part 1
of 2

9568

DIAMOND DRILLING REPORT

for

Sulphurets Property

Sulphurets 1 Group, Central 1 Group and

Central 2 Group Mineral Claims

Skeena Mining Division

104B/8E, 8W, 9E, 9W

56° 30' N, 130° 15' E

Claims owned by: Granduc Mines Limited (NPL)

Sidney F. Ross and

Esso Resources Canada Limited

Operated by: Esso Minerals Canada

600 - 1281 West Georgia Street

Vancouver, B.C. V6E 3J7

Report by: Dane A. Bridge

Submitted: September 29, 1981

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MAPS

INTRODUCTION

This report documents diamond drilling primarily for gold mineralization in the south-central portion of the Sulphurets property.

LOCATION

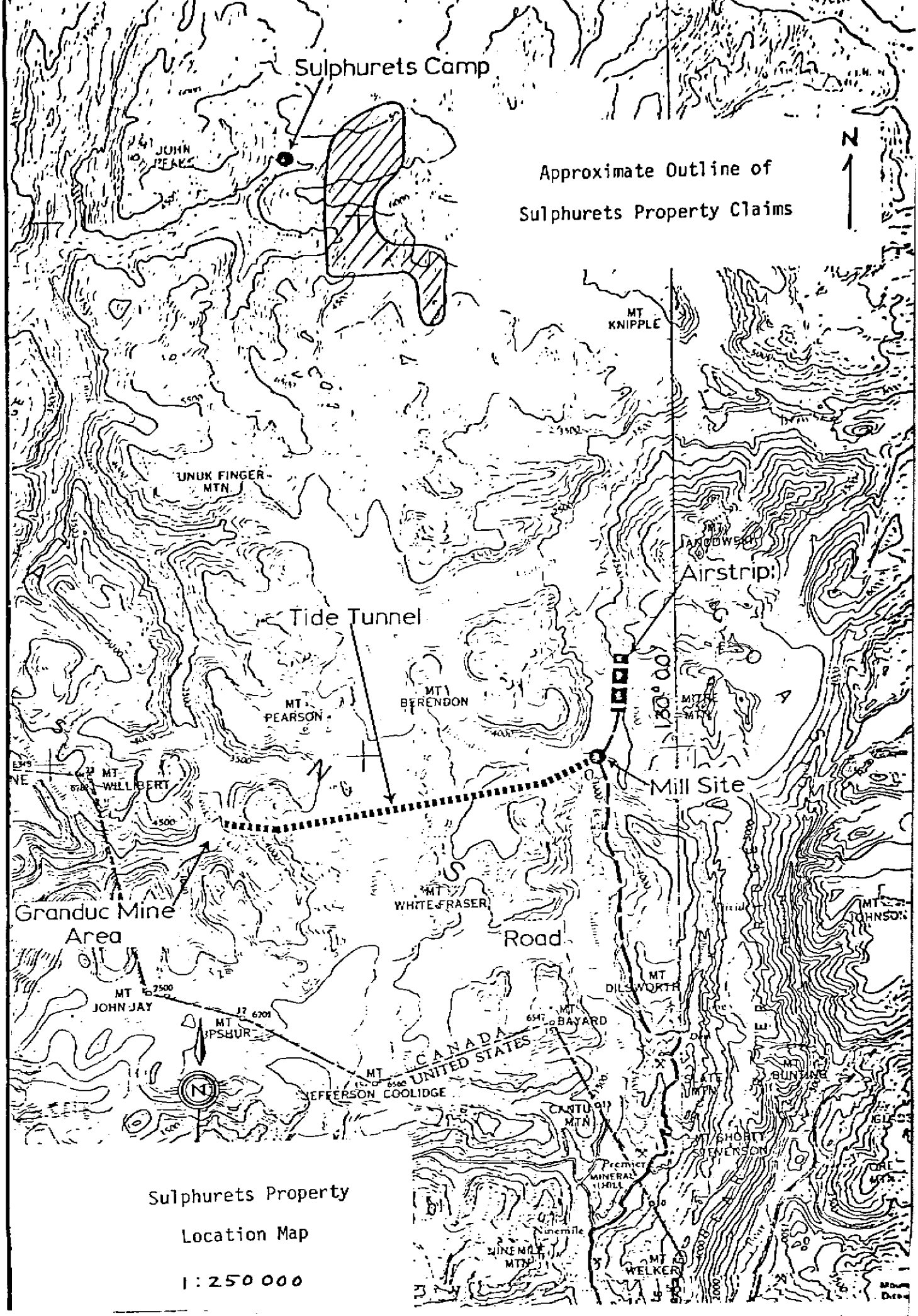
The Sulphurets property is located approximately 65 km northwest of Stewart, B.C. and 20 km north of the Granduc Mine. It is at the headwaters of Mitchell and Sulphurets Creeks. The property is centered at $56^{o}30'N$ and $130^{o}15'E$. It covers parts of 104B/8E, 8W, 9E, 9W.

