821285

EXPLORATION PROPOSAL

FOR THE

DEL VMS PROSPECT

Deep Creek Area
Omineca Mining Division
British Columbia

Lat. 54°39′ N.-Long. 126°42′W.
NTS 93 L/10

Willard D. Tompson
January 4, 1993

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ILLUSTRATIONS

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Massive sulfide mineralization occurs in submarine volcanic rocks and in marine shale and greywacke of the Lower Jurassic (Pliensbachian) Nilkitkwa Formation east of Telkwa, British Columbia.

Some bands of massive sulfides occur in outcrops and were discovered by prospectors in 1915; others were found in bulldozer trenches in the 1960's.

Geochemical and geophysical methods have produced some encouraging results and a few shallow, close-spaced exploratory holes have been drilled, but there were no large ore-grade intersections.

Induced polarization surveys along with magnetic and EM surveys are recommended. Diamond drilling is recommended if suitable targets are identified by the geophysical work.

Grid preparation and geophysical surveys are expected to cost $45,100. A 3000-foot diamond drilling program is proposed to test geophysical targets and will cost about $74,000.

Exploration Proposal
for the
Del VMS Prospect
Omineca Mining Division
British Columbia

PROPERTY AND LOCATION

The Del group of mineral claims lies 23 kilometers easterly from Telkwa, British Columbia (Figure 1) and covers a volcanogenic massive sulfide prospect, which in the 1960's and 1970's was known as the Del Santo property.

Access to the claim area is from Highway 16 (Figure 2) near the settlement of Quick, British Columbia. From Highway 16, Kerr Road, an improved gravel road traverses easterly to an unimproved 4WD dirt road known locally as, the Deception Lake road. The 4WD road exits Kerr Road about 5 kilometers east of the highway and traverses northeasterly to the Del group, a distance of about 8 kilometers (Figure 3).

The claim area lies in the Babine Range and is characterized by low to moderate relief with elevations of 1060 to 1450 meters. Three small tributaries of Deep Creek occur on the claim group as well as four small lakes, which are from 1 to 7 hectares in area. Mature stands of spruce, balsam and lodgepole pine cover the area and according to British Columbia Forest Service maps, are from 100 to 140 years old and from 10 to 28 meters tall.

