G E O L O G I C A L R E P O R T

O N T H E

H A L L M A C M I N E S L T D .

P R O P E R T Y

SITUATED NEAR SANDON (B.C.)

SLOCAN MINING CAMP

NTS: 82 K/3E & 82 F/14E

APRIL 24, 1983

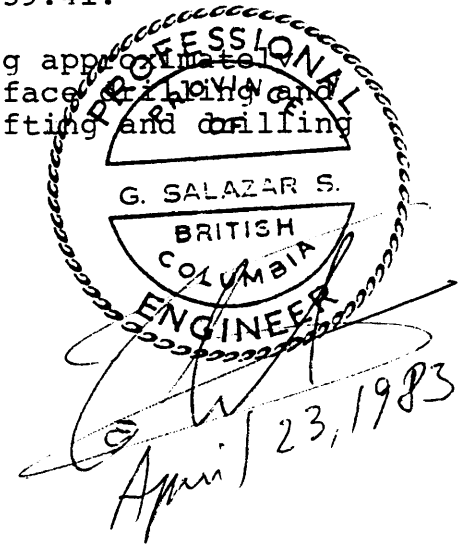
G. SALAZAR
P. ENG. (B.C.)

i SUMMARY

This report, prepared at the request of the directors of Hallmac Mines Ltd. (N.P.L.), covers a diamond drilling and underground sampling program carried out in the months of November, 1982, through March, 1983, under the supervision of Mr. Dennis H. Gray, director of the company.

Nine NQWL drillholes totaling 828.74 m. successfully tested three separate sections of the Hallmac Lodes and the down dip extension of the Hallmac North Lode. A total of 159 chip samples were collected from the safely accessible workings within the Hallmac Lodes. Underground and surface surveying, portal opening and trenching were also carried out and are covered in this report. Reserves at the Hallmac Lodes total 26,365.24 tonnes and average 39.35 (o/t) silver, 14.17% lead, 1.14% zinc and 0.0094 (o/t) gold over an average, diluted, width of 1.24 m. 17.7% of these reserves are considered to be in the proven catagory. Hallmac Mines Ltd. (N.P.L.) reports that the total cost of this program was $228.359.41.

A two stage program costing approximately $2,000,000.00 consisting of surface drilling and exploration and underground drifting and drilling is proposed and outlined.



ii CONCLUSIONS

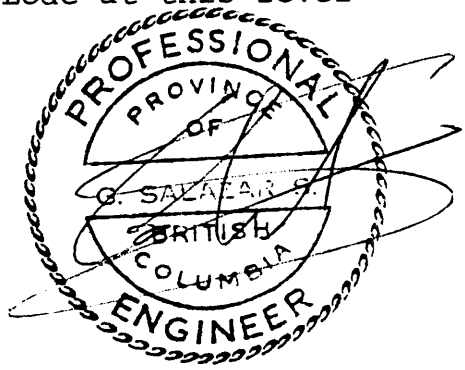
The program covered in this report resulted in the following:

1 - Highgrade silver ore boundaries for the Hallmac Lodes are proposed and outlined.

2 - Ore reserves for the Hallmac Lode were defined.

3 - The Hallmac Lode was extended along strike.

4 - The high grade silver ore shoots have been tentatively projected onto the 1690 Level, and an exploration program attempting to find the Lode at this level is recommended.



iii RECOMMENDATIONS

A two stage program consisting of:

STAGE I - Surface
- Reconnaissance
- 1020 m. diamond drilling
- Investigation of other lodes

- Underground
- 175 m. drifting
- 1410 m. diamond drilling
- one more portal @ 1780 MASL

STAGE II - Underground
- 350 m. drifting
- 95 m. raising
- 500 m. diamond drilling

Costing approximately $2,000,000.00 - is outlined and recommended.

Stage I budget expenditures are allocated as follows:

1. Hallmac Lode

Surface	$ 151,700.00	13.7%
Underground		
drifting	376,842.33	34.1%
drilling	250,000.00	22.6%
TOTAL	$ 778,542.33	70.4%

2. Other Lodes

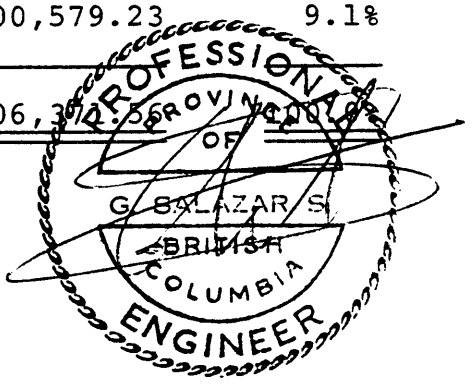
Surface	$ 60,000.00	5.4%
Underground	90,750.00	8.2%

3. Property General

Suface & Drilling	76,500.00	6.9%

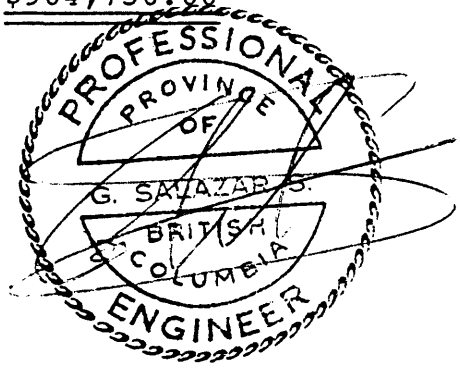
4. Administration 100,579.23 9.1%

GRAND TOTAL - STAGE I $1,106,3[illegible]2.56 [illegible]%



Stage II Budget expenditures, in turn, are allocated as follows:

1. Hallmac Lode			
Drifting	$378,125.00	41.8%	
Raising	167,500.00	18.5%	
			60.3%
2. Hallmac North Lode			
Drifting	75,625.00	8.4%	
Drilling	50,000.00	5.5%	
			13.9%
3. Other Lodes (Drilling)	151,250.00		16.7%
4. Administration	82,250.00		9.1%
GRAND TOTAL	$904,750.00		100.0%



* NOTE: Appendices 4, 5 and 6 available at Hallmac Mines Ltd.'s offices.

TABLES

MAPS

1.0 INTRODUCTION

1.1: LOCATION

The Hallmac Mines Ltd. (N.P.L.) property is located immediately North of the village of Sandon, in the Slocan Mining Division. Sandon itself is situated in the Selkirk Mountain, 9.65 km. east of Slocan Lake, 14.5 km. by road. Map N-1.

The discovery site of the Hallmac Lode and its present underground developments are all in located mineral claims, in an area never crown granted.

1.2: ACCESS

Access to Sandon is by road from New Denver or Kaslo, which are connected by paved highway 31 A. The all-weather graveled road to Sandon splits off of this highway at a place locally named Three Forks, which is also the confluence of Kane, Seaton and Carpenter Creeks, and follows the latter creek. The old Payne Mountain trail is followed for 2.3 km. thereby entering into Hallmac's privately built road. Maps N-1 and 2.

Dickenson Mines Ltd. is operating a 125 ton/day mine and mill facility at the Silmonac Property, thereby ensuring continuous transportation facilities throughout the year.

1.3: TOPOGRAPHY & CLIMATE

Hallmac lode workings are at 1689.56 m., 1734.51 m. and 1821.49 m., most of the underground development having been carried out in the first two levels. The lowermost, Altoona, workings are at an elevation of 1013.16 m., and are located alongside the presently abandoned right-of-way of the Kaslo and Slocan railway. Slopes are precip-itous in many areas but are mostly steep. Timber is mostly second growth or alpine and heavy. Growth includes fir, hemlock, cedar, balsam, spruce and tamarack and is suitable for underground use but an adequate supply is readily available from lumber mills in communities in the general area. Local creeks and springs supply ample water to meet exploration requirements. Snow

conditions vary greatly from year to year but mining can generally be carried on continuously except for the short periods in the winter and spring months when the main access roads may be disrupted by snow-slides. June is commonly a wet and rather cold month and snow can be expected to return to the summits in early October.

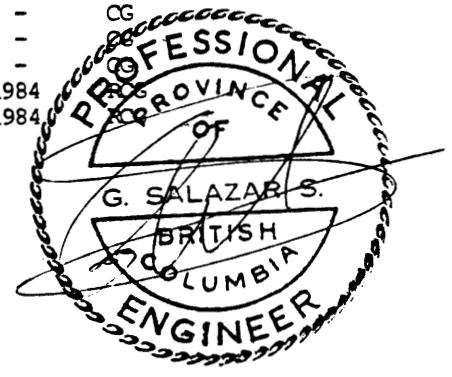
1.4 PROPERTY & CLAIMS

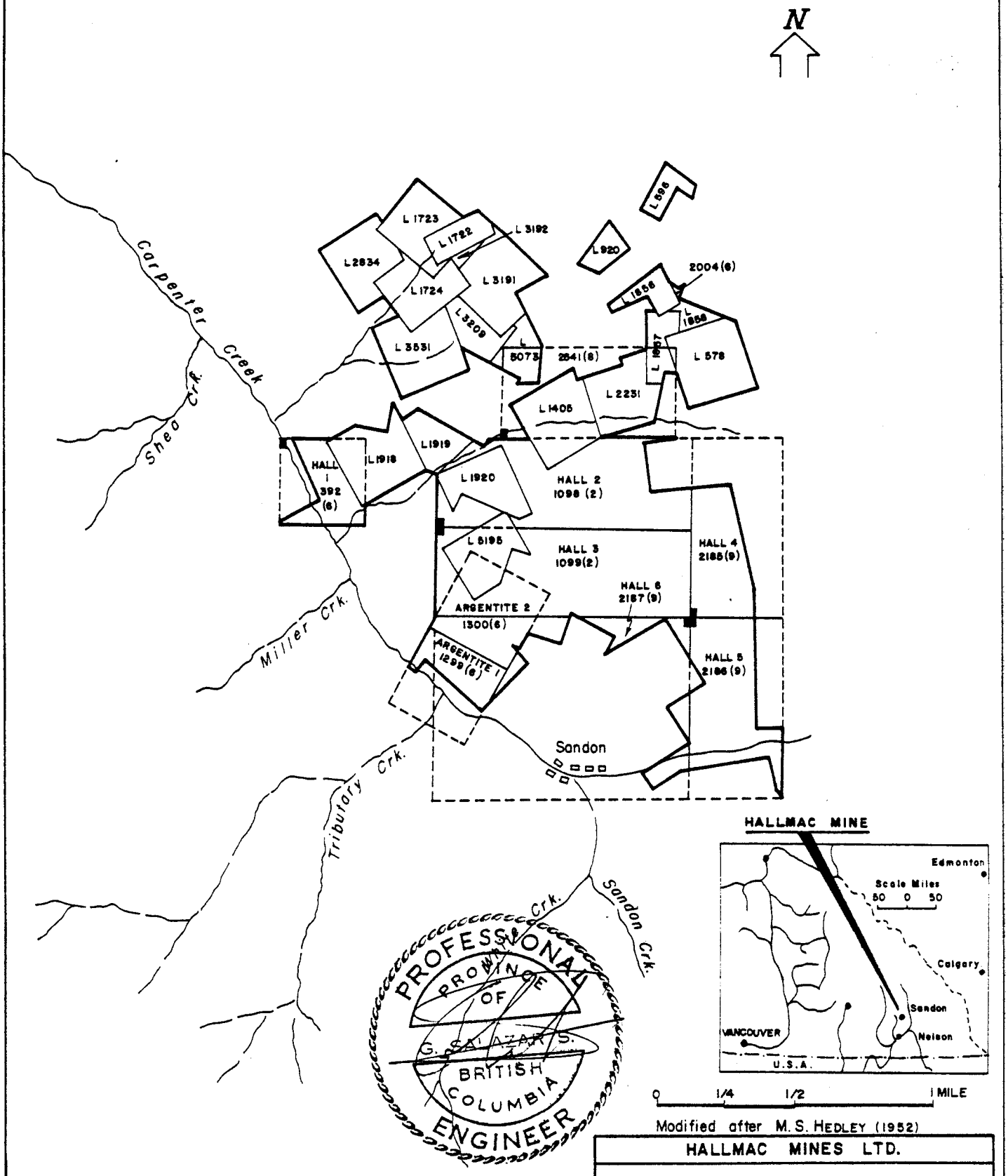
Map N°1 shows the location of claims presently owned by Hallmac Mines Ltd. (N.P.L.) Table N°1 is a listing of the company's property, as per my investigation of their land position at the Gold Commissioner's office on March 1, 1983.

TABLE N°1: LIST OF CLAIMS - HALLMAC MINES LTD.

