

**A PERCUSSION DRILLING REPORT  
ON THE  
DUAL GROUP OF MINERAL CLAIMS  
DUAL PROPERTY**

**Omineca Mining Division, British Columbia**

**NTS 93E/14**

**Latitude 53°58' N  
Longitude 127°08' W**

**Owner/Operator**

**Bob HAMBLIN**

**by**

**Kelly L. ILLERBRUN, P.Eng.  
Geological Engineer**

**GEOLOGICAL SURVEY BRANCH  
December 18, 1997 ASSESSMENT REPORT**

**25,304**

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**Revised June 29, 1998**

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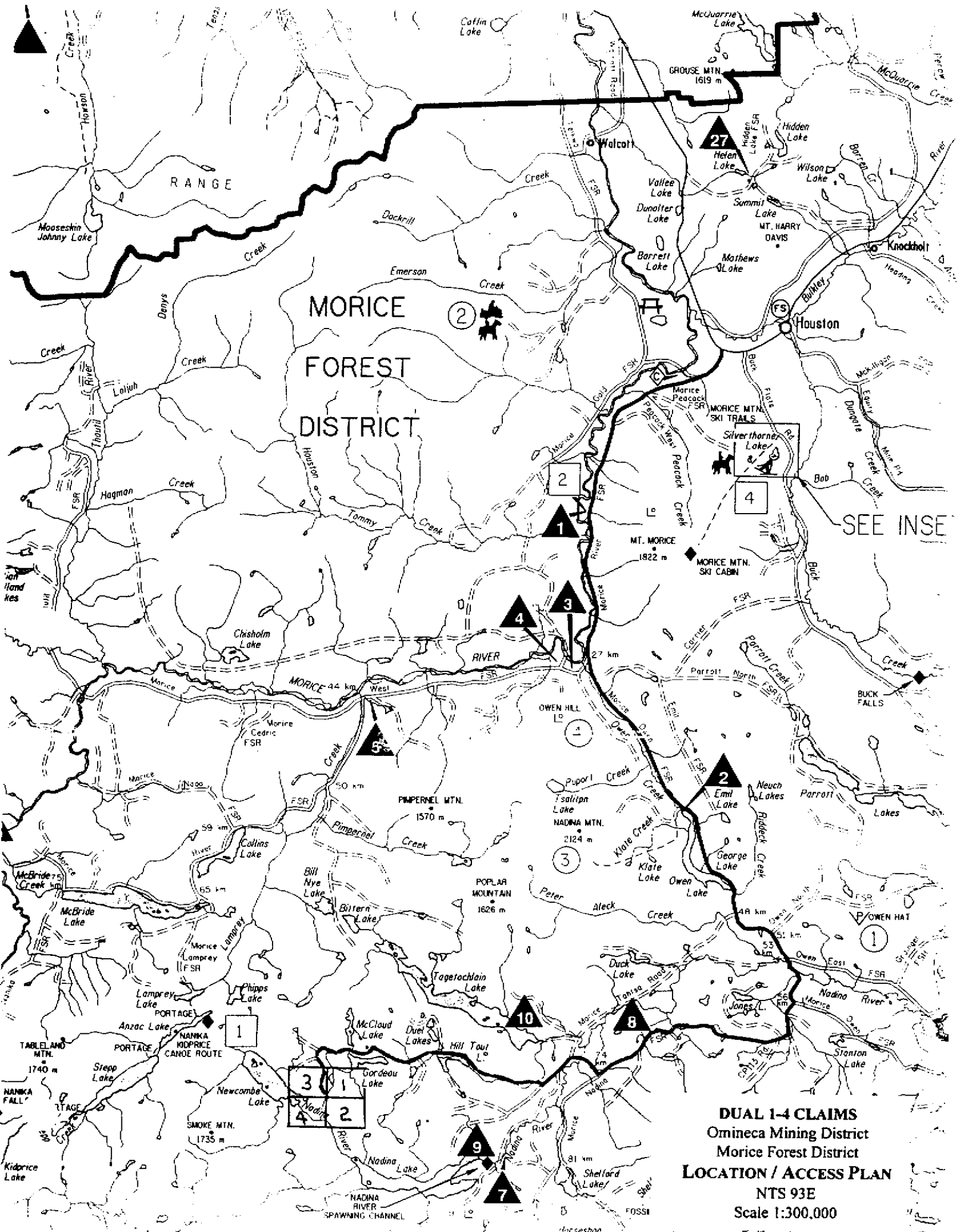
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## **SUMMARY**

This report covers the drilling of twenty 2-3/4" diameter percussion holes on the Dual Property. The holes were drilled in 1997 during the period October 19-22nd with an M32 Tank Drill. In total 2,000 feet (609.6 meters) of hole were drilled. These holes were drilled as part of a reconnaissance subsurface testing program that was approved by Work Permit # SMI-97-0200352-300.

