

Mining Records

KEYSTONE PROJECT

REPORT ON DRILLING OF HOLES

W-80-1 & W-80-2

Coquihalla Area, B.C.
Nicola Mining Division
149°41'N, 121°01'W
NTS 92H/11E

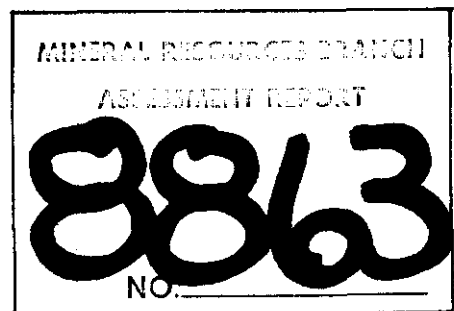
WORK PERIOD: MAY 13-JUNE 10, 1980

by

A. W. Randall, P.Eng.
Project Geologist

WESTERN MINES LIMITED

DECEMBER 1980



CONTENTS

	<u>Page</u>
SUMMARY AND CONCLUSIONS	1
INTRODUCTION	2
DETAILS OF DRILLING PROGRAM	2
GEOLOGY OF DRILL HOLES	3
ALTERATION	4
FRACTURING	4
ASSAYS AND GEOCHEMISTRY	5

APPENDIX

- A. CLAIM STATUS AND CLAIM MAP
- B. DRILL LOGS - W-80-1
 - W-80-2
- C. SPERRY-SUN HOLE DEVIATION REPORTS
- D. SUMMARY OF EXPENDITURES

FIGURES

- FIG. 1 LOCATION MAP
- FIG. 2 CLAIM STATUS
- FIG. 3 PLAN OF DRILL HOLES
- FIG. 4 COMPOSITE GEOLOGY CROSS SECTION

SUMMARY AND CONCLUSIONS

The 1980 drilling program has been inconclusive as far as discovering molybdenum mineralization is concerned. From the 1979 program it was shown that molybdenum mineralization is present at depth grading at least 0.04% Mo (Saleken 1979, Hole W-79-1). The 1980 drill holes intersected the first indication of this mineralization, sporadic short sections of molybdenite paint on fractures grading up to 100 ppm Mo. We have shown by this drilling that the mineralization noted in hole W-79-1 does not exist at a higher level (ie. closer to surface) in the area west of W-79-1.

The only continuous occurrence of molybdenum mineralization discovered so far on the property is at considerable depth. The potential exists for similar mineralization to occur much closer to surface. However before further deep drilling is done to test for this potential it is recommended that a consultant, well versed in the type deposit (eg. Climax's Henderson-Urad deposit), be retained to examine all existing data and drill core to see if a clearer interpretation of the geological picture can be developed and indicate where future drill holes should be placed.

A further aspect of this property which has perhaps been overlooked is the Au-Ag mineralization associated with the quartz-sphalerite-galena vein systems. Some of this mineralization is quite close to surface (eg. W-80-1). Hence the potential to develop some tonnage of Au-Ag mineralization could be evaluated relatively cheaply.

INTRODUCTION

The purpose of this report is to summarize work carried out on the Keystone project claims during 1980.

The Keystone property, consisting of 77 units is located in the Coquihalla Pass area approximately 60 km by road southwest of Merritt. The history and general geological picture of this property up to and including work done by Western Mines is well documented in reports by Len Saleken for 1978 and 1979. Molybdenite mineralization associated with the Keystone stock is the primary target although some precious metal content is also of interest.

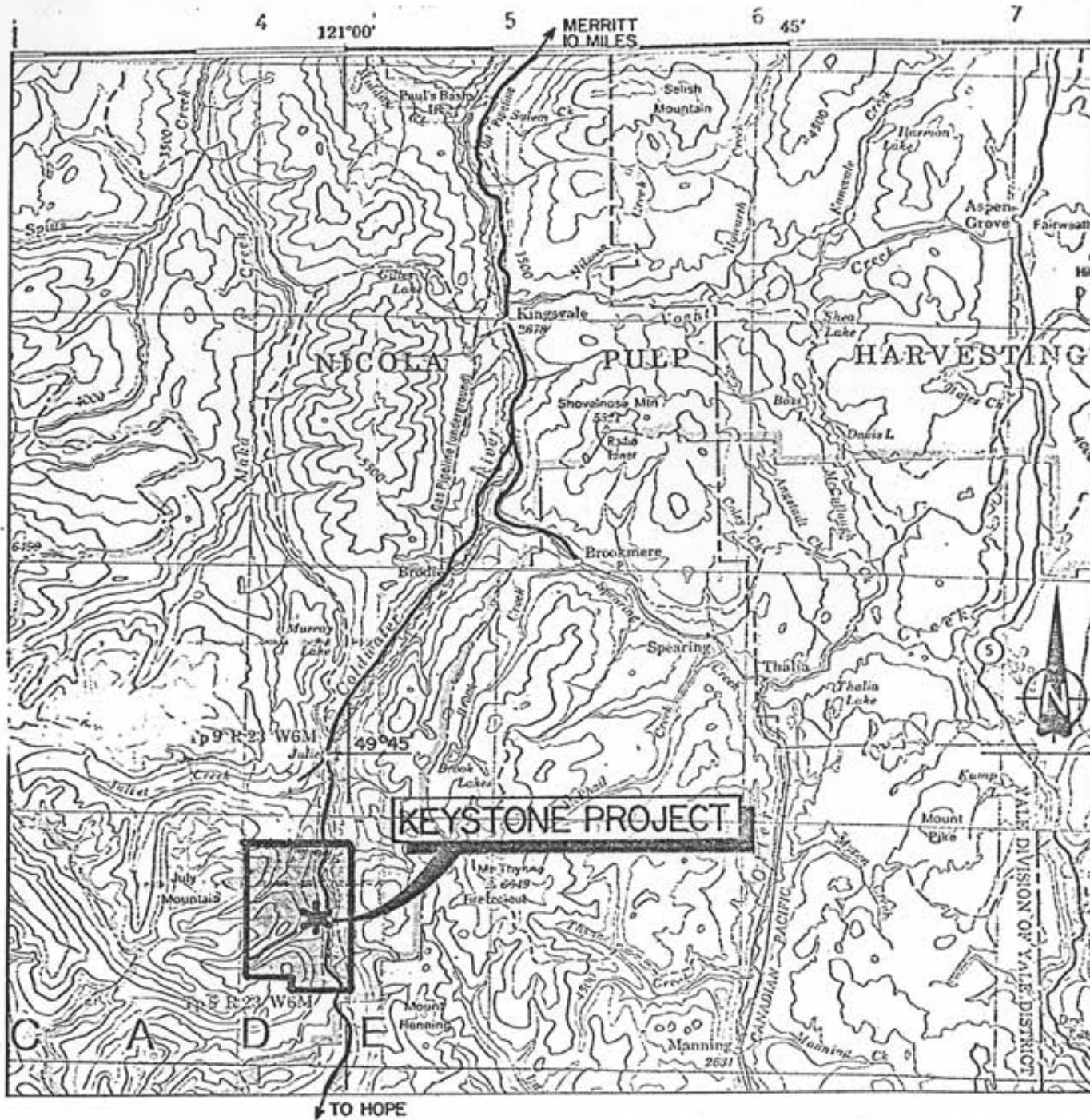
The program for 1980 consisted of 2 diamond drill holes.