CLAIM NAME	N° OF UNITS	RECORD N°	RECORD DATE	EXPIRY YEAR	TYPE *
Hall 1	1	392(6)	June 20/77	1986	MC
Hall 2	3	1098(2)	Feb. 15/79	1986	MC
Hall 3	3	1099(2)	Feb. 15/79	1986	MC
Hall 4	2	2185(9)	Sept.11/80	1986	MC
Hall 5	2	2186(9)	Sept.11/80	1986	MC
Hall 6	6	2187(9)	Sept.11/80	1986	MC
M.L. 370	-	-	-	-	-
(L.1920-Tawanda)	1	-	Nov. 22/71		ML
Argentite 1	1	1299(6)	June 29/79	1983	MC
Argentite 2	1	1300(6)	June 20/79	1983	MC
Lemax Fr.	1	2004(6)	June 26/80	1983	RCG
International Fr. (L.2834)	1	744(7)	July 13/78	1983	RCG
Ocean (L.1723)	1	742(7)	July 13/78	1983	RCG
Reciprocity (1.1722)	1	741(7)	July 13/78	1983	RCG
Main Fr. (L.3192)	1	2015(6)	June 30/80	1983	-
Big Timber (L3191)	1	99(11)	Nov. 20/75	1983	RCG
DumDum Fr. (L.5073)	1	1672(1)	Jan. 16/80	1983	RCG
Redress Fr. 2 (L3209)	1	ML # 21	Nov. 17/60	1983	ML
Mercury (L 3531)	1	ML # 21	Nov. 17/60	1983	ML
Lilliam N°4 (L.1724)	1	743(7)	July 13/78	1983	RCG
Bow Knot (L.1919)	1	Folio 5-1110			MPA
Altoona (Ll918)	1				MPA
Donelly (L.5195)	1	88(11)	Nov. 20/75	1991	RCG
Majestic (Ll405)	1	-	-	-	CG
Unexpected (L2231)	1	-	-	-	CG
Sulphire (L.1857)	1	-	-	-	CG
Minneapolis (L578)	1	-	-	-	CG
Gem (L.1858)	1	-	-	-	CG
Snow Storm (L.920)	1	595(3)	March 17/78	1984	RCG
Day Dawn & Day Dawn Fr.	1	558(12)	Dec. 28/77	1984	RCG

* RCG: Reverted Crown Grant
CG: Crown Grant
MPA: Mineral Production Area
ML: Mineral Lease
MC: Mineral Claim





Modified after M. S. HEDLEY (1952)

HALLMAC MINES LTD.

PROPERTY & INDEX MAP

UPDATES	
Date	Revised
April 23/83	GSS

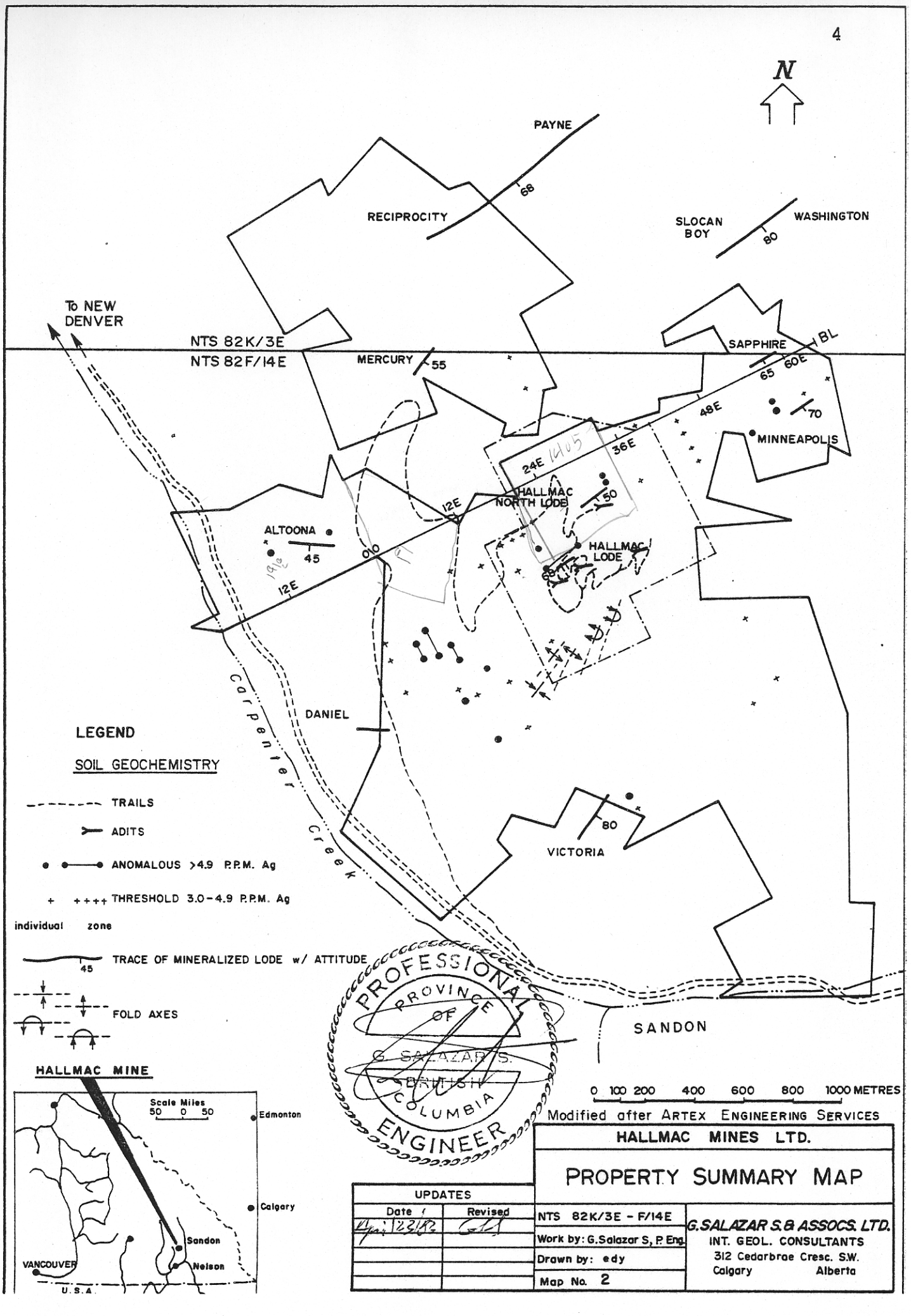
NTS 82 K/3E - F/14E

Work by: G. Salazar S, P. Eng.

Drawn by: edy

Map No. 1

G. SALAZAR S. & ASSOCS. LTD.
INT. GEOL. CONSULTANTS
312 Cedarbrae Cresc. S.W.
Calgary Alberta



UPDATES	
Date	Revised
Apr 22/82	

HALLMAC MINES LTD.

PROPERTY SUMMARY MAP

NTS 82K/3E - F/14E

Work by: G. Salazar S, P. Eng.

Drawn by: edy

Map No. 2

G. SALAZAR S. & ASSOCS. LTD.
INT. GEOL. CONSULTANTS
312 Cedarbrae Cresc. S.W.
Calgary Alberta

1.5 HISTORY

The property, presently owned by Hallmac Mines Ltd. (N.P.L.), covers a portion of the initial discovery and the whole of the latest discovery in the Slocan Camp. In addition to the Payne - Reciprocity (oldest) and Hallmac (latest) lodes, the Mercury, Altoona, Majestic, Sapphire and Minneapolis lodes outcrop within the property boundaries. The Daniel and Victoria lodes trend into the property from the south as well.

The history of the Sandon and Slocan Mining Camps started at the Payne and Slocan-Boy lodes. It is covered in detail by Cairnes, Hedley, Irwin, Little, etc. and is not covered here.

The Hallmac lode was discovered in September of 1980 in the course of trench follow up of soil geochemical anomalies found in 1979. Map N÷2, extracted from work carried out by L.B. Goldsmith and Artex Engineering Services also summarizes the surfaces geological and geochemical work carried out to January, 1982.

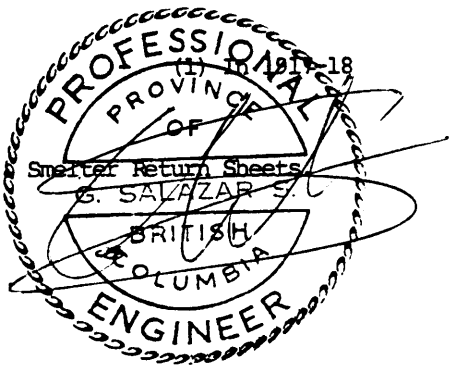
1.6 PRODUCTION

Table N÷2 summarizes the production of all lodes known to be present in the B.C. Government's minfile and updated with recent production statistics for the Hallmac lode. Total production for the Payne and Slocan-Boy - Washington lodes is also included in this table because of their importance and possible on-trend geological significance although their production came from outside the company's property.

TABLE N°2: PRODUCTION HISTORY BY LODE

LODE	TONNES SHIPPED	TONNES MILLED	SILVER GRS.	LEAD TONNES	ZINC TONNES	GOLD GRS.		REMARKS
1. Altoona								
1950-1952	3836		156,355	30.10	144.73	NR.	(1)	237 Kg.C_d also
1965-1966	905	905	55,208	12.80	23.36	31.0	(1)	145 Kg.C_d also
2. Mercury								
1901-06,15&37	179	-	10,210	0.68	0.004	-	(1)	
3. Majestic	221	-	-	148.84	-			1904-07,10, 12,16,21-22
4. Sapphire	37	-	52,284	-	-	1,026	(1)	
5. Minneapolis	-	-	-	-	-	-	(1)	Adits w/no production reported
6. Hallmac	1,805	680	3,558,586	523.32	-	50.	(2)	Produced from 1980 to March 2/83.
TOTAL:	6,983	1586	4,285,068	715.74	168.094	1,107.0		
7. Payne-Reciprocity	110,618	-	116,458,062	17,388.02	1,024.41	-	(1)	Produced 1983-1910 1916-22, 1935,38,39
8. Slocan Boy Washington	64						(1)	Recovered 2,327.0 Kgs. of CD in 1964 & 1968-70 (Total)
9. Daniel	17		4,914	-	6.29	-	(1)	In 1917.61 Tonnes more
10. Victoria	3	-	4,448	1.21	-		(1)	In 1917-18

References:
1. Minfile.
2. Hallmac Mines Ltd. News Releases, Annual Reports, Smelter Return Sheets.



1.7 WORK DONE IN WINTER OF 1982 - 1983

The 1982 - 83 winter program consisted of the following:

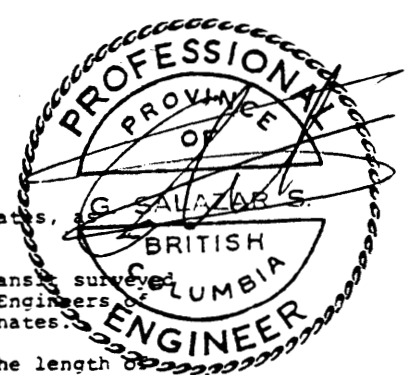
1.7.1: Drilling

A total of nine NQWL diamond drill holes were drilled using a trailer-mounted BBS-1 with an HQ-size hydraulic head , owned and operated by Kootenay Exploration Drilling of Rossland, B.C. The program was designed and supervised by Mr. Dennis H. Gray, vice-president, Hallmac Mines Ltd. The writer was responsible for logging and sampling the cores thus recovered. Chemex Labs of Calgary was responsible for all assaying and geochemical analysis carried out in the said cores. Detailed Diamond Drill Records are enclosed as Appendix N÷4. Assaying and geochemical analysis techniques and Assay certificates are enclosed as Appendix N÷5.

Table N÷3 summarizes the pertinent survey data for each diamond drill hole.

