81-# 1123. _# 9889

DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

CHAPPELLE CLAIMS

OMINECA MINING DIVISION

Lat. 57°17'N, Long. 127°07'W

NTS: 94-E-6

Owner of Claims: Du Pont of Canada Exploration Limited
Operator of Claims: Du Pont of Canada Exploration Limited

Author: T. J. Drown
Date Submitted: 1981 12 04

T. J. Drown

CONTENTS

LIST OF FIGURES

INTRODUCTION

1. Location

The Chappelle claims are situated at 57°17'N latitude and 127°08'W longitude between Thutade Lake and Toodoggone Lake, 80 km west of the Rocky Mountain Trench. Air distance to Smithers, B.C. is 288 km at azimuth 180°.

2. Access

The claims are best reached by flying to the 1676 m Sturdee Valley airstrip at 57°13'N latitude and 127°06'W longitude and travelling by a 16 km road to the Baker Mine comp. From here the work area is accessed by helicopter, approximately 4 km to the east.

3. Claim Definition

The Chappelle claims consist of 168 two post and fractional mineral claims. Exploration work was completed over the following claims with their respective record data:

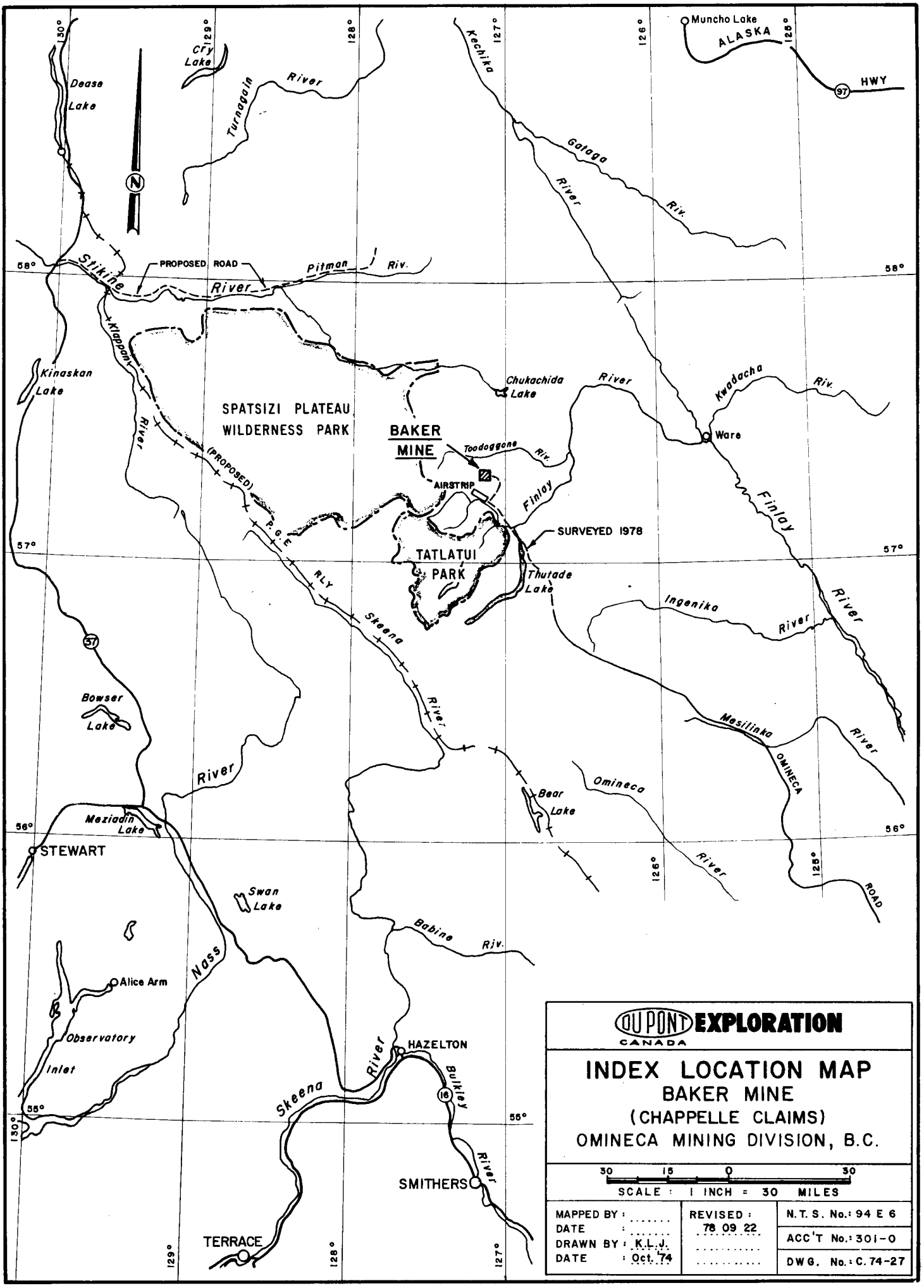
Claim	Record No.	Tag No.	Record Date
CHAPPELLE 184	95699	197171M	1970 11 09
CHAPPELLE 186	95701	197176M	1970 11 09
CHAPPELLE 194	95709	197184M	1970 11 09
CHAPPELLE 195	95710	197185M	1970 11 09
CHAPPELLE 196	95711	197186M	1970 11 09
CHAPPELLE 197	95712	197187M	1970 11 09
CHAPPELLE 198	96066	197668M	1970 11 12
CHAPPELLE 199	96067	197669M	1970 11 12

