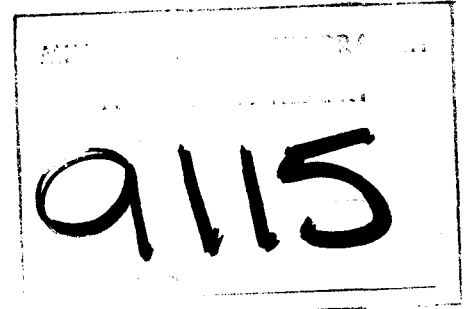


'81-# 285-# 9115

D R I L L I N G R E P O R T

O N

S P R I N G G R O U P



(Spring 1-9, Athelstan, Ax, Eclipse, Alto Fr.  
Eganville, Yellow Jacket, Violet Fr., Hennekinn,  
Verde, Evening Star, Mac 1, May Fr., Union,  
Union Fr., Idaho, Paper Dollar, Homestake,  
Deadwood, Par, Dodge, Hit, Genie 1-6,  
Jimmy.)

Lat.  $49^{\circ} 34'$ ; Long.  $118^{\circ} 22'$ ; N.T.S. 82E/9W

Greenwood Mining Division

Work Completed: October 15 to November 4, 1980

FOR

P E A R L R E S O U R C E S L T D .

BY

T.E.LISLE, P.ENG.

R.H. SERAPHIM, Ph.D., P.Eng.

December 22, 1980

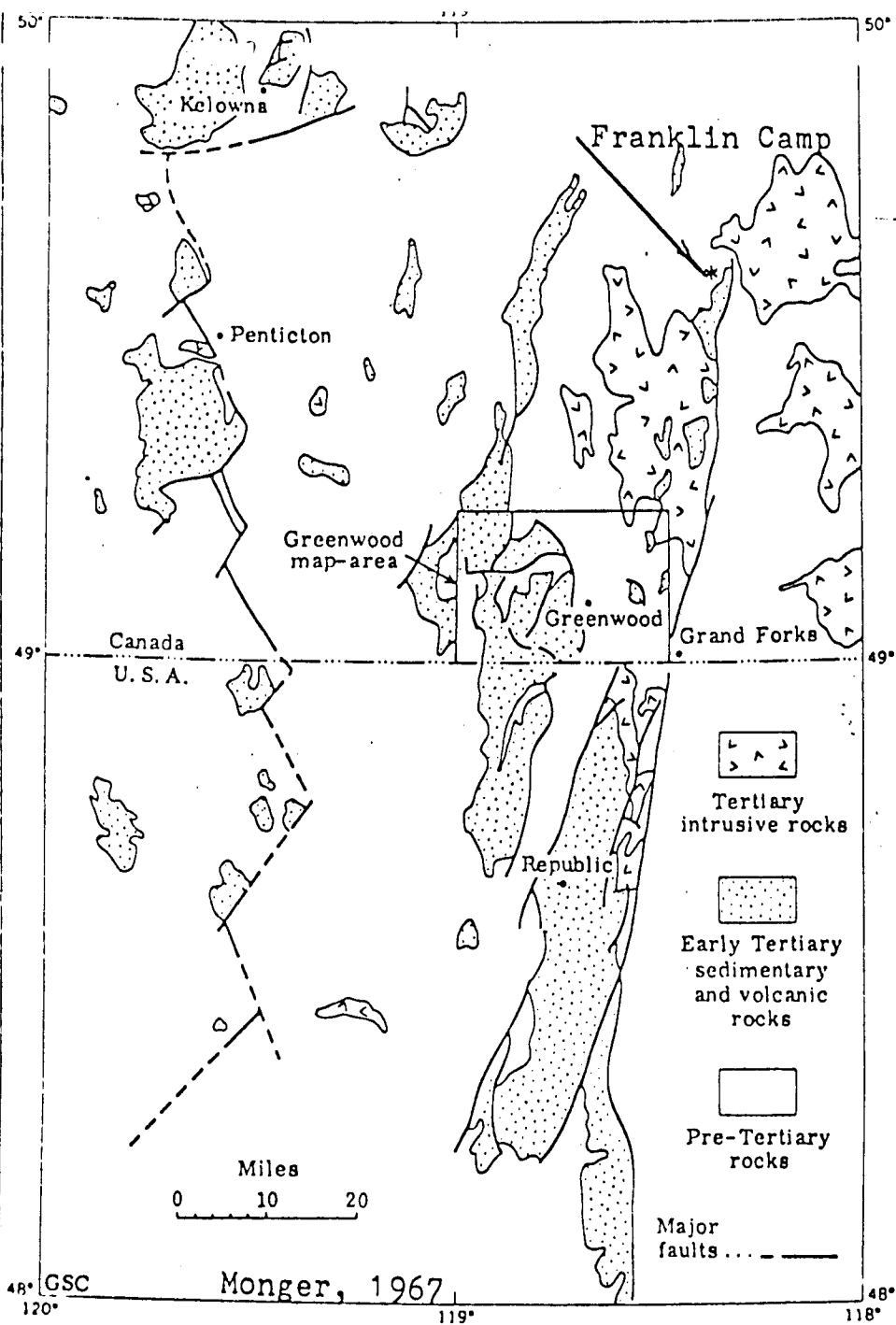


Figure 1. Distribution of early Tertiary rocks in parts of south-central British Columbia and northern Washington

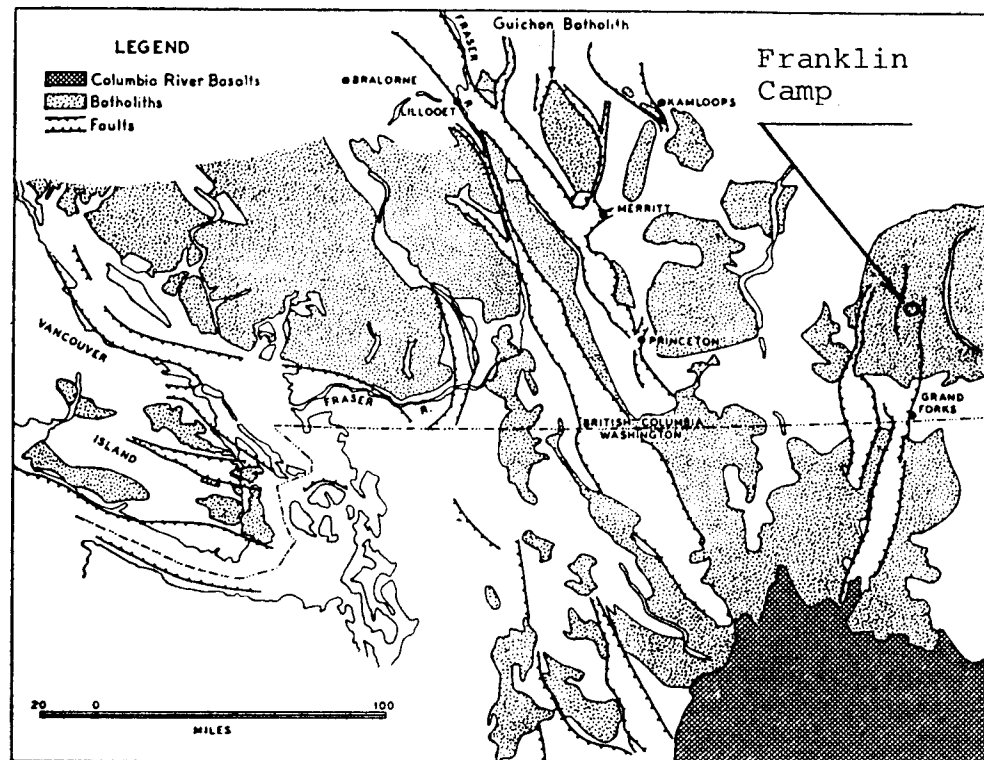


Figure 2. Regional graben pattern in southwestern British Columbia.

