6136

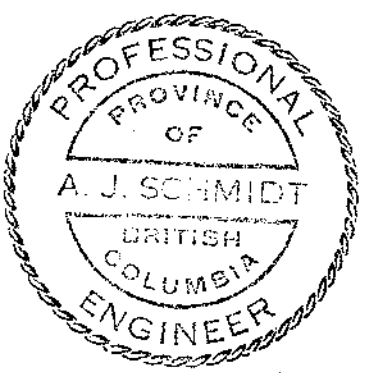
DRILLING REPORT

ON THE

POPLAR GROUPS 1 TO 7
OMINECA MINING DIVISION

SEPTEMBER TO NOVEMBER, 1976

LOCATED
FIFTY KILOMETERS SOUTHWEST
OF HOUSTON, B.C.
54° 127° NW



BY

B. BOWEN, GEOLOGIST
UTAH MINES LTD.

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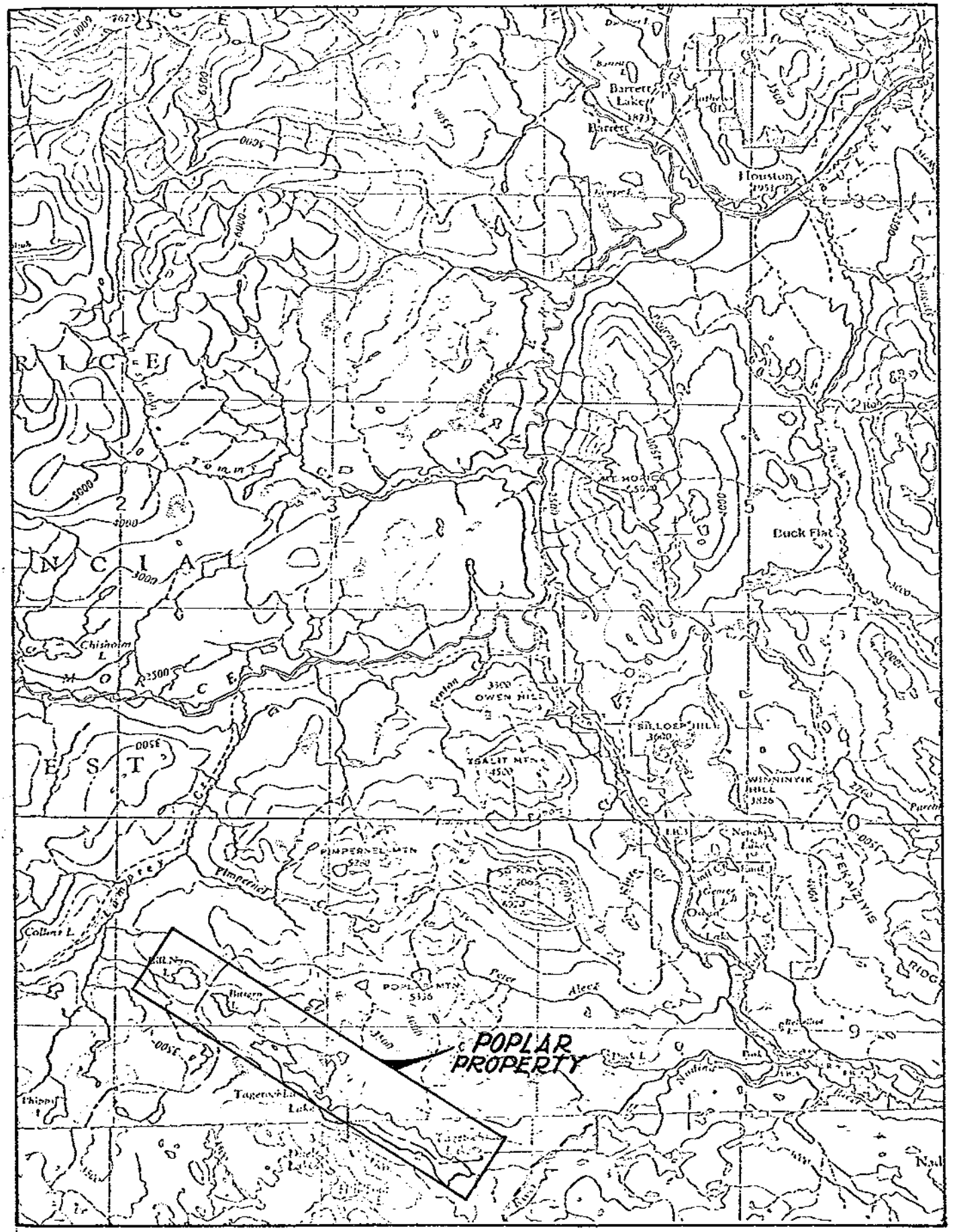
ILLUSTRATIONS (MAP POCKET)



INDEX MAP

POPLAR CLAIMS

OMINECA MINING DIVISION

5 0 5 Miles

1:250,000

DRILLING REPORT ON THE POPLAR GROUPS 1 TO 7

INTRODUCTION

An eight hole diamond drilling program was conducted on the Poplar Lake Prospect between 23rd September and 19th November, 1976. The claims upon which diamond drilling was specifically done include Poplar #3, #5, #7 and #13.

Geology and supervision by Utah Mines Ltd. included the following personnel: E. Bohn, D. Crowe, V. Arsenau, G. Norman and F. Gatchalian, geologists; F. Crha, R. Schmidt, L. Frantz and R. Willson, field assistants.

Drilling was performed by D.W. Coates Enterprises Ltd. The drilling crew consisted of two (2) two-man drilling crews, with one man acting as a runner-foreman. Camp costs were incurred by D.W. Coates Enterprises Ltd. during the period 23rd September to 20th October. Camp costs for the remainder of the program were incurred by Utah Mines Ltd.

The Poplar groups affected by this report cover an area approximately 10.5 kilometers long by 3.5 kilometers wide. Drilling was confined to the Canyon and East Creek areas, on the north shore of Tagetochlain Lake. Within the immediate drill area, vegetation is characterized by large open poplar meadows, topography is gentle to flat and there is very little relief. Average elevation is 910 (±) meters above sea level.

Base camp was located on Poplar #8.

DIAMOND DRILLING PROGRAM

One Longyear "38" drill was used and was equipped to drill NQ core size. Each crew worked a 10 hour shift, 7 days per week. A John Deere 450 tractor was used for drill moves.

Core was logged by a Utah geologist, then split in half, with half of the core sent for analyses via Pacific Western Airlines air freight to Chemex Labs Ltd., Vancouver. The remaining half of the split core was placed in storage in the storage and logging facility located on Poplar #7. Every box of core was labelled with the diamond drill hole number and the footage contained in the box.

Upon completion of the drilling program, each drill hole collar was surveyed by J. Kerr, Professional Engineer. His hole location data is incorporated in the Diamond Drill Hole Collar Location Plan (Plate No. 1).

A summary of diamond drill holes drilled during the period 28th September to 19th October, 1976 is given below:

HOLE NO.	CO-ORD. (METERS) N	E	ELEV. (METERS)	ANGLE	AZIMUTH	TOTAL DEPTH (METERS)
PC-27	5904.51	11,436.54	910.9	-90°		303.9
PC-28	5995.87	11,271.01	930.3	-60°	090°	306.6
PC-29	5977.12	11,468.11	910.9	-70°	077°	239.6
PC-30	6100.93	11,475.96	908.4	-60°	090°	260.9
PC-31	5898.83	11,802.76	903.5	-80°	090°	252.1

HOLE NO.	CO-ORD. (METERS) N	E	ELEV. (METERS)	ANGLE	AZIMUTH	TOTAL DEPTH (METERS)
PC-32	6000.30	11,949.69	917.0	-60°	270°	257.3
PC-33	6096.09	12,301.29	915.8	-90°		212.4
PC-34	6000.76	12,161.70	909.0	-60°	090°	215.2
			TOTAL METERAGE			2048.0

Data accompanying the drilling report consists of complete diamond drill logs for diamond drill holes PC-27 to PC-34 and a Diamond Drill Hole Collar Location Plan (Plate no. 1). Statement of Qualifications and Statement of Costs are given in Appendices A and B respectively. Contractors' invoices and a copy of the drilling contract are given in Appendices C and D respectively.

B. K. Bowen

B.K. BOWEN
GEOLOGIST

VANCOUVER, B.C.
DECEMBER 15, 1976

BKB/jfb

APPENDIX A

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

The field work for the report was done by the following persons whose qualifications are outlined below.

1. E. BOHN, JR. Geologist for Utah Mines Ltd., Vancouver, British Columbia

Completed A.A. (geology) at the College of San Mateo, San Mateo, California in 1966; completed B.C. (geology) at Oregon State University, Corvallis, Oregon in 1968; employed as an exploration geologist during the summer field seasons of 1968 and 1969 with Humble Oil & Refining Co. in Alaska and Idaho; employed as a teaching assistant from 1968 to 1970 at the MacKay School of Mines, University of Nevada in Reno, Nevada; employed part time as a consultant in 1970 for Cortez Gold Mines, Battle Mountain, Nevada; employed part time as a geologist from November 1970 to June 1971 with Utah Construction and Mining Co., Reno, Nevada; employed as a uranium geologist in western and southwestern U.S. from June 1971 to March 1974 with Lucius Pitkin, Inc. (contract work for U.S. Atomic Energy Commission), Grand Junction, Colorado; employed as a geologist in western U.S. by Utah International Inc. from March 1974 to June 1976 in Tucson, Arizona under the supervision of S.A. Taylor; transferred to Utah Mines Ltd. as a geologist in June 1976 to date under the supervision of A.J. Schmidt, P.Eng.

2. DON CROWE, Temporary geologist, Utah Mines Ltd., Vancouver, British Columbia

Completed B.Sc. at the University of British Columbia in 1976; employed by Cominco Ltd., Canex Placer Ltd. and Utah Mines Ltd. in the summers of 1973, 1974 and 1975 respectively as an assistant geologist; employed by Utah Mines Ltd. from May 1976 to October 1976 as a field geologist, under the supervision of A.J. Schmidt, P.Eng.

3. G. NORMAN, Geologist, Utah Mines Ltd., Vancouver, British Columbia

Completed B.Sc. (Honors Geology) at the University of Alberta in 1973; employed by Imperial Oil during the 1972 field season as an assistant geologist; employed by Canadian Superior Ltd. from May 1973 to October 1973 as a field geologist; employed by Kaiser Resources Ltd. from November 1973 to December 1974 as a field geologist; employed by Utah Mines Ltd. from April, 1975 to September 1975 and from January 1976 to date as a geologist under the supervision of A.J. Schmidt, P.Eng.

4. F.R. GATCHALIAN, JR., Geologist for Utah Mines Ltd., Vancouver, British Columbia

Completed B.A. (geology) at Adamson University, Manilla, P.I., in 1950; employed by Atlas Consolidated Mining and Development Company from April to June, 1956 as student-trainee; employed by American Asiatic Oil

Corporation from April, 1959 to March 1963 in the Philippines Islands as geologist for oil exploration under the supervision of Foutunato Mamaclay; employed by Samar Mining Company Incorporated from March 1963 to March 1964 in the Marara project, Davao, P.I. as project geologist under the supervision of G.M. DuBoulay; employed by Central Engineering Company from March 1964 to November 1967 in Manila, P.I. as a geologist under the supervision of Pablo Capistrano; employed by Utah Mines Ltd. from January 1968 to date as a geologist under the supervision of A.J. Schmidt, P.Eng., and M.J. Young, P.Eng.

5. VERN ARSENAU, Temporary geologist for Utah Mines Ltd., Vancouver, British Columbia

Completed B.Sc. at the University of New Brunswick, Fredericton, in 1976; employed by Utah Mines Ltd. from May, 1976 to November 1976 under the supervision of D.G. Cargill, P.Eng. and A.J. Schmidt, P.Eng.

APPENDIX B

STATEMENT OF COSTS

STATEMENT OF COSTS

SALARIES

E. Bohn	52 days @ $ 62.50 per day	$ 3,250.00	
D. Crowe	22 days @ $ 39.42 per day	867.24	
F. Crha	51 days @ $ 42.30 per day	2,157.30	
L. Frantz	11 days @ $ 28.84 per day	317.24	
R. Schmidt	41 days @ $ 38.46 per day	1,576.86	
V. Arsenau	43 days @ $ 38.46 per day	1,653.78	
G. Norman	16 days @ $ 50.00 per day	800.00	
F. Gatchalian	8 days @ $ 67.30 per day	538.40	
R. Willson	2 days @ $ 42.30 per day	84.60	
	TOTAL	$11,245.42	
			$ 11,245.42

VEHICLE RENTAL

One 1975 Suburban, Chevrolet 4x4
53/30 months @ $238.50 per month $ 422.15

One 1975 3/4 Ton Pick-up, Chevrolet 4x4
60/30 months @ $217.50 per month $ 435.00

Host Rent-a-Car Pick-up, Chevrolet 4x4
Total Cost $1,155.80

TOTAL $2,012.95

$ 2,012.95

GAS (BULK AND CREDIT CARDS)

Total Cost		$ 951.29	
	TOTAL	$ 951.29	
			$ 951.29

MAINTENANCE AND TIRES

Total Cost		$ 655.98	
	TOTAL	$ 655.98	
			$ 655.98

LIGHT PLANT RENTAL

One VM Motori 5 kw Diesel			
60 days	@ $ 11.83 per day	$ 709.80	
	TOTAL	$ 709.80	
			$ 709.80

RADIO EQUIPMENT

SBX-11 60 days	@ $ 2.50 per day	$ 150.00	
	TOTAL	$ 150.00	
			$ 150.00

GROCERIES AND SUPPLIES

Total Cost		$ 602.41	
	TOTAL	$ 602.41	
			$ 602.41

MISCELLANEOUS HARDWARE

Total Cost		$ 75.63	
	TOTAL	$ 75.63	
			$ 75.63

STOVE AND DIESEL FUEL (BULK)

Total Cost		$ 237.50	
	TOTAL	$ 237.50	
			$ 237.50

UTAH MOBILIZATION - DEMOBILIZATION

Airfares -	Total Cost	$ 1,147.50	
Food & Accomodation -	Total Cost	$ 675.00	
	TOTAL	$ 1,822.50	
			$ 1,822.50

DIAMOND DRILLING

Total Cost		$ 93,761.92	
	TOTAL	$ 93,761.92	
			$ 93,761,92

DIAMOND DRILL HOLE COLLAR LOCATION SURVEY

Total Cost		$ 1,266.95	
	TOTAL	$ 1,266.95	
			$ 1,266.95

REPORT AND MAP PREPARATION

Total Cost	$ 750.00		
TOTAL	$ 750.00		
		$	750.00
GRAND TOTAL			$114,242.35

Average cost per foot for diamond drilling (used for cost distribution purposes):

equals $\frac{\text{GRAND TOTAL}}{\text{TOTAL FOOTAGE}}$

equals $\frac{\$\ 114,242.35}{6719\ \text{FEET}}$

equals $ 17.00 per foot.

A. Schmidt

A.J. SCHMIDT, P.Eng.
DISTRICT GEOLOGIST

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. J. SCHMIDT

VANCOUVER, B.C.
DECEMBER 15, 1976

AJS/jfb

APPENDIX C

CONTRACTORS' INVOICES

KERR, DAWSON & ASSOCIATES LTD.

9 - 219 VICTORIA STREET
KAMLOOPS, B.C.

INVOICE No. 239

(239-59-4)

INVOICE TO: Utah Mines Ltd.
#1600 - 1050 West Pender St.
Vancouver, B.C.

PROJ. No. 106

DATE ~~Oct. 31/76~~

FOR: Surveying Drill Holes PC - 16 to 34
Tagetochlain Lake

John R. Kerr, P. Eng.			
3 days at 175.00/day	$ 525.00		
2 days travel at 150.00/day	300.00		$ 825.00
EXPENSES:			
Truck Rental:			
5 days at 20.00/day	100.00		
1190 miles at 0.20/mi	238.00		
		$ 338.00	
Room and Board		90.60	
Misc. Supplies and Telephone		13.35	
			$ 441.95
			$ 1266.95

UTAH MINES LTD. -- EXPLORATION DEPT.

DISTRIBUTION — TOTAL HEREIN

Location	Major	Minor	Act.	Exp.	Amount
00		A2880	0	510	1266.95
00		0	0	0	
00		0	0	0	
00		0	0	0	
00		0	0	0	

Date Received — [illegible] 1266.95

Ext. & Prices

Approved by [signature]

Amount [illegible]

Check No.

OK

RECEIVED NOV 2 1976

E. & O.E.

255A STATSON ROAD
RICHMOND, B.C.
V6X 2P9

DATE: Oct. 8/76

007-31-7

Utah Mines Ltd.
Suite 1600, 1050 W. Pender St.
Vancouver, B. C.
V6E 3S7

RE: Poplar 93 - 1 - 2 Drilling

PERIOD: September 16 - 30, 1976

Drilling Detail	✓	$11,534.2
Mobilization	✓	2,047.9
Drilling with Mud	? need credit OK/received 455	455.1
Core Boxes	✓	1,424.1
Camps	✓	1,142.0
		$16,602.9

OK 455
Poplar

UTAH MINES LTD. -- EXPLORATION DEPT.

DISTRIBUTION

Location	Major	Minor	Act.	Exp.	Amount
00		A2880	0	0	16,602.9
00		0	0	0	
00		0	0	0	
00		0	0	0	
00		0	0	0	

Date Received	Invoice Amount	16,602.9
Ext. & Prices	Discount	
Approved by	Amount Payable	
	Check No.	

RECEIVED
OCT 12 1976

D.W. COATES ENTERPRISES LTD.

256A SIMPSON ROAD
RICHMOND, B.C.
V6X 2P9

INVOICE NO: 1064
JOB NO.: 273
DATE: Oct. 21/76

Utah Mines Ltd.
Suite 1600, 1050 W. Pender St.
Vancouver, B. C. V6E 3S7

Copy

RE: Poplar 93 - L - 2 Drilling

PERIOD: October 1 - 15, 1976

Drilling Detail	✓ $50,043.
Moving, Setting Up & Tearing Down	✓ 908.
Drilling with Mud	✓ 329.
Acid Testing	✓ 136.
Core Boxes	✓ 209.
Camps	✓ 5,479.
	$57,105.

UTAH MINES LTD. -- EXPLORATION DEPT.

DISTRIBUTION

Location	Major	Minor	Act.	Exp.	Amount
00		A2880	0	0	57,105.14
00		0	0	0	
00		0	0	0	
00		0	0	0	
00		0	0	0	

Date Received	Invoice Amount	57,105.14
Ext. & Prices	Discount	
Approved by	Amount Payable	
	Check No.	

RECEIVED OCT 25 1976

D.W. COATES ENTERPRISES LTD.
256A SIMPSON ROAD
RICHMOND, B.C.
V6X 2P9

JOB NO: 273
DATE: Oct. 29/76

Utah Mines Ltd.
Suite 1600, 1050 W. Pender St.
Vancouver, B. C. V6E 3S7

017-31-7

RE: Poplar 93-I-7 drilling
PERIOD: October 16 - 22, 1976

Drilling Detail	✓	$16,017.7
Moving, Setting Up & Tearing Down	✓	272.0
Demobilization	✓	1,218.5
Drilling with Mud	✓	(455.1
Acid Testing	✓	35.7
Material Left in Holes	✓	633.7
Camps	✓	1,713.9
Other Charges	✓	618.1
	✓	$20,053.8

Poplar
OK/AS

UTAH MINES LTD. - EXPLORATION DEPT.					
DISTRIBUTION					
Location	Major	Minor	Act.	Exp.	Amount
00		A2880	0	0	20,053.8
00		0	0	0	
00		0	0	0	
00		0	0	0	
00		0	0	0	
Date Received		Invoice Amount			20,053.8
Ext. & Prices		Discount			
Approved by		Amount Payable			
		Check No.			

RECEIVED
OCT 29 1976

APPENDIX E

DIAMOND DRILLING CONTRACT

DRILLING AGREEMENT

THIS AGREEMENT, entered into this 26th day of April, 1976 by and between

UTAH MINES LTD., a

corporation, hereinafter referred to as "Owner", and

D. W. Coates Enterprises Ltd.
256A Simpson Road
Richmond, B. C.

hereinafter referred to as "Contractor",

WITNESSETH:

WHEREAS, Owner desires to have Contractor carry out a drilling program on certain lands controlled by Owner and located near Houston, B. C., specifically on the north shore of Tagetochlain (Poplar) Lake, about 30 miles southwest of Houston, B. C.

; and

WHEREAS, Contractor is desirous of performing such drilling program for Owner and is fully equipped and capable to perform such work;

NOW THEREFORE, in consideration of the covenants and conditions hereinafter set forth, Owner and Contractor mutually agree as follows:

1. WORK TO BE PERFORMED: Contractor agrees to perform fully and completely all drilling and/or coring work requested by Owner to be done by Contractor on the abovementioned lands, such performance by Contractor to be in strict conformance with the terms and provisions of this agreement and specifically in conformance with those provisions set forth on Schedule I attached hereto and by this reference incorporated herein.

All work to be performed by Contractor hereunder shall be done at such times, such locations and in such manner as requested by Owner, subject, however, to the specific provisions set forth in Schedule I hereto.

It is understood that Owner may employ other contractors to perform work, including drilling, upon the subject property and Contractor shall conduct its operations so as to best cooperate with such other contractors, if so requested by Owner.

2. WORKMEN AND EQUIPMENT: Contractor agrees to furnish and maintain in first class operating condition the equipment, machinery, tools, and supplies specified in Schedule I hereto, or necessary to perform the work as set forth in said Schedule I hereto, and all labor, including superintendence, and all other things whatsoever required or convenient to properly perform the work specified in this agreement and within the time herein required. Owner may require Contractor to discharge from the performance of this contract any employee deemed to be in any way objectionable by Owner. No equipment furnished by Contractor hereunder for use in the performance of this agreement shall, without the prior consent of Owner, be removed from the site of the work until such time as the performance of this contract shall be completed by Contractor.

3. COMMENCEMENT AND PROGRESS OF WORK: Unless otherwise specified in Schedule I herein, Contractor shall, within thirty days after being notified by Owner to start work, commence work in the field at such locations as Owner may designate and shall thereafter continue diligently in the performance of the work at such rate of progress and at such locations as may be required by Owner and shall fully complete said work to the satisfaction of Owner.

4. NO REPRESENTATIONS TO CONTRACTOR: It is understood that Contractor has satisfied itself as to the nature and location of the work, the character of the soil, rock, or other materials to be encountered, the character, kind and quantity of equipment needed for the prosecution of the work, and the conditions under which the work is to be performed and Owner has made no

representations to Contractor concerning the conditions to be encountered in the performance of the work. No verbal agreement or statement shall affect or modify any of the terms or provisions of this contract and no change, amendment, or modification of the terms or conditions of this contract shall be valid unless reduced to writing and signed by Owner and Contractor.

5. LIENS AND CLAIMS: Contractor shall discharge at once all liens, claims, stop notices, or attachments which may be filed or levied in connection with the work done by Contractor under this agreement and shall pay all taxes levied upon Contractor, its employees, equipment, property, or operations and Contractor shall hold Owner, Owner's property, and the lands upon which the work called for in this contract is being performed harmless therefrom. Contractor shall pay promptly and in full the claims of all persons, firms, or corporations performing labor upon or furnishing equipment, materials, supplies, or power used in the performance of or contributing to the work described in this agreement.

Upon completion of work under this agreement, Contractor, if required by Owner, shall deliver to the Owner a complete release of all claims for taxes, liens, claims, stop notices, or attachments arising out of this agreement or receipts in full in lieu thereof and if required in either case, an affidavit that, to Contractor's knowledge, such releases or receipts include all labor and material for which a lien, claim, stop notice, or attachment could be filed.

6. LIABILITY FOR INJURIES AND PROPERTY DAMAGE: Contractor shall save harmless Owner, Owner's property, and the lands upon which the work called for in this agreement is being performed from all liability for injury to or death of persons and for damage to property in any way arising out of Contractor's performance under this agreement.

7. PATENT RIGHTS: Contractor shall save harmless Owner, Owner's property, and the lands upon which the work called for in this agreement is being performed from any claim, damage or expense arising out of any action or proceeding for the infringement or alleged infringement of any patent arising out of Contractor's performance under this agreement.

8. PAYMENT: In consideration of the covenants of the Contractor herein set forth and the full and prompt performance of this agreement by Contractor, Owner agrees to pay to Contractor and Contractor agrees to receive and accept as full compensation for Contractor's performance of this agreement, and also for any loss or damage to Contractor arising out of this agreement or from action of the elements or from unforeseen difficulties or obstructions which may be encountered in the performance of the contract, and for all risks of every description to Contractor in connection with the work, those sums set forth in Schedule II attached hereto and by this reference incorporated herein.

An estimate will be made by Owner once each calendar month during the term of this agreement of the amount of work completed by Contractor during the preceding calendar month and Owner will, on or before the last day of each calendar month, pay to Contractor the amounts due under the terms of Schedule II hereto for such work completed by Contractor during said preceding month. The estimates and calculations made by Owner as to the amount of work done by Contractor hereunder shall be final and binding upon Contractor and shall conclusively establish the amount of work done by Contractor hereunder.

9. BOND: Contractor shall furnish a surety bond in form satisfactory to Owner, with a surety approved by Owner, in the amount of waived ($) guaranteeing the faithful performance of this agreement by Contractor and the payment by Contractor of the claims of all persons, firms or corporations performing labor upon or furnishing materials, equipment, supplies or power used in the performance

of this agreement.

No work shall be commenced under this contract until the required bond is produced and submitted to Owner. Should any surety upon the said bond become unacceptable to Owner for any reason at any time, Contractor will promptly furnish such additional surety, sureties, or security as Owner may request.

10. TERM OF CONTRACT: Unless the provisions of Schedule I shall specify a different length of time during which Contractor shall be bound to perform under the terms of this agreement, Contractor shall be obligated to perform for Owner under the provisions of this contract upon the lands hereinabove described, all drilling work requested by Owner to be performed by Contractor during a period of one (1) year from and after the date of this agreement, provided, however, that Owner may, at any time after the completion of the minimum amount of drilling work guaranteed to Contractor under the provisions set forth in Schedule I, terminate this agreement by giving notice of such termination to Contractor.

11. INSURANCE: Contractor shall obtain and carry during the period of this agreement at Contractor's sole cost the following insurance coverage:

Insurance Coverage	Minimum Limits	
Bodily Injury Liability including Contractual Liability and Completed Operations	Each person	$100,000.00
	Each occurrence	$300,000.00
Property Damage Liability including Contractual and Completed Operations	Each occurrence	$100,000.00
	Aggregate	$100,000.00
Automobile: (Including owned and non-owned automobiles)		
Bodily Injury	Each person	$100,000.00
	Each occurrence	$300,000.00
Property Damage	Each accident	$100,000.00

Workmen's Compensation and Employer's Liability	Full Statutory Compliance Each person Each accident	 $100,000.00 $300,000.00

No work under this contract shall be started until certificates of insurance conforming with the above minimum requirements are obtained and submitted to the Owner. Insurance companies must be satisfactory to Owner, and policies must provide that ten (10) days' written notice be given to Owner prior to cancellation or annulment.

12. COMPLIANCE WITH THE LAW: Contractor and its employees shall at all times observe and comply with all statutes, ordinances, and regulations of any nation, state, province, municipality or other governmental authority or agency having jurisdiction over the place where the work hereunder is being carried on.

13. PERMITS: Contractor shall obtain all permits and licences necessary for the performance of this contract and shall give all necessary notices and pay all fees required by governmental agencies or by other authorities in connection with the performance of this contract.

14. SUPERINTENDENT: The Contractor shall have a competent superintendent, satisfactory to Owner, on the work at all times with authority to act for Contractor. The superintendent shall not be changed except with the consent of Owner unless the superintendent ceases to be in the employ of the Contractor.

15. CONTRACTOR NOT AGENT OF OWNER: In the execution of the work to be performed hereunder, Contractor shall operate as an independent contractor and not as an agent or employee of Owner. Contractor shall hold Owner harmless from any liability which may arise by reason of any action or representation of Contractor, its agents, or employees.

16. NOTICE AND PLACE OF PAYMENT: All notices to be given to Owner by Contractor hereunder shall be delivered to

Owner's office at 1600 - 1050 West Pender Street Vancouver, B. C. . Any notice to be given by Owner to Contractor hereunder may be given by delivering such notice personally to Contractor's superintendent at the job site or, at Owner's option, such notice may be given by depositing said notice in any United States post office in an envelope, postage prepaid, and addressed to Contractor at 256A Simpson Road Richmond, B. C. . Such notice to Contractor shall be deemed to have been given either upon its delivery to Contractor's superintendent or by deposit in said post office as the case may be.

All moneys payable to Contractor hereunder shall be payable at Owner's office in Vancouver, B. C. or at Owner's option may be mailed to Contractor in the manner hereinabove prescribed for the giving of notice to Contractor.

17. ASSIGNMENT: Contractor will not, without the previous written consent of Owner, assign this agreement nor subcontract any part or portion of the work to be performed hereunder to any other party.

18. PROTECTION OF INFORMATION: No information whatsoever regarding the conduct, records, or results of any work performed by Contractor under this agreement shall be given or discussed by Contractor or any of Contractor's agents or employees in any manner to or with any party other than the Owner without the prior written consent of Owner.

19. SUCCESSORS: This agreement and each and every provision hereof shall inure to the benefit of and be binding upon the parties hereto and their successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date hereinabove set forth.

Utah Mines Limited
OWNER
By

D. W. Coates Enterprises Ltd.
CONTRACTOR
By

SCHEDULE I

WORK PROVISIONS

1. The work is to consist of NQ core drilling on the Company's property near Houston, B.C. The Contractor will supply equipment and crews to operate one drilling rig, two 10 hour shifts per day on the drill rig, seven days a week.

Drilling will commence after camp is established, by Owner, on or about June 15, 1976.

2. Holes will be drilled with NQ wireline. In all instances, reasonable care shall be exercised to obtain the recovery of as high a percentage of core as the formation being drilled will reasonably permit. All such core shall be properly identified in correct order and placed in core boxes provided by Owner. Contractor shall furnish a log of each hole drilled, showing location and depth drilled and/or a daily record sheet with holes drilled and footage noted. Said record is to be signed by the driller and will be used in computing payment for work done.

3. The location, depth and angle of each hole to be drilled by Contractor shall be specified by the Owner. Maximum depth of any hole shall be around 1000 feet.

Notwithstanding any other provision of this agreement, Owner guarantees that a minimum of 5000 feet of drilling will be required of Contractor, under this agreement, but total footage may be extended beyond that amount by mutual consent.

4. The Owner shall check the angle and direction of each hole in order to assure that the hole is being started at the required angle and in the required direction. The Contractor assumes no responsibility for any deviation that may occur in a hole beyond the collar. The measurement of all holes shall be taken from the top of casing, or standpipe, as the case may be, which shall be kept as close to the original contour of the ground as circumstances will permit.

5. Should cavities or loose and caving materials, or other adverse conditions be encountered, so that in the opinion of the Owner and Contractor, further drilling in a hole is not practical, the hole may be abandoned, and the Contractor shall be paid at the rates specified in Schedule II attached hereto for the footage actually drilled, provided, however, that the Contractor shall not be paid when said adverse conditions are a direct result of negligence on the part of the Contractor. The Contractor, at the request of the Owner, will replace any driller not achieving satisfactory core recovery.

6. The Owner shall provide main camp facilities such as dining tent and dry tent. Contractor shall provide sleeping quarters for its crews, at his own expense.

7. The Contractor will provide the transportation necessary to move its equipment and crews on the property, with the exception of air transportation services which, if required, would be supplied by Owner.

8. The Owner shall provide, at its own expense, all rights of way that may be required to enable Contractor to move to and from, and to operate on, the drill sites specified by Owner. Contractor shall be permitted to fell and cut such timber as may be required in the course of the work hereunder upon the property controlled by Owner, provided, however, that Contractor shall comply with all the terms of Owner's permits allowing such timber cutting. Owner shall save the Contractor harmless from any assessments for stumpage.

9. This agreement and any disputes arising hereunder shall be interpreted and determined in accordance with the laws of the province of British Columbia.

10. During the course of the work, the Contractor agrees at all times, to keep operations free from accumulation of waste material, rubbish and garbage, and upon completion of the work, shall remove all tools, scaffoldings, surplus materials and rubbish, and leave premises in a clean condition. The Contractor shall observe and comply with all applicable Federal and Provincial laws, regulations and orders relating to prevention of forest fires and sanitation.

SCHEDULE II

PAYMENT SCHEDULE

The Owner shall pay the Contractor in Canadian Funds for work completed according to the following schedule:

1. Surface Drilling

The price per foot for core drilling in bedrock, from the surface, shall be:

		Price/foot(NQ)
0	- 500 feet	$11.21 a foot
500	- 1000 feet	$11.93 a foot

2. Overburden Drilling

From 0 to 25 feet at $11.21 a foot; from 25 to 50 feet at $11.80 a foot; from 50 to 100 feet at $13.30 a foot; beyond 100 feet at Field Cost.

3. Field Cost Defined

Field Cost is defined for the purpose of this agreement as all direct labor, including supervision, at $13.00 per man hour, drill and tower rental at $9.50 per drill shift hour, pumps at $0.85 per hour, mud mixer (when applicable) at $0.60 per hour, tractor (when applicable) at $15.00 per hour, 4x4 truck (when applicable) at $7.50 per hour, pickup truck (when applicable) at $6.50 per hour, plus the cost of all down-the-hole tools and supplies lost or consumed on the Field Cost portion of the work, at job site cost plus 15%. Reaming casing shall be done at $0.80 per foot reamed to cover the cost of wear and tear on casing.

4. Casing, reaming, cementing and mud circulation operations, in overburden or in bedrock, if and when required shall be at Field Cost

5. Pipe or Casing left in hole

Any casing, casing shoe bits or pipe left in holes at Owner's request shall be paid for by Owner, at cost plus 15%.

6. Standby, dip testing or delay time, or other time during which the Contractor's crews are performing services for the Owner, not otherwise covered herein, shall be at Field Cost.

7. Travel Time

Should travel time between camp and drill site exceed one half hour per man per shift, the cost of such travel time shall be for the Owner's account, at Field Cost Labor rates.

8. Water

Contractor will supply 2500 feet of water line with pumps capable of 300 foot lift at no cost to the Owner. Contractor will install and remove waterlines at no cost to the Owner.

9. The above schedules include the first 20-man hours spent moving between holes, setting up and tearing down. Should such moving time be greater, then that time over 20 man hours will be charged on a Field Cost basis.

Any move of equipment and crews requiring air transportation will be at Field Cost.

10. Tractor Rental

Contractor will provide a tractor to assist with moves at no cost to the Owner. Tractor rental, when applicable, shall be at $15.00 per hour.

11. Mud and Additives

If ever required to help penetrate the overburden and/or aid in core recovery, would be supplied at cost on job site plus 15%. Time spent mixing mud and stabilizing the hole would be charged on a Field Cost basis.

12. Service Vehicles

Contractor will supply four wheel drive vehicles for service vehicles for its crews, at no cost to Owner.

13. Camp

Owner will provide board in its camp for Contractor's crew at no cost to Contractor. Contractor will provide sleep tents for its crew.

14. Mobilization and Demobiliation

For equipment and crews from Contractor's base of operations to truck discharge point, and from truck loading point return, a lump sum of $1500.00. If the transport cannot be taken to camp, either for unloading or loading, then the move from truck discharge point to drill camp, and from drill camp to truck loading point shall be at Field Cost.

15. Core Boxes

Contractor will supply core boxes, if requested, at $4.55 per box, lids at $1.50 each.

