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GEOLOGICAL AND GEOCHEMICAL REPORT

on the

RAIN 1 - 17 Mineral Claims

Revelstoke Mining Division
NTS 82 M/ 8 W

Latitude: 51° 26' N
Longitude: 118° 07' W

Prepared for:

Bethlehem Resources Corporation
(Owner and Operator)

Christopher J. Wild, B.A.Sc.
October 18, 1990

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

20,628

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SUMMARY

A reconnaissance exploration program including geological mapping, stream silt sampling and soil geochemistry, was conducted on the RAIN claims in the Downie Creek area, north of Revelstoke, B.C. The purpose of this program was to locate areas of potential stratiform massive sulphide mineralization in Paleozoic metasedimentary and metavolcanic rocks of the Lardeau Group.

A section of stratigraphy exposed in the Murder Creek area matches the ore hosting sequence at the Goldstream Mine almost exactly. Additionally, soil and rock geochemistry immediately north of Murder Creek links up very well with previous work done on the Sorcerer Creek showings. That work showed a trend of very anomalous zinc values south of the showings. Favourable stratigraphy extends south into Standard Creek and may join with the trend of stratigraphy from the old Standard showings farther to the south. Mapping on the east side of Downie Creek revealed a panel of favourable Lardeau Group sediments extending southeast from a large antiform on the RAIN 9 claim.

A program for 1991 has been proposed that would include detailed grid work over the Murder Creek area. Follow-up work would be done on Standard Ridge in the neighbourhood of two gossans noted on Noranda geology maps, and north of the Sorcerer Creek showings to determine the extent of favourable stratigraphy. Reconnaissance work is also proposed for the upper Standard Creek drainage and over a panel of Lardeau stratigraphy extending southeast toward Downie Lake.

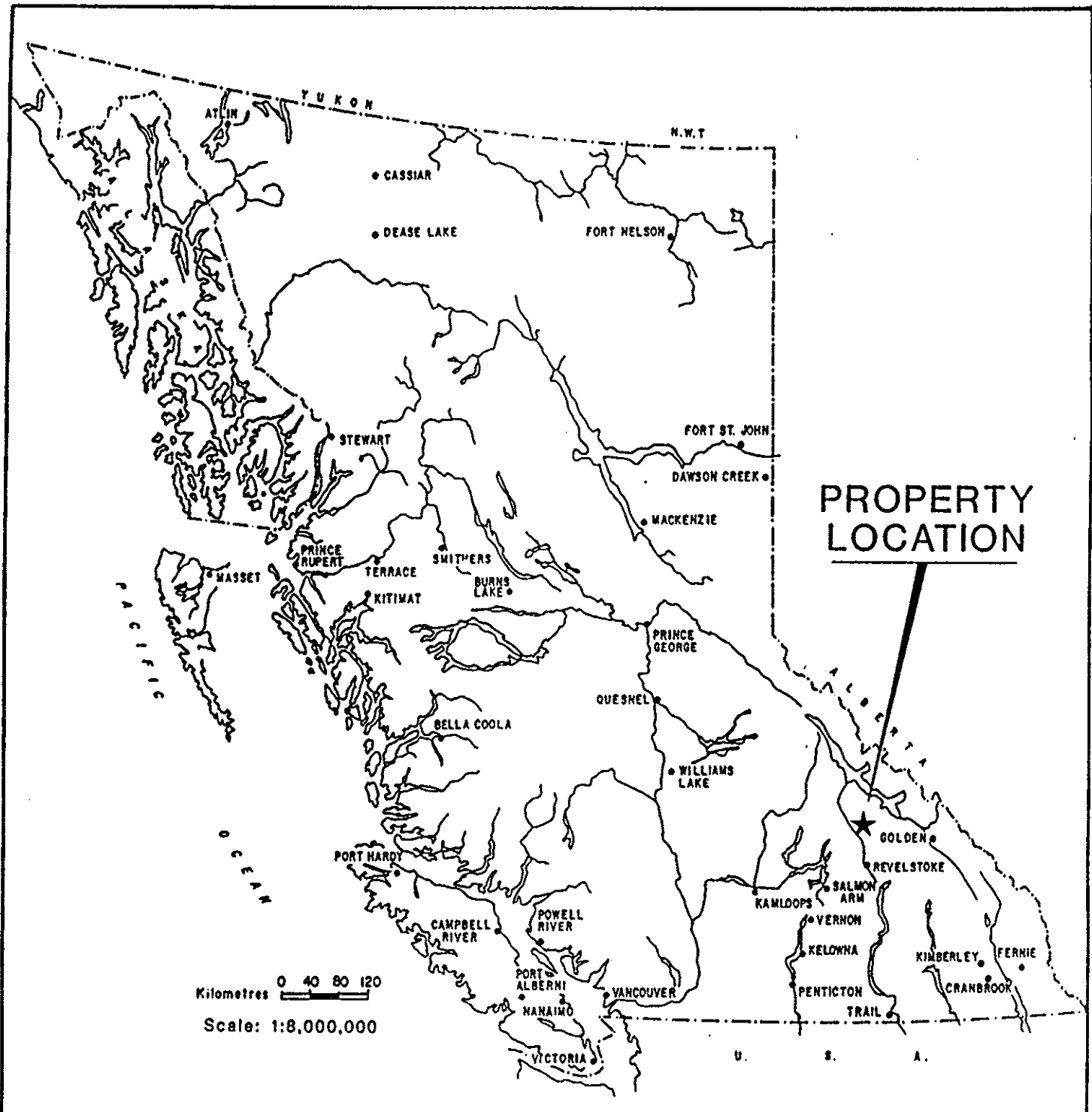
INTRODUCTION

A work program consisting of regional geological mapping, stream sediment sampling, and contour soil geochemical sampling was carried out on the RAIN property between July 6 and September 27, 1990. The program was designed to cover as much of the property as practical from logging roads and strategically placed flycamps. The purpose was to locate areas of favourable stratigraphy that may host Cu-Pb-Zn-Ag stratiform massive sulphide mineralization.

Location and Access (51° 26' N. Lat.; 118° 07' W. Long.)


The RAIN property is located in the northern Selkirk Mountains, 50 kilometres north of Revelstoke, B.C. (Figure 1). The property consists of 17 mineral claims totalling 265 units, extending approximately 15 kilometres southeast along Downie Creek from Sorcerer Creek.

Excellent access to the property is afforded by Route 23 (Nakusp-Mica Creek Highway) to Downie Creek Logging Road. The property lies between kilometre 15 and kilometre 29 along Downie Road (Figure 4). The main road runs along the southwest side of Downie Creek with branch roads running along the northeast side of Downie Creek entirely within the claim block and along the north side of Sorcerer Creek off the property. The alpine portions of the property were accessed by helicopter.



