

79-#347-#7562

REPORT ON DIAMOND DRILLING
SUBMITTED FOR ASSESSMENT WORK
ON THE LAKE GROUP OF MINERAL CLAIMS

Nanaimo, M.D.
Utah Mines Ltd.

J. Lamb, P.Eng
Sept. 1979.

CO-ORDINATES

50° 37' N
127° 28' 20" W



UTAH MINES LTD.
ISLAND COPPER MINE
P.O. BOX 370
PORT HARDY, B.C. V0N 2PO
TELEPHONE (604) 949-6326

September 7th, 1979.

Ministry of Energy, Mines & Petroleum Resources,
Douglas Building,
Victoria, B.C.
V8V 1X4.

Dear Sirs,

Re: Assessment Report - Lake Group of Mineral Claims

The above report, in duplicate, is being submitted in compliance with regulations governing assessment work under the Mineral Act, revised to January 1st, 1978.

Credit is requested for diamond drilling performed between July 24th and August 12th, 1979.

Yours truly,



John Lamb, P.Eng.,
Project Geologist.

JL:ebh

encl:

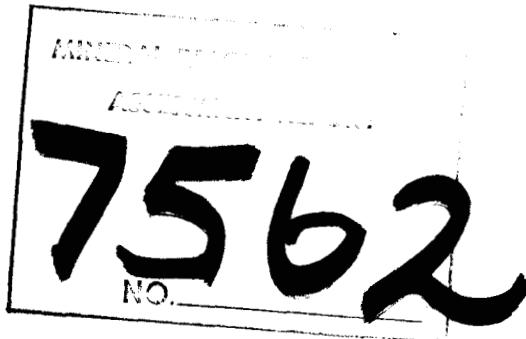


TABLE OF CONTENTS

	<u>Page</u>
Objective	1
Work Performed	2
Statement of Costs	4
Results and Conclusion	6

APPENDICES

- I. Drilling Proposal for Island Copper Contract
- II. Acceptance Letter for Drilling Proposal
- III. Diamond Drill Logs (in rear envelope)

MAPS

Index Map - Sheet 92^L/11 Scale 1:50000

Claim Map - Scale 1: 12000

REPORT ON DIAMOND DRILLING ON THE

LAKE GROUP OF MINERAL CLAIMS

Lat. $50^{\circ} 37'$ N Long. $127^{\circ} 28' 20''$ W.

Objective:

The hole was drilled to determine:

- a) the stratigraphic section through the Parson Bay and Quatsino formations, down to the underlying Karmutsen formation.
- b) the presence of metallic mineralization in these rocks, especially on the contact between the Quatsino and the Karmutsen.

UTAH MINES LTD.
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WORK PERFORMED:

- 1) One hole was diamond drilled between July 23rd and August 12th, 1979.

The hole is at the end of a prepared tractor trail, off an old logging road about 6000 feet at N 10 E from the centre of the Island Copper pit. It is on the Lake M.C. (in unit IN, IW), just outside the boundary of L 2145, which demises Mineral Lease M-34. It is collared about 850 feet at N 68 W from the legal corner post of the Lake mineral claim.

- 2) Particulars of the hole are:

Number	Inclination	Length (feet)	Collar Elevation	Co-ordinates
M-6	-90°	1695 <u>516.65 M</u>	440 Ft. <u>134.1 M</u>	N.11760 E 26625

The co-ordinate position of the collar belongs to the co-ordinate grid used over the whole Island Copper property.

- 3) The drill core is in storage at the Island Copper mine. Logs are included with this report.
- 4) Core logging was performed by:

John Lamb, P. Eng.,
B.A.Sc., M.A.Sc., - University of B.C.

This person is on the geological staff at the Island Copper Mine.

- 5) An itemized cost statement is included in this report.
- 6) A copy of the diamond drilling proposal is included. This proposal is from Thirty-Two Albert Crescent Ltd., a member company of the Tonto Drilling Ltd., organization. Together with my letter of acceptance, it forms the agreement, under which the work was done.

contd....

UTAH MINES LTD.
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TELEPHONE (604) 949-6326

WORK PERFORMED: /contd...

page 2.

- 7) Both an index map and a detailed claim map are attached to this report, showing the drill hole location and the extent of the Lake group of claims.

John Lamb
John Lamb, P. Eng.,

Project Geologist.

UTAH MINES LTD.
ISLAND COPPER MINE
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PORT HARDY, B.C. V0N 2P0
TELEPHONE (604) 949-6326

STATEMENT OF COSTS
FOR THE
LAKE GROUP OF MINERAL CLAIMS

A) Contractor's Charges

Overburden - M-6

0 - 20 at \$14.25	\$ 285.00
<u>Rock - M-6</u>	
<u>Fr.</u>	
20 - 1000 at \$14.25	\$13,965.00
1000 - 1500 at \$15.25	7,625.00
1500 - 1695 at \$17.25	3,363.75

Field Cost (Operation at hourly rates; reaming, maintenance testing etc.)	2,305.00
--	----------

Extra Charges

a) M-6 - (casings, reaming bits, etc.)	211.07
b) Mud circulation products at 11% of total mud costs.	\$ 2,193.84
c) Mobilization cost at 11% of total mobilization	418.00
d) Hard ground charges at 20% of footage drilled 339 feet @ \$6.00	\$ 2,034.00

B) Utah Costs

Core house labour	\$ 1,660.00
Geological Supervision	1,500.00
Company overhead at 25% of labour plus supervision	790.00

UTAH MINES LTD.
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TELEPHONE (604) 949-6326

STATEMENT OF COSTS FOR THE
LAKE GROUP OF MINERAL CLAIMS/contd...