16. Cost Escalation

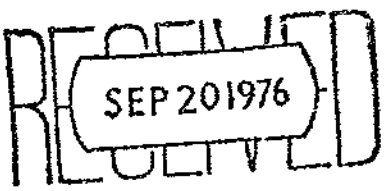
The Owner will not countenance any cost escalations by the Contractor during the life of this contract.

17. Additional Drilling

The Contractor agrees that should the Owner request additional drilling, beyond the minimum 5000 feet, that such drilling, up to a total footage of 10,000 feet, will be done at the same rates as detailed above in Schedule II.

D. W. COATES
ENTERPRISES LTD.
diamond drilling contractors
256 A Simpson Road, Richmond, B.C. V6X 2P9 – Phone: (604) 273-0985

September 15, 1976



Utah Mines Ltd.
1600 - 1050 West Pender St.
Vancouver, B. C. V6E - 3S7
Attention: Mr. A. J. Schmidt
Project Geologist

Dear Andy:

Re: Amendment to the agreement dated 26th of April 1976 between Utah Mines Ltd. and D. W. Coates Enterprises Ltd.

We present herewith for your perusal and approval, an amendment to the above agreement made necessary since the Contractor will now be operating the cookery and dry.

Reference:

(a) Agreement date April 26th - 1976
Schedule II - Clause Payment Schedule.

Item 1 - No change
Item 2 - No change
Item 3 - No change
Item 4 - No change
Item 5 - No change
Item 6 - No change
Item 7 - No change
Item 8 - Water - add:

Should water heaters be required then the heating and maintaining of the water lines would be performed on the following basis:

Oil employed in the heaters ------At cost on job site
Labour - maintaining line---------Field cost
Coil Stoves----------No charge

Item 9 - No change
Item 10- No change
Item 11- No change
Item 12- No change
Item 13- Camp----to read:

Contractor will operate and provide board in the camp for his crew and for the Utah crew on the following basis.

(a) Utah will provide tents and tent frames for their own requirements, the kitchen and the dry.

(b) Utah will provide 250 gallon water tank, showers and water heater for the dry and a generator at no cost to the Contractor.

(c) The Contractor will supply a supply pump and 2000' of hose for camp, complete cookery facilities, canvas for his own crew tent and heat for the dry, cookery and his own tent.

(d) The Contractor will provide transportation of Utahs camp equipment from Vancouver to job site and return at no cost to Utah.

(e) The Contractor will be compensated for operating the camp as above on the following basis:

1. All labour time erecting, fixing, furnishing and dismantling all camp and cookery save his own tent setup, would be charged on a field cost basis.

2. The Contractor would charge Utah $1.00 per foot for each foot drilled [redacted] to compensate for the camp and cookery.

138.

3. Utah would agree to pay the Contractor $5.00 per meal for each meal served their personnel.

Item 14 - No change
Item 15 - No change
Item 16 - No change
Item 17 - No change

There are no further additions or changes to the contract.

Should the above meet with your approval would you kindly so signify by signing and forwarding the enclosed copy of this letter to the above address.

Thank you for giving us this opportunity to serve you.

Yours very truly,
D. W. Coates ~~Enterprises Ltd.~~

D. W. Coates

Accepted on behalf of
UTAH MINES LTD.

A. Schmidt

Accepted on behalf of
D. W. COATES ENTERPRISES LTD.

6136

HOLE NO.: PC-28		PROJECT: Poplar	PAGE NO.: 1 OF 20
COLLAR ELEV.: 930.67m	GROUND ELEV.: 930.30m	DATE STARTED: Oct. 1, 1976	REF. TO CLAIM CORNER:
COORDINATES:	N. 5995.87m E. 11271.01m	DATE FINISHED: Oct. 4, 1976	SCALE: 1cm = 1m
INCLINATION: -60°	BEARING: due east (090°)	TOTAL DEPTH: 1006' or 306.6m	LOGGED BY: DBC

COMMENTS:

AVE CORE REC'Y / HOLE: 98.63%

SECTION	ALTERATION: SILIC / CLAYS / SERICITE / POTASSIC	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT
15					0-21.3m OVERBURDEN						
18											
21							21.3			21.3	
				-Q(ser) vlt, 1cm. -Q-cl vlt 3mm -drusy CB-py vlt. 7mm -qtz-cl flooding 4mm -q-ser 7mm	ALTERED INTRUSIVE (FELD. PPY(?) -med. to f.g., crowded with feldspar phenos. no mafics visible but it is speckled with qtz-chlorite-pyrite blotches (1-2mm diam) that may represent altd mafics	6.5	23.2	80		2.7	86
24		weak			-alteration initially (21-33m) is moderate pervasive phyllic. Clay appears strongest near fault area other fracture areas exhibit good quartz-sericite	7.0	26.2	91		24.0 3.0	94
27		strong		-very thin hair fract -hazy q(ser) flooding & envelopes FAULT recemented gouge -q. flooding -clay -drusy q.v. (0.3cm)	} strong chalky clay in phenos & fractures sericite increases approaching	6.5	29.2	82		27.0 3.0	88
30											

HOLE NO.: PC-28
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: 090°

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE: 1 cm → 1 m
LOGGED BY: DBC

SECTION	ALTERATION: SILIC	CLAYS	SERICITE	POTASSIC	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT
30				moderate-weak				ALTERED INTRUSIVE CONT. (FELD. PPY(?))					30	
								3mm py-cpt H, ; - pyritized, hair vlts ; - 7mm, q-ser enveloped ; > Py smear on fract. — clay altd phenos (very chalky) q-ser in glmass ; clay in glmass too (fractures) ; tr. MoS_2	5.5	32.3	100		3.0	98
33								- 1cm ; - 1cm ; - 1.5cm ; - 3mm (Py) ; - 2mm py vlt. ; py hair vlts. — - alteration moderate - pervasive ; - texture preserved	5.0	35.3	91		33 / 3.0	93
36					strong			- 1-2cm clotty py ; - qtz flooding ; - 1cm w. py vlt in sl. vuggy qtz	4.0	38.4	99		36 / 3.0	99
39								- fract. bounded 5x5x5cm py wedge ; - 1cm qtz envel. ; - 2mm w. clay-filled fract. py vlts (some MoS_2) ; - 2cm. wide ; - amygdule	4.0	41.4	99		39 / 3.0	98
42								- 1cm. w. ; - 1cm. w. ; - 5mm w. sheared Py + gouge ; > qtz clouds + envelopes ; - vuggy, clotty py vlt some cpy ; - Amygdule py stringers	3.0	[illegible]	96		42 / 3.0	97
45														

HOLE NO.: PC-28
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: 090°

PROJECT:
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: DBC

SECTION	ALTERATION: SILIN / CLAYS / SERICITE / POTASSIC	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
45		mod. to weak	Py / cpy; Py / cpy / MoS2		2cm w. FAULT gouge; 1mm w., qtz envel.	ALTERED INTRUSIVE - FELDSPAR PORPHYRY CONT. carbonate vlts, fairly frequent wormy qtz haloes and flooding is quite common also	2.5	47.5	100		45	100
48					2mm w, 5mm qtz envel each side; 2cm w. gouge FLT; 1cm CB vlt	Some MoS_2 grains	2.5	50.6	99		3.0 / 48	99
51					1cm w. wormy qtz stringers; 2.5cm. w.		2.0	53.6	99		3.0 / 51	98
54					1cm; fract'd, faulted, sheared sulphide; 1cm wide; 4mm w.		2.5	56.7	97		3.0 / 54	97
57					2mm wide		2.5	59.7	98		3.0 / 57	98
60											60	

HOLE NO.: PC-28 PROJECT: PAGE NO.: 4 of 20

COLLAR ELEV.: GROUND ELEV.: DATE STARTED: REF. TO CLAIM CORNER:

COORDINATES: N. E. DATE FINISHED: SCALE:

INCLINATION: -60° BEARING: 090° TOTAL DEPTH: LOGGED BY: DBC

SECTION	ALTERATION (Silic, Clay, Sericite, Potassic)	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
60					FELDSPAR PORPHYRY CONT.					60	
					-Zones of blotchy and flooded patches of qtz-clay-chlorite (Some of the blotches have clay filled voids (sericitic g/mass)) - v. strong pervasive alteration	5.5		100		3.0	100
63			Py, cpy, mgte		-sericB envel. HE(d); clotty clay. 61-63 *5:3 ratio of translucent sericite (with beaded quartz) to milky white-beige soft 'plastic' clay. Clay is clotty but evenly distributed (*bino micr)		62.8			63	
		wool			clotty qtz-CL ±clay, sericite	3.0		97		3.0	97
					8mm wide						
66					qtz-chlorite-sericite flooding		65.8			66	
					6mm wide	2.5		98		3.0	98
69							68.9			69	
					1cm CL-qtz clots	3.0		95		3.0	95
72							71.9			72	
					4mm CB						
					(CL)-qtz-sericite blotches; 1cm diam py in blotch; 7mm w.; lt. tacky green clay in g/mass montmorillonite?	2.5		100		3.0	100
75											

HOLE NO.: PC-28 | PROJECT: | PAGE NO.: 5 OF 20

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: -60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: PBC

ALTERATION: SILICA | CLAYS | SERICITE | POTASSIC

FRACTURING | MINERAL | GEOLOGY

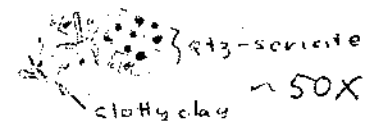
COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

ALTERED FELDSPAR PORPHYRY CONT.

78-81 :- appearance of aggregates of HEed fine mafic with associated sericite chlorite and clay.



- xtalline vuggy cB
- dense silicom. py
- py in vuggy cB
- cBx py (4-5 mm diam) vuggy
- py along fract
- scattered and aggregate HE specks
- 3-6mm
- 2mm
- cB, py along fract 5mm
- 5mm wide, 2cm wide qtz envel
- blotches of q-ser in clay-ser q mass.
- vuggy
- vuggy 7mm qtz veins has clots of cB between qtz xtals pyclot & specks and coatings of MoS2
- cB coated vuggy & vn, faulted
- pebbly gouge fault
- wavy silin stringers

clear intrusive texture

noticeable increase in cPy

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.
75					75	
	2.5		99		3.0	99
78		78.0			78.0	
	2.5		99		3.0	99
81		81.1			81	
	2.5		100		3.0	100
84		84.1			84	
	3.0		97		3.0	97
87		87.2			87	
	2.0		99		3.0	99
90					90	

HOLE NO.: PC-28 | PROJECT: | PAGE NO.: 6 OF 20
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE:
INCLINATION: −60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: DBC

ALTERATION: SILICA, CLAYS, SERICITE, POTASSIC | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

MINERAL: vuggy; py / cpy / MoS_2 / py

COMMENTS:
- 1cm arv.
- 1cm wide
- clay coated fract.
- 1cm w qtz v., with drusy cavities, py + CB fill
- 1cm wide
- 1.5cm w. qtz-CB vein, contains (scattered) v. thin streaks of MoS_2 & 4mm clots of py* CB toward vein interior, sharp border. *- coarsely crystalline
- some cpy blebs
- drusy dogtooth CB in vein interior
- vugs of drusy qtz xtals
- 2cm diam clot of clay with soap-like consistency (kaolin?).
- 6mm
- 2mm
- 4mm clay clots
- 2mm py
- 6mm
- gouge FAULT
- brecciated and cemented by silica-carbonate
- 2-3mm py-cpy vlt [illegible]

DESCRIPTIVE GEOLOGY

FELDSPAR PORPHYRY
- a distinct reduction in alteration intensity (90–94+). moderate phyllic, pervasive
- f-m.gr FP crowded with plag (50%) spotted with chloritic-siliceous blotches (2mm diam) in lt. grey matrix
- a slight waxy-green hue is noticed throughout, associated with sericite is identifiable thru binder as the major alteration
- some remnant, chlorite-sericite platy BT

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
90–93	2.0	90.2	99		3.0	99
93–96	1.0	93.3	98		3.0	98
96–99	1.5	96.3	98		3.0	98
99–102	2.5	99.4	99		3.0	99
102–105	1.5	102.3	99		3.0	99

HOLE NO.: PC-28 | PROJECT: | PAGE NO.: 7 OF 20
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE:
INCLINATION: -60° | BEARING: due east (090°) | TOTAL DEPTH: | LOGGED BY: DBC

ALTERATION (SILIC., CLAY, SERICITE, POTASSIC) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
105	FELDSPAR PORPHYRY CON'T - strong clay 111+	1.5	105.5	99	NQ	105 – 3.0	99
108	-2mm; clay coated; 3mm w/ cpy-py vlt; 1.5cm envel; wormy qtz stringers 9tyr 1cm wide; 3mm cpy-py vlt.; qtz-CB flooding & veining; fine drusy qtz cavities	1.5	108.5	100		108 – 3.0	100
111	3cm wide band of finely speckled HE chlorite & ?BT; strong clay; 2cm wide qtz (-ser) envel.s; cse xtalline CB; Py, ser on fract.; 3mm wide; 4mm; sheared py, minor qtz envel; qtz env ~111 → 120+ apparent differentiation and contrasting in sericite vs. clay alteration	3.0	111.5	97		111 – 3.0	99
114	qtz enveloped fractures show considerable sericite (coarsened) development on fract. planes. A distinctly chalky clay alteration appears to be the much stronger component in non enveloped fractures, & clay content is still high in gmass & moderate to strong pervasive clay, weaker sericite 116.3 ← specks Bornite on fract & dissem. sericite developed on non-enveloped fract., some in gmass	2.5	114.6	98		114 – 3.0	98
117	chalky clay strong in non env. fract and g'mass; strong (i.e coarse) ser with qtz envel.; veins (2mm); coarse sericite on fract; 1cm w qtz (CB) veining & annealing / blebby py Mass. ...	1.5	117.6	100		117 – 3.0	100
120						120	

HOLE NO.: PC-28
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: −60°
BEARING: 090°

PROJECT:
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: DBC

ALTERATION: SIL'N | CLAYS | SERICITE | POTASSIC — FRACTURING — MINERAL — GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

FELDSPAR PORPHYRY (± chlorite) CONT

good qtz (+ser) envelopes in moderate to strong argillic & lesser phyllic alteration
frequency of envel ≥ 1/10cm (~15), 5ml to 2cm wide

- Q-ser env, 5mm
- vein, fine (cy blobs) } strong pervasive Q-ser/ic.
- Q-ser env (halos)
- } Q-ser ± CG envelopes: ~1–2cm wide
- Q-ser FAULT 1cm. wide
- 2mm clay
- 2cm w Q-ser env (minor CL)
- f.g. intense CL-clay-ser-py-qtz f.g. mottled texture
- } argillic alt'n confined to plag phenos
- 6mm x-cutting (dense) qtz envel-veins.
- 2mm wide CG
- clay coated fract.
- kaolin-CG vlt.
- 4mm
- sheared su on fract.
- dissem. & fract. localized MoS2, MoS2 in q. v.
- 6mm wide
- 4mm w. ser. vein (coarse, +qtz)
- envel
- 4mm w. 4mm blebby py in Q-CG vlt.
- 6mm qtz envel
- ← coarse sericite on broken surface
- ser. CL-py replacement of BI visible (pseudomorphs, remnant (? OZ))
- } brown-grey matrix, slight evidence of minor bxla (mostly qtz-cl) coarse sericite on fract. little clay (+ ?)

Section marks: 120, 123, 126, 129, 132, 135

Section	% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.
120–123	2.5	120.7	98		3.0	98
123–126	2.0	123.7	100		3.0	99
126–129	3.0	126.8	100		3.0	100
129–132	2.5	129.8	98		3.0	98
132–135	2.0	132.9	97		3.0	97

HOLE NO.: DC-78 | PROJECT: | PAGE NO.: 9 OF 20

COLLAR ELEV.: GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: -70° BEARING: 090° | TOTAL DEPTH: | LOGGED BY: DBC

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.

135

Comments: coarser on fract.; – clay on fract.; v. fine 20% BI on fract.; some 20% ... spots; crustiform; ...; thick (1-2 mm) blebs of Py-cpy on fract. Also MoS2 specks; v. fine xtalline quartz; crustiform; fine xtalline; 5 mm chlorite also; sulphides coat; strong MoS2; broken but clay; 3 cm ... sericite development on fract.; 4 mm ... thin MoS2, 2 mm cpy blebs; sheared; qtz ... sulphide on surf.; calc. slickenside lineations; at 140° to core along fract. plane; sheared su. (Py); slick lin. at 12° to core along fract. plane; 1 cm, cavities within

FELDSPAR PORPHYRY CONT

– coarse grained

138.5 – dark red brown hue with faded waxy green ... plag implies considerable quartz – kspar in groundmass. Spotty patches of disseminated MoS2 up to .5%. little ... but ... healed fractures. Good sulphide development here. Crustiform quartz on some fractures.

142.5 dolite contact; strongly argillized plag

143.9

144.35 – Sharp contact – to intensely clay altered beige, amygdaloidal (2 mm white partly CB amyds) volcanic dike. Thin gouge along fault plane (<1 mm width)

POST MINIL VOLCANIC DIKE

gouge fault; 1 cm env.; ... env.; 1 cm qtz env.; 3 cm ... env.; 5 mm ... width v. 5 mm; fineness ... cuts qtz halo

FELDSPAR PORPHYRY CONT

Section marks: 135, 138, 141, 144, 147, 150

Sulphides %: 20 (138–141); 1.5 (141–144); 2.0 (144–147)

Drilling interval: 135.9, 139.0, 142.0, 145.1, 148.1

% core recovered: 98, 99, 98, 98, 99

Sample interval / % rec'y: 135–138: 3.0, 98; 138–141: 3.0, 99; 141–144: 3.0, 98; 144–147: 3.0, 98; 147–150: 3.0, 99

Margin notes: 138/1.5; 150/2.0

HOLE NO.: PC-28
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60° BEARING: 090°

PROJECT:
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: DBC

SECTION	ALTERATION: SILIC	CLAY	SERICITE	POTASSIC	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
150					weak to moderate	py / cpy / MoS2 / mgte / HE		FELDSPAR PORPHYRY CONT					150	
								2mm; – cse ser c̄ clay on fract; – .5-1mm cpy vlt, H orange; – appearance of 2° feldspar; – evidence of chlorite-sericite-magnetite; – mgte - sulph. assoc. in 2° fsp zones; – sulphide replacement of 1° BT (pseudomorphs)	1.5	151.2			3.0	99
153								≀ light HE stain; – HE stain halo about 1mm vlt; – 1mm clay vlt env. by cb-qtz (inner) to qtz (outer) and cut by qtz-cb; 150.15			99		153	
								– POST MINERAL DYKE 154.3-154.5 (?): aphanitic lt grey-brown, clay after plag, [illegible] gouge at upper contact; – 5mm py vlt env. by cse sericite	1.5	154.2			3.0	98
156								broken up, finely fract, intense clay altn; – Q [illegible] 5mm; fine py			98		156	
								– 1.5cm CB encloses and angular FP frags, cse sericite associated; – intense clay; – 1cm q-py-cpy v.; – streak of mottled q-ser-cpy; – q-cl spots; – 2cm w. q. vein; MoS2 at vein walls, cpy rimmed by, assoc w. mgte	2.0	157.3			3.0	99
159								cse ser. on fract with Qtz flooding			99		159	
								pitted 2mm py in cavities; fspar presence in g'mass, spotted cl. associated	2.2	160.3			3.0	98
162								wispy q veins, v. broken up; [illegible] qtz w/ fspar; – fine mgte filled fract			98		162	
								[illegible] sericite [illegible] chlorite in g'mass	2.0	163.4			3.0	99
165													165	

HOLE NO.: PC-28

COLLAR ELEV.: GROUND ELEV.:

COORDINATES: N. E.

INCLINATION: -60°

BEARING: due east (090°)

PROJECT:

DATE STARTED:

DATE FINISHED:

TOTAL DEPTH:

REF. TO CLAIM CORNER:

SCALE:

LOGGED BY: DBC

SECTION	ALTERATION (SILICA / CLAY / SERICITE / POTASSIC)	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY
165					Potassic = Kspar in g'mass	FELDSPAR PORPHYRY CONT – deep red brown stain = 2° Kspar in g'mass. 165–168.4 – very broken up – sulphides best developed on fractures, cpy-[illegible] assoc'n – good MoS₂
168					thin veins (~5mm) su on fract; 2-3mm thick py on fract, some qtz xtals; qtz-cl vlt in patch of intense, pervasive mgte, 2° Kspar alt'n, CB, clay, chlorite, sulphide on fract.	
171					thin ~12cm wide [illegible]; 2mm CB, mgte vlts, py; 2cm w qtz [illegible]; [illegible] on fract; fine qtz-cl-su vlts	
174		COM			fine sec, su on fract; 2mm CB	
177					2-3mm crustiform qtz, cse sericite; 2mm wide thin qtz envel.; clay coated, 2cm qtz halo; 1cm w melded [illegible] su, [illegible] wide; qtz-CB flooding with disturbed [illegible] stringers, good ore	intense pervasive clay alt'n within and surrounding faults. Little gouge, mostly slickensides, smeared sulphide
180						

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT
			NQ	165	
2.0	166.4	99		3.0	98
		98		168	
2.0	169.5			3.0	99
		100		171	
1.5	172.5			3.0	99
		98		174	
2.0	175.5			3.0	97
		100		177	
2.0	178.6			3.0	100
		100		180	

AVE CORE REC'Y / HOLE:

HOLE NO.: PC-28
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: 090°

PROJECT:
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: DBC

SECTION	ALTERATION (SILICA / CLAY / SERICITE / POTASSIC)	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

FELDSPAR PORPHYRY CONT.

- slight increase in fracturing faulting (negligible gouge)
- section of strong pervasive argillic alt'n with patchy quartz-ser. haloes

Notes (depth-keyed, left column):

- 6mm CB near FAULT
- clay on fract.
- slickensides at 65° to core axis in fault plane
- 1cm, crystalline CB
- FAULT, slick.
- [illegible]
- slick at 60° to c. axis in flt. plane
- sheared clay (intense) qtz., intense fracturing
- Snaky py-CB with thin qtz. envel.
- 3mm w. g.v.
- 4mm
- fine [illegible] within qtz flood
- 2mm
- [illegible] 2° BI
- 8mm
- [illegible] qtz
- slick lin. at 65° to core axis on FAULT plane
- [illegible] env., [illegible]
- 1mm 1-3cm w Q-CB [illegible]
- 3mm Q envelope and [illegible] with CB [illegible]
- clay [illegible] vuggy, [illegible] and [illegible] (locally)
- [illegible] envelopes Q-CB vlt (2mm)
- 3mm [illegible] qtz.
- 7mm w. cut by CB vlt.
- thick clay CB

~191 – ~190

Potassic c̄ 2°BI as 2mm blotches in gmass, producing mottled texture

[illegible] PORPHYRY – FELD. PORPHYRY

With appearance of [illegible] 2°BI texture appears finer grained and [illegible] than [illegible] in [illegible] FP, i.e. [illegible]. However no visible 1°BI books, despite strong 2°BI would appear to indicate FP as original rock type. An obscure contact is drawn that may be alteration or gradational FP – [illegible] contact.

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
180					180	
	2.5	181.7	100		3.0	100
					183	
	2.0	184.7	99		3.0	99
186					186	
	2.0	187.7	100		3.0	100
189					189	
	2.0	190.8	100		3.0	100
192					192	
	2.0	193.8	99		3.0	99
195					195	

HOLE NO.: PC-28 | PROJECT: | PAGE NO.: 13 OF 20
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. | E. | DATE FINISHED: | SCALE:
INCLINATION: — | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: DB

SECTION	ALTERATION (Sil / Clay / Sericite / Potassic)	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
195					2-3mm clay alts, after plag? (bio?) alteration at dipping contact; HE stringers	BIOTITE PORPHYRY – FELDSPAR PORPHYRY cont. 196.2–206.4 FELDSPAR PORPHYRY – coarse-grained in (fine-grained?) zones – good cpy mineralization is spotty (HE + ?)	2.0	196.9	98		195	3.0 / 98
198					mottled HE, 2083 fine sulphide, chlorite, minor stringers in 3 fract. (incl. qtz?); 2mm sheared clay on surface	200 – ? generally ? f.g. qtz in clay	2.0	199.9	99		198	3.0 / 99
201					dark mottled brown clay; 2cm banded zone of 3-7mm clots, chlorite, qtz?, intense qtz in clay, chlorite alteration, mapping deformation of feld phenos; sharp Kspar-clay alt'n contact (V. irregular); qtz over original clay	201 – evidence of ? in ? ? ? ? sericite development around sulphides and mica blades in ?. 201.5 – distinct ? of sulphides	2.0	203.0	99		201	3.0 / 99
204						206.4–239.0 Biotite Porphyry (as before) Textural changes, finer grain size, less euhedral plag grains. 208.5 very intense alteration. 210 – MoS₂ in qtz v. – ? silica ? ? ? ? ? mottled ? clay > ? (?) ? ?	1.0	206.0	100		204	100
207					? CB; ? qtz v.; dense CB in qtz vein with		1.0	209.1	99		207	99
210											210	

HOLE NO.: PC-28 | PROJECT: Poplar | PAGE NO.: 14 of 20

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm=1m

INCLINATION: -60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
210					Biotite Porphyry continued					NQ		
					MoS_2 in 0.5 cm. Thick qtz veinlet							
					0.2 cm. vein Thick MoS_2 veinlets		1.0	212.1	100		3.0	100
213					vuggy qtz vein 1-2.0 cm Thick. Mineralized: Cpy°, MoS_2°, ZnS°, enargite° and/or Tetrahedrite° bornite°, Pyrite°, calcite°, stibnite°		1.5	215.2	100		3.0	100
216					1.5 cm qtz veinlet with Cpy° Also clay alteration within veinlet near vertical.		2.5	218.2	100		3.0	100
					veinlets of MoS_2 along minor fault planes. Faults displace qtz. veinlets							
219					0.2 cm Py veinlet with minor qtz							
					0.4 cm veinlet of Py and Cpy		4.0	223.3	99		3.0	99
					1cm qtz veinlet with MoS_2, Cpy							
222					10-15 cm fracture zone.						3.0	
					2 cm. aplite veinlet with Cpy, MoS_2							
					qtz strigers (1-2 mm) with MoS_2; generally parallel to core axis		3.5	226.3	100		3.0	100
					alteration mainly silica and Sericite							
225											3.0	

HOLE NO.: PC-28 | PROJECT: Poplar | PAGE NO.: 15 OF 20
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm. → 1 m.
INCLINATION: -60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
227					~1-1.5 cm qtz veinlet with stilbite, contains Cpy, MoS$_2$ in traces				NQ		
					Hematite stains scattered through parts of core	2.0	228.4	100		3.0	100
					2-3 mm clay veinlet nearly parallel to core axis						
					~0.3 mm qtz veinlet with Py, Cpy, MoS$_2$, clays. Grains vary in size from fine to coarse. Biotite alteration in patches with clays (230-231). Clays mostly along fractures but also within core	0.5	230.4	98		3.0	98
					~0.1 cm veinlet MoS$_2$						
					~0.2 cm veinlet K-spar, near vertical. ~qtz veinlet cuts across K-spar alteration. Strong K-spar flooding (10 cm). Secondary bio. with hematite staining. Patchy K-spar. Strong clay alteration and Sericite (231.5-233)		233.5	100		3.0	100
					~0.3 cm qtz veinlet, Cpy mineralized. Secondary biotite patches. Hematite staining (localised)						
					Varying grain size from fine to coarse in short intervals (10 cm). Rock still B.P., some primary bio. observed	0.5	236.5	99		3.0	99
					~0.2 cm qtz veinlet						
					Textural changes, Biotite Porphyry - Feldspar Porphyry? Coarser K-spar than before.						
					~0.2-0.5 cm qtz veinlet with Cpy and MoS$_2$ with some clays	0.5	239.6	100		3.0	100
					Stringers of Cpy (5-10 cm long). 239.0-251.2 Feldspar Porphyry						
					contact BP-FP at 239.0, F.P. coarse grain K-spar phenos. More evidence of silica alteration before. Py seen in irregular patches.						

HOLE NO.: PC-28 | PROJECT: Poplar | PAGE NO.: 16 OF 20

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm → 1 m.

INCLINATION: -60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
240					Feldspar Porphyry Continued						240	
					Stringers of Cpy and MoS_2 parallel to core axis (20-30cm long)							
					Patchy qtz alt. mixed with sericite		.7		100		3.0	100
					Pyrite in patches — Texture varies from feldspar grains							
					Mineralized qtz veinlet still fairly large.			242.6				
					7-8cm wide qtz veinlet with calcite and Pyrite						243	
					Mineralization mostly Pyrite along fractures							
244					Highly altered fragments (5-6cm across) within core. Fragments		1.0		99		3.0	99
					Possibly of biotite porphyry.							
					qtz veinlets 0.1-0.2 cm wide.			245.7			246	
					Clay alteration increases and sericite decreases							
					fragment 60° across (same as at 244.2)							
					Good clay alteration within fracture zone							
					Patches of secondary biotite within fracture zone							
					very distinctive 1-2 cm across patches		0.5		100		3.0	100
					Hematite staining, K_2O alteration also in places			248.7				
249					Feldspar phenos large. Good F.P. texture						249	
					qtz veinlet (1-1.4 cm) displaced 1.5 cm along fracture plane. Veinlet							
					min. with Cpy and minor MoS_2							
					Significant drop in amount of sericite alt.							
					MoS_2 min.							
					Minor K_2O alt. in separate blotches		1.0		96		3.0	98
					250.7-251.1 extensive albitization associated with sericite, Hematite stain							
					Cpy and some MoS_2.			251.8				
252					251.7-251.8 Biotite Porphyry						252	
					Strong biotite alt. near contact area (20cm) Same as before. Fine grain pkg.							
					Hematite staining							
					Secondary biotite							
					Veinlets of MoS_2							
					K_2O alt. in scattered blebs		3.0		99		2.5	99
					Fragment 3.5 cm across. Possibly feldspar porphyry							
					Hematite staining			255.8				
255											255	

HOLE NO.: PC-28
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: 60°
BEARING: 090°

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE: 1cm → 1m
LOGGED BY: P.A.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS	AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

255

- desseminated MoS_2 in core
- 0.3-0.5 cm qtz. veinlet, not mineralised

256.1-257.3 Feldspar Porphyry
Same as before. Coarse feldspar phenos, euhedral. Decrease in amount of [illegible]

- K_2O alt. near contact
- 0.2-0.4 cm qtz veinlet with minor Cpy
- Py min along fractures
- qtz-sericite flooding 30-35 cm veinlets

257.3-257.5 Altered dyke with some stringers of [illegible]. Fine grain groundmass with [illegible] phenos (up to [illegible]) light grey to pinkish color.

257.5-259.5 Feldspar Porphyry
Same as above

- stringers of MoS_2 and Cpy
- qtz-serecite flooding
- qtz veinlet with calcite, MoS_2 and some yellow to orange staining?

258

- good MoS_2 mineralisation in veinlets (258.9-260)
- vuggy qtz veinlet

Mineralisation decreases and is mostly in [illegible] fractured specks Cpy + Py

- qtz veinlet 1.0 cm wide with Cpy, minor Py and traces of MoS_2

261

- qtz-serecite flooding extends for [illegible]
- 2 intersecting qtz veinlets with serecite and minor Cpy
- strong qtz-serecite flooding (30 cm)
- qtz veinlet 0.2-1.0 cm wide with serecite and Cpy mineralisation
- 7-8 cm across fragment fine grain light brown rock, [illegible] min, later than formation of fragment. Fragment is [illegible] before (~ 258)
- qtz veinlet with serecite

264

- Hematite staining with MoS_2 stringers
- K_2O alteration (264-265.8) increasing from 265-265.8, gives orange tint to rock
- MoS_2 with Hematite
- Secondary biotite and chlorite [illegible]
- Secondary biotite and minor K_2O alteration
- 2-6 mm. qtz veinlets nearly parallel to core axis

267

- [illegible] cm Pyrite veinlet
- 266.1-267.3 Patches of purple translucent x'tals possibly Fluorite
- Patchy K_2O alteration
- qtz-serecite flooding in places
- extensive qtz-serecite flooding with minor amounts of clays 265.9-268.6
- Patches of K_2O alteration
- qtz veinlets mineralised (Cpy), Fluorite [illegible] in veinlets

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
			NQ	255	
2,0		99		3.0	99
	257.9			258	
1,5		99		[illegible]	99
	260.9			261	
2,0		94		3.3	94
	264.0			264	
2,5		98		3.0	98
	267.0			267	
2,4		99		[illegible]	99

HOLE NO.: PC-28 | PROJECT: Poplar | PAGE NO.: 18 OF 20

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm → 1m.