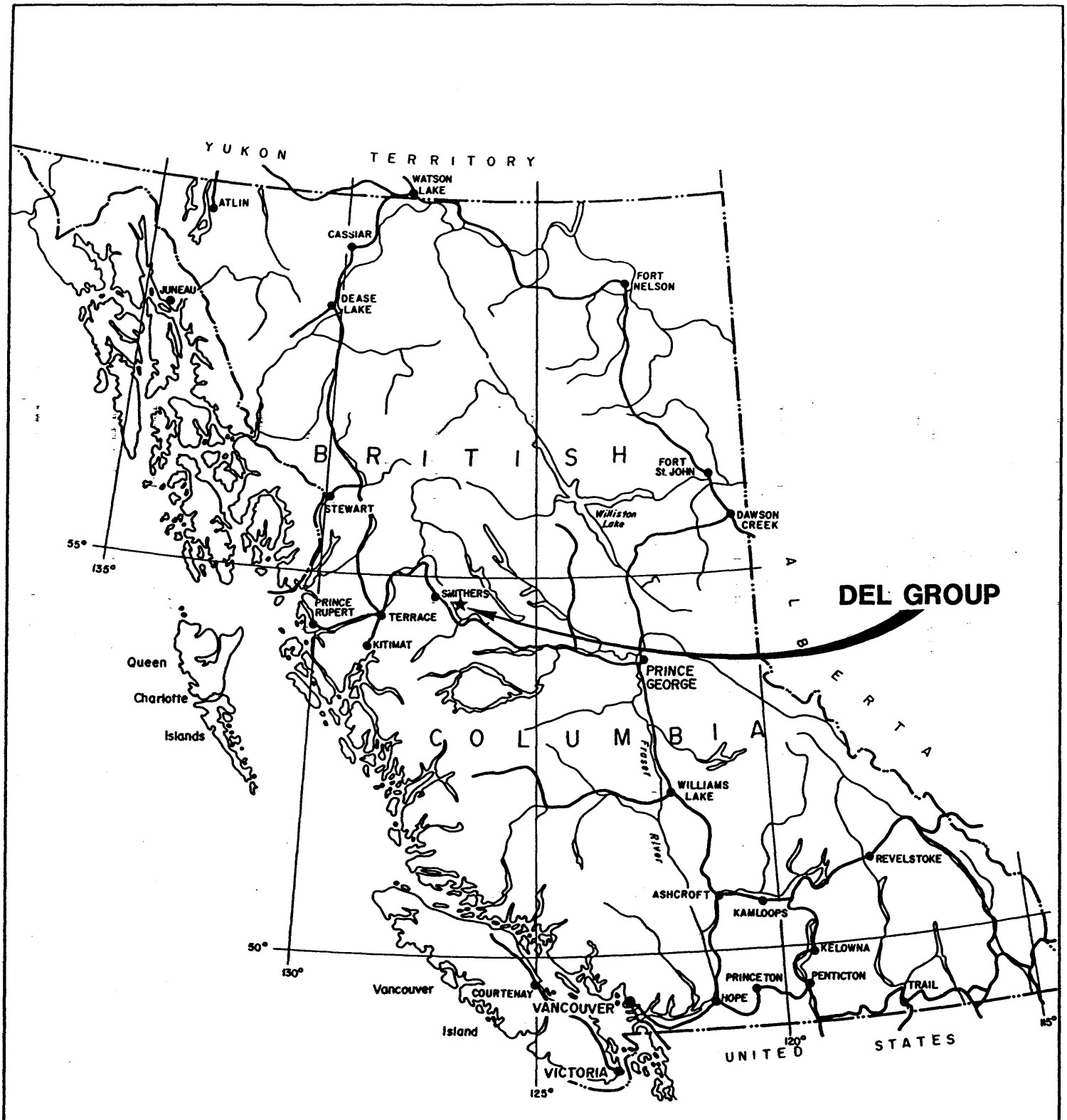


FIGURE 1

DEEP CREEK VMS PROSPECT AREA

MAP OF BRITISH COLUMBIA SHOWING LOCATION OF THE DEL GROUP

Omineca Mining Division, British Columbia

Willard D. Tompson	January 4, 1993

SCALE – 1 : 2 000 000

Kilometres 20 0 20 40 60 80 100 120 140 160 180 200 Kilometres

Figure 2.- Map of Smithers-Telkwa area showing location of the Del group and important cultural and geographical features.