No new massive sulfide veins were discovered during the drilling. Two float samples of massive sulfide containing copper and gold mineralization require further follow-up.



SEE INSE

**DUAL 1-4 CLAIMS**  
 Omineca Mining District  
 Morice Forest District  
**LOCATION / ACCESS PLAN**  
 NTS 93E  
 Scale 1:300,000

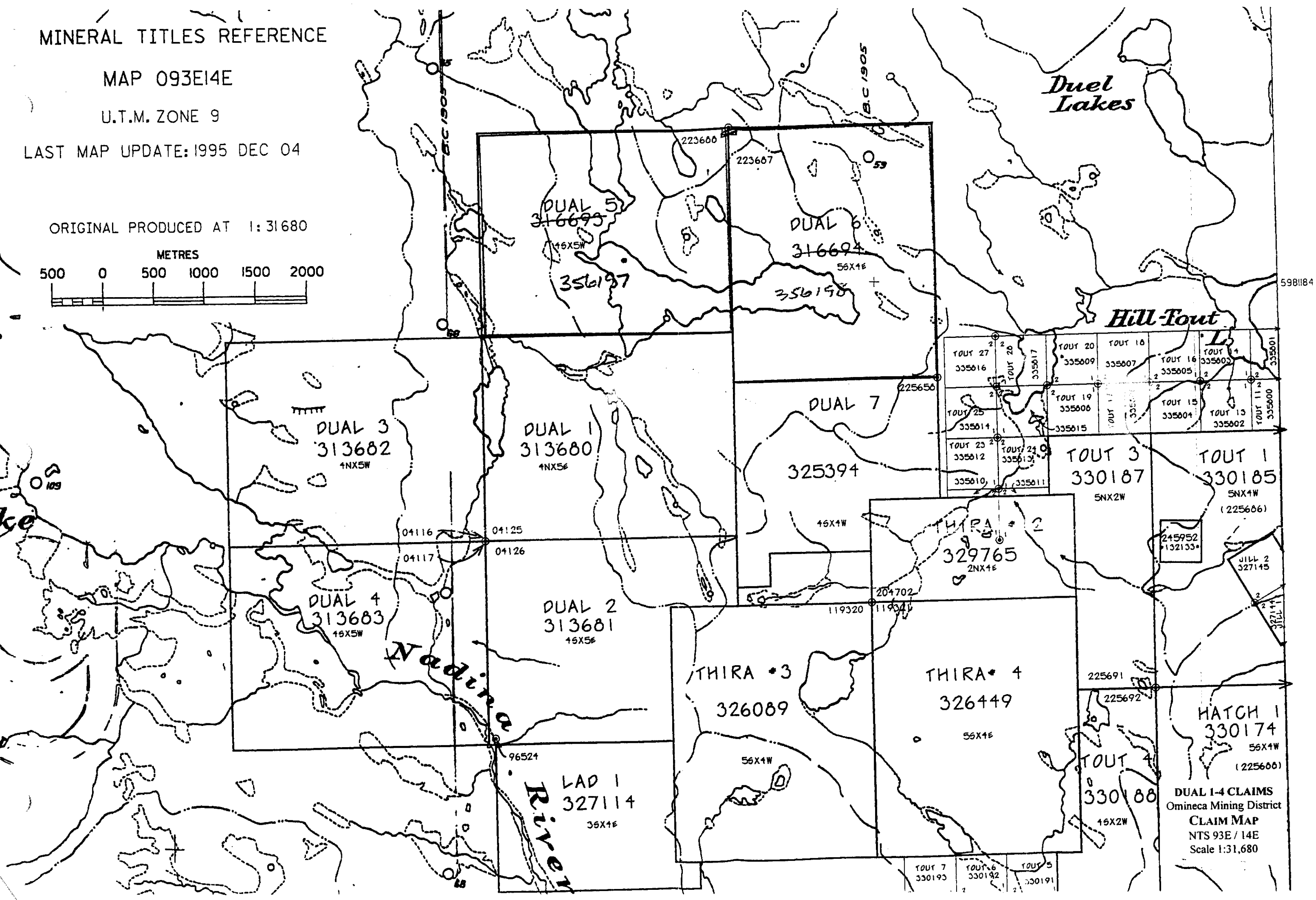
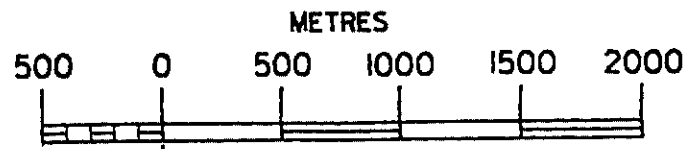
MINERAL TITLES REFERENCE