(After J.M.Carr, 1962, B.C. MMAR. )

LOCATION MAP

FRANKLIN CAMP

Figure 1

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" 2	Statement of Expenses
" 3	Assay Certificates.

INTRODUCTION

(I) LOCATION AND ACCESS

Franklin Camp is located 72 kilometers (45 miles) north of Grand Forks in southern British Columbia. Lat.  $49^{\circ}34'$ ; Long.  $118^{\circ}22'$ ; N.T.S. 82E. 9W. Access to the Camp is by paved road (30 km.) and secondary gravel roads running northerly along the Granby and north fork of the Granby River. Access within the claims is by 4-wheel drive roads.

Elevations range from 850 meters in Burrell Creek to 1130 meters above sea-level on Franklin Mountain. The Union Mine is on the lower eastern slopes of Franklin Mountain and has been investigated in the past by four levels developed between 853 and 985 meters above sea-level.

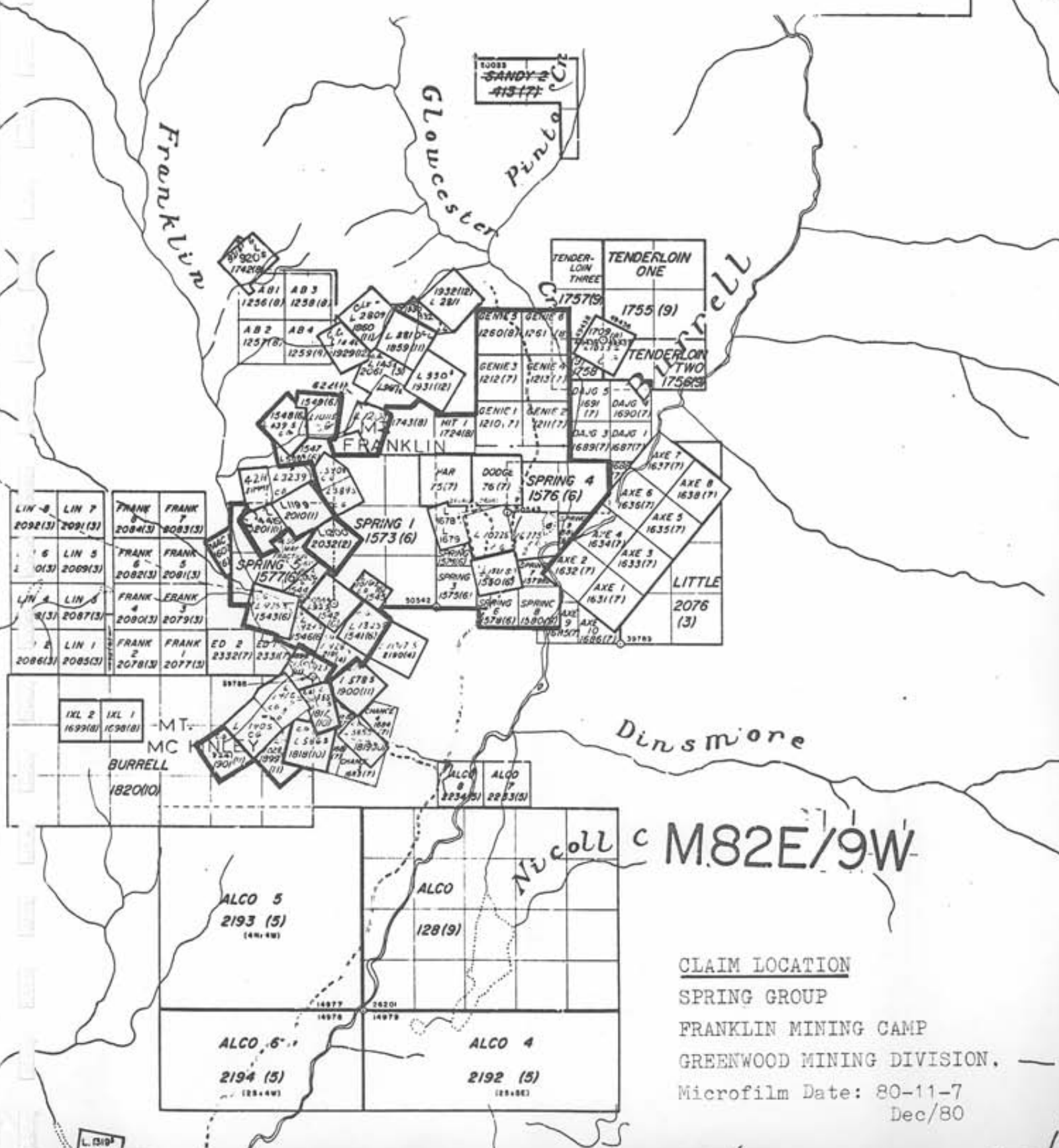
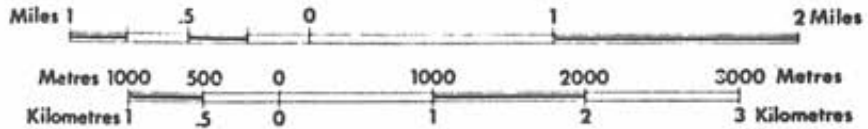
(II) CLAIMS

The property is comprised of the following claims in the Greenwood Mining Division.

	<u>UNITS</u>	<u>RECORD</u>	<u>ANNIVERSARY</u>
SPRING 1	6	1573 (6)	June 12, 1982
2	1	1574 (6)	"
3	1	1575 (6)	"
4	2	1576 (6)	"
5	4	1577 (6)	"
6	1	1578 (6)	"
7	1	1579 (6)	"
8	1	1580 (6)	"
9	1	1581 (6)	"



Province of British Columbia  
Ministry of Energy, Mines and Petroleum Resources



CLAIM LOCATION  
 SPRING GROUP  
 FRANKLIN MINING CAMP  
 GREENWOOD MINING DIVISION.  
 Microfilm Date: 80-11-7  
 Dec/80

ECLIPSE	R.C.G.	1543 (6)	June 6, 1982
ATHELSTAN	"	1541 (6)	"
AX	"	1542 (6)	"
ALTO FR.	"	1544 (6)	"
EGANVILLE	"	1545 (6)	"
YELLOW JACKET	"	1546 (6)	June 6, 1981
VIOLET FR.	"	1547 (6)	"
HENNEKINN	"	1548 (6)	"
VERDE	"	1549 (6)	"
EVENING STAR	"	1550 (6)	"
MAC NO. 1	"	1607 (6)	, 1981
MAY FR.	"	1611 (6)	, 1981
UNION	C.G.	1022	
UNION FR.	"	1678	
IDAHO	"	1679	
PAPER DOLLAR	"	1677	
HOMESTAKE	"	589S	
DEAD WOOD	"	590S	
PAR		75 (7)	June 23, 1981
DODGE		76 (7)	"
HIT	2P	1724 (8)	Aug. 16, 1981
GENIE 1-4	"	1210-1213 (7)	July 26, 1981
GENIE 5-6	2P	1260-1261 (8)	"
JIMMY		42H	

### (III) HISTORY

Claims were first staked at Franklin Camp in 1896 (Banner) and exploration has continued on an intermittent basis since that time. C.W. Drysdale mapped the geology of the camp and produced Memoir 56 "Geology of the Franklin Mining Camp" in 1915.

The Bulk of production (less than 200,000 tons) of gold, silver, lead and zinc ore was derived from the Union Mine in the period 1931 to 1933 by Hecla Mining Company Ltd. With the exception of smaller tonnages produced to 1947 (?) the Union property has remained inactive since that time.