DETAILS OF DRILLING PROGRAM

Diamond drilling was carried out during the period May 13 to June 10, 1980. Coates Drilling provided a Longyear 44 rig mobilized out of Kamloops, equipped to drill both NQ and BQ size core. The drilling was considered relatively easy with production of about 100 feet per shift.

Access roads to the drill sites were difficult to construct due to bedrock close to surface on a fairly steep slope. A 4 x 4 was needed to drive to the drill sites.

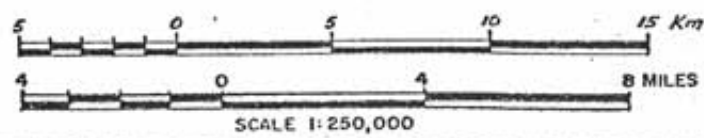
Hole 80-1 was drilled NQ to 610 meters then reduced to BQ for the remainder of the hole to 642 meters. Since no problems were encountered in drilling 80-1, it was decided to drill 80-2 BQ for its entire length of 775 meters. Both holes were tested with a Sperry-Sun bore-hole camera to determine their final configuration.



WESTERN MINES LIMITED

LOCATION MAP

- KEYSTONE PROJECT -



DRAWN BY:

DATE: DEC. 1980

FIGURE 1

GEOLOGY OF DRILL HOLES

Molybdenite mineralization had been intersected in DH 79-1 grading up to .044 Mo in the interval 1,055 to 1,307 meters. Also encouraging the search was the presence of molybdenite bearing pebbles in the breccia intersected in DH 78-1. The grade of these pebbles was generally higher than any moly mineralization previously seen on the property. Hence it was hoped that similar mineralization could be found at a higher level (ie. closer to surface) and in an area in which it had not been destroyed by the brecciation.

Hole 80-1 was located 230 meters west of hole 79-1. This hole had been planned to be located 300 meters west of 79-1 but could not be placed there due to the topography. The upper 70 meters of this hole encountered relatively fresh Keystone quartz diorite. From 70-550 meters cut well developed Keystone quartz diorite breccia. Within the breccia from 450-510 meters were two thick rhyolite-porphyrty dykes. The remainder of the hole from 550 to 642 meters was in generally fresh Keystone quartz diorite. A minor amount of molybdenite paint was noted on a few fractures in the lower part of this hole.

Since hole 80-1 encountered the fresh Keystone quartz diorite it was decided to move closer to 79-1 and drill a second hole hence 80-2 was collared 120 meters west of 79-1. This hole also encountered breccia from 35 to 620 meters, however, most of this breccia was the crackle variety as opposed to the jumble breccia noted in both holes 79-1 and 80-1. The remainder of hole 80-2 from 620 to 775 meters was in relatively fresh to weakly brecciated and altered Keystone quartz diorite. Scattered fractures with molybdenite paint were noted in the interval 640-775 meters.

ALTERATION

In the Keystone quartz diorite breccia extensive sericite alteration was noted forming abundant concentric layers of varying shades of green sericite around the breccia fragments. The cores of the breccia blocks were either fresh or kaolinized. It appears that the larger fragments have the fresh cores and the smaller ones kaolinite cores (perhaps reflecting a kaolinization front).

In the unbrecciated sections the main alteration was sericite envelopes peripheral to fractures lined with sericite, ⁺ quartz, ⁺ pyrite.

Pyrite is common to abundant throughout. It is generally on fractures of the fresh and crackle brecciated sections and may be found disseminated through the matrix of the jumble breccia. Occasional pre-breccia pyrite filled fractures were noted in some of the breccia fragments. Semi-massive to massive pyrite was occasionally noted either as vein-like fillings or within sections of silica flooding.

Quartz-sphalerite-galena, ⁺ rhodochrosite, ⁺ chalcopyrite veins were scattered through the drill core, however, these veins were thickest and generally most abundant in the upper parts of the holes. These veins, which may be as much as 20 centimeters thick, were often vuggy allowing the growth of well developed sphalerite, galena and rhodochrosite crystals.

The oxidized zone, as indicated by the presence of limonite staining on and peripheral to fractures, extends to a depth of about 40 meters.

FRACTURING

Fracture orientations varied from almost parallel to approximately perpendicular with relation to the core axis. However, most fractures were at angles of 40° to 50° to the C.A. The intensity of fracturing is quite variable, complicated by the brecciation. Fracture density ranges from 3 to 30 per meter but averages probably around 5 or 6.

ASSAYS AND GEOCHEMISTRY

A few selected sections in the upper parts of both holes where abundant sphalerite-galena bearing veins are present were sampled to check their Pb, Zn, Au and Ag content. The lower sections of the holes, where molybdenite mineralization was noted, were systematically sampled for Mo.

All samples were geochemically analyzed for Pb, Zn, Au, Ag and Mo. A few samples were checked for W. Check assays were run for Au and Ag on samples from the Pb-Zn veins which were geochemically anomalous in Au and Ag.

