

GEOCHEMICAL SAMPLING
OF
REDFERN LAKE PROPERTY

CLAIMS ROCKY 1 TO 4, AND

TYR 36 TO 38, 43

NTS 94 G/5W

OWNER: VESTOR EXPLORATIONS LTD.

OPERATOR: TECK EXPLORATIONS LIMITED

BY

WAYNE SPILSBURY

Vancouver, B. C.

October 2, 1979

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7705

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SUMMARY AND CONCLUSIONS

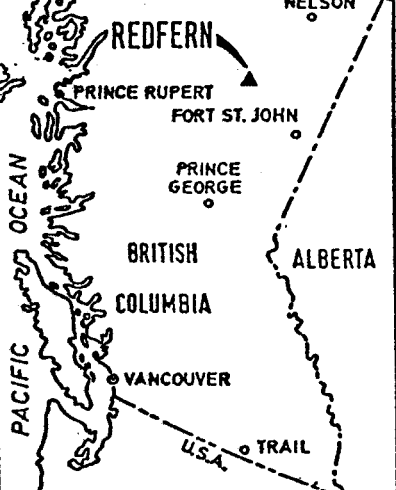
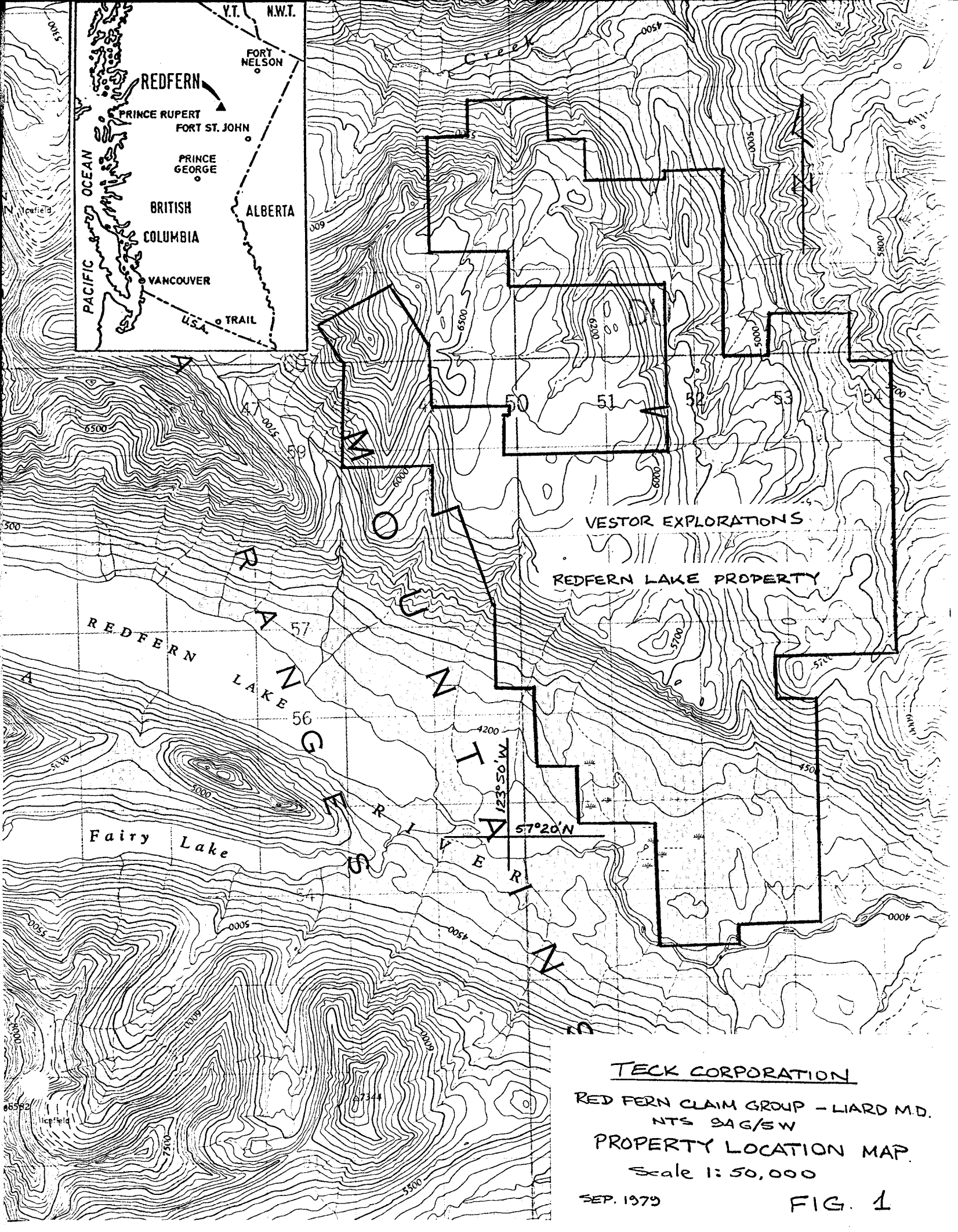
Geological mapping and rock-chip sampling were carried out on a Pb/Zn mineralized zone between Mid-Devonian dolomites and limestones. A soil geochemical grid was conducted over an area southwest of the contact zone. Chip sampling indicates that the contact zone is not of ore-grade for Pb/Zn and soil tests failed to delineate glacial covered mineralization in the bedrock.