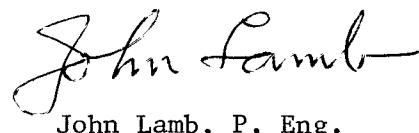
page 2.

B) Utah Costs

Core boxes, 63 at \$3.95	\$ 248.85
Room and Board 4 men for 21 days at \$15.72/day	1,320.48
Tractor for towing drill, preparing trails and drill sites, 38 hours @ \$50./hour.	\$ 1,900.00
Preparation of report	\$ 400.00
Survey of hole	350.00
Vehicle operation 200 miles @ 30¢/mile	60.00
 TOTAL COST -	
	 \$ 40,629.99

Footage Drilled = 1695

∴ Cost Per Foot = \$23.97
Per Meter = 78.65



John Lamb

John Lamb, P. Eng.

Project Geologist.

JL:ebh

RESULTS AND CONCLUSION:

The hole was collared in the Parson Bay formation, continuing in it to 215 meters. Numerous short runs of fine fragmental tuff, sandy and cherty tuffs were encountered in this distance. To 418 meters the rock was a highly altered sequence of lithic, lapilli, and fine cherty tuff, with occasional dikes of dark greenish hornblende porphyry. From 418 to 486 meters the rock was mostly contorted gray Quatsino limestone. A thin band of tan skarn was encountered at 484.3 meters, with prominent epidote alteration and good chalcopyrite and pyrite. At 486.5 meters, the dark volcanic rock of the Karmutsen formation was encountered and continued to the bottom of the hole at 516.65 meters.

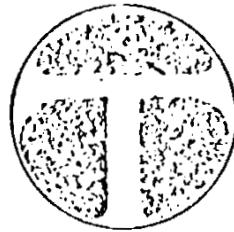
This hole, together with an earlier hole in the same general area, indicates that the Quatsino-Karmutsen contact zone has a potential for skarn replacement type of copper mineralization. Where this contact encounters the roots of the Island Copper porphyry mineralization, about 1.6 km. to the south, there may well be mineable orebodies. They could lie at depths of about 850 meters, well below the proposed pit bottom.


John Lamb

John Lamb,

Project Geologist.

Appendix I



thirty-two albert crescent Limited

A MEMBER OF THE TONTO GROUP OF COMPANIES

UTAH MINES LTD.

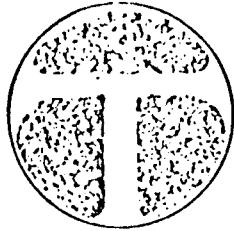
PROPOSAL FOR ISLAND COPPER MINE PROJECT

APRIL 30, 1979

2nd proposal

revised from that
dated 25 April 79.

.S.F.



thirty-two albert crescent Limited

A MEMBER OF THE TONTO GROUP OF COMPANIES

April 30, 1979

Utah Mines Ltd.
Island Copper Mine
Port Hardy, B.C.

Attn: Mr. John Lamb

Dear Sir:

We are pleased to submit the following quotation on your project at the Island Copper Mine.

A. Scope of the Program

1. The program contemplates a minimum of 15,000 feet of NQ and BQ drilling.
2. The drilling will commence in mid May 1979.
3. The program contemplates holes ranging in depth from 500' to 1,000' with a capability of going to 1,600'. Holes will be inclined from minus 70 degrees to minus 90 degrees.

B. Union Certification

Our employees will be members of the Tunnel and Rock Workers Union, Local 168.

C. UTAH's Responsibilities

1. Drill roads and drill sites are to be constructed and maintained accessible to skid mounted drill rigs, supply trucks and pickups

...2

free of cost to Thirty-Two Albert. Any environmental responsibility relating to the construction, use or reclamation of same shall be the responsibility of Utah. Thirty-Two Albert will, however, remove all trash and loose materials, leaving drill sites in a clean and orderly condition.

2. All licences, land and water use permits, environmental reports, reports relating to hole plugging, etc. shall be the responsibility of Utah. Thirty-Two Albert shall cooperate with and give technical assistance if requested for compliance with these regulations.
3. Utah will hold Thirty-Two Albert harmless for any liability claims which may arise from normal activity related to this contract including pollution of ground water or surrounding land from discharge of drill water and wastes save if Thirty-Two Albert's employees act in an irresponsible manner.
4. Utah will provide locked storage space for Thirty-Two Albert's parts and supplies.
5. Utah will provide equipment to assist in moving Thirty-Two Albert's rigs from site to site.
6. Utah will either provide or be responsible for the following items at Thirty-Two Albert's list price plus 10%:
 - a) cement, drilling mud and additives and soluble oils
 - b) core boxes
 - c) any other special tools or drilling accessories which may be required for testing purposes or requested left in the hole.
7. Utah will provide room and board for Thirty-Two Albert's crews at no cost to Thirty-Two Albert. It is understood crews will be accommodated in Utah's camp at the mine site.