The Mo values were generally low, only one sample in W-80-2 ran more than 100 ppm Mo. The best Au-Ag values obtained were in W-80-1 where one interval from 255.8-256.4 ft. (0.6 ft.) assayed 65 oz./ton Ag and a second interval 317-327 ft. (10 ft.) assayed 1.2 oz./ton Ag and .678 oz./ton Au.

A. W. Randall, P.Eng.
December, 1980

APPENDIX A

CLAIM STATUS

CLAIM MAP

CLAIM STATUS

The Keystone Joint Venture holdings consist of 11 claims totalling 77 units. The claims are registered under Western Mines Limited.

<u>CLAIM</u>	<u>UNITS</u>	<u>RECORD NO.</u>	<u>RECORD DATE</u>	<u>EXPIRY DATE</u> (as of Dec 1980)
Keystone	6	341	Sept. 26, 1977	1990
Comstock	1	339	Sept. 26, 1977	1987
Bonanza	8	734	Oct. 3, 1979	1990
River Queen #1	8	311	Aug. 5, 1977	1987
River Queen #2	6	312	Aug. 5, 1977	1987
River Queen #3	6	313	Aug. 5, 1977	1987
Dry #1	18	487	July. 26, 1978	1987
Blue Gold	9	337	Sept. 26, 1977	1987
Red Bog	6	310	Aug. 5, 1977	1987
Falls	9	338	Sept. 26, 1977	1987
	—			
TOTAL	<u>77</u>			

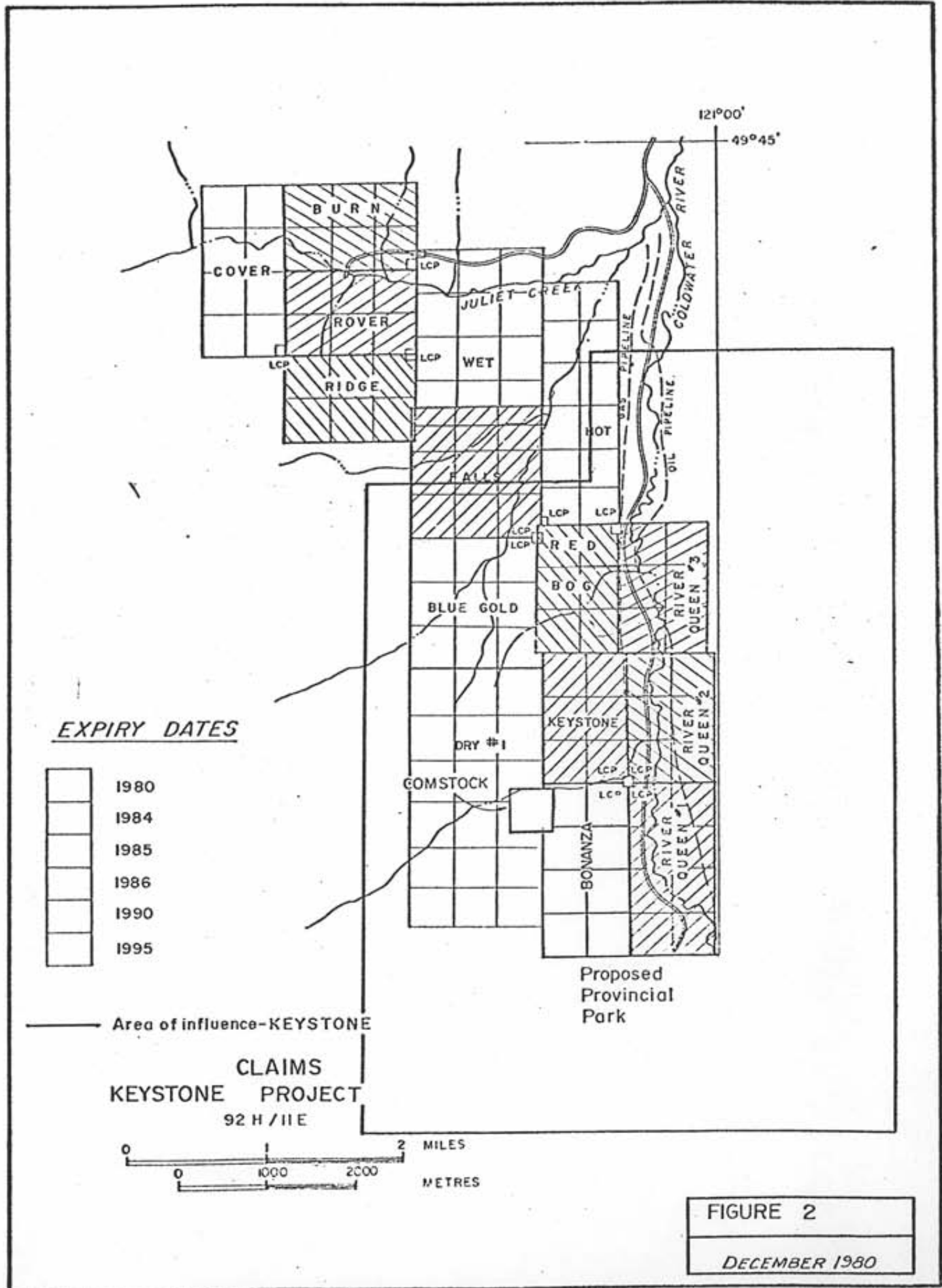


FIGURE 2
DECEMBER 1980

APPENDIX B

DRILL LOGS W-80-1

W-80-2

NOTE: - (1) ALL ASSAY INFORMATION INCLUDED IN DRILL LOGS

(2) DRILL CORE STORED IN WESTERN MINES WAREHOUSE IN VANCOUVER

WESTERN MINES LIMITED		Page 13 of 30				HOLE NO. W-80-1							
FEET/ METRES		ROCK TYPE / ALTERATION	GRAPHIC LOG.	MINERALIZATION / STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSAYS				
528.8	ctd 592.8	564.6-568.2 large qd block with weakly		veinlets in matrix @ 50° ±;									
		altered core;											
		558.3-559.4 porphyritic-rhyolite bx,		591.2 qtz.-sph.-ga.- minor									
		phenos generally very faint;		veinlet @ 50°;									
		578 - crumbly, clay-filled, highly											
		altered section;											
		591-592.8 rhyolite (? felsite) - porphyry											
592.8	852	Breccia - highly altered as above but		624-625.5 scattered sph. & ga.									
		includes fragments of ? Eagle Gd.,		& ? siderite (yellowish),									
		porphyritic rhyolite, felsite, as well as		best grade (Pb-Zn) material									
		qd;		associated with frs @ 60° which									
		593.4-594.3 highly altered qd-granular mass		are in turn cut by frs @ 50°									
		of plag.-qtz.-biotite with clay; crumbly;		with siderite only;									
		608.4-611.5 very broken section, similar to above but less granular; some qtz veining		-sericite-chlorite-clay, ± py. frs @ 30°&60° common;									

associated with;