INTRODUCTION

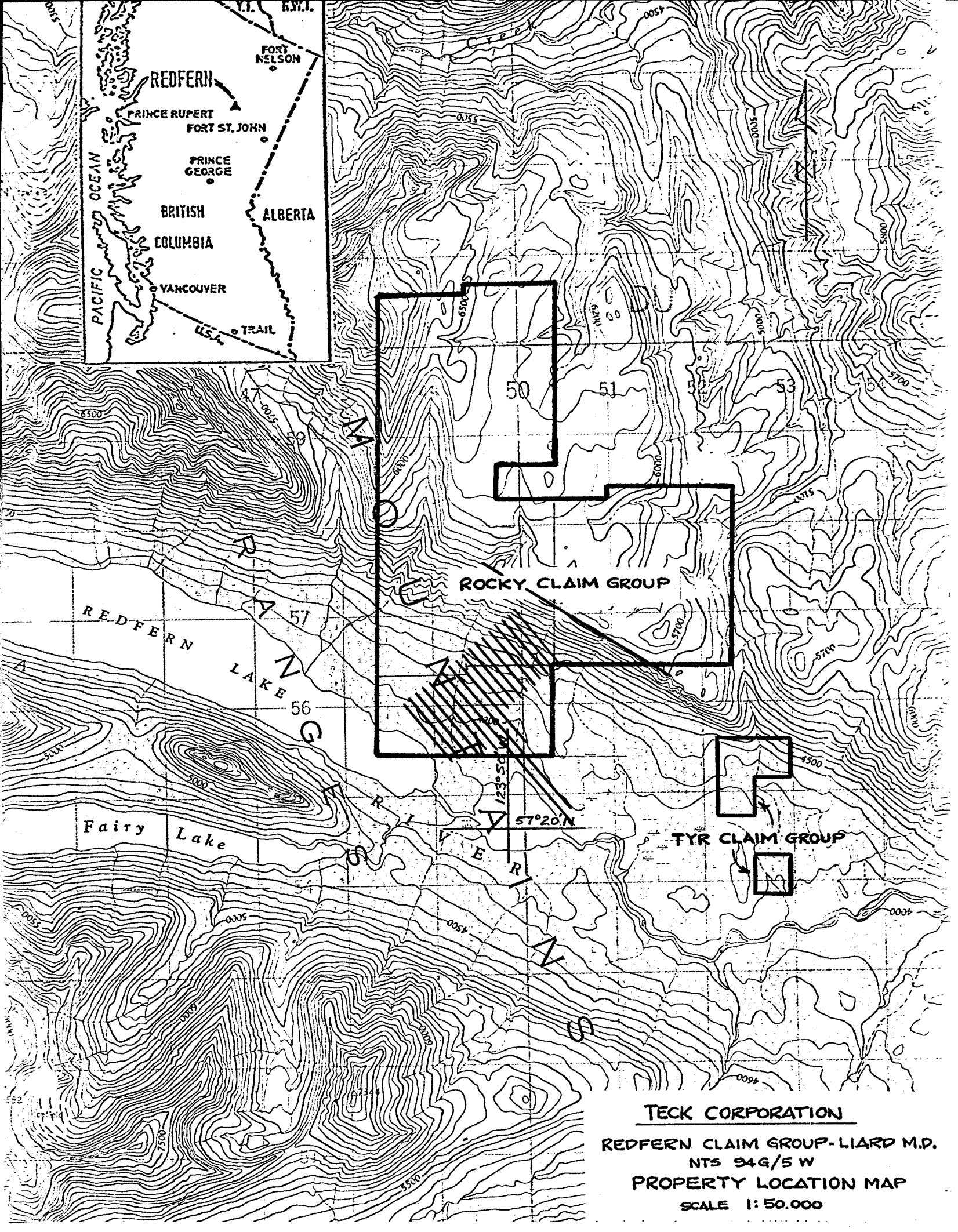
A four-man crew employed by Teck conducted a two-week program (July 24 to August 8, 1979) on the Redfern Lake property (Claims Rocky 1-4, #731-734, and Tyr 36-38, 43, #69552-69554, 69559) owned by Vestor Explorations. The program consisted of (a) detailed rock chip-sampling, (b) soil-geochemical sampling, (c) geological mapping, and (d) minor trenching.

