



DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE UTSHIG PROPERTY

WHITEHORSE MINING DIVISION

(YUKON TERRITORY)

LAT. 60°54'N, LONG. 134°29'W

NTS: 105-D-<sup>16</sup>W

OWNER OF CLAIMS: DU PONT OF CANADA EXPLORATION LIMITED

OPERATOR: DU PONT OF CANADA EXPLORATION LIMITED

Submitted by: L. D. Holmgren  
J.T. Neelands

Date : 1982 June

091043

This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 1,800-.

*R. Watson*

*for* Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

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INTRODUCTION

During 1981 May, reconnaissance stream sediment sampling was carried out in the Carcross area of southern Yukon. The sampling was undertaken as part of a large regional programme known as Kulta Project. The areal extent of this project is shown on Dwgs. KU.81-1, 1a and 2.

As the result of an anomalous gold sample in a creek draining west into the McClintock Lakes, the drainage area of this creek was staked as the UTSHIG property.

LOCATION AND ACCESS

105 D 16 W

The UTSHIG claim is located within the Whitehorse Mining Division, NTS 105-D-~~21~~ (Lat. 60°54'N, Long. 134°29'W). The property is located two kilometres east of the McClintock Lakes and five kilometres west of Mt. Byng. The nearest population centre is Whitehorse, 37 kilometres to the southwest. The claim is accessible by helicopter from Whitehorse.

TOPOGRAPHY AND VEGETATION

The property is located on the western slopes of Mt. Byng, sloping down towards the McClintock Lakes. The northeastern corner of the claims is a moss covered plateau at an elevation of 1855 metres. In the southwest corner, the property is at an elevation of 790 metres and is covered by thin stands of spruce, pine and willow. The property is drained by two intermittent creeks draining south into a westerly flowing stream that flows into McClintock Lakes.

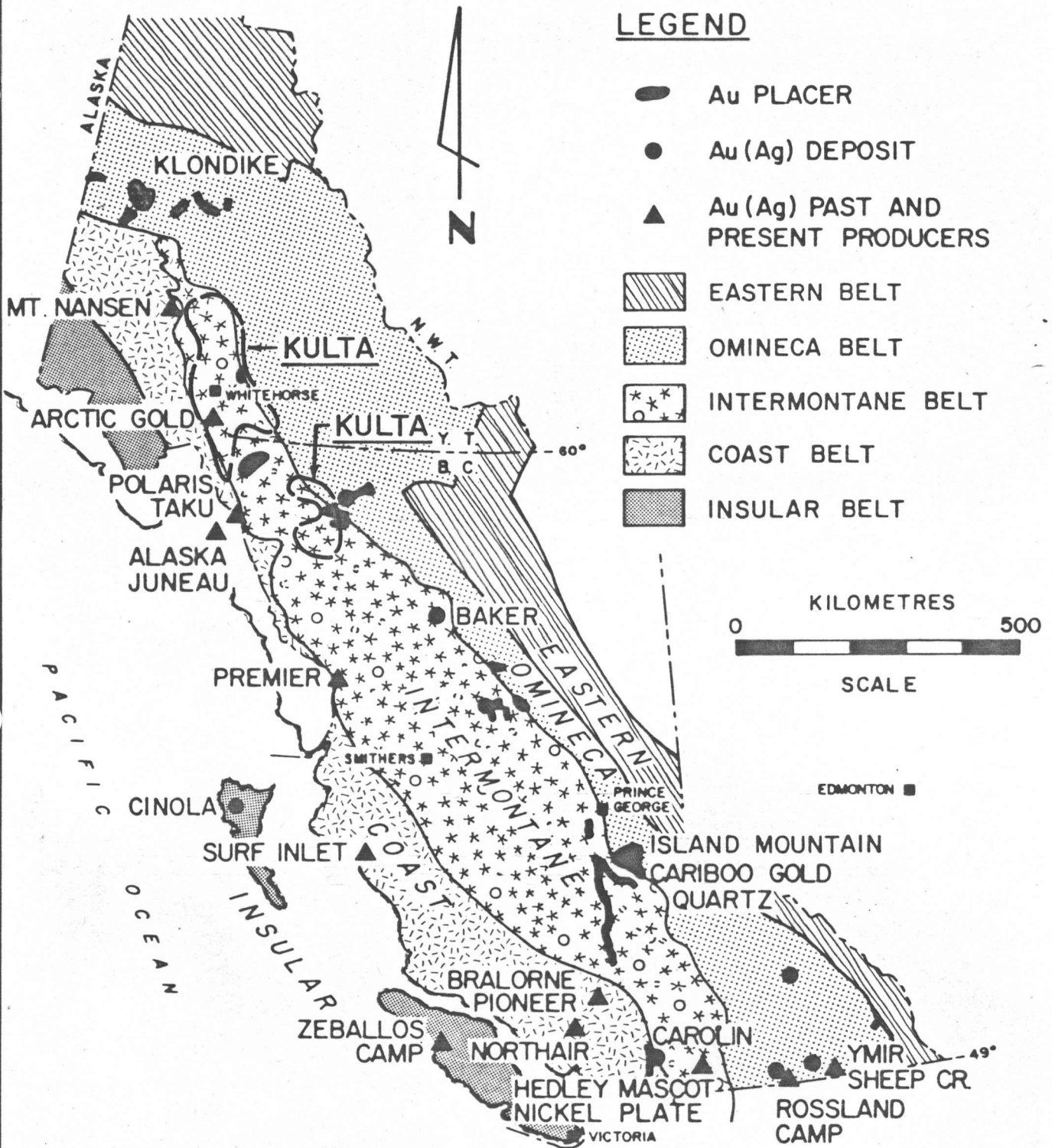
PROPERTY DEFINITION

The property consists of 48 claim units. See Dwg. No. KU.81-257 for claim location. The claims are in good standing until 1982 June 8.