INCLINATION: -60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

SECTION	ALTERATION (Silica / Clay / Sericite / K₂O)	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
270					Fluorite veinlet mineralized with Cpy and minor MoS_2; sericite flooding; minor K_2O alteration; Hematite staining, Pyrite along fracture surfaces; minor K_2O; qtz-serecite flooding 7-8 cm wide; mineralised veinlets of Cpy	1.7		100	NQ	3.0	100
					MoS_2 min. both veinlets and specks; veinlet of clay along fracture; clay along fracture; qtz veinlet with serecite; 2 cm gypsum veinlet along fracture; 273.1-273.8 extensive qtz-serecite flooding; gypsum veinlets 0.1-0.3 cm wide	2.0	273.1	98		3.0	98
			Py, Cpy, Moly		qtz veinlet with MoS_2 and Cpy; good MoS_2 in veinlets; secondary biotite and K_2O; Hematite staining; Patchy K_2O alteration; biotite alteration 7-8 cm	1.5	276.1	98		3.0	98
					secondary K-spar giving orange tint to core; stringers of Cpy with minor MoS_2		278.6	100			
			Py		qtz veinlet with serecite; Patchy K_2O alteration; mineralised qtz vein 0.2-0.5 cm; veinlets of Cpy with minor MoS_2	2.5	279.2	100		3.0	100
			Cpy, MoS_2		qtz veinlets 0.2-1.5 cm with Cpy; 0.2-0.4 cm veinlet clay; good MoS_2 mineralisation in veinlets; Mineralised vein (20-25 cm wide) with good MoS_2, Cpy, specularite. Some clay and brecciation; 70-80 cm zone of extensive brecciation and clay alteration, vuggy qtz veinlets with calcite, MoS_2 and Cpy also in zone; 284.3-285.2 zone of high grade (8-12%) mineralisation with vuggy dolomite and minor qtz. Good Cpy and MoS_2. 2 samples 20 cm long taken from core	3.0	282.2	100			100
285											

HOLE NO.: PC-28 | PROJECT: Poplar | PAGE NO.: 19 OF 20

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm → 1 m

INCLINATION: -[illegible] | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

ALTERATION: Silica, Clays, Sericite, K_2O-Bio | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Section	Descriptive Geology	% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.
285	← good cpy (end of high grade zone) Feldspar Porphyry continued ← veinlets of MoS_2 0.1-0.2 cm wide ← spotty K_2O alteration ← veinlets cpy with minor MoS_2 (less than 0.1 cm wide) ← qtz-serecite flooding with minor clay ← increasing K_2O alteration ← qtz-serecite veinlets 2-8 cm wide	2.6	285.3	98	NQ	285 – 3.0	98
288	← good dessiminated cpy ← Hematite staining with magnetite ← K_2O alteration mixed with qtz-serecite ← hematite staining with magnetite ← qtz veinlet with good MoS_2 and minor [illegible] qtz-serecite veinlet 2-3 cm wide with good (3-4%) cpy and some MoS_2 ← mixed specularite and MoS_2	1.7	288.3	99		288 – 3.0	99
291	← veinlet vaggy in places, 0.5-3 cm wide, with selenite, qtz [illegible] and MoS_2 ← qtz serecite flooding with MoS_2 ← Texture changes, feldspar phenos smaller and less euhedral as before but rock still F.P. ← veinlet of calcite and selenite (1-5 cm wide) with some min. cpy and MoS_2 in places. Some yellow staining within veinlet.? ← Sharp increase in clay content. Decrease in serecite and silica and minor stillite and clay.	1.0	291.4	97		291 – 3.0	97
294	← mineralised veinlet 0.3-0.6 cm wide with MoS_2, cpy, calcite, gypsum, qtz. ← increase in amount of clay ← qtz-serecite flooding ← evidence of K_2O continued ← mineralised qtz veinlet with MoS_2, cpy, calcite	1.6	294.4	99		294 – 3.0	99
297	← qtz-serecite veinlets 7-8 cm wide ← K_2O alteration as before ← mineralised calcite veinlet with strong K_2O on edges 297-300: Gradational change from F.P. to B.P. Less euhedral feldspar grains. Increase in clay alteration ← strong clay alteration gives rock sugary texture ← hematite staining with magnetite ← Shear zone with calcite and qtz veinlets	1.4	297.5	99		297	99
300						300	

HOLE NO.: PC-28 | PROJECT: Poplar | PAGE NO.: 20 OF 20

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm → 1 m

INCLINATION: -60° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
300		weak			← Strong K_2O giving orange color to rock ← clay alteration still pronounced ← magnetite in veinlet with qtz and calcite ← qtz-serecite flooding ← increase in silica and serecite ← calcite veinlet 0.2-0.5 cm wide with K_2O at edges	2.6	300.5	96	NQ	300 – 303 3.0	97
					← qtz-serecite flooding ———— Feldspar Porphyry 304-306.6 ← strong clay alteration — Same as before ← small amount of sulphides — euhedral Feldspar grains ← qtz-serecite veinlet, K_2O alteration still prominent	2.6	303.6	100		3.6	99
					———— 306.6 END of HOLE ————		306.6			306.6	

6136

HOLE NO.: PC-29
COLLAR ELEV.: 911.10 m
GROUND ELEV.: 910.90 m
COORDINATES: N. 5977.12 m E. 11468.11 m.
INCLINATION: -70°
BEARING: 077°

PROJECT: Poplar
DATE STARTED: 10/5/76
DATE FINISHED: 10/7/76
TOTAL DEPTH: 786' or 239.6 m

PAGE NO.: 1 OF 14
REF. TO CLAIM CORNER:
SCALE: 10 mm → 1 m
LOGGED BY: V.A. & GATCHALIAN

AVE CORE REC'Y / HOLE: 97.68%

CORE SIZE: NQ

SECTION	ALTERATION	FRACTURING	MINERAL	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
0–15				0 - 15.4 m - OVERBURDEN						
15–18	Bio	Strong	Py, Cpy	15.4-15.9 Altered intrusive - Biotite Porphyry. dark coloured rock with euhedral (primary) biotite, clay alteration. Plag. anhedral to subhedral. 15.9-17.0 Feldspar Porphyry: large euhedral plag grains, no mafics, mineralised veinlets, light brownish color. Sharp contact with biotite porphyry (15.9). Calcite veinlet with minor qtz. 17.0-21.7 Biotite Porphyry (as above). Strong secondary biotite & good Cpy mineralisation. ← extensive fracturing, some due to drilling	6.0	15.4 – 17	98	NQWL	15.4 – 18 (41799)	98
18–21	Bio, Bio-K₂O		Py, Cpy	← Pyrite concentrated along fractures ← minor K_2O along qtz veinlet ← dessiminated magnetite ← qtz-serecite flooding ← Hematite staining with magnetite ← High sulphide concentration clay mainly along fractures	5.0	17 – 20.1	97		18 – 21 (41800)	98
21–24	K_2O Bio, Bio	Weak	MoS₂, Py, Cpy	← minor K_2O alteration — Feldspar Porphyry 21.7-22.1 ← qtz vlts with K_2O on edges — Biotite Porphyry 22.1-22.8 ← Strong clay alteration — Feldspar Porphyry 22.8-23.55 ← qtz-serecite flooding — Biotite Porphyry 23.55-46.6 ← minor MoS_2	2.5	20.1 – 23.2	99		21 – 24 (41801)	99
						23.2 –	98			

HOLE NO.: PC-29 | PROJECT: Poplar | PAGE NO.: 2 OF 14

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm → 1m

INCLINATION: | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

ALTERATION: Sericite, K_2O-Bio | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Biotite Porphyry continued

- calcite vlt 0.2-0.8 cm with Cpy and Py.
- Fault zone 21-25 cm with crushed Py on fault plane. Extensive clay mins. on fault
- mineralised qtz veinlets 0.1-0.5 cm
- K_2O alteration along qtz veinlets
- intense fracturing associated with good Cpy min.
- 27.9-29.2 very significant increase in clay alteration. Rock is very incompetent as result of alteration. Very fine grain Cpy in rock
- qtz vlt. 0.4-0.6 cm with Cpy
- qtz-serecite flooding
- qtz stringers with Cpy
- good fine grain Cpy mineralization within qtz-serecite veinlets
- amount of clay alteration varies but it is pronounced throughout core.
- minor K_2O alteration
- Both primary and secondary Biotite present
- qtz vlt. vuggy in places 0.2-1.2 cm wide
- clay alt. restricted to plag. phenos.
- qtz vlt. 0.2-0.4 cm with minor Cpy and K_2O on edges
- minor qtz vlt 0.2-0.6 cm
- decrease in silica content, Rock looses competency 35.8-36.1
- 1.0-2.0 cm qtz vlt
- intense fracturing and increase in Cpy min.
- increase in silica and serecite alteration with corresponding decrease in clay

Section	% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	Sample No.	% Recy. Samp. Int.
24–27	3.0	26.2	98	NQ	24–27	41802	97
27–30	5.0	29.3	96		27–30	41803	97
30–33	3.0	32.3	99		30–33	41804	99
33–36	1.5	35.9	98		33–36	41805	98
36–39	2.5	38.5	97 / 100		36–39	41806	98

HOLE NO.: PC-29 | PROJECT: Poplar | PAGE NO.: 3 OF
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm = 1 m
INCLINATION: -70 | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: V.A.

SECTION	ALTERATION (Clay / Chl / Sericite / K2O-Bio)	FRACTURING	MINERAL	DESCRIPTIVE GEOLOGY	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
39	Bio	Strong	Py Cpy	qtz vlt. 2-3 cm wide vuggy in places, good qtz x'tals and well mineralised with Cpy Pyrite min. along fractures minor K_2O in places good Cpy min. fine grain	2.5		100	NQ	39 – 41807	100
42	K2O Bio		Py Cpy	biotite alteration still pronounced. Primary biotite still present but less euhedral increase in clay alt. Pyrite vlt. 1-1.5 cm wide with calcite and qtz on outer edges calcite vlt. 0.2-0.4 cm	[illegible]	41.5	100		42 – 41808	99
45	Bio	Weak	Py Cpy	qtz vlt with Cpy and Py 2-4 cm wide — 46.6-49.2 Feldspar Porphyry? qtz-sericite flooding. Texture changes, decrease in number of Plag. grains. Gradational contact decrease in clay content vuggy qtz vlt. with calcite x'tals and Pyrite, vlt. 2-3 cm wide calcite vlt. 0.4-1.5 cm with patches of pyrite narrow vlts. of Cpy (0.1 cm) and Pyrite vlts mixed within rock	[illegible]	44.5	98		45 – 41809	99
48	K2O Bio	Moderate	Py Cpy	alteration varies from high to low clay content. Possibly due to contamination (as before) — Biotite Porphyry: strong clay alt. Presence of primary and secondary biotite minor K_2O within qtz vlts. Fine grain Cpy stringers calcite vlt. 0.5 cm wide	3.2	47.5	100		48 – 41810	100
51	Bio	Strong	Py Cpy	calcite locally along fractures red staining along fractures. Stained sericite? good cpy mineralisation extensive fracturing of rock. Some due to drilling good Pyrite min. along fractures minor K_2O	[illegible]	50.6	100		51 – 41811	99
54						53.6	100		54	

HOLE NO.: PC-29 | PROJECT: Poplar | PAGE NO.: 4 OF 14

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm = 1 m

INCLINATION: -?? | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: ??

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
54	moderate; K₂O Bio	STR / Mod	Py Cpy MoS₂		Biotite Porphyry				NQ	54	
					0.3 cm Pyrite vlt. with calcite mixed in minor clay alteration	0.5		100		41812	80
					0.2 cm vlt Cpy with good MoS_2 Pyrite mostly along fracture surfaces minor clay and K_2O						
57					qtz vlt. 1-3 cm wide vuggy in places with calcite X'tals and Cpy. K_2O also present on edges of vlt.		56.7			57	
		Mod	Py Cpy MoS₂		58.6-59.7: Change in alteration, Sharp decrease of Secondary biotite, some clay present and extensive serecite and qtz.	3.0		100		41813	99
60	Bio				qtz. vlt. 1-2 cm wide with Cpy and minor MoS_2 with calcite X'tals in vugs good Py. min. along fractures		59.7			60	
	K₂O Bio	STRONG	Py Cpy		qtz vlt 1 cm wide with Cpy and calcite. Strong Biotite alteration throughout rock gives dark apperance to core	1.5		98		41814	98
					qtz vlt. with cpy and calcite						
63	moderate; strong → ← Weak; med. → ← Weak. Mod; strong Bio.	STR / Mod / WK / STR	py - ccp - Mo		63-88 Feldspar - Biotite - Porphyry: (Possibly Altered Grano. Porph)		62.8			63	
					pinkish gash vn. & perras. K-spar on matrix. — smoky qtz. gash vn. — Zone of ±40% Sec. biotite & perrdsine ccp. — pinkish Cq 2 cm. hem. Stains — hairline py. — hairline py. — 1 cm. py. — 1 cm. py — 3 mm. qtz vnl.	5-6%		98		41815	98
					66-67 locally intense (pervasive) sericitization partly brown biotite occurs as vnlets plus mottling in groundmass.						
66					phenos: 30% black-books of anhedral-sub.hedral biotite; 10% probably primary & 20% Secondary; 20-30% white lath-like plag. fldspar now Kaolinized & in places Sericitized.		65.8			66	
					matrix: 40-50% is silica, sericite and fine gr. brownish sec. biotite; locally (K-spar?) some pinkish stains on fractures; clay locally on fract. Matrix slightly limy. Contains: dissem. py & ccp; veinlets of same, trace of MoS_2; CO_3 veinlets and qtz.(+)			99		41816	99
69					In general this section is tentatively correlated to Potassic zone of altn.		68.9	99		69	

HOLE NO.: PG-29 | PROJECT: Poplar | PAGE NO.: 5 OF 16
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: | N. | E. | DATE FINISHED: | SCALE: 1 cm = 1 m
INCLINATION: -35° | BEARING: 090 | TOTAL DEPTH: | LOGGED BY: E.R.G.

SECTION | ALTERATION | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP INT

DESCRIPTIVE GEOLOGY

Alteration column notes: Moderate (Si_2) includes veining (Si_2) sil. matrix; wk. mod.; strong; Infinge; strong Mod.; Wk. Mod.; Mod. - stng; Strong; Wk. Mod.; Strong. Bio. Wk. Kspar; mod. Bio. mod. K-spar; wk. K-spar; strong Si_2 (Ser); strong; stng; Mod.

Fracturing: Moderate (7-10 fractures per foot); strong (15-20 fract. per foot)

Mineral: Cu: Mo: Py⁺; cp⁻ py⁻; Mo. Cu

Comments:
- 1 cm. wh. feqtz.
- 2 cm. smoky qtz.
- abundant dissc. ccp - MoS_2 in bio. rich zone
- 2 cm. qtz w/ pinkish envelope (Kspar?)
- ½ m. pinkish cast (K spar?) plus hematite; chlorite knots
- Pinkish (stain) qtz. in tight fract.
- brick red knots (hematite(?)) in sil. matrix. Some disse. Fe_3O_4 (2-3%)
- 1 cm. smoky Qtz. vn w/ K. spar / or clg envelope.
- wk. limy tight fracture
- Well preserved white lath-like plag. feldspar, partially clayey
- wk. kaol. slip.
- irreg. py⁺ ccp⁻ vnls.
- hairlike ccp vnl. in locally (0.9 m.) strong biotitic sect.
- appox. 1" dia. angl. chloritic frag.
- Wk. limy slip; clg. gouge
- euhedral plag. ± (1 cm across) pheno § fine - med. biotite knots.
- Wk. tight slip
- py in 1 cm. smoky qtz. vnl.
- 2 mm. limy qtz. sm.
- hairline py.; trace ccp⁻ + MoS_2
- 3 mm. py. sm.

69 - 85 <u>feldspar - biotite - Porphyry; Cont.</u>
- Prominent tight fractures (e.g. 7-10 fract. per foot) healed w/ CO_3, Qtz, py - ccp sms.

72' - 76.5 Prominent coarse euhedral, black, primary biotite ~ 40% as phenos. Matrix predominantly sil. + broken unhedral sec. brown biotite. wk. clg § ser.

% Sulphides: 5-7%

Drilling interval	% Core recovered	% Rec'y samp int
	98	98
	97	97
	97	97
	99	99
	100	100

HOLE NO.: PC. 26 | PROJECT: Poplar | PAGE NO.: 6 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: 10/5/76 | REF. TO CLAIM CORNER:

COORDINATES: 5,978 N. 11,475 E. | DATE FINISHED: 10/7/76 | SCALE: 1 cm. = 1 m.

INCLINATION: -70° | BEARING: N77E | TOTAL DEPTH: 786 233.58 m. | LOGGED BY: F. R. 2.

SECTION	ALTERATION: Silicification	Clay	Serecite	Biotite - Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	* SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP. INT.
84	Fairly strong silicified matrix	strong after plagio (86–88); weak after plagio (88–93); weak (93–95); wk. (96–99)	white ser. mod. (84–88); weak (88–95); mod (96–99)	wk.; Both sec. bio + K-spar strong (84–90); strong mainly Biotite (sec) (90–95); K-spar (96–99)	strong 2 fract. per foot (84–89); weak (1 fract. per foot) (89–99)				6-8%			NQ. WL.	84	84
86											1.5		41822	95
88													87	87
90													41823	97
91											1.2		90	90
92													41824	98
94													93	93
96													41825	97
98													96	96
													41826	100
														99

Comments:
- vuggy qtz.vn. + 15 micro fract. per foot
- wk. tight slip.
- 1cm. Calcite vnl.
- K-spar flooding in sil. matrix. w/ speck of sphal.
- 2 mm. py.sm. w/ k-spar envelope at 88m. is gradational contact zone.
- K-spar vnlets + abundant disse. cp.
- Intensely fractured core.
- crushed chips fairly massive, but cont. good disse cp + mainly SiO_2 + sec. Bio.
- brick red hematite sm. in fairly sil. matrix.
- fine gr. books of felty sec. biotite. ± 60%
- white pyrite(?) cubes.
- vuggy section; rectangular vugs pre-occupied by euhed. biotite.
- 1mm. cp sn.
- 1' well developed euhed. plagio, strongly Kaol.
- Hairlike cp. vnlets.
- Well develope vugs partially healed w/ felty brown sec. bio. Fairly good Potassic alttn.
- wk. gougy slip

Descriptive Geology:

63-88 Feldspar - Biotite - Porphyry: Cont. (F.B.P)

* 88 m. to 94 core badly crushed, but no fault is evident.. Contains well developed felty sec. biotite.

88-1?? Quartz - Feldspar - Biotite Porphyry: (QFBP)

Med. gry to greyish brown Porphyry. (Possibly Quartz Monzonite Porph.)

Groundmass: med. gry; med. gr. largely SiO_2, fine gr. ser. biotite, & ser.

95.5 m. to 98. Pinkish Kspar(?) start to develope into mod. amount. (both in matrix & phenos)

Groundmass Cont., WK. Serecite

Phenocryst (± 50%)

15% rounded - sub-rounded up to 1cm. smoky qtz cyrs.

15% black & brownish felty biotite (up to 2-3 mm. across) 5% is primary 10% secondary

15-20% feldspar; 10% plagio ± 10% pinkish ortho., locally strongly ser. & Kaolinized.

HOLE NO.: PC. 29 | PROJECT: POPLAR | PAGE NO.: 7 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm. = 1m.

INCLINATION: -70° | BEARING: N77E | TOTAL DEPTH: 766 ft 233.58m | LOGGED BY: F.R.G.

SECTION	ALTERATION: Silicification / Kaolinization / Sericitization / Biotite K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP INT
99	Silicification: wk. – Strong as vnlt. & sil matrix – very strong; Kaolinization: str – Mod. – wk. – strg – wk.; Sericitization: Mod. – Weak – mod 310 str K-spar; Biotite K-spar: strong both K-spar & Sec Bio	Strong to Mod. – strong to intensely fractured	py. cop?, MoS_2 (trace)		← wk. slip				100		99	
					wk. tight criss fract. $Co_3^{(-)}$; 1cm. qtz. vn w/ trace MoS_2	88 - 132.1 Quartz-Feldspar-Biotite (Q.F.B.) Cont.					41827	97
101					weak, tight gougy slip	Phenos cont. <5% stably augite(?) & hornblende(?)			96			
					hairline cop vnlets.	Contains: Weak qtz vnlets occasionally w/ pinkish K-spar envelope, slightly calc. white sms. gypsum(?) and disse. plus hairline py. cop veinlets. Trace amounts of MoS_2. Contains weak Fe_3O_4.					102	
103					smoky qtz. vn. (1cm) w/ spotty K-spar envelope -cop							98
					criss-crossing qtz. vngs.							
					wk. slip.				98			
					2" gougy slip st. limy	to 106.5						
105					cop vnl sorrounded w/ pinkish K-spar.	* from 100' down qtz. eyes phenos decrease to <5%. also white feldspar phenos to 1% and very spotty					105	
					limy fract.							
					smoky 1cm. qtz. w/ cop & pinkish envelope.							97
					smoky qtz. network		6-8%			NQ TW		
107					cop vnlets. sorrounded w/ K-spar; 3" well develope sl. altered plagio. phenos							
					1cm. smoky qtz w/ K-spar envelope						108	
109					well develope sec. biotite (primary?) cop mainly on fract.							98
					limy K-spar sm.				95			
					contact irreg. but sharp	* at 110.8 to 111.1 is a section of dark grey, fine-med gr. Andesitic rock. Contains ~ 30% felty brown sec. biotite ~ 10% Fe_3O_4 & mostly plagio(?) good disse. cop laced w/ 1mm. thick white gypsum(?)						
111					Good patches of K-spar on foot & hanging wall sharp cte.						111	
					Andesitic 1" frag.							
					K-spar flooding & vnlets				97		41831	99
113					2cm. cop. bleb							
					Green sericitized feldspar mod. over 1' sect						114	

HOLE NO.: PC. 29 | PROJECT: POPLAR | PAGE NO.: 8 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm. = 1 m.

INCLINATION: -70° | BEARING: N 77 E | TOTAL DEPTH: 786 ft 233.58 m. | LOGGED BY: F.R.C.

SECTION	ALTERATION: Silicification	Kaolinization/clay	Sericitization	Biotite/K-spar	FRACTURING	MINERAL	COMMENTS	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY.
114	Strong – Moderate mainly in groundmass	mod / stng	strong	strong Bio + K-spar	wk		wk. fract			98		114	
							ctc. gradational						97
					Mod.	trace Mo	1/2" Q.F.P. w/ 1" ccp blb. 1 cm. smoky qtz.						
116							ctc. sharp; sl limy ctc.						
							qtz.sm. w/ K-spar envelope					117	
118					Wk. to Mod.	Py cep.	cep hairline vnlts.						100
		Mod.	Moderate	Very strong			Wk. fracturing but good diss. sulfide.	5% to 6%					
120												120	
							ccp. sm.						
							steep 75° slip						98
122		stng	strong	WK. Nil		Py, cep.	section mainly sericitized - kaolinized feldspar; No biotite				NQ		
123												123	
124				Ste Bio. wk K-spar			Py. stringers						99
							hairline fracture; some gypsum(?)						
		Mod.	Mod.	strong			tight hairline fract. w/ minor MoS_2						
126					Strong		ccp.sm					126	
				mod.			1" bleb of biotite (felty sec. bio).						
			strong	w. mod. K-spar		Bor.	hairlike sm. of hematite after bornite & good Bornite xtals.						97
128							1-3 cm. pink-K-spar vnlts; some brick red hematite.						
129												129	

DESCRIPTIVE GEOLOGY

88 – 132.1 Quartz-Feldspar-Biotite-Porph (QFBP) cont:

* 115.3 – 116 m. is a section of mainly Feldspar (~50% plagio), and ~5% brownish-black sub biotite... ~10 qtz. eyes. The plagio is completely Kaolinized -- & ser(?)... WK. sulfide < 1%, trace ccp.

HOLE NO.: PC. 27 | PROJECT: Kemess AR | PAGE NO.: 9 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1meter

INCLINATION: -70° | BEARING: N77°E | TOTAL DEPTH: 786' | LOGGED BY: J.R.C.

SECTION	ALTERATION (Silicification / Kaolinization / Sericitization / Biotite K-spar)	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y
129–132	Wk. Mod. / strg / Mod. / strong bio. K-spar; stg / Wk. / Mod.	Wk.			K-spar vnlt. 2' of Feldspar-Bio. Porph. 88 m – 132.1 Quartz-Feldspar-Biotite Porphyry (Q.F.B.P.): contd. 1' Feldspar-Bio. Porph (no qtz. eyes). fairly sharp ctc.	4–5%	129.5			129	97
132–133	F / K / S / KS	H	Mo S₂		Zeolite sm. Dike(?) 132.1 – 133: Purple to Lt. brown – Fine Gr. Andesitic Volc.; Contains rounded qtz & zeolite(?) amygdules. Barren & fresh. fairly sharp ctc.	Nil				132	
133–138	Mod. strong / Mod / strong / Strong Biotization / wk. K-spar	Mod. Fract per foot / Wk.	Trace cp. / Py.		133 – 155 Quartz-Feldspar-Biotite Porphyry (Q.F.B.P.) very similar in most respect w/ sec. 88 m – 132.1 . . . Short sections shows absence of Quartz eyes phenos w/ abundant (30-40%) lath like kaolinized plag. phenos. Feldspar-Biotite Porph. hi-cly altn. K-spar sm. py. ccp vnl. Hi-cly Altd. Feldspar-Bio Porp. Wk. slip (limy gouge). 1cm. sm. of black narrow (needle like) biotitized hornblende(?). 2mm. qtz. sm. wk. slip. ccp. sm. Qtz vn. w/ K-spar				NQ.W.L.	135	98 / 97
138–144	Mod to strong / K-spar mainly in vnlt. / Mod				tight K-spar vnl. 2mm. K-spar sm. py-ccp. vnl.; limy walls. sharp ctc. 1cm. Qtz. vn. w/ K-spar envelope. Feldspar (Kaol.) & Biot. Porph. (No qtz. eyes). sharp – steep – 70° ctc. K-spar patches in mod. sil. matrix.	3–5%	139			138 / 141 / 144	93 / 95
143–144	Mod. → Wk. / Mod.										

HOLE NO.: RC. 29
COLLAR ELEV.:
COORDINATES:
INCLINATION: -70°

GROUND ELEV.:
N. E.
BEARING: N77°E

PROJECT: KOHLAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE: 1 cm = 1 m.
LOGGED BY: F.R.C.

SECTION	ALTERATION: Silicification	Kaol./Arg. clay	Sericitization	Biotite/K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT
144	Mod – Strong	Mod / Wk.	Mod stng.	K-spar(+) / Strong Bio	Strat. per. foot / Wk.	MoS₂ trace / cep⁺ / py⁺		K-spar; 1cm. cloudy qtz. w/ K-spar envel.; limy slip. 133-155 Quartz-Feldspar-Biotite Porp.: Cont.				99	↑	144	99
146								steep slip; limy gouge		5%					
148			Strong					py(+) cep(-) bamboo sm.; euh. lath-like plag (well developed) 1 foot cont.; gougy 1cm. slip; wk micro fracts. sl. limy; py. cep.(-) sm.		to ½%				147	98
150		Sec. stg.			Mod (+)			pinkish qtz flooding in sil groundmass; py⁺ cep⁺ vnlets; trace MoS₂						150	94
152								Gougy slip; sl. limy. K-spar patches; cloudy qtz. sm. trace MoS₂					NQ WL	153	
154	Mod.							1cm cloudy qtz vnlets w/ pinkish K-spar(?) envelope. * at 155 m to 163 both sec. & primary Biotite decrease est. <2% phen's in groundmass. ∓ 1% as fine gr. felty biotite; sulfide also weak. Quartz eyes also decrease significantly to ± 2-3%							95
156		Wk-Mod.			strong	py⁻ cep, tr. MoS₂		well developed white lath-like plag. phenos (50%) completely kaolinized; poor qtz eyes. hairline Fe_3O_4 stringers. Cloudy-smoky qtz stockwork w/ occasional shades of pinkish K-spar; strongly sericitized groundmass. 1 section well developed plagio. phenos.		1 to 2				156	98
158														159	

HOLE NO.: PC 27
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION:
BEARING:

PROJECT: POBAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: F.R.C.

SECTION | ALTERATION: SiO2/Silicification, Clay/Kaolinization, Sericitization, Biotite/K-spar | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT.

DESCRIPTIVE GEOLOGY

Section: 159 – 161 – 163 – 165 – 167 – 169 – 171 – 173 – 174

Alteration (159–164): SiO2 strong; Clay mod. strng; Sericitization strong; Biotite/K-spar wk. Mod.
Fracturing: Intense – V. strng
Mineral: trace Mo

Alteration (164–174): SiO2 Mod. to strg. (mainly from ...); Clay strong, mod., strg; Sericitization Moderate, strg; Biotite/K-spar strg, wk., strg, wk.
Fracturing: mod. strg, wk.
Mineral: ccp⁻, py⁺

Geology notes:
- hairline Fe_3O_4 facings
- qtz veinlets floating pinkish enveloped
- Co_3 sm. w/ ser. envelope.
- py. sm.
- hairline dolomitic Co_3
- primary biotite picking-up.
- ct. gradational
- gougy slip.
- smoky qtz
- cloudy qtz. vn. (2cm)
- wk. slip.
- red (brick) hematite (Knots)
- hi-cly gouge
- 1mm. blk streak (Fe_3O_4) sm.
- py⁺ ccp⁻ sm
- hi-cly gouge
- patches⁺ of pink. K-spar
- py⁺ ccp⁻ at qtz sm walls
- blebs (1") black sec. bio.
- cloudy – smoky qtz. sm. trace Moly
- patches (1") sec. blk. bio.
- Co_3 on tight fract.
- flat 3 mm. limy qtz.

155-164.4 Feldspar (plagioclase) Porp.: Intervening section of brownish + greenish (lt.) stained porphyry.
Groundmass: 60% cloudy silica, plus wk. felty biotite & fine gr. sericite.
Phenos: 30% plagioclase (creamy white) almost completely kaolinized & sericitized; Some (2%) green sericite; 1-2% brownish sec. Biotite...

164.5 – 172.1 Quartz-Feldspar-Biotite Porph (Q.F.B.P); Same as Sectn. 133.155 m. w/ short sections as sect. 155 – 164.5 (F.P.)
Contains weak sulphide; cloudy qtz. vnlets⁺, K-spar⁻ as enveloped to qtz. minor hairline Fe_3O_4.

at 166.5 m – 167 m is a section of vuggy Q.F.P. w/ negligible (<1%) biotite; vugs partially healed w/ creamy kaolin after plag.

at 173 to 174.5 as sec. 166.5 – 169. hi-cly & cert

% Sulphides: 1% (159–164.5); 3% (164.5–174)

Drilling interval	% Core recovered	Core size	Sample interval	% Rec'y samp. int.
159	100	NQ WL	159 – 162 (4?847)	99
162	97		162 – 165 (4?848)	98
163.5				
165	99		165 – 168 (4?849)	99
166.4				
168	99		168 – 171 (4?850)	98
169.5				
171	96		171 – 174 (4?851)	97
172.5	99			
174				

HOLE NO.: P.C. 29
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION:
BEARING:

PROJECT: POPLAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: [illegible]

SECTION	ALTERATION: Silicification	ALTERATION: Carbonatization/Chl	ALTERATION: Sericitization	ALTERATION: Biotite/K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP INT
174 – 177	strong–Mod	strong	strong	weak – Mod	weak			1cm. smoky qtz, sm. py⁻ — qtz. sm. w/ pinkish envelope 164.5 - 179.1 Quartz-Feldspar-Biotite Porph (QFB.P) — pinkish qtz frag. w/ slip. — Qtz sm. w/ K-spar envelope — Feldspar Porph. 1' — contact against feldspar Porp. sharp. 176.5 - 179.1 Well developed lt. green sericite (rectangular) after plag. Biotite poor as phenos; strong in matrix. Coeval to sec. 155-164 m.	2%		99		174	98
177 – 180	V.K. Mod.		very strg.	strg.		MoS₂ trace		— mainly qtz groundmass / some cly + ser. Rock type (?) so altered — F.B.P. poor sulfide (?) 179.1 - 181 is Feldspar-Biotite Porph. Large rectangular (1cm - 2cm) white laths plag. phenos; w/ 3-5% euhed. primary blk. bio. set on aphanitic grayish groundmass -- Altn. mainly strg. ser. None to very scarce qtz "eyes" phenos	<1% (60%)					97
180 – 182				Bio⁺/K-spar (?)		cp⁻		— dk. gry andesitic some 1% qtz eye phenos K-spar vnlets⁺ — 1' sect. of dk. gry - blk fine gr. aph. volc(?); fine gr. sec. bio⁺ good cp⁻. — Sec. Bio vnlet. fatty dk. brn. — cloudy qtz str.	1%					98
182 – 187	strong	weak	Mod.	very strong	strong	py⁺		181 - 189 Quartz-Feldspar-Biotite Porph: very similar in all respect to sect. 164.5 - 179.1; regarding quartz eyes phenos (10-15%) 1 cm. euhed. py. — py⁺ cp⁻ sm. — flooded K-spar vnlets — well developed plag. phenos in hematitic groundmass; K-spar also in groundmass. — flooded K-spar vnlets around 1" ser. blob. — K-spar vnlets⁺ in sil. groundmass — 1' andesitic sect. ~ 181 m. — K-spar vnlets.	3%		96		186, 189	99, 97
189	Mod/Wk		Wk	K-spar⁺										

HOLE NO.: DC. 29
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION:
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: F.R.C.

SECTION	ALTERATION: Silicification / Kaolinization / Sericitization / Biotite/K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y
189	Mod. to WK; WK-Mod.; Mod; WK	WK.	PY (cp?)		qtz marked by intense pink K-spar vns.; blotches of Kaolin.; patches of hematite surrounded w/ white qtz. sm.	181 - 189 Quartz - Feldspar - Biotite Porph. Cont.				NQ WL	189	
191					fairly massive sect.	189 - 212 Feldspar - Porphyry: Greyish - lt. green, med. gr. porphyry	<1%	19.	9.		4153	98
193					well developed rounded - subrounded feldspar phenos. at 192 to olive green chloritized & epidotized n.? developing	phenos: 60% predominantly white, green, and grey plagioclase feldspar, euhed and sub.hedron, 1mm to 1cm.; 2-5% un-hed. black books of primary biotite up to 2mm across, welded on...		193.5	9.		192	97
195					tight slip; qtz eyes phenos	groundmass; 40% fine gr. to aphanitic greyish - lt. green groundmass in part sericitized, kaolinized.			96		195	96
197	Med. mainly pervasive; Weak; K-spar	very weak (very massive)			tight fracture; 1cm. pink vnl.; Pink vnlets (K-spar?)	Contains: weak sulfide dissem.; qtz eyes (-) negligible <0.5%. Contains brick-red hematite patches. This section is fairly massive.	<1%				198	98
199	Mod.							.0				
201	Wk. - Mod.; Mod. Strong; Mod.				large (1-2 cm) white lath-like feldspar phenos rounded to sub-rounded; partially kaolinized						201	100
203					vuggy - cloudy qtz. sm.			03	99			
204											204	

HOLE NO.: PC. 27 | PROJECT: POPLAR | PAGE NO.: 14 OF 16

COLLAR ELEV.: GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: BEARING: | TOTAL DEPTH: | LOGGED BY: F.R.C.

SECTION | ALTERATION (Silicification, Kaolinization, Sericitization, Biotite/K-spar) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y

DESCRIPTIVE GEOLOGY

Section: 204 – 206 – 208 – 210 – 212 – 214 – 216 – 218 – 219

Alteration: Silicification: Mod. → Strong → Moderate → Mod.; Kaolinization: wk → strg → Strong; Sericitization: wk → Strong Ser. → Strong; Biotite/K-spar: wk → Mod. → Strong

Fracturing: Weak → strong

Mineral: Py. cp$^{(s)}$ → Py. cp. tr. MoS_2 → Cp.

Comments:

Vuggy qtz. sm.

gouge in wk slip

tight fract. w/ $CO_3^{(-)}$

2 mm. tight smoky qtz sm. trace MoS_2

Hi-cly gouge mod. slip.

hairline cp. sm.

hairline qtz. vnlets. w/ trace MoS_2

ctc. gradtn. marked by intense silfn. & qtz flooding.

tight fract.

pink - K-spar sms.

cloudy qtz. vnl.

qtz w/ K-spar envelope

sl. pinkish qtz sm.

py^{+} $cp^{(s)}$ sm.

Descriptive geology:

187-212 Feldspar-Porphyry: Cont.

210-212 Qtz "eyes" phenos picking up slightly (5-6%) in strongly sil. groundmass. Some patches of yellowish brown cly (phyrophyllite?) present.

212-227: Quartz-Feldspar-Biotite Porph. very similar in most respect to sect. 161-189 m. w/ sections where both feldspar phenos is distinctly altered to cly + ser. Biotite books (primary & sec.) > 10% in sil. groundmass.

% Sulphides: <1% (204–210); 2% to 3% (210–219)

Drilling interval: 206, 210, 219

% Core recovered: 97, 97, 96

Core size: NQ WL

Sample interval: 204–207: 27814 (78); 207–210 (96); 210–213 (97); 213–216 (97); 216–219 (96)

HOLE NO.: PC 29 | PROJECT: POPLAR | PAGE NO.: 15 OF 16
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: | N. | E. | DATE FINISHED: | SCALE:
INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: F.R.R.