D. THIRTY-TWO ALBERT's Responsibilities

1. Thirty-Two Albert will provide drill crews, drills and all other necessary equipment and materials to complete the program as outlined above.
 - a) The following equipment will be supplied:
 - 1 skid mounted Longyear Super 38 rig and 1 skid mounted Longyear 34 rig
 - all ancillary pumps, drill strings and other equipment
 - 2 3/4 ton trucks
 - mobile parts trailer and all spares
 - a Bombardier personnel carrier at industry rental rates of approximately \$2,500.00 per month

- b) All drill operators employed on this job will have a minimum of five years drilling experience.
- 2. Thirty-Two Albert will provide transportation for its personnel to and from the drill sites.
- 3. Thirty-Two Albert will provide a full time foreman to supervise the drilling operations. The foreman will have a minimum of ten years experience in running and being responsible for diamond drill jobs.
- 4. Thirty-Two Albert will transport the core from the drill site to Utah's core shed.
- 5. Thirty-Two Albert will provide water to the drill site at no cost providing the horizontal distance does not exceed 1,500' and the lift 250'. Installation and maintenance are to Utah's account at quoted labour rates.

E. General

- 1. In the event that drill pipe and other equipment become broken or lost in the hole, Utah will be responsible for time and materials consumed to recover the materials. If they should end up being left in the hole, then they will be charged at their replacement value.
- 2. In the event that cavities or loose and caving materials are encountered of a nature as to prevent the completion of any hole, then Thirty-Two Albert does not, under these conditions, guarantee to drill to a predetermined depth and in the event that it becomes necessary to abandon the said hole, Thirty-Two Albert shall charge Utah for those holes abandoned, at the depth at which they were abandoned, at the footage rates specified. If required to continue on in the hole then Thirty-Two Albert has the option to revert to standby rate plus all materials, supplies and equipment needed at delivered cost, subsequent to Utah's approval.
- 3. It is agreed that hourly rates shall be interpreted here to mean the labour of a two-man crew, machine and equipment rental, plus pipe and casing lost or left in holes, diamond loss and setting charges, materials and supplies consumed in the work at Thirty-Two Albert's list price.

In the event extra labour over and above the regular two-man crew is required, Thirty-Two Albert agrees to supply such

additional labour at the rate of sixteen dollars and fifty cents (\$16.50) per man per hour.

F. Bid Prices

1. Moving time

a) Move in charge including all equipment, supplies and personnel to the transport discharge point for each rig	\$ 1900.00
b) Move from site to site and to and from the transport loading or discharge point including all equipment, supplies and personnel for the rigs. Four hours free time will be allowed for each move.	16.50/man hr. 10.00/drill hr.
c) Move out charge including all equipment, supplies and personnel for each rig	1900.00

 2. Drilling Rates

	<u>BWL</u>	<u>NWL</u>
a) Overburden or Wastedumps		
0 - 50'	14.25	15.25
50 - 100'*	15.25	16.25
100 - 150'*	17.25	18.25
*or hourly rate plus material whichever is greater.		
Casing shoes charged at cost plus 10%.		
b) Core Drilling	<u>BQ</u>	<u>NQ</u>
0 - 1000'	14.25	15.25
1000 - 1500'	15.25	16.25
1500 - 2000'	17.25	18.25

Note: If siliceous magnetite breccia or similar hard material is encountered, an additional \$6.00 per foot will be charged for BQ drilling and \$7.00 per foot for NQ drilling. The hard material surcharge will apply anytime the penetration rate drops below four feet per hour and the footage drops below 60 feet per bit.

 3. The following services will be performed at the designated hourly cost:
 - a) Testing
 - b) Standby at Utah's request or any other delays not caused by Thirty-Two Albert
 - c) Setting and pulling casing
 - d) Regaining lost circulation and cementing including setting and drilling time
 - e) Reaming, hole conditioning, drilling cave
- | | |
|--|----------------------------------|
| | 16.50/man hr.
10.00/drill hr. |
|--|----------------------------------|

5.

4. Travel time in excess of one hour per man shift 16.50/man hr.

Thank you for permitting us to tender on your project. We look forward to working for you in the near future.

Yours very truly,

THIRTY-TWO ALBERT CRESCENT
LIMITED



Charles E. Croft

CEC:cm

APPENDIX II.

April 30th, 1979.

Mr. C. Croft,
Tonto Drilling Limited,
1215 W. 7th Avenue,
Vancouver, B.C.
V6H 1B7.

Dear Chuck,

This is to advise you that your bid for this summer's diamond drilling at Island Copper has been accepted with the following proviso's which you and I and John Fleming just discussed on the telephone:

- 1) That your quote will include a non-running foreman which will add approximately 75^c/foot to the drilling footage rates.
- 2) That your crews will deliver the boxes of core to our shed in camp, when they come off shift.
- 3) That overburden drilling rates beyond 50 feet will increase \$1.00 per ft. to 100 feet of depth and \$2.00 per foot to 150 feet of depth.
- 4) That your definition of hard ground will be "when rate of penetration is less than 4 feet per hour and bit life is less than 60 feet".
- 5) That you will rent us a bombardier carrier for difficult access problems at a rate of approximately \$2,500/month.

