Report

- on the -

SYLVESTER K PROPERTY

Greenwood Mining Division, British Columbia

- for -

Kettle River Resources Ltd.,

1620 - 701 West Georgia St.,

Vancouver, B. C.

Prepared by;

Kerr, Dawson and Associates Ltd.,

#206 - 310 Nicola Street,

Kamloops, B. C. V2C 2P5

J. M. Dawson, P. Eng.

September 20, 1982

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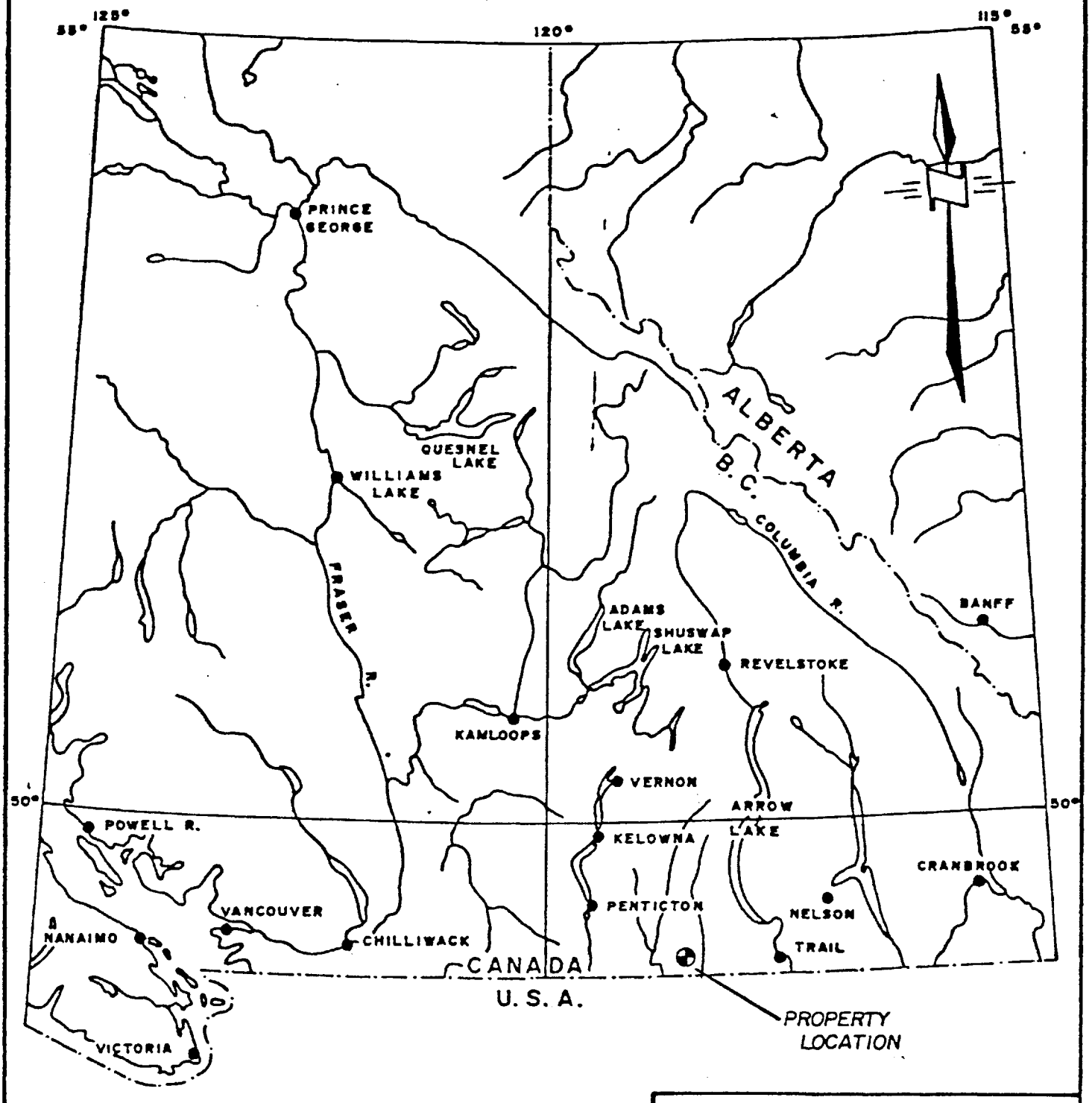


KETTLE RIVER RESOURCES LTD

LOCATION MAP

SYLVESTER K PROPERTY

GREENWOOD MINING DIVISION, B.C.