LOCATION AND ACCESS

The property is approximately 150 air-miles NNW of Mackenzie, B. C., the center of the property having co-ordinates $57^{\circ}22'W$ latitude and $123^{\circ}50'$ longitude (See Map No. 1). Access is by charter fixed-wing aircraft from Mackenzie, B.C. or by all-terrain vehicle along seismic lines which join the Alaska Highway 60 miles to the east near Fort Nelson.



TECK CORPORATION
RED FERN CLAIM GROUP - LIARD M.D.
NTS 9A6/SW
PROPERTY LOCATION MAP
Scale 1:50,000
SEP. 1979
FIG. 1



REDFERN
PRINCE RUPERT
FORT ST. JOHN
PRINCE GEORGE
BRITISH COLUMBIA
VANCOUVER
ALBERTA
TRAIL
PACIFIC OCEAN
U.S.A.

ROCKY CLAIM GROUP

TYR CLAIM GROUP

TECK CORPORATION
REDFERN CLAIM GROUP-LIARD M.D.
NTS 94G/5 W
PROPERTY LOCATION MAP
SCALE 1:50,000

GEOLOGY

1. General

The main focus of the program was to delineate and then sample the contact zone between the Basal Reef and Upper Limestone units of the Dunedin Formation (Mid-Devonian in age).

The Basal Reef unit consists of dark, fine-grained massive layered dolomites, with relatively high porosity and locally highly fossiliferous. Overlying this unit is the Upper Limestone which is a light grey, medium grained, well-layered, limestone with numerous coral-like fossils. The "South Face" cliffs provide the best exposure of this contact zone and was mapped in detail (see Map No. 2).

The contact is gradational over a width of 2 to 10 metres and is generally mineralized with secondary zinc. The contact can be traced the full length of the "South Face" (1850 m), the better mineralized zones are more brecciated and silicified.

2. Structural Geology

The predominate structural feature in the claim area is a broad anticline plunging gently to the southeast. The east limb is cut-off by a thrust fault and the west limb appears undeformed but is poorly exposed.

(See Map 2).

3. Mineralization

Along the South Face, secondary zinc, (smithsonite?) galena and barite were found in both the talus and in place.

The barite was located in brecciated dolomites of the basal reef unit usually adjacent to fracture zones in massive calcite/barite "patches" about 1 m. x 1 m. in size. These are similar to numerous barite occurrences in the area, none of which are of economic size.