TABLE N÷3: 1982 DRILLING PROGRAM - SURVEY DATA

HOLE (DDH)	LATITUDE (N)	DEPARTURE (E)	COLLAR ELEVATION (M)	DEPTH (M)	AZIMUTH	DIP	HOLE RECOVERY %
82-1	5766.0	5843.0	1784.6	46.34	346°	-70°	98.2
82-2	5763.1	5835.5	1781.3	41.76	346°	-70°	97.0
82-3	5760.5	5828.0	1777.8	55.47	346°	-70°	91.4
82-4	5758.0	5820.0	1775.1	50.90	346°	-70°	86.0
82-5	5754.218	5812.297	1772.25	55.47	346°	-70°	88.0
82-6	5850.409	5680.679	1660.60	153.31	-	-90°	95.0
82-7	5928.5	5696.5	1663.6	153.31	-	-90°	97.6
82-8	5744.357	5884.661	1817.19	163.98	86° 19	-60°	96.4
82-9	5788.0	5909.0	1816.6	108.20	34°	-60°	96.9
		TOTAL		828.74			



NOTES:

1. All coordinates are reported in Mine Coordinates, as presently reported by Johnson & Associates.
2. Collars of DDH's 82-5, 82-6 and 82-8 were transit surveyed by Ray Johnson and Associates surveyors and Engineers of Nelson, B.C., hence the more accurate coordinates.
3. Hole recovery was calculated by meassuring the length of core recovered and dividing this measurement by the length of hole drilled. Core loss due to driving casing is not included.

1.7.2: Trenching

Two long trenches were excavated at survey locations 5874.682 N - 5536.606 E and 5840.868 N - 5949.478 E under the supervision of Dennis H. Gray, a CASE 1150 tractor owned by R. Reitmeier was used for this purpose. The writer chip sampled these trenches, thereby collecting a total of 79 samples. The trench at 5840.868 N - 5949.478 E is presently being used to start a portal, which will be 108.09 m. higher than the present Hallmac upper level.

1.7.3 Underground Sampling

A total of 159 chip samples were collected from safely accessible workings above the Hallmac Lower level. Heavy timbering at the Hallmac Upper (or 1735 m.) level and within the raises prevented us from sampling certain reported higher grade intervals, although the writer was able to collect samples from the vicinity of these areas. The Hallmac lower (or 1690 m.) level was not sampled at this stage because of either timbering or absence of visible lode mineralization.

Wherever possible, chip samples were collected perpendicular to the structure being sampled and after a channel had been cleared off of any possible blast spray, which is common in the stoping areas sampled, specially where ochre ore and solid, crumbly galena occur together. This program was implimented by the writer.

1.7.4: Surveying

The Hallmac access road, both drifts into the Hallmac, three of the diamond drill holes drilled this past winter and several trenches were transit and chain surveyed by Ray Johnson and Associates, Surveyors and Engineers of Nelson, B.C.

1.8 REFERENCES

1.8.1: Cairnes, C.E., (1934) Slocan Mining Camp, B.C. Geol. Surv. Canada, Mem, 173.

1.8.2: Cairnes, C.E., (1935) Description of Properties, Slocan Mining Camp, B.C., Geol. Surv. Canada Mem. 184.

1.8.3: Fyles, J.T., (1967) Geology of the Ainsworth-Kaslo Area, B.C., B.C. Dept. of Mines, Bull. No. 53.

1.8.4: Goldsmith, L.B. & Logan, JM (1982): Geological Mapping, Soil Geochemistry and Sampling of the Majestic 4 and 5 levels, Sandon Area Property, B.C. NTS 82k/3E and 82F/14E. Prepared for Hallmac Mines Ltd.

1.8.5: Hallmac Mines Ltd., (1982) Annual Report for year Ended June 30, 1982.

1.8.6: Hallmac Mines Ltd. (1981) Annual Report for year Ended June 30, 1981.

1.8.7: Hallmac Mines Ltd., Numerous Quarterly reports.

1.8.8: Hedley, MS (1952) Geology and Ore Deposits of the Sandon Area, Slocan Mining Camp, B.C.; B.C. Dept. of Mines, Bull. No. 29.

1.8.9: Hyndman, D.W. (1968)Petrology and Structure of Nakusp Map-Area, B.C.; Geol. Surv. Canada, Bull. 161.

1.8.10: Little H.W. (1960) Nelson Map-area, West Half, B.C.; Geol. Surv. Canada, Mem. 308.

1.8.11: Robinson, MC (circa 1950) Geologic Setting and Relationships of the Silver-Lead-Zinc Ore Depostis of the Silverton Area, Slocan Mining Camp; unpublished.

1.8 REFERENCES CONTINUED

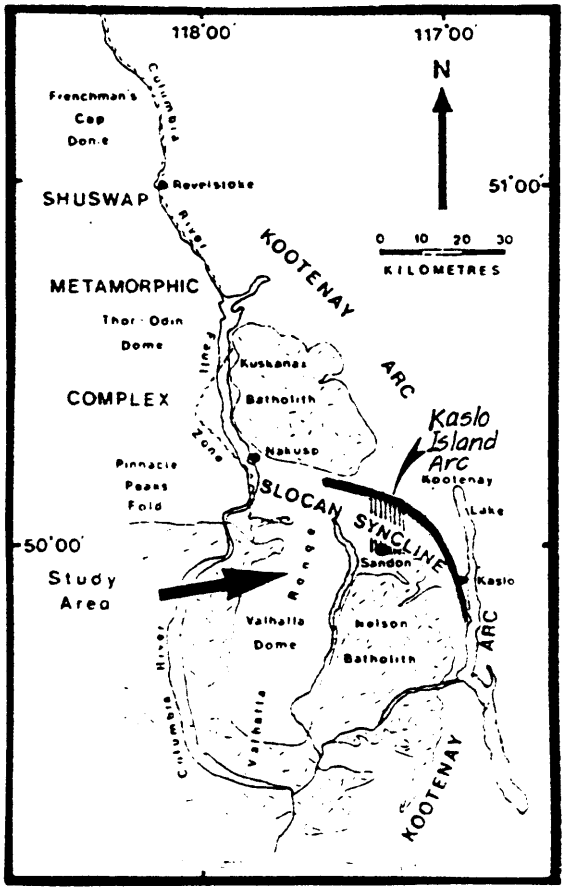
1.8.12: Stacey, N.W. (1982) Geological Mapping of Underground workings at the Hallmac Lode. Prepared for Hallmac Mines Ltd.

2.0 REGIONAL GEOLOGY

The Slocan Group, of Upper Triassic to Lower Jurassic Age, comprising primarily argillites and argillaceous rocks with subordinate quartzite, limestone and tuffaceous units, underlies the mine area and forms a structurally complex belt of rocks. Estimates of thickness of the Slocan Group range from 2,072.6 m. (Cairnes, 1934) to 11,277.6 m. (Irwin, 1950). This considerable thickness of sediments appears to have accumulated along a basin-like trough wedge between the Omineca Geanticline to the west and southwest and the older (?) Kaslo volcanics Island Arc to the east and north. Estuarine conditions of deposition were suggested by Hedley (1952), the source area being one of the comparatively low relief and large extent (Little, 1960), and to the southwest (Cairnes, 1934).

Intruding these sediments, generally concordant with strike of bedding, are dykes and sills of possible lower Cretaceous age. They have been correlated to the Nelson Batholith by Cairnes (1934) and Hedley (1952), while others correlate them, less conventionally, with a series of "Nelson-type" stocks of alkalic-calcic quartzmonzonite to quartz diorite composition that intrude the sedimentary package considerably north of the edge of the Nelson Batholith.

Inserted below is a Regional Structural Map extracted from work by Goldsmith and Logan (1982) modified by the writer. It shows the Slocan Syncline-Kaslo Volcanics Island Arc forming an arcuate belt between the KusKanax and Nelson Batholiths. The structural trend changes from east-west near Nakusp to south-southeast between Slocan Lake and Kaslo, to south along central Kootenay Lake. The Valhalla Dome forms the core to this warping.



3.0 PROPERTY GEOLOGY

Surface geological work at the Hallmac property was carried out by L.B. Goldsmith, J.M. Logan and N.W. Stacey. Stacey also mapped the Hallmac lode underground workings. The writer has drawn freely from their contributions for the following descriptions. Conclusions and interpretations expressed herewith, though, are solely the responsibility of the writer.

3.1 STRUCTURE

A huge recumbent fold, open or concave to the southwest, was recognized and described by Hedley (1952). Its lower limb, with beds dipping to the southwest and younging topographycally upwards, passes through Payne Mountain. The overturned Payne anticline, first recognized by Mayo (1940-41), who traced its axis for several thousand feet along the southwestern slope of the mountain and is placed by Goldsmith imediately to the east of the area mapped by him and Logan..."perhaps near the eastern border of the Unexpected claim."

In discussing a cross section drawn parallel to the Hallmac lode (not included in this report), Goldsmith states that it..."shows interpreted drag (parasitic) folding within predominantly northeasterly-dipping rocks. Along this section it is clear that the Hallmac lode is contained within a structure where dips change rapidly..."The longitudinal section prepared by N.W. Stacey (Map N$\div$ 6.2) after mapping the area in detail confirms the rapidly changing nature of the dips and folding. This factor has been noted in the Slocan Group as favourable for ore development.

Salic and mafic igneous rocks are reported to occur predominantly as undeformed dykes and sills, generally concordant with the sedimentary rocks..."Where discordant, they remain strongly influenced by the trend of major folding " (Goldsmith and Logan, 1982).

3.2 LITHOLOGIES

The area of the Hallmac and Majestic (hereafter refered to as Hallmac north) lodes is underlain by fine-grained, dark, argillaceous rocks intruded by dykes and sills. Other sedimentary rocks include quartzites, limestones, pseudo-conglomerates and possibly tuffs. Dykes and sills are variable in composition and have been grouped, for convenience, in salic and mafic.

3.2.1: Sedimentary Rocks

3.2.1.1: Argillites

This unit is characteristically very fine grained and dark grey to black in color. It is usually quite carbonaceous. Included here are minor slates and both arenaceous

and calcareous intervals. Bedding varies from thinly-bedded to massive units. In core, the argillites may be strongly silicified, and/or sericitized. They locally show typical hydrothermal alteration zonning, grading from a fresh looking argillite to a centre with both strong sericitization and with quartz-potasium feldspar and/or hematite-plagioclase veinlets back to fresh argillite. The area of strongest hydrothermal alteration appears to be closely associated to the hanging-wall zone at the Hallmac lode.

3.2.1.2: Quartzites

The quartzites are usually massive fine-to medium-grained, light grey and dark grey to black in colour and usually recrystallized. Thin alternating beds of quartzite and argillite occur both in core and on surface.

Goldsmith and Logan (1982), report the presence of two quartzite horizons/units within the area mapped by them. The southernmost unit contains disseminated pyrite and weathers to a reddish-orange colour. The northern unit weathers buff to grey in colour, contains little pyrite and carries abundant white quartz. Both of these units are observed in core. The former appears to be more calcareous and the latter more carbonaceous. Pyrite in the former unit does not appear to be a product of regional metamorphism. This unit also appears to carry geochemically anomalous amounts of gold.

3.2.1.3: Limestone

Two widely separated narrow (0.3 meter) bands have been recognized on outcrop. Both are black, sooty, argillaceous, fine-grained and thin-bedded on outcrop, while in core the limestone bands encountered are not thinly bedded, are medium grained equigranular and show development of quartz-calcite stockwork gashes.

3.2.1.4: Pseudoconglomerate

This term was coined by Cairnes (1934), who defined it as formed from shearing of interbedded quartzites and slates. The quartzite beds have broken and the slates have flowed around the disjointed and rounded fragments of quartzite. The quartzite fragments,

which are variable in size and angularity, appear to float in a matrix of argillite exhibiting flow structures. Strong alteration of this unit may cause ghosting of the fragments. Re-worked, healed, fault zones may produce narrow bands of very similar texture and appearance. The value of this unit in a structural study was pointed out by Irwin (1950)..."in that the direction of movement can be deduced as normal to the direction of greatest elongation of the fragments". No such study has been conducted at the Hallmac property as yet.

3.2.1.5: Volcanics

Tuffaceous sediments occur primarily stratigraphy-cally high in the Slocan series,..."but fine grained equivalents may occur further east among more slatey members", (Cairnes, 1934). Goldsmith and Logan describe a horizon composed of secondary minerals with possible volcanic components and waterlain sedimentary structures.

Other volcanic rocks may be presently mislabelled and refered to as dykes or sills. A careful, detailed study of these rocks, specially in those areas where they are conformable to bedding, is required.

3.2.2: Igneous Rocks

Dykes and sills of pre - and post-mineral age are common throughout the Sandon area. They have been described by Cairnes (1934) and Hedley (1952), both of whom recognized a broad range in composition from salic through to mafic types.