The current owner and operator of the claims is Du Pont of Canada Exploration Limited.

4. History

The property was staked in 1968 by Kennco Exploration (Western) Limited as the result of a regional geochemical exploration programme when quartz float containing high grade gold and silver were found by Gordon Davies. Subsequent work on the property during 1969, 1970, 1971 and 1972 exposed a 250x2 m quartz vein containing zones of high grade gold and silver.

Con West Exploration optioned the claims in late 1972 and paid the costs of building an airstrip at Black Lake, a road to the camp and about 213 m of drifting at the 5400'



DUPONT EXPLORATION
CANADA

INDEX LOCATION MAP
BAKER MINE
(CHAPPELLE CLAIMS)
OMINECA MINING DIVISION, B.C.

30 15 0 30
SCALE : 1 INCH = 30 MILES

MAPPED BY :	REVISED : 78 09 22	N.T.S. No.: 94 E 6
DATE :		ACC'T No.: 301-0
DRAWN BY : K.L.J.		DWG. No.: C.74-27
DATE : Oct. 74		

(1650 metre) elevation. They intersected the vein 50 metres below the surface in a barren section of quartz and subsequently dropped the option.

Du Pont Exploration's new (from Kennco) vice-president, Dave Barr, optioned the property in 1974 and authorized a drilling programme during the summers of 1974 and 1975 which led to the driving of two raises into the mineralized portions of the vein and the establishment of about 57 000 tons of ore-grade material.

In 1979, further diamond drilling was completed and a new adit at the 1690 metre elevation was driven with a view to sampling the mineralization and determining the characteristics of the deposit. Construction of a 100 ton per day mill commenced in 1980 and full scale production commenced in early 1981.

5. Summary of Work Performed

A total of 3 stream sediment samples were collected along with 14 rock chip samples and 67 soil samples. Geologic mapping at a scale of 1:10 000 was completed using air photographs for control.

GEOLOGY

1. Introduction

The Chappelle claims are located in the Intermontane Belt of Mesozoic volcanic sedimentary and plutonic rocks. Minor amounts of Paleozoic rocks are also present. Published geological maps indicate the claims are underlain by Takla and Toodoggone Group volcanic rocks of late Triassic and Jurassic ages respectively and the Hogem Intrusions of early Cretaceous age. The distribution of rock types noted are shown on Dwg. No. C.81-1.

2. Lithology

a. Quartz Monzonite

This rock type is medium- to fine-grained, and varies from greenish-grey to greyish-pink in colour. Coarser varieties contain feldspars to 4 mm in length. Minor pyrite is found throughout the rock. Iron staining is common of fractures and along biotite margins.

b. Dacite

This rock can be divided into three distinct units; moderately altered, green porphyritic and maroon porphyritic. Altered dacite is buff to grey, massive and typically crumbly and bleached where argillized. Where weakly silicified narrow, <1 mm, quartz veinlets occur over intervals of 0.5 m.