(IV) SUMMARY OF WORK

675 meters (2220 feet) of B.Q. drilling in five holes was completed on the Union claims (Fig. 3) in October and November, 1980. The drilling was under contract to D.J. Drilling Ltd. of Surrey, B.C. The program was under the direction of R.H. Seraphim Engineering Ltd. The core is stored by E.V. McDougall's cabin located approximately 100 meters northwest of the northwest corner post of the Union Fraction crown granted claim.

A small amount of bulldozer work was completed on the Union claims. This work mainly involved re-clearing of old roads and trenches as shown on Fig. 3.

GEOLOGY

Franklin Camp is in a graben close to the Granby River Fault. The fault forms the eastern boundary of the Republic Graben, A Tertiary regional structure trending north-northeast through the International Boundary.

The Granby Fault separates mainly Precambrian (?) metamorphic rocks on the east from an assemblage of Paleozoic, Mesozoic and Cenozoic rocks on the west. It apparently terminates in intrusive rocks immediately north of the Franklin Camp. The structure is obscure, particularly the westerly bounding fault north of the boundary, but the trace of the graben is partly marked by a linear belt of Tertiary volcanic and sedimentary rocks. Mineral deposits in the Franklin Camp

occur in and near a roof pendant of volcanic and sedimentary rocks previously mapped as part of the Anarchist Group of Paleozoic age. Deposits occur both in the pendant and in younger Tertiary aged intrusions.

Pearl Resources Limited acquired the Spring claims and a number of reverted crown granted claims in 1979. In 1980, the company acquired a working option on the Union and related crown granted claims from the Hecla Mining Company, and also a number of adjacent claims from E.V. McDougall and associates. Geological work was undertaken in 1980.

Detailed geology map of the Union claim, filed for assessment previously, indicates the Union Mine was developed in a westerly trending structure that apparently crosses a northerly trending sequence of volcanic and related fragmental and sedimentary rocks. The purpose of the drilling program was to investigate in greater detail, target areas along the westerly trend of the Union Mine structure.

#### DRILL RESULTS

Technical data related to drill hole numbers 1 to 5 is shown on accompanying drill logs. Samples of drill core yielded low gold and silver assays.

The drill holes were laid out to test westerly trending siliceous zones west of the open Union Mine workings. The holes unfortunately parallel the apparent northerly trend of the sedimentary formations. For this reason and

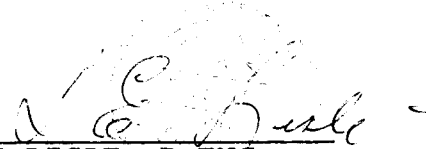


because access to the underground is restricted, detailed interpretation of the geology in the area of drilling is difficult.

The drilling did cut a number of distinct dark cherty argillite horizons which may form important markers if they can be correlated with surface and underground.

#### CONCLUSIONS AND RECOMMENDATIONS

Five holes were drilled in the area west of the Union workings to test surface and underground targets. The holes cut sedimentary and lesser volcanic rocks of the Franklin Group pendant. Sections of the drill core cut and assayed returned generally low amounts of gold and silver. However, data produced from drilling will be useful in resolving the structure and setting of the Union and related mineral deposits. Other target areas in the Union Mine area are present and should be explored further.

  
T.E. LISLE, P.ENG.

R.H. Seraphim, PhD, P.Eng.

80-1

(1)

LATITUDE ..... ELEVATION 1029 Meters BEARING 003° DEPTH 450.0' STARTED Oct. 23/80 COMPLETED Oct. 25/80

DEPARTURE ..... SECTION ..... DIP Collar -50°  
450 feet -56° DRILLED BY D.J. Drilling Co., Ltd LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAYS			
0-12.0	Casing								
12.0-29.0	Light grey cherty-tuff breccia, 5-25% calcite in matrix vein quartz 27.0'-27.5'. local pyrite								
29.0-47.0	Light to dark green tuff. Bedding @ 50° to C.A. @ 34.0'. Calcite veinlets common. Pyrite-calcite veins @ 40.5', @ 50° 46.0' and with epidote @ 43.0'.								
47.0-59.5	Fine Grained calcareous tuffaceous greywacke with inter-cal- lated sedimentary breccia (clasts of lt. grey green tuff and chert) @ 50.0' to 51.5'. Py. & Ep. @ 48.0'. Py. & Calcite stringers @ 52.5' to 59.0' often ochre hematite associated.								
59.5-75.0	Light grey cherty tuff, local fine laminations @ 40° to 50° Ubiquitous Calcite - Pyrite veinlets. Pyritic @ 64.0'. Contact @ 50° to C.A.								
75.0-92.0	F.G. Calcareous tuffaceous greywacke. Calcite vein @ 79.0' & Py.-calcite stringers 85.0' - 88.0'.								
92.0-94.0	As 59.5-75.0' with Py. Ca. @ 92.0'-92.5' & 1/2" calcite 93'-94'								
94.0-101.0	As 75.0-92.0. 1 cm Py.Ca.stringer 30° @ 96.5-97 and numerous stringers throughout.								
101-104.0	Light grey sedimentary breccia.								
104.0-106.0	Light grey coarse tuff or greywacke. Py.Ca. stringers.								

LATITUDE ..... ELEVATION 1029 Meters BEARING 003° DEPTH 450.0 STARTED Oct. 23/80 COMPLETED Oct. 25/80  
 DEPARTURE ..... SECTION ..... DIP Collar -50° 450 feet -56° DRILLED BY D.J. Drilling Co. Ltd GGDG BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAYS	
106.0-111.0	As in 59.5'-75.0' commonly brecciated. Calcite stringers						
111.0-163.0	Mixed sedimentary rocks as above						
	F.G. calcareous tuff & greywacke. 111.0-115.0', 117.0-121.0, & 129.0'-159.0' interbedded with light grey tuff & cherty tuff. Dark cherty tuff @ 161.5-163. Contacts @ 115.0' - 45°; 117.0'-55°; 122.0'-35°; Py.&Ca. stringers common 111-115.0'; 129.0-159.0'. Framboidal Pyrite @ 129.0'.	20485	209.0	214.0	5.0'	0.08	<0.003
163.0-209.0	Light grey-green tuff, Locally finely laminated @ 30°. Brecciated 192.0-197.0; 198.5'-209.0'. Py. Carb stringers 167.0, 171.0, 174.0' Quartz vein (2 cm) @ 172.5 @ 35° and @ 158.0' - 45°, strong epidote alteration 174.0'-175.0'. Quartz-Ep vein @ 161.0' @ 45°. Calcite vein @ 189.5'.	20486	214.0	219.0	5.0'	0.06	<0.003
		20487	219.0	221.5	2.5'	0.02	0.003
		20478	221.5	224.5	5.0'	0.02	0.003
		20479	224.5	229.5	5.0	0.10	0.046
209.0-214.0	Quartz vein	20480	229.5	234.5	5.0'	0.04	<0.003
214.0-221.5	F.G. grey-green tuff breccia. Local silicification	20481	234.5	239.5	5.0'	0.03	0.012
221.5-230.0	" " " ", Breccia zone. Local quartz, Pyrite & minor Cpy.	20482	239.5	244.5	5.0'	0.01	<0.003
230.0-251.0	Light grey-green F.G. pyritic tuff with dark grey to black zones 230-31, 244.0'-251.0' Quartz @ 250.5-251.0. Py-Carb. veinlets common	20483	244.5	249.5	5.0'	0.18	<0.003
		20484	249.5	251.0	1.50'	0.01	<0.003
251.0-266.5	M.G. grey green tuff (greywacke)						

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80-1.  
(3)