**PROPERTY
LOCATION**

Kilometres 0 40 80 120
Scale: 1:8,000,000

	BETHLEHEM RESOURCES CORPORATION	<i>RAIN PROPERTY</i>		
		LOCATION MAP		
Crafted By :	Date :	Map Index No.	Scale :	Drawing No.
Geodrafting	Nov., 1989	82M-8	1:8,000,000	1

Topography and Physiography

The RAIN claims lie along Downie Creek, a large U-shaped drainage in the rugged northern Selkirk Mountains. Valley walls are steep, especially on the south and east portions of the property. Ridges and peaks are very sharp. Small glaciers remain on the far southeastern part of the claims. Elevations range from 670 metres to 2,530 metres A.S.L.

Vegetation consists of mature stands of cedar, hemlock, spruce, and pine with extensive patches of slide alder and devil's club. Logging is currently very active at the lower elevations along Downie Creek. Outcrop at lower elevations is limited to road cuts, creek exposures and scattered cliffs. Cliffs are prevalent along the east side of Downie Creek valley. Exposure in alpine areas is excellent. Thick glacial till and alluvial deposits cover the valley bottoms.

The Downie Creek area falls within the Interior Rain Belt. Temperatures range between -30°C and $+30^{\circ}\text{C}$; precipitation averages 1.15 metres with over half falling as snow (up to 6 metres).

Property Status

The RAIN claims consist of 17 mineral claims totalling 265 units (Figure 2). All claims are located within the Revelstoke Mining Division. Claim information is as follows:

RAIN PROPERTY

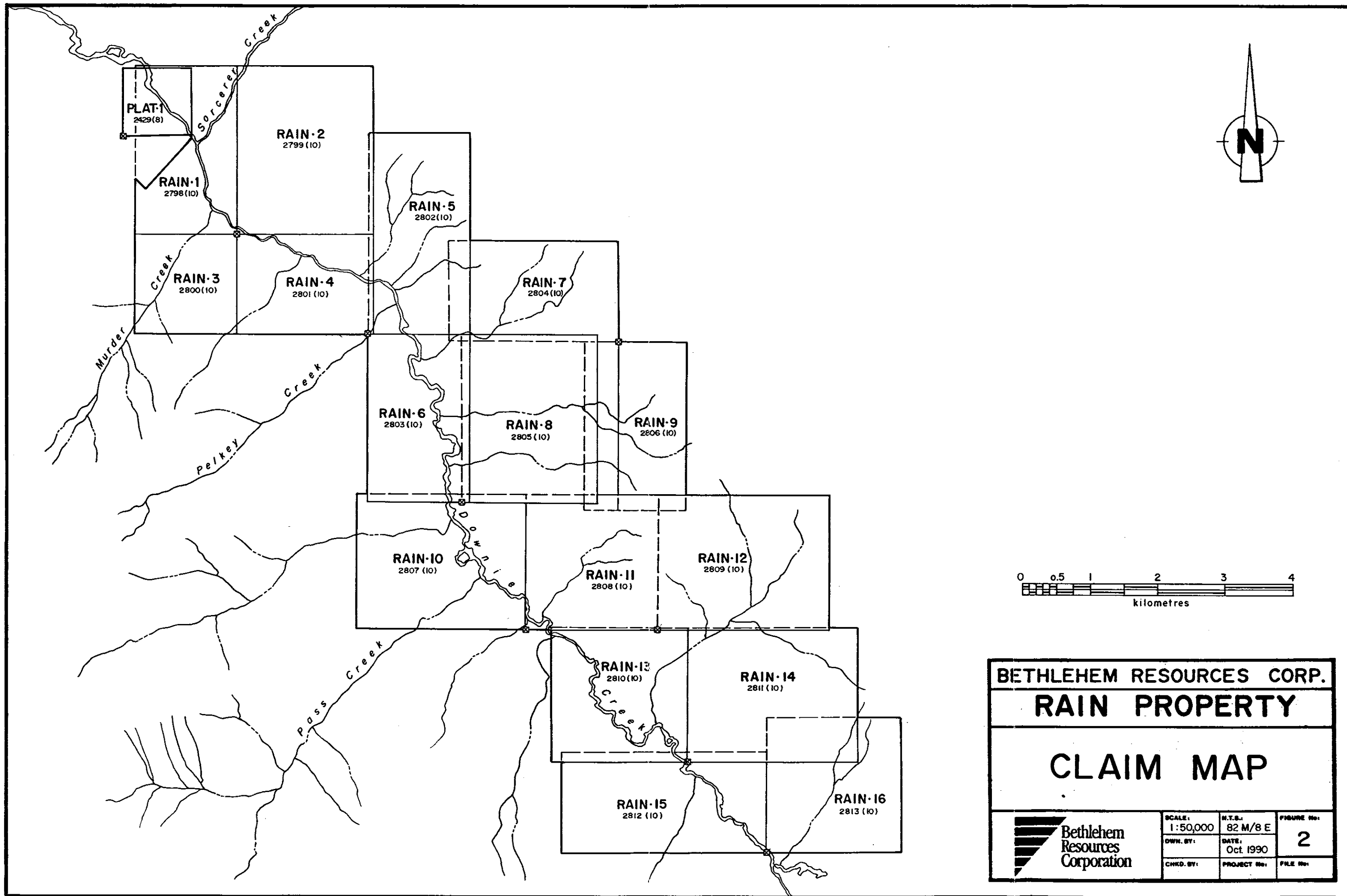
No. Of Claims: 17 No. Of Units: 265


Total Number of Hectares: 6,625

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD #</u>	<u>AREA</u>	<u>RECORD DT.</u>	<u>EXPIRY DT.</u>
RAIN 1	15	2798	375	OCT 18/89	OCT 18/90
RAIN 2	20	2799	500	OCT 18/89	OCT 18/90
RAIN 3	9	2800	225	OCT 18/89	OCT 18/90
RAIN 4	12	2801	300	OCT 18/89	OCT 18/90
RAIN 5	18	2802	450	OCT 18/89	OCT 18/90
RAIN 6	15	2803	375	OCT 18/89	OCT 31/90
RAIN 7	15	2804	375	OCT 31/89	OCT 31/90
RAIN 8	20	2805	500	OCT 18/89	OCT 18/90
RAIN 9	10	2806	250	OCT 31/89	OCT 31/90
RAIN 10	20	2807	500	OCT 20/89	OCT 20/90
RAIN 11	16	2809	400	OCT 20/89	OCT 20/90
RAIN 12	20	2809	500	OCT 20/89	OCT 20/90
RAIN 13	16	2810	400	OCT 20/89	OCT 20/90
RAIN 14	20	2811	500	OCT 20/89	OCT 20/90
RAIN 15	18	2812	450	OCT 20/89	OCT 20/90
RAIN 16	16	2813	400	OCT 20/89	OCT 20/90
RAIN 17	5	2814	125	OCT 31/89	OCT 31/90

All the above claims are 100% owned and operated by:

Bethlehem Resources Corporation
 Suite 860 - 808 W. Hastings Street
 Vancouver, B.C., V6C 2X4



BETHLEHEM RESOURCES CORP.			
RAIN PROPERTY			
CLAIM MAP			
 Bethlehem Resources Corporation	SCALE: 1:50,000	N.T.S.: 82 M/8 E	FIGURE No: 2
	OWN. BY:	DATE: Oct 1990	FILE No:
	CHKD. BY:	PROJECT No:	

History

The Big Bend area has a long history of mining exploration dating back to the 1860's. Interest in hardrock mining intensified with the discovery of the Montgomery Cu-Zn-Ag massive sulphide showing in 1896. This property lies between Boulder Creek and Long Creek on the south flank of Downie Peak, approximately 12 kilometres northwest of the RAIN property. Work on the Montgomery has continued sporadically to the present.