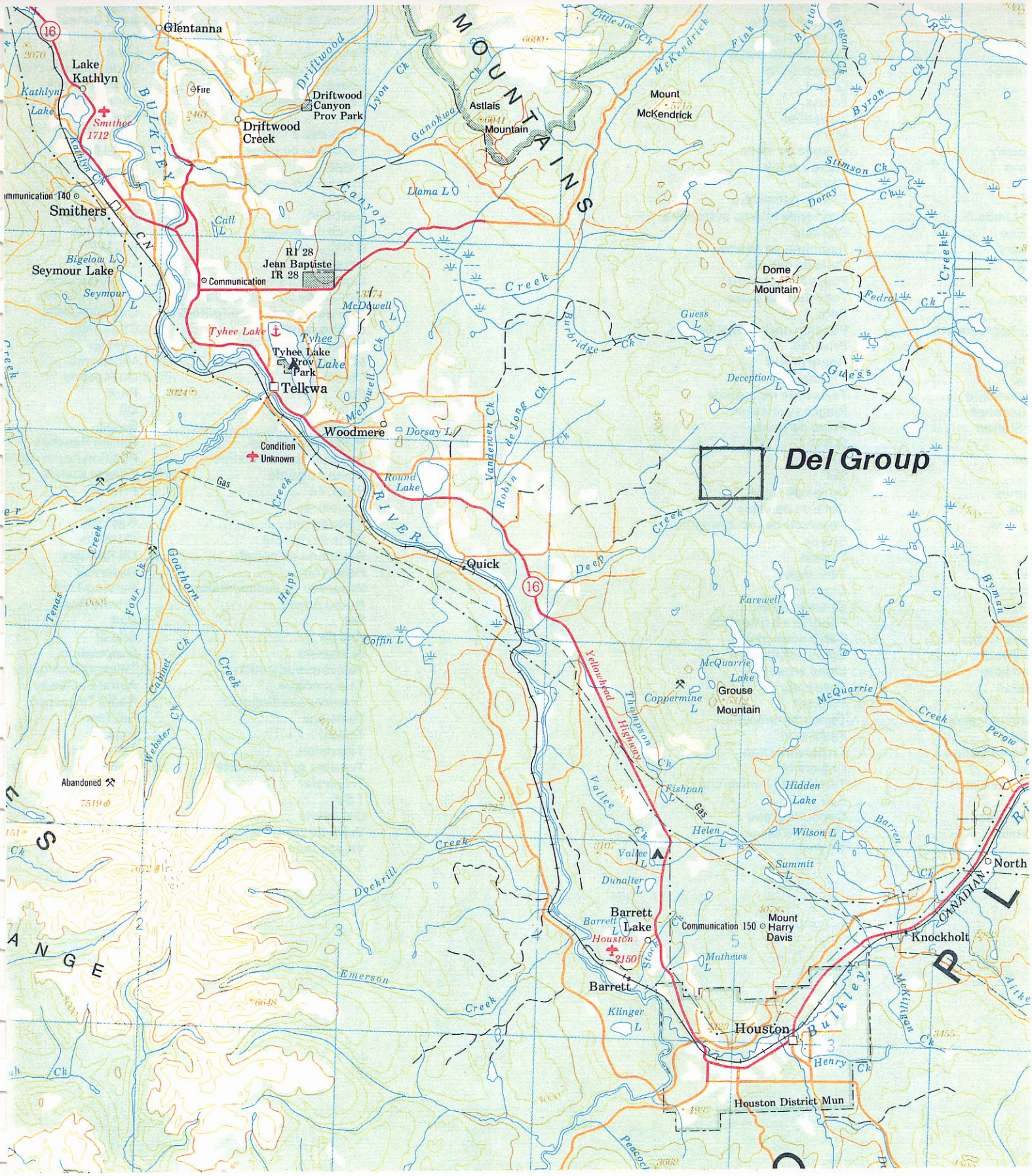


Figure 3.- Topographic map showing the Del group and access.

CLAIMS

The Del group is comprised of two claims (Figure 4):

Claim Name	Tenure No.	Units	Date of Record
Deep	314107	20	October 23, 1992
Del	314603	10	November 10, 1992

The claims are owned by, W.D. Tompson, signator of this report and by Al Burrows, Telkwa, B.C.

HISTORY

The earliest record of work on the mineral occurrences at Deep Creek is in 1915. In that year the B.C. Minister of Mines noted that claims were staked in the Deep Creek area. The next mention in the literature is 13 years later (B.C. Min. of Mines, 1928) when it was reported that open cuts and pits were made on pyrite-chalcopyrite-sphalerite occurrences by claim owners, Tom Brewer and Tom Brandon.

Thirty-nine years passed before the next work was recorded, when in 1967, claim owner Mel Chapman cut several bulldozer trenches. Texas Gulf Sulfur Co. (L'Orsa, 1968) optioned the claims from Chapman in 1968 and conducted a ground magnetometer survey and a limited geochemical soil survey.

In 1969 Falconbridge Nickel Mines Ltd. optioned the claims from owners, Mel Chapman and Francis Madigan (Brown, 1970; Helgesen, 1970 and Harper, 1970) and in 1969 and 1970 conducted geochemical soil surveys, geological mapping, magnetometer surveys and electromagnetic surveys using Ronka E.M.-16 and Ronka Mark IV equipment and drilled three diamond drill holes for a total of