LATITUDE ..... ELEVATION 1029 meters BEARING 003° DEPTH 450.0' STARTED Oct. 23/80 COMPLETED Oct. 25/80  
 DEPARTURE ..... SECTION ..... DIP Collar -50° 450 feet -56° DRILLED BY D.J. Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	OZ/Ton ASSAYS	
						Ag	Au
266.5-272.5	Breccia. Chert & quartz clasts (ave. 1/2 cm) - 1/2 cm qtz vein // to C.A. 267.0-272.5 - Bottom contact @ 60°						
272.5-317.0	Light grey-green finely laminated tuff @ 30°. Bx. 301.0-307.0; K-Spar alt. 302.0'-306.5; Ep. 303.0 & 308.0'. Py fractures common.						
317.0-333.0	Vein Quartz, Py, Cpy, sphalerite, galena minor, chloritized, Ep? (esp. 317.5-318.5). sandstone?						
333.0-340.5	C.G. siltstone? with black cherty argillite 336.0-337.0; 337.5-340.5. Contacts @ 50° Extensive carbonate fractures.						
340.5-348.0	Coarse grained sandstone - clasts include chert, large black argillite fragments @ 343.0' (15 cm) Pyritic-Turbidity flow unit? Carbonate fractures as above. Light grey chert and quartz fragmental unit 344.0-347.5.						
348.0-348.5	Quartz						
348.5-369.5	Light grey cherty tuff; extensive carbonate (calcite) 350-54, minor Py.						
369.5-372	Conglomerate - intermixed chert, Lt. green tuffs & quartz pebbles, wk. Py.						
372.0-376.0	FG cherty tuff with local clasts of pyritic chert. Epidote and red hematite associated with 1/2 cm py-calcite vein (20°) @ 374.0'. Two small 1/2 cm Py veinlets surround chert frags @ 375.5'.	20477	372.0	376.0	4.0'	0.06	<0.003

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LATITUDE ..... ELEVATION 1029 meters BEARING 003° DEPTH 450.0' STARTED Oct. 23/80 COMPLETED Oct. 25/80  
 DEPARTURE ..... SECTION ..... Collar -50° DRILLED BY D.J. Drilling LOGGED BY Gaard  
 DIP 450 feet -56°

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	oz/Ton ASSAYS			
						Ag	Au		
376.0-391.5	M.G. green tuff & local F.G. interbedded cherty tuff. Carb-Py veinlets @ 378.0-383. Black cherty argillite 386-391.5.								
391.5-406.0	Sandstone (grey-green), chert & tuff clasts; quartzite fragments 391.5-393.5 large chert clasts (2-3 cm) 401.5-403.5 - 402.0-406.0 M to C.G.								
406-410.5	Lt. grey-green cherty-tuff-M.G. Sandstone 408.5-409.5 Fault zone @ 407.5' - 408.5'?								
410.5-450.0	Medium to coarse multilithic sandstone and conglomerate with thin grey-green cherty tuff interbeds @ 419-20 and 421.5-425.0', 431.0 - 434.0 (laminated @ 40°), 441.5-442.0' and finely laminated 443.0 to 447.5' @ 45°, Contacts @ 420.0' @ 20°. Epidote, hematite, pyrite, veinlets 429.5-431.0'. Quartz vein 430.0-431.0	20476	429.5	431.0	1.5'	0.10	0.003		
450.0	END Dip Test - -56°								

LATITUDE ..... ELEVATION 1029 M BEARING 356° DEPTH 500' STARTED Oct. 25/80 COMPLETED Oct. 27/80  
 DEPARTURE ..... SECTION ..... DIP - 47° DRILLED BY D & J Drilling LOGGED BY Gaard  
 see end

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	oz/Ton ASSAYS			
						Ag	Au.		
0-11	Casing								
11.0-76.0	Interbedded grey to green to brown tuff, argillite with grey-wacke at 38.5-41.5 & 54.5-61.0; 67-76.0'. Black cherty argillite 11.0-32.5, 38.0-38.5, 41.5-42.5; 45.0-45.5, 62.0-63.0. 2.5 cm quartz @ 42.5. Fault at 40.0' and 76.0'.								
76.0-81.5	Tuffaceous sedimentary breccia, 10 cm, quartz zone @ 76.5'	20488	76.0	77.0	1.0'	0.18	<0.003		
	@ 60° Minor cpy.	20489	85.0	86.0	1.0'	0.12	<0.003		
81.5-203.5	F.G. grey-green tuff. Quartz zone @ 25° 85-86.0' laminations? 20-25° and 30° @ 147.0'. Carbonate stringers common (ESP 188-190. Hematite on fracture 147.0 & 156.0' Epidote 198.5 to 203.5.								
203.5-209.0	Silicified, brecciated tuff with quartz veining, Pyritic	20498	203.5	209.0'	5.5'	0.12	0.003		
209.0-214.0	Brecciated tuff, calcified and pyritized								
	-215.5 Quartz Pyrite								
215.5-219.0	Dark grey tuff grading to bleached? light grey tuff.								
	-220-0 Quartz-Pyrite								
220.0-224.0	Brecciated tuff, calcite local silicification. Quartz veining								
	222.0-224.0'								
	-226.0 F.G. Greywacke.								

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LATITUDE ..... ELEVATION 1029 M BEARING 356° DEPTH 500' STARTED Oct. 25/80 COMPLETED Oct. 27/80  
 DEPARTURE ..... SECTION ..... DIP -47° DRILLED BY D & J Drilling LOGGED BY Gaard  
 see end

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	oz/Ton ASSAYS	
226.0-241.0	Brecciated brown tuff-chert with Pyrite						
241.0-291.5	Grey F.G. tuff-greywacke, small chip ZnS @ 290.5'						
291.5-302.5	Light grey pyritized tuff-chert - buff coloured 301.5 to 302.5', silicified 293.0' - 298.5	20499	293.0	298.5	5.5'	0.15	0.005
-311.5	Light green to grey brown and buff coloured chert & tuff Quartz veining 309.0-309.5'						
311.5-316.5	Light to dark grey tuff. Carbonate veinlets 312.0-312.5', 314-315.0' Epidote alt. at 316.5' contact						
316.5-319.0	Buff chert. Brecciated, pyritized & silicified - Carbonate (calcite vein at 318.5)						
319.0-352.5	F.G. Light grey-green tuff with buff silicified chert Bx. 335.0-344.0; 348.5-352.5.	20500	335.0	340.0	5.0'	0.16	<0.003
		20426	340.0	345.0	5.0'	0.10	<0.003
-355.0	Dark grey tuff						
355.0-375	Light grey green tuff as above - laminations @ 25° - Chert Bx. 362-63.5, 369.0-370						
-386.0	Bx. buff chert, silicified, pyritized. Qtz. vein 381.5-382.5						
-392.5	Lt. grey quartzite (siliceous tuff)? (F.G. vein quartz?) Py - Carb. veinlets	20427	379.0	384.0	5.0'	0.02	<0.003
		20428	384.0	389.0	5.0'	0.10	<0.003
-396.5	Brecciated, silicified pyritic tuff chert	20429	389.0	394.0	5.0	0.08	0.003
-407.0	Silicified Quartzite or tuff? (F.G. vein quartz)						

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LATITUDE ..... ELEVATION 1029 M. BEARING 356° DEPTH 500' STARTED Oct. 25/80 COMPLETED Oct. 27/80 (3)  
 DEPARTURE ..... SECTION ..... DIP -47° DRILLED BY D & J. Drilling LOGGED BY Gaard  
 See end