The green and maroon porphyritic rocks consist of broken euhedral plagioclases up to 5 mm in length floating in a very fine grained crystalline groundmass. Rocks are typically blocky and unaltered. Green dacites contain 10-20% fine-grained chlorite whereas maroon dacites contain 10-15% fine-grained hematite. These rock units probably belong to the Takla Group volcanics.

c. Agglomerate

This rock unit is dark green to grey in colour with fine- to medium-grained andesitic clasts to 10 cm diameter floating in a fine-grained andesitic groundmass. The rock is weakly magnetic and outcrops are subangular to rounded by weathering. This rock unit probably belongs to the Takla Group volcanics.

3. Mineralization

No mineralization of economic significance was noted during the course of the investigation. However, the alteration of dacite by quartz and clay in the vicinity of geochemically high Au-Ag values in soil suggest the potential for economic mineralization.

4. Conclusions

The area of interest was found to be underlain by dacitic and andesitic agglomerate rocks of the Takla Group and quartz monzonite of the Hogem Intrusions. Some of the volcanic rocks have been hydrothermally altered resulting in pyrite, clay and quartz. No mineralization of economic significance was noted.

GEOCHEMISTRY

1. Sample Collection, Preparation and Analysis

A total of 67 soil samples were collected from depths of 5 to 30 cm using a mattock with a 6 cm x 12 cm blade to dig to the B or C horizon. All samples were placed in labelled wet-strength Kraft paper envelopes and a plastic ribbon was fixed at the site bearing the identical number to the sample envelope. Descriptive data about the sample and site was recorded on prepared data sheets and filed.

A total of 3 bulk stream sediment samples were collected at random locations. Approximately 20 kg of coarse sediment was placed in plastic sample bags. Sample sites were identified with plastic ribbon bearing an identical number to the number on the sample bag. Specific data pertaining to the sample was recorded on special information tags and filed. Samples were later wet sieved to -20 mesh prior to shipping.

A total of 14 rock chip samples were collected at random locations. Rock chips were placed in plastic sample bags and sample sites identified with plastic flags bearing the identical number to the sample bag.

Soil, stream sediment and rock chip samples were sent to Min-En Laboratories in North Vancouver for preparation and analysis. Soil samples were oven dried and sieved to -80 mesh. The -80 mesh fraction was analyzed for Cu, Pb, Zn, Au, Ag, As, Hg and Sb according to procedures outlined in Appendix A. Stream sediment samples were further sieved to -100 mesh. The -20 to -100 and -100 mesh fraction were then treated to extract the heavy minerals and the magnetic minerals removed. The remaining heavy mineral concentrate was then analyzed for Cu, Pb, Zn, Au, Ag, as, Hg and Sb using the procedures outlined in Appendix A.

Rock samples were crushed, split, pulverized and sieved to -80 mesh. The -80 mesh fraction was then analyzed for Cu, Pb, Zn, Au, Ag, As, Hg and Sb.

2. Results and Interpretation

Drawing C.81-2 shows the sample locations, sample numbers and results of soil and stream sediment samples.

Stream sediment samples report background to moderately anomalous values for the -20 mesh fraction. Sample nos.

7252C, 7574C and 7251C report 325, 5 and 710 ppb Au respectively. In the -100 mesh fraction sample nos. 7252C, 7574C and 7251C report 5, 525 and 60 ppb Au respectively. Copper, Pb, Mg, As and Sb values are all within background limits. Samples 7252C, 7574C and 7251C report zinc values of 123, 307 and 178 ppm respectively all moderately anomalous. Silver in the -20 mesh fraction is in the 1.4 to 2.2 ppm range and in the -100 mesh fraction, Ag varies from 1.0 to 1.3 ppm. Values in the -20 mesh fraction are considered weakly anomalous.

Rock samples report background Au values from <5 ppb to anomalous Au values of 220 ppb Au. Values over 50 ppb are considered anomalous. Silver values range from 0.3 ppm to 22.0 ppm with values greater than 1.9 considered anomalous. Copper values range from 1 ppm to to 17 200 ppm with values greater than 200 ppm considered anomalous.