UTSHIG: YA60444 to YA60491

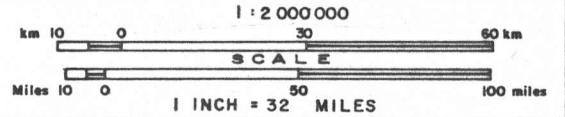
PREVIOUS WORK

No previous work is recorded concerning the property. The property was staked in June 1981 on the basis of an auriferous stream sediment anomaly. Follow-up work in August consisted of collecting stream sediment and rock samples for analysis.



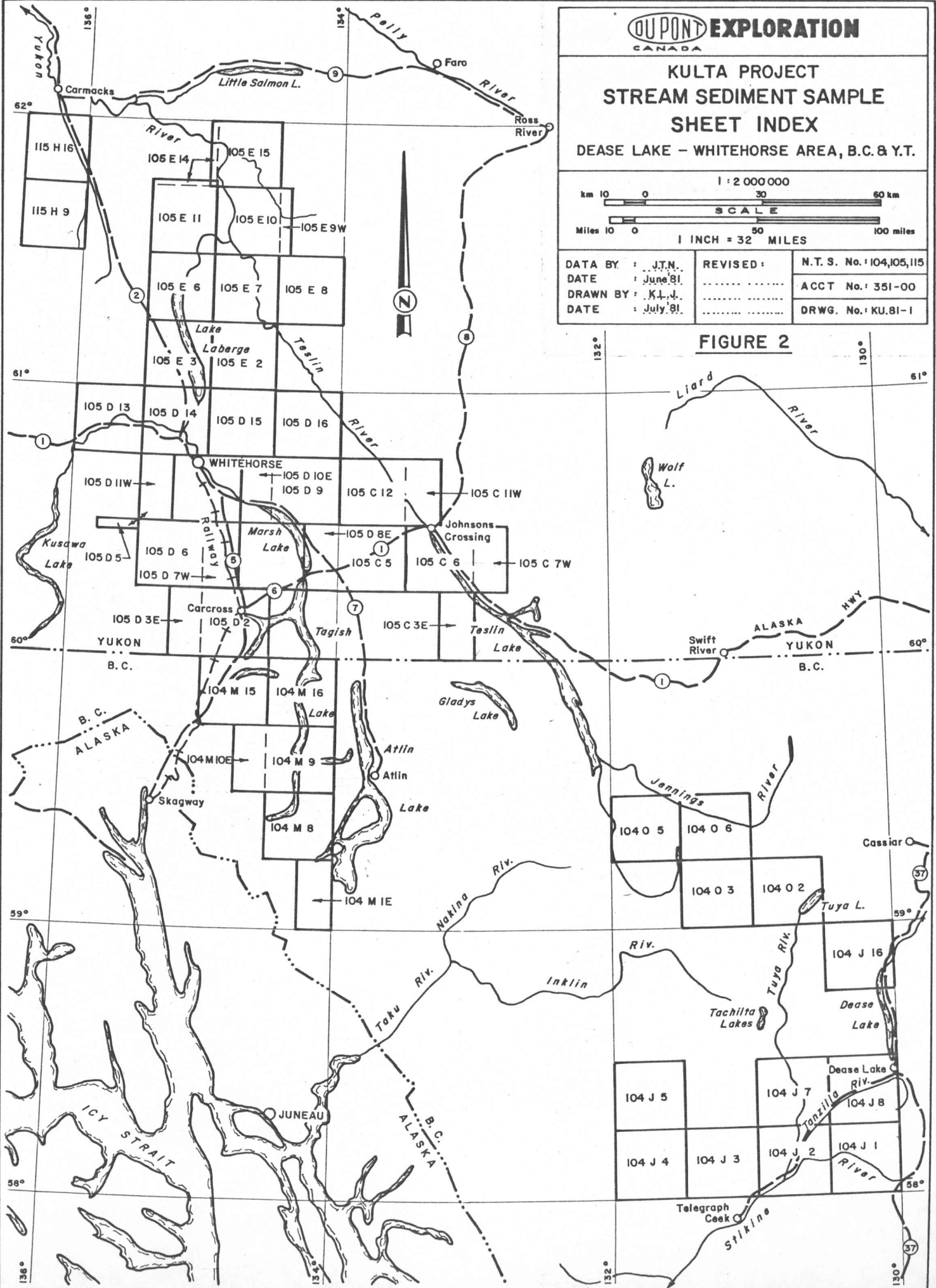
**FIGURE I**  
**KULTA PROJECT AREAS**  
 PRINCIPAL LODGE & PLACER GOLD DEPOSITS  
 CANADIAN CORDILLERA

**KULTA PROJECT  
STREAM SEDIMENT SAMPLE  
SHEET INDEX  
DEASE LAKE - WHITEHORSE AREA, B.C. & Y.T.**

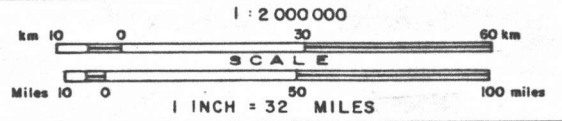


DATA BY : J.T.N.	REVISED :	N.T.S. No. 104,105,115
DATE : June '81		ACCT No. 351-00
DRAWN BY : K.L.J.		DRWG. No. KU.81-1
DATE : July '81		

