

GEOPHYSICAL, GEOLOGICAL
and GEOCHEMICAL
ASSESSMENT REPORT

on the

SYLVESTER PROPERTY

CLAIMS: BELMONT FR, CIMERON, NEW YORK,
SYLVESTER K, SYLVESTER K FR, TIMER FR

PHOENIX AREA

GREENWOOD MINING DIVISION

NTS: 82E/2E
Latitude: 49° 07.3' North
Longitude: 118° 33.3' West
Owner: Noranda Exploration Co. Ltd.
Operator: Kettle River Resources Ltd.
Consultant: K.L. Daughtry & Associates Ltd.
Author: W.R. Gilmour
Date: February 7, 1983

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,119

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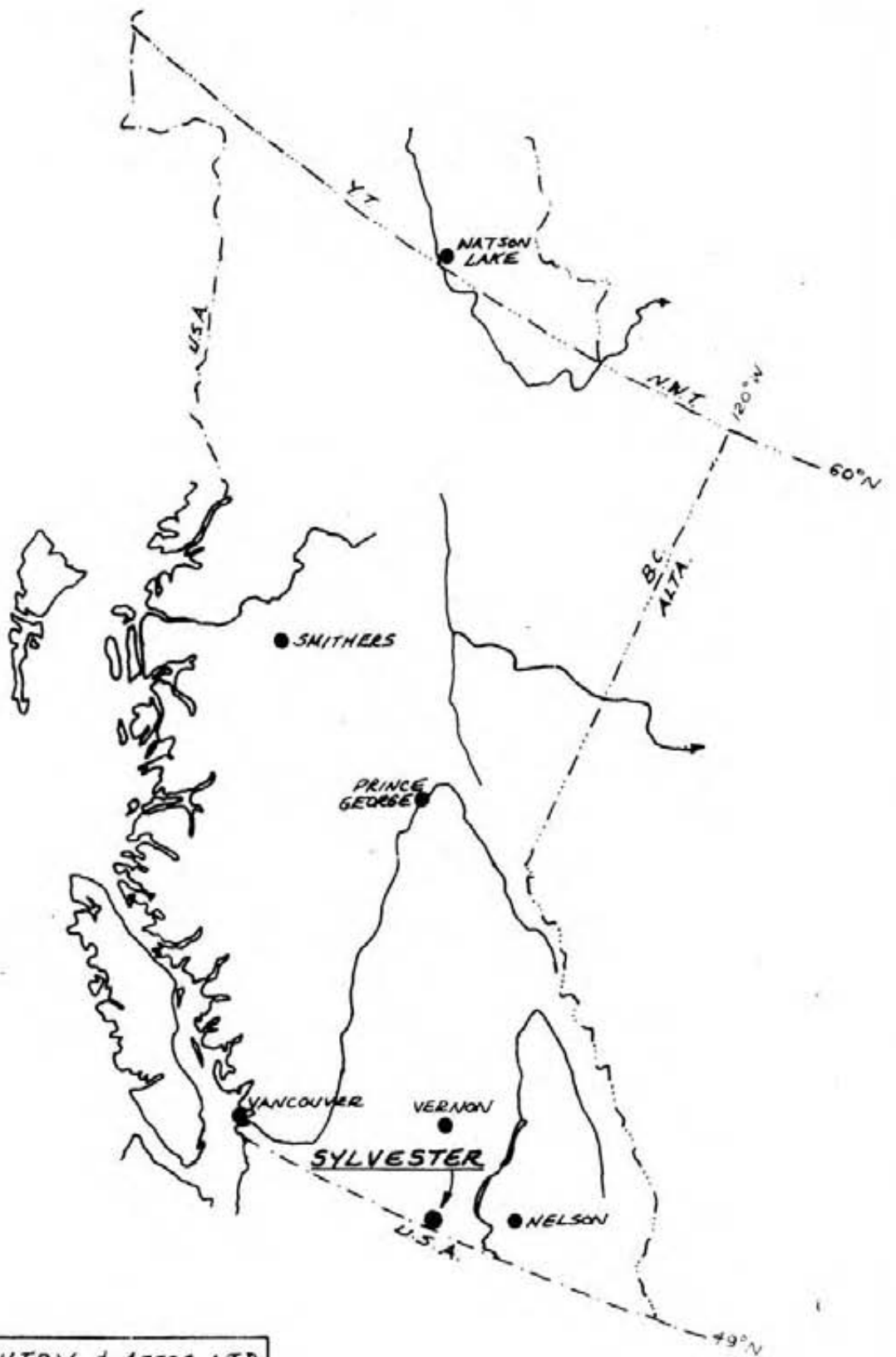
SUMMARY

This report describes geological, geophysical and geochemical exploration work carried out on the Sylvester property.

Geological mapping at a scale of 1:1,000 was completed over the northern portion of the property. The VLF EM survey was also completed over the same area, for a total of 1.9 line-kilometres. A geochemical survey comprising 133 soil samples was conducted over the property. All samples were analysed for gold, silver and copper and some for zinc, arsenic, antimony and mercury.

Backhoe trenching has shown that the VLF conductor defines a gold-bearing stratiform massive sulphide horizon at a clastic/carbonate contact. The gold soil geochemistry indicates the much wider extent of mineralization in the footwall.

The property exhibits excellent exploration potential and a programme of further exploration is recommended.