The Standard property, located approximately eight kilometres southwest of the RAIN 10 claim, was also discovered in 1896. This Cu-Zn-Ag massive sulphide has also been worked intermittently; the last serious work was completed by Noranda Exploration Company Limited in 1976. Regional mapping by Noranda in connection with exploration of the Standard-Keystone area, extended to the western boundary of the RAIN claims (Gibson, 1976-77).

A small sulphide showing lies near the north end of the RAIN property, immediately north of the Sorcerer Creek - Downie Creek confluence. Noranda examined these sulphide showings in 1976 (G. Gibson, pers. comm.) and 1979 (Mathieson et al, 1980). In 1979, the SOC 1 and 2 mineral claims were staked by A.J. Hurlbert and optioned to Noranda. A control grid was established in late 1979 and early 1980. Soil samples were collected at 50 m intervals on the 50 m grid, and VLF-EM and magnetometer surveys were completed. Geological mapping was also completed on the grid (Mathieson et al, 1980). The showing is currently covered by the PLAT #1 mineral claim adjoining the RAIN 1 claim (Figure 2).

GEOLOGICAL SETTING

Regional Geology

The RAIN property lies within the Selkirk Allochthon, a fault bounded series of tectonic slices consisting of complexly deformed metasedimentary and metavolcanic rocks and intruded by several granitic stocks (Figure 3). These rocks were transported from west to east over the core and mantling gneisses of the Monashee Complex during middle Mesozoic to Eocene times (Read and Brown, 1981). The Monashee Decollement marks the contact between these gneisses and the Shuswap Metamorphic Complex to the north and west. To the east, the east-dipping Columbia River Fault separates the Selkirk Allochthon from the underlying Monashee Complex.

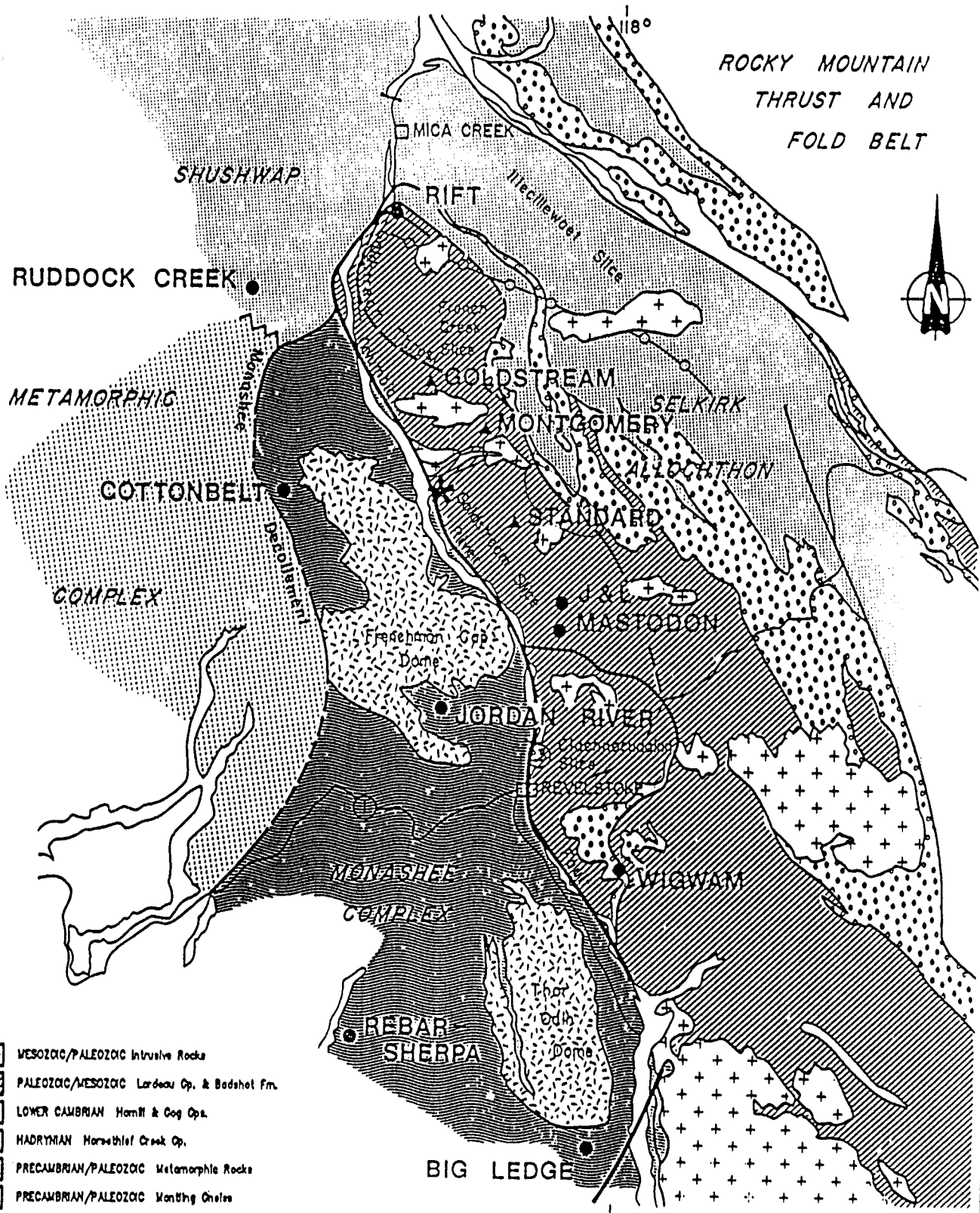
Rocks within the Selkirk Allochthon have undergone at least three phases of deformation. Phase 1 is believed to have inverted much of the Goldstream Slice, perhaps as the underlimb of a recumbent nappe (Read and Brown, 1981). Phase 2 is characterized by large, tight, isoclinal to recumbent folds, a strong axial planar foliation, and northwest trending fold axes. Third phase folds show much variability in size and style but are generally more open than their second phase counterparts. In the Downie Creek area, third phase features are limited to kink folds, wavy crenulation cleavages, and broad, upright, open folds.