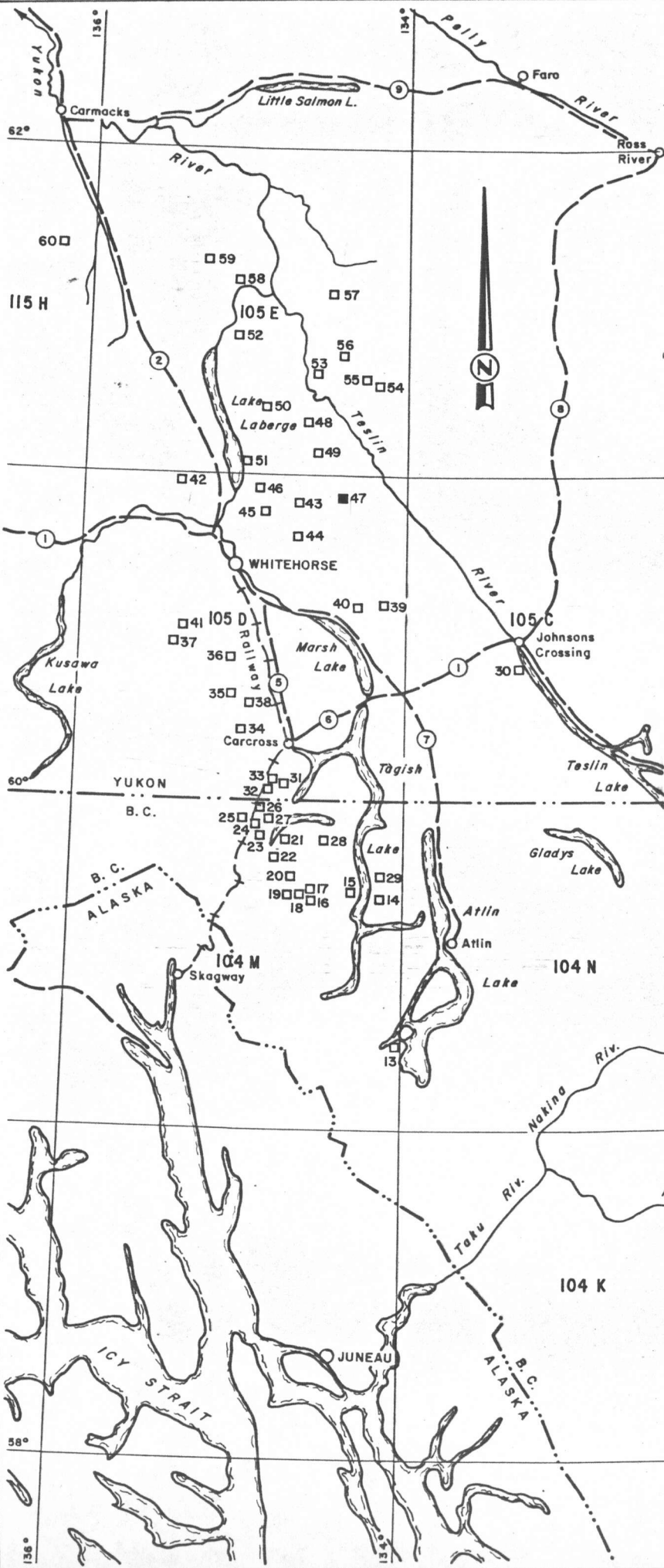
**FIGURE 2**



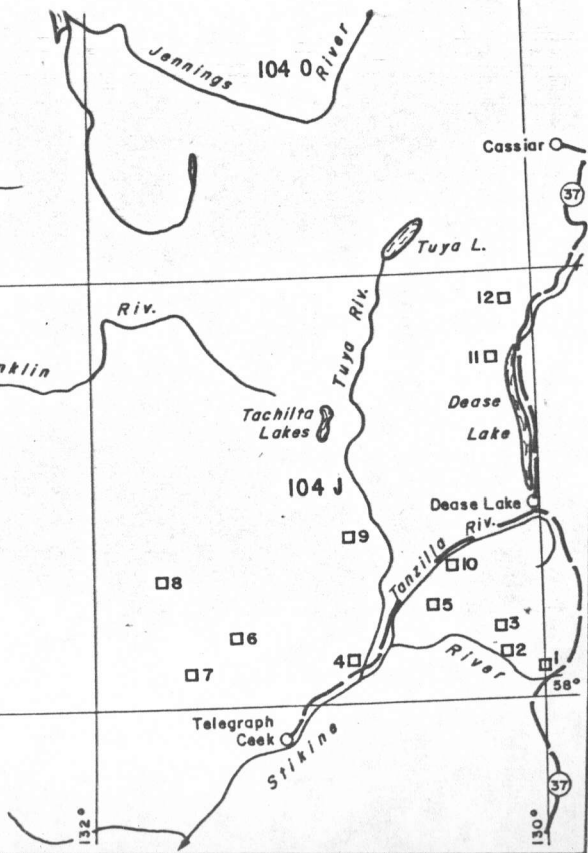
**KULTA PROJECT  
CLAIM LOCATION MAP**  
DEASE LAKE - WHITEHORSE AREA, B.C. & Y.T.



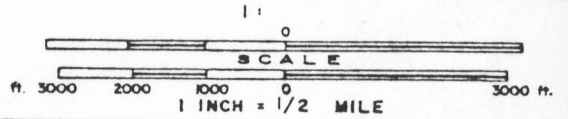
DATA BY : .....	REVISED : .....	N. T. S. No. : 104,105,115
DATE : .....	811023 .....	ACCT. No. : 351-00
DRAWN BY : K.L.J.	.....	DRWG. No. : KU.81-2
DATE : July'81	.....	.....