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotite, K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT
219–222	Mod. gradual; mainly veinlets	stng.	stng. fn. Ser.	st.; wk.				½' well developed ser. kaol. feldspar phenos. No biotite phenos; hi-cly altn. brick red hematitic patches. 212 - 227 Quartz-Feldspar-Biotite Porp.: Cont.	2% to 3%	221.3	96		219–222: 41867	96
222–225	mainly veinlets	stng. to Mod.	Mod.	strong	mainly vnlts. of Qtz	trace MoS2; Py. Ccp		qtz. sm. w/ sericitized plag. enveloped. Py+. wk. k-spar around qtz. vns. Py+ ccp- sm. around K-spar envelope. smoky qtz vning. w/ ccp, trace MoS2		224.	97		222–225: 41868	97
225–228	strong in grndmass	stng.			strong			trace MoS2 in smoky, steeply dipping qtz. * 225 - 226.5 Biotite phenos weak (< 5%) w/ corresponding kaolinized - ser. feldspar increase. strong cly gouge fault(?) sl. fragmental walls. ctc gradational obliterated by hi-brownish(?) cly pyrophyllite(?). wk. slip		227.	99		225–228: 41869	99
228–231		stng. Brnish buff		Weak - Mod.	Mod. vnings.			series of hi-cly gouge slip. hi-cly contact zone gradational. 227-230.2 Feldspar Porph.: very similar as in sectn. 189-212; Creamy sericitised, kaolinized feldspar set on SiO2 rich groundmass. Poor sulfide. Patches of creamy-buff cly (pyrophyllite?) obliterates (phenos.) porphyritic texture.	<.5	230.4	98		228–231: 41870	98
231–234	Mod.			Mod.	stng fract.			2 mm. qtz. sm w/ pink stain. 1' hi-kaolinized plag. feldspar. 1½ cm. smoky qtz. K-spar patches. mod. slip / creamy gouge. buff-brown hi-cly sect. pyrophyllite(?) 230.2 - 239.6 Quartz-Feldspar-Biotite Porph. as section 212-227. Quartz eyes picking-up.		233.	98		231–234: 41871	97

HOLE NO.: PC 29
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION:
BEARING:

PROJECT: POPLAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 786' or 239.6

PAGE NO.: 16 OF 16
REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: FRR

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotite/Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	* SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
234 – 239.6	Mod.	strg.	strong	Mod. - strong	WK. - Mod.	cp' MoS₂ tr. py		buff-brownish oly (pyroph?) patches. Quartz. Feldspar Biotite-Porp : Cont. — limy fract. — rock tex. appearing vuggy rectangular vugs; decomposed plagio felds.		<.5	2...	75 / 75	NQWL	234 – 237 / 237 – 239.6	97 / 95

786' or 239.6 m. End of Hole

HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 1 OF 18 | 6136

COLLAR ELEV.: 908.60 m. | GROUND ELEV.: 908.40 m. | DATE STARTED: Oct 8, 1976 | REF. TO CLAIM CORNER:

COORDINATES: N. 6100.93 E. 11475.96 m | DATE FINISHED: Oct 10, 1976 | SCALE: 1cm = 1m

INCLINATION: -60° | BEARING: [illegible] | TOTAL DEPTH: 856' or 260.9m. | LOGGED BY: E. Bah[illegible]

SECTION	ALTERATION: Sil.	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
0								AVE CORE REC'Y / HOLE 98.02%				NQ		
							Overburden	0-11.5m Overburden						
										11.5			11.5	
12					Strong			11.5-13.4m Argillite — med.gy.br. to dk.gy.bk. Vfg. w/ only loc. sandy zones. Gen well frac + broken. Loc.± qtz-seri vlts + flood, gen vlts <0.5cm. 2nd bio± as vlts + flood loc. Loc. K_2O, bleaching, and bx. Py±, Cpy± as vlts. + fg. diss. MoS_2 gen ∓ CO_3^- loc.	2.7		90		1.5	90
								up to 1.0 cm vuggy qtz-CO_3 vlt w/ 1.5cm K_2O halo, Cpy±, MoS_2					13.0	
					Intense	cpy, py, MoS_2		MoS_2± w/ qtz vlt.						
								qtz vlts. to 0.5cm.						
								Contact: Arg/BP						
					Strong			13.4-42.7m Biotite Porphyry — lt.gy.bn. to dk.gy.bk; pred m.g., loc. cg. w/ plag phenos up to 0.6 cm. Primary bio phenos to 0.3cm. Loc. well frac. Alt highly variable — pred. vlts, flood, + patchy 2nd bio w/ qtz vlts ±; loc. zones of strong clay after plag; vlts of K_2O gen wk. Seri variable, gen after plag + loc. flood. Py± as vlts + diss — fg.-m.g. Cpy ± as fg. diss + vlts, loc.± w/ qtz vlts. MoS_2±.	1.8	14.0	97		2.0	93
								loc. 0.2 cm qtz vlts w/ K_2O halos						
								cl± loc. on fracs.						
								2nd bio > 2nd K_2O					15.0	

HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 2 OF 18

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm. = 1m.

INCLINATION: -60° | BEARING: Due E | TOTAL DEPTH: 856' | LOGGED BY: E. Bakin

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
15					Strong-Flood			Biotite Porphyry Cont'd.					NQ		
								2nd bio > 2nd K_2O				97		3.0	97
								BP bleached; bio I — seri		3.2					
								seri loc.							
								up to 3cm qtz_3 vlt w/ cpy++, mos_2+			13.1				
								Rk. loc. bleached							
								cpy-py variable							
18								2nd bio spotty						18.0	
								19.0 — 19.2m. Narrow mixed zone of BP and Argillite, repetitive. Sx text loc.				98		3.0	98
								19.8 — contact of mixed zone/BP consist of bx. qtz_3 + py vlts.		2.3	20.1				
								0.4 qtz_3 vlt w/ seri, mag⁻, cpy+, py±							
21								0.5cm. py-pog vlt w/ 0.2cm qtz_3 halo.				99		21.0	
								seri loc. deuteric after bio.							
								cpy± loc. w/ qtz_3 vlts, mag⁻⁻							
								vuggy (vugs to +1cm) qtz_3 vlt to +4cm w/ bx text. Large xls.							
								CO_3 ± AS dol. cpy± mos_2+							
								py, cpy weaker but v.s.g. cpy > py		1.7	23.2			3.0	99
								ch, seri both ±; ch after plag., seri after bio							
24														24.0	
								thin qtz_3 vlts, loc. w/ K_2O halos; cpy⁻ gen.				97		3.0	97
								0.6cm qtz_3 vlt.		2.2	26.2				
								strong 2nd bio flood							
27								seri loc. w/ qtz_3 vlt				98		27.0	
								BP loc. w/ gn tint due to clay alt. of plag.							
								Frag. text.		2.0	29.3			3.0	98
								cpy± w/ 0.3cm qtz_3 vlt.				97			
								wispy bio vlts.						30.0	
30					Strong										

HOLE NO.: PC-30
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bohm

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY
30–45					Strong	cpy, py, mos₂	

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Biotite Porphyry Contd.

- increase in cpy, vlt + diss.
- 2nd bio+
- qt_3 flood+, seri−, cpy+ > py 3:1 or better; mos_2+ loc. w/ qt_3 vlts.

BP much broken, hard and well min. w/ cpy

- +6cm K_2O-qt_3 flood zone, vuggy, CO_3± as calcite + dolomite; seri+, bio−, cpy±
- cl+ after plag
- cpy+. Alt rather uniform w/ qt_3 flood, 2nd bio, and seri gen+ w/ loc.+ K_2O.
- silica+ is flood
- loc+ 2nd bio vlts, K_2O
- steep 0.2cm qt_3 vlts.
- seri gen− w/ qt_3, bio, K_2O vlts.
- vk loc. vuggy
- vuggy 0.3cm qt_3-K_2O vlt w/ cpy+, [illegible]
- vk. highly broken

[illegible] spotty loc.

- contact BP/Arg
- [illegible] bio flood
- contacts Arg/BP/Arg
- 0.2cm qt_3 vlt w/ cpy±

42.7-43.6m Argillite – [illegible]; darker in color – blkish, dense. Contact w/ BP irreg.
43.6-43.8m Biotite Porphyry – as before; [illegible] w/ 2nd bio, qt_3, K_2O, + seri alt.
43.8-46.3m Argillite – as before

Seri− loc. w/ qt_3, K_2O – bio vlts as patches

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
			NQ		
3.4	32.3	97		3.0 (33.0)	97
3.1	35.3	76		3.0 (36.0)	98
3.6	38.4	97		3.0 (39.0)	97
3.2	41.4	98		3.0 (42.0)	96
2.[illegible]	44.5	95		3.0 (45.0)	96
		100			

HOLE NO.: Pc-30 | PROJECT: Poplar | PAGE NO.: 4 OF 18

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m

INCLINATION: -60° | BEARING: Due E | TOTAL DEPTH: 856' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O – Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY
45–60					Strong; Moderate; Strong; Wk–Mod; Mod	py, py, mos2; cpy+, py, spec, mos2		see below

DESCRIPTIVE GEOLOGY

Argillite Cont'd.

- Contact: Arg/BP
- 46.3–66.3m Biotite Porphyry — as before. Rock loc. bleached w/ bio destroyed (seri?). Alt very spotty w/ loc qtz-K_2O, loc. clay, and loc bio. Min varies but strongly vlt controlled loc. Diss ±
- 0.2cm qtz vlt w/ broad K_2O soak, dolomite±, cpy±, mos_2±, py⁻
- 0.3cm qtz-dolo. vlt w/ specularite+
- up to 2cm vuggy xlline qtz-calcite-dolo. vlt w/ spec+, mos_2± loc, py⁻, cpy⁻
- Magnetite spotty but loc+
- K_2O flood zone, cpy±
- cpy±, bornite⁻ w/ 2nd bio vlt.
- irreg. offset 1.4cm K_2O vlt, cpy⁻, py⁻
- c.g. cpy+ w/ qtz-K_2O vlt - 0.2cm
- 0.1cm calcite vlt
- irreg. thin qtz vlts, seri±, cpy+, py±
- Hem+ loc. after mag and as spec. vlts.
- qtz-K_2O flood + vlt zone w/ seri⁻, cpy±, py⁻, spec±, mos_2⁻
- up to 2cm qtz-py-seri vlt zone w/ py+, mos_2±, bornite⁻
- cpy+ as diss + vlts.
- 2nd bio vlts+ to 0.2cm w/ qtz-K_2O vlts, cpy+
- irreg. vlt zone w/ qtz±, K_2O+, seri⁻, ... py⁻, mos_2°
- steep qtz-K_2O-spec. vlt zone w/ vlts. to 0.5cm, spec±, cpy+, py⁻, mos_2°
- Hematite+ where ... loc. bleached
- qtz-K_2O-spec bx vn zone, cpy+ to 0.4cm blebs, spec+, CO_3⁻
- 2.0cm K_2O vlt w/ qtz⁻, py⁻, cpy±
- BP very dark w/ 2nd bio
- py, cpy+ as vlts + diss w/ qtz, K_2O, bio vlts.
- qtz+, bio vlt zone w/ ... to 2cm w/ dolo. xls, py+, cpy⁻

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
			NQ		
[illegible]	47.5	100		48.0	99
3.5	50.6	96		3.0 / 51.0	96
[illegible]	53.6	96		3.0 / 54.0	96
[illegible]	56.7	99		3.0 / 57.0	99
[illegible]	59.7	99		3.0 / 60.0	99

Sample interval 45.0–48.0: 3.0

HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 5 OF 18
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m
INCLINATION: -60° | BEARING: Due E | TOTAL DEPTH: 856' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
60						py, cpy, spec, mag		Biotite Porphyry Contd.					NQ		
								1.5cm qtz-calcite-bo vlt, vuggy, cpy+, py±							
								cpy>py by 5:1 loc.							
								0.3 CO_3 vlt, w/ less qtz vlt zone, cpy+, py+, spec± — Hem+ loc as spec after mag		[illegible]		98		3.0	98
								minor fault zone w/ clay, CO_3							
								[illegible] qtz-K_2O, and qtz vlt zone w/ [illegible], cpy+, py−							
63								cpy wker w/ bio, Good BP text.			62.8			63.0	
								Strong mag. of plag loc.							
								random K_2O vlts.		3.2		97		3.0	97
								zone of offset qtz-py vlts w/ [illegible]							
								BP slightly fragmental — [illegible] BP.							
66								offset qtz vlts [illegible]			65.8			66.0	
								[illegible] parallel frac.							
								Contact BP/FP. QFP — 66.3-?? [illegible] - very sharp contact w/ BP approx. -10°. [illegible] plag phenos to 0.8cm [illegible], bio to [illegible] cm in length, qtz eyes to 0.[illegible] cm, all in f.g. groundmass of qtz, grainy K_2O, plag, [illegible]. Plag [illegible] alt to clay and/or seri; [illegible] (high %) alt to chlorite and/or seri - chl appears to predominate and gives rk its gn color. Loc. qtz [illegible] and dol vlt. Min [illegible] sparse w/ [illegible] as fine w/ approx 1:1 py/cpy ratio. [illegible] rock name [illegible] is granodiorite porphyry. qtz eyes [illegible], QFP [illegible] not applicable.		<1.0		99		3.0	99
								loc. 0.2cm calcite vlts.							
69						py, cpy, CO_3		patchy K_2O — [illegible] vuggy indicating [illegible] and possible [illegible]			68.9			69.0	
								core parallel fracs.		<1.0		97		3.0	97
72											71.3			72.0	
					wk - Mod			seri alt increasing as [illegible]							
								vuggy 0.3cm calcite-dol vlt w/ [illegible]		<1.0		99		3.0	99
								py xls+, cpy+ w/ seri							
								loc. calcite-dol vlts, and [illegible]							
75								clay pred after plag.			75.0			75.0	

HOLE NO.: PC-30
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 656'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION | ALTERATION (Silica, Clay, Sericite, K_2O-Bi) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

75

Contacts - FP/And/FP

Feldspar Porphyry Contd.

25.2-25.6m Andesite Dike - post mineral, Lt. gy trachytic to dkgr ap porphyritic andesite, [illegible] clay alt. Upper contact marked by gouge and up to 5cm qtz-calcite vlt w/ dark gn chl and seri

25.6-[illegible] Feldspar Porphyry - as before, strong seri flooding, Loc. calcite and dolo vlts and also in [illegible] w/ [illegible] replacing matrix mins, chl much weaker

py+, cpy+ w/ seri

78

2cm frag of BP

0.2cm qtz-dolo vlt w/ cpy+, py±

Mineral: py, cpy, (MoS_2)

hairline py vlt.

loc. blobs of cpy+py, cpy w/ halos of born-covellite indicating assimilation and/or metasomatism

81

py+ w/ seri

clay remains pred. after plag.

yel-orange dolo vlts.

84

frags of pre-existing qtz-sulfide vlts [illegible] [illegible] by [illegible]

87

rk loc. very bright yel-gn, like epidote but appears to be clay-seri after plag.

1.5cm qtz-K_2O-CO_3-seri vlt w/ py±, cpy?, MoS_2?, tetrahedrite±, sphalerite?

5cm min frag of BP(?); cpy+, py±

90

Section (m)	% Sulphides	Drilling interval	% Core recovered	Core size	Sample interval	% Rec'y samp. int.
75–78	<1.0	78.0	97	NQ	3.0 (to 78.0)	97
78–81	<1.0	81.0	98		3.0 (to 81.0)	98
81–84	<1.0	84.1	97		3.0 (to 84.0)	97
84–87	<1.0	87.2	98		3.0 (to 87.0)	98
87–90	<1.0		98		3.0 (to 90.0)	98

HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 7 OF 18
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m
INCLINATION: - 60 | BEARING: Due E | TOTAL DEPTH: 856' | LOGGED BY: E. Bohn

SECTION	ALTERATION (Silica / Clay / Sericite / K_2O-Bio)	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
90		Moderate	py, cpy, MoS_2		Feldspar Porphyry Contd.	<1.0	90.2	97	NQ	3.0	97
93						<1.0	93.3	100		3.0	100
96						<1.0	96.3	96		3.0	98
99		Weak				<1.0	99.4	97		99.0 / 3.0	97
102						<1.0	102.4	99		102.0	99
105											

Comments:

- chl spotty loc. cpy loc. > py
- sulfide grains often appear resorbed or assimilated.
- gen parallel frax.
- oblique [illegible]
- loc. blebs of K_2O - resorbed?
- 0.2 cm irreg. py vlt w/ seri.
- 2 cm vug lined w/ qtz xls
- [illegible] very vuggy - metasomatic change
- loc. qtz or qtz-dol'n vlts 0.2 cm or less.
- chypped still after ply phenos
- As FP becomes darker, py, seri decreases and qtz flood and chl gen increase
- Wormy K_2O; cpy, py; Primary bio lots alt → seri, chl.
- loc. more SiO_2 flood in grdmass

HOLE NO.: PC-30
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: - 60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Eslin

SECTION	ALTERATION: Silica	Clay	Sericite	K-F - Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE

- 105

DESCRIPTIVE GEOLOGY

Feldspar Porphyry Contd.

- 7cm assimilated frag; v.f.g. w/ qtz, plag, mag, py, py, v.f.g.
- 6cm gouge zone w/ crushed py, qtz, seri, cl, CO3
- 0.2cm qtz vlt w/ py, cpy, sphal
- 0.2 cm CO3 vlt w/ K2O halo, x-line chl.
- 0.3 cm qtz vlt w/ cpy
- chl loc
- strong K2O zone - K-flds flood, replacing plag

- 108

Fracturing: Weak

- 111

- Contacts: FP/And/FP — 112.1-112.3 - Andesite Dike - as before (not mineral ...)
- 112.3-113.7 - Feldspar Porphyry - as before.
- contacts: FP/And/FP — 113.7-113.8m Andesite Dike - as before (not mineral).
- hem staining plag. — 113.8-119.2m - Feldspar Porphyry - as before.

- 114

- irreg. stockwork spec vlts.

Fracturing: Weak

- 117

- 0.3 calcite vlt.
- little K2O vlts + money ... gradient.

- contacts: FP/And/FP — 119.2-119.5m Andesite Dike as before (not mineral).
- 119.5-123.5m Feldspar Porphyry as before.

- 120

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	105.5		NQ		
<1.0		98		3.0	98
	108.5			108.0	
<1.0		99		3.0	99
	111.6			111.0	
<1.0		99		3.0	99
	114.6			114.0	
<1.0		98		3.0	98
	117.7			117.0	
<1.0		97		3.0	97
				120.0	

HOLE NO.: PC-30
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60° BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
120								Feldspar Porphyry Contd.			120.3		NQ		
						py, cpy, moS2		Irreg sericite qtz zone w/ diss ilmenite.		<1.0		96		3.0	98
								Irreg K_2O-qtz-sericite w/ diss ilmenite.							
123					Weak			Contact: FP/And						123.0	
								123.5 - 125.2m Andesite Dike - as before. Upper contact w/ up to 2cm mylonite zone, lower contact w/ up to 1.5cm mylonite zone. Rhyolite breccia.			123.3				
								Contact: And/FP		<1.0		99		3.0	99
								125.5 - 178.0m Feldspar Porphyry - as before.							
126											126.6			126.0	
						py, cpy, moS2		Zones of strong thin (<0.3cm) sericite veinlets as [illegible]. Py+moly+cpy? gen vnlts. Loc. qtz flood w/ seri.		1.0		100		3.0	100
129											129.8			129.0	
								[illegible] w/ qtz [illegible] gal cpy.		[illegible]		100		3.0	100
132											132.9			132.0	
					Wk-Mod			0.5cm py vlt. w/ seri							
								2cm irreg qtz-seri vlt w/ py + moS2 + chalcedonite		1.0		97		3.0	98
								[illegible] as above, alt. [illegible]							
								Loc. [illegible]							
135														135.0	

HOLE NO.: PC-30
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 256'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bahr

SECTION	ALTERATION: Silica	Clay	Sericite	K₂F – Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
135					mod			Feldspar Porphyry Contd.	
								strong yel-grn color predominates	
						py cpy mos		py-ser vlt, crushed	
138					mod-strong			loc. strong, steep shearing w/ partial healing clay + seri. Broken and crushed	
								2.5cm clay-py+seri zone	
141								loc. py-dol vlts.	
								Min. decr. py as diss; minor vlts.	
								rk pervasively alt to clay-seri w/ moderate loc. strong shearing + gouge loc.	
144								144.7 – 145.1 Rk type change? Appears to be FP w/ slightly more chl+ – clay. May be strong alt zone w/ clay-seri	
						py cpy mos		2.5cm irreg patch of assimilated cpy+spec. Dol.	
147									
								loc. zones of shearing + gouge	
150									

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	135.9	17	NQ		
<1.0		98		3.0 (to 138.0)	98
1.0	139.0	100		3.0 (to 141.0)	99
<1.0	142.0	100		3.0 (to 144.0)	100
<1.0	145.1	98		3.0 (to 147.0)	99
<1.0	148.1	98		3.0 (to 150.0)	98

HOLE NO.: PC-30
COLLAR ELEV.:
COORDINATES:
INCLINATION: -60°

GROUND ELEV.:
N. E.
BEARING: Due E.

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:
SCALE: 1 cm = 1 m
LOGGED BY: E. Balon

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Section markers: 150, 153, 156, 159, 162, 165

Fracturing: Mod-Strong; Extens[illegible]; Weak-Moderate

Mineral: py, cpy, moly; py, cpy, moly

Feldspar Porphyry Contd

- 0.8 cm blebs of [illegible] pyrrhoty.
- 0.2 cm py vlts. w/ cl, ser
- strong shear zone w/ bx text, qtz py vlts, + cl-seri gouge
- intense gouge + shearing, but rock is still compact,
- pk feldspar color destroyed below fault zone
- [illegible] cm [illegible], qtz-seri vlt w/ mag
- irreg 1.3 qtz-chl vlts. w/ cpy ±
- resorbed py, bo (after cpx) + qtz grains

MoS₂ practically non-existent.

strong fault zone 152.8 to 154.2 m.

Min. [illegible] [illegible]. Alt. remains pervasive [illegible], w/ [illegible] qtz

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y
		98	NQ		
<1.0	151.2	96		3.0	97
—				153.0	
<1.0	154.2	97		3.0	97
				156.0	
[illegible]	157.3	97		3.0	97
				159.0	
<1.0	160.3	98		3.0	98
				162.0	
<1.0	163.4	100		3.0	99
				165.0	

HOLE NO.: PC-30
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION (Silica, Clay, Sericite, K₂O–Bio)	FRACTURING	MINERAL	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
165		Mod–Strong	Py±cpy,mos	Feldspar Porphyry Contd.	
				crushed py on frac.	
				crushed py vlts. w/ gouge zone	
				frac. diss. dolo, calcite vlts and blebs – occur.	
168				2.5 x 0.5 cm. associated qtz vlt w/ cpy	
171				frac. + shear zone w/ strong cl-seri	
174					
177			py, cpy, mos	plag very dk gn w/ cl-seri	
				strong bx and gouge	
				0.1m zone of qtz-seri bx w/ PY+, cpy	
				contact: FP/And Sharp + irregular	
				178.0–193.2m. Andesite Dike – as before. Color varies substantially – loc. tel. lt. yellow. Loc. trachytic and also fragmental. Pervasive w/ only trace py. Loc. thin calcite, dolo, and qtz vlts. Clay alt loc. but insignificant.	
180		wk	nil		

SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
		100	NQ		
<1.0	166.4			3.0	99
		99		168.0	
<1.0	169.5			3.0	98
		98		171.0	
<1.0	172.5			3.0	98
		98		174.0	
<1.0	175.6			3.0	98
		97		177.0	
1.0				1.0	97
	178.6			178.0	
–		98		–	

HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 13 OF 18

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m

INCLINATION: -60° | BEARING: Due E | TOTAL DEPTH: 856' | LOGGED BY: E. Bahn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
186								Andesite Dike Contd.					NQ		
												98			
											191.3				
												98			
											188.7				
188								0.5m zone of fine grained inclusions				99			
											187.2				
												98			
190											190.8				
												97			
														193.2	
192								contact And/FP 193.2 - 198.7m Feldspar Porphyry - as before, contact marked by gouge.			193.6				
								Serit and abundant e.g.		<1.0		98		2.9	98
194								Leucocratic veins.							
196															

Weak

Moderate

HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 14 OF 18
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m.
INCLINATION: -60° | BEARING: | TOTAL DEPTH: 856' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
195 – 198					Mod.	Py, cpy, MoS_2			
198 – 204					Mod - Strong				
205.5 – 210					Mod				

Section depth marks: 195, 198, 201, 204, 207, 210

DESCRIPTIVE GEOLOGY

Feldspar Porphyry Contd.

- 4.0 x 1.0 cm assim qtz vlt w/ 0.2 cm py vlt in center.
- loc. shear zones w/ cl-seri. bx.
- Contact: FP/Arg bx.
- py+, cpy+, MoS_2+, mag ±
- Contact: Arg bx/FP
- loc. diss cpy, py

198.7 – 199.0 m Argillite – as before. Narrow bx zone of highly alt arg + FP frags, visible phenos from FP w/ loc. mixing of texts. w/ arg. Broken and veined w/ strong, vuggy qtz. Py+, Cpy+, mag±, spec−, MoS_2 ° in vual. Strong qtz-seri-cl.

199.0 – 205.55 m Feldspar Porphyry – as before.

- 0.1 cm qtz vlt, py−
- Plag phenos very dk gn w/ cl-seri
- 1.0 cm qtz-seri-dolo bx vlt w/ and bio clots. Py, cpy−

205.5 – 234.9 Quartz Feldspar Porphyry Dike – Lt gn yel, lt ph br, lt gy gn, lt gn br, to med br, to dk red pur variegated. Phenos of rounded to euhedral qtz (to 0.5 cm) and gen. subhedral plag (to 0.7 cm) in an extremely f.g. grdmass of sugary qtz, K_2O(?), and plag. Alt chiefly cl, seri – after plag; cl after grdmass – all unrelated to ore as QFP is postmineral. Phenos: 10% qtz max, 5% plag max. Dike rock.

Quartz Feldspar Porphyry is an extremely poor term – tells nothing about composition or genesis. Proper name would be a porphyritic rhyolite to rhyodacite. Rock is not a porphy either, as phenos are much subordinate to the groundmass.

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
		18	NQ	see prev. page 196.0	
<1.0	196.7	96		3.0 (199.0)	97
1.0	199.4	98		3.0 (202.0)	97
<1.0	203.0	95		3.55 (205.55)	98
	206.0	100		—	
	209.1				

HOLE NO.: PC-30		PROJECT: Poplar	PAGE NO.: 15 OF 18
COLLAR ELEV.:	GROUND ELEV.:	DATE STARTED:	REF. TO CLAIM CORNER:
COORDINATES:	N. E.	DATE FINISHED:	SCALE: 1cm. = 1m.
INCLINATION: -60°	BEARING: Due E	TOTAL DEPTH: 856'	LOGGED BY: E. Bohn

SECTION	ALTERATION (Silica, Clay, Sericite, K2O-Bio)	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ES MA
210		Moderate - Strong	nil		Quartz Feldspar Porphyry Contd.				NC	NQ			
								212.1					
213					strong hem. stain w/ minor jarosite grains.				98				
								215.2					
216							—		96		—		
					Alt remains wit ef ouly chloritofies plag. and clay gouge along fras and shear zones, Tr stilbite loc.			218.2					
219									96				
								221.3					
222									93				
								224.3					
225									98				

HOLE NO.: PC-30
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Behn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
225 – 240					Moderate - strong; Mod; Strong; Mod	nil; cpy, py, mo$_2$			

Quartz Feldspar Porphyry Contd.

- qtz vlts to 0.3cm w/ cpy, py, moS$_2$, spec.
- Contact: QFP/FP
- 234.9–239.3 Feldspar Porphyry – as before – incr. seri, chlt, qtz vlts w/ py, cpy, mag, spec.
- Loc. qtz, qtz-seri vlts <0.2cm w/ cpy, py, mos$_2$
- 235.9–236.1m Zone of mixed FP and QFP
- qtz-dolo vlt zone w/ cpy, spec.
- steep shearing healed by qtz vlts.; cpy, py, mag, spec, moS$_2$
- 2.0cm qtz bx vlt. w/ cpy, py, moS$_2$
- Hastingsite loc.
- 2.0cm seri vlt w/ cpy
- 3.2cm qtz vlt w/ cpy
- 239.3–240.9 Biotite Porphyry – as before – incr. seri, chl and/or qtz vlt, highly variable ... contact to ... 239.7m ... mixing of FP and BP ...

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
		98	NQ		
	227.4	96			
	230.4	96			
	233.5	97		234.9	
2.3	236.5			2.3	97
		99		237.0	
3.0	239.6			3.0	99
		100		240.0	

HOLE NO.: PC-30

COLLAR ELEV.: GROUND ELEV.:

COORDINATES: N. E.

INCLINATION: -60°

BEARING: Due E

PROJECT: Poplar

DATE STARTED:

DATE FINISHED:

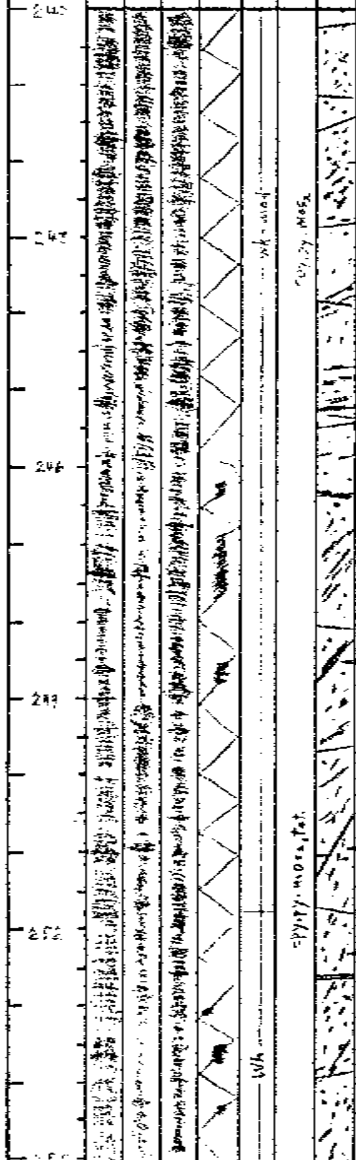
TOTAL DEPTH: 856'

REF. TO CLAIM CORNER:

SCALE: 1cm = 1m.

LOGGED BY: E. Bchu

SECTION	ALTERATION (Silica, Clay, Sericite, K₂O–Bio)	FRACTURING	MINERAL	GEOLOGY



COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Biotite Porphyry Contd.

- loc. mixing of BP and FP wk. types.
- hairline qtz + sericite vlts w/ cpy+
- vuggy 1.0cm qtz vlt w/ dolo. xls.
- cpy+ as diss. + w/ qtz vlts
- qtz-sericite + qtz vlts w/ py+, cpy
- ... vlt w/ sericite ...
- 0.5cm qtz vlt w/ cpy+, MoS₂ ...
- 2nd bio replacing plag., primary bio euhedral stable
- BP loc. very fresh
- zone of qtz-K₂O vlts to 0.6cm w/ cpy±, py, spec.±
- diss cpy+ loc.
- 1.3cm irreg K₂O, dolo, qtz, py vlt.
- Nontronite + loc.
- strong qtz vlt zone w/ cpy+, py± MoS₂+ loc. cpy+ tetrahedrite.
- steep 1.0cm qtz vlt w/ py+, cpy+, MoS₂, tetrahedrite botryoidal.
- cg. py on frac.
- cpy+ w/ qtz vlts.
- zone of steep qtz vlts to 0.8cm w/ cpy+, MoS₂ ± cpy±

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
4.2	242.6	100	NQ	3.0 (243.0)	100
3.7	245.7	100		3.0 (246.0)	100
4.0	248.7	98		3.0 (249.0)	98
4.3	251.8	98		3.0 (252.0)	98
4.5	254.8	97		3.0 (255.0)	99

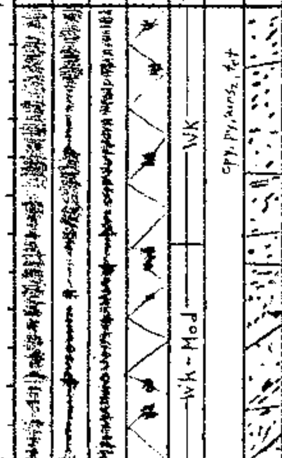
HOLE NO.: PC-30 | PROJECT: Poplar | PAGE NO.: 18 OF 18

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm.=1m.

INCLINATION: −60° | BEARING: Due E | TOTAL DEPTH: 856' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
255					WK	cpy, py, mos₂, tet		Biotite Porphyry Contd.		3.6	258.9	100	NQ	3.0 / 258.0	100
258					WK-Mod					5.3	260.9	100		2.9 / 260.9	100
261															



cpy+ loc. as diss. + w/ qtz. vlts. Tet° loc.

BP loc. rel. fresh w/ preserved primary bio.

loc. K_2O w/ or w/ ert alt.

0.4cm. qtz-dolo. vlt. w/ py+, cpy−, mos₂±

loc. qtz-py vlts+

2nd bio replacing plag; unusual but well devel. Alt. scheme prob. went: plag → seri(cl) → bio.

steep 0.3cm qtz vlt w/ cpy±, py±, mos₂±

1.2cm qtz-dolo vlt. w/ cpy±, py±

well devel. selenite vlt. on frac.

End of hole: TD − 856' or 260.9m.

End hole in BP w/ loc. well devel. qtz vlt alt. spotty 2nd bio + cl, loc. seri. Min. loc. as vlt. and diss. cpy, py, mos₂ and trace tet. Hole should possibly be deepened.

6136

HOLE NO.: PC-31		PROJECT: Poplar	
COLLAR ELEV.: 903.70 m	GROUND ELEV.: 903.5 m	DATE STARTED: Oct. 11, 1976	REF. TO CLAIM CORNER:
COORDINATES:	N. 5898.83 m E. 11802.76 m	DATE FINISHED: Oct. 12, 1976	SCALE: 1 cm = [illegible]
INCLINATION: [illegible]	BEARING: [illegible]	TOTAL DEPTH: 827' or 252.1 m	LOGGED BY: [illegible] + G.E.N.

COMMENTS:

AVE CORE REC'Y / HOLE: 96.88%

CORE SIZE: NQ

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
						0-32.7 OVERBURDEN						
		Strong	Cpy & MoS2		traces of MoS2; [illegible] qtz vlts. with some calcite; small patches (<10 cm) of [illegible]; vuggy qtz vlt. [illegible] with [illegible]	[illegible] grey [illegible] Argillite non porphyr[illegible] [illegible] stringers, Granite [illegible] fractures, [illegible] Sulfide [illegible] [illegible] in small [illegible]	[illegible]	32.9–35.7	98		[illegible]	98
			Cpy & MoS2		MoS2 vlts. (along [illegible]); qtz vlt. with [illegible]; weak to mod clay	37.15-37.4 Felt porphyritic [illegible] Dyke? [illegible] [illegible] [illegible] Irregular [illegible] contact, siliceous [illegible]	[illegible]	35.7–38.7	98		[illegible]	98
		Strong			mineralised qtz vlt. vuggy in places; strong clay alteration along fracture, [illegible]; Rock changes color, gradually becomes grey to yellow-white; qtz stringers with Cpy and MoS2 cross-cut core	37.4-87.3 fine grained grey-green Argillite; [illegible] as before	[illegible]	38.7–41.8	99		[illegible]	99

HOLE NO.:

COLLAR ELEV.: GROUND ELEV.:

COORDINATES: N. E.

INCLINATION: BEARING:

PROJECT: [illegible]

DATE STARTED:

DATE FINISHED:

TOTAL DEPTH:

REF. TO CLAIM CORNER:

SCALE: [illegible]

LOGGED BY: [illegible]

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

[illegible] Argillite [illegible]

[illegible]

[illegible] a [illegible]

[illegible]

[illegible] pyrite [illegible] and qtz vlts.

[illegible]

[illegible] darker than before.
[illegible] and serecite [illegible] silica still strong. Mineralisation increases where serecite stronger.
[illegible] grains of MoS_2 in [illegible] quantity
[illegible] qtz vlts. as before but mineralised stringers (0.1-0.2 cm wide) of Cpy present in places
Gradual changes in rock. (51-51.5)
Rock is very fine grain with minor biotite alteration in some places. It is mostly made up of qtz, and minor serecite
is weakly mineralised.
[illegible] biotite
Hematite staining
Mineralisation mostly pyrite along fractures
Traces of MoS_2
Py and cpy vlts with qtz. vlts.