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	OZ/Ton ASSAYS			
						Ag	Au		
407.0-409.5	Quartz vein to 408.0'; Remainder as in 396.0-407.0'	20430	394.0'	399.0	5.0'	0.10	0.003		
408.0-422	Buff chert unit - Breccia 409.5-411.5'; 421.0'422.0'other-wise local breccias. Breccia grades @ 419.0' to fine grain laminated unit @ 65° (turbidite flow unit)? Silicified 409.5-411.5', 419.0-419.5; 421-422.0'. Pyritic	20431	399.0	404.0	5.0'	0.17	0.010		
		20432	404.0	409.0	5.0'	0.02	<0.003		
		20433	409.0	414.0	5.0'	0.01	0.003		
		20434	414.0	418.0	4.0'	0.06	0.003		
422.0-425.0	Black cherty argillite laminated @ 30°								
425.0-441.0	Quartz conglomerate. Clasts are chert, tuff & quartz with f.g. light brown cherty tuff interbed 438.0-440.5'.								
441.0-446.0	Light green cherty-tuff breccia, bottom contact @ 30° Calcite and hematite @ 442.0.								
446.0-449.0	Black cherty argillite.								
449.0-463.5	Fine to medium grained tuffaceous greywacke. Epidote @ 462.5-463.5'								
	-466.0 F.G. grey tuffaceous chert. (Buff chert @ 465.5-466.0')								
466.0-467.0	Coarse grained sandstone								
467-488.0'	F to M.G. greywacke with tuff chert 484.0-487.0' Ep.467, 471-72.								
488-491.0	Light brown tuff chert								
491.0-500	F.G. grey-green tuff . Epidote @ 491.0', 495.0', 499.0' - 500.0' hematite @ 495.0'								
	END DIP TEST 250.0' - (-52°); 500.0' - (43°)								

WESTERN MINER-PRESS LTD.  
STANDARD FORM NO. 502



83-1

(1)

98.4 M.

LATITUDE ..... ELEVATION 1029 M. BEARING 005' DEPTH 323.0' STARTED Oct. 27/80 COMPLETED Oct. 28/80  
 DEPARTURE ..... SECTION ..... DIP -64° DRILLED BY D & J Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAYS			
0-20.0'	Casing								
20.0-86.0	Fine grain light grey-green tuff. laminations 40°-45°. Interbeds of black cherty argillite 49.5-67.0' Bx. @ 85.5'.								
86.0-114.0	F.G. grey-green tuff as above with tuffaceous greywacks 86.0-96.5' & 102.0 - 104.0' and buff chert 110.0-114.0'.								
114.0-115.0	Dark green cherty tuff with extensive calcite fractures.								
115.0-199.0	Dark to light grey-green cherty tuff. Calcite hematite fractures throughout. Lamination @ 35°. 8 cm. laminated buff chert @ 173.0' & buff chert Bx 185.5-187.0', 193.5-194.0', 195.0-197.0', 5 cm. quartz @ 142.0'								
199.0-207.5	Buff chert Bx. with clasts of green tuff. laminations @ 40° @ 204.0', Minor quartz-pyrite veining @ 207.5'.								
207.5-287.0	Mixed conglomerate, sandstone, chert tuff zone. Conglomerate with clasts of chert, tuff & quartz 207.5-213.0'; 222.5-223.5, 224.0'-225.0; 226.0-238.5' (clasts include limestone and black cherty argillite & brown chert?), 240.0-281.0' (clasts to >5 cm); 283.0-287.0'; coarse grained sandstone 213.0-216.0'; 281.0-283.0'; Limestone 224.0'-226.0' (with local chert clasts); 287.0-288.5' Black cherty argillite 216.0-218.0'.								

WESTERN MINER-PRESS LTD.  
STANDARD FORM NO. 502



80-4

185 M  
607.0'

LATITUDE ..... ELEVATION ..... BEARING 007° DEPTH ..... STARTED Oct. 28/80 COMPLETED Nov. 2/80  
 DEPARTURE ..... SECTION ..... DIP -48 DRILLED BY D.J. Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAYS			
0-10	Casing								
10.0'-34.0'	Light grey-green tuff. Lamination 30°. Breccia 18.0-24.0', 26.5-28.0', 32.0-34.0', Brown altered (Secondary Biotite)? Quartz vein 25.5-26.5', slight silicification 26.5'-28.0' and silicified 31.0-32.0'. Fault @ 30° 28.0-31.0'								
34.0-45.0	Greywacke (tuff) green, medium grained.								
45.0-49.5	Brown to light grey chert. Fault @ 49.5'								
49.5-57.5	As in 34.0-45.0' with grey-brown chert 50.0-52.0' and brown chert 54.0'-54.5; 55.5-56.5'. Calcite (limestone?) 54.5-55.0'.								
57.5-62.0'	Chert conglomerate with greywacke congl. 59.0-60.0'.								
62.0-81.0'	Mixed tuff, greywacke chert zone - chert & chert breccia 62.0-64.5', 85.0-85.5' (local py + chert clasts); Black cherty argillite 64.5-66.0' and 72.0-75.0'; brown cherty greywacke 66.0-72.0' & grey-green 75.0-81.0'; & dark grey 85.5-87.5'. Conglomerate 81.0-85.0'.								
87.5-94.0	Quartzite								
94.0-152.0	Light grey-green fine grained tuff lams @ 25°-35° Bx 99.0- 103.0'								
-168	Light grey-green tuff-chert. lams @ 25°, Py-Ca Fr. @ 159.5'.								
-176.5	" " cherty tuff as above Py-silicified 171-72; 173-73.5. Qtz-Py vein @ 50°.								

WESTERN MINER PRESS LTD.  
STANDARD FORM NO. 502

185 M.  
607.0'

LATITUDE ..... ELEVATION ..... BEARING 007° DEPTH ..... STARTED Oct. 28/80 COMPLETED Nov. 2/80  
 DEPARTURE ..... SECTION ..... DIP -48 DRILLED BY D.J. Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	oz/Ton ASSAYS	
176.5-227.5	Light to dark grey-green cherty tuff. lamination 25°-40°. Pyritic silicified zone 203-204.5', minor Cpy 208.0-209' with calcite & epidote. Black cherty argillite lamina @ 215.0' 2.5 cm calcite vein @ 60° @ 195.0'.						
227.5-270.5	Dark grey-green FG tuff-greywacke 2 cm calcite vein @ 239.0' Pyritic 246.5-247.5'.						
270.5-272.0	Quartz vein						
-273	Dark grey F.G. chert greywacke.						
-300.5	Chert, grey-green. Pyrite Fractures common (292-293)? Minor Epidote throughout	20438	291.0	294.0	3.0'	0.14	<0.003
300.5-322.5	Grey-green tuff grading to light grey-green cherty tuff breccia. laminations @ 35°. Quartz-Carbonate vein @ 45° @ 309.0-310.0'						
-327.0	Coarse grained sandstone						
-338.5	Light grey to buff chert-tuff breccia, calcite cement to 332.0						
-341.0	Laminated (5°) buff chert.						
-351.0	Green tuff laminations // to CA. Bx. 344.5-345.0', cherty 345.0'- 351.0' Epidote common - particularly @ 351.0'						
351.0-360.0	Buff chert & tuff. Quartz zone 352.0-353.0', 355.0- Carbonate @ 359.0' Bx @ 351.0-360.0'.	20437	358.0	363.0	5.0'	0.16	<0.003
360.0-370.5	Clay altered breccia - sedimentary & fault.						