MAP 093E14E

U.T.M. ZONE 9

LAST MAP UPDATE: 1995 DEC 04

ORIGINAL PRODUCED AT 1:31680



DUAL 1-4 CLAIMS  
Omineca Mining District  
CLAIM MAP  
NTS 93E / 14E  
Scale 1:31,680

## LOCATION, PHYSIOGRAPHY, ACCESS

The Dual property is situated approximately 55 kilometers southwest of Houston, BC (Figure 1) and consists of the Dual 1 to Dual 7 claims in that area (Figure 2). The property consists of 136 units over the seven four post claims. The Dual claim group lies to the south west of Gordeau Lake and to the east of Newcombe Lake and consists of Dual 1-4 claims. The NTS map sheet number is 93E/14 and the latitude and longitude are as follows:

Latitude: 53° 58'N  
Longitude: 127° 08'W

The property can be reached by a total of 100 km of gravel Forest Service Roads from Houston, BC A route log for access to the property is as follows:

1. From Highway 16 approximately 4 km west of Houston turn south on the Morice River Forest Service Road.
2. Follow the Morice River, Morice-Owen, Morice- Nadina Roads to km 74.
3. Turn right onto the Hill Tout FSR and travel approximately 5 km to the Duel Lakes FSR.
4. Follow the Duel Lakes Road to the property at approximately 102 km on the FSR.

The property lies in an area of moderate topographic relief at an elevation of 1000 to 1200 meters, north of the Boundary Ranges of the Coast Mountains, on the western edge of the Nechako plateau. Moderately steep mountain slopes, broad U-shaped valleys, large narrow lakes draining ice fields and glaciers to the south, are dominant physiographic features of the area. Slopes on the property are moderate. Glaciers have scoured the valley walls leaving a shallow overburden on the tops of the ridges and infilling the valleys with glacio-fluvial gravels and sandy clay. The vegetation consists of Sitka alder, mountain ash, willow, huckleberry, false azalea and gnarled spruce, sub-alpine fir and lodgepole pine.

## **CLAIM TENURE AND OWNERSHIP**

The Dual property consists of seven claims that comprise a total of 136 units. The claims are held by Robert Hamblin of Houston, B.C. The table below lists the status of the claims.

<b>Claim Name</b>	<b>Record Number</b>	<b>Date Recorded</b>	<b>Expiry Date</b>
Dual 1	313680	Sept 21, 1992	Sept 21, 1997
Dual 2	313681	Sept 21, 1992	Sept 21, 1997
Dual 3	313682	Sept 22, 1992	Sept 22, 1997
Dual 4	313683	Sept 22, 1992	Sept 22, 1997
Dual 5	356197	March 22, 1993	
Dual 6	356198	March 22, 1993	
Dual 7	325394	May 11, 1994	



COAST LAND DISTRICT - RANGE 5 05'