K.L. DAUGHTRY & ASSOC. LTD.
KETTLE RIVER RES. LTD.
LOCATION MAP
SYLVESTER PROPERTY
FEB./83

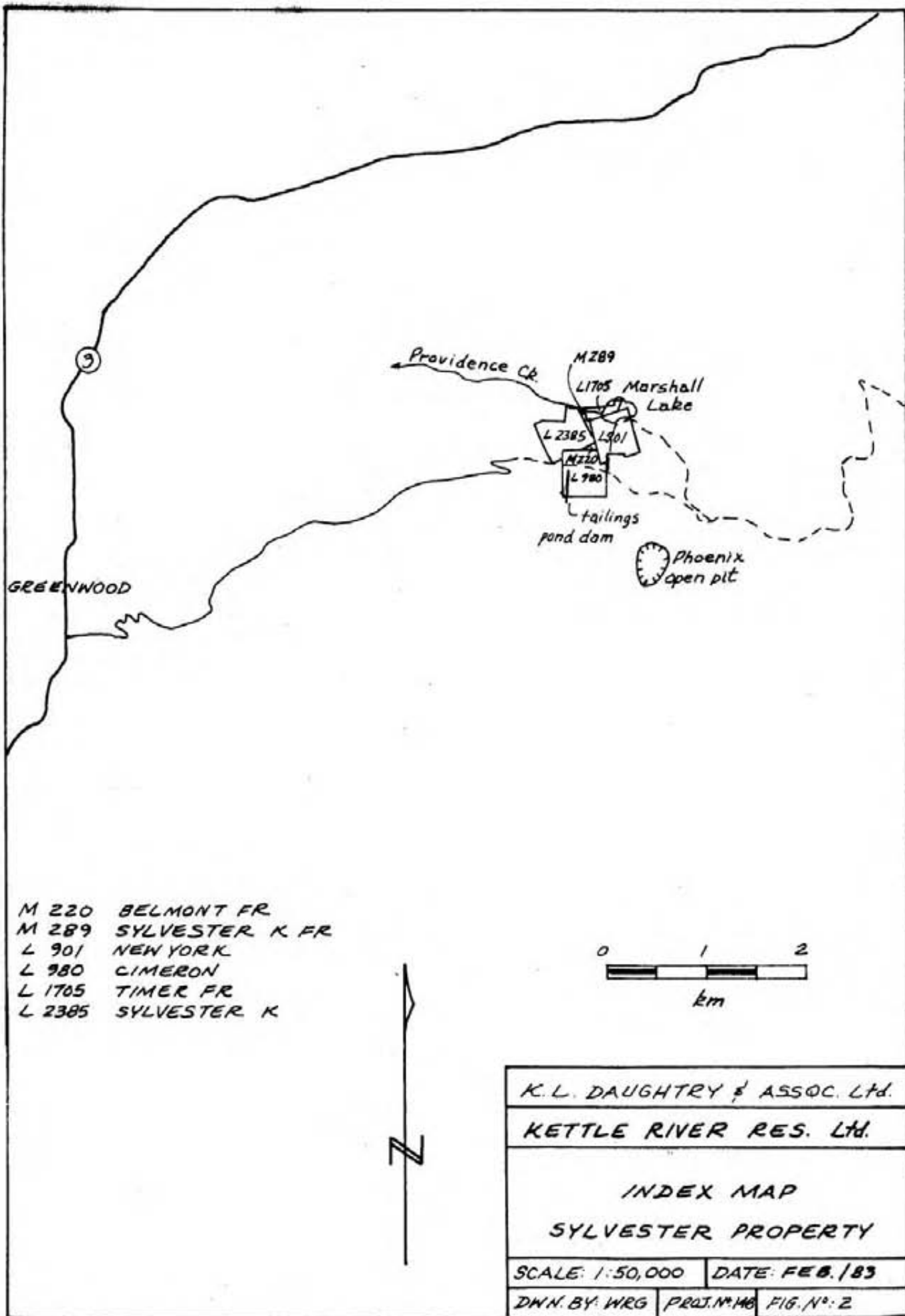
FIG. NO. 1

LOCATION, ACCESS, TOPOGRAPHY

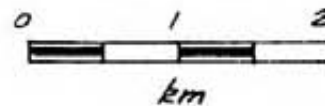
The Sylvester property is located 5.5 kilometres east-northeast of Greenwood, in the Phoenix Camp of the Boundary District of south-central British Columbia. The claims are immediately southwest of Marshall (Providence) Lake. The center of the property is at 49°06.4' North Latitude and 118°36.5' West Longitude. The National Topographic System map reference is 82E/2E.

Good access is provided by well maintained gravel roads adjacent to the area mapped. Greenwood is about 8 km westerly and Highway 3 is about 12 km easterly, along the main Phoenix road.

Elevations range from 1340 to 1425 metres above sea level, with a generally moderate topography. The Twin Creek valley has been filled in with tailings from the Phoenix mine. Some of the area has recently been logged.



- M 220 BELMONT FR
- M 289 SYLVESTER K FR
- L 901 NEW YORK
- L 980 CIMERON
- L 1705 TIMER FR
- L 2385 SYLVESTER K



K. L. DAUGHTRY & ASSOC. LTD.		
KETTLE RIVER RES. LTD.		
INDEX MAP SYLVESTER PROPERTY		
SCALE: 1:50,000	DATE: FEB. /83	
DWN. BY: WRG	PROJ. NO: 146	FIG. NO: 2

PROPERTY

The following claims comprise the Sylvester property.

<u>CLAIM NAME</u>	<u>Record No.</u>	<u>Expiry Date</u>	<u>Registered Owner</u>
BELMONT FR	M 220	October 16, 1983	Noranda Exploration Company Limited (no personal liability)
CIMERON	L 980	Crown-granted	Noranda Exploration Company Limited (no personal liability)
NEW YORK	L 901	Crown-granted	Noranda Exploration Company Limited (no personal liability)
SYLVESTER K	L 2385	Crown-granted	Noranda Exploration Company Limited (no personal liability)
SYLVESTER K FR	M 289	September 22, 1983	Noranda Exploration Company Limited (no personal liability)
TIMER FR	L 1705	Crown-granted	Noranda Exploration Company Limited (no personal liability)

The BELMONT FR and SYLVESTER K FR are mineral leases.