Date: Sept. 1982.	Scale: 1" = 64 Miles
Dwn by: W. G.	Dwg no. 279-1

Introduction

The report has been prepared at the request of the directors of Kettle River Resources Ltd. It discusses the geology and mineralization on the subject claims and particularly a newly discovered, gold-bearing, massive sulphide horizon. A phased programme of exploration is recommended along with a proposed budget.

This report is based on a personal examination of the Sylvester K property by the writer on September 2, 1982 as well as on data from various published and private reports.

Summary and Conclusions

1. The Sylvester K property consists of 6 contiguous surveyed claims aggregating 149.85 acres located in moderate terrain in the Boundary District about 5.5 km ENE of the town of Greenwood. Access is by all weather road from Greenwood which is located on Provincial Highway 3.

2. Active mining and exploration has been carried out in the Boundary District since the 1890's. The principal commodity produced was copper with by-product gold and silver. The main mining activity ceased in 1978 when ore reserves at Granby's Phoenix open pit mine were exhausted. Control of Granby's holdings passed to Noranda Mines in 1980 and in 1981 Kettle River Resources optioned most of this property and began a systematic programme of exploration for new mineral occurrences based on a stratigraphic and syngenetic model. This programme was successful in discovering a new conformable, massive sulphide body on the Sylvester K property.

3. The property is underlain by a northerly striking, steeply dipping package of sediments intruded by several small stocks and dikes and converted in part to calc-silicate skarn. Some of the rock units are now considered to be tuffs or exhalites rather than conventional sediments.

4. Detailed mapping, geophysics and subsequent trenching has outlined a conformable sulphide band or horizon which is as much as 2.6 meters thick, and has been traced along strike for 65 meters. It is open to the north and south and the EM conductor represented by this layer has been traced for at least 250 meters.

5. The sulphide layer consists of massive to sub-massive pyrrhotite, pyrite and minor chalcopyrite carrying consistent gold values in the .2 to .35 oz range (average) over the length thus far explored. In addition lower grade but probably economic values occur in at least some of the footwall rocks immediately under the sulphide horizon.

6. This mineral occurrence has excellent potential for on strike and down dip extensions and sampling thus far indicates that gold values are very uniformly distributed. The property has an excellent location with all the necessary mining infrastructure already in place. There is an excellent potential for developing a small to medium sized gold mining operation and additional exploration is certainly warranted to fully assess this potential.