The Goldstream, Montgomery, and Standard deposits are all hosted in chloritic schist, sericitic schist, and dark banded graphitic phyllites, associated with basic volcanism (Höy, Gibson,

ROCKY MOUNTAIN
THRUST AND
FOLD BELT

-52°

-51°

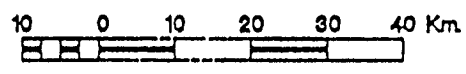


- MESOZOIC/PALEOZOIC Intrusive Rocks
- PALEOZOIC/MESOZOIC Lardeau Op. & Badshot Fm.
- LOWER CAMBRIAN Horn II & Cog Ops.
- HADRYMIAN Horsechief Creek Op.
- PRECAMBRIAN/PALEOZOIC Metamorphic Rocks
- PRECAMBRIAN/PALEOZOIC Monkshee Gneiss
- ALPHEBIAN (?) Core Gneiss

DATE	REVISION	INITIAL

GCGA

- KEYSTONE Property
- Zn - Pb Occurrence
- Selkirk Fan Axis
- Cu - Zn Occurrence



REGIONAL TECTONIC MAP

DATE: November 18, 1989	SCALE: 1:1,000,000	DWG.No.:
DRAWN By: G. Gibson	JOB No.: 00038	3
APPROVED By: GGA	N.T.S.: 82 M	

and Berg, 1984). These host rocks are part of a package that appears to be contiguous with the northern extension of the Kootenay Arc. Stratigraphy that hosts the Standard deposit has been correlated with lower Paleozoic Index Formation (Brown et al, 1983), while lead isotope data from the Goldstream Mine reveals a Devonian age for that deposit (Höy, Gibson, and Berg, 1984). This evidence places the package of potential host rocks in the middle to lower Paleozoic Lardeau Group.

Property Geology

The Downie Creek area is underlain by rocks of the Proterozoic Horsethief Creek Group, Proterozoic to lower Paleozoic Hamill Group, and Paleozoic Badshot Formation and Lardeau Group. Structurally, these units trend northwest with moderate dips to the east and northeast. Second phase isoclinal folding and a dominant axial planar foliation are the dominant structural elements. Fold axes plunge gently to the southeast and northeast, east of Keystone Peak. East of Downie Creek, plunges are moderate to the northeast, steepening northward toward Downie Peak. Broad, open third phase folds warp the foliation and original layering. Kink folds and crenulation cleavage are dominant third phase structures showing near vertical axial planar cleavage and gentle east - west plunges.

East of Downie Creek, dolomitic schists and quartzites believed to represent the uppermost Horsethief Creek rocks sit unconformably on massive white quartzites and interlayered pelitic schists of the Hamill Group. Several large synforms and antiforms

complicate the map, restricting the Horsethief Creek rocks to the northeast corner of the map sheet. Hamill rocks apparently thicken to the south, the result of isoclinal folding. One antiform is outlined by ten to 50 metres of grey Badshot marble. Lardeau metasediments occupy the core of this antiformal syncline.

Below Hamill quartzites, east of Downie Creek, lies a mixed package of interlayered marbles, chloritic, sericitic and calcareous schists. A thick sequence of Badshot marble builds gradually from beneath the Hamill quartzites, possibly along a slide noted elsewhere at the Hamill-Lardeau contact (Gibson, pers. comm). Isoclinal folding builds this Badshot marble to several thousand feet thickness at the south end of the claims. This thickening culminates around Mt. Moloch, ten kilometres to the south. Chloritic schist and marble occupy most of the Downie Creek valley throughout the length of the claims.

Chloritic and calcareous sediments dominate from Downie Creek to Standard Creek to the west. These rocks tend to be more chloritic to the south and west, eventually becoming metavolcanic greenstones near Standard Peak. To the north, graphitic, dark banded phyllites are more common. Intense isoclinal folding complicates the construction of accurate stratigraphic columns and correlations between the Standard deposit and the Murder Creek area. Soil geochemical data from the north end of this trend display extremely high zinc values trending toward the Sorcerer Creek showings and perhaps even up the north ridge between Sorcerer Creek and Downie Creek. Dark banded phyllite also appears to wrap

around the nose of Standard Ridge and into Standard Creek. Anomalous soil geochemistry is present here, also.

GEOCHEMISTRY

Sampling and Analytical Methods

A total of 42 soil samples, 24 silt samples, and 14 rocks were collected during the program. All samples were analyzed using a 28 element scan by I.C.P. methods. Soil samples were collected along a contour soil line at 880 m elevation between Murder Creek and Standard Creek (Figure 5). Soil was obtained by digging holes 10 - 35 cm deep with a mattock. At most sites good "B" horizon samples were collected and placed in high wet strength, 4" x 6" Kraft paper bags. Silts were obtained from active stream beds at widely scattered drainages over the whole property. These were also placed in the high wet strength, 4" x 6" Kraft paper bags. Rock samples were collected from geologically interesting sites around the property. Sample stations were all marked with flagging tape bearing the sample numbers. Samples were then shipped to Vangeochem Lab Limited, in Vancouver.

At the lab, silt and soil samples were sieved and the minus 80 mesh fraction collected. Rocks were crushed and pulverized to minus 100 mesh. These fractions were then digested in hot acid and analyzed for 25 elements using a Jarrel-Ash ICAP Model 9000 and directly reading the spectrophotometric emissions. Corrected data are stored on disk. Refer to Appendix 4 for a more complete description of analytical methods.

Discussion of Results

Several very weak anomalies are evident in silt geochemical data. A small creek draining Standard Ridge northeast of Standard Creek returned weak anomalies in Ag, Cd, Cu and Zn. This is an area of high soil geochemistry and anomalous rock geochemistry. Similar results were obtained from the lower reaches of Murder Creek, Brown Creek, and Pelkey Creek. These creeks drain the same rock units. One other weak anomaly was obtained from a small creek just north of Downie Creek, 700 m northwest of Sorcerer Creek. This may reflect a northerly extension of the Sorcerer Creek showings.

Several samples from the contour soil line north of Murder Creek returned extremely high values of Zn and moderately anomalous values of Ag, Ba, Cd, Ni, and Pb. Values range up to 5,182 ppm Zn. Soil samples from along a logging road 200 m downslope of the soil line also returned several highly anomalous values of Zn.

Rock samples taken from anomalous looking, sulphide-rich boulders in the same area as the road soil samples were moderately anomalous in Ag, Cu, and Zn. These rocks were also strongly to moderately manganese- and iron-rich. Three samples were also taken midway up Murder Creek. These rocks returned with Mn values greater than 15,000 ppm and Fe values greater than 10%. Zinc, lead, copper, and other metals were also strongly anomalous. The numbers are indistinguishable from those obtained from "garnet zone" rocks in the immediate structural hanging wall of the Goldstream Mine (Höy, 1979). This comparison confirms that this

unit in Murder Creek is "garnet zone" equivalent. In addition, samples of talc schist collected along strike at the head of Murder Creek show a magnesium-rich phase that is also seen in the vicinity of the Goldstream Mine.