Lead-zinc was always found in dolomitic rocks although not always in the same stratigraphic horizon.

Galena was noted in eight chip sample locations and was accompanied by a heavy concentration of secondary zinc. Numerous boxwork structures in several other sample locations showed relict galena casts.

Fine grained dark sphalerite was noted in only one sample locality; all other zinc occurrences were of the mineral smithsonite.

It had three general modes of occurrence:

- (a) by far the most common was a localization along thin fractures spaced about 1 to 5 cm apart. The rocks tended to otherwise be hard, massive and unaltered. These occurrences probably represent precipitation by zinc-rich solutions from leaching of nearby

deposits, the solution travelling along the slightly more porous contact zone.

- (b) less frequently secondary zinc-coated boxwork structures with unweathered galena were found; this type of occurrence probably represents in situ weathering of sphalerite.
- (c) at about one-third of the sample sites, secondary zinc was finely disseminated throughout the country rocks and is probably the weathering product of disseminated sphalerite.

The most extensive mineralized zones found along the contact were related to fracturing (samples 145W A, B and C and 42.5W-37.5W) although in both cases these zones did not persist along strike beyond 20 metres. The mineralized zone as it was traced along the contact often tended to "die out" only to reappear several metres further along strike although sometimes up to 10 m. higher or lower in the section. Although conforming to bedding it is not continuous and for this reason should be considered stratiform but not stratibound.

GEOCHEMICAL SAMPLING

1. Rock Chip Sampling

A total of 43 continuous chip samples were taken across strike near the contact zone between the Basal Reef Unit and the Upper Limestone Unit, along the "South Face". Samples were taken at approximately 50 metre intervals, a baseline following the cliff-edge was used as control. The terrain at the sample localities was very rugged and at 6 sample sites ropes were necessary to reach the contact zone.

The samples were tested by Bondar Clegg Laboratories using standard analytical techniques. Elements measured were lead, zinc (in %) and silver (in oz./ton). The results are listed in Appendix No. 1 and plotted on Map No. 2.

Interpretation of Results: The analysis of the rock samples shows a weak but continuous band of mineralization along the contact zone over a distance of about 2 km. Generally values are higher near zones of weakness (faults or fractures) indicating that some of the mineralization is epigenetic in origin. The results confirm that ore-grade mineralization does not occur in this horizon.

2. Soil Geochemical Survey

709 soil samples were taken along a grid which stretches from the most westward outcropping of the Basel Reef unit in the South Face to a weakly mineralized outcrop of Basal Reef rocks near the east end of Redfern Lake. Total length of the grid was 20.555 km with stations every 25 m. Using shovels or picks the samplers were instructed to take portions of the B horizon which was consistently found at 20 cm depth. Samples were sent to Bondar-Clegg Laboratories, where they were tested for Pb/Zn and silver (in parts per million). Samples were analyzed using standard analytical techniques (atomic absorption).

Interpretation of results: Results are plotted on Map No. 3 and delineate some anomalous trends for zinc. Several high values found at the top of the grid probably have their source in mass-wasting of the mineralized contact zone from the cliffs above. Anomalous values that parallel Little Redfern Lake to the west are thought to be biochemical in origin where zinc ions have accumulated in organic-rich, poorly drained soils. Bedrock is probably covered by at least 10 metres of glacial till in this area; a further reason for believing that high values do not represent local mineralization.

3. Trenching

Approximately 30 feet of trenching was done over a small outcrop of mineralized Basal Reef rock near the south end of Redfern Lake (see Map No. 3). The mineralization was found to be very local ($< 1 \text{ m}^2$) having no strike extension.

Respectfully submitted

A handwritten signature in cursive script that reads "W. Spilsbury".

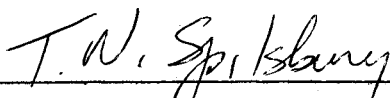
Wayne Spilsbury, Geologist

WS:mjb

AUTHOR'S QUALIFICATIONS

I, T. Wayne Spilsbury declare that:

1. I hold a Bachelor of Science Degree in Geology, granted by the University of B. C. in 1973.
2. I have been employed seasonally as an exploration geologist since graduation.
3. I hold no interest, monetary or otherwise in Teck Corporation or Vestor Explorations Ltd.
4. I am presently employed by School District No. 2 (Cranbrook, B.C.) and reside at 321 - 20th Avenue S., Cranbrook, B. C.