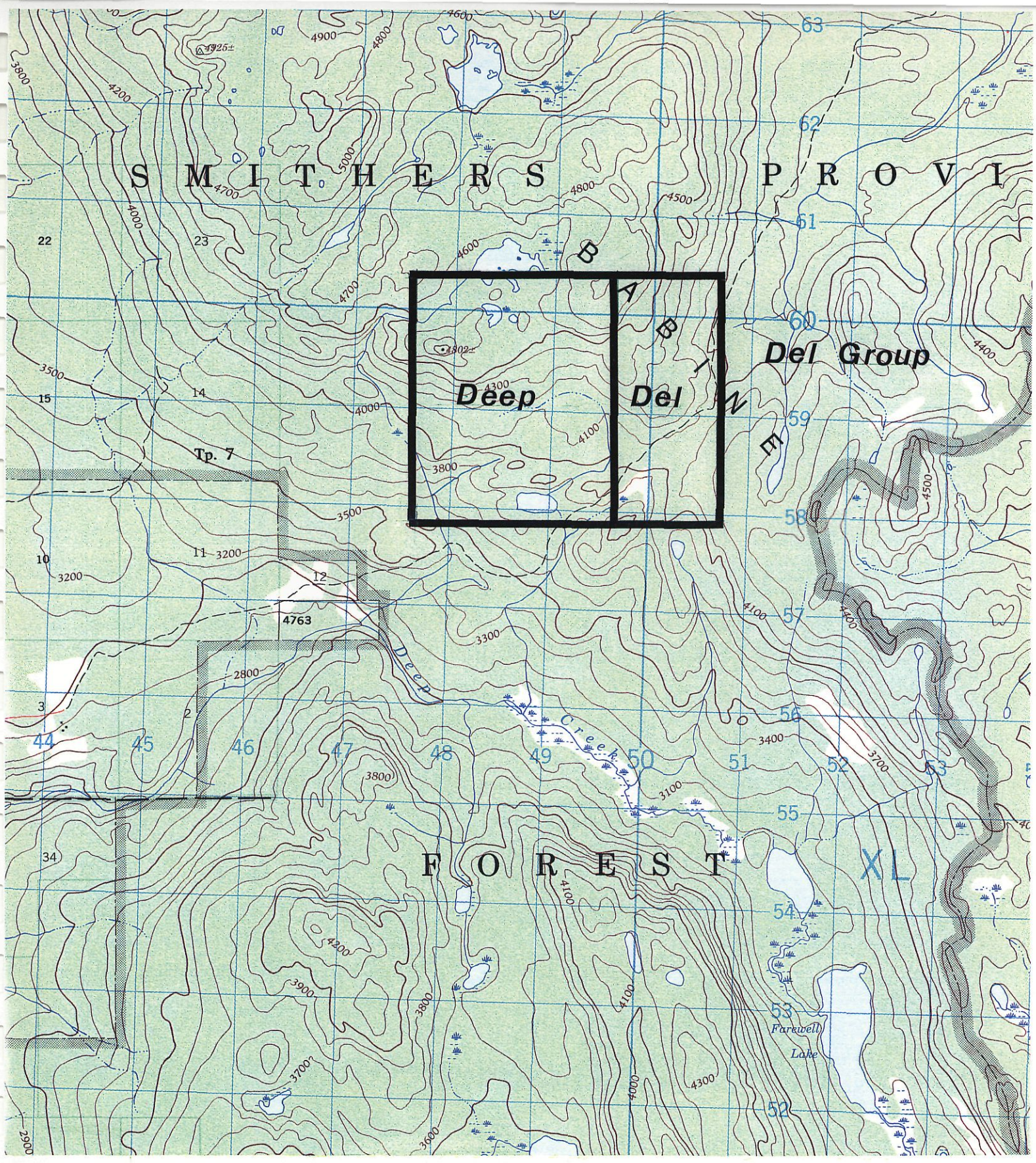


Figure 4.- Claim map of Deep and Del claims, Deep Creek area.

129.5 feet (B.C. Dept. Mines G.E.M., 1969 and B.C. Min. Energy Mines and Petrol. Res. G.E.M., 1970).

In 1970(?) Bovan Mines Ltd. drilled one BX diamond drill hole from a drill site near the trenched area (D.C. Plecash, personal communication). The hole was drilled to a depth of about 140 feet (43 meters) but no records exist from that drill hole.

Union Minere Explorations and Mining Corporation under an agreement with Mel Chapman, cut four bulldozer trenches in 1976 (B.C. Min. Energy, Mines and Petrol. Res., 1976, p. E150) each about 3 by 20 meters and 0.3 meters deep.

Petra Gem Exploration of Canada, Ltd. acquired an option to purchase the Del Santo claims from Mel Chapman and Francis Madigan and staked an additional block of claims contiguous with Del Santo. They conducted geological work (Price, 1979) over the previously cut grid lines and surveyed the trench area with a McPhar M-700 fluxgate magnetometer and conducted a pulse E.M. survey over a small (120 by 180 meters) area near the trenches (White, 1978).

In 1979 four diamond drill holes were drilled by D. Groot Logging Ltd. in the area of the previous work. About 1000 feet (328 meters) were drilled, but no records exist for that drilling. Groot also cut some bulldozer trenches in January or February of 1983 or 1984, but no maps or assays exist for that work (D.C. Plecash, personal communication).

GEOLOGY

The Babine Range of west-central British Columbia lies within the Stikine terrane. The prospect area at Deep Creek is underlain by the Nilkitkwa Formation of the Early to Middle Jurassic Hazelton

Group. Tipper and Richards (1976, p. 9-27) show that the Hazelton Group is an island-arc volcanic and sedimentary assemblage which was deposited in the Hazelton Trough during Early to Middle Jurrassic time.

The Nilkitkwa Formation is comprised of shale, greywacke, amygdaloidal andesite or basalt (MacIntyre, 1986) rhyolite, volcanic breccias, tuff and minor limestone. Rocks of the Nilkitkwa Formation exposed in the prospect area are: chlorite-epidote altered amygdolidal andesite, chloritized andesitic flows and dikes, argillite, felsic tuff and biotite-granodiorite.

MacIntyre (1986) shows that the amygdaloidal flows represent a rift-type of volcanism during which the volcanic rocks were deposited in a submarine environment. He further notes that the transitional zone, which is represented by the change from a submarine volcanic environment to a marine sedimentary environment, is a likely target area for volcanogenic massive sulfide deposits.

MASSIVE SULFIDE OCCURRENCES

Several bands of massive sulfides occur in an assemblage of black argillic tuff, limy argillite and grey sandstone (Price, 1979). The sedimentary rock units and the bands of massive sulfides apparently overlie chlorite-epidote altered amygdaloidal andesite or basalt (MacIntyre, et.al., 1986). The mineralized sedimentary rocks are overlain by rhylotic tuff (Price, 1979). According to Price (op.cit.) the best exposure of massive sulfide mineralization strikes north-northwesterly and occurs over a strike length of 137 meters and a width of 15 meters. Mineralized bands

are 1 to 2 meters wide and up to 15 meters long. The best assays were recorded from a 1.5 meter sample:

Ag	15.4 oz./ ton (479 g/t)
Cu	7.1 percent
Zn	2.7 percent

EXPLORATION RECORD

The Falconbridge grid (Harper, 1970) was 4400 by 5800 feet (1341 by 1768 meters) and all of their work was conducted on that grid. Outcrop in the grid area is about 1 to 2 percent. Overburden is from one meter to several meters deep.