-py. most commonly dissem thru bx matrix & on fr surfaces at edge of larger bx fragments;

WESTERN MINES LIMITED

FEET/ METRES		ROCK TYPE / ALTERATION	GRAPHIC LOG.	MINERALIZATION / STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSAYS						
1842	ctd 1986.2	1833-1834.3 - silicified-pyritized zone		qtz.-py.-ser.-sph.-ga. veinlets											
		with py. & qtz veinlets @ 35°;		@ 30°;											
				1895 - 7 cm irregular qtz											
				veinlet @ 30° with qtz-py.-											
				sph.-ga.-ser.;											
				1899 - steep (10°-15°) irregular, thin											
				py.-ser. fr. cut by qtz.-ser.-											
				py. stringer zone with 2.5 cm											
				ser. envelope;											
				1914.5 MoS ₂ paint on gypsum-											
				ser.-filled fr. @ 40°, some											
				slicker siding;											
				1931-1933 definite sheeting of											
				qtz-ser.< py. ± chlor. frs. @											

20°-30° off-setting similar frs. @ 50°;

WESTERN MINES LIMITED

Page 26 of 38

HOLE NO. W-80-2

FEET/ METRES	ROCK TYPE / ALTERATION	GRAPHIC LOG.	MINERALIZATION / STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSAYS						
	1960-1967 + moderately altered with and		- qtz-py-ser frs. @ 30°;											
	cut by qtz-py-sericite frs. with wide green													
	sericite envelopes; some crackle brecciating													
	flecks of sericite (muscovite) disseminated;													
	1967-1977 mod. alt; only ghost remnants of		- 5-10 frs./ft. (probably some											
	mafics remain;		due to crackle bx); - some											
	1969 - K-spar minor in matrix and some on		chl frs., some qtz-ser + py frs.											
	fs. @ 70°;		@ 30° & 40°; 10 +frs./ft;											
	1977-2036 - moderately to intensely altered;		qtz-py with green ser. enve-											
	considerable crackle bx fracturing; moderate		lope @ 30+ most abundant;											
	to extensive qtz veining & flooding with		1960 qtz-rhodo-py-minor sph &											
	associated green sericite envelopes. Most		ga @ 30°;											
	pyrite occurs with qtz veining becoming very													
	abundant in lower (more intensity sericitized)													

part of section;

APPENDIX C

SPERRY-SUN HOLE DEVIATION REPORT

sperry-sun

DIRECTIONAL SURVEY REPORT

FOR

WESTERN MINES LIMITED



TYPE OF SURVEY: SINGLE SHOTS

SURVEY DEPTH: FROM 00 FT TO 2000 FT

LEASE: W-80-1

FIELD:/AREA: CAMPBELL RIVER *Keystone*

PROVINCE: B.C. JOB NO. WESTERN1

DATE OF SURVEY: 1980 07 14

OFFICE: EDMONTON, ALBERTA

SPERRY-SUN OF CANADA
SINGLE SHOTS

PAGE 1

WESTERN MINES LIMITED
CAMPBELL RIVER W-80-1

WESTERN1
19800714

TOTAL DEPTH	DIRECTION		ANGLE		VERTICAL DEPTH	LATITUDE FEET	DEPARTURE FEET	VERTICAL SECTION	DOG LEG
	DEG	MIN	DEG	MIN					
0	N	0	0	E	0	0	0.00	0.00	0.00
500	S	84	0	E	0	35	499.98	0.28	2.53
1000	S	38	0	E	2	0	999.85	7.42	10.43
1512	S	36	0	E	3	50	1511.16	28.31	26.00
2000	S	17	0	E	4	15	1997.97	58.80	40.87
								71.60	0.29