No.	CLAIM NAME	N.T.S.	No.	CLAIM NAME	N.T.S.
1	RAND	104 I 4, J I	32	DUNK	105 D 2W
2	LATE	104 J 1E	33	UNDAL	105 D 2W
3	LAME	104 J 1E	34	EVEN-	
4	FLOOD	104 J 2W		ODD	105 D 2,3
5	TAIL	104 J 1,2	35	OLLIE	105 D 6E
6	ALLOON	104 J 3W	36	EVIEW	105 D 6E
7	HALT	104 J 4E	37	DAYIR	105 D 6W
8	EGLN	104 J 5E	38	ILLIA	105 D 7W
9	YAT	104 J 7W	39	ICHIE	105 D 9E
10	ANTZ	104 J 8W	40	INTO	105 D 9W
11	LURE	104 J 16E	41	BEXI	105 D 11W
12	ANKI	104 J 16E	42	FLAT	105 D 14W
13	NARRS	104 M 8E	43	UNCER	105 D 15E
14	HAKER	104 M 9E	44	SLEWE	105 D 15E
15	AKUM	104 M 9W	45	ERGE	105 D 15W
16	RACE	104 M 10E	46	LABE	105 D 15W
17	CREED	104 M 10E	47	UTSHIG	105 D 16W
18	CRINE	104 M 10E	48	CROST	105 E 2E
19	KEAP	104 M 10E	49	SLINE	105 E 2E
20	SELY-SKEL	104 M 15E	50	AURIER	105 E 2W
21	TAKE	104 M 15E,W	51	AKEL	105 E 3E
22	TUTS	104 M 15W	52	OVOAS	105 E 6E
23	SHUI	104 M 15W	53	ENOF	105 E 7E
24	GAUG	104 M 15W	54	MAYBE	105 E 8E
25	ANGE-BE	104 M 15W	55	MARBEE	105 E 8E,W
26	PENG	104 M 15W	56	GERM	105 E 8W
27	TSHIK	104 M 15W	57	SBS	105 E 10E
28	ANNIG	104 M 16W	58	HOOT	105 E 11E
29	UNDAS	104 M 16E	59	RANKL	105 E 11W
30	SAYEH	105 C 6W	60	KIRK	115 H 9E
31	ATHES	105 D 2E,W			



**KULTA PROJECT  
UTSHIG CLAIMS  
CLAIM MAP**  
WHITEHORSE AREA, YUKON TERRITORY



DATA BY: J.T.N.	REVISED:	N.T.S. No.: 105 D16W
DATE: 1	.....	ACCT No.: 351-12
DRAWN BY: C.L.S.	.....	DRWG. No.: KW-8-257
DATE: 82.05	.....	



## TABLE I

### Table of Formations

#### Miocene to Pleistocene (TQW)

Wrangell-Garibaldi: Basic to intermediate volcanics.

#### Upper Cretaceous-Oligocene (KTo)

Ootsa Lake - Kamloops (Hutshi Group): Intermediate to acidic volcanic flows, tuff; non-marine.

#### Late Cretaceous and Early Tertiary

Nisling Range Alaskite, Nanika (KTq): Granite, quartz monzonite lesser granodiorite.

Babine (KTg): Granodiorite, quartz diorite, quartz monzonite, lesser quartz monzonite, diorite, monzonite.

#### Lower and Middle Jurassic (JL)

Laberge-Quesnel (Stuhini Fm): Greywacke, argillite, conglomerate; marine.

#### Late Triassic - Early Jurassic

Hogem Granodiorite (EJg): Quartz diorite, granodiorite, lesser diorite, quartz monzonite.

Iron Mask (Ejd): Diorite, monzonite, syenite, quartz, diorite, minor pyroxenite, granodiorite.

#### Upper Triassic - Lower Jurassic (TJT)

Takla-Nicola: Augite porphyry, basaltic volcanics; siltstone, shale, limestone, conglomerate.

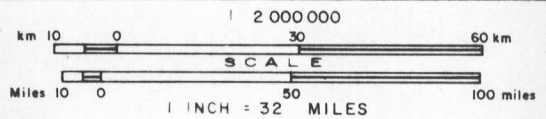
#### Mississippian - Triassic (MTC)

Cache Creek - Anvil Range: Chert, argillite, carbonate, basalt, associated diabase, gabbro, alpine ultramafic; marine.