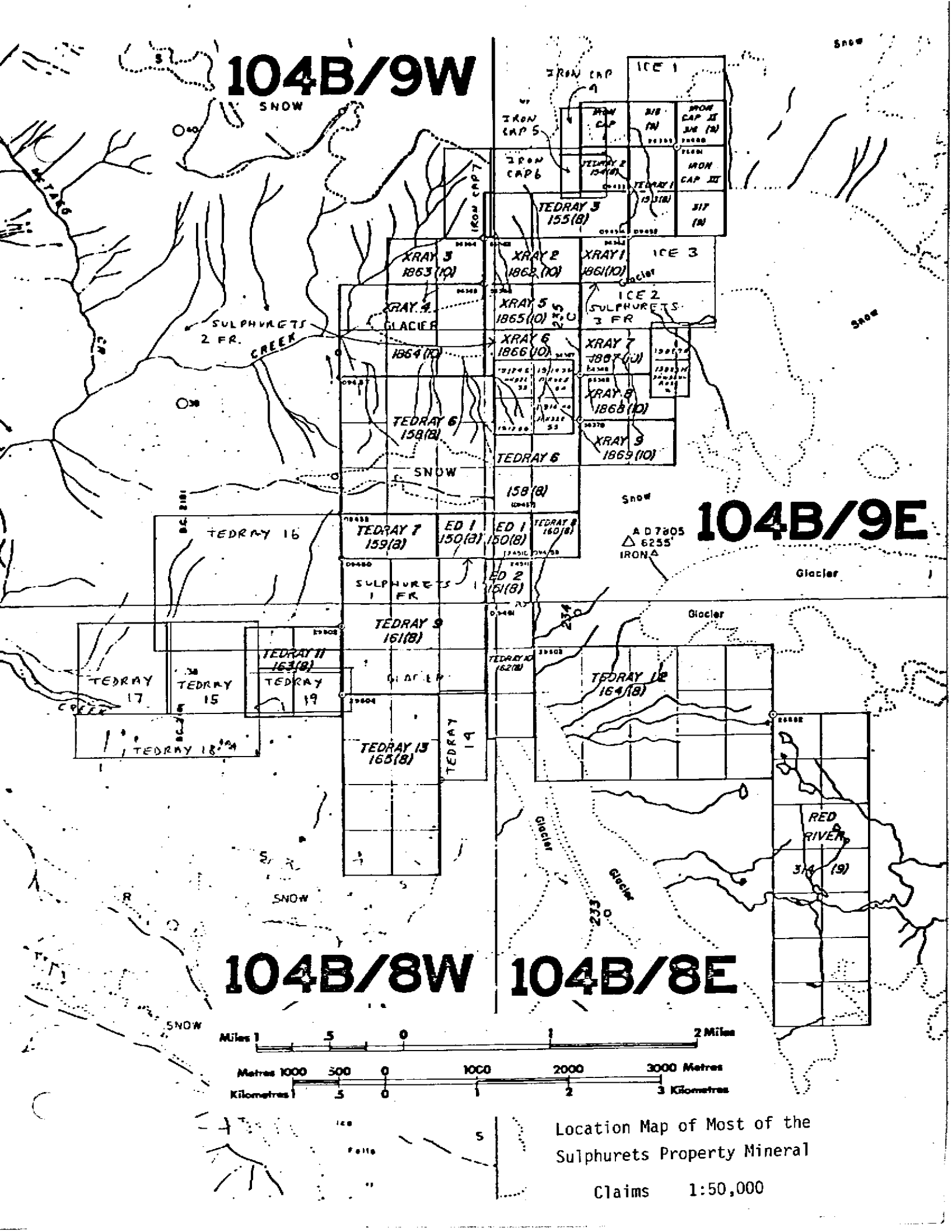
ACCESS

Access to the property is by helicopter from the Esso exploration camp located on the north side of Mitchell Creek about 200 m east of McTagg Creek.

CLAIMS

The Sulphurets property consists of 222 units, including 3 fractional claims and 6 two-post claims. The claims are held by Granduc Mines Limited (NPL), Esso Resources Canada Limited and Sidney F. Ross. The property is being operated by Esso Minerals Canada under option from Granduc and S. Ross.


Sulphurets Camp
Approximate Outline of
Sulphurets Property Claims
N
JOHN PEAK
MT KNIPPLE
UNUK FINGER MTN.
MT JANOWSKI
Airstrip
Tide Tunnel
MT PEARSON
MT BERENDON
MT WILLIBERT
Mill Site
Granduc Mine
Area
MT WHITE-FRASER
Road
MT JOHNSON
MT DILWORTH
MT JOHN JAY
MT IPSHUR
MT BAYARD
CANADA
UNITED STATES
MT JEFFERSON COOLIDGE
CANTU MTN
MT BUNTING
MT STEVENSON
Premier
MINERAL HILL
Ninemile
NINEMILE MTN.
MT WELKER
Sulphurets Property
Location Map
1:250 000



Location Map of Most of the Sulphurets Property Mineral Claims 1:50,000

The Sulphurets 1 Group consists of:

Claim	No. of Units	Record no.
Ed 1	2	150
Ed 2	1	151
Tedray 10	3	162
Tedray 11	4	163
Tedray 12	15	164
Tedray 13	8	165
Tedray 14	2	2413

Work is applied on Sulphurets 1 Group claims up to July 9, 1981. The claims were regrouped on July 17, 1981.