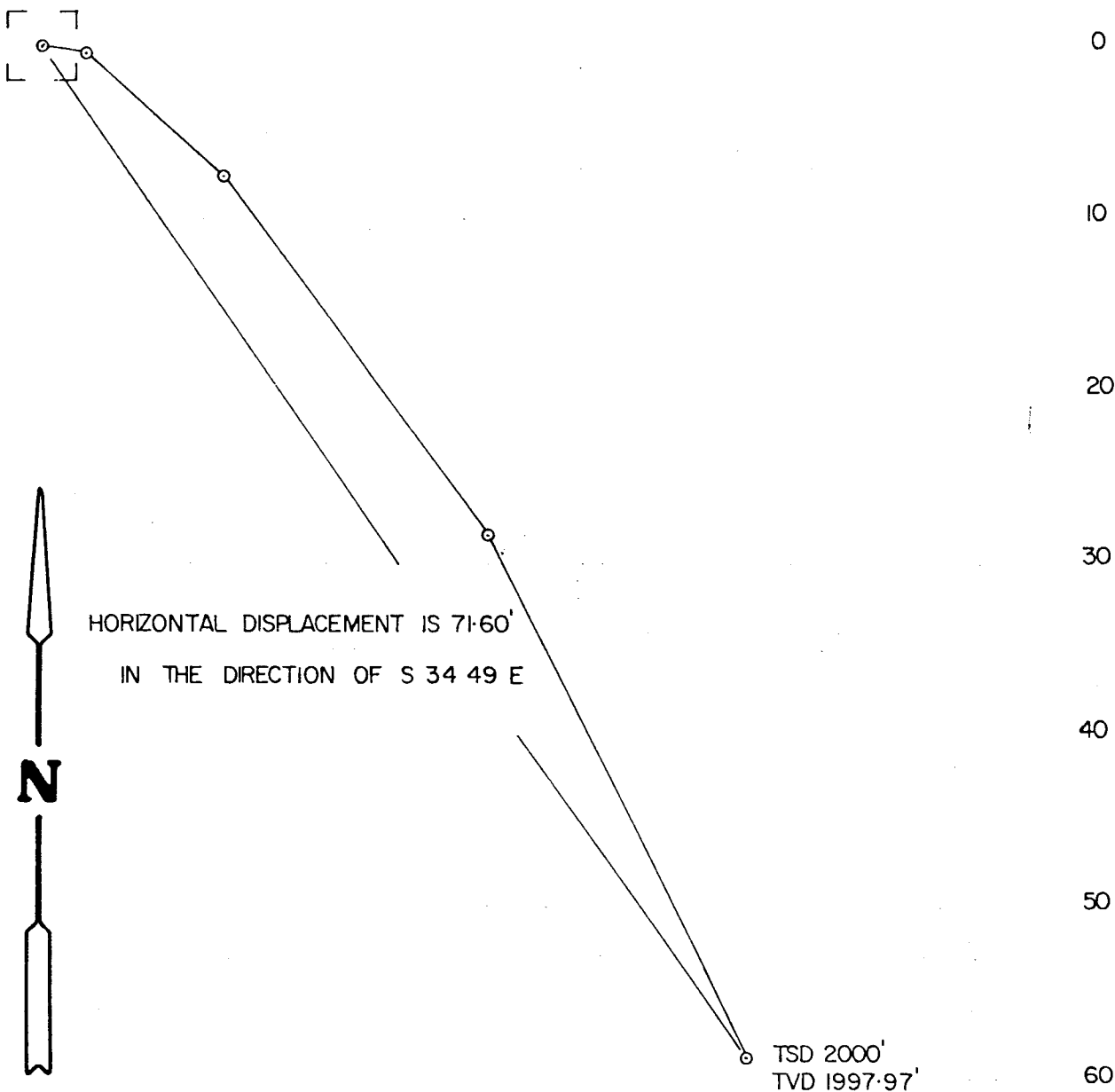
THE DOGLEG SEVERITY IS IN DEGREES PER ONE HUNDRED FEET.
THE VERTICAL SECTION WAS COMPUTED ALONG S 34 49 E
A DECLINATION OF 23 0 EAST HAS BEEN APPLIED.

BASED UPON MINIMUM CURVATURE TYPE CALCULATIONS. THE BOTTOM HOLE
DISPLACEMENT IS 71.60 FEET, IN THE DIRECTION OF S 34 49 E

WESTERN MINES LIMITED

~~CAMPBELL RIVER W-80-1~~

Keystone Project



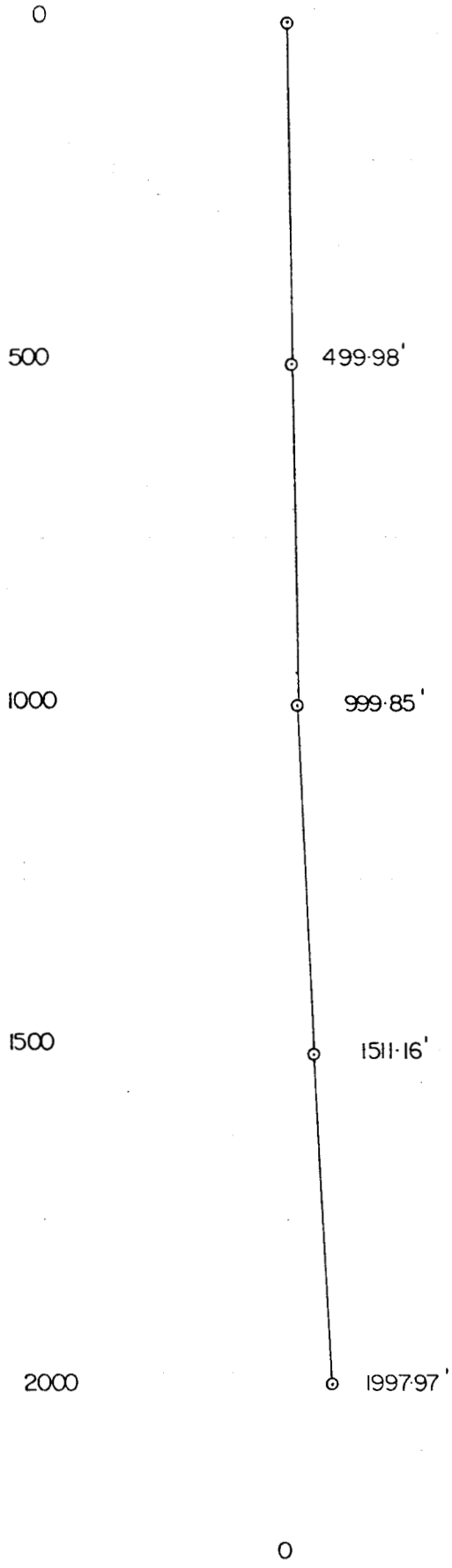
HORIZONTAL PROJECTION
SCALE 1" = 10'

0 10 20 30 40 50

sperry-sun
OF CANADA LTD.

DRWG BY: QSO CHCKD BY: SB DATE July 14/80

W-80-1



VERTICAL PROJECTION
SCALE 1" = 250'

sperry-sun
OF CANADA LTD.