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
42	[illegible]		100		3	100
45		44.9			45	
	[illegible]		97		3	97
48		47.9			48	
	1.0		99		3	99
51		50.9			51	
	2.0		99		3	99
54		54			54	
	2.0		99		3	99
57		57			57	

HOLE NO.: 10-31 | PROJECT: Poplar | PAGE NO.: 3 OF 15
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm = 1 m
INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: VA / GEN

SECTION	ALTERATION	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

- 57.0–57.3 [illegible] py [illegible] Qtz [illegible]
- 57.5–57.3 zone of brecciation, [illegible] rehealed by [illegible]
- [illegible] qtz vlt cut by brecciation ([illegible])
- stringers of py [illegible]
- vuggy qtz vn w/ patches & irreg. py [illegible]

Argillite Cont'd
- grey grn w/ dk grey irreg. patches of argillite less intensely altered.
- ground mass mostly qtz-sericite

- 1mm dol vnlt
- anhydrite & minor dol vnlt.
- ser, clay, py with qtz envelope.
- xcutting vuggy dol vn w/ pinkish selenite? xtls
- coarse ser on frac, dark patches str ser, lighter patches clay.
- dol vnlts, some times vuggy
- finely dissem py

- grey patches are mostly qtz-ser
- lighter areas - clay - ser.

- str kaol on frac w/ fine py
- dark patches ser.
- bands of str clay-ser alteration
- dk ser blotches gives a mottled txt.
- Kaolinite - irreg fillin.

- clay alter conform to bands - poss. remenant bedding?

- qtz, ser w/ MoS_2
- finely diss py, cpy
- 2-3 mm qtz-py vnlt
- dissem py cpy
- fine qtz-ser vnlts < 1mm
- 2mm qtz vnlt w/ py
- hairline py
- fine < 1mm qtz-ser lacing
- 1cm qtz-ser w/ py lacing

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
2%	to 60	98	NQ	3 (to 60)	98
1%	60–63.1	97		3 (60–63)	97
1%	63.1–66.1	98		3 (63–66)	98
2%	66.1–69	99		3 (66–69)	99
2%		100		3 (69–72)	100

HOLE NO.: PC-31 | PROJECT: Poplar | PAGE NO.: 4 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm : 1m

INCLINATION: -90° | BEARING: 090° | TOTAL DEPTH: | LOGGED BY: GEM

ALTERATION: Silica | clays | sericite | K_2O-Ba | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.
72		72.2		NQ		
	3 - 5%		97		3	97
75		75.3			75	
	2 - 3%		98		3	98
78		78.3			76	
	1 - 2%		98		3	98
81		81.4			81	
	1 - 2%		97		3	97
84		84.4			84	
	1 - 2%		99		3	99
87					87	

Argillite Cont'd

vuggy dol-qtz vn w/ hematite, cpy specks, fine py contract w/ MoS_2 dark patches of ser. good py - cpy on frac.

breccia w/ dol-qtz flooding

- groundmass str qtz-ser
- some qtz-ser vns have clay alteration halos.

good qtz-vning with ∠5mm qtz-ser vning at ⊥'s cpy - MoS_2 fair line vnlts of py

1cm qtz vn (minor ser) w/ py cpy specks MoS_2

vuggy dol irreg vn w/ specks cpy & grey metallic mineral; some hematite.

platey py on frac. yellow & brown dusting on silica poss. natrolite (clay). kaolinite or ...

1cm qtz-py-cpy vnlt.
- specks MoS_2.

anhydrite vnlt w/ specularite & cpy

dol-qtz vnlt w/ cpy & trace MoS_2.

dissem py cpy

1mm qtz vnlts w/ py

fine ∠1mm lacing of qtz-ser vnlts with cpy - MoS_2.

anhydrite along fract.

platey py & cpy

- rock becomes distinctly darker in color with introd. of secondary biot.

fine matted second black biot ∠1mm ser vnlts.

- qtz-carb vn w/ 3mm qtz-anhydrite vnlt.
- lt grn patches of clay-ser

HOLE NO.: PC-31 | PROJECT: Poplar | PAGE NO.: 5 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm : 1m

INCLINATION: -80° | BEARING: 090° Az | TOTAL DEPTH: | LOGGED BY: G.E.N.

SECTION	Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.
87					v.strg			dol vnlt w/ MoS_2 : 3mm · semi sharp cont. · vuggy dol vnlt - 2mm · 2mm qtz vn w/ sparse py } section very crumbly str kaol. · wisp biot alters to ser. shows at dark patches · 88.3-88.9 Argillite - sharp contact · vuggy qtz vn w/ MoS_2, cpy py; platy patch of tarnished bornite · good qtz-stockwork vuggy in places. vugs have well devel dolomite xtls & white fibrous mineral - zeolites · < 1mm sec brn. biot & hem. — 87.3-91.2. B.P. phenos - 15-20% kaolinized ragged plag. grndmass - str kaolinized. second biot - 10-15% black fine biot, wispy & felty.	5	87.5	99	NQ	3	99
90					mod					90.5			90	
								91.2-94.9 Argillite. small cm tongues of B.P. 91.3 & 91.8 · - strongly silicified w/ patches of clay altern shows as brown grey · good qtz-ser stockwork.	5		60		3	67
93										93.6			93	
								cpy on fract.	2		98		3	90
96								1cm dol vnlt. · qtz vn w/ cpy MoS_2 · dissem py & cpy		96.6			96	
					weak				3		96		3	96
99								increase in ser in patches with qtz-clay interstitial gives mottled texture		99.7			99	
					mod			1mm anhydrite vnlt.	2		97		3	97
102													102	

HOLE NO.: PC-31 | PROJECT: Poplar | PAGE NO.: 6 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm : 1m.

INCLINATION: -90° | BEARING: 090° Az. | TOTAL DEPTH: | LOGGED BY: G.E.N.

ALTERATION: silica, clay, sericite, K_2O - Bi | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Argillite Cont'd

- str qtz-ser altern pervasive throughout ground mass.

2mm. qtz vn w/ py
- dark patches of hbt as intensly altered arg. (clay).
dol vnlt in qtz-ser groundmass.
2cm aggregate of coarse py.

qtz vn - w/ py cpy.
secondary brn to black wispy biot. occurs as vnlts and finely dissem. in ground mass of qtz-ser

zone of secondary biotite carries higher % cpy.

good qtz - stock
- patchy calcite along tract.

fine black wispy irreg patches. second biot.
2 mm anhydrite vnlt
small slip - along 1. crushed py
hair line frac, filled w/ dol.

very fine grained second biot.

1mm. qtz vn w/ cpy py trace MoS_2.

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
102		102.5		NQ		
	3		99		3	99
105		105.8			105	
			100		3	100
108		108.6			108	
	4		100		3	100
111		111.9			111	
	2		96		3	99
114		114.9			114	
	1		97		3	97
117					117	

HOLE NO.: PC-31
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -80°
BEARING: 90°Az.

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

PAGE NO.: 7 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm:1m
LOGGED BY: GEN

SECTION	ALTERATION: silica	clay	sericite	Kg B.O.	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
117								str ser blotches surrounded by clay-ser-qtz gives mottled texture. Argillite Cont'd	
								qtz vns py cpy trace MoS_2.	
120								vuggy dol unit. 121.2-123.0 not as strongly alter'd, less ser, lt brn yellow-qtz-clay-areas	
						py cpy		very fine … dol unit.	
123								str fract. healed w/ qtz-py units	
								ground sulphide on shear cpy py MoS_2. 124.0-135.5 Fault Zone	
					very strong			124.0-128.2 - str bx and clay alter'n	
126									
129						py specularite			
132									

Depth (m)	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
117–120	2	118.0	99	NQ	3	98
120–123	2	121.0	99		3	99
123–126	1	124.1	96		3	97
126–129	tr	127.1	98		3	97
129–132	tr	130.2	98		3	98

HOLE NO.: PC-31		PROJECT: Poplar	PAGE NO.: 8 OF 15
COLLAR ELEV.:	GROUND ELEV.:	DATE STARTED:	REF. TO CLAIM CORNER:
COORDINATES:	N. E.	DATE FINISHED:	SCALE: 1cm:1m
INCLINATION: -90°	BEARING: 090Az.	TOTAL DEPTH:	LOGGED BY: G.E.N.

SECTION	ALTERATION (Silica / Clay / Sericite / K_2O Kspar)	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
132		v str / str	py spec/bar		Argillite, cont'd					NQ		
					dolomite w/ dk sphalerite.		1-3	133.2			3	99
					str ser on some fract.							
135					good qtz-ser stockwork w/ some fine py cpy.				99		135	
		strong	PY		vuggy dol along fract. w/ py.		1-2	136.3			3	83
					small slip. 1cm gouge.							
138			cpy		str ser w/ py on frac.				70		138	
					grnd mass pervasive qtz-ser.		2	139.3			3	+81
			MoS_2 cpy		vuggy bx dol vn (4cm) w/ coarse py.							
					qtz vnlt w/ MoS_2 cpy.							
141		mod - strong			qtz-dol py vn 2cm.						141	
					small slip 1cm		3				3	
144			cpy - py		py vnlt. str ser along fract.						144	
					dolomite vnlt and vuggy dol; qtz fract filling		3				3	
147											147	

HOLE NO.: PC-31
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -80°
BEARING: 090° Az

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE: 1cm:1m
LOGGED BY: G.E.N.

SECTION	ALTERATION: Silica	Clay	Sericite	K2O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
147								Argillite Cont'd				NQ		
								qtz-dol vnlt w/py						
								small slip .5cm gouge						
								dol-qtz w/ cpy py specularite (specularite rims cpy in some cases. trace sphalerite. (2cm vn).	3				3	
150													150	
					strong			qtz-py vnlt cuts dol. vnlt.						
								small slips .5cm gouge	2				3	
								1mm py vnlt.						
153													153	
						py		good py on fract - platey minor cpy						
								good qtz-ser stockwork vnlts <1mm.						
								bleb py in qtz-ser	m-tr				3	
156													156	
						py - cpy -			1				3	
159													159	
								3mm dol. vnlt						
								patches of qtz-ser in qtz-clay matrix						
								dk patches of v-f-g second biot in more clay rich areas.	1				3	
								calc. surrounding dolo & py						
162													162	

HOLE NO.: PC-31
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -80°
BEARING: 090° Az
PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:
PAGE NO.: 10 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm : 1m
LOGGED BY: G.E.N.

SECTION	ALTERATION: silica	clay	sericite	K_2O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
162–165					strong	py-MoS_2		Argillite Cont'd str qtz-ser stockwork vns ≈ 1m MoS_2 in 2mm qtz vnlt py-MoS_2 in qtz-dol vnlt. 1mm calc vnlt along fract. dol vnlt .5cm w/py	1				3 (165)	
165–168					strong			4cm gouge	1				3 (168)	
168–171						py cpy / py		less qtz-ser altern light brn grey qtz-clay qtz-dol vnlt 3mm w/ trace cpy specularite ? lt brn grey portions of rk are qtz clay - possible orig composition of argillite. or alter'n?	tr				3 (171)	
171–174								irreg qtz vn w/ MoS_2. 2mm qtz vnlt w/trace MoS_2, py dolomite vnlt qtz vnlt w/ MoS_2	2				3 (174)	
174–177						cpy-py		fine spks of a orange pink in clay altern	2				3 (177)	

HOLE NO.: PC-31 | PROJECT: Poplar | PAGE NO.: 11 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: | N. | E. | DATE FINISHED: | SCALE: 1cm : 1m

INCLINATION: -80° | BEARING: 090° Az | TOTAL DEPTH: | LOGGED BY: G.E.N.

ALTERATION: Silica, clay, sericite, K_2O Bio. | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

SECTION | DESCRIPTIVE GEOLOGY | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT.

177

Argillite Contd.

NQ

- qtz py vnlt w/ some cpy.

Fault zone 178 – 183.6
- numerous faults some zones silicified and rehealed others open and active, Rx very crumbly with

3 - 4

3

180

- rehealed zone qtz-ser py vnlts diss py cpy MoS_2.

3 - 4

3

183

- 5cm gouge crushed rx.

2

3

186

- crushed py MoS_2

2

3

- open fault zone. active.

2 - 3

3

189

- healed fault zone.

192

HOLE NO.: PC-31
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -80°
BEARING: 090 Az

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

PAGE NO.: 12 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm : 1m
LOGGED BY: G.E.N.

SECTION	ALTERATION: silica	clay	sericite	K_2O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
192–195					strong	py specularite		irreg qtz w/ py, specularite minor cpy. Argillite Cont'd. healed fault zone minor py & specularite. healed fault bx frag, crushed sulfide & qtz. sharp contact	1				3	
195–198					mod	py cpy		194.9-199 B.P. dykes (tongues). – called B.P because of text. plag .. small and more ragged. – str qtz-alter w/ patches qtz-ser. plag phenos are vague and usually nondistinguishable alter to clay-ser. – no biotite but small patches ser possible could be after biot or plag. – qtz-ser vning goody w/ py cpy. Argillite. irreggular contact	2				3	
198–201					strong			py bleb 3cm x .5cm. 199.0-203.5 Argillite lt grey to brwn str silic. w/ ser on fract. some ser on fract.	1-2				3	
201–204								1mm qtz vnlt w/ MoS_2. dolo infilling fractures irreg. ser-qtz bnds after c-g unit 1-1.5cm. remenant bedding of arg. coarse fraction of unit shows stronger ser-qtz altern. 1mm dol vnlt. small slip at contact — 203.5 Biotite Porphyry 15-20% plag phenos → clay groundmass - qtz - clay biotite phenos (rare) → ser	1				3	
204–207					mod to strong	py cpy		mod qtz-ser-py-cpy stockwork. py vnlts. str ser w/ cpy trace MoS_2. mod qtz-py vning	3				3	

Sample interval marks: 195, 198, 201, 204, 207

HOLE NO.: P.C-31

COLLAR ELEV.: GROUND ELEV.:

COORDINATES: N. E.

INCLINATION: -080°

BEARING: 090

PROJECT: Poplar

DATE STARTED:

DATE FINISHED:

TOTAL DEPTH:

REF. TO CLAIM CORNER:

SCALE: 1cm : 1m.

LOGGED BY: GEN.

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
207					mod → strong	py trace MoS_2 ; cpy		qtz-py stockwork 2-3 per cm. Biotite Porphyry Cont'd. - str dissem py trace MoS_2 and cpy		3-2			NQ	3	
210								1mm qtz dol vnlt. dker B.P has more ser. py - crushed py & qtz. plag phenos str arg. -plag phenos str arg. sections str qtz-py vnlts. - sparse ragged biot phenos → ser		3-2				3	
213								irreg masses of calc. biot phenos → ser.							
						py+ cpy		214.2-217.1 Argillite. lt gry brown - silica - clay. dark patches - ser-qtz. str micro fract of qtz-ser py some w/ cpy. Kaol along fr. good micro fract stockwork qtz-ser py+-cpy- < 1mm		3-2				3	
216					mod			217.1- Biotite Porphyry as above. - alter'n varies from qtz-ser. good qtz-py — some vnlts MoS_2 cpy & qtz-ser-py vnlts. Argillite .1m. dk ser patches - spotty		3-2				3	
219					weak			weak second biotitization. some altd. prim biot phen .5mm (black brn). persist.		3-2				3	
222															

Sample interval marks: 210, 213, 216, 219, 222

HOLE NO.: PC-31
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -80°
BEARING: 090°Az

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE: 1cm:1m
LOGGED BY: G.E.N.

SECTION	ALTERATION: Silica	ALTERATION: clay	ALTERATION: sericite	ALTERATION: K₂O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT
222					strong			good qtz-py stockwork; Biotite Porphyry Cont'd				NQ		
								v-str. silic.	1-2				3	
								1.5cm clay. not active						
225								slip at cont. - silic.; trachytic; frags B.P.; sharp cont.					225	
								225.6-226.3 Alter'd Dyke. possibly Andesite. - faint presence of trachytic texture (plag laths) groundmass clay.	2				3	
								patches ser						
228					mod	py trace MoS_2		qtz vnlt w/ py MoS_2					228	
								qtz-vn w/ py-dol-open filling center.						
								vuggy qtz-dol 1cm vnlt w/o py.	1-2				3	
231													231	
								mod to str qtz-py vnlts (minor ser)	1-2				3	
234													234	
						py MoS_2		qtz-py w/ MoS_2.	1-2				3	
								trace MoS_2						
237													237	

AVE CORE REC'Y / HOLE:

HOLE NO.: PC-31 | PROJECT: Poplar | PAGE NO.: 15 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm : 1m

INCLINATION: -080° | BEARING: 090° Az | TOTAL DEPTH: 252.m | LOGGED BY: G.E.N.

ALTERATION: silica | clay | sericite | K_2O Bio

FRACTURING: strong ← weak to mod

MINERAL: MoS_2 py

GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Biotite Porphyry Cont'd

237
- ground sulphide. healed - silica
- mod str qtz-clay-py vnlts. plag phenos str Kool,

240
- ser patches
- 5cm crushed rx airdgouge
- some dissem MoS_2.
- 6cm qtz-carb py zone
- many offset qtz-py vnlts.

243
- dissem MoS_2.
- 1.5 cm gouge.
- qtz-ser py.

246
- 1cm qtz-py vnlt.
- hair line py.
- dissem MoS_2
- 1cm qtz-py vn. str frac.
- crushed py bx qtz frac.
- harline vnlts py · qtz

249
- qtz-py vn (no sharp boundaries) some bx.
- dissem MoS_2 and w/ qtz vns
- bx qtz vn calc infilling

252
- end of hole 252m or 827'

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
2-3			NQ	3	
				240	
3				3	
				243	
2 - 3				3	
				246	
2 - 3				3	
				249	
2 - 3				3	
				252	

HOLE NO.: PC-32
COLLAR ELEV.: 917.20 m.
GROUND ELEV.: 917.00 m.
COORDINATES: N. 6000.30 m. E. 11949.69 m
INCLINATION: -60°
BEARING: Due West

PROJECT: POPLAR
DATE STARTED: 10/13/76
DATE FINISHED: 10/15/76
TOTAL DEPTH: 844' or 257.3 m.

PAGE NO.: 1 OF 16
REF. TO CLAIM CORNER:
SCALE: 1 cm = 1 meter
LOGGED BY: F.O. [illegible]

6136

SECTION | ALTERATION (Silicification, Kaolinization, Sericitization, Biotite/Vapour) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE 93.79% | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT.

DESCRIPTIVE GEOLOGY

Section depths: 26, 28, 29, 29.2, 30, 31, 33, 35, 37, 39

Alteration: Intense qtz. stringers, strong sil matrix; strong; strong - Mod.; weak to nil. Fracturing: strong both wavy and fracturing.

0-29.2 O.B.

29.2 - 186 Feldspar - Porphyry: Med. grained Porph.
Phenos: 50% creamy-white largely plag. feldspar now is partially to completely kaolinized + sericitized(?) euhedral xtals to sub-hedral up to 1cm.
60% groundmass: fine-med. grained largely SiO_2, greyish to creamy white. Some kaolinized & sericitized plag. groundmass.
In general the section is mottled w/ creamy white patches of cly. after the completely kaolinized plag.

Contains Intense smoky - cloudy qtz veinings (network) up to 1mm to 1" thick ranging 10-20% Py. veinlets & disse. disse. py ± cpy(?) trace MoS₂...

Comments:
- partially ox. fractures.
- oxidized gougy slip
- 2" smoky qtz. sms.
- smoky qtz boxwork
- wk. slip along qtz
- ½" py. sm.
- 80° gougy slip
- Sub. parallel qtz. vngs.
- mod. slip on qtz sm
- py± cp(?)
- a series of wk. gougy slip
- qtz. boxwork
- mainly py. sms.
- Intense qtz. vning.
- py± cpy(?) vnlet.

Sulphides	Drilling interval	% Core recovered	Core size	Sample interval	% Rec'y samp. int.
	29.2			29.2	
				30	93
		93			
	31.9				14
		95		33	
4% to 5%	33.8				96
		96			
	35.4			36	
		100			100
trace		100		39	

HOLE NO.: PC 32 | PROJECT: POPLAR | PAGE NO.: 2 OF 16

COLLAR ELEV.: GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: BEARING: | TOTAL DEPTH: | LOGGED BY: F.R.C.

ALTERATION: Silicificat'n / Kaolinizat'n / Sericitizat'n / Biotite/K-spar | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

SECTION | DESCRIPTIVE GEOLOGY | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP. INT.

Section marks: 39, 41, 43, 45, 47, 49, 51, 53

Alteration: Silicification — strong vns/or groundmass; Mod. vns; strong in groundmass; Mod. — Kaolinization — strong; WK.; Mod. — Sericitization — Mod.; WK. to Mod.; WK. — Biotite/K-spar — WK.; Nil

Fracturing: strong mainly vns.; strong; Mod.

Mineral: trace MoS$_2$; Cp; Py

Comments:

- intense smoky qtz. veinings. qtz. stockwork(?) trace MoS$_2$
- wk. creamy gouge
- gougy slip along smoky qtz. sm.
- tight smoky qtz network
- 1cm. smoky qtz. vn.
- wk. gougy slip
- 1-2 mm. qtz lacings
- a series of wk. slips
- hairline py vnlets
- WK. slip
- Qtz. veining (parallel)
- 1cm. euhed. py in vnlet.

Descriptive geology:

27.2 - 1?? m. Feldspar Porphyry: Cont.

at 45 m - ft: Qtz veinings decrease significantly; est. 4-5 veinlets per foot

% Sulphides	Drilling interval	% Core recovered	Core size	Sample interval	% Rec'y samp. int.
		100		39	100
	41				
		100		42	100
	44.2				
5%		100	NQWL	43	98
4%	47.3				
6%		97		46	
	48.5	96			96
	50.6			51	
		96			97
	53.6	99		52	

HOLE NO.: PC 32
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: BEARING:

PROJECT: POPLAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

PAGE NO.: 3 OF 16
REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: F.R. 2

SECTION	ALTERATION: Silicificatn	Kaolinizatn	Sericitizatn	Biotite/k-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
54	strong	Mod / strng / Mod. stng	Mod - WK / WK. to / strg.	Nil	Intense vnlts: as fractures	fr. diss. / crs.gr. / PY+		Feldspar - Porphyry: Cont.		1.5%			NQ	54	99 / 99 / 99 / 100 / 100
								3 mm. py; smoky qtz							
								a series of sub-parallel qts. hairlike str.							
56								1" cloudy qtz sm.						57	
								1' sectn criss-crossing qts. str.							
58								py sms. around smoky qtz.							
								2 mm. py.							
								wk. slip.							
								intense (± 20 vns. per foot) qtz. veining - in hi-sil. matrix							
								1 cm. py.							
								qts. vnl.							
								gentle slip (1cm gouge)							
								2 mm. py sm						63	
61								Qtz. stringers w/ hi-cly envelope							
								fine gr. py. stringers 3 vnlets/foot							
														66	
								hairlike py. w/ cly+ envelope							
								1" py sm. bordered by smoky qtz.							
								black (grounded suf.) slip.							
65								Qtz. on footwall slip.							
								py. vnl. (2 mm.)						69	

HOLE NO.: P.C. 32 | PROJECT: POPLAR | PAGE NO.: 4 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: F.R.G.

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotite / K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
69	Strong both vns & in groundmass	Intense → strong; Strong	Mod.	WK. to Nil	strong vnings as fracture	trace MoS_2; Py+ cp		intense hairline qtz vnings (10-20/foot). **Feldspar Porphyry: Cont.**				NQWL	69	
71								1cm. smoky qtz; hairline qtz network. Note: From 64.5 m to 74.2 m. the porphyritic texture of the rock is almost completely eradicated by kaolinization & sericitization, occuring as flooded patches/or blobs.						99
73								1cm. py. sm between smoky qtz vnlets. wk tight slip. creamy gouge		72			72	98
75								1" very fine gr. py. sm. at 75 m. Feldspar Porph. texture re-occur.					75	
								1cm. py sm. w/ hi. cly envelope	5%					100
77								2-3 m. smoky qtz. gougy slip. py. vnl. 1cm. smoky qtz. trace cp						
										78			78	
79								tight qtz (1-3 mm) veinings w/ hi. cly envelope.						99
81								2-3 mm. smoky qtz vnl. w/ pinkish envelope		81			81	
								3mm. py. sm. between wk. gougy slip						100
83								hairlike qtz. network						
84								1cm. mostly py. in qts.					84	

HOLE NO.: PC 32 | PROJECT: TOMAKE | PAGE NO.: 5 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: F.P.

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotite/Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
84	Strong	Intense	Mod.	Wk.	Mod.	PY. ccp		1cm. py. vnl.; 10-15 vns. per foot; 1cm. qtz. sm. w/pink. ... ; qtz vnings. 10 per foot; 1" fine gr. py. sm. between qtz. vnlets; smoky, tight, narrow (1-2 mm) qtz vns. 10-per foot; some hi-py. hairline vngs.; dark gry. - smoky qtz. boxwork; specks ccp; wk. slips - hi-cly gouge; 70° slip. hi-cly gouge; 3 mm. py. ccp (?); creamy hi-cly gouge; 1cm py; narrow qtz flooding in hi sil matrix	5%		100	NQ	84-87	100
87								Feldspar Porphyry: Cont.					87-90	98
90								* 89-109: Intense yellowish-buff brn. clay alt. porphyritic texture almost completely obliterated by cly. flooding.					90-93	100
93													93-96	100
96								@ 97-101 ft. brownish hi cly (pyrophyllite ?) flooding present.					96-99	100
99														

Alteration column notes: Strong; Intense; Mod. grey-green to yellowish cast (?); Wk. - Nil; Fracturing: Strong mainly in ... vns; Kaolinization: Strong - Mod.

HOLE NO.: PC 22 | PROJECT: POPLAR | PAGE NO.: 6 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: J.G.G.

SECTION | ALTERATION (Silicificat'n, Kaolinizat'n, Sericitizat'n, Biotite/K-spar) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP. INT.

DESCRIPTIVE GEOLOGY

Alteration columns: Silicification – intense, pervasive, groundmass ... pervasive to wk. ; Kaolinization – intense, flooding ... mod. to wk. ; Sericitization – ... wk. ; Biotite/K-spar – ... wk. ; Fracturing – intense, mainly stringers ... wk. to mod. (massive rock) ; Mineral – cp(?) ... py⁺ mainly

- wk. slip
- 1" creamy vuggy qtz. — Feldspar-Porphyry (?) Cont.
- 1' sect. of mainly plag. feldspar in SiO_2 matrix. at 109 m–121 mainly silica rich, 80–85% is silica; feldspar dissapearing significantly to almost Nil.
- wk. slip w/ creamy cly gouge.
- qtz sms. w/ mi. cly envelope
- smoky – greyish qtz. floating in H. gry SiO_2 ground mass.
- wk. slip
- 1 cm. py sm.
- at 110.5 – 118 some (1-2%) smoky qtz. eyes in sil. groundmass appearing; some creamy (10%) plag. alt'd to cly.
- qtz. veining decrease significantly to 5 vns./foot grading to mainly medium SiO_2 rich groundmass
- wk. slip
- 1 cm. py in 1" smoky qtz. vn.
- py⁺ trace cp⁻
- qtz. sm. on tight frac.
- py. sm.
- 1 mm qtz. vnlt w/ cly envelope

% Sulphides: 5%, 6%

Drilling interval / % core recovered: 99, 100, 100, 99

Core size: NQ

Sample interval: 99, 105, 115, 121, 125 — 47614, 47615, 47616(?), 47617(?)

% Rec'y samp. int.: 100, 100, 99, 100, 99

HOLE NO.: PC 32

COLLAR ELEV.: GROUND ELEV.:

COORDINATES: N. E.

INCLINATION: BEARING:

PROJECT: TOFLAR

DATE STARTED:

DATE FINISHED:

TOTAL DEPTH:

REF. TO CLAIM CORNER:

SCALE:

LOGGED BY:

SECTION	ALTERATION: Silicificatn	Kaolinizatn	Sericitizatn	Biotite/K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT
234	Strong veinlets + sil. groundmass	Mod. to strong in very small areas	Mod. / Strong	Strong	strong			Feldspar - Biotite - Quartz (±) Porph. Cont.				NQWL	234	
								3 mm. smoky qtz sm. trace MoS_2; K-spar envelope						
								Py - cp⁻						
								1" cloudy qtz. sm.			99			99
								smoky qtz eyes develope here						
236								wk. slip in qtz sm.		236.5				
								parallel smoky qtz. MoS_2					237	
								hairline - 1 mm. qtz network. fine gr. MoS_2						
238								wk. slip						
								phenos predominantly biotite book up to 5 mm across			98			98
								Py⁺ cp⁻ sm.						
240								Quartz Feldspar Bio. Porp; Good plagio (>40%) phenos. >10% qtz eyes. section laced w/ qtz network	4%	239.6			240	
								wk. gouge slip.						
								Minor qtz. eyes.			97			98
242								limy slip, hr. cly (ser) gouge						
								qtz. frags w/ bio. envelope		242.6			243	
								qtz. sms. w/ ser. envelope						
244								intense fract.			99			99
								smoky qtz frags in biotitic matrix		245.7				
246								velets of sec. bio. common here					246	
								1 cm. purple qtz(?) stringer			100			100
								sect. w/ felty bio. mottling in sil. groundmass; texture is mottled or spotted brown rock.						
248								frc. Mos₂ in qtz vnl.		248.6				
249								Py - cp⁻ vnl.			100		249	

from 242.5 - 244, is pseudo-Bx texture (F.B.Q.P.) characterized by fine gr. felty biotite patches, irreg. qtz vns. & concentrated patches of sericitized kaolinized plag. feldspar in hi. sil. matrix.

HOLE NO.: PC 32 | **PROJECT:** POPLAR | **PAGE NO.:** 16 **OF** 11?

COLLAR ELEV.: | **GROUND ELEV.:** | **DATE STARTED:** | **REF. TO CLAIM CORNER:**

COORDINATES: **N.** **E.** | **DATE FINISHED:** | **SCALE:**

INCLINATION: | **BEARING:** | **TOTAL DEPTH:** | **LOGGED BY:** F.R.G.

SECTION	ALTERATION: Silicificatn	Kaolinizatn	Sericitizatn	Biotite/Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
249 – 257.3	Strong	Wk. Mod	Mod	Strong – Intense sec. Bio. flooding	Strong	Qz. + tr. MoS2		Feldspar - Biotite - Quartz(-) Porph. Cont		4/s	249 – 251.8	100	NQ	249 – 252	99
											251.8 – 254.8	98		252 – 255	98
											254.8 – 257.3	99		255 – 257.3	99

Comments (beside the geology column, 249 – 257.3):

- smoky-grey qtz network w/ fine gr. sec. bio envelope. trace MoS_2
- wk. slip
- biotitized wall qtz sm.
- 1cm. cloudy smoky qtz
- intense qtz lacings.
- trace MoS_2 in cloudy qtz
- qtz stockwork.
- sparse qtz. eyes ph(enos)
- 2 cm. qtz
- qtz eyes phenos
- qtz. vnl.

Descriptive geology:

Feldspar - Biotite - Quartz(-) Porph. Cont

from 249 to 257: the Porphyritic texture of the rock is obscured/or obliterated by considerable amount of biotization... The rock now is compositionally qtz rich groundmass mottled by felty brown biotite. Quartz network up to 15 % vns. per foot.; sparse qtz. eyes and feldspar completely kaolinized & sericitized.

Note: Because of strong silicification and cryptocrystalline texture of the rock, the original rock composition is difficult to ascertain. It is important to note, however, that quartz "eyes" in places is observable..

257.3

End of Hole 844' = 257.3 meter.

HOLE NO.: PC-33
COLLAR ELEV.: 915.88m GROUND ELEV.: 915.80m
COORDINATES: N. 6096.09m E. 12301.29
INCLINATION: 090° BEARING:

PROJECT: Poplar
DATE STARTED: Oct.16, 1976
DATE FINISHED: Oct.17, 1976
TOTAL DEPTH: 697' or 212.4m.

REF. TO CLAIM CORNER:
SCALE: 1cm : 1m.
LOGGED BY: G.E.N. + E. Bolin

6136

COMMENTS:

AVE CORE REC'Y / HOLE 99.47%

Columns: SECTION | ALTERATION (Silica, Clay, Sericite, K2O Bio) | FRACTURING | MINERAL | GEOLOGY | DESCRIPTIVE GEOLOGY | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP. INT.

Section marks: 0, 3, 6, 9, 12, 15

Fracturing: mod (3.6–8.8); strong (8.8–11); mod (11–15)

Mineral: py + cpy; hematite; py + cpy

DESCRIPTIVE GEOLOGY

0-3.6 OVERBURDEN

3.6-24.2 *Biotite Porphyry*

plag phenos - 15-20%, str Kaol, ≥.5cm
- closely packed - euhedral to subhedral.

ground mass - qtz - clay.

Most silica present appears as a flooding, rather than veining, very high silica content. No biotite present → clay.?

In places little remenant texture.
Rx has a vuggy text - due to metasomatism shrinkage.
Traces of fine cpy present, Py occurs as dissem & vnlts w/ qtz., fine dissem hematite.

Geology column annotations:
- 2mm calc. vnlt.
- mod - str py - & qtz py vnlts. dissem py trace cpy
- calc vnlt w/ py. (3mm).
- 3.5cm qtz vn w/ py
- trace dissem cpy.
- 1cm black gouge (crushed py).
- bx and healed
- 1.5cm qtz vnlt w/ py
- str py on frac.

% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.
	3.6		NQ		
3-4	5.2	100		2.4 (to 6)	99
3-4	8.2	98		3 (6–9)	98
2-3	11.3	98		3 (9–12)	98
3	14.3	99		3 (12–15)	99

HOLE NO.: PC-33
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: 90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 212.5m

REF. TO CLAIM CORNER:
SCALE: 1cm: 1m
LOGGED BY: G. E. N

SECTION	ALTERATION: Silica	Clay	Sericite	K₂O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY
15					mod	cpy		mod py & qtz-py vnlts.	Biotite Porphyry Cont'd.
18					strong	pyr		1.5 cm py-qtz vnlt.	
								sharp cont.	
21					weak	magn		fragment B.P?	21.0 - 24.2 TRACHYTIC Dacite-Hnd Porphyry phenos - 7% large sub anhedral plag Fdd. upto 1.5cm. 15-20% smaller plag phenos→clay. <.5cm. lath like plag alinement give trachytic texture. - sparse biotite phenos. grndmass - aphanitic - qtz - plag. some fragments, dissem. magn. (minor)
								dissem. magn → hem.	
								1mm dol vnlt	
24								sharp cont.	24.2 - 39.0 Quartz Feldspar Porphyry phenos - 10% str fract. qtz - - 5% plag → clay (some kaol! others green clay!) grndmass - aphan. - clay - qtz sparse mafic phenos. trace py. slightly vuggy text due to Plag → clay and clay washed out.
27					mod / strong	Magn		27.1 - 27.9 Fault Zone	
								specks magn → hem	
30					mod				

AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	m ½	17.4	98	NQ	3 (18)	98
	m 1 N	20.4	97		3 (21)	97
	<1	23.5	97			
		26.5	99			
		29.6	99			

HOLE NO.: PC-33 | PROJECT: Poplar | PAGE NO.: 3 OF 15
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm:1m.
INCLINATION: 90° | BEARING: | TOTAL DEPTH: 212.5 | LOGGED BY: G.E.N.

SECTION | ALTERATION (silica, clay, sericite, K_2O Bio) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT.

DESCRIPTIVE GEOLOGY

30

Quartz Feldspar Porphyry Cont'd

33

← small slip.

36

39

← sheared cont.

← 1m qtz vnlt offset by dol. vnlt.

← .5 cm py vnlt.

← .5cm brrx & gouge.

← good qtz-py stockwork vnlts < 1m.

← .5 cm py vnlt.