The Central 1 Group consists of:

Claim	No of Units	Record No.
Dawson-Ross 1	1	19887
Dawson-Ross 3	1	19889
Ice 2	3	2412
Tedray 6	15	158
Tedray 7	2	159
Tedray 8	1	160
Tedray 9	9	161
Xray 7	2	1867
Xray 8	2	1868
Xray 9	2	1869

Work is applied to Central 1 Group claims up to July 2, 1981. The claims were regrouped July 17, 1981.

The Central Group 2 consists of:

Claim	No. Of Units	Record No.
Ed 2	1	151
Ice 1	2	2411
Ice 3	2	2412
Ice 4	12	3111
Ice 5	12	3112
Iron Cap 1	2	315
Iron Cap 2	1	316
Iron Cap 3	2	317
Iron Cap 4	1	2409
Iron Cap 5	1	2410
Iron Cap 6	2	2584
Iron Cap 7	2	2585
Sulphurets 1 Fr.	1	2582
Sulphurets 2 Fr.	1	2583
Sulphurets 3 Fr.	1	2648
Tedray 1	2	153
Tedray 2	1	154
Tedray 3	3	155
Tedray 8	1	160
Tedray 9	9	161
Tedray 11	4	163
Tedray 15	4	2586
Tedray 16	12	2643
Tedray 17	4	2644
Tedray 18	4	2645
Tedray 19	2	2646
Tedray 20	4	3113
Tedray 21	2	3114
Xray 1	1	1861
Xray 2	2	1862
Xray 5	2	1865

HISTORY

The first recorded work on bedrock mineral prospects in the Sulphurets Creek area was done in 1935. The property was explored by prospecting, some magnetometer surveying and drilling by Newmont Mining Corporation from 1959 to 1962. Granduc Mines Limited (NPL) has done trenching, diamond drilling, mapping and lithogeochemical sampling from 1967 to 1977.