COAST LAND DISTRICT - RANGE 4

MORICE  
FOREST

Tagelochlain  
Lake

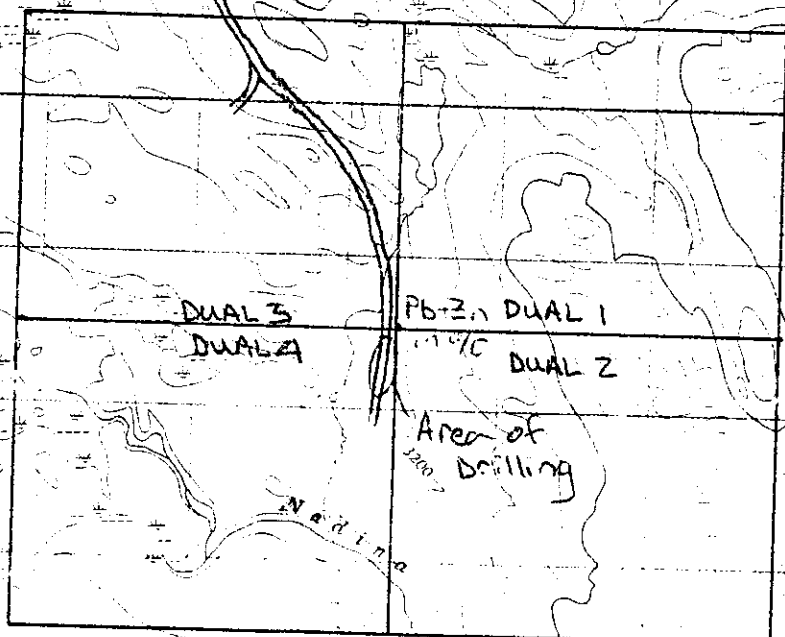
Duel  
Lakes

Hill-Tout  
Lake

Anzac  
Lake

Neucombe  
Lake

Smoke  
Mountain

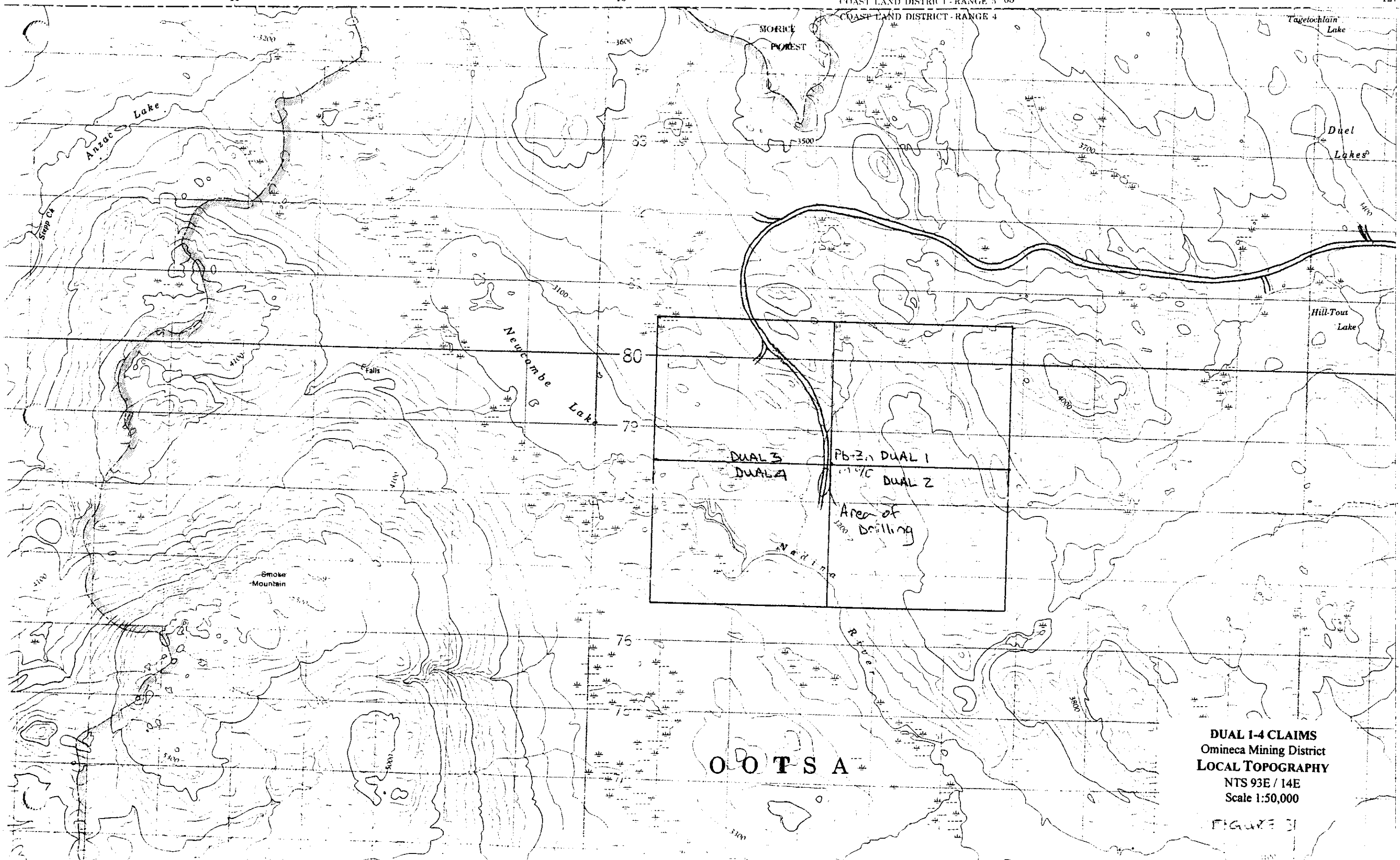


O O T S A

**DUAL 1-4 CLAIMS**  
Omineca Mining District  
**LOCAL TOPOGRAPHY**  
NTS 93E / 14E  
Scale 1:50,000

FIGURE 3

Nadina  
Lake



## REGIONAL GEOLOGY

The Dual Property is underlain by the middle Jurassic Hazelton Group, a complex group of sedimentary and volcanic rocks which comprise an island arc complex. The complex lies west of the successor Bowser Basin of the intermontane Tectonic Belt and east of the Coast Plutonic Complex. In the area of the Property the Hazelton rocks are in places unconformably overlain by sediments of the Bowser Group. The Hazelton Group is mainly an island arc complex of sub-aerial volcanics of differentiated andesitic to dacitic calc-alkaline composition with interbedded sedimentary facies. The Jurassic rocks are all capped by Skeena marine basin turbidites of Early Cretaceous Age, as well as late Cretaceous age felsic pyroclastics and even later basalt flows, both of the Kasaska Group.