Lead values range from 9 ppm to 572 ppm with values greater than 100 considered anomalous. Five rock samples contain anomalous Pb values. Zinc values range from 5 ppm to 100 ppm with values greater than 90 ppm considered anomalous. Only one sample, No. 7810C, had anomalous zinc of 100 ppm. Mercury values range from 5 ppb to 105 ppb with values greater than 40 ppb considered anomalous. Only sample 5574C was anomalous with 105 ppb Hg. Arsenic values range from <1 ppm to 33 ppm with values greater than 20 ppm considered anomalous. One sample, No. 5579C, contained anomalous As of 33 ppm. Antimony values range from 4 ppm to 51 ppm with values greater than 60 ppm considered anomalous.

Soil sample values for Au range from 5 ppb to 625 ppb with values greater than 60 considered anomalous. A total of 19 soil samples are anomalous in Au. Silver values range from 0.5 ppm to 6.0 ppm with values greater than 1.9 ppm considered anomalous. Copper values range from 6 ppm to 1 940 ppm with values greater than 100 ppm considered anomalous. Lead values range from 8 ppm to 615 ppm with values greater than 100 ppm considered anomalous. Zinc values range from 21 ppm to 515 ppm with values greater than 100 ppm considered anomalous. Mercury values range from 5 ppb to 90 ppb with values greater than 100 ppb considered anomalous and background considered to be approximately 40 ppb. Arsenic values range from <1 ppm to 66 ppm averaging about 9 ppm and values greater than 25 considered anomalous. Two samples report anomalous As values, these are sample nos. 7811C and 7227C with 35 ppm and 66 ppm respectively. Antimony values range from 2 ppm to 72 ppm with values greater than 80 ppm considered anomalous.

In conclusion, numerous soil and rock samples report anomalous values in Au, Ag, Cu and Zn with the occasional soil and rock anomalous in Pb and As. Two of the three stream sediment samples report anomalous Au, Ag and Cu values in the -20 mesh and two report anomalous Cu and Au in the -100 mesh fraction.

COST STATEMENT

1. Wages

	Rate/day	Spec.dates	# Days	Cost
1 sampler	$57.18	July 2-4/81	3	$ 171.54
1 sampler	50.82	July 2-4/81	3	152.46
1 jr. field asst.	59.29	July 2-4/81	3	177.87
1 sampler	50.82	July 2-4/81	3	152.46
1 geologist	141.04	Aug. 17/81	1	141.04
				$ 795.37

2. Room & Board

Per diem rate of $30 based on 13 person-days $ 390.00

3. Transportation

Helicopter (3.0 hrs @ $350/hr)	$1 050.00
Fuel (Helicopter) (18.9 gal/hrx4.21/galx3.0 hrs)	$ 238.71
Air fare: Vancouver-Smithers Return 5 @ $234.60	$1 173.00
Smithers-Sturdee Valley Return 5 @ $80.00	$ 400.00
	$2 861.71

4. Analytical Services

Min-En Laboratories Invoice #8862, 8426

67 soil -prep. (@ $0.85 ea.)	$ 56.95
67 soil -Cu,Pb,Zn,Au,Ag,Hg,As,Sb (@ $20.95 ea.)	1 403.65
14 rock -prep. (@ $2.25 ea.)	31.50
14 rock -Cu,Pb,Zn,Au,Ag,Hg,As,Sb (@ $20.95 ea.)	293.30
4 heavy mineral flotation -prep. (@ $20.00 ea.)	80.00
4 heavy mineral flotation -100 mesh - Cu,Pb,Zn,Au,Ag,As,Hg,Sb (@ 20.95 ea)	83.80
-20 mesh +100 mesh - Cu,Au,Ag (@ $7.90 ea.)	31.60
	$1 980.80

5. Report Preparation

	Rate/day	Spec.Dates	# Days	Cost
Drafting	$127.00	Nov.12,13,16/81	3	$ 381.00
Typing	$ 64.80	Nov.16/81	1/2	32.40
Compilation	$141.04	Nov.10-13	4	$ 564.16
				$ 977.56
			GRAND TOTAL	$7 005.44