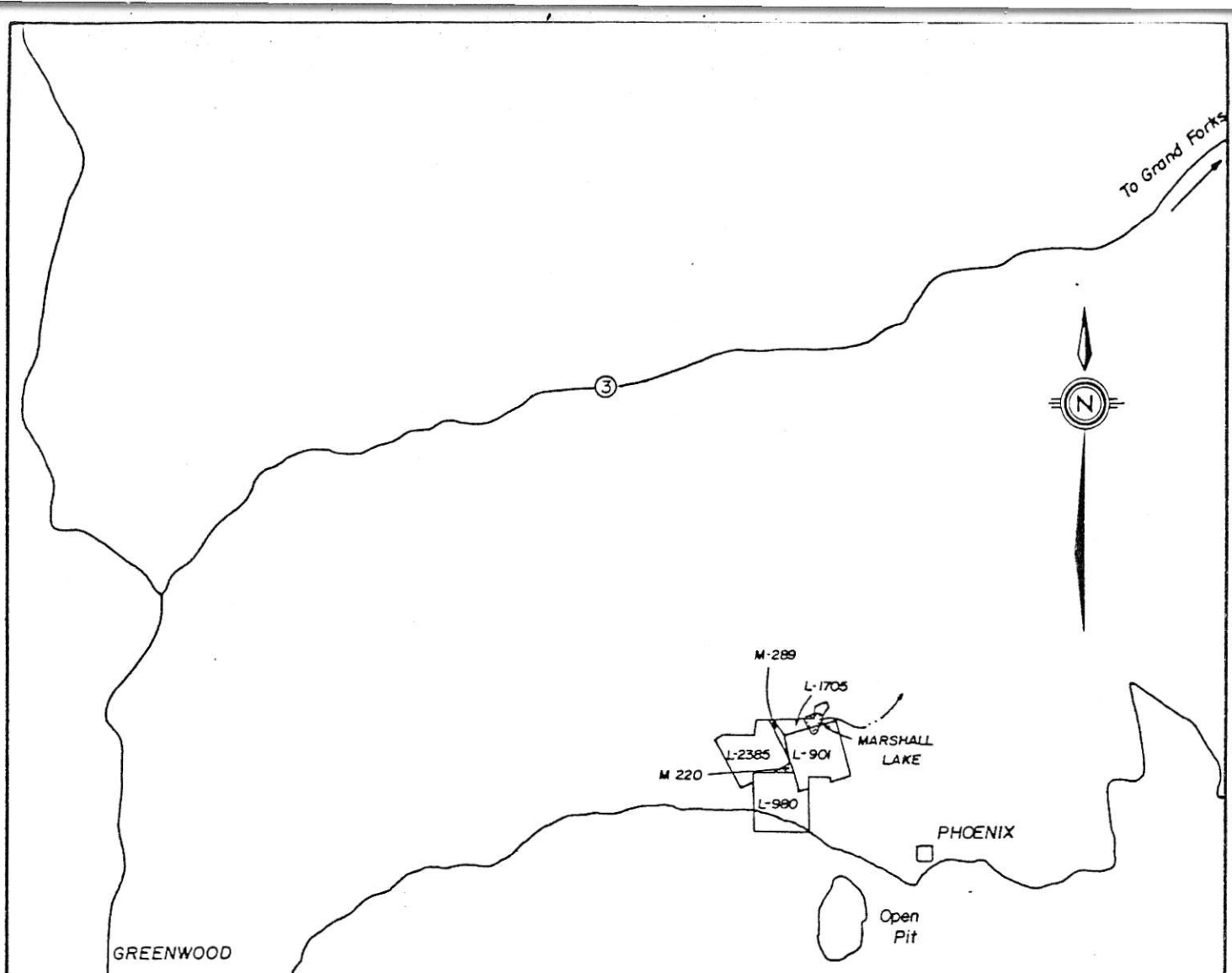
Property

The property consists of 6 contiguous surveyed claims as follows:

Claim Name	Lot No.	Acreage	Registered Owner	Expiry Date
Belmont Fr.	L-1422 (M-220)	.46	Noranda Exploration Co. Ltd.	Oct. 26, 1983
Cimeron	L-980	48.60	" "	Crown Granted
New York	L-901	47.65	" "	"
Sylvester K	L-2385	42.21	" "	"
Sylvester K Fr.	L-2368 (M-289)	1.28	" "	Sept. 22, 1983
Timer Fr.	L-1705	9.65	" "	Crown Granted

These claims were acquired by Kettle River Resources Ltd. on option from Noranda Exploration Co. Ltd. in 1981.

Disposition of these claims is shown on figure 279-2.



KETTLE RIVER RESOURCES LTD.

CLAIM MAP

SYLVESTER K PROPERTY

GREENWOOD MINING DIVISION, B.C.

Tech Work By: K.D.A.	Scale: 1:50,000
Drawn By: W.G.	Date: Sept. 1982.
App'd By: J.M.D.	Fig. No. 279-2

To accompany a report by J.M. Dawson, P.Eng.

Location and Access

The property is located in southeastern British Columbia about 5.5 km ENE of the town of Greenwood and about 11.5 km north of the international boundary. The approximate geographic center of the claims is at 49°06.5' North latitude and 118°36.5' West longitude.

Access is gained by about 8 km of all weather, gravel and paved road easterly from Greenwood. A network of old logging roads and trails provides facile access to all parts of the claims.

Physiography and Vegetation

The claim block lies predominantly on Montezuma Hill, a gentle rolling, upland area with elevations varying from 3800 to 4100 feet a.s.l. Outcrop is sparse and the bedrock surface seems irregular with indications of thick overburden cover (+15 feet) in some areas.

Parts of the claims area have been cleared by previous mining and logging activity, however a moderate growth of spruce and fir persists in some areas.

History

Mining activity in the Boundary District dates back to the early 1890's when many of the original discoveries were made. By the late 1890's most of the important mines were controlled by the Granby Consolidated Mining, Smelting and Power Company. Production continued until 1919 when available reserves were approaching exhaustion. To 1919 the reported production of the camp was 22,000,000 tons grading 1.5% Cu, 0.03 oz Au and 0.5 oz Ag per ton.