80-4

(3)

LATITUDE ..... ELEVATION ..... BEARING 007° DEPTH 185 M 607.0' STARTED Oct. 28/80 COMPLETED Nov. 2/80  
 DEPARTURE ..... SECTION ..... DIP -48 DRILLED BY D.J. Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	oz/Ton ASSAYS			
						Ag.	Au.		
370.5-374.0	Black cherty argillite - Extensive calcite veinlets.	20490	400.0	405.0	5.0'	0.15	0.014		
-376.0	Breccia. Grey tuff clasts in grey-green matrix (tuff).	20491	405.0	410.0	5.0	0.12	0.003		
-382.0	Light green tuff - sand sized tuff & chert clasts.	20492	410.0	415.0	5.0	0.18	0.003		
-386	Cherty tuff, dark brown 385.5-386.0'	20493	415.0	420.0	5.0	0.14	0.005		
-400.5	Fine to coarse sandstone with buff chert Bx 388.0-388.5 & 399.5-end	20494	420.0	425.0	5.0	0.14	<0.003		
-417.5	Pyritic quartzite, Cpy @ 412.0'	20495	425.0	430.0	5.0	0.12	<0.003		
417.5-427.0	Silicified, pyritized breccia Cpy @ 425.0'	20496	430.0	435.0	5.0	0.12	<0.003		
-432.5	Lt. Brown cherty tuff (lams @ 2°) Silicified Bx.429-432.5.	20497	435.0	439.0	4.0	0.06	0.003		
-438.0	Quartzite	20435	439.0	444.0	5.0	0.16	<0.003		
-447	Greenstone (andesite ?) with quartz 443-44 & 445.5-447.0' chloritized and silicified	20436	444.0	449.0	5.0	0.13	0.005		
-452	Silicified Breccia - ?								
-455	Andesite (greenstone) as inclusions, augite? dacite? is this Augite Andesite unit?								
-457.5	Tuff with laminae of black cherty argillite. Py. Hem. Ca.								
457.5-522	Andesite (greenstone) with laminated (45°-65°) cherty tuff 462.0-467.0', Py. Soft sediment deformed.								
522.0-539.0	Conglomerate with laminated (40°) black cherty argillite 527.0-528.0'; Dk grey cherty tuff 531-32; Light grey chert Bx 532.5-535.0 & med. grey chert 539-540.0'.								

WESTERN MINER-PRESS LTD. STANDARD FORM NO. 502

80-5

LATITUDE ..... ELEVATION 1051 M BEARING 353° DEPTH 102.4 M STARTED Nov. 3/80 COMPLETED Nov. 4/80 (1)

DEPARTURE ..... SECTION ..... DIP -57° DRILLED BY D.J. Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	oz/Ton ASSAYS	
						Ag.	Au.
0-10	Casing						
10.0-56.0	Sedimentary tuff bx. with interbeds of green greywacke. Finely laminated (60°) black cherty argillite 29.0-31.0' and 15.0' - 27.0' calcite 43.5-44.0'						
50.0-105.0	Interbedded green to grey to lt. grey tuff and greywackes. laminations 56.0-66.5' @ 45° & distorted.						
105.0-106.0	Quartz Vein						
106.0-108.0	Augite Andesite? dacite?	20439	105.0'	106.0	1.0'	0.14	<0.003
-116.0	Greywacke, grey-green, brown. Fine grained.	20440	116.0	121.0	5.0'	0.10	<0.003
116.0-137.5	Chert, grey and brown - silicified, quartz veining	20441	121.0	126.0	5.0'	0.10	<0.003
	117.0-118.0, Epidote 116.5-117.0; Minor Zn S. @ 130.5 & Cpy @ 126.5	20442	126.0	131.0	5.0'	0.18	<0.003
-153.5	Cherty tuff, lt. grey, green & brown Breccia 137.5-138.0'	20443	131.0	136.0	5.0	0.10	0.003
	Well broken. Calcite-hematite-pyrite veins 150.0-151.0'.	20444	136.0	141.0	5.0	0.06	<0.003
-157.0	Greywacke, F.G. Pyrite & epidote						
-160.0	Chert, Buff, finely laminated @ 40°-50° - Breccia with Py, Hem., and Carbonate 159.5-160.0'						
-226.0	Cherty tuff, lt. green to grey with interbedded buff chert. laminations @ 40° @ 164.0' to 10° @ 223.0'. Breccia 195.0-196.0' Minor Py. Hem. and calcite 163.0' ; 171.0-175.0' Broken 179.0-195.0' ; 205.0-206.0' & 214.0-215.0'.						

LATITUDE ..... ELEVATION 1051 M BEARING 353° DEPTH 102.4 M STARTED Nov. 3/80 COMPLETED Nov. 4/80  
 DEPARTURE ..... SECTION ..... DIP -57° DRILLED BY D.J. Drilling LOGGED BY Gaard

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAYS			
226.0-233.0	Sedimentary Bx. Light grey-green, clasts of chert & cherty tuff. Fine grained greywacke 230.0-232.0'								
233.0-234.0	Light green cherty tuff Lam. 25° -247.5 As 226.5-233.0' with greywacke 235.0-236.5'; 237.5-244.0' and as clasts & matrix 244.0-247.0'.								
247-247.5	Clay Zone - blue grey								
247.5-274.5	Conglomerate - Clasts are quartz, brown chert, calcite (limestone)? & tuff - 2.5 cm quartz vein @ 269.0- Coarse sandstone 272.0-274.0'								
-279.0	Dacite								
-288.0	Conglomerate - 1/2 cm calcite & ZnS @ 70° @ 284.5'								
-290.0	Coarse sandstone								
-293.0	Grey-brown green tuff. 2 cm calcite vein 292.0' @ 50°								
-322	Conglomerate. Tuff interbeds with lams // to C.A. 296.5 - 297.5', 298.0-298.5', & 301.0-302.0'. Black cherty argillite 309.0-310.5' with Ep alt on each side. local Carb. Fractures								
322.0-327.0	No core - underground workings?								
-336.0	Conglomerate								
	END								
	DIP TESTS 326.0' -59°								

A P P E N D I X 1

DECLARATION

I, Thomas E. Lisle, of the District of North Vancouver, Province of British Columbia, Canada, declare:

I am a geologist residing at the above address.

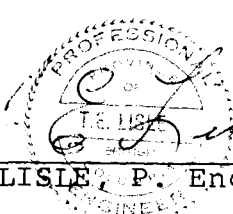
I am a graduate of the University of British Columbia in 1964 with a Bachelor of Science degree, and am a registered member of the Association of Professional Engineers of British Columbia.

I have practiced my profession since graduation, and was engaged in exploration geology for several years prior to 1964.

This report is based on field work carried out on the property in June 1979, and May, June, October, and November 1980.

D.R. Gaard is a geologist (BSc - University of Minnesota ) currently on Master's work at the University of Alaska. Experience includes 10 seasons with R.H. Sera-  
phim Engineering Ltd. in Alaska and British Columbia.

Dated at Vancouver, B.C. this *27* day of *January 1981*, ~~December, 1980~~ *TE L*

  
T.E. LISLE, P. Eng.



A P P E N D I X 2

STATEMENT OF EXPENSES -- PEARL GROUP

Onions - Bulldozer Trenching Site Preparation - Clearing Roads, etc. October 18 - November 10/80	\$ 6,667.00
D.R. Gaard - Geologist-Supervisor October 10 to November 11/80 42 days @ \$115.00/day	4,830.00
Camp Costs -- 42 x \$20.00	840.00
D.J. Drilling Ltd.	56,035.81
Truck Rental - Say 1 month	374.40
Assay Costs - Chemex Laboratory -- 49 @ \$9.50	465.50
Consulting -- R.H. Seraphim -- 4 @ \$300.00	1,200.00
Report Preparation	<u>500.00</u>
	<u>\$70,912.71</u>

*18 July*

STATEMENT

D. ONIONS HOLDINGS LTD.  
 Box 572 Ph. 445-8852  
 Grand Forks, B.C.

DATE Nov 10 19 80

R.H. Seraphim Engineering Ltd.  
316-470 Brunville St.  
Nanaimo B.C. V6C 1V5.