Results of the Geochemical Survey

Figure 5 of this report is a compilation of the geochemical and geophysical data which were produced by Falconbridge Nickel Mines, Ltd. (Harper, 1970). The compilation map (Figure 5) is at a reduced scale (1:5,000) for ease of presentation and some details from the orginal surveys are omitted.

Contoured values which are shown on the map are as follows:

Ag > 0.95ppm
Cu > 50ppm
Zn > 140ppm

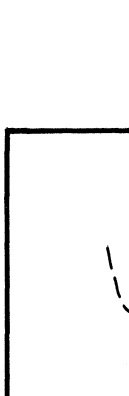
The contours show that anomalous values in silver, copper and zinc are widespread and appear to be scattered throughout most of the grid area in a nearly random orientation. The greatest concentration of anomalous values lies northwest of the road (Figure 5) where topographic relief is greater and where overburden is thinner.

20+00W (609.6m)
10+00 W (304.8m)
0 E
10+00 E (304.8m)
20+00E (609.6m)

L. 10 N (304.8m)
L. 10 S (304.8m)
L. 20 S (609.6m)
L. 30 S (914.4m)
L. 40 S (1219.2m)
L. 44 S (1341.12m)
LINE 0
Baseline

Road to Deception Lake
Road to Highway

1
2
3



LEGEND

Ag > 0.95 ppm
Cu > 50 ppm
Zn > 140 ppm

Weak E M conductors

DDH , location and number (drilled by Falconbridge in 1970)

METRES
0 100 200

FIGURE 5

DEEP CREEK VMS PROSPECT AREA

COMPILATION OF GEOCHEMICAL AND GEOPHYSICAL DATA FOR THE DEL GROUP

Omineca Mining Division, British Columbia

SCALE:		DATE:
1:5000	Willard D. Tompson	JAN. 4, 1993

It must be noted that there is no pyrite halo associated with the mineralization at Deep Creek and thus, there is no great potential for the oxidation of the other metallic minerals and their subsequent dispersal into the soil, as is common in porphyry deposits. Thus, the patterns for the geochemical anomalies may be expected to differ from those of the more familiar geochemical signature of a porphyry copper deposit.

Results of the Geophysical Surveys

The geophysical report and maps which were produced by Harper (1970) were submitted to Frontier Geosciences Inc. for re-evaluation. J. Graham Parkinson, P. Geoph. examined the data and made some general observations and recommendations (Parkinson, 1992, personal communication):

"Geophysical coverage includes VLF-(Hawaii and Maine stations) over an area of about one thirtieth of the claim group. Horizontal loop (HLEM survey) coverage with a short cable (optimized for shallower details) covers the same larger area as the geological mapping. At the 200-foot cable length the HLEM shows less detail, corresponding to the interpretation of shallow conductors. Coverage at the 200-foot cable length is limted to the same small area as covered by the VLF."