T. Wayne Spilsbury, Geologist

COST STATEMENT TO ACCOMPANY REPORT ON GEOCHEMICAL SAMPLING
 OF REDFERN LAKE PROPERTY--CLAIMS ROCKY 1 TO 4, AND TYR 36 to 38, 43
 AND STATEMENT OF EXPLORATION AND DEVELOPMENT FILED AUGUST 30, 1979.

1. <u>Contract Labour</u>			
- Dean Lockwood, Climber, consultant			
July 24-August 3/79: 11 days @ \$150	\$	1,650.00	
- W. Spilsbury, geologist			
July 23-August 10/79: 19 days @ \$100		1,900.00	
- D. Golden, field assistant			
July 25-August 10/79: 17 days @ \$50		850.00	
- C. Czerwinski, field assistant			
July 18-August 9/79: 21 days @ \$60		1,260.00	
- Teck Explorations Ltd.			
Supervision & Geochem survey			
July, August, September		<u>880.00</u>	\$ 6,540.00
2. <u>Accommodation and Food</u>			
- Shannon Motel		26.25	
- Mackenzie Co-op		<u>328.09</u>	354.34
3. <u>Transportation and Transport</u>			
- Vehicle Rental, 4 x 4 - 1 month		684.00	
- Air Charter - Helicopter		3,199.38	
- Transport, CP Air, D. Macks		<u>237.02</u>	4,120.40
4. <u>Analyses</u>			
Assays - Ag - 41 @ \$6		246.00	
Pb, Zn 82 @ \$5.50		451.00	
Geochem - Sample Preparation 696 @ 55¢		382.80	
analyses Pb,Zn,Ag, 696 @ \$3.10		<u>2,157.60</u>	3,237.40
5. <u>Miscellaneous</u>			
- Mountain Equipment		298.06	
- Telephone		14.36	
- Geochem supplies		<u>86.50</u>	398.92
6. Report preparation,(drafting, etc.)			
			<u>1,455.00</u>
TOTAL			<u>\$ 16,106.06</u>

I hereby certify that the above stated costs are all directly applicable to the actual work on the Rocky 1 & 2 claim groups.

It is requested that \$2,400.00 be applied to Rocky #1 Group (i.e. Rocky 1 & 4, 731 & 734) and \$3,200 be applied to Rocky #2 Group (i.e. Rocky 2 & 3, 732, 733) as per Statement of Exploration and Development filed at Vancouver Sub-recorder August 30, 1979.