3.2.2.1: Salic Dykes

All the salic intrusions noted are porphyritic, white and buff to light grey in colour and with limonite stains along fractures/jointing planes. Underground, they appear to be ellipsoidal in shape and may not have a large volume. Three types may be readily distinguished. The most common type is leucocratic, carries about 2-5% disseminated pyrite and characteristic-ally bears two generations of plagioclase phenocrysts, one broken and anhedral while the other is euhedral and zoned with calcium-rich cores. A second type does not carry sulphides and appear to have less abundant pheno-crysts. The third is known to occur at the Violamac and London Ridge properties, elsewhere in the district, and carries disseminated (?) galena and/or tetrahedrite.

Goldsmith and Logan report that thin section work carried out on specimens from outcrops within the Hallmac property defined the composition of these rocks as rhyodacitic to dacitic.

3.2.2.2: Mafic Dykes

Cairnes (1934) and Hedley (1952) described these mafic dykes as lamprophyres and spotted lamprophyres, which were identified by Goldsmith and Logan at four thin section sites. These rocks are composed almost exclusively of secondary minerals with eggshaped clots consisting of carbonate, some chlorite and rarely, quartz. The most altered sample studied by Goldsmith and Logan, H401, comes from a horizon on level N÷4 of the Hallmac North (Majestic) lode, is composed of carbonate, quartz and mariposite and reportedly cuts the lode system. Elsewhere, it appears to be conformable to bedding and/or parallels the lode.

Cairnes (1934) describes ..."a third type of lamprophyre", consisting of mariposite and ferruginous magnesium carbonate, chlorite and small amounts of quartz which appeared to grade into dark green lamprophyre. Regionally speaking, the closest rocks with similar chrome and magnesium content are the ultramafics within the older (?) Kaslo volcanics Island Arc that outcrop 9.1 km. to the northeast of the Hallmac property. Should these lamprophyre dykes be related to the Kaslo volcanic sequence, a revision of the accepted relative ages of this portion of the Slocan series and the underlying (?) Kaslo volcanics will be required.

3.3 LODES

3.3.1: Hallmac Lode

The Hallmac lode is presently known to extend a horizontal distance of 77 m. through drifts and stopes. DDH 82-4 intercepted this lode 19.2 m. east of the upper level drift face and DDH 82-5, drilled 13.6 m. east of the face, confirmed the presence of the lode. From sub-drift level 1730 m. to DDH 82-4, therefore, the horizontal distance is 96.2 m. long. Underground, the lode has been drifted on, or stoped,in between elevations 1751.0 m. and 1714.0 m. for a vertical height of 37.0 m. Mineralization on DDH 82-4 has extended this upwards to 1754.3 m. or 40.30 m. of total vertical height.

Map N-5.2 and 5.3 outline the high grade silver ore shoots apparent from the comprehensive underground sampling program carried out in January and February, 1983. Map N-5.2 shows the Footwall (FW) lode and Map N-5.3 shows the Hanging wall (HW) lode. These two maps summarize information reported in detail in Map N-4.1, 4.2 and 5.1 and also show the ore reserves, as presently calculated.

The FW lode shows the high grade silver ore shoots plunging predominantly south east at about 40-50°, closely paralleling the dip of the axial planes reported to occur at the Majestic Lode. A second plunge direction of 60-70° to the southwest is noted to the west of the crib raise, which parallels bedding at the Hallmac lode itself. A low grade core appears to separate the two shoots.

The HW lode system shows essentially the same ore shoot systems, with the exception that the lower grade is developed at a lower elevation.

Further sampling as work and developments progress will refine these trends. This program should be continued.

3.3.2: Other Lodes

Limited work has been carried out in the other lodes within the Hallmac Mines Ltd. property.

It is strongly recommended that they be sampled and mapped so that their potential can be evaluated. Programs in this regard are described elsewhere in this report.

4.0 DISCUSSION OF RESULTS

4.1: Drilling Program

A total of 828.74 m. were drilled in nine NQWL diamond drill holes. Individual Diamond Drill Records describing the geology and mineralization found and tabulating the assays run on specific core intervals are included as Appendix 4.

DDH's 82-1 through 82-5, 82-8 and 82-9 were drilled onto the Hallmac Lode whereas DDH's 82-6 and 82-7 were drilled onto the Hallmac North Lode.

DDH 82-1 intersected weak Cu-Ag-Zn sulphide mineralization at 17.07 metres to 24.38 metres hole depth (HD) and weak Ag-Zn sulphide mineralization at 5.18 metres to 11.58 metres (HD) and weak Ag-Zn sulphide mineralization at 5.18 metres to 11.58 metres (HD). Geochemically significant silver and zinc values present. These intervals occur close to the projection of the Hallmac lode system into the area.

DDH 82-2 intersected geochemically significant Ag-Pb-Zn sulphide mineralization at 17.22 metres (HD) to 19.81 metres (HD) and weak zinc mineralization at 31.55 metres (HD) to 34.14 metres (HD). Assays in this last interval are as follows:

From (m)	To (m)	Hole Width	Ag	Pb	Zn	Au
31.55	32.61	1.06	<0.01 o/t	<0.01%	0.190%	<0.003 o/t
32.61	33.22	0.61	<0.01 o/t	<0.01%	0.175%	<0.003 o/t
33.22	34.14	0.92	<0.6 ppm	14 ppm	1050 ppm	<5
or						
31.55	34.14	2.59	N.S.	N.S.	1880 ppm	N.S.

N.S. - Not Significant

Assays are reported in troy ounces per short ton for silver and gold and in percentages for lead and zinc, whereas geochemically analysed samples are reported in ppm for silver, lead and zinc and ppb for gold. Whenever composite intervals consisting of more than one sample include a sample that was geochemically analysed, as above, the composite average is reported in the lower assay reliability method.

DDH 82-3 intersected the following:

	From (m)	To (m)	Hole Width (m)	Ag	Pb	Zn	Au
	18.14	19.05	0.76	0.29 o/t (9.86)*	0.309%	0.308%	0.003 o/t
	19.05	26.52	7.47	7.30 ppm	317 ppm	2212 ppm	5 ppb
	26.52	28.04	1.52	0.01 o/t	0.010%	0.147%	N.S.
and	36.12	44.81	8.69	N.S.	N.S.	0.22%	N.S.
	which includes						
	36.12	36.73	0.61	0.09 o/t (3.06)*	N.S.	0.162%	N.S.
	41.76	42.06	0.30	8.91 o/t (302.94)*	0.063%	1.26%	0.003 o/t
and	42.40	43.34	0.94	0.24 o/t (8.16)*	N.S.	0.277%	N.S.

*Numbers in parentheses are equivalent grams/tonne.

N.S. - Not Significant

The weak mineralization encountered at 18.14 metres to 19.05 metres appears to represent the Hanging Wall Lode. The interval at 41.76 metres to 42.06 metres, which assayed 8.91 o/t Ag and 1.26% Zn represents the footwall system.

DDH 82-4 intersected the following:

From (m)	To (m)	Hole Width (m)	Ag o/t (grs/tonne)	Pb %	Zn %	Au o/t (gr/tonne)
16.76	23.47	6.71	7.72	5.22	0.42	0.004 (0.14)
which includes:						
16.76	17.22	0.46	5.74 (196.80)	5.01	1.25	0.004 (0.14)
17.22	17.44	0.22	58.36 (2000.91)	30.8	0.437	0.012 (0.41)
17.44	17.68	0.24	30.46 (1044.34)	15.1	0.072	0.004 (0.14)
or						
16.76	17.68	0.92	24.77 (849.26)	13.81	0.748	0.006 (0.21)
or						
17.22	17.68	0.46	43.80 (1501.71)	22.61	0.247	0.008 (0.27)
18.59	19.51	0.91	5.54 (189.94)	7.10	0.174	0.005 (0.17)
and						
21.03	21.64	0.61	32.00 (1097.14)	19.8	0.308	0.008 (0.27)
and						
26.21	26.67	0.46	28.45 (975.43)	15.6	1.63	0.006 (0.21)

Assays have not been cut and sample widths are reported as drillhole lengths rather than true widths of lode. As the other holes, DDH 82-4 was drilled perpendicular to the surface trace of the lode. Interval 16.76 metres to 23.47 metres intersected a strongly lineated and banded pseudoconglomeratic unit which is a favourable unit for mineralization in the district. Here, lineations, fragment elongation and banding all dip at 30^{o} to 40^{o} to core axis.

Apparent angles of gouge zones and quartz veins, which are represented by the higher grade material, to core axis in this area vary between 20^{o} and 40^{o}, thereby confirming the variable dip of 60 - 90^{o} S found in the underground workings to the west.

DDH 82-5 intersected the following:

From (m)	To (m)	Hole Width (m)	Core Recovery (%)	Ag o/t	(gr/tonne)	Pb %	Zn %	Au o/t (grs/tonne)
17.37	18.90	1.52	16	3.97	(134.98)	1.02	0.487	0.003
18.90	20.42	1.52	85	6.87	(233.58)	2.56	0.312	0.003
20.42	21.55	1.13	98	12.05	(409.70)	1.54	1.23	0.003
21.55	21.95	0.40		0.57	(19.38)	0.651	0.446	0.003
or								
17.37	21.55	4.18		7.20	(244.80)	1.72	0.62	0.003
and								
23.32	23.53	0.21		2.75	(93.50)	2.60	1.61	0.003

Interval 17.37 - 21.55 correlates with interval 16.76 - 23.47 in DDH 82-4 with the exception that here the recovery is much lower. If equal amounts of sulphide ore and gangue were lost, it can be calculated that the 1.52 m. interval between 17.37 m. and 18.90 m. may have assayed 21.1 o/t ag., which closely approximates the 24.77 o/t reported for interval 16.76 - 17.68 in DDH 82-4. The mineralized interval occurs immediately below a medium to fine grained, greenish grey, equigranular sandstone similar to the quartzitic ironstone unit recognized elsewhere in the property. Interval 17.37 - 18.90 consists of pebbles of galena-quartz-FeOx, lamprophyre, pseudo-conglomerate and sandstone, with the bottom 0.30 m. being fault gouge. This is followed down hole by a pre-mineral "dyke" (18.90 - 25.76), described to be of basaltic composition with small pyrite clusters scattered throughout, hanging wall inclusions, footwall vugs and cavities and galena

selvages along joint planes. This dyke is brecciated and crackled and was cemented with FeOx (after galena) - clay - silica and is black in color and very fine grained. The pseudo conglomeratic unit reported to occur in DDH 82-4 is observed below the "dyke".

Vertical holes DDH 82-6 and 82-7 attempted to intercept the Hallmac North vein at considerable depth. DDH 82-6 intersected a multi-strand fault zone between 112.17 m. and 136.6 m. of hole depth. The four most promising strands were split and sent for geochemical analysis. All returned geochemically insignificant results. 16% of this hole is logged as 0.30 to 6.70 m. intercepts of a feldspar porphyry Granite/Rhyolite Dyke, thus indicating that perhaps the hole never left the area of the same dyke. Argillites typical of the Basal Sediments unit were drilled onto at a hole depth of 69.65 m. This unit is stratigraphycally underlain by a graphitic, pyritiferous limestone unit, which was encountered at 110.34 m. The projection of the Hallmac North Lode was, therefore, tested within an area of basal sediments not commonly associated with economic mineralization.

DDH 82-7 intersected a series of fault zones in between 20.56 m. and 70.0 m., any one of them singly or in combination with other, nearby, strands may represent the down dip projection of the Hallmac North lode. A quartz - galena - pyrite - limonite vuggy vein with strong green gouge was intercepted in between 56.63 m. and 58.22 m. of hole depth. Assaying here indicates the lack of economic mineralization. A quartz-carbonate - black gouge - limonite breccia encountered at 68.37 m. - 69.10 m. returned a 0.19 o/t silver assay with no other significant value. These faults cut through typical pseudoconglomeratic rocks intruded by a granitic latite (at 66.77 - 68.15 m.) with narrow "ironstone" and limestone interbeds.

DDH 82-8, aimed to intercept the Hallmac Lodes approximately at the elevation of the 1690 Level more than one hundred and twenty meters east of the level's face, was drilled at a shallow angle to both the strike and dip of bedding and structure. It does not appear to have reached the lodes. Instead, sequence repetitions from 45.81 m., after intersecting the first limestone band, may indicate that the hole reflected off of one of the more competent beds, which was compounded at 122.78 m., where the hole seems to have hit a major fault structure. A hole drilled at 340° azimuth at $(-)60^{\circ}$ from this site is strongly recommended.