The CIMERON is part of PHOENIX 82 group, the remaining claims belonging to the CYCLOPS 82 group.

Kettle River Resources Ltd. acquired the property on option from Noranda in 1981.

HISTORY

Although there are numerous old exploration workings on the Sylvester property there is no record of the work in any British Columbia Ministry of Mines Annual Reports.

Sampling in 1938 (17) of a small dump (Figure 3, 125N?) on the "Cimeron property" yielded 0.11 oz/ton gold. Minor sampling of old workings in the area was carried out by Granby Mining in 1963 (16). "Massive pyrite" ran trace Cu, 0.135 oz/ton Au, and 0.28 oz/ton Ag. "Magnetic skarn" ran 2.15% Cu, 0.610 oz/ton Au, 1.72 oz/ton Ag, and 0.60% Zn..

The MARSHALL claim, adjoining the Sylvester property to the north, was drilled by Cominco in 1938 (2,16). During the period 1966-1973 the Marshall property was explored by San Jacinto and Highland Lode (3,4,5,6,7,11,25). Soil sampling, magnetometer, I.P. and geological surveys and percussion and diamond drilling were carried out. Minor production during that period amounted to 468 tons grading 1.0 oz/ton Au with minor values in Ag, Cu, Pb and Zn.

In 1948, Brooklyn-Stemwinder Gold Mines Ltd. did about 500 feet of diamond drilling on the NEW YORK to test a pyrite-gold showing. However, "although considerable pyrite core was obtained, the assays were not encouraging" (2A). The location of the holes is not known.

In 1966, Huntec carried out I.P. surveys for Granby over the southern part of the CIMERON claim (10,21). A north-northeast trending anomalous zone ("zone B") possibly connects with the I.P. anomaly on the Marshall property. The zone was tested with two drill holes. One of the holes intersected long sections of talc with disseminated pyrite (16). A sample ran trace in Cr, Au and Ag (11).

Part of the property was covered by a reconnaissance (400 foot x 400 foot) copper and zinc soil survey conducted by Granby during 1970-71 (16).

In 1982 Kettle River Resources Ltd. commenced a programme of geological mapping, rock sampling and VLF EM surveying. This work is described in a previous assessment report (15).

A geochemical soil survey and the completion of the above work was then carried out and is the subject of this report.

A programme of backhoe trenching, detailed geological mapping and rock sampling was begun and will be the subject of a future report.

REGIONAL GEOLOGY and MINERALIZATION

Proterozoic(?) gneisses and schists are the oldest rocks in the Greenwood area. Their relationship to the younger rocks is unclear at present.

Pennsylvanian-Permian rocks (Knob Hill Group) comprise two distinct rock units (22); 'oceanic' basalt and chert, and 'trench and arc' clastic (chiefly pelitic) and andesitic to rhyolitic volcanic rocks. These Upper Paleozoic rocks have undergone moderate regional metamorphism and folding.

Tectonically emplaced generally serpentinitized ultramafic rocks of probable Permian age (22) are common in the area. Minor platinum (e.g. at the SAPPHO property), chromium and nickel showings occur in or close to these serpentinitized rocks. Deposits spatially associated with the Ironclad serpentinite (WINNIPEG, ATHELSTAN-JACKPOT, GOLDEN CROWN, KENO, IRONCLAD, and WINNER) produced 16,800 oz gold and 47,000 oz silver from 74,000 tons of ore. Significant pyrite-gold mineralization has recently been discovered in the CITY OF PARIS area, commonly underlain by serpentinite.

Unconformably overlying the Upper Paleozoic rocks are middle to upper Triassic rocks of the Brooklyn Formation. Fyles (12,13) has identified the following main rock types in the Brooklyn Formation:

1. chert breccia ('sharpstone') with minor interbedded sandstone;
2. shale ('Rawhide shale');
3. chert-granule, limy and probably tuffaceous siltstone and sandstones; commonly occurring at chert breccia/limestone transitions;
4. limestone ('Brooklyn' and 'Stemwinder') with minor limestone breccia;
5. volcanic conglomerate; minor breccia and volcanoclastic rocks;

6. red diamictite ('puddingstone'): limestone, chert and volcanic clasts in red (volcanoclastic?) siltstone
7. sub-volcanic microdiorite

The rock units are commonly interbedded and have a lenticular nature with abundant fault contacts and disconformities. Metamorphism has commonly produced marbles and calc-silicate rocks.

In the Greenwood area important copper-gold-silver mineralization occurs in the Brooklyn Formation. Most of these ore deposits are associated with skarn and have been described as contact metasomatic deposits. Certain stratigraphic horizons, comprising porous limy sediments, were thought to be susceptible to hydrothermal fluids emitted from a mineralizing intrusion, resulting in the formation of calc-silicate skarns and iron and copper mineralization. The author of this report, however, supports the view, suggested by Peatfield (22, p 185) and Fyles (13, p 17) that sediments, commonly calcareous, were originally rich in copper and iron and were later metamorphosed to produce the copper-iron-skarn deposits.

These Triassic deposits are generally stratabound and are occasionally stratiform (e.g. the EMMA and the north end of the BROOKLYN). The deposits have been deformed tectonically, to varying degrees, by faults and folds and cut by intrusive rocks. Pyrite, chalcopyrite, hematite and magnetite are the common 'ore' minerals. Sphalerite occurs at the CYCLOPS showing. Garnet, epidote, actinolite, calcite and quartz are the common 'gangue' minerals, with wide variations in relative amounts of these minerals according to each particular camp.