42

45

39.0-67.5 Argillite

lt gry - yellow brwn. rx
→ most of rx is a mixture of qtz-clay.
- str fract w/ a strong stock work of qtz-py vnlts, some local zones of Kaol altern.

Fracturing: mod, weak, mod, strong. Mineral: py.

Drilling interval	% core recovered	Core size	Sample interval	% rec'y samp. int.	% sulphides
30–32.6	98	NQ			
32.6–35.7	97				
35.7–38.7	98				
38.7–41.8	100		39–42: 3	100	1–3
41.8–44.6	100		42–45: 3	100	2–3

HOLE NO.: PC-33 | PROJECT: Poplar | PAGE NO.: 4 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm : 1m.

INCLINATION: -90° | BEARING: | TOTAL DEPTH: 212.5 | LOGGED BY: GEN.

ALTERATION: Silica | clay | sericite | K_2O Bio | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Argillite Cont'd

- 45
- 48
- 51
- 54
- 57
- 60

healed 1cm bx

good qtz py stockwork. trace dissem fine cpy.

1cm qtz vnlt w/ py & in trac ⊥ to c.a. wall. and down center

½ cm gouge

<1mm gypsum vnlts.

good py ± qtz-py stockwork.

later qtz-py vnlt.

3mm py-qtz vnlt.

Gypsum along fault.

Fault Zone. 10cm. - healed.

2mm py vnlt. trace MoSz ± dissem cpy

str qtz-py stockwork w/ dissem py ± cpy

qtz-dol.

2cm. healed broken rx

small slip 2mm gouge

strong | py+ cpy MoS trace

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
4	47.9	100	NQ	3 – 48	100
3-4	50.9	99		3 – 51	99
1	54	98		3 – 54	98
4-1 N	57	98		3 – 57	98
1	60	99		3 – 60	99

HOLE NO.: | PROJECT: | PAGE NO.: 5 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: | N. | E. | DATE FINISHED: | SCALE:

INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY:

ALTERATION: silica, clay, sericite, K_2O Bio | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION: 60, 63, 66, 69, 72, 75

Argillite Cont'd.

- 2 cm healed bx zone Gypsum along fault.
- fine cpy dissem
- str qtz-py ± py vnlts.
- 3mm py vnlt.
- 1mm gypsum vnlt.
- 1mm py vnlt
- 2mm gypsum vnlt.
- sharp cont. - silified honey golor to black schist in dol vn.
- str pyr qtz-py stockwork
- 1mm gypsum vnlt.

67.5 - 69.6 Biotite feldspar porphyry phenos - 30-40% plag → clay ± 25 cm, ragged. grndmass - qtz. mod-str qtz-py ± py stockwork.

69.6 - 72.5 Argillite

colour - grey tan to lt brn. v-str sil ± patchy clay alter and the str fract gives bx texture,

- B.P. .1 m.
- str qtz-py ± py stockwork.
- sec. biot texture of B.P indistinct contact
- dk patch - secondary biot.
- B.P .5m. - 30-40% lt green plag → clay → biot. in aphan qtz matrix ± patch sec biot, indistinct contact

Hybrid Zone B.P & Argillite. - contacts between B.P & argillite are grad-indistinct in between distinguishable B.P look also like fragments of argill. w/ B.P matrix not distinct?

SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
3	63.0	100	NQ	3	100
2	66.1	99		3	99
3	69.2	98		3	98
2	72.2	99		3	99
2		97		3	97
				75	

HOLE NO.: PC-33 | PROJECT: Poplar | PAGE NO.: 6 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm:1m

INCLINATION: -90° | BEARING: | TOTAL DEPTH: 212.5 | LOGGED BY: GEN

ALTERATION: silica, clay, sericite, K2O Bio | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
75		75.3		NQ		
	M-1		96		3	96
78		78.3			78	
	M-N		99		3	99
81		81.9			81	
	M-N		98		3	98
84		84.4			84	
	N-1		98		3	98
87		87.5			87	
	N		99		3	99
90					90	

Hybrid B.P & Argillite

- small patches sec biot. & minor vnlts
- 8mm cpy-py vnlt cut by qtz-gypsum vnlt.
- argillite - v-str silic. gypsum on fract.
- gypsum & py on fract.
- indistinct argillite frag?

79.2 - 85.6 Biotite Porphyry

phenos - 30-40% plag → clay & ser.
2-3% biot → hem → ser
groundmass - plag, qtz sec biot.
color varies from grey green to dk grey in sec biot rich zones.

- .5cm qtz vnlt.
- small slip - gypsum-qtz-py
- good qtz-vning. some del
- 1cm qtz-py vnlts
- 1-1.5cm fragments of argillite. (str clay).
- Fault Zone 81.9 - 82.5 partially healed str. ground.

Argillite 82.5 - 83.1 slightly gritty unit. more clay altern

- primary biopheno → ser & weak sec biot + ser.
- 2mm qv vnlt.
- slight increase in cpy w/ sec biotite altern & silica
- mod to weak qtz-py stockwork
- small slip & diss py mdgn → hem
- 2.5cm qtz vn

85.6 - 89.2 Sandy Argillite

color - lt grey to tan
v-f-g- grainy text. of mostly silica with grains of clay
probably a impure argillite.

- Gypsum on fract
- mod qtz & qtz-py vnlts
- gradual contact
- gypsum <2mm.

89.2 Biotite Porphyry

HOLE NO.: PC-33 | PROJECT: Poplar | PAGE NO.: 7 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: -90° | BEARING: | TOTAL DEPTH: 212.5 | LOGGED BY: GEN.

SECTION	ALTERATION: silica	clay	sericite	K_2O Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
90								← 3cm. gouge py & crushed py			90.5		NQ		
								Biotite Porphyry Cont'd							
								Alteration changes very rapidly from clay-silica alkn. to sec biot & sil w/ very little clay.		2				3	98
								1mm gypsum vnlts				98			
								← mod qtz-py vnlts						93	
93								← poor recovery very broken. nx.			93.6				
								← 4cm gouge zone replaced by py. then later movement							
								biot → ser							
								← magn → hem vnlt.		2				3	98
								v-f-g patches sec. biot & clay.				98			
								plag → clay in groundmass						96	
96								← gypsum vnlts			96.6				
								qtz & qtz-py vnlts <.4cm. mod vning.							
								← 1.5 cm qtz vnlt.		2				3	99
								Argillite fragments				99			
								sandy Argillite.						99	
99								gradational cont.			99.7				
														3	100
										M-N		100			
								patch black v-f-g sec. bio.						102	
102								gypsum vnlts			102.7				
								mod qtz & qtz-py vning fine diss'm c.py.							
										2		100		3	100
								← 2cm gouge.							
105														105	

HOLE NO.: PC-33 | PROJECT: Poplar | PAGE NO.: 8 OF 15
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm : 1m.
INCLINATION: 090 | BEARING: | TOTAL DEPTH: 212.5. | LOGGED BY: GEN.

SECTION	ALTERATION (silica / clay / Sericite / K_2O Bio)	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
105					← v-f-g block biot-ser in grndmass; primary biot → ser.; ← gypsum vnlts; ← gypsum offsets py vnlts; ← .5cm py vnlt.; — fragment of argillite	Biotite Porphyry; - lt green plag → clay; - biot phenos → ser; - in a matrix of qtz - sec biot-ser.; - dissem py cpy & magn → hem; - mod qtz & qtz & py vnlts.	1	105.8	100	NQ	3	100
108		mod	cpy - py				1	108.6			108 / 3	100
		str			← micro vnlts py < .5mm (v-f-g sec biot in silic grndmass.); ← <.1m B.P	109.7 - 112.5 Sandy Argillite. probably an assimilated block within the B.P. - appears to be metasomatized			100			
111							2	111.9			111 / 3	99
			cpy - hem		sharp cont.; weak qtz & qtz py vnlts	112.5 - 114.8 Biotite Porphyry. 20-30% plag phenos < .5cm → clay. 5% primary biot phenos → ser; grnd mass - qtz ± ser - sec biot			99			
114		mod	py		← .1m argillite			114.9			114 / 3	98
					grndmoss - qtz - bio - ser.	114.8 - 119.1 Sandy Argillite. appears to an assimalated block	2-3		98			
117								118.2			117 / 3	98
					← gypsum.		1-2		98			
					plag → clay; biot → clay ser; groundmass qtz	119.1 - 120.1 Biotite Porphyry					120	
120												

HOLE NO.: PC-35 | PROJECT: Poplar | PAGE NO.: 9 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1 cm. = 1 m.

INCLINATION: -70° | BEARING: | TOTAL DEPTH: 597' | LOGGED BY: [illegible] Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K₂O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
120					mod	py cpy		120.1 - 123. Sandy Argillite	
								mod to weak qtz & qtz-py vnlts.	
123								123.- Biotite Porphyry; alter'n is very variable.	
								str min gypsum	
								[illegible] mm PY vnlt.	
						cpy		str qtz & qtz-py vnlts <.25cm.	
								argillite frag.	
								good dissem cpy	
126								magn →(P) hem w/ cpy surrounding	
129					weak	py, cpy, [illegible]		abrupt end to 2nd bio alt at qtz vlt.	
								0.2cm py vlt.	
								[illegible] pkish hem stain	
								[illegible] cm qtz zone w/ py-cpy vlt ±	
132								strong qtz-py vlts	
								random, fract gyp vlts; py vlt. w/ gyp	
								strong [illegible] vlts [illegible]	
135								strong pk hem stain	

Kbo. py > cpy by ~5:1

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
m-2	121.0	99	NQ	3.0	99
m-2	124.0	99		3.0	99
3	127.1	98		3.0	98
3.6	130.2	99		3.0	99
4.4	133.2	100		3.0	100

HOLE NO.: PC-33
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -70°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 697'

PAGE NO.: 10 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: G. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K2O - Mg	FRACTURING	MINERAL	GEOLOGY
135 – 150					Weak	py, cpy, mag	

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Biotite Porphyry Contd.

py - cpy % variable. loc. vfg. MnO very wk.

- sphal. ± loc.
- qtz - py, qtz - cpy vlt ± loc. ± silica.
- py ± cpy ± w/ qtz vlts.
- py ± cpy ±, mag ± hem
- 2nd bio clots ±
- % sulfides lower
- K2O loc ± w/ qtz vlts.
- Strong qtz vlt. w/ py ± cpy ±
- cpy reduced
- wispy 2nd bio ±
- mag ± hem, cpy ±, py ± w/ qtz vlt.
- alt very complex: qtz - K2O - bio - ser - clay/gyp - mag - py - cpy
- 2nd bio patchy

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
			NQ		
3.5	136.3	99		3.0 (138.0)	99
1.0	139.3	98		3.0 (141.0)	98
3.0	142.3	100		3.0 (144.0)	100
3.0	145.4	100		3.0 (147.0)	100
2.4	148.4	100		3.0 (150.0)	100

Section depth marks: 135, 138, 141, 144, 147, 150

HOLE NO.: PC-33
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 597'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Eden

ALTERATION: Silica | Clay | Calcite | K-f - Bio | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

FRACTURING: Weak
MINERAL: Py, Cpy, mag

DESCRIPTIVE GEOLOGY

Section 150 – 165

Biotite Porpyry Contd.

- py > cpy by ~3:1
- 0.2 cm qtz-spec. vlt.
- spotty, thin mag-hem vlts.
- Anhbl? ovoid patches
- zone of strong 2nd bio (patches & vlts), calcite, and qtz-vlts (?), Mag+, py+, cpy−
- gyp vlts+ loc, chl to discp. gen < 0.2 cm. (hem. vlts?)
- strong mag w/ py+, cpy−
- cpy slightly stronger, gen as dissem.
- zones of strong qtz+ vlts to 5 cm, w/ mag+ & chlorite vlts & patches, py+, cpy±
- 1.2 cm qtz+ vlt. w/ py+, cpy ±
- cpy loc. stronger as dissem.
- MoS_2− w/ 0.3 cm. qtz+ vlt.
- loc. mag vlts < 0.1 cm.
- 0.1 cm. mag vlt.
- 0.3 cm. qtz-dolo. vlt. w/ cpy+, py, MoS_2±, sphal±

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
150				NQ		
			100			
	2.0	151.5			3.0	100
153			100		153.0	
	2.0	154.5			3.0	100
156			99		156.0	
	2.0	157.6			3.0	99
159			99		159.0	
	2.6	160.6			3.0	99
162			100		162.0	
	3.2	163.7			3.0	99
165					165.0	

HOLE NO.: PC-33
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 697'

PAGE NO.: 12 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Pahn.

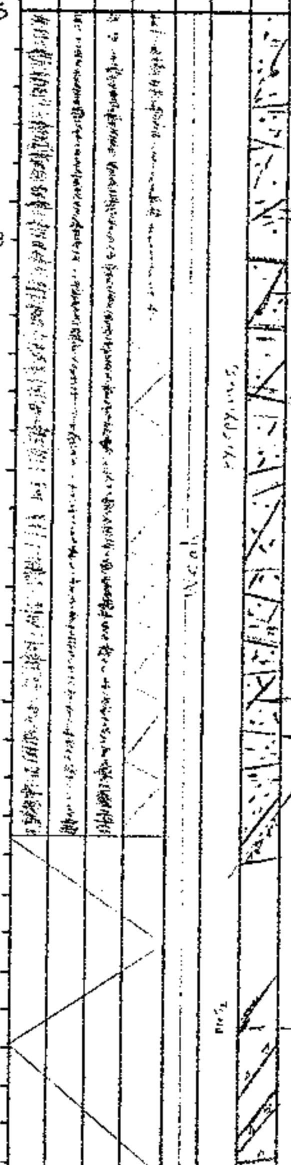
ALTERATION: Silica | Clay | Sericite | K_2O - Bio | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION: 165 – 168 – 171 – 174 – 177 – 180



Biotite Porphyry Cont'd.

- strong loc qtz, qtz-mag vlts.
- cpy± as v.f.g. diss. 0.4cm qtz-py vlt.
- patchy bio.
- strong 0.4cm irreg py vlt / gyp, qtz.
- ph hem stain to clay alt plag.
- strong 0.3cm qtz-cpy-py vlts w/ py and cpy
- steep qtz, qtz-py vlts, gen 0.4cm; cpy± loc.
- mag± hem w/ 0.4cm ... vlt, cpy±
- 0.7cm gyp vlt.

Contact: BP/QFP

175.7 - 180.9m Quartz Feldspar Porphyry - as before. Contact marked by frags of BP, QFP, and py. Plag phenos loc. very bright yel gn, clay. Tr diss. py, mag, spec. Post ore.

- very late min. w/ calcite + stilbite: mag±, cpy?, spec? mag? all along late frac. in QFP
- Loc. narrow shear and bx zones w/ yel-gn clay gouge.

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
		96	NQ		
3.0	166.7			3.0	99
		100		168.5	
2.6	169.8			3.0	100
		100		171.5	
3.4	172.8			4.7	100
		100		175.7	
	175.9				
—		100		—	100
	178.9				

HOLE NO.: PC-33
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: −90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 697'

PAGE NO.: 13 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
180					Wk–Mod	py, cpy, mosz		Quartz Feldspar Porphyry Contd.	
								180.9–212.4 m Biotite Porphyry – as before.	
								0.6 qtz-py vlts w/ cpy, mosz, pu anhy	
								cpy – com.	
								py vlts locally strong [illegible] as [illegible] vlts.	
								dolo w/ qtz vlts.	
183								gyp vlts	
								2nd bio as ovoid patches, loc w/ seri ± cpy stronger.	
								mag w/ qtz vlts.	
186								mosz w/ 0.8cm qtz py vlts	
								2nd bio [illegible]	
								[illegible]	
189								strong qtz stkwk [illegible] diss. by stringers of qtz vlts, cpy strongest as diss. [illegible] vlts [illegible]	
192								strong [illegible] zone w/ gyp, chl and py.	
								py, cpy, sphal w/ strong qtz vlts [illegible], pu anhy	
195									

SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
			NQ	180.9	
	182.4	99			
[illegible]				3.1	99
	185.0	99		184.0	
[illegible]				3.0	98
	188.0	98		187.0	
2.8				3.0	99
	191.1	100		190.0	
2.5				3.0	99
		99		193.0	
3.0	194.2			3.0	99

HOLE NO.: PC-33 | PROJECT: Poplar | PAGE NO.: 14 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm.=1m.

INCLINATION: −90° | BEARING: | TOTAL DEPTH: 697' | LOGGED BY: E. [illegible]

SECTION	ALTERATION: Silica	Clay	Sericite	K₂O - Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
195								strong hairline qtz, mag vlts [illegible] — Biotite Porphyry Contd.					VQ	[illegible]	
								cpy± loc. and diss.				99		196.5	
								2nd bio±, cpy±			197.2				
								[illegible] strong loc. qtz vlts.		3.4				[illegible]	100
198								[illegible] vlts±							
								2nd bio±				100		199.[illegible]	
								cpy vlts± loc.							
								Unusual zone 199.6–199.9 [illegible] w/ bx text± Grades down and forms [illegible] to 2.0 cm [illegible] sphal± [illegible] structure, to strong qtz-dolo zone w/ bx and "taffy" text - strong broken sphal. grains, intergrown py-cpy-sphal and/or [illegible] w/ [illegible], to vuggy chalcedony w/ graded bedding [illegible] frags (to 2.5cm) w/ sphal and py replacing bedding, to zone of bx sphal frags (to 1.5cm) [illegible] qtz-dolo. Margins of [illegible] show [illegible] shear text; cl-ser± cpy± [illegible] split saved.		[illegible]	200.3			[illegible]	100
201				Weak		cov. py, [illegible] sphal		continued [illegible] qtz, py vlts; diss cpy± loc. 2nd bio± loc. [illegible] [illegible] mag vlts.				100		202.[illegible]	
										[illegible]	203.3			[illegible]	100
								mag vlts±							
204								near vert. qtz vlt to 2 cm w/ py± [illegible]							
								strong 2nd bio				100		205.[illegible]	
								[illegible] py± along frac. [illegible]		[illegible]	206.4			[illegible]	99
207															
								parallel mag vlts±				99		208.[illegible]	
								[illegible]							
								2.0 cm qtz vlt w/ py±		[illegible]	209.4			1.45	98
210															

HOLE NO.: PC-33
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: [illegible] BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 697'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bebe

SECTION	ALTERATION: Silica	ALTERATION: Clay	ALTERATION: Sericite	ALTERATION: K₂O - Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
210					Wk	cpy py		Biotite Porphyry contd. cpy + or f.g. diss; 0.8 g/t (?) py center (0.2 m)	3.4		98	NQ	[illegible] 4.95	98
								End Hole at 697' or 212.45 m. End hole in [illegible] and K₂O [illegible]		212.5			212.45	
213														

HOLE NO.: PC-34
COLLAR ELEV.: 909.19 m. GROUND ELEV.: 909.0 m
COORDINATES: N. 6000.34 m. E. 12161.70 m
INCLINATION: -50° BEARING: Due E

PROJECT: Poplar
DATE STARTED: Oct. 18, 1976
DATE FINISHED: Oct. 19, 1976
TOTAL DEPTH: 706' or 215.2 m.

PAGE NO.: 1 OF 15 6136
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: [illegible]

AVE CORE REC'Y / HOLE: 98.97%

SECTION	ALTERATION: Silica	Clay	Sericite	Bio-K₂O	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
0								0–7.5m Overburden				HQ		
								7.5–12.8m. Biotite Porphyry – [illegible] primary text [illegible] [illegible] clay, bio – seri. [illegible] very vuggy w/ intense qtz-py vlts [illegible] widespread. Cpy only trace. MoS₂ only trace. Intensely fractured.	±5	7.3 / 7.7	98 / 96		7.5 / 2.5	95
					Intense	py		Intense qtz-py vlts.					10.0	
								Thin silic. bx at contact.	±5	11.0	97		2.8	97
								Contact BP/And 12.8–15.8 Andesite Dike – [illegible] to [illegible] and [illegible] bk. Porphyritic w/ qtz + plag phenos up to 0.5cm. [illegible] highly variable w/ [illegible] zones and trachytic zones. Alt. [illegible] clay w/ [illegible] qtz and [illegible] post mineral but [illegible] spotty py. [illegible]		14.8			12.8	
15														

HOLE NO.: PC-34
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -45° BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bal[illegible]

SECTION	ALTERATION: Silica	Clay	Sericite	K2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
15								Andesite Dike Cont'd.				99	NQ		
											17.1				
18												100			
								pebble bx. zone w/ py+							
											[illegible]				
21					weak							100			
								[illegible] gyp [illegible] healed pebble bx zone, py+			23.2				
24												100			
								Contact: And/BP 0.1cm gyp [illegible] at contact 25.8–41.2 Biotite Porphyry – as before. [illegible] alt. twin w/ qtz-py vlts. Strong [illegible] [illegible] shear zones w/ frags + gouge, [illegible] Gyp vlts widespread, gen. rather [illegible] and <0.2cm.			26.2			25.8	
27								narrow shear zone w/ qtz, BP frags, cl. strong qtz vlts gen <0.2cm w/ py [illegible]		1.5		98		3.2	98
											29.3			29.0	
30															

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -40°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-[illegible]	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY
30								Biotite Porphyry contd.
								crushed py along frac.
								[illegible] w/py
								narrow frac. zone.
33								Vit[illegible] [illegible] >5 per cent.
								[illegible] of qtz, [illegible] gyp widespread
36						py, [illegible]		partially [illegible] shear zone w/ [illegible]
			weak					[illegible] cm [illegible] gyp vlt.
								gyp vlts
39								crushed py, gyp along healed shear
42								contact: BP/QFP 42.2–[illegible] m. Quartz Feldspar Porphyry = [illegible] grey [illegible] to dk [illegible] variegated. [illegible] (to 0.5 cm) and [illegible] plag [illegible] qtz, [illegible] and plag. [illegible] plag. [illegible] is generally [illegible] but [illegible] has py along [illegible] and shear zones, [illegible] gyp vlts.
								healed frac w/ crushed py [illegible]
45								crushed py on frac.

AVE CORE REC'Y / HOLE:

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
+5		98	NQ	3.0	
	32.3			32.0	
+5		99		3.0	99
	35.4			35.0	
+5		94		3.0	99
	38.4			38.0	
+5		98		3.0	98
	41.4			41.0	
+5		97		3.0	98
	44.5			44.0	

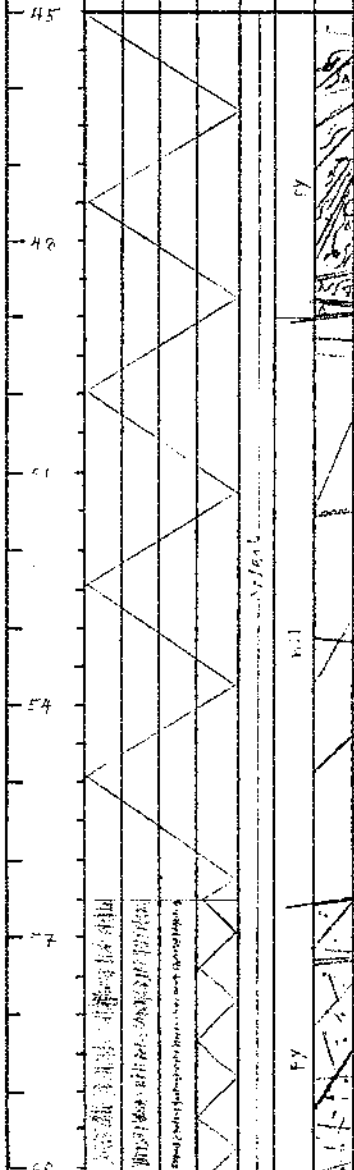
HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E.

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bhu

SECTION	ALTERATION (Silica, Clay, Sericite, K₂O-Bio)	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY



Quartz Feldspar Porphyry Contd.

- 0.8cm gyp vlt.
- vk.blk. w/ crushed py
- strong shearing + bx. ... healed py ...
- bx... + clay at contact

Possible ... change to BP? at ~48-49m ... sheared total.

Contact: QFP/And 48.0-56.5m. Andesite Diss. - as before, ... very fragmental. Bio phenos loc.(primary). Test ... widespread gyp vlts.

Contact: And/BP 56.5-63.2m. Biotite Porphyry - as before. Strong qtz-py-py and gyp vlts. ... bx and gouge zones. BP text gen. destroyed.

- strong qtz-py, py vlts.
- irreg. py vlt. to 1.2cm.
- 0.6cm py vlt.

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
1-2		97	NQ	3.0	4?
				47.0	
	48.5				
4-?				2.0	95
		97		49.0	
	50.6				
		99			
	53.6				
		100			
				56.5	
	56.7				
4-5		100		3.5	100
	59.7				
				60.0	

HOLE NO.: PC-34 | PROJECT: Poplar | PAGE NO.: 5 OF 15

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm.=1m.

INCLINATION: - 60° | BEARING: Due E. | TOTAL DEPTH: 706' | LOGGED BY: E. Bob[illegible]

SECTION	ALTERATION: Silica	Clay	Sericite	K2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
60								0.8cm py vlt w/spec. hem. — Biotite Porphyry [illegible]					NQ		
								[illegible] w/ qtz-py vlt.		+5		97		3.0	17
								0.6cm py vlt.			62.8			63.0	
63						py		zone of intense vlts [illegible] 1.5cm larger vlt offset by [illegible]							
								0.4cm py vlt.				76			
								[illegible] py vlt [illegible] 13 vlts, diss py.		4.5	65.5			4.2	78
66					weak			[illegible] dats. / [illegible] py vlt. / qtz vlt [illegible] / contact: BP/QFP — 67.2 - 80.3 m. Quartz Feldspar Porphyry - as before [illegible] / Bx zone w/ BP frags in QFP				93		67.2	
69								py - along fracs.			68.9				
												78			
										—					
72											71.7				
												93			
75											75.0				

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E.

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

PAGE NO.: 6 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm. = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K₂O-Bi	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.

Quartz Feldspar Porphyry Contd.

Mineral: nil

% Core Recovered: 98; 91; 100; 100; 100
Core Size: NQ
Drilling Interval: 78.0; [illegible]; 84.1; 87.2
Sample Interval: 80.2; 3.8; 84.0; 3.0; 87.0; 3.0; 90.0
% Sulphides: +5; +5; +5
% Rec'y. Samp. Int.: 100; 100; 100

— contact: QFP/BP [illegible] Biotite Porphyry: [illegible] gyp vlts, [illegible]

— 2.0cm. gyp vlt

strong py vlts. [illegible] 0.8cm.

— strong crackled py at contact

— Contact: BP/Arg. [illegible] 19.5m. Argillite — [illegible] sandier zones, [illegible] strong qtz-py vlts, [illegible] gyp vlts ± py vlts [illegible] 0.2cm. or less, [illegible]

— narrow BP zone in arg.

— arg. bx. + healed.

strong qtz, qtz-py, and py vlts, [illegible]

— narrow silic. arg. bx.

— semi-loc. of qtz-py vlts.

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K-Sp-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
90								Argillite Contd.	
								0.1m of alt BP	
								← 3.0 gyp vlt w/ [illegible] py.	
								Minor tongues of alt BP in arg, localized in old structures.	
93						Py, MoS2		← zone of strong py vlts, [illegible], gyp vlts.	
								0.25m of alt BP	
								1.5cm gyp vlt	
								← 0.8cm qtz vlt w/ py [illegible]	
96					Weak			[illegible]	
99								← contact Arg/BP — **99.5–101.8m. Biotite Porphyry** – [illegible] alt & min w/ qtz-py, py vlts. Upper contact very irregular, lower contact mod. sharp w/ gouge and bx arg. Text basically destroyed except for remnant plag grains.	
						Py, MoS2			
102								← contact BP/Arg 0.5cm [illegible] — **101.8–117.5m. Argillite** – as before. [illegible], qtz-py, py vlts. [illegible] in arg than BP as it is a tight rock.	
								← coarse py vlts w/ [illegible]	
								← arg. darker w/ orig. [illegible] color	
105									

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	90.2		NQ		
+5		99		3.0	99
	93.3			93.0	
5		100		3.0	100
	96.7			96.0	
+5		100		3.0	100
	99.4			99.0	
+5		100		3.0	100
	102.4			102.0	
5		99		3.0	99
				105.0	

HOLE NO.: PC-34
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -65°
BEARING: Duo E
PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bohn

SECTION	ALTERATION (Silica / Clay / Sericite / K,Al–Bio)	FRACTURING	MINERAL	COMMENTS / DESCRIPTIVE GEOLOGY
105		Weak		Argillite Contd.
				irreg. offset qtz vlt. w/ py ±
108				sl. darker, orig color
		Mod	Py, mass	loc. narrow bx zones in arg.
111				0.2cm qtz vlt. w/ py +
114				Pol. shear zone (healed), crs-grd py.
		Weak		crushed py along slips
117				contact: Arg/And — 117.5–118.1m Andesite Dike — as before, loc. very trachytic, loc. bleached [illegible] min.
				bx frags of QFP to 12cm in And.
				Contacts: And/Arg/And — 118.1–118.2m Argillite — as before, brecciated, py ±
				118.2–119.6m Andesite Dike — as before.
				contact: And/Arg — 119.6–119.8m Argillite — as before, brecciated, py +
120				contact: Arg/QFP — 119.8–123.0 Quartz Feldspar Porphyry — as before, [illegible] dike.

SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	105.4		NQ		
+5		98		3.0	98
	108.5			108.0	
?		100		3.0	100
	111.5			111.0	
+5		99		3.0	99
	114.6			114.0	
+5		100		3.5	100
	117.6			117.5	
--		100		—	

HOLE NO.: PC-34
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

PAGE NO.: 9 OF 15
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bohu

SECTION	ALTERATION: Silica / Clay / Sericite / K_2O - Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
120					Quartz Feldspar Porphyry Contd.				NQ		
							120.7	100			
123			Py		Contact: QFP/Arg — 123.0-123.8m Argillite = as before; loc. bx. py+						
					Contact: Arg/And — 123.8-130.3m Andesite Dike - as before. Post min. ...		123.7				
					And. loc. trachytic			100			
126							126.8				
		Weak			gyp vlts. widespread						
129								100			
							129.8				
					Contacts: And/Arg/And — 130.3-130.9m Argillite = as before. Bx, py+						
			Py		130.9-134.8m Andesite Dike - as before, Post min.			100			
132							132.9				
								100			
135					Contact: And/Arg — 134.8-137.0m Argillite - as before.						

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Pela

SECTION	ALTERATION (Silica / Clay / Sericite / K_2O-Bio)	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.

DESCRIPTIVE GEOLOGY

135

Argillite Contd.

- qtz-py vlts.
- contact: Arg/And

137.0-139.0m. Andesite Dike - as before.

- > [illegible] bleaching, color changes

138

139.0-151.2m. Biotite Porphyry - as before [illegible] contact. 2nd bio alt very strong [illegible] with strong qtz vlts. [illegible] after plag, [illegible] spotty. Py as vlts & diss, cpy - loc. Bio loc. very dark.

- irreg. [illegible] vlts.
- strong 2nd bio.

141

- [illegible] qtz vlts w/ py, cpy
- [illegible]
- slicks on frac.

144

- 1.5cm qtz-py vlt, [illegible]
- loc. mag vlts. [illegible] w/ qtz vlts.
- cpy loc. stronger

147

- [illegible]

150

FRACTURING (139.0-150): Weak

MINERAL: PY; py, cpy

CORE SIZE: NQ

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	135.7			
		100		
	139.0		139.0	
		100	3.0	100
	142.0		142.0	
.7		100	3.0	100
	145.1		145.0	
2.4		100	3.0	100
	148.1		148.0	
2.7		100	3.0	100

HOLE NO.: PC-34
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K-F-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
150					Weak	py, cpy		Biotite Porphyry Contd.	
								Contact: BP/Arg.	
								151.8-156.5m Argillite - as before. Qtz-py vlts loc, cpy - loc. 2nd bio alt loc.+ Bx. text loc. due to brecciage, veining, movements & additional veining.	
								cpy loc. stronger	
153								zone of strong silica, bx.	
								... cp vlts. much reduced	
								... 1/2 cm irreg qtz vlts, py + cpy	
156								contact: Arg/BP	
								156.5-194.9m Biotite Porphyry - as before. 2nd bio a ... much reduced, ... absent. Qtz-sulfide vlts ±, ... as all phases replacing plag. Ser ± Py ... gen, cpy - but loc. ... diss.	
								up to 2cm irreg qtz-dolo bx vlts w/ sphal +	
159								loc.± qtz vlts, to 4cm, gen < 0.4cm. Cpy gen -, py +	
162						py, cpy, ...			
								0.2m zone of bx, qtz veining w/ sphal ±, py ±, cpy ±, pn ... ±, ... ±, ... ±, dolo ±	
165								± 4cm bx vlt like above zone.	

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y
			NQ	See prev. page 151.0	
	151.2				
2.8		100		3.0	[illegible]
	154.2			154.0	
[illegible]		91		3.0	[illegible]
	157.3			157.0	
2.3		93		3.0	9[illegible]
	160.3			160.0	
[illegible]		100		3.0	[illegible]
	163.4			163.0	
2.4		100		3.0	[illegible]

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E.

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Kin	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
165								Biotite Porphyry Contd.	
								zones of strong qtz-seri, py+, cpy-	
								thin veggy qtz vlt, py±	
168								dolo-pre-cut loc.	
								[illegible] 2nd bio [illegible]	
171								[illegible] qtz vlt w/ [illegible]	
								strong py veining stockw qtz vlt	
		Py cpy mag						mag± [illegible] w/ 2nd bio chl	
								[illegible] w/ 0.3 qtz. vlt. py+	
174									
177								cpy [illegible] considerably, loc⁻, [illegible]	
								drilling problems, ground core	
180								pol py or free.	

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ES MA… C…
		100	NQ	see prev. page / 166.0		
2.5	166.4	96		3.0 / 169.0	95	0.
[illegible]	169.5	97		[illegible] / 172.0	[illegible]	[illegible]
[illegible]	172.5	100		3.0 / 175.0	100	[illegible]
2.5	175.6	94		3.0 / 178.0	95	[illegible]
3.3	178.1	95		3.0	95	[illegible]

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: 60°
BEARING: [illegible]

PROJECT: Pop Br
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	ALTERATION (Si, Clay, Calcite, Ka/Ch-Rb)	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
180					[illegible] Porphyry Contd.	
					Vuggy qtz. vlts. w/ cpy, sphal, dolo ±	
					cpy noticeably stronger as diss, vlt.	
183			py, cpy [illegible]		[illegible] zone of qtz-dolo vlts, py±, cpy±	
					[illegible] somewhat weaker, SiO₂ stronger into [illegible]	
					[illegible]	
186					up to 5cm zone of strong vuggy qtz vlts w/ dolo [illegible] Py±, cpy±, hem stain	
					0.5cm qtz-dolo vlt w/ py±, cpy±, sphal	
189					0.4cm qtz-dolo vlt, py	
					0.2cm qtz vlt. w/ [illegible] ±	
					Contact: PP/Arg. 191.9-215.2m Argillite - as before. Sharp contact [illegible]	
192					zone of strong silica, py±, cpy±	
					strong hem staining	
					1x argil w/ qtz-dolo vlts, py± cpy±, [illegible], [illegible], sphal	

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
		95	HQ	See Prev. Page / 181.0	
2.7	181.7	100		3.0	97
[illegible]	184.7			184.0	
[illegible]		99		3.0	97
				187.0	
3.0	187.8	99		3.0	99
				190.0	
[illegible]	190.6	98		3.0	98
				193.0	
2.5	193.6	100		3.0	99

HOLE NO.: PC-34
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -60°
BEARING: Due E.