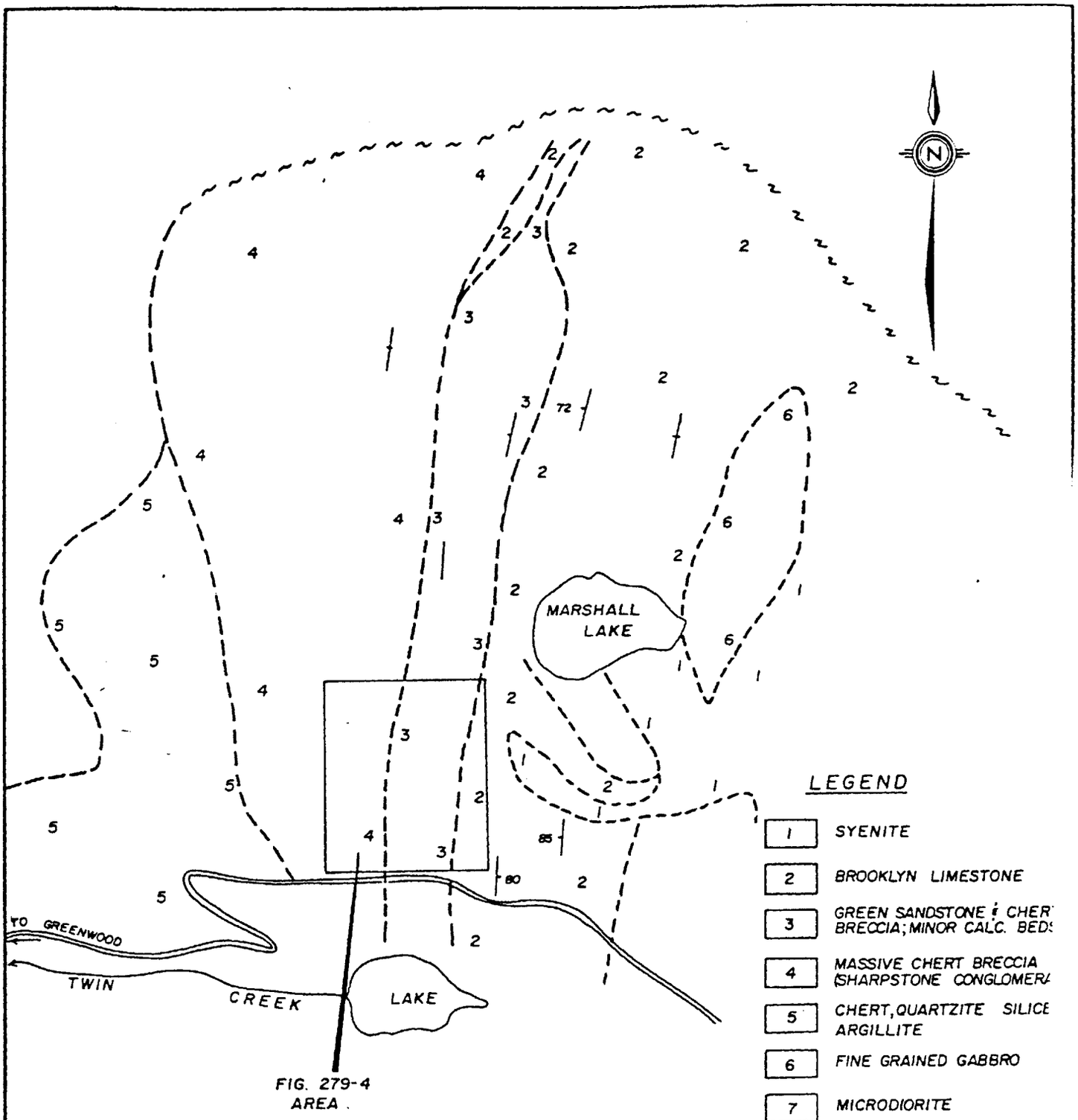
With the advent of modern mining technology, Granby began open pit mining at Phoenix in 1955 and continued until 1978 when all economic reserves were finally exhausted. The gross tonnage mined during this second stage was about 13 million tons grading about 0.55% Cu, 0.5 gms Au and 4 gms Ag per tonne.

Control of the Granby Company passed to Noranda Corporation in 1980 and in May 1981 Kettle River Resources optioned the bulk of the original Granby holdings from Noranda and acquired additional ground in the camp by staking and option from other parties.

Kettle River Resources personnel began a re-evaluation of the Boundary District in terms of a syngenetic or volcanogenic model rather than the classical skarn hypothesis with which the genesis of most of the Boundary mineral occurrences has generally been related.