DDH 82-9 intersected the following:

From (m)	To (m)	Hole Width (m)	Ag o/t (grs/tonne)	Pb %	Zn %	Au o/t (grs/tonne)
22.56	23.68	1.12	8.41	13.25	1.16	0.003
25.42	25.85	0.43	1.62	0.53	0.899	0.003
26.06	27.58	1.52	8.37	2.75	0.97	0.004
29.41	30.48	1.07	15.56	0.572	1.56	0.006

The initial assay results from one of the two samples composited into interval 26.06 - 27.58 returned 0.154 o/t gold. A number of check assays run on the original and new pulps did not confirm such a high assay. Silver assays, though, were repeated within permissible limits. It is suspected that free gold may occur in this interval. This possibility should be checked by quartering the core and assaying one of the splits again. Mineralization coincides with the presence of a highly conductive unit (100 ohms average and up to 300 - 350 ohms, as meassured with a portable voltmeter). This rock is fine to medium grained equigranular and black and has been variably identified as a sandstone, an argillite or basaltic dyke depending on the presence or absence of megascopically identifiable features. Microscopic work is required and recommended. It is locally vuggy and, where present, bedding (?) cuts core axis at 30°. Strong sericite and biotite hydrothermal alteration products are identified in this unit. As well, a zone of regressive alteration products where sericite altered "argillite" shows epidote - chlorite alteration haloes adjacent to quartz - potassium feldspar - and epidote - chlorite - pyrite - filled selvages and hairline fractures. These megascopic alteration features makes the writer lean towards a igneous, probably volcanic, origin for this unit and shall be temporarily described as of basaltic composition until microscopic work is carried out. Core recovery within the lodes themselves was low. It is recommended that two drill-holes, at 300° and 340° azimuth, be drilled from the same set up to further test this target. A portal at a elevation of 1780 m. A.S.L., should this further drilling prove up a new ore shoot, is also recommended.

Map N÷ 8.1 to 8.9 are individual cross sections of each drillhole.

4.2 UNDERGROUND SAMPLING

Results from this underground sampling program are shown in Map N- 4.1. Map N- 4.2, in turn, shows the composited assay results based on a minimum mining width of 0.9 m. (or 3.0 feet). Specific hanging wall or footwall samples were not included in the composites on this basis and were ignored in the ore reserves. Assays were not cut for the purpose of calculating these composites since it is felt that the difference between adjacent samples is directly related to the amount of silver and lead found in place.

Assay information kindly made available by David Minerals Ltd. to Hallmac Mines Ltd. was used to complement the information gathered by the writer. A comparison of their assay results to those from samples collected by us from the same sites, gives us confidence in the repeatability of such assays. An exception to this is the marked difference between David Minerals sample 026315 (110.0 o/t Ag, 32.59 % Pb, 1.65 % Zn over 0.84 m.) and our samples 1696. to 1698 (16.10 o/t Ag, 7.19 % Pb, 1.562 % Zn, 1175 ppm Cu, 0.006 o/t Au composited over 1.60 m.) The only difference is that the David Mineral's sample appears to have been collected from just below the lip of an internal raise while our samples come from the back of the drift. The two have been taken as correct and a assay boundary has been drawn between them.

Map N- 5.1 shows the composited assays along Section A-A, a vertical longitudinal section through latitude 5745.5 N. Map N- 5.2 and 5.3, in turn, are the same longitudinal section as Map N- 5.1 representing the footwall and hanging wall lodes, repectively, into which the following is plotted:

1) Apparent silver zonning and ore shoots, as presently defined by available assays, as composited to minimum mining widths.

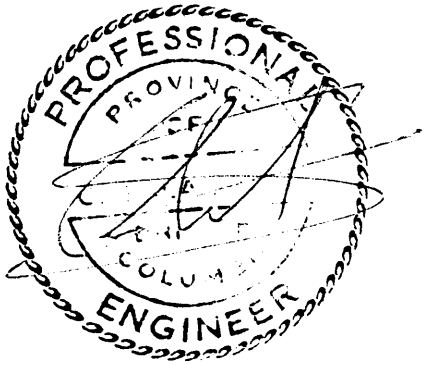
2) Underground workings clearly recognizable to be within either lode. The area above 1735 Level has been considered as totally within the Footwall Lode for convenience only since the two lodes are so close to each other that they were mined from a single stope.

3) Ore Reserves, as described in the following section.

Map N÷ 7.1, 7.2 and 7.3 are vertical sections across the lodes. Map N÷ 7.1 is drawn at 338° Azimuth along the ore pass raise and was initially drawn by N.W. Stacey and is slightly modified. It shows that both lodes come together above 1735 Level and are projected to occur immediately north of 1690 Level. Maps N÷ 7.2 and 7.3 are vertical sections at Longitude 5770 E and 5740 E, respectively, and corroborate the conclusions gleamed from Map N÷7.1.

4.3: Trench Sampling

Two long trenches were excavated at survey locations 5874.682 N - 5536.606 E and 5840.868 N - 5949.478 E under the supervision of Dennis H. Gray. A CASE 1150 tractor owned by R. Reitmeier was used for this purpose. The writer chip sampled these trenches, thereby collecting a total of 79 samples. The trench at 5840.868 N - 5949.478 E is presently being used to start a portal, which will be 108.09 m. higher than the present Hallmac upper level. Assay results of this sampling program are shown on Map N÷3.



5.0 ORE RESERVES

Map N÷5.2 and 5.3 are vertical, longitudinal sections along latitude 5745.5 N of the footwall and hanging wall Hallmac lodes, respectively. On them, the following is shown:

- Underground workings within each lode. The area above 1735 Level has not been included in Map N÷5.3 because the two lodes are so close together that they were mined as a single stope. They are, though, shown on Map N÷5.2.

- Sample sites - Composited assays are shown on Map N÷5.1.

- Ore shoot boundaries, as defined in section 4.2 of this report.

- Ore reserve blocks.

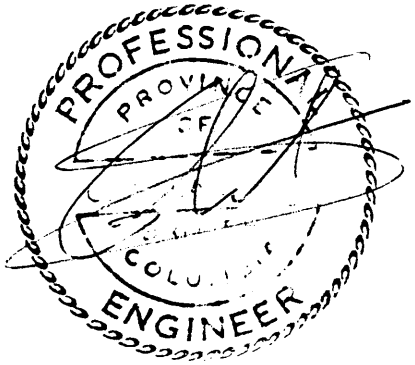
The prime parameter used in blocking out ore reserves was the ore shoot boundaries, which are highly interpretative at this stage. Once these boundaries were recognized and accepted, the individual ore reserve blocks were defined according to the amount of information available within each block. Blocks bounded by those areas above 1735 Level that were inaccessible to sampling were given a higher confidence level (i.e. from probable to proven) based on the knowledge that those inaccessible areas have continuously produced high grade ore. Composited assays within any one block were then averaged by calculating the arithmetic average of the widths and the weighted average of the assays. Gold assays below detection limits were considered as zero. Silver and lead assays were not cut, specially because in most cases assay widths already represent minimum mining widths and these high silver and lead assays are thought to be representative of the material sampled.

Areas were measured on each longitudinal section, which are vertical, mined out areas being subtracted from the calculations. The lodes vary in between 60^{o} and 70^{o} in dip. Reserves should be measured along the plane of the vein rather than along a projection. Table N÷4.3 in which all reserves are summarized, show a "corrected" reserve

column in which the calculated reserves reported on Tables N÷4.1, 4.1.1, 4.2 and 4.2.1 have been adjusted by multiplying them by a factor of 1.119, thereby assuming an average dip of 65° to the south for both lodes.

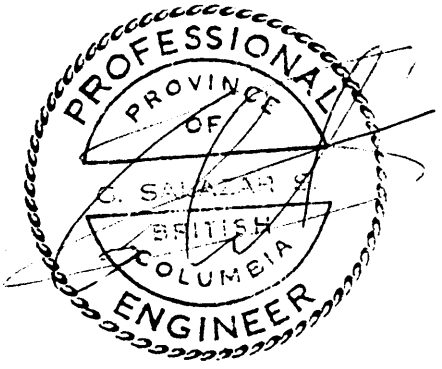
This last table also shows that the footwall lode has a total, corrected, reserve of 17,960.72 tonnes grading 45.02 (o/t) silver, 16.94% lead, 1.29% Zn and 0.011 (o/t) gold with an average width of 1.11 m. The hanging wall lode, in turn, has a total, corrected, reserve of 8,405.08 tonnes grading 27.24 (o/t) silver, 8.16% lead, 0.837% zinc and 0.0069 (o/t) gold with an average width of 1.52 m. This last reported width is considered by the writer as too wide and is probably due to a strong influence - via the weighted average calculation - of the ore reserve blocks derived from DDH's 82-4 and 82-5.

Total reserves, calculated and corrected, are, therefore, 26,365.24 tonnes with 39.35 (o/t) silver, 14.17 % lead, 1.14 %zinc and 0.0094 (o/t) gold over a average mining width of 1.24 meters. These reserves consist of 4,669.98 corrected tonnes (17.7% of total) in the proven confidence category, 2421.54 corrected tonnes (9.2% of total in the probable category, 4,241.20 connected tonnes (16.1% of total) in the possible (1) catagory and the remainder (57%) in the possible (2) category.



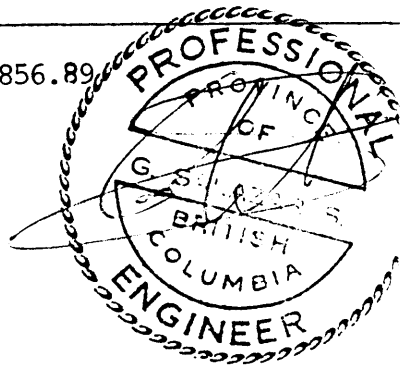
ORE RESERVES CALCULATION SHEET
HALLMAC FOOTWALL LODE

Block N=	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block A (FW)								Proven
1729WSD	0.50	22.06	1.63	1.45	2967	0.006		
	1.09	18.13	4.70	1.24	1428	0.003		
	1.49	39.94	5.76	1.369	4386	0.004		
1730WSD	0.71	69.65	16.96	1.91	N/A	0.009		
1715WSD	1.30	48.08	7.11	1.55	1850	0.013		
	1.21	5.18	0.27	0.87	736	<0.003		
	0.70	53.80	1.47	1.43	1435	0.088		
	1.00	35.17	5.31	1.36	1982	0.014	806.99	
Block B (FW)								Proven
1735ERl	1.10	84.98	38.4	0.65	2000	<0.003		
1729WSD	0.85	51.28	16.98	0.595	1740	0.006		
	1.23	58.16	15.48	0.634	523	0.004		
1715WSD	1.00	99.03	8.07	1.81	2200	0.048		
	1.00	100.48	11.94	2.04	5700	0.105		
	1.40	46.09	4.08	1.80	3780	0.034		
	1.00	56.75	0.93	1.03	2695	0.028		
	1.16	39.92	2.87	1.29	1458	0.005		
	0.81	37.66	5.66	0.69	2240	<0.003		
	1.12	41.83	6.00	1.03	2305	<0.003		
	0.91	56.03	3.01	0.746	2380	0.004		
	1.30	54.56	4.94	1.32	4900	0.017		
	1.16	55.83	9.10	1.08	2444	0.019	306.38	
Block C (FW)								Proven
1735ERl	1.05	38.35	27.29	1.28	2750	0.025		
1729ESD	1.02	33.58	7.99	1.14	1529	0.006		
	0.91	35.82	12.45	1.07	2016	0.006		
	1.05	39.39	8.25	1.18	2712	0.012		
	0.88	38.94	9.81	1.76	1997	0.018		
	0.98	37.22	13.25	1.28	2217	0.014	482.80	



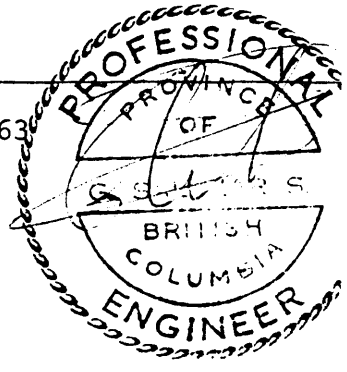
ORE RESERVES CALCULATION SHEET
HALLMAC FOOTWALL LODE
(CONTINUED)