Subsequent to the sedimentary and volcanic activity, the rocks have been complexly folded and faulted and intruded by a succession of small to medium sized intrusives whose ages range from Upper Cretaceous to Eocene. The Eocene Nanika intrusives are known to have porphyry showings, including the Berg copper deposit to the south. However, of these many intrusives, the Late Cretaceous Bulkley hornblende-biotite diorites appear to contain the most important porphyry copper-molybdenum deposits of the district, including the Huckleberry, Whiting Creek and Ox Lake deposits to the south and the Poplar Lake property to the East.

The regional metamorphic grade is of the lower greenschist facies. The regional scale alteration assemblage consists of moderate chloritic alteration with trace to minor disseminated pyrite. This regional metamorphic event peaked during the mid-Cretaceous time (approximately 110-90 Ma).

## PROPERTY GEOLOGY

The geology of the Dual Lakes property is not well understood. The property is still in a grass roots stage and will benefit from future exploration programs. To the south and east of Gordeau Lake and to the north and east of the Dual 1 claim a number of intrusions or intrusive phases have been outlined that show copper and molybdenum mineralization. The intrusions are characterized as porphyritic biotite-feldspar diorite/granodiorite stocks with disseminated and quartz vein controlled chalcopyrite mineralization. Molybdenite has also been observed to occur with the quartz veins and as separate clusters on fractures. Volcanic rocks to the north of Gordeau Lake show predominantly fracture controlled mineralization that has been exposed in a number of hand trenches that appear to be several years (decades?) old.

On the Dual 1-4 claims in the vicinity of the LCP a series of Barite-Galena-Sphalerite veins occur in a suite of strongly altered volcanic host rocks adjacent to the veins. These veins were originally exposed by construction of forest access roads into the area and are currently only exposed in the ditch of the road. The volcanic rock alteration occurs as weak to intense argillic overprinting and has resulted in the destruction of most original textures. Outcrops away from the vein systems show typical Hazelton volcanic assemblages of purple to green fragmental, crystal lapilli tuffs and possibly interbedded flows. To the south of the Ba-Pb-Zn veins the host volcanics show a very high degree of sulphide mineralization as disseminated pyrite.

## DRILL PROGRAM

A total of twenty (20) 2-3/4" diameter percussion holes (DL-1 to DL-20) were drilled on the road over a length of 500 metres south of the main barite-lead-zinc vein showing. Outcrop in the road ditch consists of pyrite-clay altered volcanic rocks in the area of drilling. Hole locations are plotted on Figure 4.

All holes were drilled to a depth of 30.5 metres (100 feet). Composite samples over the entire length of each hole were submitted to Min-En Labs in Vancouver for 31 element ICP analysis and a gold fire assay.

Cutting were visually assessed by the author for lithology, alteration and mineralization.

During the drill program two massive sulfide float samples (DLR-1, DLR-2) were collected from till in the area of holes DL-1 to DL-3. These samples were also submitted to Min-En for 31 element ICP and fire assay for gold.

## RESULTS

Drill cuttings from all samples were all strongly altered with pyrite contents ranging from visual estimates of less than 1% by volume to 2%. Original rock textures were difficult to determine but it is believed that most samples consisted of hydrothermally altered volcanic rocks that are close to argillic stages. Chips were light grey to white and locally consisted only of clay minerals. The chips are similar in appearance to the outcrop rock types observed in the area to the south of the LCP. Assays for the drill hole cuttings are appended as Appendix 1.

Except for the road fill material no overburden was encountered.

Anomalous lead and zinc values were encountered in holes DL-3, DL-6, DL-18, and DL-19. Silver, cadmium and galium may also show anomalous values in these holes as evidenced in the ICP report, however, sample dilution may have reduced the effectiveness of the anomalies.

According to the driller, there is a strong possibility that some of the samples were mis-labelled. Based on the results, it is suspected that DL-3 and DL-6 are from the same area as DL-18 and DL-19.