An extensive programme of detailed mapping and sampling was begun along with an exhaustive study of old Granby exploration records. Mapping by Dr. J. T. Fyles showed that if a stratigraphic or syngenetic control of some of the mineralization was tenable, the favorable horizon should pass through the Sylvester K area. This area is located just west of the old Brooklyn Mine, a showing which demonstrates some characteristics favoring a syngenetic origin.

Examination of old Granby records showed that some gold values had been obtained from old showings in Sylvester K area. Subsequent ground examination, mapping and sampling demonstrated anomalous to ore grade gold values from scattered old pits on the Sylvester K claims. A VLF electromagnetic survey showed a strong conductor approximately conformable with bedding in an overburden covered area. Subsequent trenching revealed a conformable sulphide zone which in some areas at least exhibits many characteristics of syngenetic sulphide deposits.



KETTLE RIVER RESOURCES LTD.

SURFACE GEOLOGY

SYLVESTER K PROPERTY

GREENWOOD MINING DIVISION, B.C.

Tech Work By: Kerr, Dawson & Assoc. Ltd.	Scale: 1:1200
Drawn By: W.G.	Date: Sept. 1982.
App'd By: J.M.D.	Fig. No. 279-3

To accompany a report by J.M. Dawson, P.Eng.

Geology

The district is underlain by an assemblage of Paleozoic basement rocks and Triassic sediments and minor volcanics intruded by a variety of mafic to alkaline igneous bodies. Minor Tertiary sediments overlie the older rocks locally.

The basement rocks, known as the Knob Hill Group consist of amphibolite, chert, quartzite, argillite and minor limestone.

Unconformably overlying the Knob Hill Group is the Triassic Brooklyn Formation. According to Peatfield (1978) the Brooklyn Formation consists of:

(1). Clastic units of shale, graywacke and/or conglomerate. The clasts in the conglomerates are either chert pebbles (sharpstone), volcanic rocks or limestone (puddingstone).
(2). Carbonate units, grading from pure limestone to limy shale. Iron and copper mineralization occurs in impure limestones and limy shales.
(3). Tuffaceous units which resemble graywacke.

On the Sylvester K property the geology has been mapped in detail by W. R. Gilmour and is largely summarized from his report. Essentially, several members of the Brooklyn Formation have been intruded by small diorite to syenite intrusions and are in places converted to calc silicates.

The sharpstone conglomerate (unit 4 on Figure 279-3) is represented by a green sandstone with minor conglomeratic and argillaceous sections.

Overlying the sandstone is a gray to black, siliceous, pyritic argillite (part of unit 3 on Figure 279-3). This is in turn overlain by a calcareous sandstone (also part of unit 3). East of and overlying this so called "aeolian sandstone" is the distinctive Brooklyn Limestone.

This stratigraphy is complicated by possible facies changes towards the southern part of the property. Intermittent irregular areas of skarn further obscure the succession.