Block N-	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block D (FW)								Probable
1729ESD	0.85	15.91	5.15	1.04	1277	0.0057		
1715WSD	1.00	28.23	0.491	1.08	3376	0.002		
	0.93	22.57	2.63	1.06	2412	0.0037	327.67	
Block E (FW)								Possible
1729ESD	1.45	8.90	9.46	0.740	902	0.006	180.62	
Block F (FW)								Proven
1735ER1	1.18	68.61	33.98	0.74	1877	0.003		
	2.10	73.29	31.4	0.62	1718	0.010		
	1.64	71.61	32.33	0.66	1775	0.007	661.29	
Block G (FW)								Proven
1735ER2	1.33	7.45	5.98	0.602	620	0.005		
	2.20	37.30	12.42	0.85	894	0.006		
	0.64	20.62	13.9	1.08	1070	<0.003		
	1.39	23.32	9.79	0.75	770	0.004	120.58	
Block H (FW)								Proven
1735ER2	0.83	61.47	25.9	1.82	1950	0.031		
	0.82	50.48	19.31	0.87	1180	<0.003		
	1.34	62.97	29.9	1.56	1537	0.028		
	0.50	75.83	34.4	1.41	1300	<0.003		
	0.87	61.52	27.11	1.44	1517	0.018	856.89	



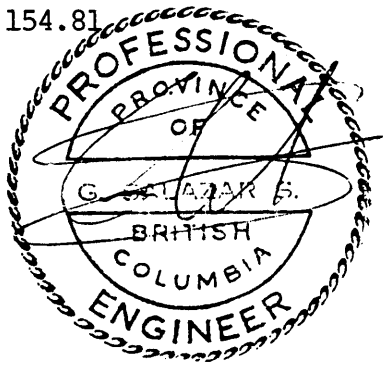
ORE RESERVES CALCULATION SHEET
HALLMAC FOOTWALL LODE
(CONTINUED)

Block No.	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block I (FW)								Probable
1735Inc.	0.90	13.05	7.31	1.40	1450	0.014	248.87	
Block J (FW)								Probable
1735Inc.	0.55	57.95	24.1	1.43	2100	0.004	119.21	
Block K (FW)								Possible (1)
Block H	0.87	61.52	27.11	1.44	1517	0.018		
Block I	0.90	13.05	7.31	1.40	1450	0.014		
Block J	0.55	57.95	24.1	1.43	2100	0.004		
	0.84	51.33	22.79	1.43	1560	0.016	203.29	
Block L (FW)								Drill Possible
DDH82-4	0.46	28.45	15.6	1.63		0.006		
82-5	0.21	2.75	2.6	1.61		<0.003		
	0.34	20.39	11.53	1.62		0.004	258.65	
Block M (FW)								Possible
1735Inc.	1.3	43.74	15.6	1.14	2700	<0.003		
Block L	0.34	20.39	11.53	1.62		0.004		
	0.82	38.90	14.76	1.23		0.0008	433.63	
Block N (FW)								Possible
Block L	0.34	20.39	11.53	1.62		0.004		
Block M	0.82	38.90	14.76	1.23		0.0008		
	0.64	31.98	13.55	1.38		0.002	306.63	



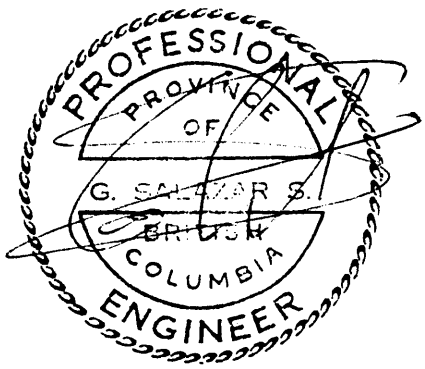
ORE RESERVES CALCULATION SHEET
HALLMAC FOOTWALL LODE
(CONTINUED)

Block N-	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block O (FW)								Possible (1)
Block J	0.55	57.97	24.1	1.43	2100	0.004		
Block M	0.82	20.39	11.53	1.62		0.004		
Block N	0.64	31.98	13.55	1.38		0.002		
	0.72	29.74	13.99	1.51		0.004	434.28	
Block P (FW)								Possible (2)
Block D	0.93	22.57	2.63	1.06	2412	0.0037		
Block E	1.45	8.90	9.46	0.74	902	0.006		
Block C	0.98	37.22	13.25	1.28	2217	0.014		
Block F	1.64	71.61	32.33	0.66	1775	0.007		
Block R	1.23	28.43	13.09	1.08		0.012		
Block H	0.87	61.52	27.11	1.44	1517	0.018		
Block I	0.90	13.05	7.31	1.40	1450	0.014		
Block J	0.55	57.95	24.1	1.43	2100	0.004		
Block O	0.72	29.74	13.99	1.51		0.004		
	1.25	50.96	21.89	1.36		0.012	7612.35	
Block Q (FW)								Possible
Block A	1.00	35.17	5.31	1.36	1982	0.014		
	1.00	35.17	5.31	1.36	1982	0.014	854.15	
Block R (FW)								Possible
1735ER1	1.42	13.18	7.73	1.18	804	0.017		
Block G	1.39	23.32	9.79	0.75	770	0.004		
Block H	0.87	61.52	27.11	1.44	1517	0.018		
	1.23	28.43	13.09	1.08		0.012	154.81	



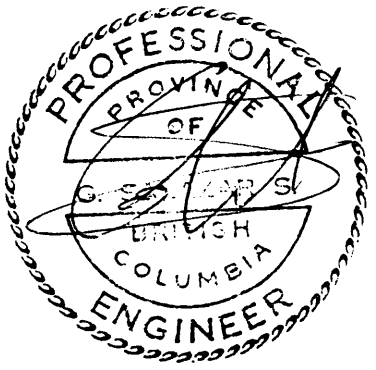
ORE RESERVES CALCULATION SHEET
HALLMAC FOOTWALL LODE
(CONTINUED)

Block N-	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block T (FW)								Possible (2)
1715W	0.75	19.82	1.37	1.14	1435	0.005		
Block A	1.00	35.17	5.31	1.36	1982	0.014		
Block B	1.16	55.83	9.10	1.08	2444	0.019		
Block D	0.93	22.57	2.63	1.06	2412	0.0037		
	0.96	35.36	5.04	1.16		0.011	1681.60	



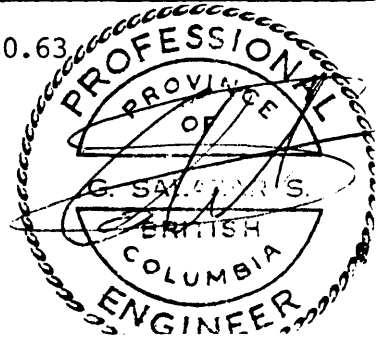
SUMMARY OF ORE RESERVES - FOOTWALL LODE

Block N°	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block A	1.00	35.17	5.31	1.36	1982	0.014	806.99	Proven
B	1.16	55.83	9.10	1.08	2444	0.019	306.38	Proven
C	0.98	37.22	13.25	1.28	2217	0.014	482.80	Proven
D	0.93	22.57	2.63	1.06	2412	0.0037	327.67	Probable
E	1.45	8.90	9.46	0.746	902	0.006	180.62	Possible (1)
F	1.64	71.61	32.33	0.66	1775	0.007	661.29	Proven
G	1.39	23.32	9.79	0.75	770	0.004	120.58	Probable
H	0.86	61.52	27.11	1.44	1517	0.018	856.89	Proven
I	0.90	13.05	7.31	1.40	1450	0.014	248.87	Probable
J	0.55	57.95	24.1	1.43	2100	0.004	119.21	Probable
K	0.84	51.33	22.79	1.43	1560	0.016	203.29	Possible (1)
L	0.34	20.39	11.53	1.62	-	0.004	258.65	Drill Possible
M	0.82	38.90	14.76	1.23	-	0.0008	433.63	Drill Possible
N	0.64	31.98	13.55	1.38	-	0.002	306.63	Drill Poss.(1)
O	0.72	29.74	13.99	1.51	-	0.004	434.28	Possible (1)
P	1.25	50.96	21.89	1.36	-	0.012	7612.35	Possible (2)
Q	1.00	35.17	5.31	1.36	1982	0.014	854.15	Possible (1)
R	1.23	28.43	13.09	1.08	-	0.012	154.81	Possible (1)
T	0.96	35.36	5.04	1.16	-	0.011	1681.60	Possible (2)
TOTAL	1.11	45.02	16.94	1.29	-	0.011	16050.69	



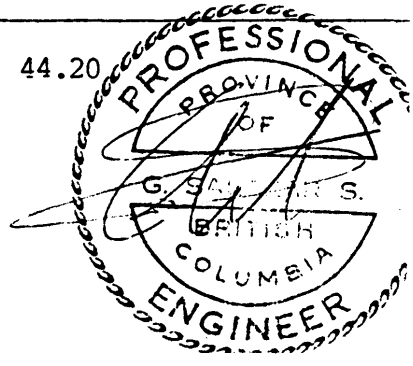
ORE RESERVE CALCULATION SHEET
HALLMAC HANGING WALL LODE

Block Sample	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block A (HW)								Probable
1730WSD	1.20	33.51	9.45	0.567	-	0.017		
1726WSD	0.88	26.31	8.62	0.818	-	0.017		
	0.65	24.50	11.03	1.440	1264	0.043		
	1.15	20.61	5.34	1.623	834	0.009		
	1.05	29.11	9.98	2.160	1557	0.0096		
1720WR	0.77	43.00	15.65	1.910				
	0.95	29.24	9.61	1.130	-	0.015	533.94	
Block B (HW)								Proven
1730WSD	1.51	9.54	6.66	0.671	N/A	0.037		
	0.76	5.83	2.23	1.510	1690	0.005		
	0.33	20.47	16.0	1.090	N/A	0.011		
	1.55	1.53	0.843	0.212	N/A	<0.003		
	0.89	3.31	0.924	1.450	N/A	0.0055		
	1.01	6.13	3.80	0.820	-	0.014	110.98	
Block C (HW)								Proven
1720WSD	0.93	17.0	4.29	0.930				
	0.96	19.4	2.25	0.880				
	0.95	18.22	3.25	0.900			42.26	
Block D (HW)								Proven
1720WSD	1.36	5.72	0.75	0.489	349	0.007		
	0.90	3.58	0.764	0.666	299	<0.003		
	1.13	4.87	0.76	0.560	-	0.004	80.63	



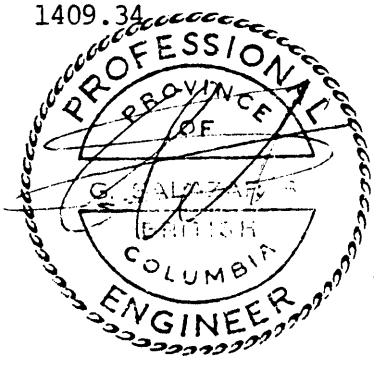
ORE RESERVE CALCULATION SHEET
HALLMAC HANGING WALL LODE
(CONTINUED)

Block Sample	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block E (HW)								Possible
Block A	0.95	29.24	9.61	1.13	-	0.015		
C	0.95	18.22	3.25	0.90	-	-		
D	1.13	4.87	0.76	0.56	-	0.004		
F	0.97	80.81	21.44	1.36	-	0.020		
H	1.08	4.01	1.59	0.69	-	-		
I	0.88	33.40	11.62	0.79	1328	0.004		
J	0.90	84.46	21.55	0.622	1205	0.007		
K	0.85	24.57	7.05	0.889	1224	0.004		
L	0.85	24.57	7.05	0.889	1224	0.004		
	0.90	34.44	9.84	0.90	-	0.007	2730.60	
Block F (HW)								Proven
1730WSD	0.50	58.61	16.8	1.37	N/A	0.022		
	0.63	63.0	19.83	1.70	-	-		
	0.84	110.0	32.59	1.65	-	-		
1720WSD	1.90	79.66	18.26	1.124	2154	0.020		
	0.97	80.81	21.44	1.36	-	0.020	99.68	
Block G (HW)								Proven
1730ESD	0.90	10.33	1.63	1.66	N/A	<0.003		
	1.60	16.10	7.19	1.562	1175	0.006		
	1.25	14.02	5.19	1.60	-	0.004	149.48	
Block H (HW)								Proven
1720ESD	0.80	2.2	0.59	0.57	-	-		
	1.20	1.2	0.32	0.93	-	-		
	1.25	7.87	3.44	0.526	844	<0.003		
	1.08	4.01	1.59	0.69	-	-	44.20	



ORE RESERVE CALCULATION SHEET
HALLMAC HANGING WALL LODE
(CONTINUED)