T. J. Drown
Geologist
1981 November 19

QUALIFICATIONS

I, Thomas J. Drown do hereby certify that:

1. I am a geologist residing at 4780 Fortune Avenue, Richmond, BC and employed by Du Pont of Canada Exploration Limited.

2. I am a graduate of the University of British Columbia with a B.Sc. in Honours Geology.

3. I have practised my profession for approximately six years in Canada.

4. Between 1981 July 10 and 1981 November 15, I supervised/ directed a field programme on the CHAPPELLE claims on behalf of Du Pont of Canada Exploration Limited.

Thomas J. Drown

APPENDIX A

Geochemical Analytical Procedure

PHONE 980-5814

APPENDIX A

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 WORK

PROCEDURE 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°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_3 and $HClO_4$ 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.

PHONE 980-5814

APPENDIX A

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 WORK

PROCEDURES 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 HNO_3 and $HClO_4$ mixture.

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

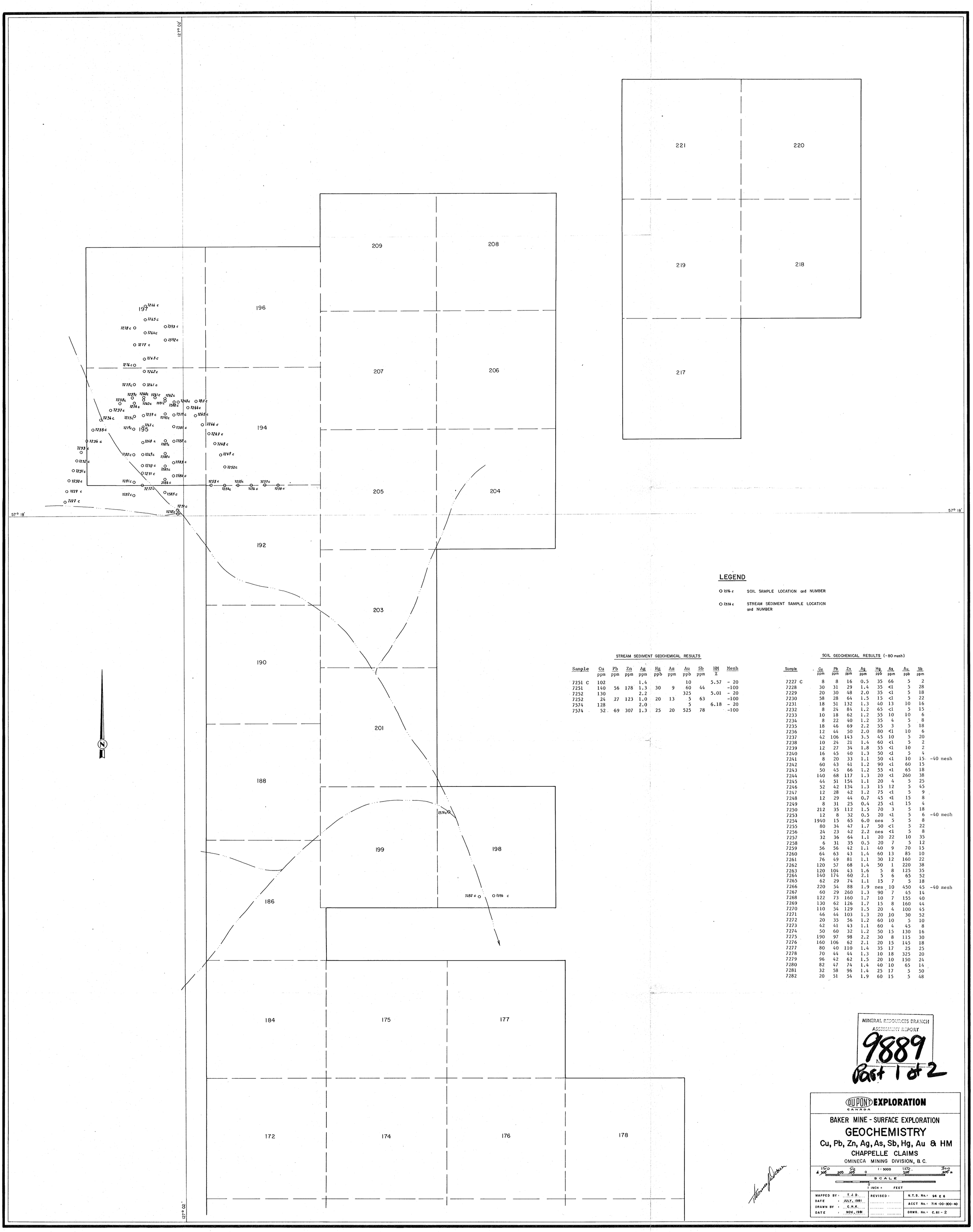
Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the CH_2H_2-Air flame combination but the Molybdenum determination is carried out by C_2H_2-N_2O gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzit method using Ag $CS_2N(C_2H_5)_2$ as a reagent. The detection limit obtained is 1. 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.