GEOLOGY AND MINERALIZATION

The property is a high-level alkaline copper porphyry deposit with elevated levels of molybdenum, gold and silver. Exploration for Cu and Mo has not been successful and the current emphasis is for Au and Ag.

Three main areas of Au or Au-Ag mineralization occur on the property in volcanic and mixed volcanic-sedimentary host rocks. Au-Ag mineralization in quartz or quartz-barite veins occurs north of the Mitchell Glacier and around Brucejack Lake in sub-vertical structures apparently related to the Brucejack Fault.

An extensive zone of low-grade Au mineralization occurs north of the Sulphurets Glacier. Large and commonly multiple fault blocks of andesite or chert are variably silicified, quartz and quartz-pyrite veined and altered to potassium feldspar or chlorite dominant alteration assemblages. Au appears to correlate with both vein and disseminated pyrite and with the most intensely potassium feldspar or quartz altered rock. Locally minor amounts of tourmaline occur in the gold-bearing rocks.

DIAMOND DRILLING

DDH 18, 19, 20, 23, 24, 25, 26 and 27 were drilled on the Tedray 9 mineral claim. DDH 19 and 20 intersected a pyritic andesite flow breccia altered to mainly potassium feldspar and quartz. Chalcopyrite-bearing sections lower in the holes were in sericite and chlorite-altered andesites.

DDH 18, 23, 24, 25, 26 and 27 intersected mainly chloritic and locally silicified andesites. DDH 23 and 24 contained visible gold as very fine flakes associated with pyrite-quartz veins in moderately to intensely silicified chloritic and sericitic andesites.

DDH 21 and 22 were drilled on the Tedray 11 mineral claim. The holes were drilled to intersect a 3 metre thick quartz-pyrite vein. The holes failed to intersect the vein but intersected pyritic, fine to medium grained, flow-banded rhyolites.

Split drill core is stored at the Esso camp on Mitchell Creek.

The map accompanying the report shows the location of all the diamond drill holes on the Sulphurets property. Holes drilled by Granduc have been renumbered as follows:

DDH 1-62	DDH 1
DDH 2-62	DDH 2
DDH 68- 1	DDH 3
DDH 68- 2	DDH 4
DDH 68- 3	DDH 5
DDH 68- 4	DDH 6
DDH 68- 5	DDH 7
DDH 68- 6	DDH 8

SUMMARY OF COSTS

1. Fuel costs are cost of fuel plus cartage and helicopter transportation to camp or fuel cache area.

2. The mobilization - demobilization costs for the drill are proportioned according to the footage of each hole as a portion of the 1400 feet of contracted drilling using one Longyear 38 diamond drill. The total cost is estimated as follows:

Mob-demob as per contract	$10,550.00
Mob, labour, 120 hr at $24/hr	2,800.00
Mob, helicopter 13.1 hr. at $438/hr.	5,737.80
Mob, helicopter 13.9 hr. at $584/hr.	8,117.60
Estimated demob, labour, 120 hr. at $24/hr.	2,880.00
Estimated demob, helicopter, same as for mob	13,855,40
Total mob-demob cost	44,020.80
Mob-demob cost per foot	3.14

3. Helicopter costs are for the contract rate plus fuel consumed, for 206B and 206L-1 respectively.

D. Bridges

$340/hr. + $98/hr. for fuel	$438/hr.
$440/hr. + $144/hr. for fuel	584/hr.