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 706'

REF. TO CLAIM CORNER:
SCALE: 1 cm = 1 m.
LOGGED BY: E. B[illegible]

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
195								Argillite Contd.					[illegible]	[illegible] 196.0	
								MoS2+ w/ 0.2cm qtz vlt.				100			
								[illegible] lacy vlts. of qtz-py / py [illegible]			196.7				
198								0cm vuggy qtz-[illegible] py [illegible]		[illegible]		96		3.0	97
						Slick		[illegible] arg. w/ qtz [illegible] py, [illegible]			199.9			199.0	
201								[illegible] seri. [illegible]		3.0		99		3.0	91
								wispy 2nd [illegible] / [illegible] arg.						202.0	
								vuggy qtz vlt. w/ py+			203.0				
204								py vlt [illegible] wk. / sulfides [illegible]		3.0		100		3.0	100
														205.0	
207										[illegible]	206.0			3.0	[illegible]
								0.4cm qtz vlt, py, mag [illegible]				96		208.0	
								[illegible] qtz vlts. [illegible] py		[illegible]	209.1			3.0	77
210								[illegible] qtz vlt w/ py [illegible] mag [illegible]				95			

HOLE NO.: PC-34		PROJECT:	PAGE NO.: 15 OF 15
COLLAR ELEV.:	GROUND ELEV.:	DATE STARTED:	REF. TO CLAIM CORNER:
COORDINATES:	N. E.	DATE FINISHED:	SCALE: 1cm = 1m
INCLINATION: -60°	BEARING: Due E.	TOTAL DEPTH: 706'	LOGGED BY: E. Baba

SECTION	ALTERATION: Silica	Clay	Sericite	K2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
210								Argillite Contd.					NG	See Prev. page 210	
								clay, calcite on steep frac.				98			
								steep qtz vlt to 1.0cm w/ mag + hem, py							
								0.4cm qtz vlt w/ spotty cl-seri.			212.1				
								Qtz(±)-py, py(±), and bio sulfide vlts gen <0.3cm, gen hairline.							
215					Weak	py, cpy, MoS2				1.9		96		42	98
								vlts < 0.2cm							
								End of hole at 215.2 m or 706 ft.			215.2			215.2	
216								[illegible]							

HOLE NO.: PC 32
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION:
BEARING:

PROJECT: POPLAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

REF. TO CLAIM CORNER:
SCALE:
LOGGED BY:

SECTION	ALTERATION: Silicification	ALTERATION: Kaolinization	ALTERATION: Sericitization	ALTERATION: Biotite/Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
114		mod to stg.						Qtz. sm & slip. / hi-cly gouge / wk. slip on qtz (feat) vnl't (?) sm. / 2 parallel slip / 1" vuggy creamy qtz / Py + ccp(?) / wk. fault (?) gouge / 2" smoky qtz · 270 · trace MoS_2 / mod. gougy fault (?)	**Feldspar Porphyry : Cont.**	5%		97		114	97
116															
118				wk to U.I	strong			zone of parallel gougy slips / 1cm smoky qtz w/ hi-cly envelope / hi-cly gouge. slip.						117	98
120		strong	Rd.					1cm. smoky qtz / Py + ccp(?) sm.		7%			NQ WL	120	100
122	strong														
124								patches of brownish fels. bio. in hi-sil. groundmass. / tight gougy fract.		5%				123	100
126		wk. Mod		wk to U.I	mod. weak			qtz network 15-20 per foot / wk. slip / Smoky qtz. vn. w/ pink border				99		126	99
128														129	

HOLE NO.: PC 32 | PROJECT: HORLAK | PAGE NO.: 8 OF 16
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE:
INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY:

ALTERATION (Silicification, Kaolinization, Sericitization, Biotite/Kspar) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % RECY SAMP INT

DESCRIPTIVE GEOLOGY

Feldspar Porphyry : Cont

Section 129–143

- 1 mm py. vnl.
- 10m. smoky qtz. dry envelope
- wk. clip
- 1cm. py
- gouge 1"
- irreg. 1" smoky qtz. trace MoS_2
- silica fragments in so gougy friable zone.
- gouge w/ black powdered sulfide ?
- flat lying cloudy qtz
- 3 mm. py. between smoky qtz
- 1" smoky qtz. sm. w/ pink envelope
- py+ cp(+) vnl.
- sl. limy wall qtz. sm.
- py vl.
- wk. slip hi-cly gouge
- med. slip on 1 cm py. 9m.
- hairline qtz. str. w/ diss. py. w/ pinkish stains (Kspar?)
- creamy gougy clip w/ grounded sulfide py+
- med. slip. sl frag. walls
- 1cm mainly. py veinlets.

Note at 131.5 to 144 the Porphyritic texture again, is obliterated by strong (patches) Kaolinization.

Alteration: Silicification strong; Kaolinization strong; Sericitization Mod.; Biotite/Kspar wk. – nil
Fracturing: strong mainly on slips
Mineral: py, mainly

Sulphides: 4%, 5%
% Core recovered: 99, 98, 98, 97, 99
Core size: NQ

HOLE NO.: PC 32.
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: BEARING:

PROJECT: POPLAR
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

PAGE NO.: 7 OF 16
REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: M.R.G.

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotization/Zones	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP. INT.
144	strong	Intense	Mod	Wk. – Nil	Strong to Moderate			Feldspar. Porphyry : Cont.			100	NQ	144	
								py in qtz. vnlts.						
								Mod. slips w/ grounded blk. sulfide – gouge		145				99
146		strong	strong					zone of intense kaolinization porph. tex. obliterated by clay altn.						
								fragmental section along multiple slips. ; fragments mainly qtz.	5 to 6%				147	
148								irregularly shape qtz vn. w/ hi. clay envelope		148.1				99
								1cm. smoky qtz						
								a series of sub-parallel weak. slip.						
150								Fault mod. strong; w/angular sil. frags. blk. clay gouge w/ grounded sulfide pseudo-Bxa. texture.					150	
								Py. blob (1cm.)						98
152								wk. slip						
								1cm. smoky qtz w/ ser.(?) clay envelope						
								2mm py + cp(?) vnl.					153	
								1cm. cloudy qtz. vnl.						
154			Mod					qtz. vnl. 1cm.						98
								gougy slip						
								a small (1") frags. of qtz.						
156		strong						2" creamy white qtz. vn., vuggy tex.					156	
								hairline py.	7%					
								cl. limy vuggy white qtz.		157.3				99
158								intense qtz. veining very vuggy & fragmental					159	

Sample intervals: 144–147 (4/1/78 – 12/1/78), 150–153 (3/1/78), 156–159 (8/10/78)

HOLE NO.: PC 32 | PROJECT: [illegible] | PAGE NO.: 10 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: [illegible]

SECTION	ALTERATION: Silicification	Kaolinization	Pyritization	Biotite/Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
159	Strong	Strong	Mod	Nil		Au		vuggy qtz. vn. trace MoS_2	5 tr 6%		100		159	
								1cm. qtz. sm. — Feldspar Porphyry: Cont.						98
160					Strong			vuggy qtz. trace MoS_2, hi: cly envelope	4%					
						trace MoS_2		py. blob, py + cp (?) s.m.	tr				162	
162								euhed. crs. py vn in vuggy qtz.						97
								blk. powdery slip; gougy.						
								hi. cly gouge; slip	3%					
164		Strong [illegible]		weak. fine gr. (Bi + Bio)	Mod. to	wk. [illegible]		qtz. veinlets. w/ cly + ser envelope.					165	
								1cm. sl. limy qtz. — Note! 164-173 - core is partially bleach to white, presumably due to strong sericitization & kaolinization.				NQ		78
166						Py +		2-2.5 mm. qtz. stringers on tight fract., surrounded w/ white fine-gr. ser?						
								fine-gr. py. sm.					168	
168	strong	Mode						hi. cly gougy fault w/ grounded black sulfide.	5%					98
								wk. flat slip						
								gouge 1cm.						
170			Mod.					2 cm. limy qtz.					171	
								hi. cly slip; crumbly gouge						97
172								white qtz veinlets; w/ vugs. trace MoS_2						
173								py.					174	

HOLE NO.: PC 32
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION:
BEARING:

PROJECT: EXPO
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH:

PAGE NO.: 11 OF 16
REF. TO CLAIM CORNER:
SCALE:
LOGGED BY: E.K.A.

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotite/K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
174								qtz. frags in hi. cly. matrix; vuggy qtz.; hi-cly gouge; 1" py. knot	5		98		174	98
								292-186 Feldspar - Porphyry: Cont.						
176		Mod.		KK				py + ccp vnl.; qtz w/ py.; py strong (black) gougy fault w/ 1" ccp. vnl.						
						ccp		1" patch of blk. sec. biotite					177	
178		strong			Strong			qtz. vn on fault footwall; qtz frags.; gougy slp; py vnl. w/ trace ccp; Qtz. stc.	4%					98
180								wk. slip, limy gouge	tr				180	
	strong		Moderate	Mod.				Some (1%) qtz eyes phenos. appear in sil. matrix; Bio 3%; ctct grad.						
								180.5-186 fine gr. blk felty biotite occuring in mod. (10%) amount; Quartz eyes ± 5% and plag. feldspar ± 35% in fairly SiO_2 rich groundmass. (Q.F.B.P equivalent.)	5%			NQ wl		97
182		strong						smoky qtz vnl. w/ felty brown bio on walls						
								wk. slip					183	
184				strong		ccp		py-ccp in smoky qtz. MoS_2 trace						97
		Mod.						wk. slip						
186	Mod.							ctc. gradational; py + ccp am.					186	
		wk.	mod. stg.			ccp		1-1% qtz eyes phenos in sil. gdmss.						98
188								py ccp am.						
								pinkish qtz. vn. gougy wall					189	

HOLE NO.: PC-32

COLLAR ELEV.: GROUND ELEV.:

COORDINATES: N. E.

INCLINATION: BEARING:

PROJECT: POLAR

DATE STARTED:

DATE FINISHED:

TOTAL DEPTH:

REF. TO CLAIM CORNER:

SCALE:

LOGGED BY: F.R.C.

ALTERATION: Silicification | Kaolinization | Sericitization | Biotite/K-spar

FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT.

DESCRIPTIVE GEOLOGY

Section: 189 – 191 – 193 – 195 – 197 – 199 – 201 – 203 – 205

Alteration: Strong groundmass + qtz. flooding —*— strong qtz vnlgs consisting Bio; Mod.; Strong; Mod.; Strong; Strong; Mod.; Mod.; Strong pervasive plus flooding on groundmass; Strong Biotite plus flooding (Strong Biotite vnlgs).

Fracturing: Strong vngs.

Mineral: Py⁺ cp⁻ Mo

- pinkish qtz on slip.
- py⁺ cp⁻ in qtz vn; 212-186: Feldspar-Biotite Porph.
- 1" biot. knot.
- qtz. network. tr. MoS_2
- wk. slip
- smoky qtz network w/ brown biotite envelope. loc. vuggy qtz.
- biotitic slip.; gouge w/ ser.⁺
- very prom. biotite vnlts plus those on groundmass.
- 1" smoky qtz vn. w/ good MoS_2 sericitized walls.
- vuggy - creamy qtz. vn. 1" cl. lny
- pseudo. Bxa tex; qtz. frags w/ cly. ser. matrix
- well develop feldspar (ser. + Kaol.), second. bio⁺ phenos Qtz eyes⁻
- waxy green ser. knots. (5%)
- py⁺ dr. cp^(?)
- wk. slip
- tr. MoS_2 in qtz vn. footwall slip.
- py⁺ tr. MoS_2 in smoky qtz. vn.

from 186-216: the porphyritic texture of the rock is completely erradicated by Alt'n. (bio⁺ cly⁺ ser.) flooding in sil. groundmass rock presumably altered F.B.P. Quartz eyes rare (1-5% loc).

Sulphides: 3% – 4% ; 1% ; 5

% Core recovered: 100

Core size: NQ

Sample interval: 189; CEL/1184; CEL/1185; 195; CEL/1186; 201; CEL/1187; 205

% Rec'y samp. int.: 99; 99; 98; 99; 100

HOLE NO.: PC-32 | PROJECT: POPLAR | PAGE NO.: 13 OF 16

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE:

INCLINATION: | BEARING: | TOTAL DEPTH: | LOGGED BY: H.K.A.

SECTION	ALTERATION: Silicificat'n	Kaolinizat'n	Sericitizat'n	Biotite/Kspar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
	Strong Qtz flooding + sil. gradness	Wk. Mod	Mod	Strong patches + flood & sec. patchy Bio	Strong to Mod.	Py. Ccp. Tr MoS2		trace MoS2 in 1cm. smoky qtz.				100		204	99
								qtz flooding in sil matrix.							
								186 - 222 Feldspar Biotite Porph. Cont.							
								trace MoS2 1cm. qtz sm tr. Bio, ser+ on walls		4	206			207	
								qtz. sm. 90°							
								py. ccp sm in vuggy qtz.							98
								1" smoky qtz. trace MoS2							
								vuggy smoky qtz.							
								gougy qtz. vn. wall						210	
								gougy qtz. vnl. tr. MoS2		5%					98
								loc. bio-ser. in slip zone Some pinkish K spar(?) stains							
								py ccp sm.							
								qtz str. w/ ser. biot. envelope				93		213	
								py+ ccp(?) sm.							99
								Zone of intense brownish biotite patches. qtz. sm. surrounded w/ bio.							
								parallel qtz. sm.							
	Strg	Mod		Mod. strong				pinkish (k. spar) envelope in Qtz. sm.						216	
								well developed bi- cly altred; ser.(?) creamy white feldspar phenos set on sil. biotitized grdmass; good books of primary(?) biot.		2%					99
	Mod.			Mod				contact sharp.			219			219	
								(Q.F.B. Porp.) Quartz eyes well preserved (± 10%)							
								Py.							

DESCRIPTIVE GEOLOGY

HOLE NO.: PC 32		PROJECT: POPLAR	PAGE NO.: 14 OF 16
COLLAR ELEV.:	GROUND ELEV.:	DATE STARTED:	REF. TO CLAIM CORNER:
COORDINATES:	N. E.	DATE FINISHED:	SCALE:
INCLINATION:	BEARING:	TOTAL DEPTH:	LOGGED BY: F.R.A.

SECTION	ALTERATION: Silicification	Kaolinization	Sericitization	Biotization / K-spar	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
219–235	strng. … strng.	strg. … Mod. … strng.	Mod.	mod. strg. … Intense in Sections … Strong … Mod.	strong					4%	221, 224, 227, 230, 233	100, 99, 99, 95, 100, 96	NQ	219, 222, 225, 228, 231, 234	100, 99, 98, 99, 100

Feldspar - Biotite - Quartz(-) - Porph. Cont.

- qtz(-) eyes phenos
- 1" k-spar sm.
- qtz. vn. w/ k-spar envelope
- qtz eyes flooding in sil. matrix poor feldspar phenos.
- py - ccp vnl.
- K-spar sm.
- c/c. grad. obscured by silf'n
- This section is pred. primary & sec. biotite phenos in sil. matrix. locally, wk. K-spar/or plag. phenos. disso ccp+... This section also dark grey colour due to fine gr. sec. bio+.
- c/c. grad. obscured by silf'n.
- smoky qtz w/ K-spar envelope
- qtz. "eyes"
- wk. slip, wk gouge
- frequent shected fract.
- smoky qtz tr. MoS2
- py+ ccp- surrounded w/ chy. ser.
- gougy slip.
- qtz vnlts parallel core frac MoS2
- qtz. frags pseudo-Bxa.
- grounded blk. sulfide mixed w/ ser. gouge.
- 1cm. fine gr. py.
- H - chy - ser+

HOLE NO.: PC-27
COLLAR ELEV.: 911.05m GROUND ELEV.: 910.90m
COORDINATES: N. 5904.51m E. 11436.54m
INCLINATION: -70° BEARING:

PROJECT: Poplar
DATE STARTED: Sept. 28, 1976
DATE FINISHED: Sept. 30, 1976
TOTAL DEPTH: 997' or 303.9 m.

REF. TO CLAIM CORNER:
SCALE: 1 cm = 1 m
LOGGED BY: E. Fahn

6136

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O - Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	Total % SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
0m														
								Overburden						
3														
6										7.3				
					strong			contact flat near contact; 7.55 — hem on fracs.; 8.6 and oxide on fracs.		7.9	90%	NQ	7.55	
								Argillite – 7.55–13.9m – med. gybr, brgy to dk gybk; vfg, weakly loc. mg text; loc. well frac and broken. Loc.$^+$ qtz-seri alt as flood w/ gen thin qtz vlts (<0.5cm); chl$^+$ as access alt; 2nd bio as wispy vlts and loc. pervasive flood. Py$^+$ as diss and vlts to 0.11 cm; Cpy$^+$ gen as fg. diss. Loc. CO_3 and kaol along fracs.						
9								vuggy 0.7cm ddo vlts w/ cp.py; diss min spotty but loc.$^+$; rk has been well broken loc. and healed.	3.2				2.45m	94
					med	py/cpy, MoS_2					95		10.0	
								$MoS_2$$^+$ w/ qtz vlts, wispy bio vlts		11.1				
12					weak			thin qtz vlts loc. w/ MoS_2 ±; argillite finer grained, more dense toward contact.	4.0		64		3m	80
								contact at −70°, very sharp		12.5			13.0	
					med	cpy, py, MoS_2		13.9 — **Biotite Porphyry – 13.9–19.2m** – ltgy, ltgn gy, to med brgy, to dk gybk; predominant porph text but loc. finer grained due to alt wiping out text. Well fract. Vlts, patches, + floods of 2nd bio, w/ assoc. chl; loc. dev. of feldspar phenos; qtz-seri alteration vlts and wispy flood into f.p. rk loc. vuggy indicating infiltrated metamorphism. Cpy/MoS_2 str... [illegible]	4.7		70		3m	90
15								py, MoS_2 loc.$^+$; rk loc. blk w/ bio.						

HOLE NO.: PC-27
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 997'

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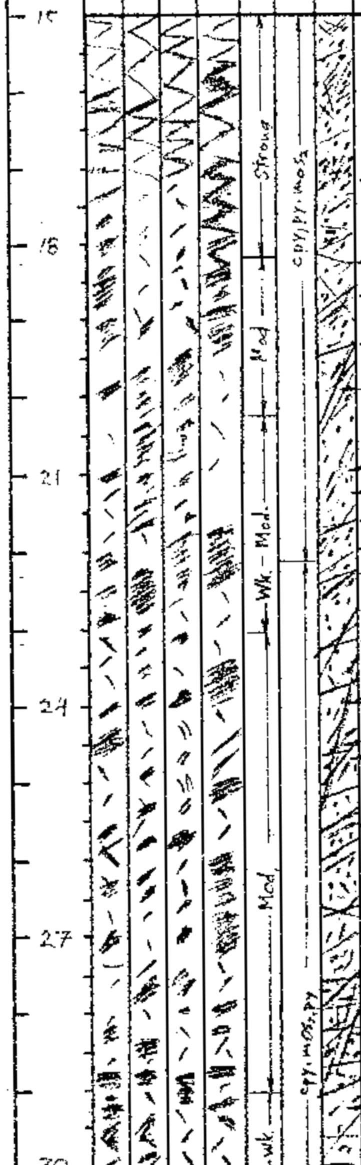
REF. TO CLAIM CORNER:
SCALE: 1 cm = 1 m
LOGGED BY: E. Bohn

COMMENTS:

AVE CORE REC'Y / HOLE



DESCRIPTIVE GEOLOGY

Bio. Porph. Contd.

cpy, py loc. w/ mafics.

loc. 0.2cm qtz-CO3 vlts, vuggy, w/ py+, cpy+, MoS2−

wisps + flecks of 2nd bio+

cpy+ loc. on young frac.

ca. 1 m. F.P. tongue

cl− along fracs.

strong frac.

BP/FP grad. contact

Loc. arg of plag. phenos

±0.2cm py vlts. along frac. w/ gouge, slicks; also w/ qtz.

2cm qtz vlt, vuggy w/ dol. xls in vugs; MoS2+ w/ qtz.

0.2cm qtz-cpy vlt. offsets 0.4cm barren qtz vlt.

FP/BP grad. contact.

BP w/ cpy+

0.5 cm. qtz-MoS2 vlt w/ 0.5 to 2cm flanking peg vlt. (c.g.)

BP/FP contact – grad

FP/BP contact – grad

CO3 along steep frac.

0.8cm qtz vlt w/ MoS2+, cpy±

cl. on frac.

1cm qtz vlt. w/ 1cm seri halo. py+, cpy±

diss. cpy vfg-cg.

Loc. bright gn patches chl. w/ seri

MoS2− w/ thin qtz vlts.

CO3 on frac, cl−

wispy bio vlts.

zone of mod qtz, vlts cpy−

0.7cm qtz vlt, seri− w/ MoS2+

cl, CO3 along frac.

14.2 – 21.6 — Feldspar Porphyry – Lt. pk gy to med gy gn. Pred. m.g. porph text. w/ up to 0.5cm plag phenos loc. alt to f.g. seri and kaol, poss. w/ v.f.g chl. Grdmass gen v.f.g., w/ pred plag, few mafics. K2O gen nil. Loc. qtz vlts gen < 0.3cm. w/ cpy±, MoS2 loc.+. Diss cpy+ in FP. Loc. patchy chl to 0.7cm. Rk. gen less silicified than BP. Cpy gen > py.

21.6 – 22.3 — Biotite Porph – as before. Loc.+ cpy as diss. Porph text. loc. well devel.

22.3 – 23.2 — Felspar Porph. – as before. Cpy±, py+.

23.2 – 31.5 — Biotite Porph. – cpy loc. v.f.g., diss MoS2 loc. Porph text v.f.g. seri in matrix of 2nd. bio alt. BP Mod. porph text loc.

Mu loc. after mafics

Bio content varies considerably

Loc. med. gn blebs of chl, seri.

27–31m. MoS2 loc.+

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP. INT.
	15.8	90	NQ	14.0	
3.5	17.4	84		3.0	87
3.0	20.4	90		17.0 / 3.0	94
3.6	23.5	97		20.0 / 3.0	13
4.0	26.5	99		25.0 / 3.0	98
3.5	29.6	98		28.0 / 3.0	97

HOLE NO.: PC-27
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PROJECT: Poplar
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LOGGED BY: E. Bohn

Columns: SECTION | ALTERATION (Silica, Clay, Sericite, K2O-Bio) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP. INT.

Section: 30 – 45

Fracturing: Wk (30–33); Mod (33–34.5); Wk (34.5–36.5); Mod (36.5–39); Wk (40–43); Mod (43–45)

Mineral: Cpy, MoS2, Py (31–34); Cpy loc. (42–45)

DESCRIPTIVE GEOLOGY

Comments (keyed to depth):

- zone where BP has been sheared and rehealed. Gouge text w/ much clay.
- 0.2cm qtz-seri vlt that change to bio w/ depth.
- sheared + healed qtz vlt w/ cpy, mos2.
- Contact BP/FP
- 0.3m vuggy, coarse calcite bx vn. w/ bp. frags.
- text loc. sheared
- thin qtz vlts w/ cpy+ mos2±
- 0.5cm qtz vlt w/ mos2+ on flanks
- zone of silic. w/ vlts to 1.5cm w/ seri halos. Py+ in up to 0.3cm vlts; Cpy0, MoS2+
- Contact: FP/BP – FP intrusive bx; contact grad + poorly def.
- Loc. crushed + smeared sulfides on open + healed fracs.
- CO3+, cl- along fracs.
- 0.5cm qtz-calcite vlt, vuggy
- bio. clots
- hybrid zone, K2O alt; loc. FP text.
- vague contact.
- slides of crushed sulf.
- mod. frax.
- loc. 2nd K2O
- MoS2+, cpy- w/ qtz vlts.
- cpy+ as diss.
- contact BP/FP – mixing of texts.
- MoS2+ w/ qtz vlts.
- Contact FP/BP irreg.
- 0.1 cpy vlt.
- 0.2 qtz vlt w/ 0.7cm K2O halo; cpy-, mos2-
- Loc.+ mixing of texts.
- 1.5cm qtz-K2O vlt w/ chl-, py-, cpy±, mos2

Bio. Porph contd.

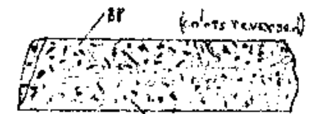
31.7m to 34.0m Feldspar Porphyry – sim. to earlier intervals except text poor near calcite vein. Loc. bleaching + seri alt. Text gets stronger near 33 m. but some SiO2 flooding. Cpy+, mos2+ as diss and loc. vlts. Contact appears to be at 31.7 but best text change is at 32.6m. Spotty CO3 on fracs.

34.0 – 37.6m Biotite Porphyry – Feldspar Porphyry Intrusive Breccia – mottled and speckled med gn gy, bl gy to dk bk gy. Matrix of BP w/ sr to ang. frags of FP up to 3cm that loc. may have sharp boundaries w/ matrix but gen. are subtle and gradational. Alt. of matrix pred. 2nd bio, w/ loc. qtz vlts. gen < 0.2cm, and patchy seri, Cl-, chl-. Frags alt to strong seri. 2nd bio vlts loc. cut + offset frags. Diss. cpy±, py-, mos2- gen but loc.+ w/ qtz vlts. Lower contact w/ BP is grad. w/ some assimilated and hybridized rk. types. 2nd K2O wormy and vlt ~ 37-37.6m. w/ qtz core-K2O halos loc.

37.6 – 40.2m B.P. – as before w/ loc. zones of 2nd K2O; plag phenos well alt to cl. Cpy+ loc.

40.2 – 41.8 m. Feldspar Porphyry – as before except loc. mod. silicified. Upper contact w/ BP shows bx text; lower contact is vague and hybridized. Py+, Cpy+ loc. w/ mos2± w/ qtz vlts. Patchy K2O.

41.8 – 45.0 m. Biotite Porphyry – as before except loc. hybridized and alt. by qtz-K2O which gives rock "FP" text; appears almost mixed – BP–FP – unusual. Cpy+ loc. as diss and vlts.



sketch at 44.8m

Sample Interval (m)	% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Length	% Rec'y Samp. Int.
31.0 – 34.0	4.0	32.6	97	NQ	3.0	98
34.0 – 37.0	4.3	35.7	99		3.0	99
37.0 – 40.0	4.5	38.7	99		3.0	98
40.0 – 43.0	3.8	41.8	98		3.0	98
43.0 –	4.0	44.8	98		3.0	98

HOLE NO.: PC-27
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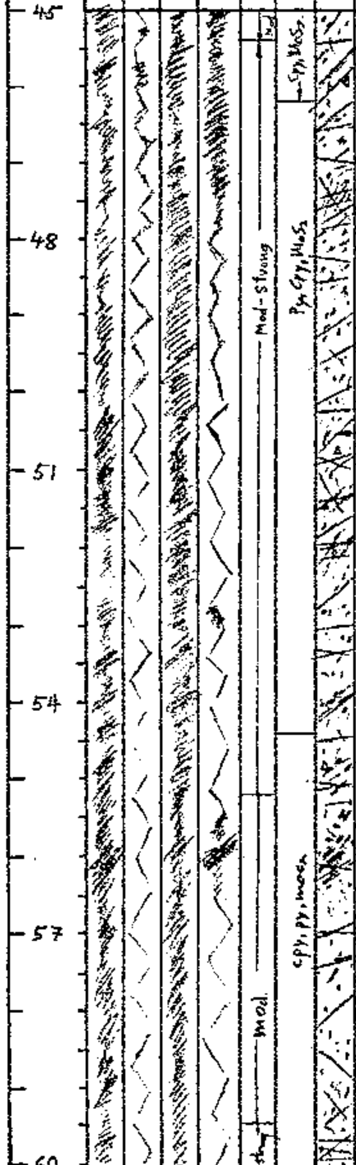
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 997'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bohm

SECTION	ALTERATION: Silica	Clay	Sericite	K2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE



- cpy+, py increase
- 0.2cm py vlt. w/ 0.7cm qtz-seri halos
- Contact BP/Argillite
- Thin qtz vlt w/ py+, cpy±
- much broken ground
- vuggy qtz-CO3 vlt, cpy−
- Loc. thin qtz vlts.
- Loc. intense hairline qtz vlts.
- 0.3cm py vlt w/ qtz.
- mos2−
- 2.3 cm qtz-seri vlt w/ bx text, rolled qtz eyes; cpy±, py+
- vugg qtz vlts that cut cpy min frags of arg.
- Diss. cpy+, vfg.
- zone of wispy 2nd bio, qtz, seri, 2nd hem; cpy±, py+, mag+, mos2−. Net text.
- Loc. qtz vlts.+
- smeared sulfides along frac.
- MoS2+ loc., vfg.
- patchy text
- mos2−

Bio. Porph. Contd. Similar hybridization of rk types.

458-738' Argillite – as before. Zones of strong frax. Upper contact w/ BP has bx frags of arg. in BP. Loc.+ seri vfg. Silica±, and gen py > cpy. Sheared text loc.+ MoS2 gen− except loc. w/ qtz vlt. Loc. bx text.

Lighter color – increase in seri. Loc. well broken but gen flat fracs.

Loc.+ thin qtz vlts. (<0.2cm) w/ cpy±, py±, mos2−
Rock text loc. shows much breakage and healing

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
			NQ	46.0	
2.5	47.8	99		3.0	99
				49.0	
2.0	50.9	99		3.0	99
				52.0	
2.4	53.9	99		3.0	99
				55.0	
3.2	57.0	100		3.0	100
				58.0	
2.5	60.0	100		3.0	98

HOLE NO.: PC-17 | PROJECT: Poplar | PAGE NO.: 5 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m

INCLINATION: -90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y.
60					mod	py, cpy, MoS_2		DESCRIPTIVE GEOLOGY					NQ	61.0	
								0.5cm $qtz_{\frac{1}{2}}$-seri vlt cpy⁻, MoS_2 t, py⁻							
								Argillite Contd. Loc., very spotty 2nd bio.							
								Loc. $qtz_{\frac{1}{8}}$-seri vlts. w/ cpy t, py t, MoS_2⁻							
								2 narrow bx zones w/ SiO_2; upper zone w/ ang. frags, lower one w/ sm frags.		3.0		96		2.0	96
63					wk						63.1			63.0	
								0.6cm $qtz_{\frac{1}{3}}$ vlt.						3.0	90
								vuggy 0.5cm $qtz_{\frac{1}{3}}$ vlt w/ py t, cpy⁻ MoS_2⁻		2.5		90			
								0.1cm mag. vlts w/ cpy⁻, py°			66.1			66.0	
								Loc. stronger 2nd bio.						3.0	98
								cpy t loc.							
								0.2 cm. $qtz_{\frac{1}{3}}$ vlt. w/ MoS_2 t, cpy⁻		3.3		98			
								MoS_2 t w/ 0.2cm $qtz_{\frac{1}{3}}$ vlts. cpy⁻, py⁻							
69								0.2cm py vlt.			69.2			69.0	
								Seri alt. loc. t and v fg. Much seri may be alt. primary micaceous min. rather than totally introduced seri.						3.0	99
								0.3cm vuggy $qtz_{\frac{1}{3}}$ vlt w/ bx arg.		2.8		99			
								0.2cm $qtz_{\frac{1}{3}}$ vlt w/ py t, cpy t, MoS_2 t; thin seri halo!							
								cpy, py gen. v fg. loc. ex. fg.							
72								Arg. text. loc. appears much broken and recleaved ?? m to contact - arg is loc. coarser grained.			72.2			72.0	
								irreg 0.2cm $qtz_{\frac{1}{3}}$-CO_3 vlt.							
								Loc. hairline $qtz_{\frac{1}{3}}$ vlts w/ cpy t, py⁻, MoS_2⁻							
								0.3cm $qtz_{\frac{1}{3}}$-dolo vlt w/ cpy t as blebs py⁻							
								~55° contact t arg/FP ?3.85 - 84.1m						3.0	96
								Feldspar Porphyry - as before. Arg/FP contact mod. sharp w/ a few frags of arg. in FP. Plag phenos loc. clay + seri alt; seri alt loc. pervasive in groups. Loc. 2nd bio vlts. Chl patchy after bio. $qtz_{\frac{1}{3}}$ vlts loc. t. cpy t, py t as gen fg. to v.g. diss w/ loc. vlts, MoS_2 t w/ $qtz_{\frac{1}{3}}$ vlts., loc. mac diss.		3.2		96			
								sulfide content noticeably higher; disc cpy t, py t							
								irreg $qtz_{\frac{1}{3}}$ vlts. to 0.5cm w/ MoS_2 t, py⁻							
75					wk-mod									75.0	

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SCALE: 1cm = 1m
LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
75 – 90					wk-mod (75–77); strong (77–79); mod (79–80); strong (80–84); wk (84–90)	cpy, py, MoS_2			

DESCRIPTIVE GEOLOGY

Feldspar Porphyry Contd.

Diss cpy, py loc. very strong, up to ~7%, MoS_2 to 0.5% loc.
Sericite tends to be gn, rather than colorless as in [illegible]; variable
Note: MoS_2 loc. rims cpy grains
Frax. loc. very strong but appears to be partly due to forcing of drill bit.
Rock loc. hard and flooded w/ SiO_2.

84.1 – 97.6m Biotite Porphyry? – Very subtle text change through broken zone. Probable mixing of rock types. BP does not have prev. appearance; lighter color w/ [illegible] of plag. Plag f-m.g. and closer packed than FP. Rk. loc. sheared and healed; alt spotty and erratic. cpy+, mos₂+, py+ loc.

MoS_2+ loc. as hairline vlts, w/ qtz-seri vlts, and rimming cpy.

Comments (at depth, top to bottom):
- hairline 2nd bio vlts.
- 0.5–1.0cm qtz vlt w/ c.g. cpy±
- cpy+ w/ irreg. qtz vlt.
- qtz vlts loc. vuggy
- mos₂± in broken rk.
- very vuggy 0.4 qtz vlt w/ cpy+ py+ and dull gy mag plates P— hem
- cpy+ py+ mos₂± as diss. and on fracs of much broken rk.
- gdmass loc. goes from med. gn-brish gy, to lt. gy gn.
- med-dk gn seri blotches, chl?
- rock loc. very vuggy
- wormy qtz – seri vlts to 1.5cm.
- rock much broken
- c.g. cpy xls on open frac. Contact: approx FP/BP
- Loc. strong qtz-seri flooding
- 0.5cm qtz-seri vlt. w/ cpy, py
- mos₂+ w/ 0.2cm qtz-seri vlts
- CO_3 along frac.
- 0.1cm cpy vlt w/ qtz-seri vlt.
- cg. diss. py+ cpy±
- slicks, smeared sulfides, CO_3
- qtz, CO_3 frac. filling
- 3cm vuggy qtz-seri vlt. w/ py+ mos₂±, cpy
- Vuggy qtz-CO_3 bx vlts: MoS_2+, cpy, py, sphalerite+, xls in vugs, gal(?)±

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	75.3		NQ		
4.2		97		3.0 (75.0–78.0)	97
	78.3			78.0	
5.0		86		3.0 (78.0–81.0)	87
	81.4			81.0	
4.5		89		3.0 (81.0–84.0)	88
	83.5	87		84.0	
	84.4				
3.7		97		3.0 (84.0–87.0)	96
	87.5			87.0	
3.0		95		3.0 (87.0–90.0)	95
				90.0	

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 7 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m

INCLINATION: −90 | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohm

ALTERATION: Silica | clay | Sericite | K_2O - Bio | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT
90		90.5		NQ		
	2.4		98		3.0	97
93		93.6			93.0	
	3.2		100		3.0	99
96		96.7			96.0	
	4.0		97		3.0	98
99		99.7			99.0	
	4.4		98		3.0	98
102		103.7			102.0	
	4.0		99		3.0	95
105					105.0	

0.5cm qtz_3-seri vlt, bio°, $py^{\pm}$, cpy^{-}, $mos_2{}^{\pm}$ sphal± Biotite Porphyry Contd.
steep frac. w/ rehealed qtz_3; slicks. polished sulfides.