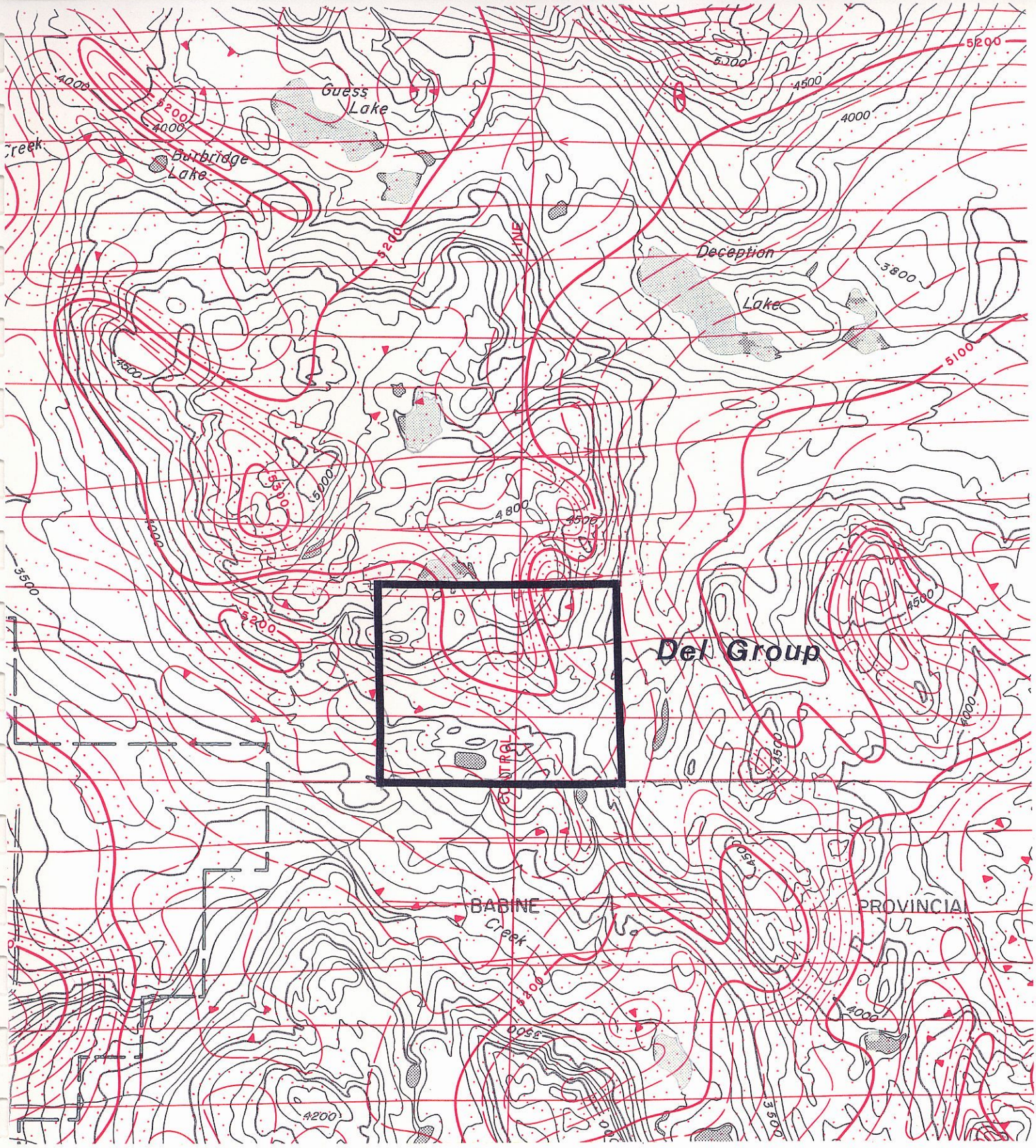
"In general, the geophysical work done appears to be properly controlled and to consist of low noise data. The surveys are of appropriate types for this geological environment." "The interpretability of this data would benefit from entering the posted data values from the profiles and replotting them to more suitable amplitudes and common map scales. As well, the magnetics data could be enhanced by entering the posted data into the Earthprobe or GeoPak Software packages and sun angle shading for fault lineations. At the same time a more detailed contour map could be produced."

"Line 4S, an area of anomalous copper and silver geochemistry, is accessible by road, has three showings (of which the two easternmost were drill tested) and is cut by several conductors (which are parallel to the strikes of the trenched showings). Considering the nearby mineralization, the western half of the line is of particular interest for further work."

A weak, linear magnetic anomaly is centered approximately at the baseline and line zero and extends for about 300 meters north-northwesterly and 600 meters south-southeasterly through the center of the Falconbridge grid area.

Several weak conductors were disclosed by the HLEM and VLF surveys, mostly occurring in a broad zone extending north-northwesterly from L.22S. to L.2N., a distance of about 750 meters (Figure 5).

A part of the Airborne Magnetic Survey, Map 5311G, which was produced by the Geological Survey of Canada is shown as Figure 6 in this report.



Scale: One Inch to One Mile = $\frac{1}{63,360}$

Miles

1 1/2 0 1 2 3

GEOPHYSICS PAPER 5311

QUICK

BRITISH COLUMBIA

SHEET 93 $\frac{L}{10}$

Figure 6.- Part of aeromagnetic map, Quick, British Columbia.

Diamond Drilling Program

Although three different owners have drilled the occurrences at Deep Creek (see Page 5, this report) records exist for only the drilling done by Falconbridge Nickel Mines, Ltd. (Harper, 1970). The holes were drilled in an area of about 50 by 150 feet (15 x 45 meters) and were drilled to depths of 11, 12 and 15 meters respectively. Summary logs of those holes are pages 15 to 17 of this report.

Rocks encountered in the drilling were andesitic tuff, tuffaceous shale, chert, cherty greywacke, andesite and andesite breccia. Chlorite-epidote alteration and quartz-calcite veining are common throughout the core.

Massive sulfides and patchy bunches of sulfides were encountered in drill holes 2 and 3. Drill hole number one terminated in mineralization at 38.5 feet (11.7m) after a 5.7 foot (1.7m) intersection of sulfides.

Assay data from the drill core are summarized as follows;

	Depth			Assays			
	(feet)	(feet)	Interval	Au	Ag	Cu	Zn
DDH No.	From	To	(feet)	(opt)	(opt)	(%)	(%)
1	29.7	31.2	1.5			0.01	0.10
1	32.8	38.5	5.7			0.08	0.19
2	0	2.0	2.0			2.32	0.18
2	2.0	10.0	8.0			0.43	0.04
2	10.0	20.0	10.0			0.16	0.12
3	0	5.0	5.0	Tr	0.4	0.24	0.66
3	5.0	10.0	5.0	Tr	0.1	0.09	1.24
3	10.0	15.0	5.0	Tr	0.3	0.18	0.63
3	15.0	18.2	3.2	NA	NA	1.08	0.99
3	19.7	25.0	5.3	NA	NA	0.02	0.04

Summary Log
DDH Del Santo No. 1
Falconbridge Nickel Mines Ltd.