Production figures for the main Triassic deposits are as follows:

	<u>Tons</u>	<u>Cu</u> <u>%</u>	<u>Au</u> <u>oz/ton</u>	<u>Ag</u> <u>oz/ton</u>
<u>PHOENIX CAMP</u> - Knob Hill, Old Ironsides, Stemwinder, Brooklyn, Idaho, Snowshoe, Rawhide, Gold Drop, Curlew, Monarch	30,278,000	0.85%	0.032	0.20
<u>DEADWOOD CAMP</u> - Motherlode, Sunset, Greyhound, Morrison	4,643,000	0.86%	0.038	0.16
<u>SUMMIT CAMP</u> - BC, Emma, Oro Denoro, Mountain Rose	<u>506,000</u>	<u>1.8%</u>	<u>0.023</u>	<u>0.65</u>
TOTAL	35,427,000	0.86%	0.033	0.20

Andesitic volcanic rocks of Jurassic age, possibly including some of Triassic age, occur east of the Phoenix area overlying the Brooklyn Formation. No economic mineral deposits are known to exist in these rocks. The Mesozoic rocks have undergone moderate folding, with a general north-south axial trace of slightly northward plunging open folds.

Intrusive 'Nelson' rocks of probable Cretaceous age have thermally metamorphosed the Triassic copper-gold-silver deposits but may not be otherwise genetically related to them. Porphyritic rocks of Cretaceous(?) age host copper mineralization at the CITY OF PARIS deposit (8), and are responsible for the copper-silver mineralization on the SAPPHO prospect (14).

Mineralized quartz veins of Cretaceous and/or Tertiary(?) age occur in the Greenwood area, apparently with random areal distribution. The seven main deposits (DENTONIA, PROVIDENCE, SKYLARK, YANKEE BOY, NUMBER SEVEN, E PLURIBUS UNUM and LAST CHANCE) have produced 54,400 oz of gold and 2,015,000 oz of silver from 179,000 tons of ore.

During Tertiary times deposition of clastic sediments, volcanic flows and fragmental rocks and the intrusion of acidic to basic igneous rocks accompanied graben-like normal faulting (20).

PROPERTY GEOLOGY and MINERALIZATION

On the Sylvester property the Brooklyn Formation is represented by similar stratigraphic units as at the Phoenix mine. Using Granby's geological terms the rock units are, from west to east and older to younger, 'sharpstone conglomerate', 'footwall argillite', 'aeolian sandstone' and Brooklyn limestone. These rocks dip steeply and strike east of north.

The 'sharpstone' is represented by a green sandstone with minor conglomeratic and argillaceous sections. Chert grains occur in a green matrix with minor epidote alteration.

Overlying the sandstone is a grey to black, siliceous, tuffaceous(?), pyritic argillite. The pyrite content probably averages about 10% although massive sulphide beds occur, seemingly more frequently at the top of the unit. This argillite unit also contains pyritic sandstone: chert grains with altered lithic (and volcanoclastic?) fragments in a black siliceous matrix. Trenching at the VLF crossover discovered a 2.5 m thick massive to semi-massive sulphide bed at or near the argillite/limestone contact. Pyrite is the most common sulphide, commonly occurring as medium to coarse-grained (2 to 6 mm) subangular grains. Finer grained pyrrhotite can comprise greater than 50% of the rock in a hand specimen. Minor copper values are higher in pyrrhotite-rich sections and appear to post-date other sulphide minerals, often occurring in fractures. Silica often encapsulates the pyrite grains, producing a light 'clinkery' rock where pyrite is weathered out. Gold values in the massive sulphides range from 0.21 oz/ton to 0.45 oz/ton (9). The footwall pyritic argillite is also significantly gold bearing. This zone also contains massive pyrite beds, up to one metre in

thickness.

On the south wall of an old pit just north of 375N/60E a near vertical 6 cm wide pyrite bed is exposed. Two flatly-dipping slips have down-stepped this bed to the east by 10 cm and 5 cm.

The 'aeolian sandstone' consists of rounded rice-sized grains of chert in a calcite matrix. Minor limy argillaceous and limestone beds or lenses also occur.

The limy chert sandstone is overlain by limestone, recrystallized to a marble. The recrystallization has not been intensive as the rock is usually fine-grained and in places is still grey-coloured on a weathered surface.

On the southern part of the property there appears to be either a facies change along strike from argillite and limy chert sandstone to limestone or an offsetting fault.

A Triassic(?) or later microdiorite, containing about 5% pyrite, cuts the layered rocks at the north end of the property.

Tertiary hornblende porphyry dykes with minor feldspar and minor, possibly related, 'skarny' rocks seem to occur in a discordant NW-SE zone. Epidote-rich zones occur but are not pervasive. The dykes appear to be flat-lying with northerly or easterly dips. Outcrops along the main road show the dykes to be truncated by faults.

VLF EM SURVEY

The VLF (very low frequency) electromagnetic method makes use of powerful, distant military radio transmitters. These transmitters induce electric currents in conductive bodies. The induced currents produce secondary magnetic fields which can be detected by measuring deviations in the normal VLF fields. To maximize detection the direction to the transmitting station should be parallel to the strike of the conductor, although differences in direction of up to 45 degrees still give very good responses. Klein and Lajoie (18) summarize the interpretation of results as follows:

"The conductor is located at the inflection point marking the crossover from positive tilt to negative tilt, and the maximum in field strength" (Klein and Lajoie, p 270).

They also state that the VLF method can detect "unwanted sources" such as swamp edges, creeks and topographic highs.

On the Sylvester property a VLF EM survey was carried out over a flagged grid comprising 1.9 km of line. Readings were taken every 10 m on lines 25 m apart. The instrument used was a Sabre model 27. Hawaii, transmitting at 23.4 khz and at a direction of 250 degrees azimuth, was the station used. This station does not transmit on Wednesday. A base station was set up near 100N/60E. The operator returned to the base station several times throughout the survey to adjust the instrument. The field strength readings often showed considerable drift, in both directions, and readings were difficult to duplicate. However, tilt angle measurements remained consistent. The field strength readings are relative readings as the gain was often adjusted in order to obtain readings.