DRWG BY: FOSD CHCKD BY: [Signature] DATE July 14/80

sperry-sun

DIRECTIONAL SURVEY REPORT

FOR

WESTERN MINES LIMITED



TYPE OF SURVEY: SINGLE SHOTS

SURVEY DEPTH: FROM 00 FT TO 2543 FT

LEASE: W-80-2

FIELD:/AREA: CAMPBELL RIVER

PROVINCE: B.C. JOB NO. WESTERN2

DATE OF SURVEY: 1980 07 14

OFFICE: EDMONTON, ALBERTA

SPERRY-SUN OF CANADA
SINGLE SHOTS

PAGE 1

WESTERN MINES LIMITED
CAMPBELL RIVER W-80-2

WESTERN2
19800714

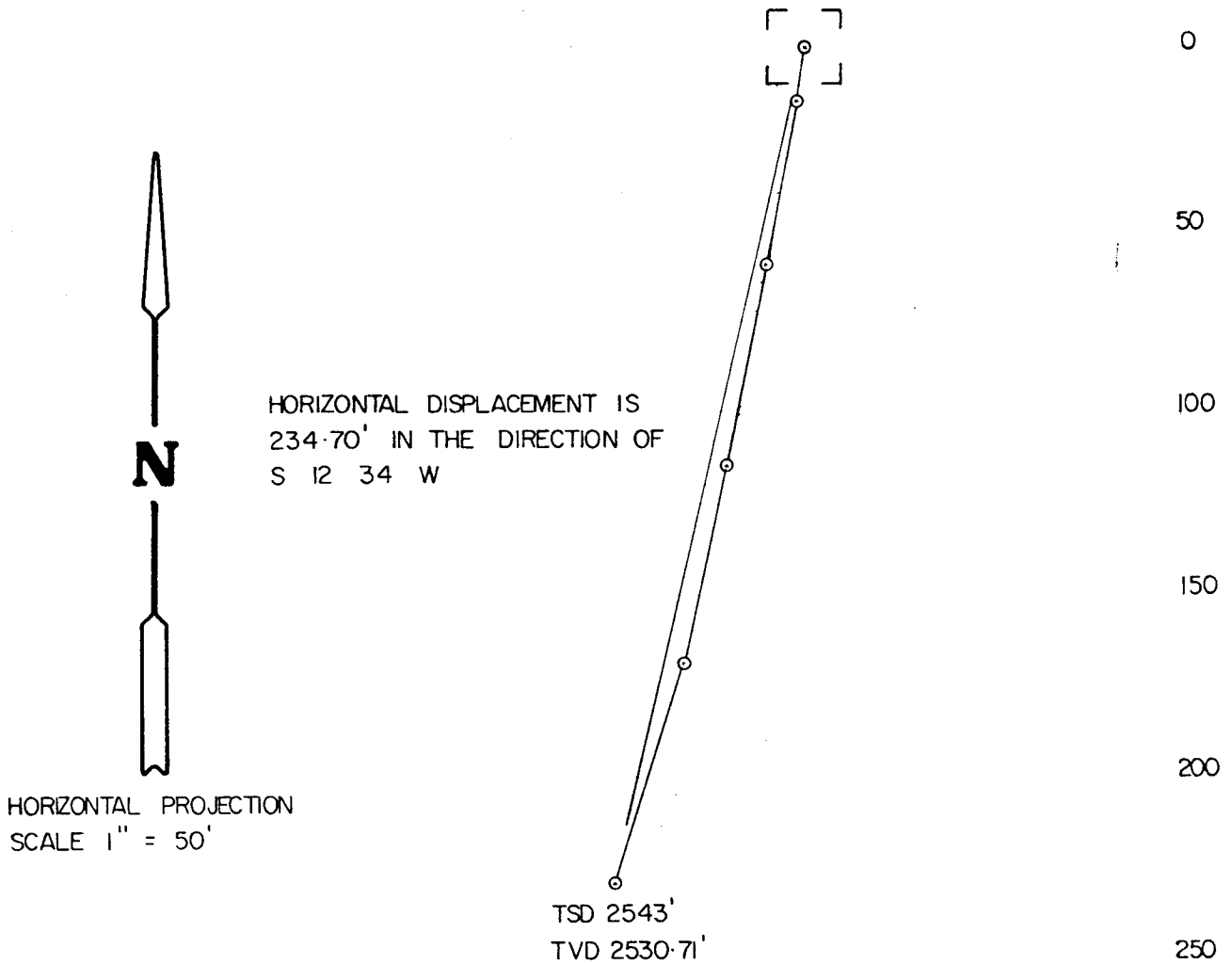
TOTAL DEPTH	DIRECTION			ANGLE	VERTICAL DEPTH	LATITUDE FEET	DEPARTURE FEET	VERTICAL SECTION	DOG LEG
	DEG	MIN		DEG MIN					
0	N	0	0	E	0 0	0.00 N	0.00 E	0.00	0.00
500	S	9	0	W	3 40	15.81 S	2.51 W	15.96	0.73
1000	S	11	0	W	6 35	59.74 S	10.48 W	60.58	0.58
1500	S	12	0	W	6 35	115.91 S	21.91 W	117.89	0.02
2000	S	13	0	W	6 5	169.76 S	33.83 W	173.04	0.10
2543	S	19	0	W	7 0	229.08 S	51.08 W	234.70	0.21

THE DOGLEG SEVERITY IS IN DEGREES PER ONE HUNDRED FEET.
THE VERTICAL SECTION WAS COMPUTED ALONG S 12 34 W
A DECLINATION OF 23 0 EAST HAS BEEN APPLIED.

BASED UPON MINIMUM CURVATURE TYPE CALCULATIONS. THE BOTTOM HOLE
DISPLACEMENT IS 234.70 FEET, IN THE DIRECTION OF S 12 34 W