Latitude L.3+94S.
Departure 0+32E.
Elevation
Bearing 278°
Angle -45°
Date started Sept. 22, 1970
Date completed Sept. 24, 1970
Depth 38.5ft. (11.7m)
Core size
Avg. core recovery 60%

From	To	Description of Rocks	Assays Au (opt)	Ag (opt)	Cu (%)	Zn (%)
0	6.2	Dark grey to purplish-brown tuffaceous shale.				
6.2	16.8	Purplish tuffaceous shale and greenish andesitic tuff.				
16.8	23.1	Fine grained, purplish andesite with quartz-chlorite bands.				
23.1	28.3	Chloritized fragmental andesite.				
28.3	29.7	Bands of purplish fine grained andesitic tuff with f. g. greenish tuffaceous shale.				
29.7	31.2	Purplish andesite				
30.0	32.8		NA	NA	0.01	0.10
31.2	32.7	Banded shale. White cherty bands, whitish-greenish bands and purplish andesitic tuff bands.				
32.7	38.5	Purplish andesite. Abundant pyrite, minor chalcopyrite, sphalerite.				
32.8	38.5		NA	NA	0.08	0.19

End hole at 38.5 ft. (11.7m)

Summary Log
DDH Del Santo No. 2
Falconbridge Nickel Mines Ltd.

Latitude	L.3+81S.
Departure	0+14W.
Elevation	
Bearing	0
Angle	Vertical
Date started	Sept. 25, 1970
Date completed	Sept. 25, 1970
Depth	40.0 ft. (12.2m)
Core size	
Avg. core recovery	61.2%

From	To	Description of Rocks	Assays Au (opt)	Ag (opt)	Cu (%)	Zn (%)
0	2.0	30 percent massive sulfides, pyrite, chalcopyrite, sphalerite in brown-purplish biotite-andesitic tuff; with quartz veins.	NA	NA	2.32	0.18
2.0	3.0	Brecciated, quartz veined, purplish-brown andesite with 5 percent massive sulfides.				
3.0	8.0	2 percent massive sulfides in brecciated quartz-veined, purplish-brown andesite.				
8.0	16.9	Fine grained, green-brown-grey shale with minor chalcopyrite.				
2.0	10.0		NA	NA	0.43	0.04
10.0	20.0		NA	NA	0.16	0.12
16.9	17.1	Fault gouge.				
17.1	27.2	Banded, purplish and pinkish tuffaceous shale. Beds contorted.				
27.2	27.5	Fault gouge.				
27.5	40.0	Fine grained, dark green, sheared andesite, locally purplish in color.				

End hole at 40.0 feet (12.2m) due to sticking rods and low water pressure.

Summary Log
DDH Del Santo No. 3
Falconbridge Nickel Mines Ltd.

Latitude	L.2+50S.
Departure	0+70W.
Elevation	
Bearing	238°
Angle	-70°
Date started	Sept. 26, 1970
Date completed	Sept. 27, 1970
Depth	51.0 ft.(15.5m)
Core size	
Avg. core recovery	67%

From	To	Description of Rocks	Assays Au (opt)	Ag (opt)	Cu (%)	Zn (%)
0	13.3	Very fine grained grey-brown greywacke. Some pyrite, chalcopyrite, sphalerite; each less than 1%. Limonite at contact, 50°with CA.				
0	5.0		Tr	0.4	0.24	0.66
5.0	10.0		Tr	0.1	0.09	1.24
10.0	15.0		Tr	0.3	.018	0.63
13.3	14.1	Dark reddish, fine grained andesite.				
14.1	16.0	Grey and white cherty grey-wacke. Occasional blebs sphalerite.				
15.0	18.2		NA	NA	1.08	0.99
16.0	17.8	Grey and white cherty grey-wacke becoming brown to greenish-brown with chloritic bands. Has bands of massive sulfides.				
17.8	19.7	Epidote-rich and rusty. Poor recovery.				
19.7	25.7	Dark green-brown,fragmental greywacke.Andesitic compo-sition. Some patches of py-cp-sl and quartz.				
19.7	25.0		NA	NA	0.02	0.04
25.7	32.9	Dark green andesitic tuff.				
32.9	51.0	Fine grained, purplish to greenish andesite. Chloritic alteration prominent on fractures. Many calcite and quartz veinlets.				

End of hole at 50 feet (15.5m)

CONCLUSIONS

The Del group is underlain by volcanic and sedimentary rocks of the Lower Jurrasic Nilkitkwa Formation, a submarine assemblage which was deposited in an island-arc environment during a period of rift-type volcanism.