127° 02'

57° 18'



LEGEND

7574 c — SOIL SAMPLE LOCATION and NUMBER

7574 c — STREAM SEDIMENT SAMPLE LOCATION and NUMBER

STREAM SEDIMENT GEOCHEMICAL RESULTS

Sample	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Hg ppb	As ppm	Au ppb	Sb ppm	HM %	Mesh
7251 C	102			1.4			10		5.57	- 20
7251	140	56	178	1.3	30	9	60	44		-100
7252	130			2.2			325		5.01	- 20
7252	24	27	123	1.0	20	13	5	63		-100
7574	128			2.0			5		6.18	- 20
7574	52	69	307	1.3	25	20	525	78		-100

SOIL GEOCHEMICAL RESULTS (-80 mesh)

Sample	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Hg ppb	As ppm	Au ppb	Sb ppm	
7227 C	8	8	16	0.5	35	66	5	2	
7228	30	31	29	1.4	35	<1	5	28	
7229	20	30	48	2.0	35	<1	5	18	
7230	58	28	64	1.5	15	<1	5	22	
7231	18	51	132	1.3	40	13	10	16	
7232	8	24	84	1.2	65	<1	5	15	
7233	10	18	62	1.2	55	10	10	6	
7234	8	22	40	1.2	35	4	5	8	
7235	18	46	69	2.2	55	3	5	18	
7236	12	44	50	2.0	80	<1	10	6	
7237	42	106	143	3.5	45	10	5	20	
7238	10	24	21	1.4	60	<1	5	2	
7239	12	27	34	1.8	55	<1	10	2	
7240	16	45	40	1.3	50	<1	5	4	
7241	8	20	33	1.1	50	<1	10	15	-40 mesh
7242	60	43	41	1.2	90	<1	60	15	
7243	50	45	66	1.2	55	<1	65	18	
7244	140	68	117	1.3	20	<1	260	38	
7245	44	51	154	1.1	20	4	5	25	
7246	52	42	134	1.3	15	12	5	45	
7247	12	28	42	1.2	75	<1	5	9	
7248	12	29	44	0.7	45	<1	15	8	
7249	8	31	25	0.4	25	<1	15	4	
7250	212	35	112	1.5	70	3	5	18	
7253	12	8	32	0.5	20	<1	5	6	-40 mesh
7254	1940	15	65	6.0	nes	5	5	8	
7255	80	34	47	1.7	50	<1	5	22	
7256	24	23	42	2.2	nes	<1	5	8	
7257	32	36	64	1.1	20	22	10	35	
7258	6	31	35	0.5	20	7	5	12	
7259	56	56	42	1.1	40	9	70	15	
7260	64	63	43	1.4	60	13	85	10	
7261	76	49	81	1.1	30	12	160	22	
7262	120	57	68	1.4	50	1	220	38	
7263	120	104	43	1.6	5	8	125	35	
7264	140	174	60	2.1	5	6	65	52	
7265	62	29	74	1.1	15	7	5	18	
7266	220	54	88	1.9	nes	10	450	45	-40 mesh
7267	60	29	260	1.3	90	7	45	14	
7268	122	73	160	1.7	10	7	155	40	
7269	130	62	126	1.7	15	8	160	44	
7270	110	54	129	1.5	20	4	100	45	
7271	46	44	103	1.3	20	10	30	52	
7272	20	35	56	1.2	60	10	5	10	
7273	42	41	43	1.1	60	4	45	8	
7274	50	60	32	1.2	50	15	130	16	
7275	190	97	98	2.2	30	8	115	30	
7276	160	106	62	2.1	20	15	145	18	
7277	80	40	110	1.4	35	17	25	25	
7278	70	44	44	1.3	10	18	325	20	
7279	96	42	62	1.5	20	10	150	24	
7280	82	47	74	1.4	40	10	65	14	
7281	32	58	96	1.4	25	17	5	50	
7282	20	51	54	1.9	60	15	5	48	