WESTERN MINES LIMITED

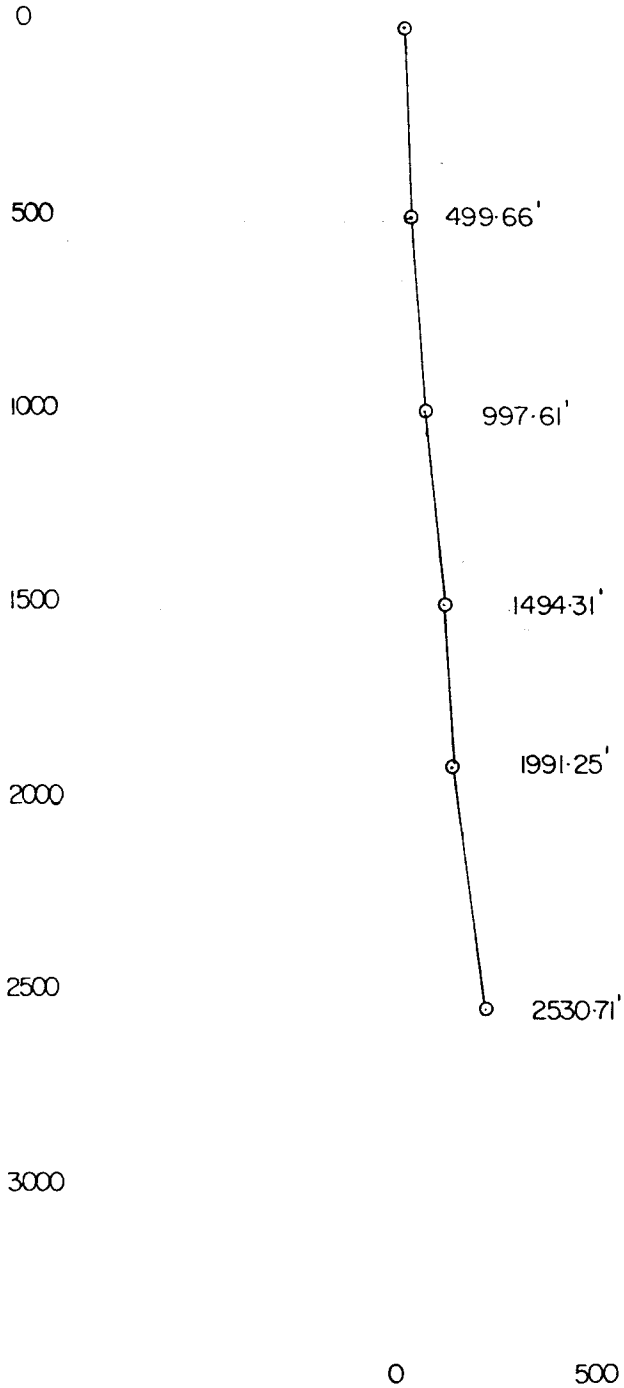
~~CAMPBELL RIVER~~ W-80-2 Keystone Project



sperry-sun
OF CANADA LTD.

DRWG BY: ASD CHCKD BY: [Signature] DATE July 14/80

W - 80 - 2



VERTICAL PROJECTION
SCALE 1" = 500'

sperry-sun
OF CANADA LTD.