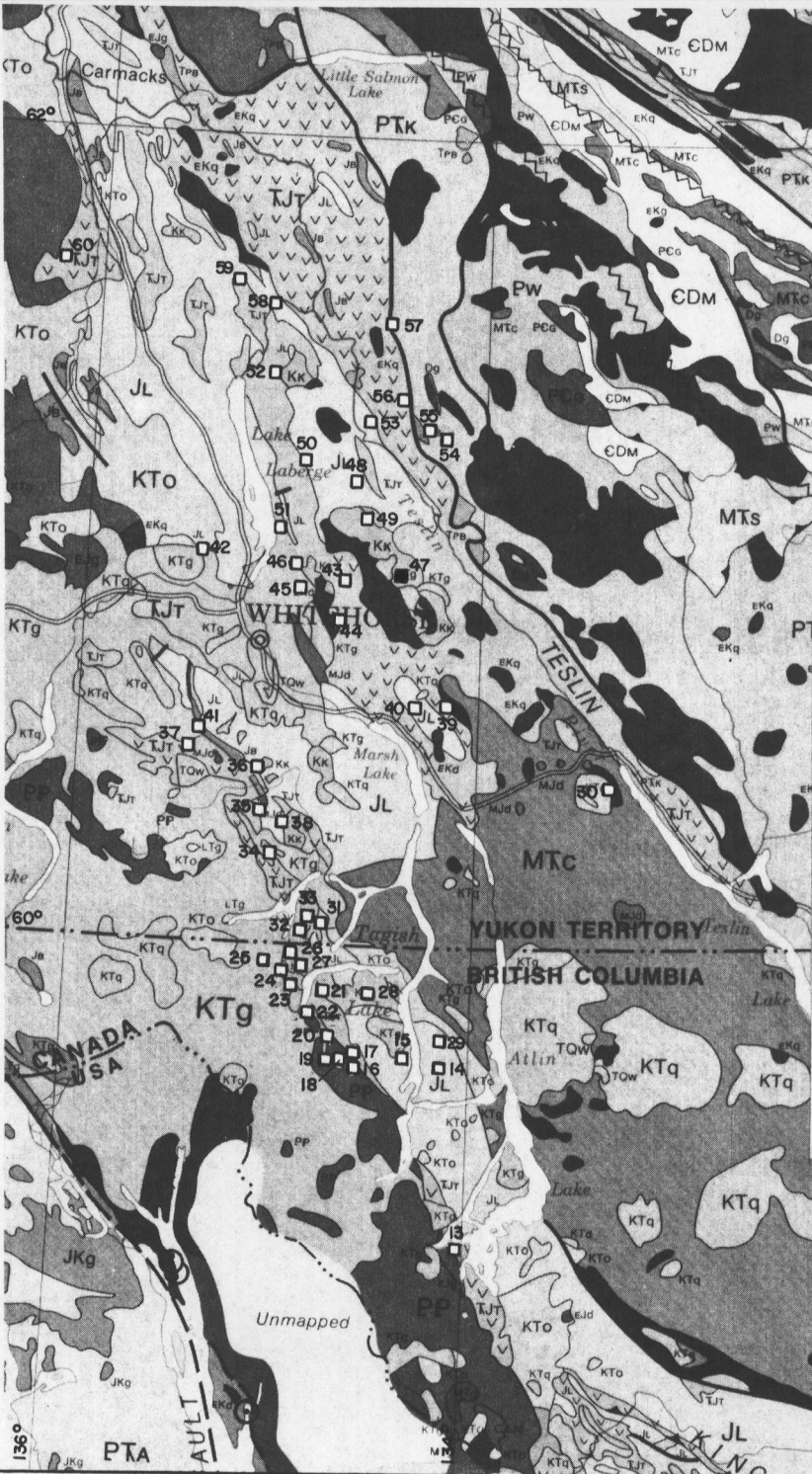
#### Proterozoic - Palaeozoic

Central Gneiss - Skagit: Granitoid Gneiss, migmatite schist, amphibolite, plutonic rocks.

**KULTA PROJECT  
REGIONAL GEOLOGY  
DEASE LAKE - WHITEHORSE AREA, B.C. & Y.T.**



DATA BY	J.T.N.	REVISED	N T S No. 104,105,115
DATE			ACCT No. 351-00
DRAWN BY	K.L.J.		DRWG No. KU.81-2b
DATE	MAY '82		



No.	CLAIM NAME	N.T.S.	No.	CLAIM NAME	N.T.S.
1	RAND	104 I 4, J 1	32	DUNK	105 D 2W
2	LATE	104 J 1E	33	UNDAL	105 D 2W
3	LAME	104 J 1E	34	EVEN -	
4	FLOOD	104 J 2W	35	ODD	105 D 2, 3
5	TAIL	104 J 1, 2	36	OLLIE	105 D 6E
6	ALOON	104 J 3W	37	EVIEW	105 D 6E
7	HALT	104 J 4E	38	DAYIR	105 D 6W
8	EGLLEN	104 J 5E	39	ILLIA	105 D 7W
9	YAT	104 J 7W	40	ICHIE	105 D 9E
10	ANTZ	104 J 8W	41	INTO	105 D 9W
11	LURE	104 J 16E	42	BEXI	105 D 11W
12	ANKI	104 J 16E	43	FLAT	105 D 14W
13	NARRS	104 M 8E	44	UNCER	105 D 15E
14	HAKER	104 M 9E	45	SLEWE	105 D 15E
15	AKUM	104 M 9W	46	ERGE	105 D 15W
16	RACE	104 M 10E	47	LABE	105 D 15W
17	CREED	104 M 10E	48	UTSHIG	105 D 16W
18	CRINE	104 M 10E	49	CROST	105 E 2E
19	KEAP	104 M 10E	50	SLINE	105 E 2E
20	SELY-SKEL	104 M 15E	51	AURIER	105 E 2W
21	TAKE	104 M 15E, W	52	AKEL	105 E 3E
22	TUTS	104 M 15W	53	OVOAS	105 E 6E
23	SHUI	104 M 15W	54	ENOF	105 E 7E
24	GAUG	104 M 15W	55	MAYBE	105 E 8E
25	ANGE-BE	104 M 15W	56	MARBEE	105 E 8E, W
26	PENG	104 M 15W	57	GERM	105 E 8W
27	TSHIK	104 M 15W	58	SBS	105 E 10E
28	ANNIG	104 M 16W	59	HOOT	105 E 11E
29	UNDAS	104 M 16E	60	RANKL	105 E 11W
30	SAYEH	105 C 6W		KIRK	115 H 9E
31	ATHES	105 D 2E, W			

**LEGEND**

- UPPER CRETACEOUS - OLIGOCENE  
KTo Carmacks, Mt Nansen, Endako: Intermediate to acidic volcanic flows, tuff: non marine
- LOWER AND MIDDLE JURASSIC  
Tjt Nicola and Lewes: Volcanic and sedimentary rocks.
- LATE CRETACEOUS AND EARLY TERTIARY  
KTq, KTg Granitic rocks
- LATE PALEOZOIC - TRIASSIC  
Alpine - type ultramafics



PERSONNEL

Property work was performed by the following people on the dates indicated:

1981 August 22:	L. Holmgren	(Senior Geological Assistant
	J. Peter	(Senior Geological Assistant)
	C. Naas	(Junior " " )
	A. MacArthur	( " " " )

GEOLOGYRegional Geology

The property lies within the Intermontane Belt of the western Cordillera. The belt consisting mainly of sedimentary and volcanic rocks stretches from the Yukon to southern British Columbia. The belt averages 150 kilometres in width and trends northwest-southeast. Bordering the belt to the west are the granitic rocks of the Coast Mountain Intrusions, which stretch along the entire B.C. coast into Alaska.