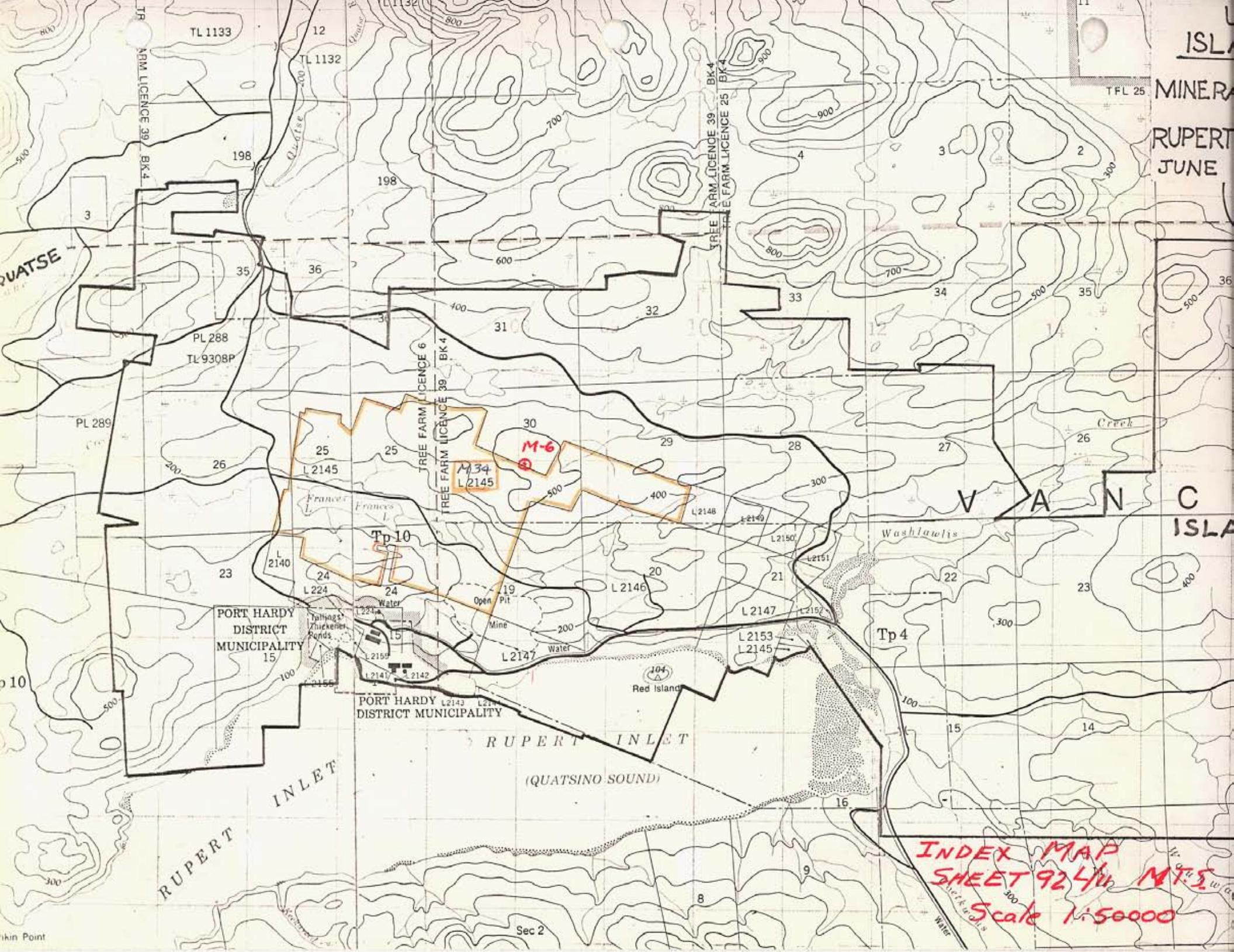
You should try to meet a commencement date of May 22nd, just after the long Victoria day holiday weekend.

Wishing you the best and looking forward to working with you this summer, I remain,

yours truly,


John Lamb,
Project Geologist.

JL:ebh



HOLE NO. M-6

CASING COLLAR ELEV.: 440 FT GROUND ELEV.:

COORDINATES: N. 11760

E. 26625

INCLINATION: -90°

BEARING: —

PROJECT:

PAGE NO: 1 OF 28

DATE STARTED: 25 JUL '79

REF. TO CLAIM CORNER:

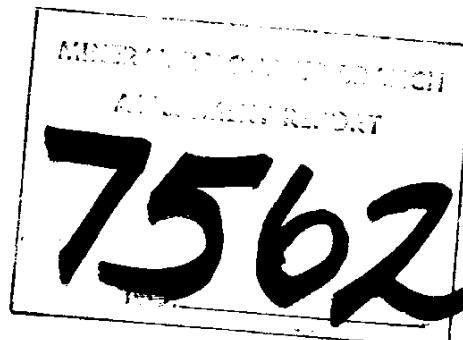
DATE FINISHED: 11 AUG 79

SCALE:

TOTAL DEPTH: 1695 FT (516.65 M)

LOGGED BY: J.L.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS: LOCATED ON LAKE MC a few feet from boundary of L2145 (approx on Sec 175). 0-20 - overburden (no core).	AVE CORE REC'Y / HOLE	% SULPHIDES		SAMPLE INTERVAL	% REC'Y SAMP INT.	ESTI-MATED
							DRILLING INTERVAL	% CORE RECOVERED			
20	6.1 14				20-23 - Black fractured argillite, somewhat limey. Calc frags & gills. Some epid. 23-39 - f. gray dark to greenish tuff. w. fine small frags.		20	60			
30	9.14 M				} shot w calc vns. } + gills. Pale green } to buff						
40	12.19 M						39				
50	15.24 M				39-106 - Black limey argillite shot through w. calc network vlt. Some vlt. tinged green w. epid. Some fine bddg. from 40° to 50° to core. Dissem py. in some beds						
60	18.29 M				thin bddg @ 45°						
70	21.33 M										
80	24.38 M				sheared w. carbonaceous gouge						



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 3 OF 28

COORDINATES:

N.