Tilt angle profiles are shown on Figures 4a and 4b; field strength profiles on Figures 5a and 5b; and contoured Fraser values on Figure 6.

The tilt angle profiles show that the conductor continues strongly to line 375N and weakly to line 450N. The area south of line 300N was previously surveyed (15). A second, weaker conductor occurs west and north of the main one. Note the effect of the dam and Marshall Lake on the tilt angle readings (Figure 4b). The field strength profiles, although not exceedingly strong, do help confirm the tilt angle crossovers as being due to conductors. Heavy pyritic mineralization was noted near where the conductor crosses line 450N.

Contoured Fraser values show the main conductor extends from about 160N/10E to 460N/120E, a distance of 320 m. The survey shows a highly conductive section (Fraser values ≥ 28) over a 230 m length. The second conductor extends from about 380N/15E to 520N/50E, a distance of 140 m. A moderately conductive, 85 m long section (Fraser values ≥ 14) occurs within this zone. The zone is partially exposed in one area and two grab samples returned 0.002 oz/ton gold.

A MAX-MIN test survey was run over the massive sulphides along line 250N. A 20 m wide, subtle anomaly (P.P. Nielsen, personal communication) was detected. Anomalous readings were obtained from total field magnetometer and fluxgate magnetometer test surveys which were conducted over the same area.

SOIL GEOCHEMISTRY

A programme of soil sampling was carried out on various claims held by Kettle River Resources Ltd. in the Greenwood area. Most of the area surveyed was underlain by rocks of the Brooklyn Formation. Samples were collected and analysed for gold, with some samples also being analysed for silver and copper. The results on the various properties have been combined for statistical treatment and interpretation. Cumulative frequency curves were used to determine anomalous classifications. The following table summarizes the results.

	<u>gold</u>	<u>silver</u>	<u>copper</u>
number of samples	1405	652	652
mode	5 ppb	0.6 ppm	19-20 ppm
median	5 ppb	0.6 ppm	23-24 ppm
weakly anomalous % of samples	15-20 ppb 2.7%	1.0-1.2 ppm 5.5%	43-57 ppm 5.2%
moderately anomalous %	25-50 ppb 1.1%	1.3-1.6 ppm 1.1%	58-85 ppm 3.8%
strongly anomalous %	>55 ppb 1.5%	>1.7 ppm 0.8%	>86 ppm 2.9%

On the Sylvester property a 50 m x 20 m picket-line grid totalling 2.6 km was installed. Note that the grid is different from the VLF grid. Samples, totalling 133, were collected in numbered Kraft wet-strength paper bags and sent to MIN-EN Laboratories Ltd. in North Vancouver for analysis. Included in the above total is a line of 20 samples at 10 m intervals previously collected across the mineralized zone. Wherever possible the samples were collected from the 'B' horizon at approximately 15 cm depth.

All of the samples were analysed for gold, silver and copper with 20 samples also being analysed for zinc, arsenic, antimony and mercury (Figures 7-10).

The -80 mesh fraction was subjected to nitric-perchloric digestion (Cu,Ag,Zn,As analyses), nitric-hydrogen chloride digestion (Sb), nitric-sulphuric-peroxide digestion (Hg), and aqua regia digestion (Au). Analysis was by either atomic absorption (Cu,Ag,Zn,Hg,Au) or spectrophotometry (Sb,As). A 5 gm sample was used for gold analysis. Three additional soil samples were analysed for gold by Bondar-Clegg and Company Ltd. of North Vancouver. Analysis was by combined fire assay and atomic absorption, with a 20 gm sample being used.

The property is generally till-covered, particularly in the areas underlain by argillite. In the area of the trenching the depth to the massive sulphide zone ranges from 1.9 m to greater than 3.5 m.

The gold results show a range in values from less than 5 ppb to 960 ppb. Silver ranges from 0.1 ppm to 2.4 ppm, copper from 4 ppm to 88 ppm, zinc from 53 ppm to 174 ppm, arsenic from 1 ppm to 12 ppm, antimony from 3 ppm to 14 ppm, and mercury 10 ppb to 90 ppb. Although some anomalous values of gold, silver and copper occur scattered over the property, most anomalous values for each metal occur in clusters which are distinct from each other (see DISCUSSION and CONCLUSIONS).

DISCUSSION and CONCLUSIONS

On the Sylvester property a siliceous, pyritic argillite unit of the Brooklyn Formation is host to significant gold mineralization. The unit is stratigraphically equivalent to the 'footwall argillites' at the Phoenix mine. Trenching has revealed economic grades and widths in a stratabound massive to semi-massive sulphide pyrite-pyrrhotite-chalcopyrite horizon at the contact of argillites with calcareous sediments. Values are in gold, silver and copper. The pyritic footwall argillites are significantly gold-bearing and in places contain massive sulphide beds.

Trenching at the VLF crossover on the main conductor discovered a gold-bearing massive to semi-massive sulphide horizon. The 320 m length of the conductor indicates a good tonnage potential. The secondary conductor should also be tested even though preliminary sampling does not indicate the presence of significant gold mineralization.

The VLF is a less discriminating electromagnetic method when compared to most other EM methods, due to its higher frequency. The MAX-MIN EM method does not appear to work satisfactorily well over the Sylvester type of mineralization. This is probably due to silica encapsulation of pyrite grains resulting in a poor conductor. To explore for this type of mineralization at depth a more powerful high frequency method would be required.

Anomalous magnetic readings were obtained over the massive sulphide zone but the zone would likely be missed if the reading interval was greater than 10 m.