Physiographically, the region is part of the Yukon Plateau. This area is characterized by glaciated mountain peaks generally under 2000 metres in elevation and long narrow lake-filled valleys. To the west, the rugged extensively glaciated peaks of the Coast Mountains dominate.

The Tagish-Bennett Lake areas are dominated by rocks of the Intermontane Belt with small plutons (2-8 km in size) of Late Cretaceous Coast Intrusions scattered throughout. The main front of the Coast Mountains occurs seven kilometres west of the area. The rocks of the Intermontane Belt comprise Palaeozoic metamorphic rocks (schists and gneiss), Pennsylvanian (?) and Permian volcanic and meta-volcanic rocks (Taku Group), Lower and Middle Jurassic sediments (Laberge Group), and Upper Cretaceous volcanic rocks (Hutshi Group). See Table of Formations (Table 1) and Dwg. No. KU.81-2b (Kulta Project Regional Geology).

The rocks generally occur in northwest trending belts as part of a large regional synclorium (Wheeler 1961, p. 103). All Pre-Cretaceous rocks show this trend. Locally tight folding has been observed, possibly due to intrusive placement.

Economic mineralization has been exploited in the area from various sources. The Engineer Mine (Au,Ag) is hosted by quartz-calcite veins occurring in shales and greywackes of the Laberge Group. Venus Mine (Au,Ag) is hosted by a quartz vein cutting through Hutshi Group andesites. Numerous other showings similar to the Venus Mine occur in the Tagish Lake region.

### Local Geology

The majority of the property examined is covered by large outcrops of fine-grained massive basalt belonging to the Cretaceous Hutshi Group. Within the basalt several exposures of a felsic dyke were observed. This dyke may be related to the Coast Intrusions which crop out to the south and west of the property. A small exposure of conglomerate was observed in contact with the basalts in the northeastern portion of the property. These conglomerates may represent the basal beds of the Hutshi Group.

The following is a brief description of the units observed thus far on the property.

a. Basalt - Map unit 8d

This unit is fine-grained, black to dark green, weathering to local gossanous patches. Small cubes and blebs of pyrite and pyrrhotite are present in the rock near the gossans.

b. Conglomerate - Map Unit 8f

This unit has a grey-green, fine-grained volcanic ground mass with clasts of quartz, chert, and granitic fragments. The fragments are quite angular in some places.

c. Felsic Dyke - Map Unit 9c

The dyke which is a maximum of 1 1/2 metres wide is light grey, siliceous and aphanitic. It contains phenocrysts of olivine (0.2 to 0.5 cm in size), quartz eyes (0.2 cm in size), and minor small mafic minerals. Contact with the enclosing basalts is sharp.

### Structure

No bedding is visible in the basalts. Foliation in the area follows the regional northwest trends.

### Mineralization

Gossanous sections of basalt contain 5 to 7% pyrite cubes and pyrrhotite blebs. A talus piece showing vuggy quartz and calcite with siderite and goethite appears to be from an unidentified vein on the property.

## GEOCHEMISTRY

### Procedure

A total of 3 rock and 19 stream sediment and silt samples were collected during 1981.

Stream sediment samples were collected at 200 metre intervals with the use of an aluminum scoop. They were sieved to -14 and -10 mesh in the field and placed in a plastic bag with a sample tag. The sample site was marked with flagging tape bearing the sample number.

Rock samples were collected at random throughout the claim group and placed in plastic bags along with a sample tag. The sample site was also marked with a length of flagging tape.

All samples were shipped to Min-En Laboratories Ltd., North Vancouver for preparation and analysis. All samples were analyzed for Mo, Cu, Pb, Zn, Ag, Hg, As, Mn, Au and Sb. In addition, stream sediment samples were sieved to -20 mesh and a heavy mineral separation and analysis was performed for Cu, Ag and Au.

### Results

A statistical analysis of the results obtained from regional stream sediment samples was performed to determine background and anomalous values for the various elements. Details of this analysis appears in a report by Neelands (1982) titled "Geochemical Report - Kulda Regional Stream Sediment Sampling Programme in the Dease Lake and Tagish Lake Areas". Table II reproduced from that report reveals median background values obtained for the elements studied. Table III shows the results of a report titled "Kulda Follow-Up" (Neelands 1982). The two studies show a good correlation between the stream sediment (heavy mineral) samples. The anomalous values given in Table III will be applied to the results of this property.

The results of geochemical sampling on the UTSHIG property are tabled on Dwg. No. KU.81-213. These results have also been tabulated as to frequency distribution of elements in stream sediments and heavy minerals (see Table IV).

The original heavy mineral stream sediment sample ran 320 ppb Au in the coarse heavy mineral fraction. Follow-up stream sediments in the same location as the original failed to reproduce the initial value. Samples 200 metres downstream and up to 700 metres upstream of the original were never higher than 10 ppb in the coarse heavy mineral fraction.