4. Camp costs are estimated at $28.00 per man-day as follows:

Total camp cost was estimated at $75,000. in 1980. Additions and improvements in 1981 are not included. The camp will be used for about 100 days per field season over 3 years. The daily camp cost is therefore $250. Groceries plus delivery cost approximately $5000/month or $166.67/day. Total room and board costs are $250 + $166.67 = $416.67/day. There are normally 15 men employed in camp so the cost per man-day is about $28.00.

5. Camp support costs are $371/day based on a cook at $96/day, a first aid attendant at $92/day, room ad board at $28/day for cook, first aid attendant, helicopter pilot and helicopter engineer and $75/day for a part-time expeditor in Stewart plus a rented truck.

COST STATEMENT - CENTRAL 1 GROUP

Drill Site Preparation, June 7, 10, 12, 13, 29, July 2

Faller, 1 day at $375	$ 375.00
Assistants, 19 man-days at $48	912.00
Helicopter, 2.7 hr. at $438	1,182.60
Room and board, 20 days at $280	560.00

Drilling, DDH 18-20, June 15-July 2

1500 ft. at $20.50	30,750.00
112 ft. at $21	2,352.00
Labour, 280 hr. at $24	6,720.00
Fuel, 505 gal. at $3.60	1,818.00
Helicopter, 27.0 hr. at $438	11,826.00
Mob-demob, 1612 ft. at $3.14	5,061.68
Assays, 212 at $12.25	2,597.00
Survey instrument, 18 days at $47	846.00
Hydraulic core splitter, 18 days at $17	306.00
Core boxes, 65 at $5	325.00
Geologist, 18 days at $170	3,060.00
Assistant, 18 days at $79	1,422.00
Core splitter, 18 days at $60	1,080.00
Room and board, 126 man-days at $28	3,528.00
Camp support costs, 18 days at $371	6,678.00
Total	$81,398.68
Cost per foot	50.50

Note: An adequate amount of drilling was done July 1 and 2 to apply work to Ice 2 which has an anniversary date of June 30.

D Bailey

COST STATEMENT - SULPHURETS 1 GROUP

Drill Site Preparation, June 5, 6, 11 and 13	
Faller, 2 days at $375	$ 750.00
Assistants, 8 man-days at $48	384.00
Helicopter, 2.4 hr. at $438	1,051.20
Room and board, 10 man-days at $28	280.00
Drilling, DDH 21 and 22, July 3-9	
675.5 ft. at $20.50	13,847.75
Labour, 118 hr. at $24	4,745.00
Fuel, 213 gal. at $3.60	766.80
Helicopter, 13.8 hr. at $438	6,044.90
Mob-demob, 675.5 ft. at $3.14	2,101.07
Assays, 73 at $12.25	894.25
Survey instrument, 7 days at $47	329.00
Hydraulic core splitter, 7 days at $17	119.00
Core Boxes, 28 at $5	140.00
Geologist, 7 days at $170	1,190.00
Assistant, 7 days at $79	553.00
Core splitters, 7 days at $60	420.00
Room and board, 28 man-days at $28	784.00
Camp support costs, 7 days at $371	2,597.00
Parts lost in DDH 21, BQ core tube, core barrel, shell, bit and backend	1,200.00

Total	$38,216.47
Cost per foot	56.58

COST STATEMENT - CENTRAL 2 GROUP

Drilling, DDH 23-27, July 10-August 1, 1981

2282.5 ft. at $20.50	$46,770.75
354 ft. at $21.	7,434.00
Labour, 217 hr. at $24	5,208.00
Fuel, 830 gal. at $3.60	2,988.00
Helicopter, 43.8 hr. at $438	19,184.40
Mob-demob, 2635.5 ft. at $3.14	8,275.47
Assays, 298 at $1225	3,650.50
Survey instrument, 23 days at $47	1,081.00
Hydraulic core splitter, 23 days at $17	391.00
Core boxes, 106 at $5	530.00
Geologist, 23 days at $170	3,910.00
Assistant, 23 days at $79	1,817.00
Core splitter, 23 days at $60	1,380.00
Room and board, 161 man-days at $28	4,508.00
Parts left in holes	6,400.00
Total	$122,061.12
Cost per foot	46.31

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LIST OF PERSONNEL

Robert Baerg - Senior Geological Assistant
4043 Coast Meridian Road
Port Coquitlam, B.C.