Block Sample	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block I (HW)								Proven
1720WSD	0.90	33.79	15.99	0.678	702	0.004		
	0.80	21.03	6.94	0.993	1318	<0.003		
1726ESD	0.95	43.46	11.43	0.719	1930	0.008		
	0.88	33.40	11.62	0.79	1328	0.004	180.72	
Block J (HW)								Proven
1726E	0.90	84.46	21.55	0.622	1205	0.007		
	0.90	84.46	21.55	0.622	1205	0.007	317.42	
Block K (HW)								Probable
1720W	0.85	24.57	7.05	0.889	1224	0.004		
	0.85	24.57	7.05	0.889	1224	0.004	813.75	
Block L (HW)								Possible
Block K	0.85	24.57	7.05	0.889	1224	0.004	514.26	
Block M (HW)								Drill Possible
82-5	1.52	3.97	1.02	0.487				
	1.52	6.87	2.56	0.312				
	1.13	12.05	1.54	1.23				
	0.40	0.57	0.651	0.446				
T. Width	3.96	6.63	1.63	0.609			1409.34	



ORE RESERVE CALCULATION SHEET
HALLMAC HANGING WALL LODE
(CONTINUED)

Block Sample	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Block Type
Block N (HW)								Drill Possible
82-4	0.46	5.74	5.01	1.25		0.004		
	0.22	58.36	30.8	0.437		0.012		
	0.24	30.46	15.1	0.072		0.004		
	0.91	5.54	7.10	0.174		0.005		
T. Width	1.58	15.21	10.47	0.463		0.005	449.85	
Block P (HW)								Proven
1730WSD	0.70	34.0	11.15	1.65			33.63	

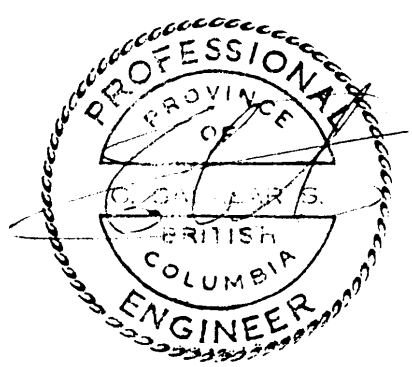
SUMMARY OF ORE RESERVES
HANGING WALL HALLMAC LODE

Block Sample	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonne	Block Type
Block A	0.95	29.24	9.61	1.13	-	0.015	533.94	Probable
B	1.01	6.13	3.80	0.82	-	0.014	110.98	Proven
C	0.95	18.22	3.25	0.90	-	-	42.26	Proven
D	1.13	4.87	0.76	0.56	-	0.004	80.63	Proven
E	0.90	34.44	9.84	0.90	-	0.007	2730.60	Possible (2)
F	0.97	80.81	21.44	1.36	-	0.020	99.68	Proven
G	1.25	14.02	5.19	1.60	-	0.004	149.48	Proven
H	1.08	4.01	1.59	0.69	-	-	44.20	Proven
I	0.88	33.40	11.62	0.79	1328	0.004	180.72	Proven
J	0.90	84.46	21.55	0.622	1205	0.007	317.42	Proven
K	0.85	24.57	7.05	0.889	1224	0.004	813.75	Probable
L	0.85	24.57	7.05	0.889	1224	0.004	514.26	Possible
M	3.96	6.63	1.63	0.609	-	-	1409.34	Drill Possible (1)
N	1.58	15.21	10.47	0.463	-	0.005	449.85	Drill Possible (2)
P	0.70	34.00	11.15	1.65	-	-	33.63	Proven (1)
TOTALS	1.52	27.24	8.16	0.837	-	0.0069	7510.74	

ORE RESERVES - HALLMAC LODE
FINAL SUMMARY

Block Sample	Width (m)	Ag o/t	Pb %	Zn %	Cu ppm	Au o/t	Tonnes	Corrected Tonnes *
HANGING WALL LODE								
Proven	0.98	43.59	12.20	0.92	-	0.008	1059.0	1185.02
Probable	0.89	26.42	8.06	0.98	-	0.008	1347.69	1508.07
Poss.(1)	1.19	20.20	8.65	0.69	-	0.004	964.11	1078.84
Poss.(2)	1.94	24.97	7.05	0.80	-	0.004	4139.94	4632.59
	1.52	27.24	8.16	0.84	-	0.005	7510.74	8404.52
FOOTWALL LODE								
Proven	1.11	52.50	18.64	1.19	1892	0.014	3114.35	3484.96
Probable	0.93	24.94	8.24	1.17	1830	0.0069	816.33	913.47
Poss. (1)	0.85	32.31	11.50	1.33	769	0.0077	2826.06	3162.36
Poss. (2)	1.20	48.14	18.84	1.32	-	0.012	9293.95	10399.93
TOTAL	1.11	45.02	16.94	1.29	-	0.011	16050.69	17960.72
HALLMAC LODE TOTAL								
Proven	1.08	50.24	17.01	1.12	-	0.012	4173.35	4669.98
Probable	0.91	25.86	8.13	1.05	-	0.008	2164.02	2421.54
Poss. (1)	0.94	29.23	10.78	1.17	-	0.0068	3790.17	4241.20
Poss. (2)	1.43	41.00	15.21	1.16	-	0.0095	13433.89	15032.52
GRAND TOTAL	1.24	39.35	14.17	1.14	-	0.0094	23561.43	26365.24

* Calculated Tonnes x 1.119 = Corrected Tonnes, thereby accounting for average dip of lode of 65° South.



6.0 RECOMMENDED PROGRAM

6.1 General

The program outlined below is designed as a follow-up of previous work and is strongly dependent on Goldsmith and Logan for the section regarding surface exploration.

The recommendations for underground development and exploration, on the other hand are based on the underground sampling and drilling programs subject of this report.

6.2 Surface

6.2.1: A Topographic Map at a minimum scale of 1:5000 and a 5 m. contour interval is required to continue exploration and development of the several targets available. Existing ground control should be used in the preparation of the topographic map. A photo mosaic at the same scale should also be prepared. This map can later be blown up to a scale of 1:1000 for more detailed work.

6.2.2: Road Building and Trenching

The grade of the Hallmac Mine road should be reduced to improve access to the higher workings. As well, trenching has proven to be a good exploration tool to define the location of the lode(s) and should be continued.

6.2.3: Diamond Drilling

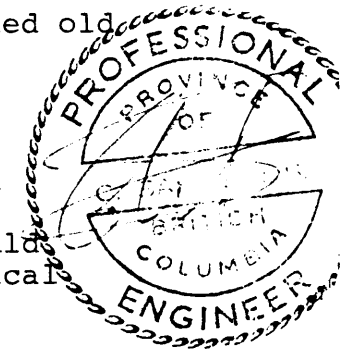
6.2.3.1: Two more holes should be drilled from DDH 82-9 set up, each to be at least 80 m. long.

6.2.3.2: One hole from DDH 82-8 set up, drilled at 340° Azimuth and to a depth of 160 m.

6.2.3.3: Follow up testing of trenches onto geochemical anomalies and a re-opened old working, ten holes, 70 m. each.

6.2.4: Reconnaissance and Exploration

The geochemical soil sampling program should be completed over the remainder of the property. Anomalous areas reported by previous workers should be checked by trenching and/or drilling. Geological mapping should be carried out simultaneously.



6.3 Underground

6.3.1: Hallmac Lode

6.3.1.1: Drifting and Crosscutting

6.3.1.1.1: Those areas of the lower, 1690 level, in between survey stations 2-2 and 2-3, and 2-5 and 2-7, should be carefully washed and sampled. This will require taking lagging and timber support off, and should be done by safety conscious personnel.

6.3.1.1.2: Extend level 1735 (Upper) to the area of DDH's 82-4 and 82-5. This can be done either along the vein from survey station 3-4 for a distance of 35.0 m. or following a azimuth of 85° for 40.0 m. from survey station 3-3. The former method of exploration entails:

- Development in ore.
- Generation of revenue.
- Possible delays due to bad ground.
- Need for ten meter long crosscuts to either side of drift to build drill stations.

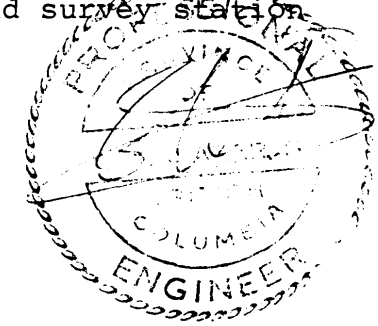
The latter method, in turn, entails:

- No ore or revenue generation.
- No need for cross cuts since the drift can be designed to be used for drilling.
- Crosscuts required for development.
- More drilling is required.

The author feels that it is easier to develop a more systematic method of exploration and development with the latter method and, therefore, recommends it.

This drift can be further extended for another 40.0 m. at an azimuth of 60°. The area under the trench/portal site at an elevation of 1780 m. will thus be tested.

Fans of four diamond drill holes per station totalling 75 m. are also recommended. At present, two such fans, one on section with DDH 82-4 and another with DDH 82-5 are the required minimum. Two more such fans are envisioned between DDH 82-5 and survey station 3-3.



6.3.1.1.3: Open up portal at elevation 1780 m. A.S.L. and drive drift to area first found by DDH 82-9 and confirmed by DDH's 83-1 and 83-2 proposed, a distance of 60 meters. Mineralization in DDH 82-9 was intercepted at an elevation of 1798.0 m. to 1790.0 m. and was apparently found on a trench at an elevation of 1812.0 m. Mineralized backs of at least 32.0 m. height would, therefore, be the target.

Should this portion prove successful, two drill-stations shall be sited and three to four drill hole fans drilled from them. A total of 20 m. of crosscutting and 100 m. of drilling per fan are recommended.

6.3.1.4: The down dip extent of the Hallmac Lodes below Level 1735 should be investigated. Utmost use of Level 1690 is recommended, although this may encumber mine productivity since the said level is presently used for hauling. Careful planning and coordination of work schedules may eliminate most of this conflict.

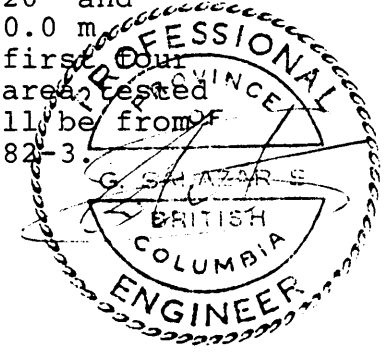
Once the lodes and the structures have been found and defined in the critical areas of Level 1690, (recommendation 6.3.1.1.1) and testing of the DDH 82-4 area from Level 1735 has proven its worth and defined this new oreshoot's rake below the said level, it is recommended that Hallmac drill the down extension of these and other ore shoots from Level 1690. The known ore shoots are projected downdip to Level 1690 as shown on Section A-A'. It is recommended that at least one crosscut, 20 m. long be driven northwards from Level 1690 once these shoots have been drilled.

6.3.1.2: Underground Drilling

It is recommended that a machine capable of drilling BQ-size wireline holes be contracted to carry out the following drilling program. This minimum size is recommended in an effort to maximize core recovery within the lode.

6.3.1.2.1: Drilling from 1735 (Upper) Level East Extension

A total of eight fans of drill holes are proposed to test and extend the mineralized zone found with DDH's 82-4 and 82-5. Four holes, at + 20°, 0°, -20° and -40°, and lengths of 20.0, 15.0, 20.0 and 20.0 m. respectively per fan are recommended. The first four drill fans are placed vertically under the area tested by DDH's 82-4 and 82-5, the second stage will be from the area underlain by DDH's 82-1, 82-2 and 82-3.



6.3.1.2.2: Drilling from 1690 (Lower) Level

This drilling is designed to accomplish two purposes. First, it should find and define the trace of the lodes at this elevation. The lode(s) have to be sought in areas where the possibility of them being squeezed out by post-mineral dykes, as it seems to have been the case in the raise near survey station 2-4, is minimal. It should, as well, attempt to intercept the down plunge extensions of the higher silver grade ore shoots, as roughly defined by this winter's underground sampling program.

Section A-A' (Map N÷ 5-1) shows a best-guess projection of the known high grade silver ore shoots extracted from Map N÷ 5.2 and 5.3. It also shows that a total of 14 holes, 20 m. long each, are proposed in an effort of finding and definning the lodes at this elevation. Follow up of any drill interception of economic interest with fans of holes at $+20^{o}$ and -20^{o} dips on drill stations eight meters apart are also recommended.

6.3.1.2.3: Follow up of Ore Shoots found with proposed work on 1735 (Upper) Level.

Should the work carried out on the 1735 (Upper) Level under the area intercepted in DDH's 82-4 and 82-5 prove to be successful, its extension onto the 1690 (Lower) Level should be sought. A program costing approximately the same as 6.3.1.2.2 is envisioned.