TABLE IIKulta Regional Stream Sediment Sampling ProgrammeBackground and Anomalous Values

<u>Element</u>	<u>No. of Samples</u>	<u>Mean ppm</u>	<u>Median Background ppm</u>	<u>Standard Deviation</u>	<u>95% Threshold ppm</u>
Mo	625	1.8	1.0	1.39	4.0
Cu(C1)CHm	598	44.5	38.0	27.39	150.0
Cu(C2)F	621	35.9	32.0	21.15	80.0
Pb	622	16.3	15.0	7.08	30.0
Zn	598	67.0	65.0	23.77	150.0
Ag(S1)CHm	623	1.04	1.0	0.50	2.5
Ag(S2)F	628	0.71	1.0	0.32	1.6
Mn	602	589.6	570.0	232.6	1200.0
Au(G1)CHm	588	8.21	5.0	5.22	25.0
Au(G2)F	579	6.2	5.0	4.66	15.0
§HM			6.0%		

TABLE III

Kulta Follow-Up

Background and Anomalous Values

Element	Medium					
	Heavy Mineral (227 samples)		SiH (43 Samples)		Soil (461 samples)	
	Median	Anomalous	Median	Anomalous	Median	Anomalous
MoF	1.0	3.0	1.0	2.0	4.0	15.0
CuF	30.0	90.0	70.0	160.0	40.0	250.0
CuFHM						
CuHM	50.0	180.0				
PbF	20.0	60.0	20.0	30.0	20.0	50.0
ZnF	60.0	160.0	80.0	100.0	90.0	200.0
AgF	0.8	1.5	0.9	1.2	0.8	1.7
AgFHM						
AgCHM	0.8	2.6				
HgF	25.0	50.0	40.0	80.0	35.0	160.0
AsF	10.0	50.0	15.0	45.0	15.0	120.0
MnF	500.0	1000.0	800.0	2000.0	700.0	2000.0
AuF	5.0	30.0	5.0	15.0	5.0	20.0
AuFHM						
AuCHM	5.0	50.0				
SbF	15.0	40.0	25.0	40.0	20.0	40.0
HMs						



Further upstream near the eastern boundary of the claims, two samples (8437C and 8438C) ran 950 ppb and 1500 ppb Au respectively in the fine heavy mineral fraction. The samples with the higher gold values also had elevated silver contents (3.0 ppm in sample 8438C).

Rock geochemistry on the property did not reveal any gold anomalies. The table below summarizes the rock types tested and any associated anomalies. Full rock geochemistry results are tabled on drawing KU.81-212.

#### Description of Rock Samples

<u>Sample No.</u>	<u>Rock Type</u>	<u>Anomalous Values</u>
8643D	Talus, vuggy quartz and calcite	1.9 ppm Ag, 210 ppm Sb
8644D	Basalt with pyrite, pyrrhotite	62 ppm Sb
8645D	Basalt with pyrite, pyrrhotite	70 ppm Sb

#### CONCLUSIONS AND RECOMMENDATIONS

Follow-up stream sediment sampling has confirmed the existence of a gold anomaly in the creek. The source of this anomaly was not found in the rocks examined. It is recommended that further geological mapping and soil sampling be initiated in order to isolate the source of the gold.

COST STATEMENT

<u>Wages</u>	<u>Cost</u>
2 Sr. Geol. Assistants, 1 manday(s) (1981 Aug. 22)	\$ 124.65
2 Jr. Geol. Assistants, 2 manday(s) (1981 Aug. 22)	<u>107.98</u>
	\$ 232.63

Room & Board

<u>Location</u>	<u>Daily Rate</u>	<u>Date</u>	<u>No. of Days</u>	
McCrary Ranch Yukon Terr.	\$25.00	1981 Aug. 22	4	\$ 100.00

Transportation

a. Truck Rental (Avis-Whitehorse, YT): 1 day(s) @ \$35.85/day	\$ 35.85
b. Helicopter in support of field work @ \$432.50/hr including fuel (Flying by Viking Helicopter Ltd. of Prince George)	
Dates (1981): Aug. 22	No. of hrs: 1.5
	<u>648.75</u>
	\$ 684.60

Analytical Services

<u>Type of Sample</u>	<u>No. of</u>	<u>Fraction Analyzed</u>	<u>Elements Analyzed</u>											<u>Unit Price</u>		
			<u>F</u>	<u>FHM</u>	<u>CHM</u>	<u>Mo</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Ag</u>	<u>Hg</u>	<u>As</u>			<u>Mn</u>
Heavy Mineral	16	X		X	X	X	X	X		X	X	X		X	\$17.75	\$ 284.00
	16		X							X				X	7.90	126.40
	16			X						X				X	7.90	126.40
Silt	2	X		X	X	X	X	X	X	X	X	X	X	X	23.65	47.30
Rock	3	X		X	X	X	X	X	X	X	X		X	X	22.75	68.25
Preparation - Rock							3	@	\$2.25	sample						6.75
- Heavy Mineral							16	@	\$20.00	sample						320.00
- Soil/Silt							2	@	\$0.85	sample						1.70

Mo(\$0.90), Cu(\$0.90), Pb(\$0.90), Zn(\$0.90), Ni(\$0.90), Ag(\$0.90/  
\$2.00), Hg(\$4.50), As(\$3.00), Mn(\$0.90), Au(\$5.00), Sb(\$3.75)

\$ 980.80

Report Preparation

Drafting: 1 day @ \$100/day

Typing: 1 day @ \$95.00

Map preparation 8 maps at 16¢/square foot

Cost

\$ 100.00

95.00

11.52

\$ 206.52

GRAND TOTAL:\$2,204.55

REFERENCES

- Christie, R. L.; "Geology: Bennett (104M)", G.S.C. Preliminary Series Map No. 19-1957, 1957.
- Neelands, J. T.; "Geochemical Report - Kulta Regional Stream Sediment Sampling Programme in the Dease Lake and Tagish Lake Areas", B.C. Dept. of Mines Assessment Report, 1982.
- Neelands, J. T.; "Kulta Follow-Up (104-J, 104-M)" Geological and Geochemical Report, B.C. Dept. of Mines Assessment Report, 1982.
- Wheeler, J. O.; "Whitehorse Map-Area, Yukon Territory (105-0)", G.S.C. Memoir 312, 1961.