DATE	DETAILS	DEBIT	CREDIT	BALANCE
Nov 1	D-6 cat	8 hrs		
2	D-6 cat	8 hrs		
3	D-6 cat	8 hrs		
4	D-6 cat	8 hrs		
5	D-6 cat	8 hrs		
		40 hrs @ 40.00		1600.00
Nov 5	John Deere Loader			
	rental: 14 days @ 70.00			980.00
	(anchor for diamond drill)			
	Rental on			
	Stalensberg Water Tank			100.00
	(diamond drill)			
				00 0892

DATE	DETAILS	DEBIT	CREDIT	BALANCE
Oct 31	Account payable	3987.50		
	Deposit (cash by bank) 1000.00		1000.00	
Nov 6	Payroll acct printing	2987.50		
Nov 10	Account payable	2680.00		

Nov 10 1980  
 R.H. Seraphim Engineering Ltd.  
 316-470 Brunville  
 Nanaimo B.C. V6C 1V5

16

STATEMENT  
 D. ONIONS HOLDINGS LTD.  
 Box 572 Ph. 445-8852  
 Grand Forks, B.C.

... LTD.  
... 0662  
... Forks, B.C.

DATE Oct 31 1956

DATE	DETAILS	DEBIT	CREDIT	BALANCE
Oct 27	350 JD (murdied) 2 hrs @ 35.00			70.00
	D-6 9 hrs @ 40.00			360.00
Oct 28	D-6 9 hrs @ 40.00			360.00
Oct 29	D-6 8 hrs @ 40.00			320.00
Oct 30	D-6 8 hrs @ 40.00			320.00
Oct 31	D-6 8 hrs @ 40.00			320.00
				<u>3987.50</u>
	less \$1,000 deposit			1000.00
				<u>2987.50</u>

EMPLOYER SH Simpson Eng Ltd.  
 EMPLOYEE DR Ewald

DATE	JOB	HOURS
10/16/56 -	Wagon Maintenance - Park Signal	
11/14/56	Supervising Drill job	US \$3600.00
11/15, 11/17 -	Office work	US \$500.00
11/20/56	1 day travel to Park	US \$100.00
	total	US \$4200.00

1750  
4900

# D.J. DRILLING COMPANY LTD.

13135 - 20th Avenue  
SURREY, B.C. V4A 1Z1  
Phone 531-4134

November 20th, 1980.

R. H. SERAPHIM ENGINEERING  
316 - 470 Granville Street,  
Vancouver, B.C. V6C 1V5

Dear Sirs:            Re: Diamond Drilling near  
Grand Forks, B.C.

The following is a summary of the attached invoices covering the work at the above location from October 15th, to November 4th, 1980.

Hole # 80-1	\$ 9,357.80
Hole # 80-2	\$ 10,414.00
Hole # 80-3	\$ 6,776.80
Hole # 80-4	\$ 12,832.20
Hole # 80-5A	\$ 529.60
Hole # 80-5B	\$ 8,268.26
Labour re laying waterline and moves	\$ 6,131.25
Core Boxes	\$ 475.90
Freight	\$ <u>1,250.00</u>
Total	\$ <u>56,035.81</u>

Yours truly,

*pd Dec 1/80*  
*E.M. Schussler*

(Mrs.) E.M. Schussler.  
Secretary.

encl.

# D.J. DRILLING COMPANY LTD.

13135 - 20th Avenue  
 SURREY, B.C. V4A 1Z1  
 Phone 531-4134

TO RN SERAPHIM ENGRG

DATE Nov. 20/80

RE LAB DIAMOND DRILLING NEAR GRAND FORKS BC.

Te 90-58 (CONT'D)

LAB IMP BIT	301.60		1160.46		1276.46		\$ 8,265.26			
LAB	1160.46		1276.46							
ABOUT RE LAYING WATERLINE & MOVES										
	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>25</u>	<u>27</u>	<u>28</u>	<u>Nov. 2</u>	<u>4</u>
PO: EN	10	10	10							
MCDONALD	10	10	10	10	4	10	10	2	2	9 8
US TIL	10	10	10	10		5		8	2	1 8
QUILINA	10	10	10	10		5		8	2	1 8
MALLARD	10	10	10	10	4	10	10	2	2	5 8
	50	50	50	40	8	30	20	20	8	19 32
	327 man HOURS @ 18.75						\$ 6,191.25			
C RE BOXES							\$ 475.90			
FREIGHT							\$ 1,250.00			



# INVOICE

## CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1  
TELEPHONE: 984-0221  
AREA CODE: 604  
TELEX: 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

TO: Dr. R. H. Seraphim Engineering Ltd.  
316 - 470 Granville St.  
Vancouver, B.C.  
V6C 1V5  
ATTN:

CERTIFICATE NO. A8011158-001  
INVOICE NO. 41142  
DATE Dec. 11/80

	DESCRIPTION	SUB-TOTAL	TOTAL
37	Assayed for Ag & Au @ \$9.50 Less 10%	\$351.50 35.15	\$316.35

*Pearl Resources*

TERMS—NET 30 DAYS

1½% Per Month (18% Per Annum) Charged on Overdue Accounts

78-04

TO R.H. SERAPHIM ENGINEERING DATE Nov 20/80  
RE: RD DIAMOND DRILLING NEAR GRAND FORKS BC.

Hole # 80-1		
CASING	0-12' @ 25. <sup>00</sup>	300.00
CORE DRILLING	12'-450' = 438' @ 20. <sup>60</sup>	9022.80
1	ACID TEST	35.00
		<u>9357.80</u>
Hole # 80-2		
CASING	0-10' @ 25. <sup>00</sup>	250.00
CORE DRILLING	10'-500' = 490' @ 20. <sup>60</sup>	10,094.00
	ACID TESTS @ 35. <sup>00</sup>	70.00
		<u>10,414.00</u>
Hole # 80-3		
CASING	0-20' @ 25. <sup>00</sup>	500.00
CORE DRILLING	20'-323' = 303' @ 20. <sup>60</sup>	6241.80
1	ACID TEST	35.00
		<u>6776.80</u>

RE: RD DIAMOND DRILLING NEAR GRAND FORKS BC

Hole # 80-4		1 - 438
		2 - 500
CASING	0-10' @ 25. <sup>00</sup>	3 325
CORE DRILLING	10'-500' = 490' @ 20. <sup>60</sup>	# 4 - 607
	500'-607' = 107' @ 22. <sup>60</sup>	5A - 24
2	ACID TESTS @ 35. <sup>00</sup>	5B - 328
		<u>12,832.20</u>
Hole # 80-5A		
CASING	0-8' @ 25. <sup>00</sup>	200.00
CORE DRILLING	8'-24' = 16' @ 20. <sup>60</sup>	329.60
		<u>529.60</u>
Hole # 80-5B		
CASING	0-8' @ 25. <sup>00</sup>	200.00
CORE DRILLING	8'-336' = 328' @ 20. <sup>60</sup>	6756.80
1	ACID TEST	35.00
CORE BARREL & TUBE		635.00
1 RD REMAINING SHELL		223.86



APPENDIX 3

# CHEMEX LABS LTD.

212 BROOKSBANK AVE  
NORTH VANCOUVER B.C.  
CANADA V7J 2C1  
TELEPHONE: (604)984-0221  
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ASSAY

TO : SERAPHIM, DR. R.H.  
ATTN: MR. T. LISLE  
BCX 48  
ATLIN, B.C.  
VOW 1A0

CERT. # : A8011078-001-A  
INVOICE # : 40832  
DATE : 28-NOV-80  
P.C. # : NONE

Sample description	Prep code	Ag oz/t	Au oz/t				
20476	207	0.10	0.003	--	--	--	--
20477	207	0.06	<0.003	--	--	--	--
20478	207	0.02	0.003	--	--	--	--
20479	207	0.10	0.046	--	--	--	--
20480	207	0.04	<0.003	--	--	--	--
20481	207	0.03	0.012	--	--	--	--
20482	207	0.01	<0.003	--	--	--	--
20483	207	0.18	<0.003	--	--	--	--
20484	207	0.01	<0.003	--	--	--	--
20485	207	0.08	<0.003	--	--	--	--
20486	207	0.06	<0.003	--	--	--	--
20487	207	0.02	0.003	--	--	--	--