CONCLUSIONS

The purpose of the 1990 exploration program on the RAIN property was to locate areas with potentially favourable stratigraphy for hosting stratiform massive sulphide deposits. The program was successful in discovering a stratigraphic section in the Murder Creek area that is virtually identical to that of the Goldstream Mine. Rock geochemistry has confirmed the presence of an exhalative "garnet zone", while soil geochemistry has revealed the presence of extremely anomalous zinc values. This work links up very well with work done on the Sorcerer Creek property by Noranda in 1980. That data extends the trend of anomalous soil geochemistry north of the RAIN claims. Thus, the Sorcerer Creek showings may be original stratiform sulphide bodies that have undergone skarnification. The trend of favourable stratigraphy may then extend up the hill north of Downie Creek.

The trend of favourable stratigraphy will also extend to the south from Standard Ridge down into Standard Creek toward a major fork in the creek. There may be a relationship between this horizon and the old Standard showings. Mapping by Noranda personnel in 1976 and 1977 shows the presence of two gossans on the steep west facing slope above Standard Creek. This favourable stratigraphy may also be present on the lower limb of the Keystone fold to the west.

East of Downie Creek, the area of greatest potential lies south and east of the RAIN claims, from the core of an antiform

outlined by Badshot marble. The area of favourable Lardeau stratigraphy expands to the south and has yet to be examined in any detail. A new showing has recently been reported in the vicinity of Downie Lake, four or five kilometres to the south.

Recommendations

Work in 1991 should follow up the Murder Creek area. An effort should be made to acquire more ground around the lower reaches of Standard Creek, over the Sorcerer Creek showings, and along the trend of potential mineralization. Currently only one claim, the PLAT #1, totalling four units, is valid in the area. This claim, owned by James Patrick of Revelstoke, is due to expire August 7, 1991. Prospecting work has already been filed on the claims. All two-post claims previously in the area, including the BOB 1-8, SUE PAT 1-4, PAULINE 1-6 AND SARA I-IV, have now expired. They were also owned by Mr. Patrick. The PAULINE claims expired after the RAIN claims were staked, leaving a wedge of open ground over an areas of strong soil geochemistry (Figure 5). Efforts should be made to acquire all the ground previously covered by these two-post claims.

A grid is proposed along the trend of potential mineralization from Murder Creek to the end of Standard Ridge. The baseline would run north approximately three kilometres. Wing lines spaced every 100 metres, would average 500 metres in length with stations set every 25 metres. Grid lines would total 20 kilometres. Soil sampling, magnetometer, VLF-EM, and transient EM surveys would then

be run over the grid. Additionally, detailed geological mapping would be completed. Total cost of such a program is estimated at \$45,000 (see Appendix 5).

Follow-up work, peripheral to gridded areas, would concentrate on Standard Ridge, paying particular attention to the two gossans shown on Noranda geology maps. Prospecting, including contour soil sampling and ground geophysics should also be done north of the Sorcerer Creek showings to determine if potential host rocks continue to the north.

On a reconnaissance scale, two areas deserve a close examination. The first is the southern extension of the potential host horizon into Standard Creek particularly near the large fork in the creek. A flycamp of one week duration is envisioned to map and prospect this area. The second area is to the southeast from just north of the RAIN 12 claim south toward Downie Lake. Two flycamps of three to four days duration should be sufficient to examine this area.

Respectfully Submitted,



Christopher J. Wild, Geologist

REFERENCES

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A P P E N D I X 1

STATEMENT OF COSTS

STATEMENT OF COSTS

1.	Field Personnel			\$ 11,170.17
	C.J. Wild	41.5 days @ \$190.	7,885.00	
	K.E. Hicks	7 days @ \$230.	1,610.00	
	Assistants	18 mandays @ 93.07	1,675.17	
2.	Food and Accommodation			633.22
3.	Transportation			5,997.21
	Helicopter		3,641.96	
	Auto/Truck Expenses		2,355.25	
4.	Geochemical Analyses (25 element ICP)			616.00
	80 samples @ \$7.70		616.00	
5.	Field Supplies			1,220.20
	maps		216.19	
	camp gear		164.01	
	camp gear rental		840.00	
6.	Report			
	C.J. Wild	10 days @ \$190		1,900.00
7.	Drafting			500.00
8.	Miscellaneous			<u>5.82</u>
				\$22,042.62

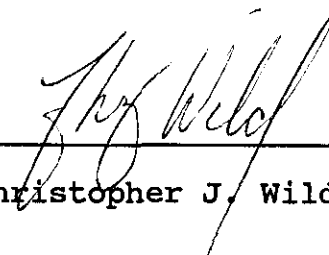
A P P E N D I X 2

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Christopher J. Wild, of the Municipality of Burnaby, Province of British Columbia, do hereby certify that:

1. I am an independent consulting geologist with residence at 803 - 5932 Patterson Avenue, Burnaby, British Columbia.
2. I am a graduate of the University of British Columbia with a B.A.Sc. in Geological Engineering (1984).
3. I have worked in mining exploration since 1982.
4. I personally supervised all aspects of the exploration activities described in this report.
5. I do not possess any interest in the property or companies involved.



Christopher J. Wild, Geologist

A P P E N D I X 3

GEOCHEMICAL DATA

VANGUARD CHEM LAB LIMITED

1630 Pandora Street, Vancouver, B.C. V5L 1L6
 Ph: (604) 251-5656 Fax: (604) 254-5717

ICAP GEOCHEMICAL ANALYSIS

0.5 gram sample is digested with 5 ml of 3:1:2 HCl to HNO₃ to H₂O at 95 °C for 90 minutes and is diluted to 10 ml with water.
 This leach is partial for Al, Ba, Ca, Cr, Fe, K, Mg, Na, Ni, P, Se, Sr and U.

ANALYST: *Rymal*

REPORT #: 990286 PA

BETHLEHEM RESOURCES CORP.

