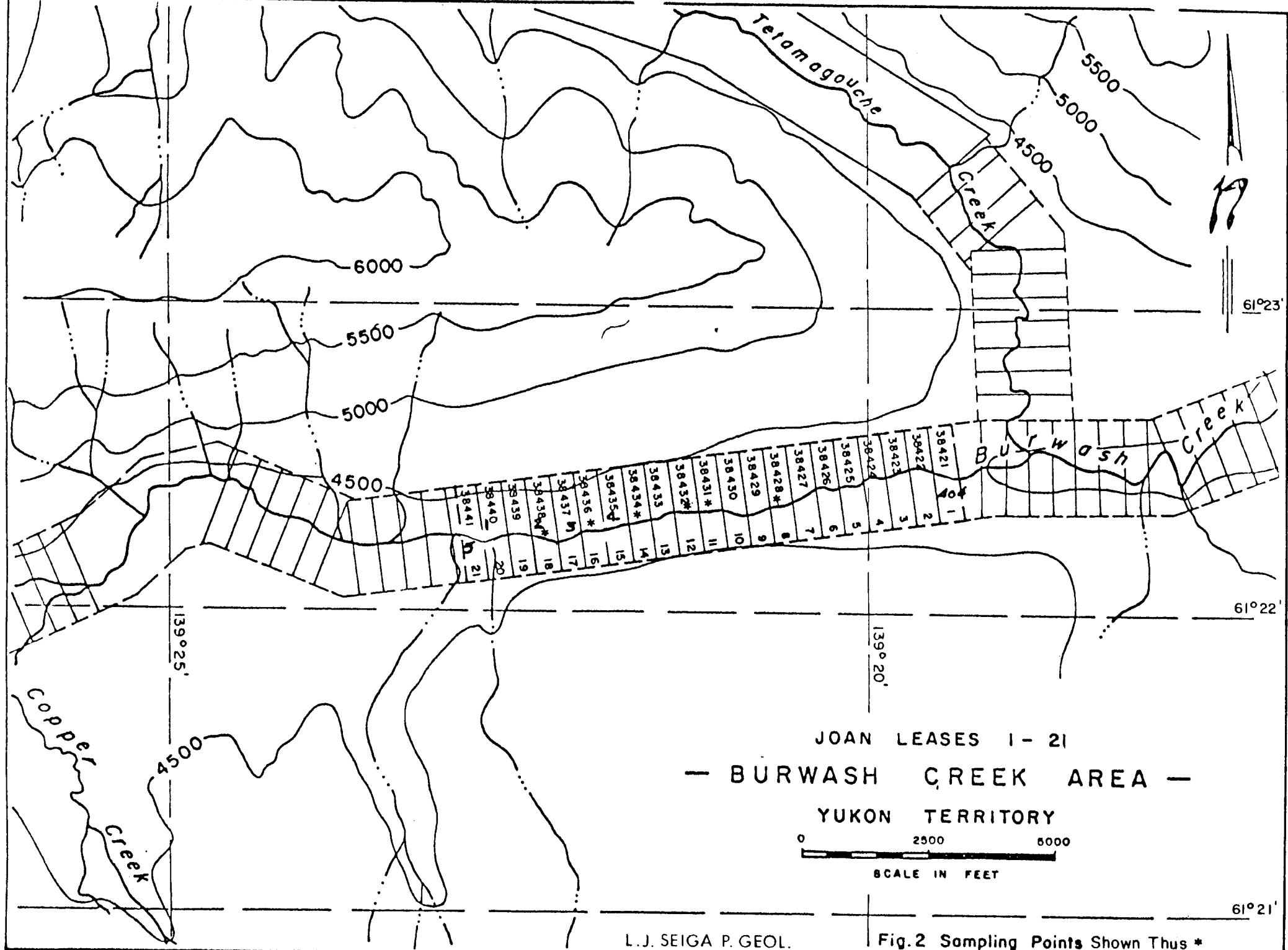
RECORD Nos. 38421-38441

# LOCATION MAP

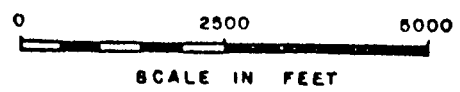
BURWASH CREEK PROPERTY  
YUKON TERRITORY

SCALE  
(AS SHOWN)

FIG. 1



JOAN LEASES 1 - 21  
 — BURWASH CREEK AREA —  
 YUKON TERRITORY



## REFERENCES

1. Mineral Industry of Yukon Territories and S.W. District of McKenzie.

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3. Skinner 1961 pp. 17-18, 1962, pp. 20-21
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6. G.S.C. Memoir 340, J. E. MULLER pp. 106
7. G.S.C. Memoir 284, H. S. BOSTOK pp. 367-369
8. G.S.C. Summary Report for 1914, pp. 3-10, 10-33, (1915)



ATTESTATION

I, LEVY J. SIEGA of 24 GRANDVILLE AVENUE, ST. ALBERT, ALBERTA make oath and say, that:

1. I am a registered Professional Geologist in good standing with the Association of Professional Engineers, Geologists and Geophysicists of Alberta. No. 25927
2. I have no direct or indirect interest in either the property or securities of Duane Pfaff, nor do I expect to receive any such interest.
3. This report is based on a personal examination of the property and reports, maps and data in my personal files.
4. I am a graduate of Washington State University, B.Sc. and have been working in a consulting capacity for 23 years.

Levy J. Siega, P. Geol.