Dane Bridge - Senior Geologist
1163 Keith Road
West Vancouver, B.C.

Victor Devost - Faller
3949 Crescent View
Terrace, B.C.

Deborah Fediuk - Senior Geological Assistant
4886-4th Avenue
Delta, B.C.

John Harrop - Senior Geological Assistant
6348-180 Street
Surrey, B.C.

Stephen Lowe - Junior Assistant
401-1394 Robson Street
Vancouver, B.C.

Walter Melnyk - Project Geologist
1614 Coleman Street
North Vancouver, B.C.

Robert Salkeld - Senior Geological Assistant
311-1330 Burrard Street
Vancouver, B.C.

Thomas Simpson - Assistant Project Geologist
P.O. Box 8898
Moscow, Idaho

STATEMENT OF QUALIFICATIONS

I, Dane A. Bridge, certify that I received my B.Sc. Honours in Geology in 1969 and my M.Sc. in Geology in 1972, both from the University of Manitoba.

Dane A. Bridge

STATEMENT OF QUALIFICATIONS

I, Walter Melnyk, certify that I received my B.Sc. Eng. in 1972 from the University of Saskatchewan, Saskatoon. I am a registered professional engineer in the province of Ontario and British Columbia.

Walter Melynk

STATEMENT OF QUALIFICATION

I, Tom Simpson, certify that I received my B.Sc. degree in geology from Marshall University, Huntington, West Virginia in 1976. I am currently enrolled in the M.Sc. program at the University of Idaho, Moscow, Idaho.

T. M. Simpson

Tom Simpson

STATEMENT OF QUALIFICATIONS

Robert Baerg, Deborah Fediuk and John Harrop have completed three years of geology at the University of British Columbia.

SCHEDULE "A"

DID SHEET AND JOB SPECIFICATIONS

1. DESCRIPTION OF WORK:

The work is to consist of a series of drill holes, drilled at locations specified by the Company. A total minimum footage of 14,000 feet shall be drilled, but total footage may be extended by mutual consent. Maximum depth of any hole shall not exceed 2000 feet and minimum depth shall be 400 feet. The Contractor will not be called upon to drill any hole at a flatter angle than 45' degrees. Measurement of all holes shall be taken from the top of the casing pipe. If holes of a greater depth than 2000 feet are desired, such drilling shall be performed only upon such conditions and at such rates as may be agreed upon before commencement of such drilling.

2. SCHEDULE OF RATES:

The company agrees to pay the Contractor for footage drilled and other services performed as follows:

(a) Coring in Bedrock

Depth Intervals	B Q Size	Size
0 - 500 ft.	$ 20.50 /Ft.	$ /Ft.
500 - 1000 ft.	$ 21.00 /Ft	$ /Ft.
1000-1500 ft.	$ 21.50 /Ft	$ /Ft.
1500-2000 ft.	$ 22.00 /Ft	$ /Ft.
2000-2500 ft.	$ /Ft	$ /Ft.

(b) Casing of Overburden

Depth Interval	
0 - 50 ft.	$ 20.50 /Ft.
50-100 ft.	$ Field Cost /Ft.

(c) The following services will be provided on an operating Field Cost basis:

1. Casing of overburden over 50 feet.
2. Reaming and setting casing for borehole reduction, borehole stabilization, and control of return water.

3. Drilling caved or broken ground.
4. All cementing operations, excluding setting time but including drilling of set cement.
5. Supplying water to the drill when water supply over 1000 feet lateral and/or 200 feet vertical lift from borehole collar under non-freezing conditions and all costs under freezing conditions.
6. Recovering pipe and/or casing at the Company's request.
7. Hole orientation tests.
8. Setting of wedges, at the Company's request, for the purpose of directional drilling.