*Len Amadori*  
.....  
Registered Assayer, Province of British Columbia



MEMBER  
CANADIAN TESTING  
ASSOCIATION





# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ASSAY

TO : SERAPHIM, DR. R.H.,  
 316-470 GRANVILLE STREET,  
 VANCOUVER, B.C.,  
 V6C 1V5

CERT. # : A8011153-001-A  
 INVOICE # : 41142  
 DATE : 10-DEC-80  
 P.C. # : NONE

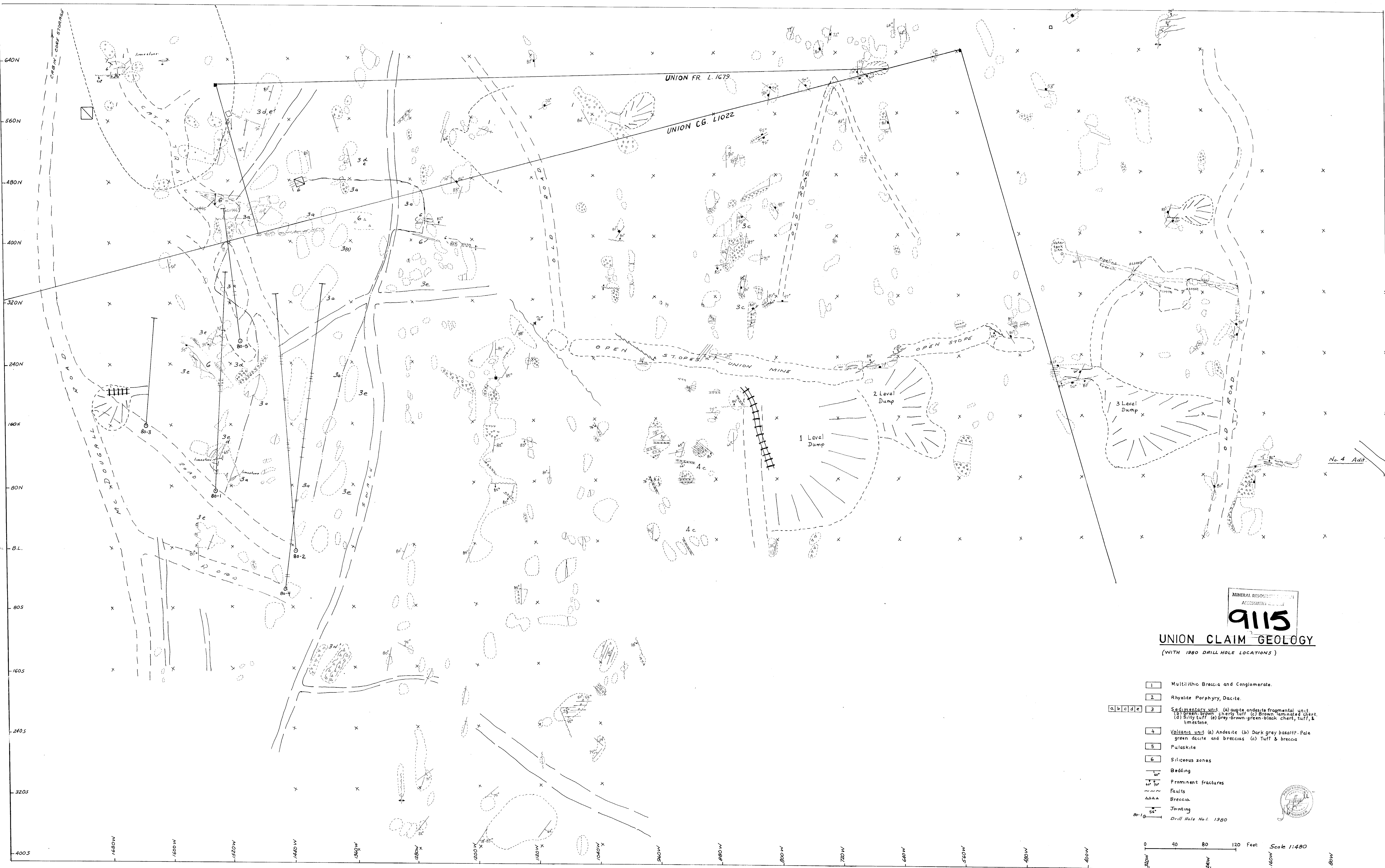
Sample description	Prec code	Ag oz/t	Au oz/t				
20426	207	0.10	<0.003 ✓	--	--	--	--
20427	207	0.02	<0.003 ✓	--	--	--	--
20428	207	0.10	<0.003 ✓	--	--	--	--
20429	207	0.08	0.003 ✓	--	--	--	--
20430	207	0.10	0.003 ✓	--	--	--	--
20431	207	0.17	0.010 ✓	--	--	--	--
20432	207	0.02	<0.003 ✓	--	--	--	--
20433	207	0.01	0.003 ✓	--	--	--	--
20434	207	0.06	0.003 ✓	--	--	--	--
20435	207	0.16	<0.003 ✓	--	--	--	--
20436	207	0.13	0.005 ✓	--	--	--	--
20437	207	0.16	<0.003 ✓	--	--	--	--
20438	207	0.14	<0.003 ✓	--	--	--	--
20439	207	0.14	<0.003 ✓	--	--	--	--
20440	207	0.10	<0.003 ✓	--	--	--	--
20441	207	0.10	<0.003 ✓	--	--	--	--
20442	207	0.18	<0.003 ✓	--	--	--	--
20443	207	0.10	0.003 ✓	--	--	--	--
20444	207	0.06	<0.003 ✓	--	--	--	--
20445	207	0.30	0.040 ✓				
20446	207	0.34	0.062 ✓				
20447	207	0.48	0.005 ✓				
20448	207	0.62	0.003 ✓				
20449	207	0.58	0.003 ✓				
20488	207	0.18	<0.003 ✓				
20489	207	0.12	<0.003 ✓				
20490	207	0.15	0.014 ✓				
20491	207	0.12	0.003 ✓				
20492	207	0.18	0.003 ✓				
20493	207	0.14	0.005 ✓				
20494	207	0.14	<0.003 ✓				
20495	207	0.12	<0.003 ✓				
20496	207	0.12	<0.003 ✓				
20497	207	0.06	0.003 ✓				
20498	207	0.12	0.003 ✓				
20499	207	0.15	0.005 ✓				
20500	207	0.16	<0.003 ✓				

*Surface Sample.  
 Surface Sample.  
 9.0 feet  
 4.0' of 2.5' vein.  
 Quartz outcrop.*

*B. Swaites*

Registered Assayer, Province of British Columbia





MINERAL RESOURCES DIVISION  
 GEOLOGICAL SURVEY OF CANADA  
**9115**

**UNION CLAIM GEOLOGY**  
 (WITH 1980 DRILL HOLE LOCATIONS)

- 1 Multistatic Breccia and Conglomerate.
- 2 Rhyolite Porphyry, Dacite.
- 3 Sedimentary unit (a) light andesite fragmental unit (b) green-brown cherty tuff (c) brown laminated chert (d) silty tuff (e) grey-brown-green-black chert, tuff, & limestone.
- 4 Volcanic unit (a) Andesite (b) Dark grey basalt? Pale green dacite and breccias (c) Tuff & breccia
- 5 Pulaskite
- 6 Siliceous zones
- Bedding
- Prominent fractures
- Faults
- Breccia
- Jointing
- 80-10 Drill Hole No. 1980