DRWG BY: ASD CHCKD BY: [Signature] DATE July 14/80

APPENDIX D

SUMMARY OF EXPENDITURES

EXPLORATION COST REPORT

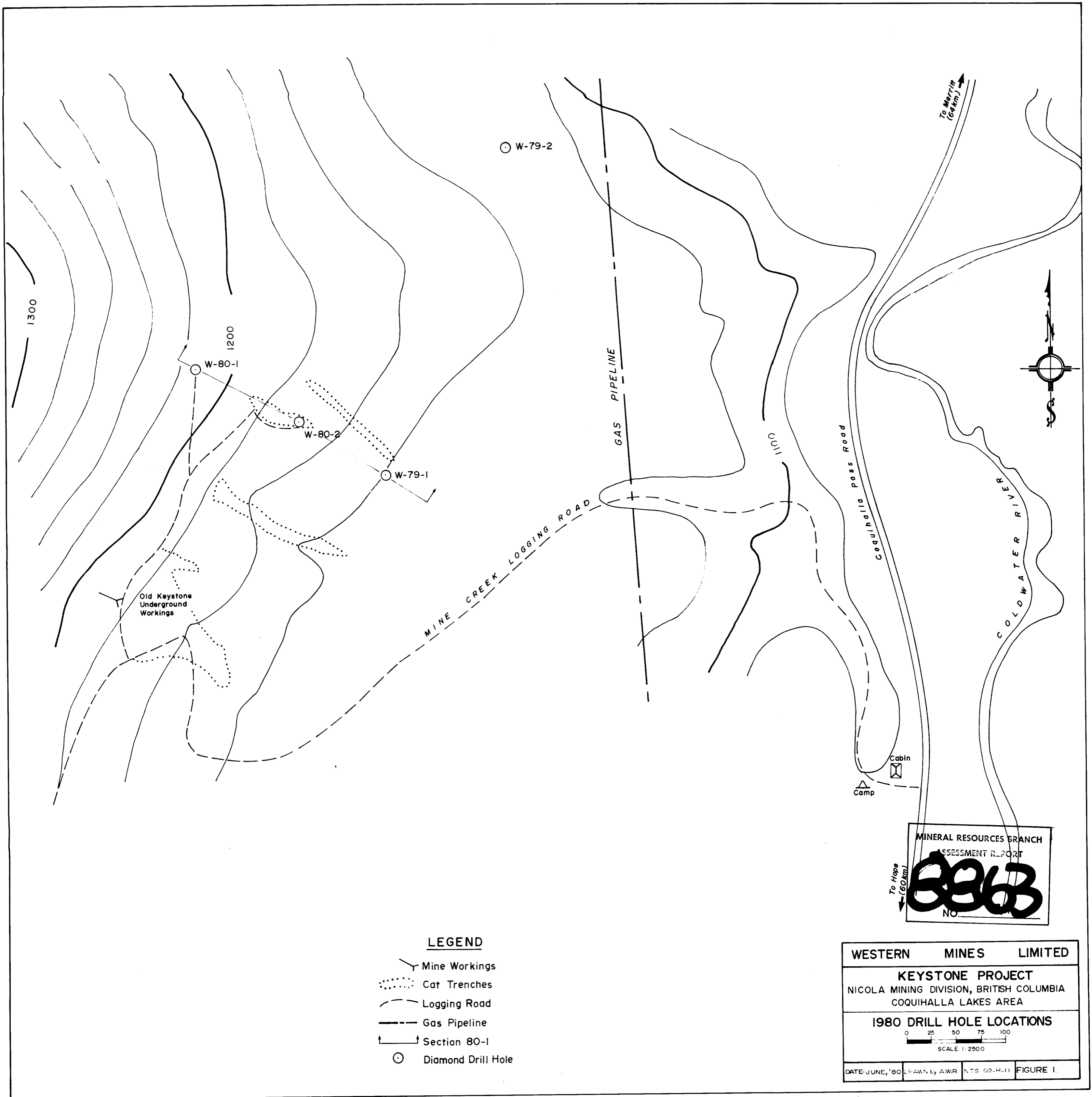
AFE NAME: Keystone

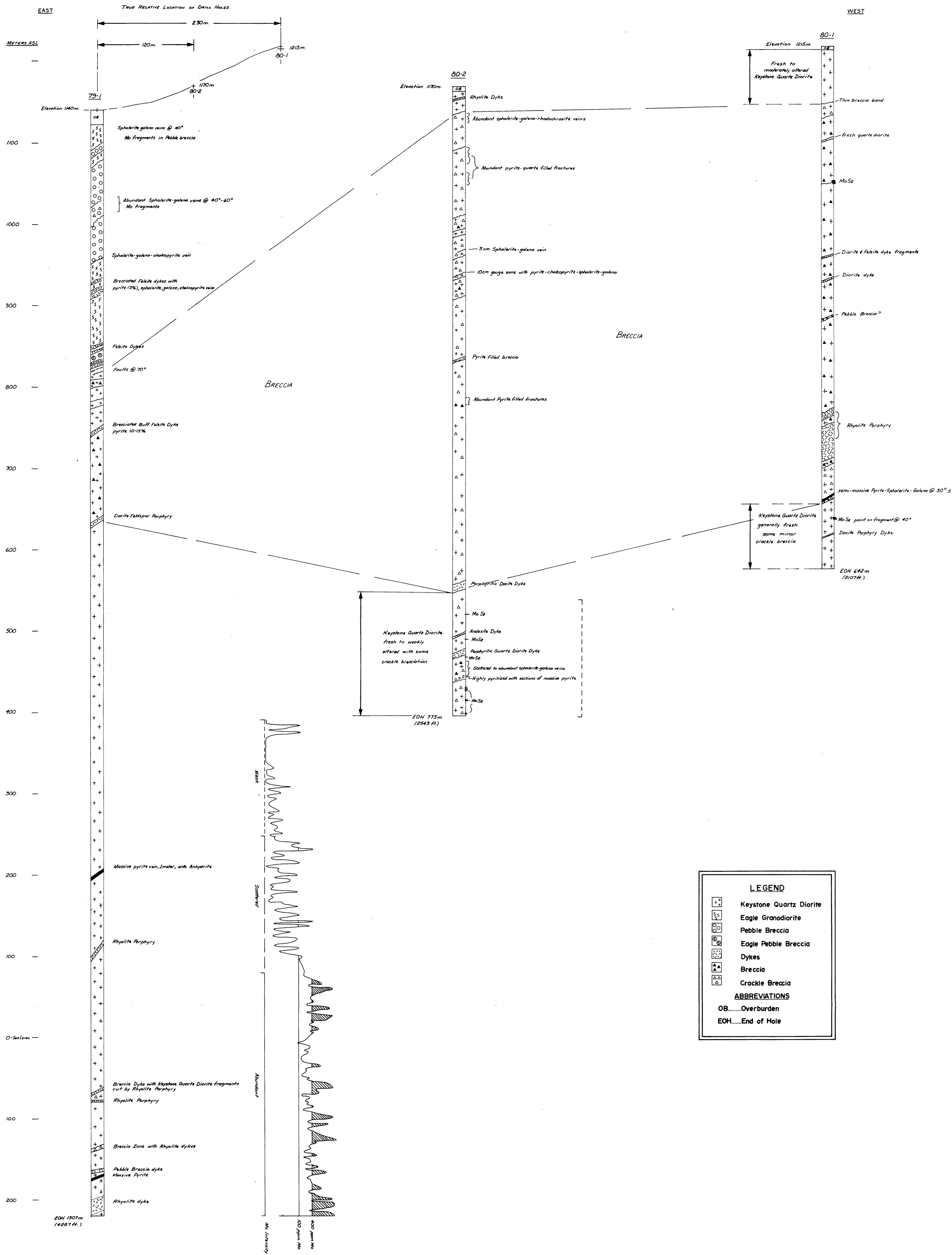
WESTERN OIL E

MONTH: August, 1980

AFE NO. : _____

	CURRENT MONTH	AMOUNT TO DATE	TOTAL ESTIMATE	VARIANCE
ACQUISITION COSTS				
OPTION/PROPERTY ACQUISITION COSTS		10,000	10,000	
STAKING COSTS				
RECORDING & HOLDING FEES			5,000	5,000
LEGAL FEES & EXPENSES (Acquisition Only)				
EXPLORATION COSTS				
TRAILS		387	2,000	1,613
BULLDOZING, TRENCHING, ROAD CONSTRUCTION			2,000	2,000
DRILLING <i>1409 meters @ 74.11/meter</i>		104,427	106,000	1,573
GEOCHEMICAL	14	1,084	7,000	5,916
GEOPHYSICAL		(3,996)		3,996
LINE CUTTING				
SURVEYING		7,137		(7,137)
OTHER CONTRACTORS				
CAMP SUPPLIES AND NON-CAPITAL EQUIPMENT		289		(289)
SENIOR SUPERVISION		812	3,000	2,188
SITE PERSONNEL	36	12,284	15,000	2,716
SUNDRY			1,000	1,000
COMMUNICATIONS	12	116		(116)
OFFICE EXPENSES		4,571	3,000	(1,571)
SHIPPING & FREIGHT		378	1,000	622
OFFICE RENTAL				
EQUIPMENT RENTAL AND MAINTENANCE		3,252		(3,252)
SUBSISTENCE, BOARD & LODGINGS		648	4,000	3,352
TRANSPORTATION - ON SITE		395	3,000	2,605
TRANSPORTATION - TO/FROM SITE	28	849	1,000	151
OTHER LEGAL FEES				
JOINT VENTURE ADVANCES				
LAND USE, WATER USE & ENVIRONMENTAL PROTECTION				
ENTERTAINMENT & BUSINESS DEVELOPMENT		5		(5)
PRE-FEASIBILITY			12,000	12,000
ADMINISTRATION FEE				
MANAGEMENT FEE RECOVERY		(10,957)		10,957
TOTALS	90	131,681	175,000	43,319





MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8863

WESTERN MINES LIMITED

KEYSTONE PROJECT

DRILL HOLE GEOLOGY

FIGURE- 4

SCALE

0 20 40 60 meters

Scale 1:2000

DATE: Dec 1980 REVISED: DRAWN BY: L.G.C. NTS NO. 32-4-10411