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TELEPHONE: (604) 684-9264

QUALIFICATIONS

I, Lisa Dawne Holmgren, do hereby certify that:

1. I am a geologist residing at 68 Wood Cres., SW, Calgary, Alberta and am employed by Du Pont of Canada Exploration Limited.
2. I am a graduate of The University of British Columbia with a B.Sc. (Honors) degree in geology.
3. I am an Associate of the Geological Association of Canada.
4. I have been practicing my profession in geology continuously for the past two years in British Columbia and Yukon Territory, Canada.
5. Between 1981 May and 1981 August, I participated in the field programme described in this report on behalf of Du Pont of Canada Exploration Limited.

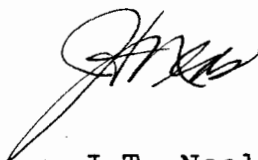
A handwritten signature in cursive script, appearing to read "L. D. Holmgren", followed by a long horizontal line extending to the right.

L. D. Holmgren  
1982 May

QUALIFICATIONS

I, John Thomas Neelands, do hereby certify that:

1. I am a geologist residing at 118-B W. 14th Ave, Vancouver, British Columbia and employed by Du Pont of Canada Exploration Limited.
2. I am a graduate of Carleton University (1971) in Ottawa, Canada, and hold a B.Sc., degree in Geology.
3. I am a member of the Geological Association of Canada and of the Association of Exploration Geochemists.
4. I have been practising my profession for the past ten years and have been active in the mining industry for the past sixteen years.
5. Between 1981 May and 1981 October, I supervised and participated in the field programme described in this report on behalf of Du Pont of Canada Exploration Limited.



J.T. Neelands  
1982 June

**APPENDIX I**

**Laboratory Procedure**

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURES FOR Mo, Cu, Cd, Pb, Mn, Ni, Ag, Zn, As, F

Samples are processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the  $\text{CH}_2\text{H}_2$ -Air flame combination but the Molybdenum determination is carried out by  $\text{C}_2\text{H}_2$ - $\text{N}_2\text{O}$  gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzeit method using  $\text{Ag CS}_2\text{N} (\text{C}_2\text{H}_5)_2$  as a reagent. The detection limit obtained is 1.2 ppm.

Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soil samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.

APPENDIX I*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95<sup>o</sup>C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with HNO<sub>3</sub> and HClO<sub>4</sub> mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5. ppb.

134° 30'

60° 55'



**LEGEND**

- TERTIARY**
- MIOCENE**
- CARMACKS GROUP**
- 12 Grey weathering massive hornblende andesite porphyry
- EOCENE**
- MT. NANSEN GROUP**
- 11 II a) Andesite II b) Basalt
- 10 IO a) Quartz monzonite IO b) Granodiorite
- CRETACEOUS**
- COAST INTRUSIONS**
- 9 9a) Quartz monzonite 9b) Granodiorite  
9c) Felsic dyke 9d) Mafic dyke
- HUTSHI GROUP**
- 8 8a) Rhyolite 8b) Dacite 8c) Andesite  
8d) Basalt 8e) Tuff 8f) Volcanic conglomerate
- 7 7a) Peridotite 7b) Serpentinite

- UPPER JURASSIC and/or LOWER CRETACEOUS**
- TANTALUS FORMATION**
- 6 6a) Shale 6b) Schist 6c) Quartz sericite schist
- UPPER TRIASSIC and LOWER JURASSIC**
- LABERGE GROUP**
- 5 5a) Siltstone 5b) Limestone 5c) Shale  
5d) Quartzite 5e) Conglomerate 5f) Hornfels
- 4 4a) Dacite 4b) Andesite 4c) Basalt  
4d) Volcaniclastics (conglomerate, breccia) 4e) Tuff
- LEWIS RIVER GROUP**
- 3 3a) Limestone 3b) Argillite 3c) Siltstone  
3d) Arkose 3e) Greywacke 3f) Quartzite
- 2 2a) Rhyolite 2b) Dacite 2c) Andesite  
2d) Basalt 2e) Volcanic breccia, conglomerate
- CARBONIFEROUS and/or PERMIAN**
- ANVIL ALLOCHTHONOUS ASSEMBLAGE**
- 1 1a) Gneiss 1b) Schist 1c) Quartzite  
1d) Phyllite 1e) Breccia

**SYMBOLS**

- OUTCROP
- CONTACT
- x 8643 D ROCK SAMPLE LOCATION and NUMBER
- CLAIM LINE

ROCK GEOCHEMICAL RESULTS

Sample	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Ag ppm	Hg ppb	As ppm	Au ppb	Sb ppm
8643 D	2	7	30	69	28	1.9	50	<1	5	210
8644 D	1	26	5	28	16	1.1	10	<1	5	62
8645 D	1	23	5	32	16	0.9	10	<1	5	70

**OUPON EXPLORATION**  
CANADA

**KULTA PROJECT  
UTSHIG CLAIMS  
GEOLOGY**

WHITEHORSE AREA, YUKON TERRITORY

SCALE  
1:10,000  
1 INCH = 833 FEET

MAPPED BY: J.T.N., L.D.H.  
DATE: 81 08 22  
DRAWN BY: C.H.K.  
DATE: 82 05 06

REVISED:  
ACCT No.: 351-12  
N.T.S. No.: 105 D 16W  
DRWG No.: KU 81-212

081043

134° 30'

60° 55'

M' CLINTOCK LAKES