PROJECT: RAIN

DATE IN: AUG 23 1990

DATE OUT: SEPT 04 1990

ATTENTION: MR. PAT RANKLESS

PAGE 1 OF 1

Sample Name	Ag	Al	As	Ba	Bi	Ca	Cl	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Ni	P	Pb	Se	Sn	Sr	U	V	Zn	
ppm	µg/g	ppm	ppm	ppm	ppm	µg/g	ppm	ppm	ppm	ppm	µg/g	µg/g	µg/g	ppm	ppm	µg/g	µg/g	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
1001	1.2	0.53	194	27	<3	1.95	6.5	49	127	548	>10.00	0.39	0.35	12237	45	<0.01	314	0.37	136	21	18	74	<5	<3	377
1002	1.4	0.47	124	34	<3	4.71	22.2	77	126	961	>10.00	0.38	0.68	15119	66	<0.01	513	0.51	198	45	36	146	<5	<3	1025
1003	0.6	0.48	231	67	<3	1.99	3.7	41	90	631	>10.00	0.29	0.15	15255	48	<0.01	232	0.46	125	23	32	122	<5	<3	468
1004	0.8	0.90	<3	26	<3	1.35	10.0	45	130	389	>10.00	0.29	0.25	1538	43	<0.01	158	0.43	171	6	11	61	<5	<3	147
1005	1.2	0.56	<3	12	<3	0.69	7.4	48	94	532	8.57	0.36	0.20	799	41	<0.01	215	0.13	90	18	17	28	<5	<3	129
1006	2.1	1.54	478	41	<3	0.62	0.6	33	366	567	>10.00	0.46	0.56	3657	49	<0.01	239	0.32	115	32	77	23	5	<3	272
1007	<0.1	3.63	<3	290	<3	>10.00	2.5	22	109	37	2.06	<0.01	3.94	415	26	<0.01	49	0.03	52	<2	16	2231	<5	<3	83
Minimum Detection	0.1	0.01	3	1	3	0.01	0.1	1	1	1	0.01	0.01	0.01	1	1	0.01	1	0.01	2	2	2	1	5	3	1
Maximum Detection	50.0	10.00	2000	1000	1000	10.00	1000.0	20000	1000	20000	10.00	10.00	10.00	20000	1000	10.00	20000	10.00	20000	2000	1000	10000	100	1000	20000

< - Less Than Minimum > - Greater Than Maximum Is - Insufficient Sample as - No Sample ANALYSIS RESULTS - Further Analyses By Alternate Methods Suggested.

VANGEOCHEM LAB LIMITED

1630 Pandora Street, Vancouver, B.C. V5L 1L5
 Ph: (604) 251-5656 Fax: (604) 254-5717

ICAP GEOCHEMICAL ANALYSIS

A .5 gram sample is digested with 5 ml of 3:1:2 HCl to HNO₃ to H₂O at 95 °C for 90 minutes and is diluted to 10 ml with water.
 This leach is partial for Al, Ba, Ca, Cr, Fe, K, Mg, Mn, Na, P, Sb, Sr and U.

ANALYST: *[Signature]*

REPORT #: 990634 PA

BETHLEHEM RESOURCES CORP.

PROJECT: NONE GIVEN

DATE IN: OCT 01 1990

DATE OUT: OCT 05 1990

ATTENTION: MR. McANDLESS & MR. WILB

PAGE 1 OF 1

Sample Name	Ag	Al	As	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sn	Sr	U	V	Zn
	ppm	I	ppm	ppm	ppm	I	ppm	ppm	ppm	ppm	I	I	I	ppm	ppm	I	ppm	I	ppm	ppm	ppm	ppm	ppm	ppm	ppm
S-1022	0.1	1.63	<3	95	<3	0.28	2.4	13	196	21	2.73	0.07	0.67	461	94	0.07	370	0.03	34	<2	7	22	<5	<3	109
S-1023	<0.1	1.20	<3	93	<3	6.56	0.9	13	81	27	2.13	0.38	1.15	390	7	0.08	30	0.03	35	<2	7	201	<5	<3	46
S-1024	<0.1	1.21	<3	47	<3	0.57	1.1	9	107	14	1.97	0.09	0.47	314	11	0.07	20	0.02	24	<2	7	61	<5	<3	38
RCM1006	0.2	3.92	<3	136	<3	4.37	3.3	16	165	128	4.29	0.36	1.40	1287	24	0.09	48	0.31	44	4	15	168	<5	<3	107
RCM1009	<0.1	0.12	92	13	<3	1.53	2.7	68	211	9	2.80	0.16	0.46	760	4	0.03	998	<0.01	20	<2	6	77	<5	<3	9
RCM1010	0.1	1.79	<3	85	<3	>10.00	1.4	16	66	37	3.02	0.43	1.51	1178	6	0.06	64	0.05	43	<2	8	476	<5	<3	73
RCM1011	0.3	1.18	951	13	<3	1.59	7.8	31	123	327	>10.00	0.42	0.58	>20000	12	0.22	116	0.26	66	35	28	103	<5	<3	81
RCM1012	<0.1	0.19	74	3	<3	0.00	1.1	31	375	9	0.53	<0.01	0.83	266	2	<0.01	191	<0.01	13	<2	2	4	<5	<3	25
RCM1013	0.1	0.73	<3	175	<3	>10.00	2.9	14	79	31	3.46	0.48	0.42	1095	5	0.11	75	0.07	54	<2	6	496	<5	<3	363
RCM1014	0.1	0.08	1486	53	<3	>10.00	5.8	58	120	5	3.63	0.48	5.72	3622	9	0.06	571	<0.01	46	<2	7	652	<5	<3	70

Minimum Detection	0.1	0.01	3	1	3	0.01	0.1	1	1	1	0.01	0.01	0.01	1	1	0.01	1	0.01	2	2	2	1	5	3	1
Maximum Detection	50.0	10.00	2000	1000	1000	10.00	1000.0	20000	1000	20000	10.00	10.00	10.00	20000	1000	10.00	20000	10.00	20000	2000	1000	10000	100	1000	20000
< - Less Than Minimum																									
> - Greater Than Maximum																									
is - Insufficient Sample																									
ss - No Sample																									

ABNORMAL RESULTS - Further Analyses By Alternate Methods Suggested.

MLL 3720 P002/003

FORM 01000000

UGC

A P P E N D I X 4

ANALYTICAL TECHNIQUES



VANGEOCHEM LAB LIMITED

MAIN OFFICE AND LABORATORY
1988 Triumph Street
Vancouver, B.C. V5L 1K5
1(604)251-5656 FAX:251-5717

BRANCH OFFICE
1630 PANDORA ST.
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Oct 26th, 1988

TO:

BETHLEHEM RESOURCES LTD.
860 - 808 West Hastings St.
Vancouver, B.C. V6C 2X4

Company _____
File _____
OCT 28 1988
Sub-file _____

FROM:

Vangeochem Lab Limited
1988 Triumph Street
Vancouver, British Columbia
V5L 1K5

SUBJECT: Analytical procedure used to determine hot acid soluble for 28 element scan by Inductively Coupled Plasma Spectrophotometry in geochemical silt and soil samples.

1. Method of Sample Preparation

- (a) Geochemical soil, silt or rock samples were received at the laboratory in high wet-strength, 4" x 6", Kraft paper bags. Rock samples would be received in poly ore bags.
- (b) Dried soil and silt samples were sifted by hand using an 8" diameter, 80-mesh, stainless steel sieve. The plus 80-mesh fraction was rejected. The minus 80-mesh fraction was transferred into a new bag for subsequent analyses.
- (c) Dried rock samples were crushed using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for subsequent analyses.