E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

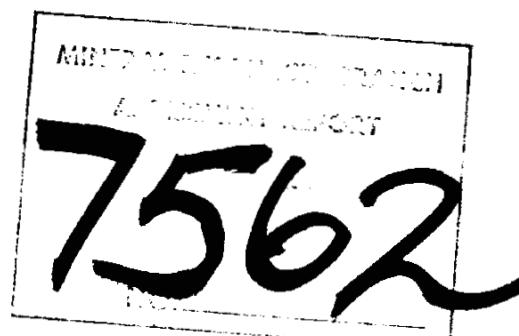
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	DESCRIPTIVE GEOLOGY		SULPHIDES %	DRILLING INTERVAL 140	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
140															
150-45.72 M					- bddg @ 35°										
160-48.77 M					- some gils. thin bddg @ 32°										
170-51.81 M														171	
180-54.86 M															
190-57.91 M															
200-60.96 M															



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 4 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

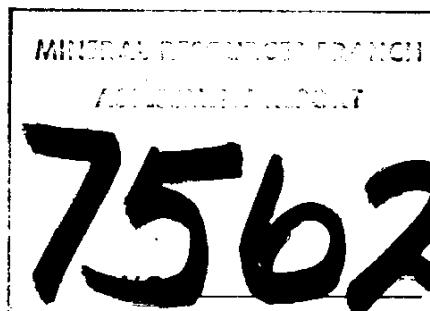
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y	% SAMP. INT.	ESTI-MATED
					DESCRIPTIVE GEOLOGY		200	200	BQ					
200					171-222 - See P3 Fine spse dissem Py									
210					slip w. $\frac{1}{4}$ " gouge				80					
220														
230 - 70 M					222 - 290 Mixed dark fgt tuffs & limey med. gray tuff w. irreg vns cak-lauv. Fine scatt'd py.			222						
240														
250														
260														



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT

DATE STARTED

PAGE NO: 5 OF 28

COORDINATES:

N. E.

DATE FINISHED

REF. TO CLAIM CORNER

INCLINATION:

BEARING:

TOTAL DEPTH

SCAII

LOGGED BY

SECTION	ALTERATION			COMMENTS:	AVE CORE REC'Y / HOLE	%	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
	FRACTURING	MATERIAL	GEOLOGY										
260	-80.11				222 - 290 -						260		
270					See p 4								
280				- 1' limey gouge + 6' x 6'								90	
290				greenish cherty limey tuff bddg @ 25° to core			7562				290		
300					290 - 312 - Pale gray f. bdd. limey cherty looking sediment w. calc gashes. Much b'xtd & healed.								
310													
320				bddg @ 45°	312 - 342		Black bdd. arg. laced w. calc smg						

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.

PROJECT

PAGE NO: 6 OF 28

COORDINATES:

22 E

DATE STARTED

REF TO CLAIM CORNER

INCLINATION

DEARIMA:

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SCALE:

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 7 OF 28

COORDINATES:

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

DATE FINISHED:

SCALE:

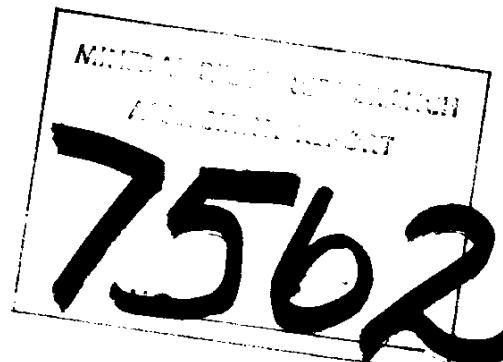
N. E.

TOTAL DEPTH:

LOGGED BY: / /

BEARING:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
380													
380													
390	120 M				- bddg @ 30°	380 - 440 - arg. w. layers of tuff & limey sandy beds where noted. Much calc crackling to 387 - gray tuff w frogs arg.							
400					- bddg slip 1" wide	At 393' a layer of limey seds, palegray in arg., $\frac{1}{4}$ " wide. Contains fine py, pyrr & a few coarse grains Cpy (strata-bound min'lzn). Many other tiny sulph. rich beds scattered in core. Much fine contortion & crinkling in some arg. layers							
410					- strong shearing								
420	130 M				- limey bed @ 45°								
430					- bddg @ 45°								
440													



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 8 OF 28

DATE STARTED

REF. TO CLAIM CORNER

DATE FINISHED:

SCALE

TOTAL DEPTH:

LOGGED BY

HOLE NO. 14-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 9 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT.	ESTI-MATED
500													
510													
520													
160 M													
530													
540													
550													
170 M													
560													

500 - 527 - Massive black limey arg.
w few fine light bold stripes.
All heavily crackled w. white
calc. seams, which themselves
are broken by later movement.