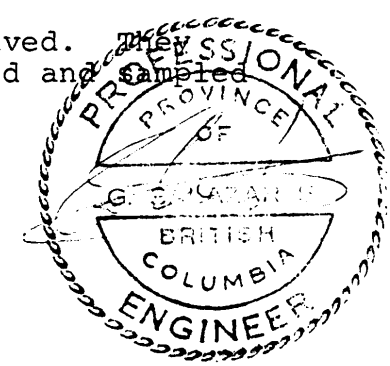
6.3.2: Hallmac North Lode

6.3.2.1: The known ore shoot should be examined in the raise above N÷4 level and on N÷3 Level to establish the rake of the ore shoot prior to any decision to drift ahead on N÷4 Level. N÷3 Level and the Raise should be re-opened, rehabilitated, sampled and mapped.

6.3.2.2: Follow up drifting for a distance of 60.0 m. along the vein would be required to drift accross the ore shoot.

6.3.3: Minneapolis and Saphire Lodes

The workings into these lodes are caved. They should be re-opened, rehabilitated, mapped and sampled to assess their potential.



7.0 ESTIMATED BUDGET FOR RECOMMENDED PROGRAM - STAGE I

7.1: Surface

7.1.1: Topographic Mapping

Prepare topographic map at 1:5000 scale and 5 m. contour interval with available photography and extended ground control: $10,000.00

7.1.2: Road Building

This budget is in addition to those specified in the specific cases described above and includes trenching: 40,000.00

7.1.3: Diamond Drilling

7.1.3.1: From DDH 82-9 set up, two holes, 80 m. each @ 85.00/m., all inclusive: 13,600.00

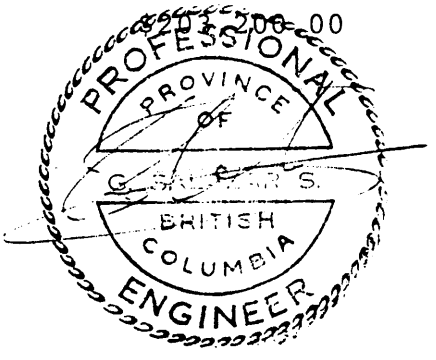
7.1.3.2: From DDH 82-8 set up, one hole, 160 m., @ $85.00/m., all inclusive: 13,600.00

7.1.3.3: Ten holes, 70 m. each @ $85.00/m., all inclusive: 59,500.00

7.1.4: Reconnaissance & Exploration

Salaries: Geologist, senior prospector, two junior prospectors,:	$27,500.00
Room and Board:	3,000.00
Transportation, 2 months @ $50./day:	3,000.00
Assaying and geochemical analysis:	15,000.00
Drafting:	5,000.00
Report:	6,000.00
Supervision:	7,000.00
	66,500.00

Subtotal this page: $201,200.00



Subtotal carried forward:		$203,200.00

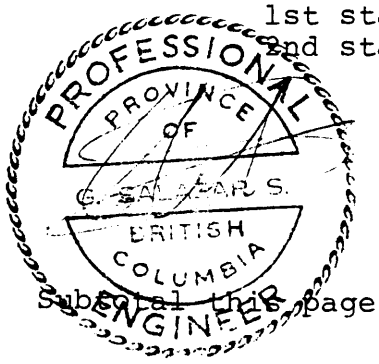
7.2: UNDERGROUND

7.2.1: Hallmac Lodes

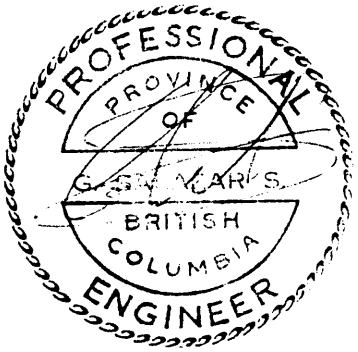
7.2.1.1: Drifting and Crosscutting

7.2.1.1.1: a) Opening, washing, replacing logging, etc. - costs for both areas 2-2 to 2-3 (16.0 m.) and 2-5 to 2-7 (15.0 m.), total of 31.0 m. @ estimated 1/3rd cost of driving drift 31.0 m. x 1/3 x 1150. - ($/m.)=	11,883.33	
b) Sampling, 31. m. x c, 50 samples, two man days, wages & ancillary:	500.00	
c) Assaying, Au, Ag, Pb, Zn, & Cu, 50 samples @ 20.15/sample:	1,457.50	
d) Transportation - 3 days @ $50./day:	150.00	
e) Room and Board - 2 man days @ $50./manday:	100.00	
f) Miscellaneous & Administration:	2,000.00	
		16,090.83
7.2.1.1.2: a) Subcontract stage 1, 2.0 m. x 2.5 m. drift, 40 m. long @ 40 m. 1150 - $/m., all inclusive cost:	46,000.00	
b) Supervision, 5 days @ $400.00/day:	2,000.00	
c) Geological mapping, sampling 5 days @ $400./1 day	2,000.00	
d) Room and Board 10 mandays @ $50./manday	5,000.00	
e) Transportation 10 days @ $50./day	500.00	
f) Administration and Miscellaneous	5,000.00	
		60,500.00
Subtotal this page:		279,790.83

Subtotal carried forward:			$279,790.83
g) Stage II, 40 m. @ average $1512.50/m. cost, all inclusive:			60,500.00
Drilling I 75 m. x 4 x 100.-$/m.	30,000.00		
Drilling II 100 x 4 x 100.- $/m.	40,000.00		
			70,000.00
7.2.1.1.3:			
a) Portal, as per costs @ 1850.0 m., 8x10 . Approx.			25,000.00
b) Drift, 60 m. long			
- Direct costs 60 m.x 1150.-$/m all inclusive subcontract	69,000.00		
- supervision, 10 days @ 400.$/day	4,000.00		
- Assaying 50 samples	1,457.50		
- Transportation 10 days @ $50/day	500.00		
- Geological mapping, sampling 2 days @ $400./day	800.00		
- Room and Board 12-2 mandays @ $50./m.d.	1,200.00		
- Administration & miscellaneous, 15%	11,544.00		
			88,501.50
c) Crosscuts for Drill Stations 2-10 m. = 20 m.x1512.50 $/m.			30,250.00
d) Drilling 2x100x100-$/m.			20,000.00
7.2.1.1.4: Crosscut from Level 1690			
1st stage - 20 m. (one)			
2nd stage - 60 m. (three)			
80 m. of crosscuts (four) @ $1,512.50/m.			$121,000.00
Subtotal this page			$695,042.23



Subtotal carried forward:		$695,042.33
7.2.1.2.1: Drilling from 1735 (Upper) Level Extension: Already accounted for under 7.2.1.1.2.		
7.2.1.2.2: Drilling from 1690 (Lower) Level. Phase I: 14 holes, 3 cm long @ 100 - $/m.		42,000.00
Phase II: Minimum 8 fans, 2 holes, 30 m. @ 100 $/m.		48,000.00
7.2.1.2.3: Drilling for extension of DDH 82-4 & 82-5 down to 1690 (Lower Level)		70,000.00
7.2.2: Hallmac North Vein		
7.2.2.1: Re-open, rehabilitate, sample and map level N-3.		
- Road Preparation	2,000.00	
- Portal Excavation w/ backhoe/loader	750.00	
- Timber portal, ladders	5,000.00	
- Sampling	2,000.00	
- Assaying	3,000.00	
- Report, Drafting, supervision	2,250.00	
		15,000.00
7.2.2.1: Drifting 60 m. along vein, mapping, sampling, supervision @ $1,512.50/m.		90,750.00
7.2.3: Mineapolis and Saphire Lodes		
7.2.3.1: Re-open, rehabilitate, sample and map all workings		
- Road Preparation	25,000.00	
- Portal Excavation or/ backhoe /loader	1,500.00	
- Timber portal	4,000.00	
- Sampling	5,000.00	
- Assaying	5,000.00	
- Report Draftings	3,500.00	
- Supervision	1,000.00	
		45,000.00
Contingency and Administration 10.0%		100,579.23
TOTAL STAGE I		$ 1,106,371.56



8.0 ESTIMATED BUDGET FOR STAGE II FOLLOW UP

8.1: Underground Developments

8.1.1: Hallmac Lode

8.1.1.1: Extend 1780 level another 100 m., drive 1825 level 150 m, total 250 m. @ 1,512.50/m., all inclusive. $378,125.00

8.1.1.2: Drive a second raise from 1690 Level to 1735 Level under the ore shoot at DDH's 82-4 & 82.5, 45.0 m. long, 3.5 m. x 2.5 m. fully cribbed, @ $1,500.00-/m. 67,500.00

8.1.1.3: Drive connecting raise between 1780 and 1825 Levels, 50 m. @ $2,000/m. 100,000.00

8.1.2: Hallmac North Lode

Driving Level N÷5 to hit the ore shoot 23.0 m. below Level n÷4 will require extending the level between 190 m. and 225 m. more, for an approximate cost of $230,000 - Unfortunately, topography flattens below level N÷5, thereby increasing the exploratory distance drastically. It is, therefore, suggested that 100 m. of cross cutting be planned for to set up drill stations from which the down dip extension of the oreshoot below level N÷4 can be accomplished.

- 50 m. crosscutting @ $1,512.50/m. 75,625.00

- 500 m. Diamond Drilling @ 100./m. 50,000.00

8.1.3: Minneapolis/Saphire

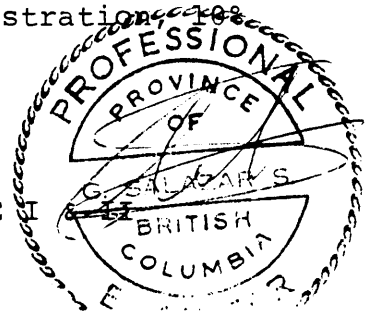
Underground Development, 100 m. @ 1,512.50/m. 151,250.00

8.1.4: Miscellaneous, Contingency, Administration, 10%

82,250.00

TOTAL STAGE II 904,750.00

GRAND TOTAL STAGE I & II $2,011,121.56



APPENDIX 1

CERTIFICATE OF QUALIFICATIONS

I, G. Salazar S., Mining Geologist of Calgary, Alberta, hereby certify:

1. That I attended and graduated from the Universidad Nacional de Ingenieria de Lima, Peru with a Bachelor of Science and Engineering Degree in Mining Engineering and Mining Geology in 1967. That I also attended and graduated from Harvard University with a Master of Science Degree in Economic Geology in 1969.

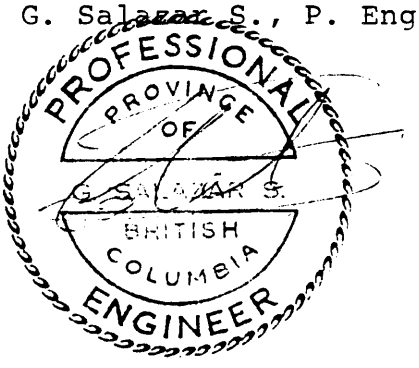
2. That I am a Registered Professional Geologist in the Province of Alberta and a Professional Engineer in the Province of British Columbia and have in excess of ten years experience in North America.

3. That a personal field inspection of this property was made by me, and that data, other than the 1982-83 winter program, covered in this report and generated by others, was obtained from the files of Hallmac Mines Ltd., reviewed by myself, with an effective date of December 17, 1982.

4. That I have not, directly or indirectly, received and do not expect to receive any interest, direct or indirect, in the property of Hallmac Mines Ltd., or any affiliate, and I do not beneficially own, directly or indirectly, any securities of Hallmac Mines Ltd. or any affiliate.

Calgary, Alberta

G. Salazar S., P. Eng.(B.C.)



APPENDIX N-3

STATEMENT OF EXPENDITURES
DIAMOND DRILLING AND EXPLORATION PROGRAM

For the period November 1, 1982 to March 31, 1983

Prepared by Hallmac Mines Ltd. (N.P.L.)

1.	Diamond Drilling	$ 75,387.50
2.	1850 Level Portal, expenses to date	14,400.00
3.	Bulldozer work, including snow removal, drillsite preparation, portal excavation and trenching	25,859.00
4.	Assaying	10,356.10
5.	Vehicle and Equipment	4,429.42
6.	Surface and Underground Surveying	12,050.00
7.	Engineering and Geological	53,917.00
8.	Room, Board & Travel	16,210.39
9.	Core storage building and installation of electricity @ Sandon	5,500.00
10.	Administration Overhead	10,250.00
		$ 228,359.41

Signed: Ronald Smylie

Ronald Smylie
Director and
Secretary Treasurer