Where operating Field Costs are defined as:

Operating Field Costs

Labour (including Supervision) $24.00 per man hour.

Tractor n/a per hour.

Water Truck (excluding driver) n/a per hour.

Equipment

Drills	Type	Operating Hourly Rate
2	Longyear S38	$12.00

Pumps	Type	Operating Hourly Rate
n/a		

Other	Type	Operating Hourly Rate

While operating on a Field Cost basis, supplies consumed or damaged beyond use, including diamond articles, mud ingredients, cement, rods, core barrels, etc. shall be for the Company's account at site replacement value plus 10 %. However, if due to Contractor negligence, or through poor drilling practices, equipment is damaged or lost and hole is not completed, then these costs shall be for the Contractor's account.

(d) The Following services would be provided on a non-operating Field Cost Basis:

1. Setting time for cement.
2. Delays caused by the Company.

Where non-operating Field Costs are defined as:

Non-Operating Field Costs

Labour (Including supervision) $24.00 per man hour;
Drill, pumps and service vehicle n/a per drill hour.
Tractor - operating n/a per hour.
Tractor - non-operating n/a per hour.

(e) Travelling Time

The Company agrees to pay for travelling time from Campsite to drill site and return per shift on the following basis:

Labour $22.00 per hour
Vehicle n/a per day

(f) Mobilization and Between Hole Moves

Mobilization and demobilization of crew and equipment to and from Kutcho Creek strip and will charge company $3500. for same. Moves between holes will be at non operating Field Cost.

(g) Room and board for Contractor's personnel will be provided by ESSO MINERALS.

Contractor will provide meals and accomodations for up to n/a of the Company's representatives at a price of n/a per day.

Room and board will be provided by the Company to Contractor at NO COST per man day.

(h) Core boxes, including lids, will be provided by N/A.
Contractor's rates for core boxes on site shall be $_____?

(i) Core splitter to be supplied by ESSO MINERALS.
Contractor to supply core splittter at n/a per _____.

(j) Standby Rental

It is agreed that, at the completion of the present active drilling program, the Company may retain the Contractor's drilling equipment at the drill area for a rental rate of N/A per N/A per drilling unit. The standby rental charge will cease to apply upon commencement of continuous drilling program, or on the giving of written notice to the Contractor by the Company that the drilling equipment is no longer required.

(k) Fuel, gas, oil and propane for drills, pumps, heaters and camp will be supplied by ESSO MINERALS at no cost to The Contractor.