 W. Meyer

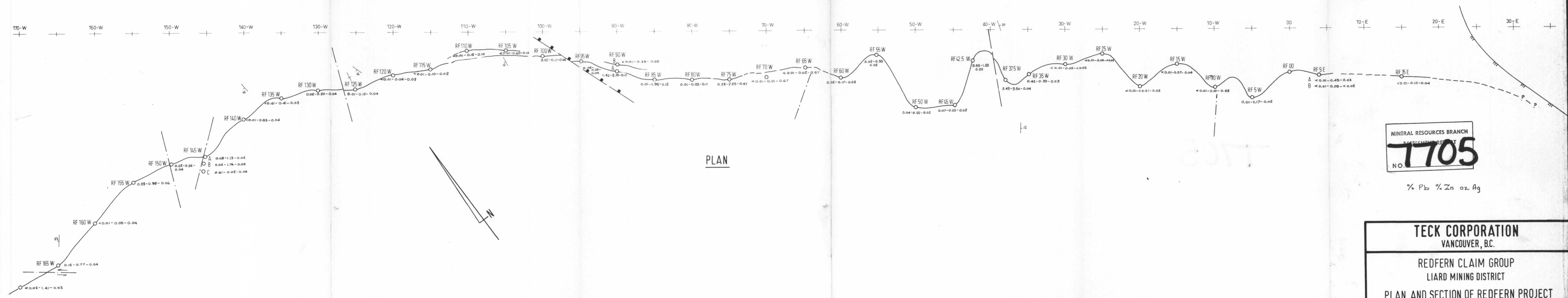
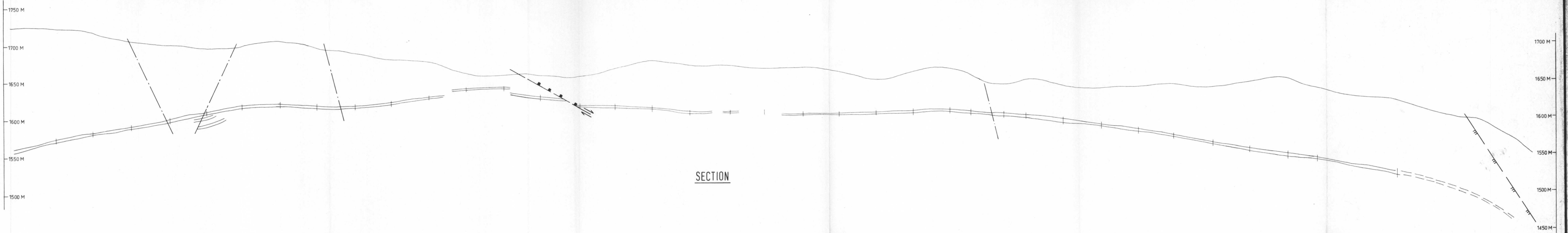
APPENDIX--DESCRIPTION OF CHIP SAMPLES

<u>Number</u>	<u>Sampled Thickness</u>	<u>% Zn</u>	<u>% Pb</u>	<u>Oz/t. Ag</u>	<u>Description</u>
05E -B	3 m.	0.09	< 0.01	<0.02	breccia zone, calcite matrix, good zinc test over 3 m., min. zone higher up sect. could be fault offset.
10E					Heavy scree--no sample available
15E	2.5 m.				Breccia zone in Upper Lmst. on contact or basal reef, appears up section from 05E, minor sphalerite in Silica parting.
20E					covered, no further sampling possible.
<hr/>					
00W	3 m.				contact in outcrop in scree, highest zn reaction above & below calcite vein, qtz. crystal in vuggs.
05W	2 m.	1.17	0.01	0.02	Zn. reaction over 1 m. across strike; exact contact may be scree covered.
10W	3 m.	0.10	< 0.01	<0.02	Zn reaction; strongest at contact, thick; (30 cm) calcite vein(?) just above contact.
15W	2.5 m.	0.07	< 0.01	0.04	contact at top of cliff; low-med. zinc reaction
20W	3 m.	< 0.01	< 0.01	0.03	med. Zn reaction.
25W	3 m.	0.04	< 0.01	< 0.02	Zn. reaction at contact bottom of 1st cliff and in outcrop above, cu-staining in calcite.
30W	3.0 m.	0.05	0.01	0.02	Zn reaction and Cu-staining
35W	1.0 m.	0.39	0.42	0.03	fractured, silicified zone showing good continuity with RF 37.5W, galena and secondary zinc.

<u>Number</u>	<u>Sampled Thickness</u>	<u>% Zn</u>	<u>% Pb</u>	<u>Oz/t. Ag</u>	<u>Description</u>
37.5 W	1 m.	3.50	3.45	0.04	fractured, silicified band, with 6 cm layer of massive sulphide, galena and secondary zinc.
42.5W	2 m.	1.22	0.53	0.02	Fractured, silicified zone; 2-3 cm wide bands of sulphid separated by $\frac{1}{2}$ m.
45W	2 m.	0.22	0.07	0.02	Weak zinc reaction (all secondary), brecciated dolomites, bottom of zone heavily covered.
50W	3 m.	0.55	0.04	0.02	brecciated, crenulated bedding, interbedding lmst and dolomite contact is not sharp--country rock has numerous calcite partings.
55W	2 m.	0.33	0.02	0.02	Dark microcrystalline with qtz. calcite vugs - good zinc test - secondary
60W	2 m.	0.17	0.02	0.03	Zn reaction along fractures some Cu staining.
65W	2.5 m.	0.02	0.02	0.57	No zinc reaction - sample 1 m. above and 1 m. below boxwork layer.
70W	2.5 m.	0.01	< 0.01	0.67	poorly cemented dolomites small (3 cm) layer of boxwork - no zinc test.
75W	1 m.	2.25	0.23	0.47	silicified, hard dolomites - some galena with quartz/ calcite holes, silica band concordant with bedding
80W	1.5 m.	0.22	0.01	0.11	weakly silicified, with calcite/qtz. vuggs, calcite alteration of country rocks, all zinc secondary.