Float samples DLR-1 and DLR-2 contained massive pyrite-chalcopyrite mineralization. The samples contained in excess of 10,000 ppm Cu as well as 5.8 to 15 ppm Ag, and 530 to 1365 ppb Au. An additional float sample taken from this location was assayed at the Huckleberry Mine and returned a copper grade of just over 2%.

## INTERPRETATION

Based on the results of the drilling, no new lead-zinc-barite veins were discovered in this drilling program. If the samples are in fact mis-labelled as above, no anomalous results were obtained to the south of the main showing.

## **RECOMMENDATIONS**

It is recommended that a program of literature review be conducted in order to discover what previous work has been conducted by previous operators on and about the Dual Property. This review would best consist of a review of assessment reports that have been filed on claims (historical and current) in the area, a review of government geological reports that may have been published on geology in and about the area, and contact with previous operators of historical and current properties in and about the area.

It is further recommended that a program of prospecting and geological mapping be conducted over the property area so that a better understanding of the geology can be determined. This will be complicated by the overburden cover that is present over much of the property, especially in the low laying areas, however, there have been a number of areas that have also been opened up by forest development in which bedrock has been exposed.

A program of soil sampling should also be conducted to follow-up the massive sulfide float. This would first be conducted by utilizing a wide spread reconnaissance grid of 50 to 100 m spacing. The grid would then be tightened up in areas that indicated the anomalous presence of metals. Stream sediment geochemistry would also be helpful and should be conducted as part of the prospecting program.

Results of these programs would then be followed up by further work consisting of geophysical and trenching work prior to drilling.

## STATEMENT OF EXPENDITURES

The following table summarizes the expenditures that were incurred during this program.

Drilling	2000 ft at \$9.00/ft	\$ 18,000.00
Lowbed	12 hrs at \$95.00/hr	\$ 1,140.00
Assaying	20 samples at \$15.00 ea	\$ 600.00
Geologist	2 days at \$300.00/day	\$ 600.00
Pickups	5 days at \$75.00/day	\$ 375.00
Drill/Helper Travel	3hrs x 4 days x \$38.00/hr	\$ 456.00
Report Preparation	lump sum	\$ 500.00
<b>Total</b>		<b>\$ 21,671.00</b>

## AUTHOR'S QUALIFICATIONS

I, Kelly Lynn Illerbrun of 1420 Driftwood Crescent, Smithers, BC, hereby certify the following to be true and correct:

I am a graduate of the University of British Columbia, with the degree of Bachelor of Applied Science, Geological Engineering, in May 1987.

I have been employed in the mineral industry in British Columbia, prior to and after graduation, for twelve years. I have held the following positions:

- |              |  |
|--------------|--|
| 1985-1986    | Engineering Assistant<br>Westar Mining Ltd., Greenhills Operations<br>Elkford, BC                                |
| 1987-1989    | Exploration & Mine Geologist<br>Cheni Gold Mines Inc., Lawyers Operations<br>Vancouver, BC                       |
| 1989-1990    | Underground Miner<br>Cheni Gold Mines Inc., Lawyers Operations<br>Vancouver, BC                                  |
| 1990         | Exploration Geologist<br>Gulf International Minerals Inc., Inel Project<br>Vancouver, BC                         |
| 1991-1992    | Mine Engineer/Geologist<br>Timmins Nickel Inc., Dome Mountain Operation<br>Smithers, BC                          |
| 1993-Present | Geological/Mine Engineer /Exploration Project Manager<br>Huckleberry Mines Ltd., Huckleberry Mine<br>Houston, BC |

I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia as a Registered Professional Engineer.

I have been contracted by Bob Hamblin to observe the drilling program and to write this geologic report. I have visited the property prior to and during the drilling campaign conducted in 1997.

I hold no interest, either direct or indirect, in the property.