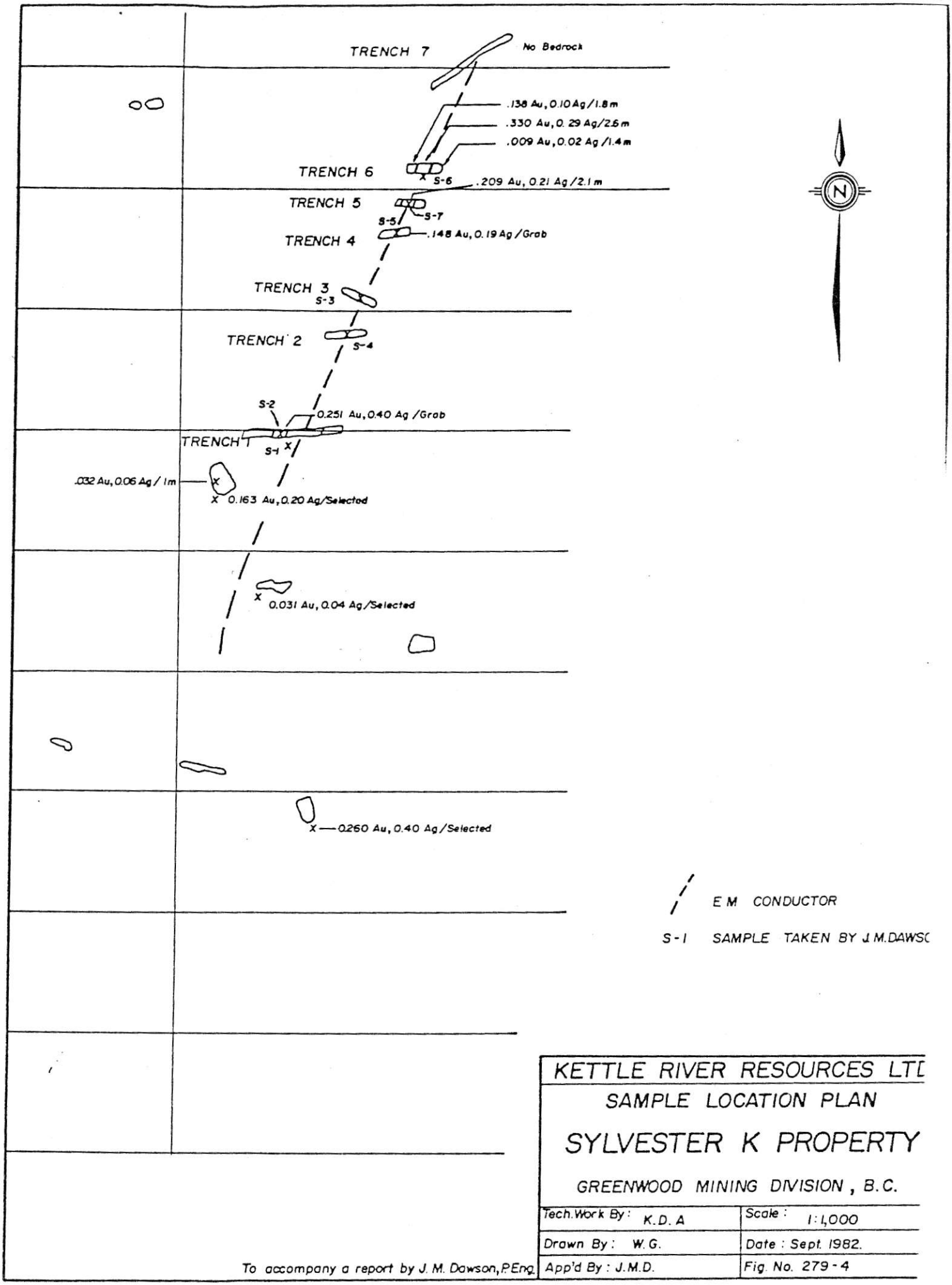
Mineralization

Attention was first focused on the Sylvester K area because of reported gold values associated with pyrite in several old showings. Sampling of various rock types containing pyrite gave values from background to as high as 0.26 oz Au and 0.40 oz Ag per ton, however these values seemed scattered and erratic.

The recent trenching of the EM conductor has exposed a new zone which is different from anything previously known on the property. To date this zone has been exposed by 6 trenches over a strike length of about 65 meters. Water and a 1 to 2 foot zone of ferricrete precluded detailed examination of the zone in trenches 1 to 4, however it is very well exposed in trenches 5 and 6 (see figure 279-4).

The zone consists of a seemingly conformable layer of massive to semimassive pyrrhotite and pyrite, striking approximately NNE and dipping very steeply east. Minor chalcopyrite is occasionally present. The sulphide layer seems to grade from predominantly pyrrhotite-rich at the top (east) to predominantly coarsely crystalline (1 cm) pyrite (up to 75%) in a siliceous matrix at the base. The hanging wall and footwall rocks are dark gray to black thinly laminated pyritic, cherty argillites with occasional 1 to 2 cm bands of massive to sub-massive pyrite.

In trenches 1 to 4 the zone was not well exposed at the time of the writer's examination, however it still appeared to be conformable though predominantly semimassive pyrite in quartz where observed.



KETTLE RIVER RESOURCES LTD

SAMPLE LOCATION PLAN

SYLVESTER K PROPERTY

GREENWOOD MINING DIVISION, B.C.

Tech. Work By: K.D.A	Scale: 1:1,000
Drawn By: W.G.	Date: Sept. 1982.
App'd By: J.M.D.	Fig. No. 279-4

To accompany a report by J. M. Dawson, P.Eng.

In some cases the pyrite is weathered out of a vuggy white quartz and occurs as unoxidized pyrite sand underneath the ferricrete capping. The actual width of the zone could not be accurately measured in these 4 trenches since blasting and ripping of the ferricrete had not been completed.