<u>Number</u>	<u>Sampled Thickness</u>	<u>% Zn</u>	<u>% Pb</u>	<u>Description</u>
85W	.5 m.	1.95	0.01	Same as 80W. weak zinc test.
90W	.5 m.	2.10	1.42	silicified, dark grey, f.g., galena 2-3% of rock, zone traced for 10 m. either side thin lenses out.
95W	1 m.	0.28	0.06	weakly silicified, dark grey dolomite. Weak zinc test.
100W	3.0 m.	0.11	0.02	silicified dolomites all zinc secondary; taken near fault zone which is infilled by quartz.
105W	1.5 m.	0.62	< 0.01	minor silicification, hard dolomite; zinc test on fractures.
110W	1.5 m.	0.12	< 0.01	same zone as 105W
115W	0.5 m	0.10	< 0.01	f.g. crystalline, dark massive dolomite weakly silicified on fractures where secondary zinc occurs - weak sections
120W	3 m.	0.04	< 0.01	similar to 115W.
125W	2 m.	0.12	< 0.01	siliceous (rounded quartz grains) arenaceous, light grey, sandy dolomite, appears 20 m. lower in section than 115W; secondary zinc along fract.
130W	2 m.	0.20	0.02	same zone as 125W
135W	2 m.	0.41	< 0.01	same zone as 125W.

<u>Number</u>	<u>Sampled Thickness</u>	<u>% Zn</u>	<u>% Pb</u>	<u>Description</u>
140W	3.5	0.53	< 0.01	hard, slightly fractured gritty arenaceous light grey, dolostone.
145W A	5.0 m.	1.13	0.08	fractured, silicified dolomite contacting mineralized fracture - galena in sample
145W B	3.5 M.	1.74	0.02	- well brecciated dolomite, calcite infilling, boxwork structures numerous, some limonitic pseudomorphs; good zinc test
145W C	2.5 m.			dark m.g. slightly brecciated, zinc test along fractures.
150W	2 M.	0.26	0.02	- weakly brecciated, massive gritty dolomite with some limonitic material - same zinc as 145A.
155W	5 m.	0.98	0.28	- brecciated dolomite parallel to fracture zone, good zinc test some galena in boxwokr.
160W	2 m.	0.05	< 0.01	- well fractured, good qtz development in drusy cavities, all zinc secondary on fractures.
165W	3 m.	0.77	0.12	- well brecciated, black dolomite, adjacent to small fault zone and barite patch, galena present.
170W	.1 m	1.41	0.02	- thin brecciated zone at very top of basal reef, probably not continuous with 165W Lack of outcrop for further sampling



SECTION

PLAN

MINERAL RESOURCES BRANCH
T705
 NO.