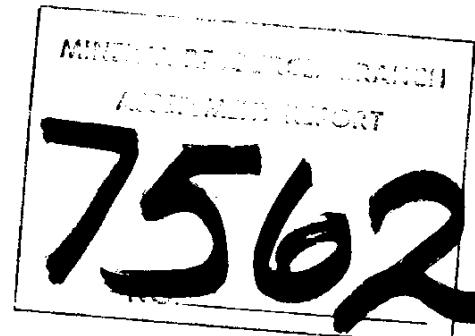
- bddg @ 45°

bddg @ 50°

527 - 650 - Mostly well bdd. argillite,
black w. thin light cherty bands.
Fretted w. calc-tourmalite vns
w knots. Some narrow bdd. bands w.
heavy py.

- bddg @ 60°

- bddg @ 55°



500

90

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 10 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

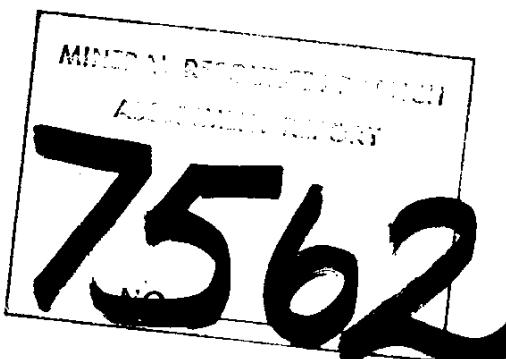
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT	ESTI-MATED
560													
570					- bddg @ 50°								
580													
590	180' M												
600					- bddg @ 45°								
610					- 1/2" band w much py.								
620					- bddg @ 65°								



MOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT

PAGE NO: 11 OF 28

DATE STARTED

REF TO CLAIM CORNER

DATE FINISHED

SCA

TOTAL DEPTH

LOGGED 8

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 12 OF 28

COORDINATES:

N.

E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

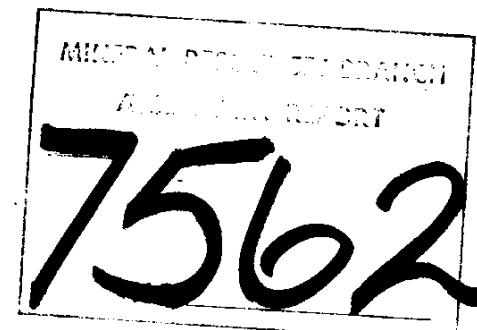
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION			COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP. INT.	ESTI-MATED
	FRACTURING	MICROSTRUCTURE	MINERAL									
680												
685												
690												
695												
700				bddg @ 75°								
705												
710												
715												
720												
725												
730												
735												
740												



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

COORDINATES:

N.

E.

INCLINATION:

BEARING:

PROJECT:

DATE STARTED:

DATE FINISHED:

TOTAL DEPTH:

PAGE NO: 13 OF 28

REF. TO CLAIM CORNER:

SCALE:

LOGGED BY:

SECTION	ALTERATION				COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT	ESTI-MATED
	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY									
740													BQ
750	-230 m												
760													
770													
780													
790	240 m												
800													

704 - 750 See P12

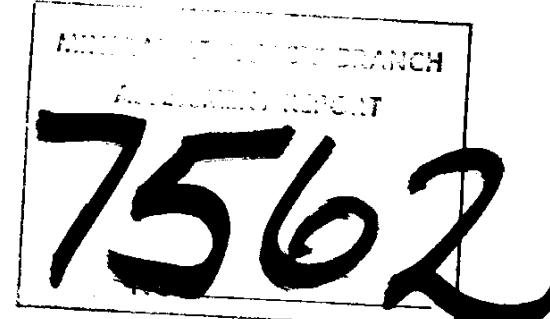
750 - 800 - gray-green cherty tuff w. some streak vlt's calc. w. some gil's. Weak epid streaks in places. Small vns & pods py in places. Occ large frags tuff b'xa.

- sheared parallel to core

- sheared along 1' core

- epid streaks.

- fault low angle



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 14 OF 28

DATE STARTED:

REF. TO CLAIM CORNER:

COORDINATES:

N. E.

DATE FINISHED:

SCALE:

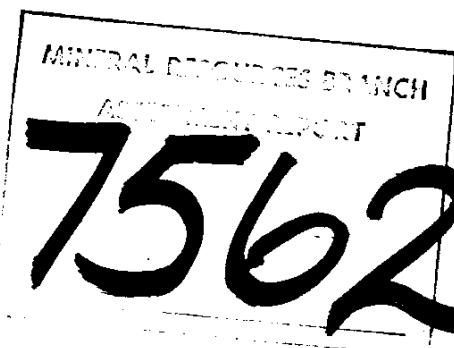
INCLINATION:

BEARING:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION			FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED	
800																
810																
820	250	147														
830																
840																
850																
860																



860

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 15 OF 28

DATE STARTED:

REF. TO CLAIM CORNER:

DATE FINISHED:

SCALE:

COORDINATES:

N. E.

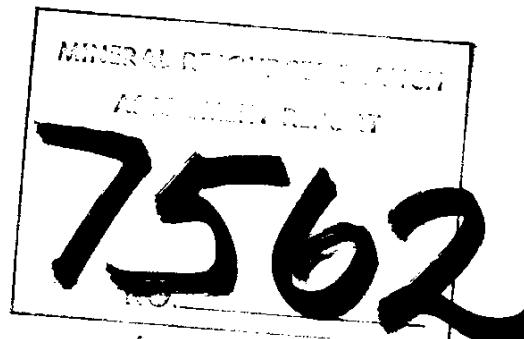
TOTAL DEPTH:

LOGGED BY:

INCLINATION:

BEARING:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	DESCRIPTIVE GEOLOGY				SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT.	ESTI-MATED	
							860	860 - 820	820	820 - 780								
860																		
870					{ epid. on shearing.													
880																		
2700 M																		
890					- i'shearing & gougy													
900					- sheared													
910																		
2800 M																		
920																		



} sheared & gougy
w. much streaky
epid.