2. Method of Digestion

- (a) 0.50 gram portions of the minus 80-mesh samples were used. Samples were weighed out using an electronic balance.
- (b) Samples were digested with a 5 ml solution of HCL:HNO3:H2O in the ratio of 3:1:2 in a 95 degree Celsius water bath for 90 minutes.
- (c) The digested samples are then removed from the bath and bulked up to 10 ml total volume with dimineralized water and thoroughly mixed.



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3. Method of Analyses

The ICP analyses elements were determined by using a Jarrel-Ash ICAP model 9000 directly reading the spectrophotometric emissions. All major matrix and trace elements are interelement corrected. All data are subsequently stored onto disk.

4. Analysts

The analyses were supervised or determined by either Mr. Eddie Tang, and, the laboratory staff.

A handwritten signature in cursive script, reading 'Eddie Tang', written over a horizontal line.

Eddie Tang
VANGEOCHEM LAB LIMITED

A P P E N D I X 5

PROPOSED 1991 BUDGET

PROPOSED 1991 BUDGET

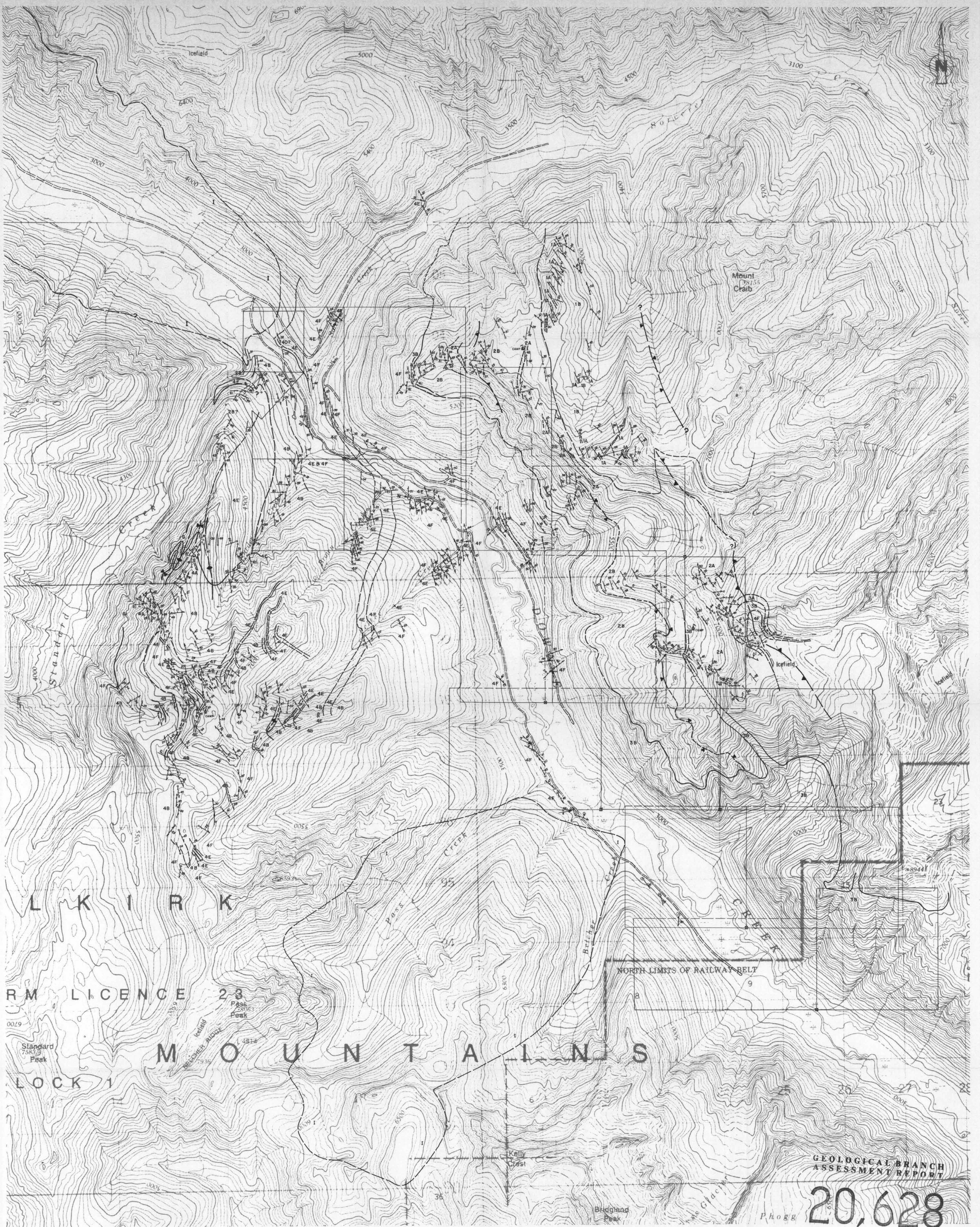
-- Grid Work --

1.	Grid Establishment & Soil Sampling		
	20 km @ \$400		\$ 8,000.00
2.	Geophysics		
	Magnetometer	20 km @ \$150/km	3,000.00
	VLF-EM	20 km @ \$150/km	3,000.00
	Transient EM	20 km @ \$650/km	1,300.00
3.	Soil Sampling - A		
	800 samples @ \$7.70		6,160.00
4.	Geologist	20 days @ \$225	4,500.00
5.	Food and Accommodation		2,000.00
6.	Report, Drafting, Miscellaneous		3,000.00
7.	Contingency		<u>2,340.00</u>
		TOTAL	<u>\$45,000.00</u>

(continued...)