DU PONT CANADA **EXPLORATION**

BAKER MINE - SURFACE EXPLORATION

GEOCHEMISTRY

Cu, Pb, Zn, Ag, As, Sb, Hg, Au & HM

CHAPPELLE CLAIMS

OMINECA MINING DIVISION, B.C.

1:5000

SCALE

1 INCH = FEET

MAPPED BY : T. J. D.	REVISED :		N.T.S. No. : 94 E 6
DATE : JULY, 1981			ACCT No. : 714-00-300-40
DRAWN BY : C.H.K.			DRWG. No. : C.81 - 2
DATE : NOV., 1981			

127° 02'

57° 18'

221 | 220

219 | 218

217

209 | 208

207 | 206

205 | 204

203

201

199 | 198

197 | 196 | 195 | 194 | 192 | 190 | 188 | 186 | 184 | 175 | 177 | 172 | 174 | 176 | 178

Talus covered

2a

2b

2c

Quartz Vein

Gossan

5569 c

5570 c

5571 c

5572 c

5573 c (talus)

5574 c (talus)

5575 c

5576 c

5577 c

5579 c

7010 c (float)

7012 c

7810 c

7812 c

LEGEND

4	GLACIAL DEPOSIT
3	QUARTZ MONZONITE – pyritized
2 (a | b | c)	DACITE — a. argillized and silicified; b. porphyritic, green; c. porphyritic, maroon
1	AGGLOMERATE, dark green - grey

SYMBOLS

- OUTCROP
- LIMIT OF EXPOSURE
- LIMIT OF GLACIAL DEPOSIT
- x 5576 c — ROCK SAMPLE LOCATION and NUMBER

ROCK GEOCHEMICAL RESULTS (-80 mesh)

Sample	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Hg ppb	As ppm	Au ppb	Sb ppm
5569 C	17200	227	46	22.0	5	10	5	40
5570	97	31	10	0.9	5	<1	220	22
5571	196	244	23	3.0	20	2	150	31
5572	188	68	34	2.6	10	4	40	12
5573	13	572	11	0.6	5	<1	15	8
5574	3	24	9	0.3	105	<1	5	2
5575	145	17	99	0.7	5	3	5	14
5576	16	200	47	0.4	5	16	5	42
5577	11	31	90	0.8	5	3	5	24
5578	3	15	45	1.1	5	3	5	51
5579	10	9	11	0.4	5	33	15	12
7810	151	141	100	1.2	5	15	60	22
7812	54	86	5	1.0	5	9	20	4
7811	205	615	14	2.7	5	35	625	72