Several occurrences of massive sulfides are known on the Del group and these have received some exploration by geochemical and geophysical methods as well as by trenching and a few diamond drill holes. Encouraging intersections of copper-zinc-silver mineralization were discovered in the trenches and drill core. However, all physical work has been concentrated in a very small area of outcropping mineralization and no deep holes have been drilled. Total drilling by three different companies over a period of nine years is less than 400 meters.

Geochemical soil surveys show anomalous values in copper, zinc and silver with anomalies scattered throughout the grid area, mostly striking in a north-northwesterly direction.

The conductors identified by the HLEM and VLF surveys are shallow conductors and no attempt has been made to discover conductors at greater depths.

RECOMMENDATIONS

Induced polarization surveys along with magnetic and EM surveys are recommended for identifying drill targets. Some grid line preparation will be required for those surveys. No camp construction will be required as the field work can be serviced by automobile from Smithers and Telkwa. Estimated costs for the work are as follows;

Del Group, Deep Creek Area

Cost Estimate for Exploration Project

Geological		
Photogrammetry	$6,000	
Petrography	3,000	
Project management	7,500	
		$16,500
Geochemical and assay		
Rock and soil analyses	2,000	
		2,000
Geophysical surveys		
Grid preparation	3,600	
Geophysical contracts	12,000	
		15,600
Transportation		
Road repair	5,000	
Truck rentals, fuel	3,500	
		8,500
Communications		
Phone, fax	500	
Field radios	2,000	
		2,500
Sub total		$ 45,100
Diamond drilling, 3,000 feet		
Drill contract	66,000	
Field costs	5,000	
Core assay	3,000	
		$ 74,000
Total costs		$119,100

Respectfully submitted

W. D. Tompson

Willard D. Tompson, P. Geo.
Consulting Geologist

REFERENCES CITED

B.C. Minister of Mines, Annual Report, 1915, p. K 233.

B.C. Minister of Mines, Annual Report, 1928, pp. C 168, 169.

B.C. Department of Mines and Petroleum Resources, G.E.M. 1969, p. 120.

B.C. Ministry of Energy, Mines and Petroleum Resources, G.E.M., 1970, p. 158.

B.C. Ministry of Energy, Mines and Petroleum Resources, Exploration in B.C., 1976, p. E 150.

B.C. Ministry of Energy, Mines and Petroleum Resources, Exploration in B.C., 1979, p. 228.

Brown, D.H., 1970; Geochemical report on Del Sauto and Del Santo claims, Quick, B.C.: private report for Falconbridge Nickel Mines, Ltd. Also recorded for assessment work with B.C. Dept. Mines and Petrol. Resources, Assessment Report no. 2543.

Harper,G., 1970; Final report, Del Santo property, Omineca mining division, 93-L-10: private report for Falconbridge Nickel Mines, Ltd., 8 p., 12 maps and drill logs.

Helgesen, D.H., 1970; Geochemical report, Chapman option (Del Santo group), Smithers, B.C.: private report for Falconbridge Nickel Mines, Ltd.

L'Orsa, A., 1968; Del Santo prospect, Quick, B.C.: private report for Texas Gulf Sulphur Co.

MacIntrye, D.G., Brown, D., Desjardins, P. and Mallett, P., 1986; Babine project, (93L/10): B.C. Min. Energy, Mines and Petrol. Res., Geol. Fieldwork, 1986, Paper 1987-1.

Price B.J., 1979; Geological and geophysical report, Del Santo 1-6, Del Santo 7-10 and Del Saunto 31-33 claims: private report for Melvin Chapman and Frances Madigan. Also recorded by B.C. Ministry of Energy, Mines and Petrol. Res. as Assessment Report no. 7286.

Tipper, H.W. and Richards, T.A., 1976; Jurassic stratigraphy and history of north-central British Columbia: Geol. Sur. Canada Bull. 270.

White, Glen E., 1978; Del Santo property, P.E.M. Survey: for Great Plains Ltd., letter and 4 plates.

CERTIFICATE

I, Willard D. Tompson, of Smithers, British Columbia do hereby certify:

1. THAT I am a consulting geologist residing at 1380 Cronin Place, Smithers, British Columbia;

2. THAT I hold a Master of Science degree (Geology) from Montana State University, Bozeman, Montana;

3. THAT I am registered as a Professional Geoscientist by The Association of Professional Engineers and Geoscientists of British Columbia;

4. THAT I am a Fellow of the Geological Association of Canada;

5. THAT I have practiced my profession for more than 30 years;

6. THAT this report is based upon a thorough assessment of published and unpublished data on the prospect area at Deep Creek and the surrounding area, the sources for which are recorded in, "References Cited" in this report;

7. THAT I am owner of an interest in the claims described in this report.

Dated at Smithers, British Columbia, this 4th day of January in the year, 1993.

W. D. Tompson

Willard D. Tompson, P.Geo.