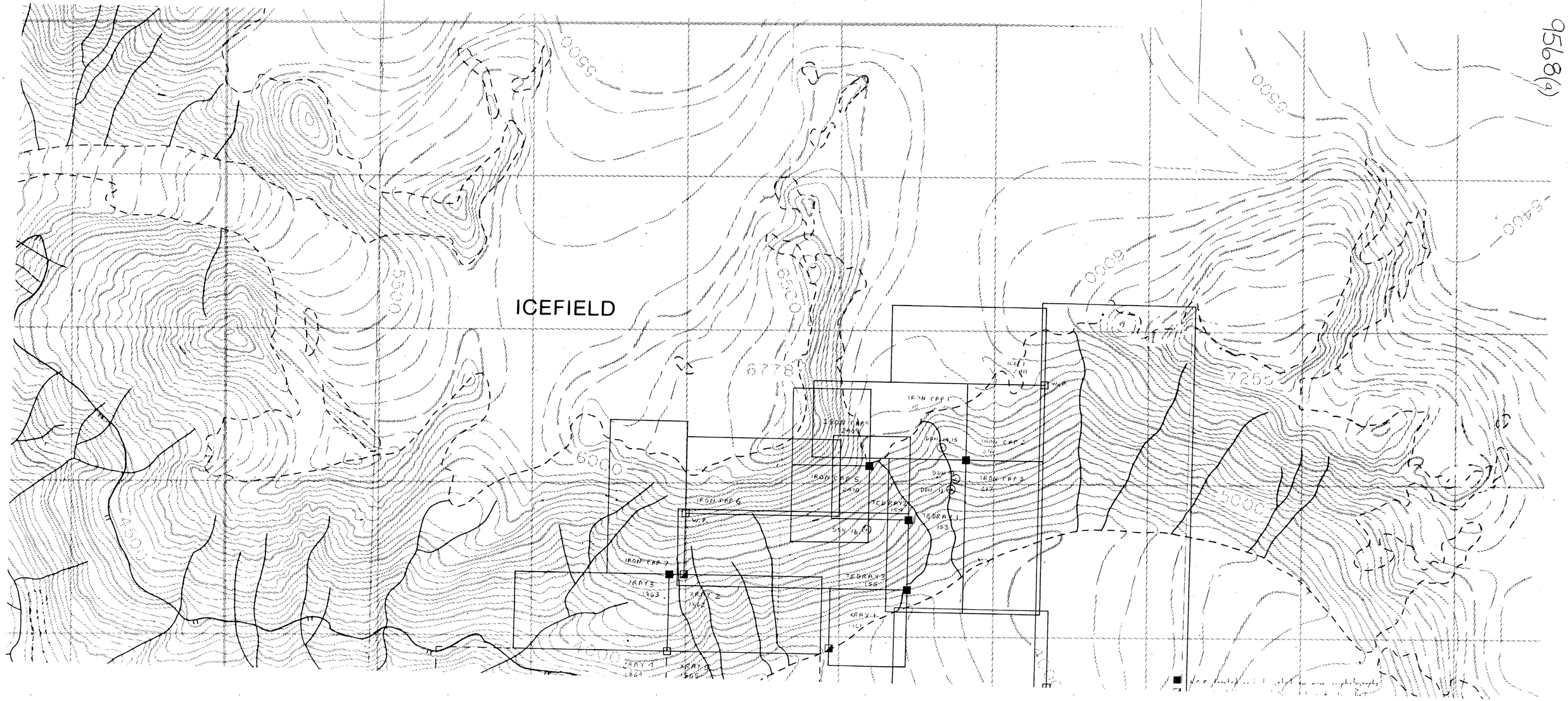
(l) The Contractor will mobilize and demobilize his drill and supplies to and from Tide Lake Strip and will charge 10550 for same.

(m) Delays caused by lack of transportation will be charged to the Company at Non-Operating Field Cost.

(n) Special Agreements.

1. The Company will pay for all wedging assemblies and special core barrels and shells required for wedging and/or controlled drilling.
2. The Contractor agrees to supply complete wedging assemblies and to wedge holes at Field Cost under the supervision of the Company's project engineer. It is further agreed that if trouble arises which is traceable to a wedge, the cost of clearing the hole to allow drilling to proceed will be charged to the Company.
3. The cost of pulling rods under controlled drilling over and above that normally required will be charged to the Company at Field Cost.

9568(a)


ICEFIELD
6600
5500
6500
6778
6000
4500
5000
7250
5400
6800
6600
ICE 1
2111
W.P.
IRON CAP 1
215
IRON CAP 4
2409
IRON CAP 2
216
IRON CAP 5
2410
IRON CAP 3
217
DDH 14,15
DDH 10
DDH 11
DDH 16
TEDRAY 2
154
TEDRAY 1
153
IRON CAP 6
W.P.
IRON CAP 7
XRAY 3
1863
XRAY 2
1862
TEDRAY 3
155
XRAY 1
1861
XRAY 4
1864
XRAY 5
1865
W.C.P. located and [illegible] on new airphotography

ICEFIE

9568(b)

Part 1
of 2

9568(b)

ICEFIELD

ICEFIELD

MORAINE

Sulphurets Property
Claim Map, 104B/9E,9W
1:10,000
North Sheet of 2 Maps
Dec. 1980, Sept. 1981

215-2