DUPONT CANADA EXPLORATION

BAKER MINE - SURFACE EXPLORATION

GEOLOGY

CHAPPELLE CLAIMS

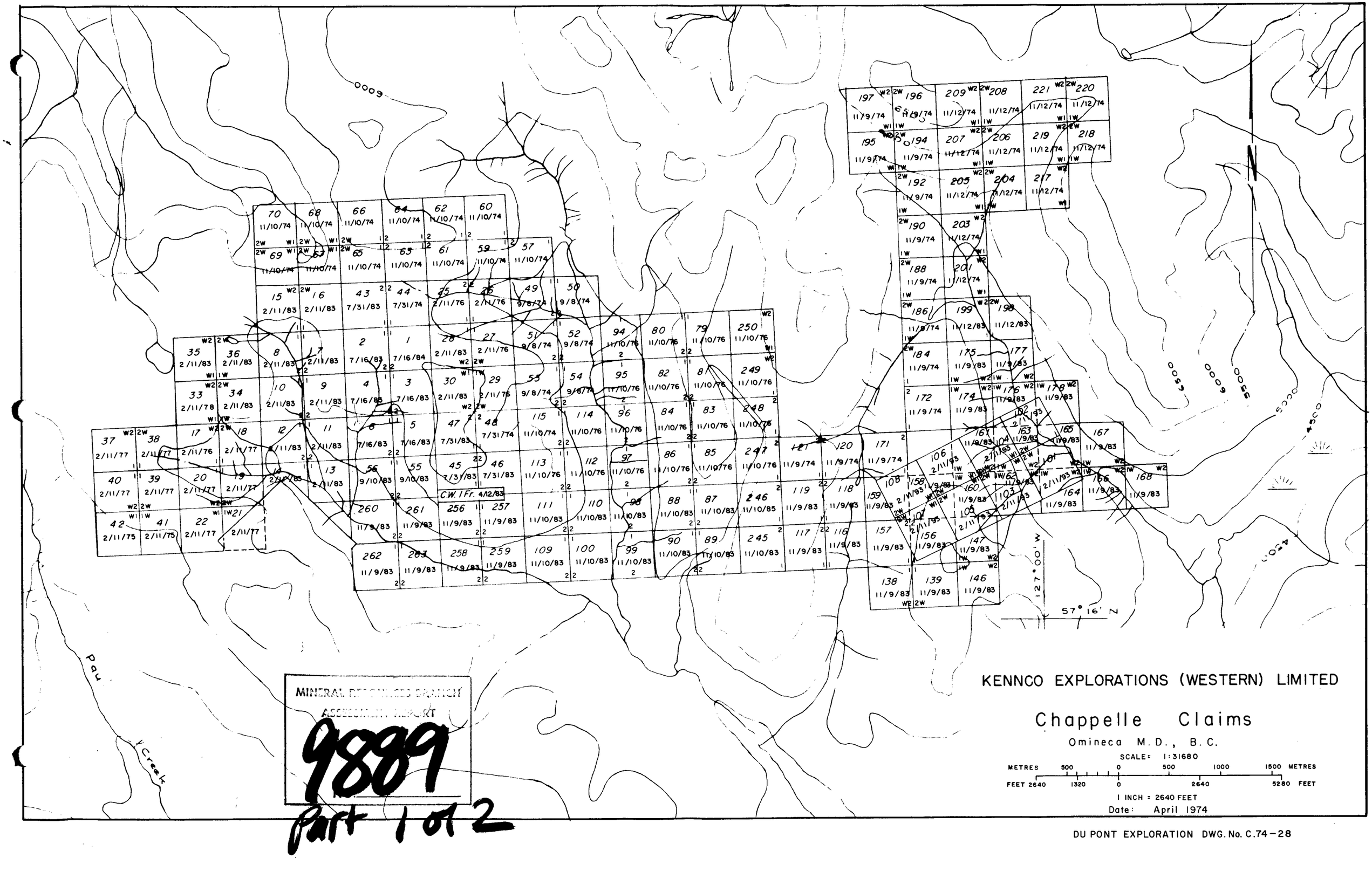
OMINECA MINING DIVISION, B.C.

1:5000

SCALE

1 INCH = FEET

MAPPED BY	T.J.D.	REVISED	N.T.S. No.: 94 E 6
DATE	JULY, 1981		ACCT No.: 714-00-300-40
DRAWN BY	C.H.K.		DRWG. No.: C.81 - 1
DATE	NOV., 1981		


MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9889
Part 1 of 2
KENNCO EXPLORATIONS (WESTERN) LIMITED
Chappelle Claims
Omineca M.D., B.C.
SCALE: 1:31680
METRES 500 0 500 1000 1500 METRES
FEET 2640 1320 0 2640 5280 FEET
1 INCH = 2640 FEET
Date: April 1974
DU PONT EXPLORATION DWG. No. C.74-28
127° 00' W
57° 16' N
Pau
Creek