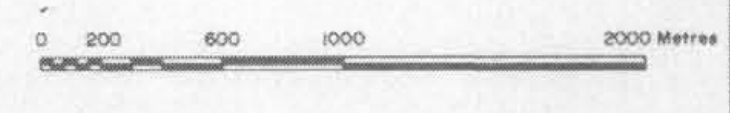
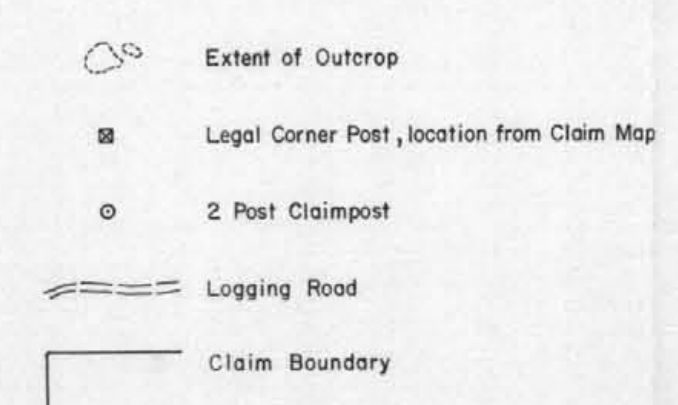
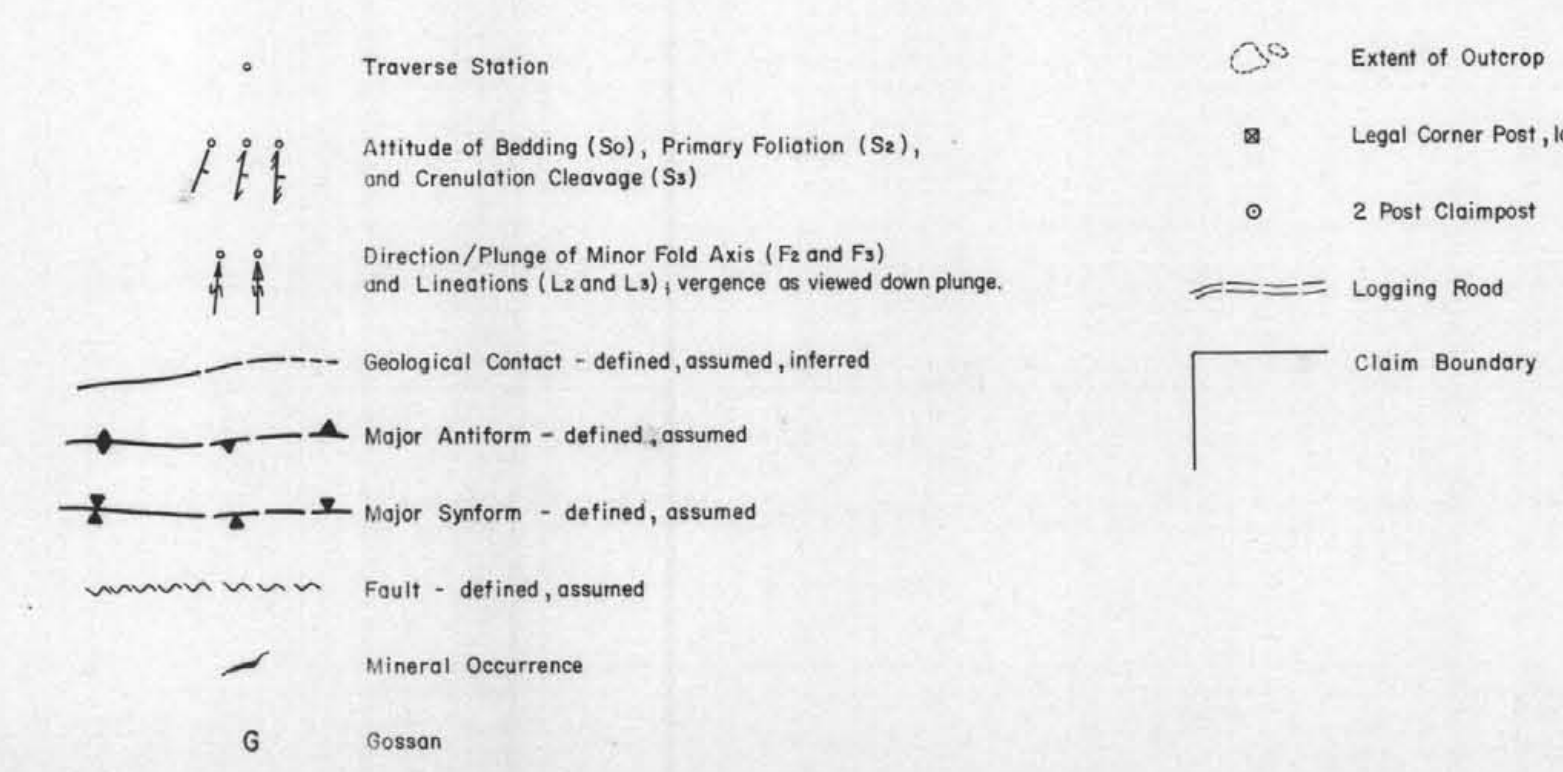
-- Follow-up and Reconnaissance Work --

1.	Personnel		
	50 man days @ \$225		11,250.00
2.	Food and Accommodation		1,000.00
3.	Transportation		
	Helicopter	10 hrs @ \$700	7,000.00
	Truck		2,500.00
4.	Geochemical Analyses	(25 element ICP)	
	200 samples @ \$10		2,000.00
5.	Field Supplies		1,500.00
6.	Report		2,000.00
7.	Drafting		500.00
8.	Contingency		<u>2,250.00</u>
		TOTAL	<u>\$30,000.00</u>
	TOTAL GRID WORK AND RECONNAISSANCE WORK		<u>\$75,000.00</u> -----



GEOLOGICAL BRANCH
ASSESSMENT REPORT
20,628

- | | |
|--|---|
| <p>4 LARDEAU GROUP - Paleozoic</p> <p>4F QUARTZ - CHLORITE - SERICITE SCHIST, minor MARBLE, QUARTZITE</p> <p>4E MARBLE</p> <p>4D SULPHIDE LAYER</p> <p>4C 'GARNET ZONE' cherty and graphitic schist</p> <p>4B QUARTZ - GRAPHITE - BIOTITE SCHIST, strongly calcareous</p> <p>4A TALC SCHIST</p> | <p>3 BADSHOT FORMATION - Paleozoic</p> <p>3B MARBLE</p> <p>3A CALC SCHIST</p> <p>2 HAMILL GROUP</p> <p>2B QUARTZITE</p> <p>2A QUARTZ - BIOTITE - MUSCOVITE SCHIST, QUARTZITE</p> <p>1 HORSETHIEF CREEK - Proterozoic</p> <p>1B DOLOMITE - MICACEOUS QUARTZITE, CHLORITE SCHIST</p> <p>1A MARBLE</p> <p>I INTRUSIVE ROCKS - Cretaceous</p> |
|--|---|

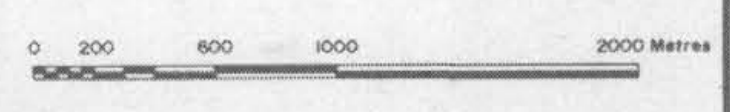


BETHLEHEM RESOURCES CORP.
RAIN PROPERTY
GEOLOGY

Bethlehem Resources Corporation	SCALE: 1:25,000	N.T.S. 82 M/8 E	FIGURE NO. 4
	DATE: Oct. 1990	PROJECT NO.	



- x S-1001 Silt Sample Location
- MCP-2001 Soil Sample Location
- ▲ RCW-1001 Rock Sample Location
- o 2 Post Claimpost
- Legal Corner Post
- Claimline



BETHLEHEM RESOURCES CORP.
RAIN PROPERTY
SAMPLE LOCATION MAP

	SCALE	DATE	FIGURE NO. 5
	1:25,000	Oct. 1990	
	DRAWN BY	PROJECT NO.	FILE NO.