91.3 - 95.6m — zone of loc+ shearing that has been healed w/ qtz_3, seri, +CO_3 vlts. VFA loc. shear offset and rotation.

0.3 - 1.0 cm qtz_3 vlts. w/ $mos_2{}^{\pm}$, $py^{\pm}$, $cpy^{\pm}$

random qtz_3 vlts, 1x BP loc. $Py^{\pm}$, $cpy^{\pm}$, $mos_2{}^{-}$

diss $cpy^{\pm}$, $py^{\pm}$

gen. qtz_3-seri vlts.

c. qtz_3 vlt. w/ seri halo.

1.1cm qtz_3 vlt. w/ $py^{\pm}$ cpy^{-} $mos_2{}^{\pm}$

rk. lighter in color

strong steep qtz_3 vlts. to 0.7cm. $cpy^{\pm}$, $mos_2{}^{\pm}$, $py^{\pm}$

Contact: BP/FP

97.6 - 101.8 m — Feldspar Porphyry — as before. Contact is marked by 2.1 cm qtz_3 vlt w/ minor seri; $cpy^{\pm}$, $py^{\pm}$. contact mod sharp but minor mixing of texts above it. Min in FP loc. v/ coarse cg. w/ vuggy vlts. Groundmass of FP loc. appears well silicified.

steep 0.3cm qtz_3 vlt. w/ cpy^{+} (c.g.), $mos_2{}^{\pm}$ loc.

0.1cm vuggy qtz_3 vlt: $mos_2{}^{++}$, cpy^{+}

contact: FP/BP

101.8 - 110.0m Biotite Porphyry — as before. 1 loc. mod. plag arg. qtz_3-seri alt+ loc. FP/BP contact again is chac. by qtz_3-seri vlt., but still subtle text mixing. Mn_{ox}+ loc. Rock loc. hard even though arg. because of qtz_3 vlts. ffloat.

diss. cpy^{+}, py^{-}

cp. seri w/ qtz_3 along frac., py^{+}

$mos_2{}^{+}$ loc.

cpy^{+} loc.

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PAGE NO.: 8 OF 21
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

ALTERATION: Silica | Clay | Sericite | K2O-Bio — FRACTURING — MINERAL — GEOLOGY — COMMENTS: — AVE CORE REC'Y / HOLE

SECTION: 105 – 108 – 111 – 114 – 117 – 120

FRACTURING: Strong; Wk; wk - mod; Strong; Wk

MINERAL: cpy. py. MoS2

DESCRIPTIVE GEOLOGY

Biotite Porphyry Contd

- strong slicks w/ CO_3, smeared sulfs.
- diss. min. erratic.
- 1cm qtz vlt, 0.4 py in center, MoS_2 +, seri halo
- MoS_2 loc.+
- c.g. py + loc. w/ qtz seri vlts

108.8-109.0m Unusual zone: May be drilling error; black, very broken and ground BP w/ cpy+. No contact noted on either side w/ other BP. Appears to be fill in the box; may be cave from up hole that was re-cored

- Loc.+ diss py, cpy
- contact: BP/Dacite/BP

110.0-110.2m. Dacite(?) Dike: m. gn gy to m. gy br. v.f.g. and wkly porph; phenos to 2mm max, gen less, of qtz + plag. Grdmass indeterminate. Contacts sharp. No min. ((QFP)

110.2-110.6m BP - as before

- Contact BP/FP

110.6-111.6m Feldspar Porphyry - as before; mod. strong arg. of plag phenos. Min ± MoS_2 loc.+ as diss. in + around cpy.

- steep 0.2cm MoS_2 vlt w/ qtz ±
- contact FP/BP
- Loc. hairline vlt py, cpy

111.6-114.4 Biotite Porphyry - as before. Well arg. Min loc. well diss. MoS_2 gen quite good, loc. coarse.

- seri loc. gn. + patchy
- rk. gen leucolite appearance due to kaol.
- 0.3cm qtz-CO_3-seri vlt w/ py-
- cl. gouge, crushed sulfides along 5cm.
- Contact BP/FP grad.

114.4-117.5 Feldspar Porphyry - as before. Strong silic. w/ lesser seri, cl. Grad. contact. Large plag phenos loc.

- steep loc. qtz-seri vlts to 2cm. w/ MoS_2 ±, cpy -, py -
- wk enargite or tetrahedrite
- cpy + loc. w/ qtz
- hairline py, MoS_2 vlts
- contact FP/Dacite

116.9-117.5 Dacite Dike - as before. Contact is steep w/ part FP w/ bio, qtz, seri. Min nil.

- contact: Dacite/FP

117.5-119.4 Feldspar Porphyry - as before, Grad. zone w/ BP below, change in gr. size.

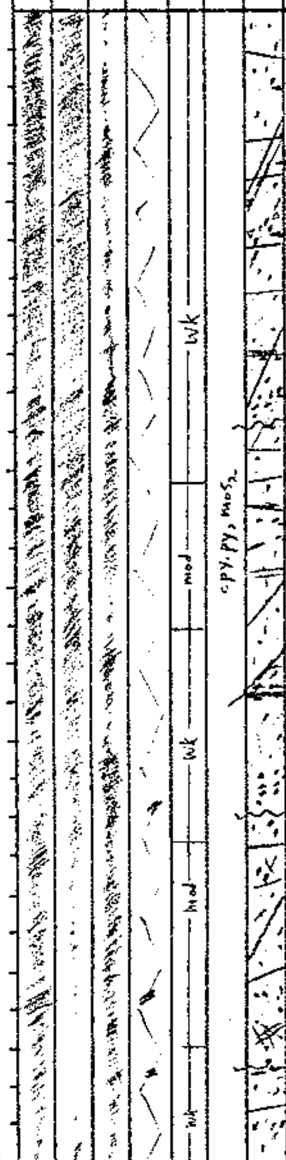
- patchy seri loc.
- 7.8 cm w/ py, cpy
- Contact FP/BP grad
- MoS_2 + loc.

119.4-125.3 Biotite Porphyry - as before, loc. f.g. w/ strong arg. alt.

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT
			NQ		
3.1	105.8	94		3.0 (108.0)	94
4.2	108.8	100		3.0 (111.0)	98
3.4	111.9	97		3.0 (114.0)	98
2.0	114.9	95		3.0 (117.0)	96
2.4	118.0	96		3.0 (120.0)	96

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO. 5 of 5
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m
INCLINATION: −70° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohn

SECTION | ALTERATION (Silica, Clay, Sericite, K_2O-Bio) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE



DESCRIPTIVE GEOLOGY

Biotite Porphyry Contd.

- very + steep qtz vlts to 2cm, $MoS_2^{\pm}$, py⁻, cpy⁻
- 0.3 cm qtz-py vlt. w/ 0.5cm gn. seri halos — Rk. very white due to arg.
- loc. stringer qtz vlts.
- MoS_2^+ w/ qtz vlt. to 0.3 cm. cpy⁻, py⁻
- diss. min.± loc.
- py + on frac. w/ seri
- MoS_2^+ w/ 1.0cm qtz vlt.
- contact BP/FP grad.
- 0.1cm seri vlt.

125.3 – 128.6 Feldspar Porphyry – as before w/ grd. mass loc. beige to pk – K_2O? Change from BP is grad. and loc. appears to be function of gr. size and alt. patterns.

- CO_3^- on frac.
- 0.4 cm. qtz vlt w/ MoS_2^+, py⁻
- diss. 0.2 cm py vlt.
- 0.2 cm qtz vlt. w/ 0.03 seri halos
- contact FP/BP

128.6 – 130.5 Biotite Porphyry – as before w/ loc. mixing of FP-BP rock types.

- 0.4 cm qtz-seri vlt. w/ py+, MoS_2 ±
- 0.7cm pyg vlt. w/ py±, cpy⁻
- contact BP/FP grad.

130.5 – 133.8 Feldspar Porphyry – as before w/ gen. less cl., more seri alt, and loc. qtz flood.

- 0.3cm qtz vlt. w/ MoS_2^+, py±
- MoS_2± loc. as vlt + diss.
- SiO_2 flood, wk K_2O
- narrow broken zone
- contact: FP/BP
- 1cm qtz-seri vlt.

133.8 – 142.0 Biotite Porphyry – as before. Loc. mixing of texts. w/ FP. Contact mod. gradational. 2nd bio°

- diss cpy loc. stronger

Section	% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.
120				NQ		
	2.8	121.0	99		3.0	98
123					123.0	
	3.0	124.0	96		3.0	97
126					126.0	
	2.8	127.1	99		3.0	98
129					129.0	
	2.4	130.1	95		3.0	96
132					132.0	
	3.0	133.2	100		3.0	98
135					135.0	

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 10 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m

INCLINATION: −90 | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bolin

SECTION	ALTERATION: Silica	Clay	Sericite	K-Spar – Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y.
								DESCRIPTIVE GEOLOGY							
135								up to 1.5cm calcite vlt way bx text; extremely sharp borders. Biotite Porphyry Contd.					NQ		
								Loc. + SiO_2 vlts + flood w/seri							
								seri loc. stronger in BP.		3.2	136.2			3.0	100
								0.3 cm qt_3 vlt w/ MoS_2±							
								Text loc. toward FP				100			
138								qt_3 – seri alt increasing						138.0	
								1cm qt_3 – seri vlt w/ K_2O							
								Loc. very strong qt_3 – seri veining + flooding. seri loc. also patchy and green in colour.							
								py > cpy, loc. diss MoS_2±			139.2			3.0	98
										2.6					
								Diss mag + vlt mag ± hem loc.				97		141.0	
141								irreg horsetail qt_3 – seri calcite vlt ± 2 cm of MoS_2±, Vuggy.							
								seri patchy							
								loc. mag. vlts.							
								Contact BP/FP			142.3			3.0	99
								143.0 – 160.1 Feldspar Porphyry – as before. Very subtle changes loc. Mixed BP-FP. Groundmass gets pinkish – 147m		2.0					
								strong qt_3 – seri vlts + shearing loc. Rhin ± py > cpy							
								irreg qt_3 vlts. zone to 4.5cm w/ MoS_2±; has bx. text, loc. cockade + vuggy.							
144								0.2 cm py vlt w/ 0.4cm halos of qt_3 – seri				100		144.0	
								0.2 cm py vlt							
								steep qt_3 – seri zone.			145.4			3.0	99
								MoS_2 + loc. w/ qt_3 – seri vlts.		2.4					
								Incipient seri after plag phenos in FP							
147								steep qt_3 – seri vlts to 0.5cm.				99		147.0	
								slight broken zone but appears to be 2nd bio alt. BP from uphole; cored cave material – don't split							
								smeared Py, MoS_2 on frac w/ calcite		3.1	148.4			3.0	99
								py, cpy loc. v. fg. diss.							
								Thin 3 gen qt_3, seri vlts.				99			
								147 – 150m – very uniform c.g. FP w/ plag phenos to 6mm							
150														150.0	

HOLE NO.: PC-27
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 997'

PAGE NO.: 11 OF 21
REF. TO CLAIM CORNER:
SCALE: 1cm = 1m.
LOGGED BY: E. Bohn

SECTION	Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY
150					mod	cpy, py, MoS_2	
153						$MoS_2^{\pm}$	
156					wk-mod		
159					mod-strong		
162					wk-mod	py, cpy, MoS_2	
165							

COMMENTS:

- seri on frac.
- vk text loc. toward BP
- steep qtz-seri vlts; $MoS_2^{\pm}$, cpy, py$^-$
- diss min. gen vfg.
- 0.6m zone of intense qtz veining w/assoc. cari, pk CO_3, MoS_2^{++}, py$^-$, cpy^0, mag$^{\pm}$. Strong bx and swirl texts. Horsetail vlts. 65° Brecked + re-silicified. Spec.
- up to 0.7cm qtz-seri vlt. w/ MoS_2^+
- voggy qtz bx zones, stringers; $MoS_2^{\pm}$, cpy$^{\pm}$, py$^-$
- vk. text loc. toward BP
- $MoS_2^{\pm}$
- $MoS_2^{\pm}$, py$^+$ w/ qtz-seri vlt.
- Contact: FP/BP
- c.g. bio.
- mod. frax.
- Contact: BP/FP
- 0.2cm qtz-seri vlt.
- zone of qtz. vlts. to 1.0cm w/ mag$^+$, specularite$^{\pm}$, MoS_2^-. Voggy.
- 0.2cm py vlt w/ 0.5cm seri halos.
- diss py > cpy
- seri loc.$^+$, patchy

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Feldspar Porphyry Cont'd.

qtz-seri-sulfide vlts. gen. have higher Cu/Fe ratio than diss. min. in host.
cl+seri incipient on plag

carbonate when w/ qtz vlts, gen. tends to top the vlt.

vk. text. loc. towards BP but may be result of strong alt of plag.

160.1-161.5m Biotite Porphyry - as before except much fresher, loc. K_2O vlts and flood; 2nd bio gen.$^-$ Strong loc. mixing of BP-FP. Some primary bio remains

161.5-210.0m Feldspar Porphyry - as before, loc. w/ admixed BP. Strong seri loc.

SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y
			NQ		
3.3	151.5	99		3.0 (153.0)	99
3.8	154.5	100		3.0 (156.0)	99
3.2	157.6	99		3.0 (159.0)	100
2.7	160.6	98		3.0 (162.0)	99
2.2	163.7	100		3.0 (165.0)	98
	164.6				

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 12 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m.

INCLINATION: −90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bahn

ALTERATION: Silica | Clay | Sericite | K-Fd-Bio

FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Feldspar Porphyry Contd.

- alt very patchy - colour/text changes. Possible loc. silicification?
- universal diss. pk-orange min - chlorite?
- 0.2 cm qtz vlts. w/ cpy, MoS_2
- Incipient alt. after plag. loc.
- loc. wk qtz-seri vlts.
- cpy a little stronger
- spotty hem. loc.
- strong bleached look; diss MoS_2
- 0.6 cm seri-qtz vlt- py, cpy
- 0.1 cm gypsum vlts. on fracs.
- 0.2 cm qtz-carb, seri vlt. w/ py, cpy, MoS_2
- 0.3 cm qtz vlt. w/ py, seri, cpy, MoS_2
- zone of qtz-CO_3 vlts to 1.5 cm w/ seri, mag, py, cpy, MoS_2
- mag vlts loc. Text. toward BP
- 0.4 cm qtz vlt. w/ sericlorite, MoS_2, sphal, py, cpy
- 0.3 cm py vlt along frac. w/ qtz.
- diss. mins slightly stronger
- 0.3 - 1.2 cm seri vlt. w/ qtz, py, cpy, MoS_2
- 0.2 cm py vlt, cpy w/ 2 cm qtz-seri vlt.
- 2.5 cm qtz vlt. w/ spec, cpy, py, pk CO_3
- mag. increasing
- cpy, py w/ 0.5 cm qtz vlt.

Loc. text changes toward BP; partial pk type mixing and alt effects.

mag and spec. loc.

cpy/py ratio improving slightly

SECTION	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
165			96	NQ		
	2.0	166.7			3.0	97
168			99		168.0	
	1.7	169.8			3.0	99
171			98		171.0	
	1.5	172.8			3.0	97
174			95		174.0	
	2.0	175.9			3.0	97
177			100		177.0	
	2.3	178.9			3.0	99
180					180	

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 13 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m.

INCLINATION: −90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohm

ALTERATION: Silica | Clay | Sericite | K_2O-Bio

FRACTURING: Mod - loc. Strong | wk - mod | wk

MINERAL: py, cpy, MoS_2

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
180		Feldspar Porphyry Contd.				NQ		
		irreg. qtz_3-CO_3 vlt. w/ cpy±, py⁻, spec			98		3.0	98
		0.3 cm qtz_3 vlt. w/ cpy±, py⁻, spec⁺						
		cpy±, mos_2⁺, py± w/ qtz_3-seri vlts.	2.5	183.0			183.0	
		0.3 cm py vlt. w/ phish dolomite; thin epidote rim w/ diss. py, cpy.						
183		steep 0.05 cm mag vlts w/ spec.			97		3.0	98
		0.6 cm. qtz_3 vlt. w/ wk seri halo; cpy⁺, mos_2±, py±	2.5	185.0				
		cpy loc. stronger					186.0	
186		0.4 cm qtz_3 vlt. w/ cpy⁺, mos_2±			99		3.0	99
		minor thin sulf. vlts.						
		Blotchy gn. seri loc.						
		Unusual zone: may be carb type change but appears due to strong seri, wk K_2O(?) flood. Feldspar phenos? 0.15 m. wide.	3.0	188.1				
		cpy stronger					189.0	
		strong, patchy seri, gn.			100		3.0	100
189		0.2 cm. qtz_3 vlt. w/ mos_2⁺						
		strong seri, pred. vlts.	3.0	191.1				
		Unusual qtz_3-seri, K_2O(?) flood zone, cpy±, py⁺					192.0	
192		irreg. disc. py vlt. w/ qtz_3, seri⁺ and CO_2.			100		3.0	99
			3.2	194.2				
		Vuggy 2.0 cm qtz_3-CO_3⁻ vlt w/ py⁺, cpy±, mos_2⁺, galac±					195.0	
195								

182.6 – 183.7 m. – zone of mod. qtz_3-K_2O-seri flooded FP(?). Text/loc. almost destroyed w/ v.f.g. sugary groundmass and remnant phenos. Sugary + vlt. K_2O w/ minor clots of 2nd bio to 2.2 cm. Diss. cpy± py±.

diss. min. quite variable in %

HOLE NO.: PC-27
COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 997'

REF. TO CLAIM CORNER:
SCALE: 1cm. = 1m.
LOGGED BY: E. Bohn

SECTION | ALTERATION (Silica, Clay, Sericite, K_2O-Bio) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Section: 195 – 210

Fracturing: wk-mod

Mineral: py, cpy, MoS_2 (approx. 199–202); cpy, py, MoS_2 (approx. 205–207)

Feldspar Porphyry Contd.

- patchy K_2O flooding, well indurated rk.
- random seri vlts > qtz vlts.
- wk-mod. arg.
- strong seri flood zone, w/ qtz-CO_3 vlts. — Rk. text. loc. toward BP
- strongly cleaved + part. healed zone; SiO_2^{+}, clay±
- steep 0.2 cm qtz vlt. w/ MoS_2^{+}, py⁻
- zone of strong steep qtz vlts, seri±, CO_3^{-}, MoS_2^{+}, cpy±, py± — Loc.+ spec. w/ qtz, seri, sulfide vlts.
- 0.2 cm qtz vlt. w/ MoS_2^{+}
- loc.± qtz vlts.
- 1.3 cm qtz. vlt. w/ cpy±, MoS_2^{-}
- 0.2 cm. qtz vlt, py⁻
- narrow + irreg. qtz, seri vlts.; cpy loc. stronger
- 0.4 cm qtz vlt, seri⁻, cpy⁻ but c.g.
- cpy stronger as diss.
- MoS_2±
- zone of strong silicification, cpy+, MoS_2± salmite xk.
- diss cpy loc. 3/1 over py
- steep 1.0 cm seri vlt, cpy±, py±
- contact FP/BP

210.0 - 211.3m Biotite Porphyry - as before, well arg., seri+ Mint, contacts grad.

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% RECY. SAMP. INT.
3.0	197.2	97	NQ	3.0 (198.0)	97
3.2	200.3	98		3.0 (201.0)	98
3.4	203.3	100		3.0 (204.0)	99
3.6	206.4	98		3.0 (207.0)	98
4.0	209.4	98		3.0 (210.0)	98

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 15 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m.

INCLINATION: −90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohn

ALTERATION (Silica, Clay, Sericite, K_2O–Bio) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: | AVE CORE REC'Y / HOLE

FRACTURING: wk (213–216), wk (222)

MINERAL: cpy, py, mos_2

DESCRIPTIVE GEOLOGY

Section 210–225

Biotite Porphyry Contd.

- 0.4cm py vlt. w/ clay gouge
- Contact: BP/FP — 211.3–234.5m Feldspar Porphyry – as before, loc. mixing of texts. w/ BP.
- cpy±, py±, mos_2⁻
- crushed py along frac.
- Specularite loc. strong as vlts, diss., and enclosing cpy, py grains.
- irreg qtz. vlt zone to +1.0cm w/ seri ±, CO_3⁻, cpy⁺, py±, mos_2⁻, spec.⁺
- 0.05cm mag vlt ± → hem
- seri loc. very gn in color.
- cpy loc. v.fg
- 0.2cm py vlt. w/ seri
- py/cpy ratio varies considerably
- zone of strong silic. w/ qtz vlts to +2cm., vuggy, seri⁻, CO_3⁻; cpy⁺, mos_2⁺ (c.g.), py ±, mod. arg.
- Text loc. → BP.
- diss. cpy⁺ loc.
- up to 1.5cm qtz. vlt, vuggy, w/ mos_2⁺ py⁻ cpy⁻
- strong seri vlts, qtz⁻ w/ cpy± to 2cm wide.
- offset 0.3cm qtz vlt. w/ mos_2 ±
- irreg. mag vlts. and diss. to 0.2cm, loc. w/ cpy. mag ± → hem
- loc. stronger arg. of plag phenos
- loc. subtle K_2O flooding
- Sericite loc. stronger in grdmass than it appears.
- gen. thin qtz + seri vlts.
- Rock color changes drastically due to varying % qtz, seri, K_2O al.
- strong zone of qtz-seri-CO_3 veining w/ mos_2±, cpy±, py±

% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.
3.5	212.4	99	NQ	3.0 (213.0)	99
3.5	215.5	99		3.0 (216.0)	99
3.5	218.5	100		3.0 (219.0)	100
3.2	221.6	100		3.0 (222.0)	100
3.0	224.6	100		3.0 (225.0)	100

HOLE NO.: PC-27		PROJECT: Poplar	PAGE NO.: 16 OF 21
COLLAR ELEV.:	GROUND ELEV.:	DATE STARTED:	REF. TO CLAIM CORNER:
COORDINATES:	N. E.	DATE FINISHED:	SCALE: 1cm.=1m.
INCLINATION: -90°	BEARING:	TOTAL DEPTH: 997'	LOGGED BY: E. Bohn

SECTION 225–240 | **ALTERATION:** Silica, Clay, Sericite, K_2O-Bio | **FRACTURING:** wk; wk-mod | **MINERAL:** cpy, py, MoS_2; py, cpy, MoS_2 | **GEOLOGY**

COMMENTS:

- cont. SiO_2 zone
- hairline qtz-seri-sulf vlts.
- 0.2cm py vlts w/0.3cm seri halos
- 0.1 mag vlt. P→ hem
- cpy/py stronger
- up to +1cm py vlt. w/ seri+ qtz± and pu anhydrite (not Fluorite)
- steep 0.2cm qtz vlt. loc. MoS_2±
- loc. spec. vlts. and mag P-T→ hem
- rk. heal w/ thin seri vlts, qtz⁻. Cpy+ loc., MoS_2±, py+
- MoS_2+, cpy⁻ w/ 0.3cm qtz vlts
- diss min loc. stronger
- hairline mag vlts P-T→ hem
- K_2O flood into gdmass
- diss. min variable
- 0.2cm py. vlts w/ strong seri halos
- Contact FP/BP approx.
- diss. soft, yellow min, non-metal. jar? probably nontronite
- 0.6cm qtz. vlt w/ py±
- crushed py, slicks, cl. on frac.
- % diss. min lower
- complex sheared, bx, and vned zone; see desc.
- loc.+ nontronite
- CO_3 on frac.

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

Feldspar Porphyry Contd.

234.5 – 303.89m Biotite Porphyry – as before except highly alt and mixed w/ FP. Text loc. destroyed as noted below. Contact is approx, may actually be higher. Rk. color highly variable.

234.5 – 240 approx. – FP text destroyed due to shearing, healing + alt. Loc. intense seri, clay alt. w/ lesser qtz vning. Sulf. loc. wker. FP-Till?

237.4 – 237.9 – intense fault bx zone. Very complex w/ fillings of calcite, siderite, qtz, clay gouge, + seri. Py vlts to 2cm, loc. crushed and powdered. Qtz vlts broken + re-broken. Rk. bx frags to +2cm. Cpy⁻, MoS_2±, minor bx. sphalerite grains, Mag±. Gyp?

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
			NQ		
3.3	227.7	100		3.0 (228.0)	100
3.6	230.7	100		3.0 (231.0)	100
3.4	233.8	100		3.0 (234.0)	100
2.2	236.8	98		3.0 (237.0)	98
2.6	239.9	99		3.0 (240.0)	99

HOLE NO.: PC-27
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90°
BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 997'

REF. TO CLAIM CORNER:
SCALE: 1cm=1m.
LOGGED BY: E. Bohn

ALTERATION: Silica | Clay | Sericite | K_2O-Bio — FRACTURING — MINERAL — GEOLOGY — COMMENTS — AVE CORE REC'Y / HOLE

Fracturing: wk-mod (240–243.5); wk (243.5–255)

Mineral: py, cpy, mos2 (240–246); cpy, py, mos2 (246–252); py, cpy, mos2 (252–255)

COMMENTS:

- strong nontronite
- CO_3 w/ 0.3cm qtz vlts. cpy⁻, MoS_2⁻
- selenite xls. on frac.
- Intense sericitization - gn. bk color
- 0.4 calcite, selenite vlts loc.
- gyp; slicks⁺ on frac.
- 1.0 cm, bright gn seri vlt.
- Rk. loc. vuggy indicating volume change ∴ metasomatism
- diss. py vlts.⁻, cpy⁻
- hairline MoS_2 vlts.
- diss. cpy slightly stronger
- 0.2cm qtz-nontronite vlts. w/ seri halos.
- vuggy
- hairline to 0.2cm "dusty" py vlts, CO_3±, qtz⁻
- wk. K_2O flood
- loc. mag. diss.
- highly polished + striated py slicks on frac. w/ CO_3
- loc. thin gyp + CO_3 vlts.
- diss. 0.2cm py vlts w/ seri
- 0.3cm. qtz-seri vlts. w/ MoS_2±, cpy⁻, py±
- loc. 0.1cm. gyp vlts. (fkt) w/ py±
- 0.3cm py vlt. w/ CO_3⁻, anhy⁻
- random zones of K_2O flood
- loc. intense seri; vlts. + flood
- R. 2nd. bio
- loc. mag vlts. to 0.1cm w/ cpy⁻

DESCRIPTIVE GEOLOGY

Biotite Porphyry Contd.

Dissemin. more pyritic

Rk. may be BP - cannot discern due to intense alt - seri⁺⁺, nontronite, clay

Rk. mottled - gn bk, gy gn, + or. yel. from seri, nontronite, and wk. stilbite (diss)

Primary rk text. returning +245 m.

Py not uncommon on fkt fracs. throughout hole.

When rock is broken w/ hammer, fresh surfaces often exhibit internal stickensides denoting strong shearing prior to at least some of the alt.

SECTION	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
240–243	2.0	242.9	96	NQ	3.0 (243.0)	96
243–246	2.2	246.0	99		3.0 (246.0)	99
246–249	3.6	249.0	98		3.0 (249.0)	98
249–252	3.2	252.1	97		3.0 (252.0)	97
252–255	2.8		100		3.0 (255.0)	100

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 18 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm.= 1m.

INCLINATION: -90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohm

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
	255.1		NQ		
3.3		98		3.0	98
	258.2			258.0	
3.6		99		3.0	99
	261.2			261.0	
3.6		99		3.0	99
	264.3			264.0	
3.8		100		3.0	100
	267.3			267.0	
3.6		100		3.0	100
				270.0	

255
- Biotite Porphyry Contd.
- tr. 2 cm. clots of mag ± hem
- numerous sul/s. vlts to 0.3 cm; irreg; py↑, cpy⁻ w/ seri, anhy, qtz.

258
- irreg. seri-qtz-anhy vlt to 1cm w/ cg. py↑, cpy ±
- diss. cpy loc. stringers
- thin mag vlts.
- many gyp vlts (gen. flat) to 0.2 cm.

  seri. alt loc. intense. Rk text obliterated.
- cpy > py loc.
- rk. laced w/ thin mag vlts.

261
- Rk. loc. may be FP
- bands of dusty mag to 1.2 cm
- widespread gyp vlts.

  MoS_2 ⁿ except loc. as diss. + w/ cpy
- very mottled appearance

  Alt. is very patchy w/ zones of K_2O flood, seri flood, + seri vlts. magnetite widespread as thin vlts, patches, and diss.

264
- up to 0.2 cm gyp vlts. w/ py↑, cpy⁻
- loc. thin mag vlts.
- 0.1 cm py vlt. w/ loc. cg. diss. py, cpy

267
- mag vlts, diss
- 0.5 cm qtz - seri - CO_3 - gyp vlt. w/ py ±
- diss. cpy loc. vf.g
- up to 1.5 cm. qtz vlt zone w/ pv anhy, seri, CO_3; MoS_2⁻
- offset 0.1 cm py vlt.
- MoS_2⁻ w/ steep anhy. vlt. py ±

270
- monzonite⁻
- irreg. CO_3 vlts.

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 19 OF 21

COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:

COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m

INCLINATION: −90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
270								qtz vlts to 1.0cm w/ py†, cpy±, anhy, CO_3^-.	Biotite Porphyry Contd.			270.4		NQ		
								mag vlts, 1cm								
								gen steep calcite vlts.								
									Rk remains very mottled + blotchy due to erratic alt. Rk type loc. uncertain.		3.8		100		3.0	100
								cpy†, py† loc. w/ CO_3, gyp vlts.							273.0	
273								steep gyp vlt.				273.4				
								gyp vlts widespread								
								mod. strong mag ss vlts, diss, + blotches	Rk highly magnetic loc.		5.0		100		3.0	100
								qtz w/ gyp-anhy vlt.								
								cpy† as vlts, diss. w/ mag.	cpy, mos_2 loc† w/ gyp and/or CO_3 vlts.						276.0	
276								py†, cpy± w/ gyp vlt. 0.2cm	qtz gen much wker — fewer vlts; granular w/ seri zones.			276.5				
								seri loc. patchy w/ py†, cpy±								
								good, gen K_2O flood			4.3		100		3.0	100
								mag vlts + diss.								
															279.0	
279								irreg, bx, pv anhy vlt. w/ gn seri borders, qtz, py±, cpy± very unusual. R 2nd Bio in anhy. vlt. to 0.6cm.				279.5				
								thin sulf. vlts.			4.0		100		3.0	100
								Loc. bx anhy vlts.								
								0.6cm irreg. gyp-anhy vlt w/ cpy†, py†, mos_2 ± loc., mag ± Bx text.							282.0	
282								thin gyp overgr.				282.5				
								~1cm, irreg, branching anhy-qtz vlt w/ lesser seri, gyp, $CO_3^=$; cpy†, mag†, py±, mos_2^- as disc in anhy. Intersecting.			4.2		100		3.0	100
								0.4cm qtz vlt w/ cpy±, mos_2 ±, offset by 0.8cm gyp vlt. w/ py±							285.0	
285																

HOLE NO.: PC-27 | PROJECT: Poplar | PAGE NO.: 20 OF 21
COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: | REF. TO CLAIM CORNER:
COORDINATES: N. E. | DATE FINISHED: | SCALE: 1cm = 1m
INCLINATION: -90° | BEARING: | TOTAL DEPTH: 997' | LOGGED BY: E. Bohn

SECTION	ALTERATION: Silica	Clay	Sericite	K_2O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE
285–300					wk	cpy, py, mos$_2$; py, cpy, mos$_2$			

Biotite Porphyry Contd.

- altern qtz-anhy vlt. w/ seri±, cpy+, mos$_2$±, py-; loc. mag vlts, disc also.
- cl, slicks on fracs.
- Loc. mag vlts to 0.3 cm, anhy±, cpy±
- seri+ as vlts., loc. w/ qtz.
- py+, cpy- w/ mag vlts.

Qtz-vning stronger loc., mos$_2$ should pick up.

- py, cpy both+ loc. w/ qtz-seri vlts, mag.
- qtz-seri loc.+ as flood + vlts.
- mag+ loc.
- diss. py+, cpy+
- steep anhy vlt w/ cpy-, mos$_2$±, py-
- diss py+, mos$_2$-
- diss. py > cpy
- mag-

Alt. zones loc. mimic rock-type contacts.

- Sg. diss cpy+ w/ qtz vlt (~1.5cm)
- cpy+, mos$_2$+, py± w/ irreg anhy vlt to 1cm, qtz-
- widespread seri alt, vlts + flood, qtz-. Loc.+ sulfide vlts + diss. py > cpy
- continued gyp vlts

Bt tex loc. stronger

SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
	285.6		NQ		
3.8		99		3.0	99
				288.0	
	288.6				
3.5		100		3.0	100
				291.0	
	291.7				
3.8		100		3.0	100
				294.0	
	294.7				
3.6		100		3.0	100
				297.0	
	297.6				
3.4		100		3.0	100
				300.0	

HOLE NO.: PC-27
COLLAR ELEV.: GROUND ELEV.:
COORDINATES: N. E.
INCLINATION: -90° BEARING:

PROJECT: Poplar
DATE STARTED:
DATE FINISHED:
TOTAL DEPTH: 997'

REF. TO CLAIM CORNER:
SCALE: 1cm = 1m
LOGGED BY: E. Bolin

SECTION	ALTERATION: Silica	Clay	Sericite	K₂O-Bio	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.
300								Biotite Porphyry Contd.					NQ		
								pyt w/ steep gyp vlt.			300.8				
								gyp + anhy vlts. common							
								BP text loc. representative but may trend toward FP. Primary bio and bio sites lacking.		3.3				3.89	98
					wk	py, cpy, mo						98			
								steep 0.2cm anhy vlt. w/ pyt, cpy ±							
303															
304								end of hole 303.89m. or 997'			303.89			303.89	

POPLAR NO. 20
POPLAR NO. 18
POPLAR NO. 16
POPLAR NO. 60
POPLAR NO. 62
POPLAR NO. 19
POPLAR NO. 17
POPLAR NO. 14
DAVE NO. 4 Fr.
POPLAR NO. 12
POPLAR NO. 15
DAVE NO. 5 Fr.
POPLAR NO. 13
DAVE NO. 1 Fr.
POPLAR NO. 1 Fr.
POPLAR NO. 1
BASELINE
POPLAR NO. 3
POPLAR NO. 11
POPLAR NO. 2
POPLAR NO. 5
POPLAR NO. 7
DAVE NO. 2 Fr.
POPLAR NO. 4
POPLAR NO. 6
POPLAR NO. 9
CANYON
EAST CREEK
Main Access Road
High Water Mark
POPLAR NO. 8 Fr.
POPLAR NO. 8
POPLAR NO. 10
DON NO. 33
TAGETOCHLAIN LAKE
DON NO. 34
DON NO. 35
DON NO. 36

LEGEND.

- Diamond drill hole completed prior To Sept. 28, 1976
- Diamond drill hole completed in the period Sept. 28. to Oct. 19, 1976.
- Base camp
- Core Storage Stucture

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6136
MAP NO. 1

TO ACCOMPANY DRILLING
REPORT ON THE
POPLAR GROUPS 1 TO 7
LOCATED 54° 127° NW
BY B. BOWEN SEPT. TO NOV. '76

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. J. SCHMIDT

Plate 1

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

POPLAR PROPERTY

DIAMOND DRILL HOLE
COLLAR LOCATION PLAN.

Work by: B.B.	Date NOV. 1976	NTS Ref.
Drawn by: C.D. A.O.K.	Revised Dec. 1976	E-6

SCALE IN METERS 50 0 50 100 150

6136