Some sampling has been done by personnel of Kettle River Resources and the writer has located some of these values on Figure 279-4. These results are as follows:

	Sample Description	Au oz/ton	Ag oz/ton
1.8M	chip sample of footwall immediately under the sulphide horizon in trench #6.	0.138	0.10
2.6M	chip sample of sulphide layer in trench #6.	0.330	0.29
1.4M	chip sample of hanging wall immediately above sulphide layer in trench #6.	0.009	0.02
2.1M	chip sample across massive sulphide layer in trench #5.	0.209	0.21
	Grab sample of "pyrite sand" in trench #4.	0.148	0.19

The writer took seven samples during his examination and the results are as follows:

	Sample Description	Au oz/ton	Ag oz/ton
Sample S-1;	grab sample of "pyrite sand" and vuggy quartz with 30% pyrite from dump material at edge of trench #1.	0.338	0.36
Sample S-2;	selected sample of pyritic argillite with thin lenses of quartz; presumably from footwall (immediately adjacent to leached ferricrete capping) in trench #1.	0.144	0.27
Sample S-3;	grab sample of "pyrite sand" and clinkery vuggy quartz which pyrite has presumably weathered from; at edge of ferricrete covered zone in trench #3.	0.372	0.26
Sample S-4;	chip sample over 0.5M of weakly pyritic argillite and minor quartz vein material in hanging wall immediately adjacent to zone of ferricrete (approx. 2M wide) presumably covering the bulk of the zone in trench #2.	0.088	0.09
Sample S-5;	grab sample of "pyrite sand" from freshly excavated material in trench #4; bulk of the zone in trench is covered by ferricrete and water.	0.292	0.51
Sample S-6;	chip sample across 2.6M massive to semi-massive sulphide layer in trench #6.	0.278	0.09
Sample S-7;	chip sample across 2.1M massive to semi-massive sulphide layer in trench #5.	0.454	0.18

Economic Potential

The mineralized zone as presently known has been traced for about 65 meters along strike and is open in both directions. The EM conductor which coincides with the massive sulphide zone has been traced for about 250 meters and while it appears to die out to the south it has not been definitely terminated to the north.

The sulphide zone is as wide as 2.6M and while its width has not been defined in trenches 1 to 4, there is a good possibility that it is at least one meter wide. Further there is evidence that while the hanging wall contains only anomalous to very low gold values, at least some of the footwall rocks immediately below the sulphide horizon carry economic precious metal values.

The persistence and relatively uniform distribution of gold values in the zone as presently known makes this property an impressive exploration bet. There is excellent potential for the development of a small to medium sized gold operation in an area where all the requisite mining infrastructure is already in place. A phased exploration programme is therefore recommended to thoroughly test this potential.

Recommendations

Phase I

(1). An extensive programme of trenching and stripping should be carried out to delineate the mineralized area completely.

(2). The trenched areas should be mapped and sampled in detail.

(3). A programme of closely spaced shallow diamond drill holes should be bored to test the continuity of the zone at depth.

Phase II

Contingent on the success of Phase I an extensive programme of diamond drilling should be undertaken to fully outline the extent of the mineralization.

Phase III

Contingent on the success of Phase II, a programme of underground drifting should be completed to bulk sample the zone and prove up reserves.

respectfully submitted;

KERR, DAWSON AND ASSOCIATES LTD.,

J. M. Dawson, P. Eng.
Geologist.

September 20, 1982
Kamloops, B. C.

Appendix A

Estimated Cost of Recommended Programme

Cost Estimate

Phase I		
(a).	Trenching and Stripping of zone.	$40,000.00
(b).	Mapping, Sampling and Supervision.	10,000.00
(c).	Assays and analyses.	4,000.00
(d).	2500 feet BQ wireline drilling @ $50.00/ft "all in".	125,000.00
(e).	Report and Map preparation.	4,000.00
	sub total	$183,000.00
	Contingency @ ~10%	17,000.00
	Total Estimated Cost of Phase I.	$200,000.00

Appendix B

Assay Certificates

ACME ANALYTICAL LABORATORIES LTD.
Assaying & Trace Analysis
852 E. Hastings St., Vancouver, B.C. V6A 1R6
Telephone:253 - 3158