  
Kelly L. Illerbrun, P.Eng. Dec 29/97

## **BIBLIOGRAPHY**

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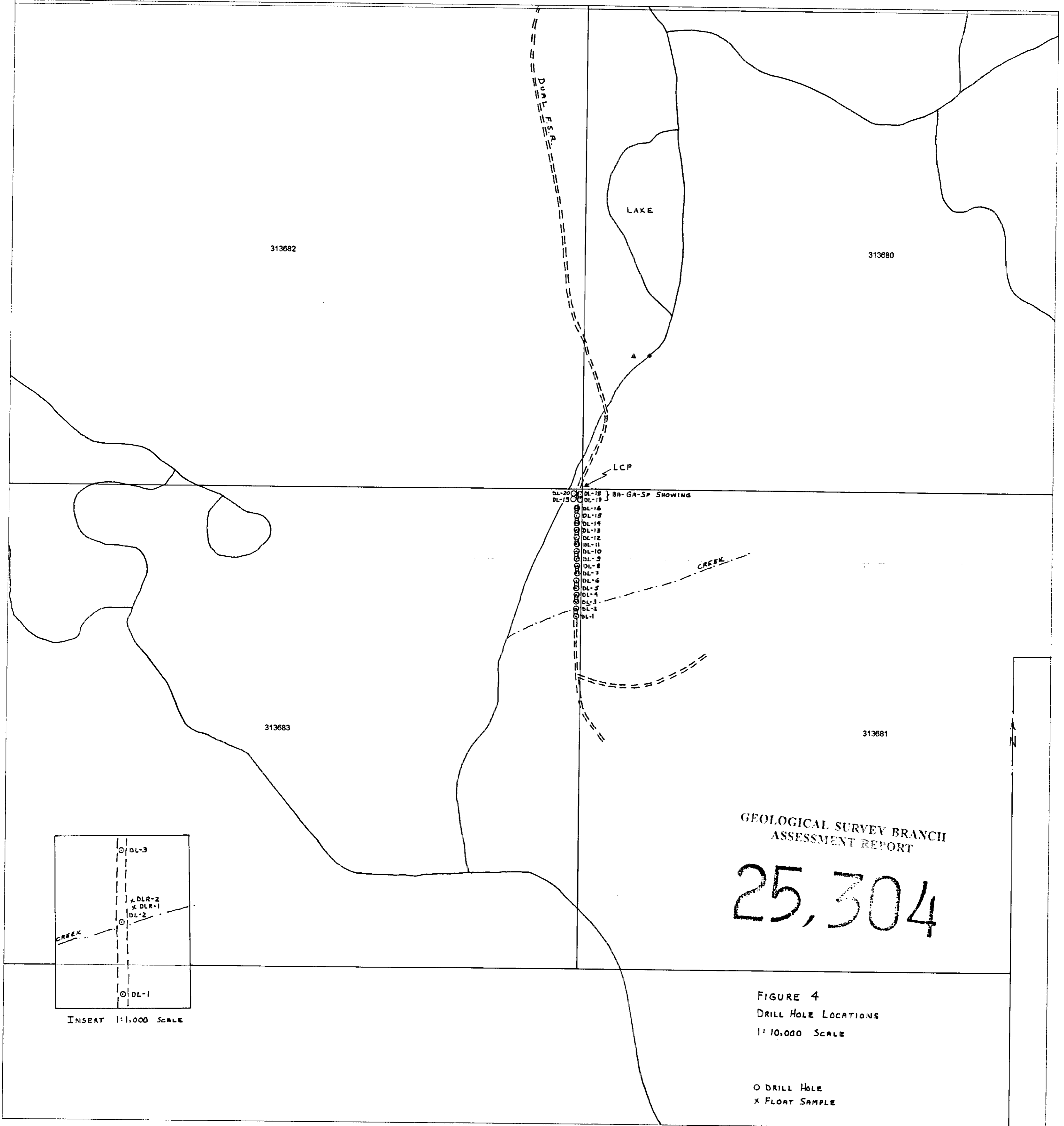


COMP: *DUAL*  
 PROJ:  
 ATTN: KELLY ILLERBRUN

MIN-EN LABS - - ICP REPORT  
 8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8  
 TEL:(604)327-3436 FAX:(604)327-3433