720

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 16 OF 28

DATE STARTED:

REF. TO CLAIM CORNER:

DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

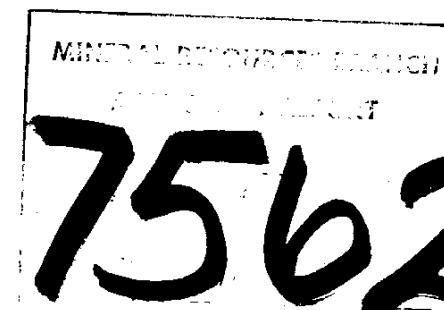
COORDINATES:

N. E.

INCLINATION:

BEARING:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	DESCRIPTIVE GEOLOGY					% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
							920	920	920	920	920							
920					good tuff b'xa.	920 - 952 - epidotized tuff, well b'xd in short runs w fine lap. texture in others. Fine hairline fracs w gils.						%	920		BQ			
930					shearing w clay alt'n										86			
940					narrow gtz vn parallel to core. clay alt'n on marg.													
950	2970' N				soft alt'd shear parallel to core. Gils calc & some epid.	952 - 984 - gray - greenish fine lithic tuff w some bands finely fragtl. A few thin calc vlt's.												
960																		
970					1" clay alt'n on slip													
980																		



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 17 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

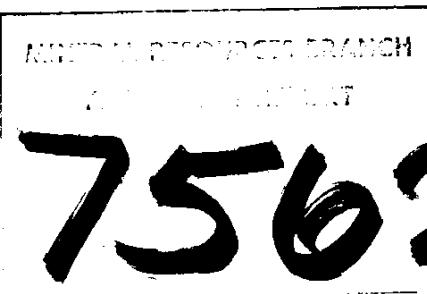
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY :

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
980													
984 - 1048 1/2													
990													
1000													
1010													
1020													
1030													
1040													



7562

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 18 OF 28

COORDINATES:

N.

E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

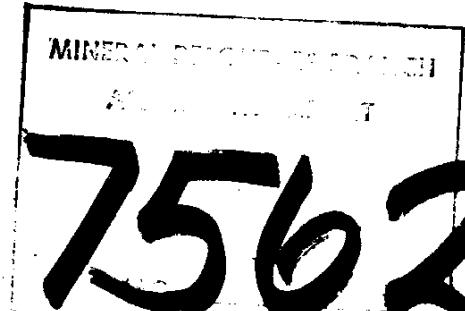
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION FRACTURING MINERAL GEOLOGY				COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY SAMP INT	ESTI- MATED	
1040														
1050 - 320 m						984 - 1048 $\frac{1}{2}$ See P17					BQ			
						- calc vns. w. gils.								
1060														
1070														
1080 - 330 m						1048 $\frac{1}{2}$ - 1100 - Mostly sap. tuff & fine lithic tuff w. short runs hiblde II as noted. Some short well bdd limy & argillaceous beds, as noted. Some calc vns. w epid alt'n & also patches epid. A few thin py. sms. Core somewhat broken.								
						bddg @ 35°								
						- beds contort. & folded								
1090														
1100						bddg @ 70° much epid.								



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 19 OF 28

COORDINATES:

N.

E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY: J. L.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	DESCRIPTIVE GEOLOGY						SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC Y SAMPL INT	ESTI-MATED
							1100	1110	1120	1130	1140	1150							
1100																			
1100 - 1160					Mixed mass. alt'd tuff + t.b. cherty beds. Much epid. alt'n & replacement through the core. Core broken in places rubbly.														
1110					6" core loss 3' rubble, mostly lost.	Dissem py. Minor calc vns.													
340 M	17				bddg @ 45°														
1120					almost 1' mass. pyrr w. 2 thin vlt's py } N.B.														
1130					bddg @ 50°														
1140					bddg contort. rot low core angle														
350 M					{ bddg contorted & parallel to core														
1150					sheared & epidotized.														
1160					bddg @ 45°														

MINES AND METALS INC.

7562

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT :

PAGE NO: 20 OF 28

COORDINATES:

N. — **E.** —

DATE STARTED

SEE TO CLAIM CORNER

INCLINATION:

BEARINGS:

TOTAL DEPTH

SCAL

LOGGED BY : ✓. ✓

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 21 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

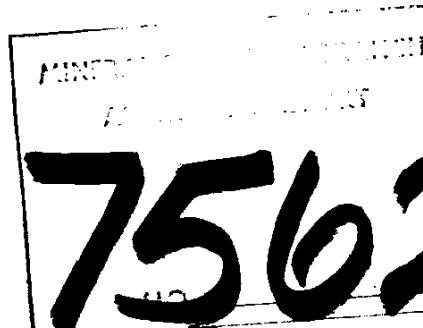
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
					DESCRIPTIVE GEOLOGY								
1220					<u>1191-1236</u> 5cc P20								
1230													
1240					<u>1236-1280</u> - Partly bedded tuff b'xg + t.b. cherty tuffs. mixed tuffs highly alter'd bubble tuff andes. II						1236		
380 M1													
1250													
1260					t.bdg @ 80°								
1270					- epidotized on bddg. @ 80°								
1280	390 11				- laccd w. gils								