To: Kerr, Dawson & Associates Ltd.,
206 - 310 Nicola St.,
Kamloops, B.C.
V2C 2P5

File No. 82-1044
Type of Samples Rocks
Disposition

ASSAY CERTIFICATE

No.	Sample	Cu%	Ag oz/ton	Au oz/ton					No.
1	3451	.01	.36	.338					1
2	3452	.02	.27	.144					2
3	3453	.01	.26	.372					3
4	3454	.01	.09	.088					4
5	3455	.01	.51	.292					5
6	3456	.18	.09	.278					6
7	3457	.29	.18	.454					7
8									8
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14									14
15									15
16									16
17									17
18									18
19									19
20									20

DATE SAMPLES RECEIVED Sept. 4, 1982
DATE REPORTS MAILED Sept. 10, 1982
ASSAYER

DEAN TOYE, B.Sc.
CHIEF CHEMIST
CERTIFIED B.C. ASSAYER

MINE-EN LABORATORIES LTD.
705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
PHONE: (604) 980 5814 OR (604) 985-4524

Certificate of Assay

AUG 18 '82

TO: Kettle River Resources,
P.O. Box 130,
Greenwood, B.C.

PROJECT No.

DATE: Aug. 11/82.

File No. 2-463

SAMPLE No.	Cu %	Pb %	Ag oz/ton	Au oz/ton	
15890	.006	.01	.03	.001	5M FROM E END ADIT TR
91	.024	.01	.02	.007	8.5M FROM ADIT TO VEIN
92	.073	.01	.40	.251	GRAB PIECES OF VEIN LOOSE
93	.024	.01	.20	.073	VEIN TO WEST END TR
94	.014	.01	.02	.009	1.4M CHERTY MTSE 260N
95	.295	.01	.29	.330	2.6M MASSIVE SULFIDE 260
96	.051	.01	.10	.138	1.6M CHERTY MF 260N TR
97	.390	.01	.21	.209	2.1M MASSIVE SULFIDE 240N
98	.348	.01	.19	.148	R SAMP 235N TR
15899	.011	.01	.46	.062	OXIDES SAMPLE 260N TR

MINE-EN Laboratories Ltd.

CERTIFIED BY: P. Ward

Appendix C

References

References

Peatfield, G.K. (1978): Geologic History and Metallogeny of the Boundary District, Southern B.C. and Northern Washington; unpublished Ph. D. Thesis, Queens University, Kingston, Ont.

McNaughton, D.A. (1945): Greenwood - Phoenix Area, British Columbia; G.S.C. Paper 45-20.

Seraphin, R.H. (1956): Geology and Copper Deposits of the Boundary District, British Columbia; CIMM Bulletin Vol. 49, No. 3.

Leroy, O.E. (1912): The Geology and Ore Deposits of Phoenix, Boundary District, British Columbia, G.S.C. Memoir 21.

Sawyer, J.B.P. (1981): Summary Report on Mineral properties in the Boundary District, Greenwood Mining Division, B. C.; Private Report to Kettle River Resources Ltd.

Gilmour, W.R. (1982): Assessment Report on the Sylvester Property, Phoenix Area, Greenwood Mining Division, B.C.; Private Report to Kettle River Resources Ltd.

Various Private files and maps of Kettle River Resources Ltd.

Personal Communications: Mr. George Stewart, Greenwood, B. C.

Mr. K. L. Daughtry, Vernon, B. C.

Mr. W. R. Gilmour, Vernon, B. C.

Appendix D

Writer's Certificate

JAMES M. DAWSON, P. ENG.
Geological Engineer

#1 - 219 VICTORIA STREET • KAMLOOPS, B.C. V2C 2A1 • TELEPHONE (604) 374-0544

Certificate

I, JAMES M. DAWSON OF KAMLOOPS, BRITISH COLUMBIA DO HEREBY CERTIFY THAT:

(1). I am a geologist employed by Kerr, Dawson and Associates Ltd. of Suite 206, 310 Nicola Street, Kamloops, B. C.

(2). I am a graduate of the Memorial University of Newfoundland - B.Sc. (1960), M. Sc. (1963), a fellow of the Geological Association of Canada and a Member of the Association of Professional Engineers of British Columbia. I have practised my profession for 19 years.

(3). I am the author of this report which is based on an examination of the subject property on September 2, 1982 as well as various published and unpublished data.

(4). I have no direct or indirect interest in the property discussed in this report nor do I expect to receive any.

(5). Permission is hereby granted to use this report to satisfy requirements of the Vancouver Stock Exchange and the B. C. Securities Commission.

KERR, DAWSON AND ASSOCIATES LTD.,

J. M. Dawson, P. Eng.
Geologist.

September 20, 1982
Kamloops, B. C.