% Pb % Zn oz Ag

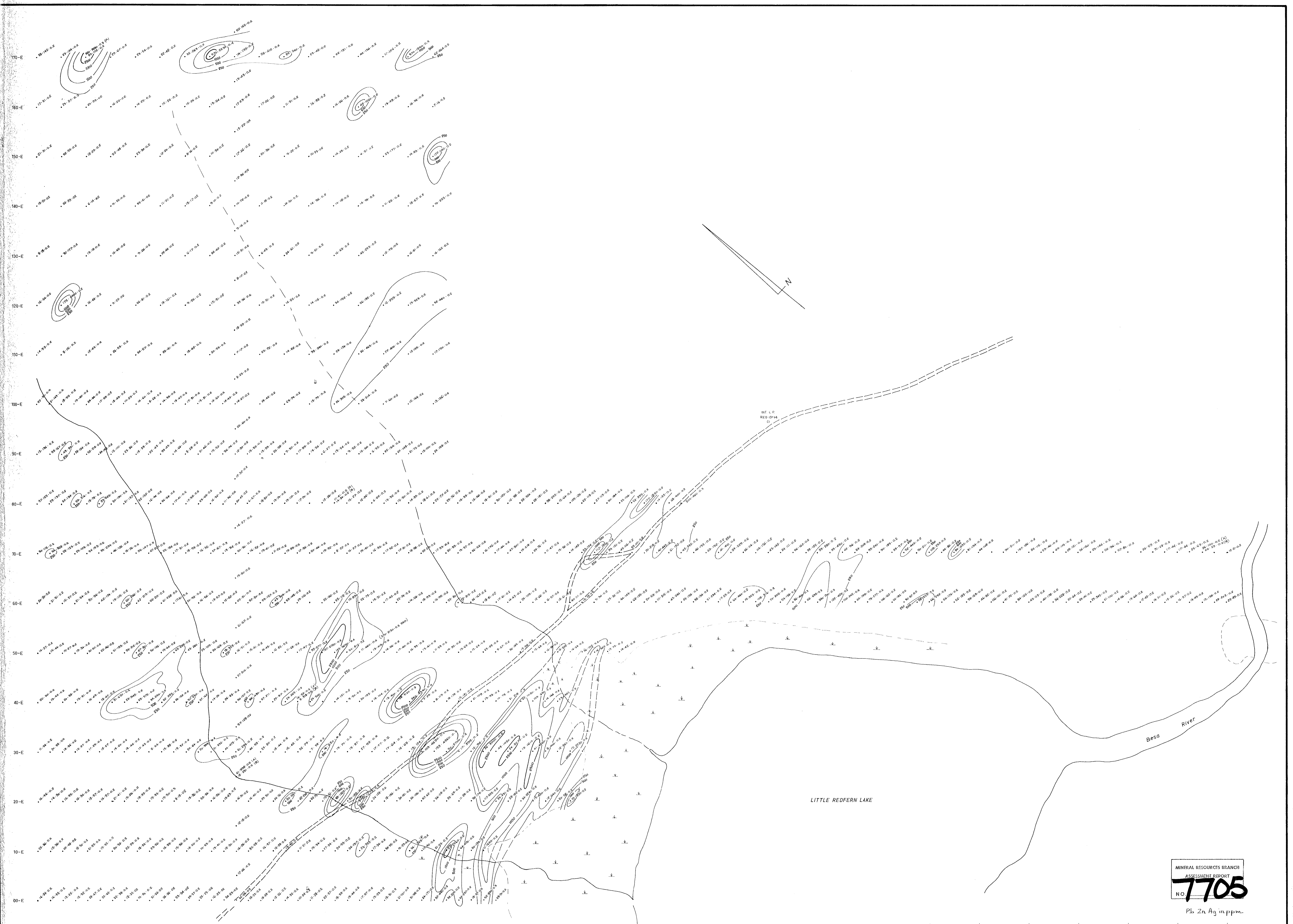
TECK CORPORATION
 VANCOUVER, B.C.

REDFERN CLAIM GROUP
 LIARD MINING DISTRICT

PLAN AND SECTION OF REDFERN PROJECT

SCALE 1:2000

DRAWN BY: P.V. DATE: SEPT. '79 REVISED: N2 1256-65-72



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
7705
Pls Zn Ag in ppm

TECK CORPORATION
VANCOUVER, B.C.

REDFERN CLAIM GROUP
LIARD MINING DISTRICT
ZINC CONTOURS

SCALE 1:2500

DRAWN BY: PV DATE: SEPT. 79 REVISED: NO 1256-GS-3