The gold soil geochemistry outlines an anomalous area 200 m long and up to 60 m wide. This anomaly overlies much of the massive sulphide zone and extends over

the mineralized footwall zone. Without the presence of the thicker mineralized footwall zone a 2 m to 3 m wide massive sulphide zone might not give a strong, continuous geochemical expression with a 50 m x 20 m sampling density. The values within the zone, averaging 318 ppb, are high despite the till and ferricrete cover. The 300 ppb value at 250N/OW is possibly due to a 'nugget effect' and should be resampled. Consideration should be given to analysing 20 gm samples in future gold analyses.

The soil survey does not reflect the copper and silver content of the massive sulphide horizon which ranges up to 0.4% and 0.5 oz/ton respectively.

The area of anomalous silver values (seven adjoining anomalous values) is restricted to an area underlain by calcareous rocks. The significance of this anomaly is not known at present. The notable increase in values along the line just south of 300N may be erroneous.

The copper anomaly lies just north of the gold anomaly in the area of the argillite/microdiorite contact. It appears that copper values have been enriched along this intrusive contact.

No anomalous patterns in zinc, arsenic, antimony or mercury were noted over the mineralized zone.

RECOMMENDATIONS

The following programme on the Sylvester property is recommended.

1. The main VLF conductor should be exposed by trenching and then geologically mapped and sampled. The ends of the conductor should be thoroughly exposed on surface to determine stratigraphical and/or structural controls on the length of the mineralized zone.
2. The pyritic footwall zone should be tested at regular intervals with special attention given to the evaluation of massive sulphide horizons.
3. The secondary (northwest) conductor should also be trenched and evaluated for gold mineralization.
4. Diamond drilling will follow to test the mineralized zone at depth.

Respectfully submitted



W.R. Gilmour

February 7, 1983.

Vernon, B.C.

REFERENCES

- | | | | |
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STATEMENT OF COSTS1. Professional Services

W.R. Gilmour, geologist 10 days @ \$250/day
 Sept 17-21 \$2500.00
 plus data compilation, report working

Ned Reid, geologist 6 days @ \$250/day 1500.00
 Oct. 4-5, 12-14
 plus data compilation

\$4000.00

2. Labour

Tim Kleman 4.5 days @ \$125/day 562.50
 Oct. 4-5, 12-14

Ron Wintermeyer 4.5 days @ \$125/day 562.50
 Oct. 4-5, 12-14

1125.00

3. Transportation

4 x 4 Blazer
 8 days @ \$35/day 280.00
 160 km @ \$.30/km 48.00
 gas, oil 25.00

automobile
 650 miles @ \$.25/mile 162.50

515.50

4. Accommodation, meals

for W.R. Gilmour, Ned Reid
 9 days @ \$35/day

315.00

5. Analysis

soil geochemistry

133 gold @ \$5.00 per sample 665.00
 133 silver @ \$1.45 per sample 192.85
 133 copper @ \$1.45 per sample 192.85
 20 zinc @ \$1.45 per sample 29.00
 20 arsenic @ \$3.80 per sample 76.00
 20 antimony @ \$4.00 per sample 80.00
 20 mercury @ \$4.00 per sample 80.00

133 sample preparations @ 0.85 per sample	113.05	
3 gold @ \$6.00 per sample	18.00	
3 sample preparations @ 0.70	2.10	
rock assays		
2 gold @ \$9.00 per sample	<u>18.00</u>	1466.85
6. <u>VLF-EM rental</u>		
2 days @ \$20/day		40.00
7. <u>Field supplies, shipping</u>		75.00
8. <u>Printing, secretarial, telephone</u>		<u>250.00</u>
		\$7787.35

STATEMENT OF QUALIFICATIONS

I, W. R. GILMOUR, of 13511 Sumac Lane, Vernon, B.C., V1B 1A1,

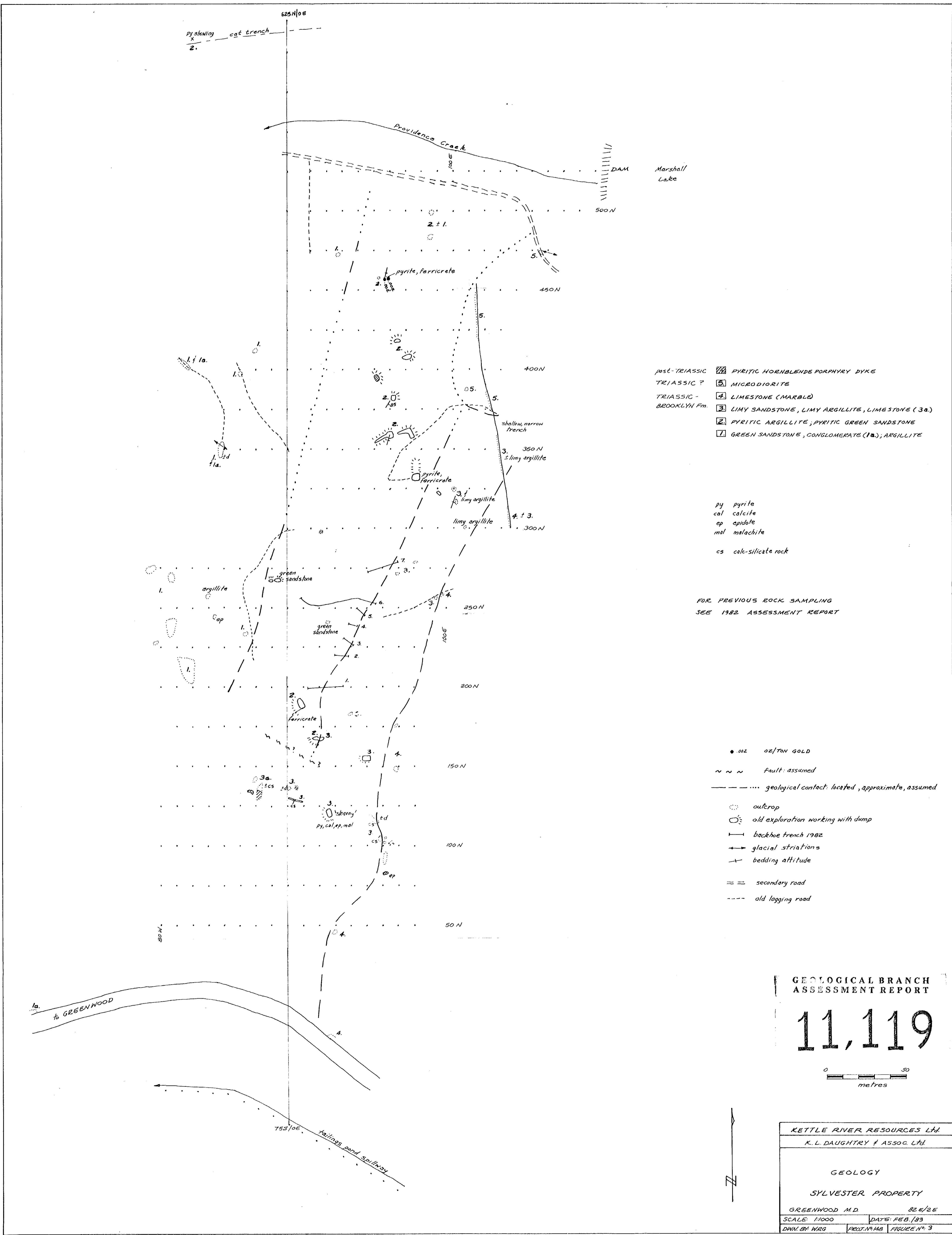
DO HEREBY CERTIFY that:

1. I am a consulting geologist in mineral exploration employed by W.R. Gilmour & Associates Ltd., Vernon.
2. I have been practising my profession in British Columbia, the Yukon Territory, and Nevada for 12 years.
3. I am a graduate of the University of British Columbia with a Bachelor of Science degree in geology.
4. I am a Fellow of the Geological Association of Canada and a member of the Society of Mining Engineers of A.I.M.E.
5. This report is based upon knowledge of the Sylvester property gained from exploration work on the property.
6. I am a Director of Kettle River Resources Ltd.



W. R. Gilmour

Vernon, B.C.
February 7, 1983.



- post-TRIASSIC [Symbol] PYRITIC HORNBLLENDE PORPHYRY DYKE
- TRIASSIC ? [Symbol] MICRODIORITE
- TRIASSIC - BROOKLYN Fm. [Symbol] LIMESTONE (MARBLE)
- [Symbol] LIMY SANDSTONE, LIMY ARGILLITE, LIMESTONE (3a)
- [Symbol] PYRITIC ARGILLITE, PYRITIC GREEN SANDSTONE
- [Symbol] GREEN SANDSTONE, CONGLOMERATE (1a); ARGILLITE

- py pyrite
- cal calcite
- ep epidote
- mal malachite
- cs calc-silicate rock

FOR PREVIOUS ROCK SAMPLING
SEE 1982 ASSESSMENT REPORT

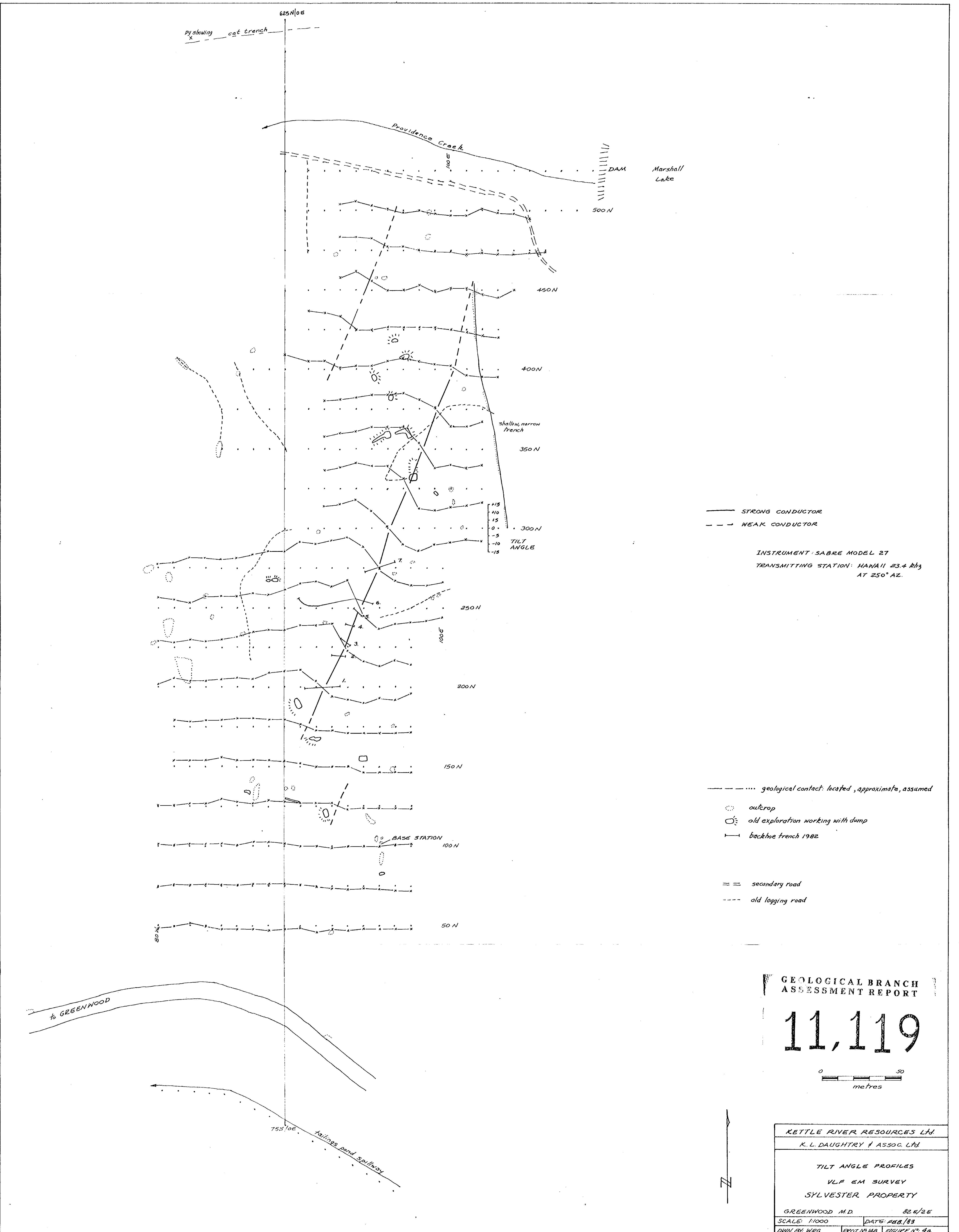
- 002 oz/TON GOLD
- ~ ~ ~ Fault: assumed
- geological contact: located, approximate, assumed
- outcrop
- old exploration working with dump
- backhoe trench 1982
- ← glacial striations
- ↘ bedding attitude
- == secondary road
- old logging road