7562

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 22 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY :

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
1280													BQ
1290													
1300													
1310													
- 400' M													
1320													
1330													
1340													

1280 - 1323

Mixed lithic tuff (buff) & t.b. limey short arg. runs, some well bedded. Laced w. extended calc vns w. consider gals in places. Consider breakage & healing of rocks & evidence of flowage folding. Some epid streaks.

bddg @ 65°

400' M

bddg @ 50°

1323 - 1371

Tan, chalky white to pale gray limey & cherty tuff, generally well bedded. Consider contortion & folding in places. Most reacts to HCl.

hddg @ 60°

7562

HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT

PAGE NO: 23 OF 28

COORDINATES:

N. E.

DATE STARTED

REF TO CLAIM CORNER

INCLINATION:

BEARING:

SCALE

TOTAL DEPTH

LOGGED BY

HOLE NO. 17-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 24 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
1400													
1410	430 m												
1420													
1430													
1440													
1450													
1460													

1371 - 1417
See P24

green-gray
lap. tuff 1417 - 1460 - Mostly white, streaked
w. blue gray bdd lms. except
volcanics where noted. Flowage
distortion in lms

richert tuff
w. weak skarn
strks.

} greenish lap. tuff and.
Good py & some epid.

} skarny andesite
w. py.

- bddg @ 45°

bddg @ 45°

MINERAL LOG

7562

HOLE NO. 17-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 25 OF 28

COORDINATES:

N.

E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

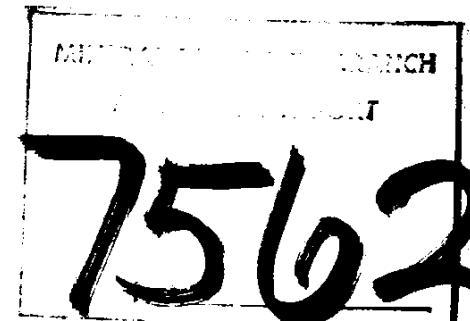
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
DESCRIPTIVE GEOLOGY													
1460					1460 - 1535 - blue-gray limestone w. - bldg @ 45° greenish andesitic alt'd sills (or dikes) where noted. Some late calc fracs.					BQ			
1470					{ dark green andesite w. scattered py & fine skarn selvedges. Much epid. att'n								
1480	450 M				contact @ 40° dark green f.gr. andesite bleached on upper cont. Dissem py. throughout.								
1490					bldg @ 50° 1" skarn selvedge Dark greenish black andesite very fine grained.								
1500													
1510	460 M				- bldg @ 50°								
1520					← bldg @ 55°								



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 26 OF 28

COORDINATES:

N. E.

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

BEARING:

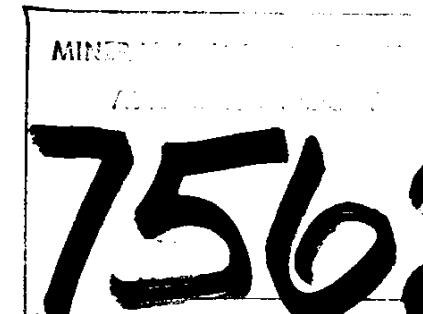
DATE FINISHED:

SCALE:

TOTAL DEPTH:

LOGGED BY:

SECTION	ALTERATION				COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTI-MATED
	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY									
1520													
1530													
1540													
470 M													
1550													
1560													
1570													
480 M.													
1580				bddg @ 60°									



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.:

PROJECT:

PAGE NO: 27 OF 28

COORDINATES:

DATE STARTED:

REF. TO CLAIM CORNER:

INCLINATION:

DATE FINISHED:

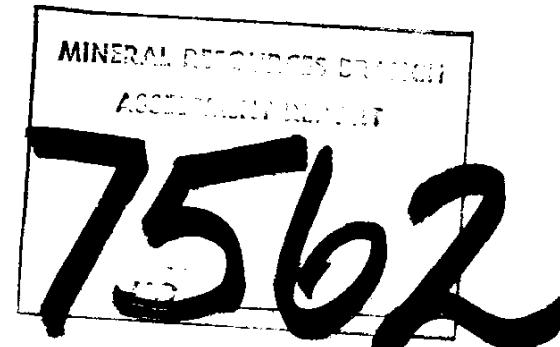
SCALE:

BEARING:

TOTAL DEPTH:

LOGGED BY :

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	Ave Core Rec'y / Hole	SULPHIDES	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp Int.	ESTI-MATED
1580													
1589					1535 - 1589 See P26								
1600													
1610					1589 - 1596 - 1 ft tan skarn w. good dissem large masses cpy. followed by epidotized skarny volc. w. dissem py & some cpy. 1596 - 1640		some gills						
1620					Black-green mostly uniformly fine grained granular basaltic looking rock, cut by numerous calcite vlt's. w streaks gills.								
1630					{ sheared. w. calc vng specks gills								
1640	50m M												



HOLE NO. M-6

CASING COLLAR ELEV.:

GROUND ELEV.

PROJECT 2

DATE STARTED:

PAGE NO: 28 OF 28

REF. TO CLAIM CORNER:

COORDINATES:

DATE FINISHED

Page 7

INCLINATION:

BEARING:

TOTAL DEPTH:

LOGGED BY