FILL NO: 7S-0331-RJ1  
 DATE: 97/10/24  
 \* \* \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL %	AS PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	GA PPM	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SN PPM	SR PPM	TH PPM	TI %	U PPM	V PPM	W PPM	ZN PPM	Au-fire PPM
DL-1	.1	.53	47	149	.1	1	.07	.1	14	28	85	3.96	1	.02	7	.02	46	4	.01	11	130	8	13	1	178	1	.01	1	9.3	1	30	17
DL-2	.1	.82	69	228	.1	2	.25	.3	14	89	48	3.73	1	.09	9	.20	202	4	.04	14	450	22	16	1	86	1	.02	1	23.2	3	161	5
DL-3	4.2	.48	94	287	.1	1	2.32	11.5	15	7	49	3.08	23	.30	1	.48	6950	5	.01	20	960	910	20	1	95	1	.01	2	13.2	5	1802	8
DL-4	.2	.42	1	498	.1	1	2.92	.4	9	12	21	2.18	1	.25	1	.63	1613	1	.01	4	1020	29	1	1	137	1	.01	1	14.1	1	88	6
DL-5	.1	.45	4	266	.1	1	3.50	.8	12	28	28	2.95	1	.30	1	.26	1521	2	.02	10	1050	28	8	1	236	1	.01	1	13.1	1	82	1
DL-6	1.4	.46	9	324	.1	4	2.85	5.9	12	1	30	3.04	38	.30	1	.56	>10000	4	.01	22	980	289	12	1	88	1	.01	5	14.0	2	529	20
DL-7	.1	.58	12	115	.1	1	1.78	.3	13	20	25	4.40	1	.22	1	.34	637	3	.01	8	860	9	10	1	79	1	.01	1	11.7	1	96	2
DL-8	.1	.50	1	569	.1	1	3.78	.1	8	21	20	1.66	1	.23	2	.54	827	1	.03	2	1130	10	1	1	108	1	.01	1	21.7	1	37	2
DL-9	.1	.46	16	109	.1	1	2.91	.1	13	16	27	3.57	1	.20	1	.34	522	2	.02	7	310	2	6	1	226	1	.01	1	8.7	1	93	1
DL-10	.8	.44	12	226	.1	4	.08	.9	10	63	22	3.36	1	.03	6	.05	92	3	.01	10	120	18	13	1	101	1	.01	5	9.4	2	81	5
DL-11	.1	.55	1	189	.1	1	2.88	.1	13	32	28	3.96	1	.22	1	.79	861	1	.03	6	1070	15	3	1	220	1	.01	1	18.7	1	118	1
DL-12	.1	.45	1	482	.1	1	2.83	.9	9	15	19	2.47	1	.23	1	.30	2057	1	.03	6	1220	8	3	1	85	1	.01	1	17.5	1	58	1
DL-13	.1	.44	1	497	.1	1	2.75	.7	10	23	20	2.18	1	.24	1	.38	1605	1	.04	6	1220	11	2	1	64	1	.01	1	18.8	1	65	3
DL-14	.1	.48	1	488	.1	1	5.11	.1	9	15	16	2.25	1	.19	7	1.00	1104	1	.03	1	1070	14	1	1	106	1	.01	1	19.3	1	52	2
DL-15	.1	.63	1	478	.1	1	3.94	.1	8	38	21	1.96	1	.23	10	.69	1009	1	.04	3	1090	16	1	1	100	1	.02	1	21.2	1	34	2
DL-16	.3	.53	1	547	.1	1	3.28	.4	10	15	22	2.37	1	.27	2	.72	1743	1	.01	4	1070	40	4	1	133	1	.01	1	16.7	1	133	2
DL-17	.2	.46	4	265	.1	1	3.75	1.1	13	24	29	3.20	1	.30	1	.25	1721	3	.02	10	1030	46	10	1	225	1	.01	1	12.6	1	117	1
DL-18	9.0	.40	51	444	.1	3	2.81	11.0	15	1	93	2.87	26	.27	1	.54	7262	5	.01	20	940	1551	44	1	96	1	.01	4	13.5	4	1565	8
DL-19	.4	.45	21	377	.1	1	2.87	6.2	13	1	30	3.01	34	.29	1	.56	>10000	3	.01	22	960	343	7	1	89	1	.01	1	13.6	2	683	24
DL-20	.1	.46	1	412	.1	1	3.79	2.2	13	1	31	2.66	1	.31	1	.52	3495	1	.01	10	990	116	4	1	124	1	.01	1	12.3	1	262	5



313682

313680

313683

313681

LAKE

LCP

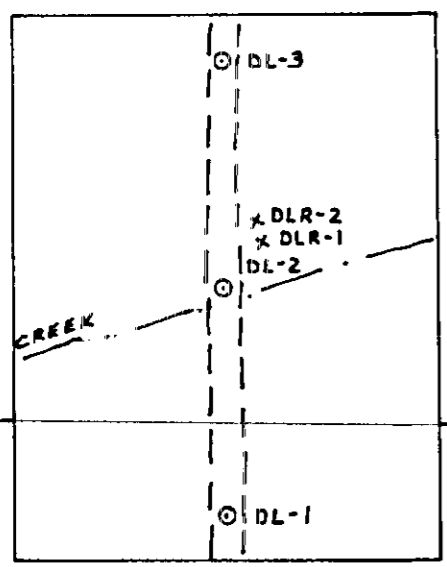
DL-20 } BA-GA-SP SHOWING  
DL-19 }

DL-18  
DL-17  
DL-16  
DL-15  
DL-14  
DL-13  
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DL-11  
DL-10  
DL-9  
DL-8  
DL-7  
DL-6  
DL-5  
DL-4  
DL-3  
DL-2  
DL-1

CREEK

GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT

25,304



INSERT 1:1,000 SCALE

FIGURE 4  
DRILL HOLE LOCATIONS  
1:10,000 SCALE

O DRILL HOLE  
X FLOAT SAMPLE