GEOLOGICAL BRANCH
ASSESSMENT REPORT

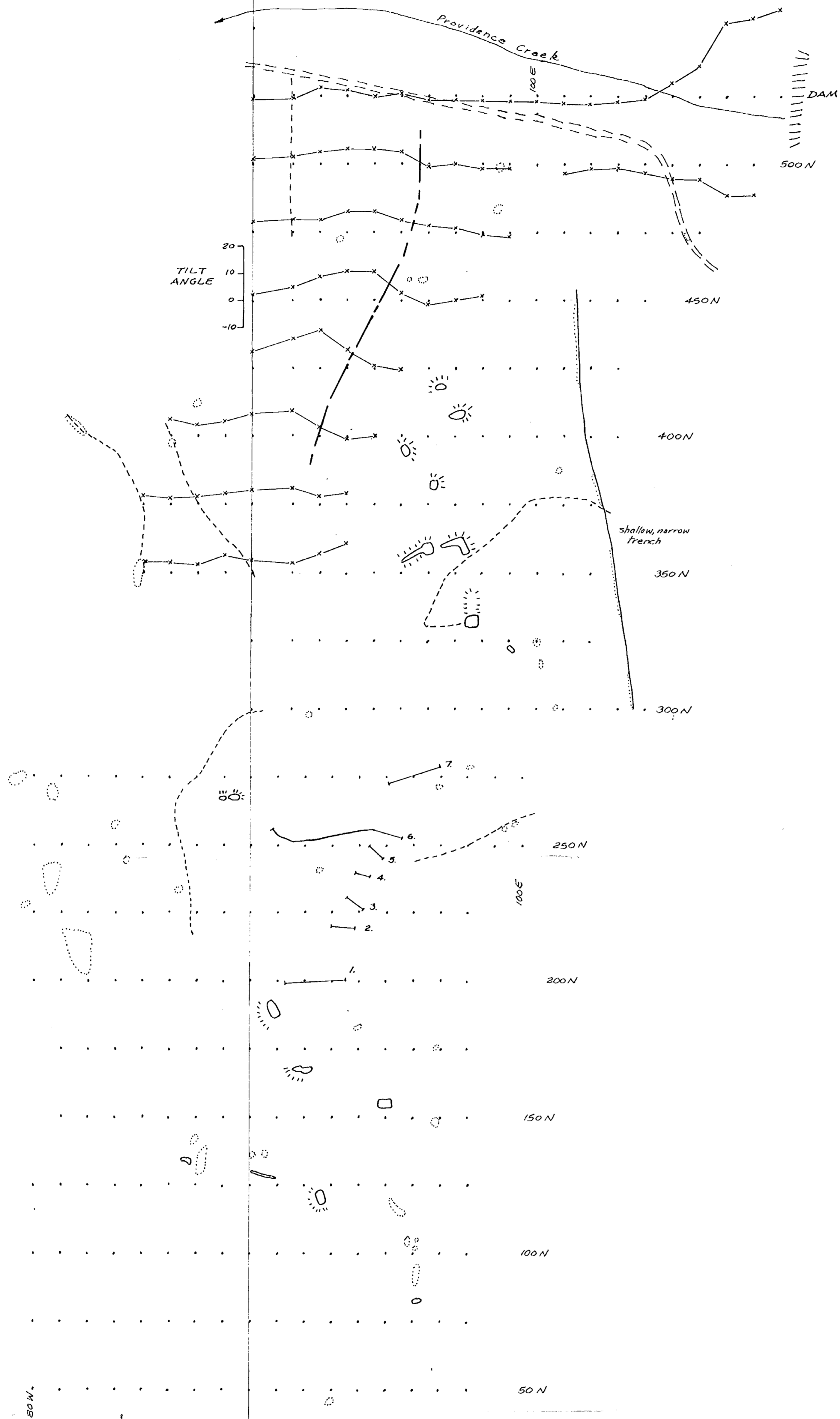
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KETTLE RIVER RESOURCES LTD.	
K. L. DAUGHTRY & ASSOC. LTD.	
GEOLOGY	
SYLVESTER PROPERTY	
GREENWOOD M.D.	82E/2E
SCALE: 1/1000	DATE: FEB./93
DWN. BY: WEG	PROJ. NO: MB FIGURE NO: 3



625N|0E
py showing cat trench



— STRONG CONDUCTOR
- - - WEAK CONDUCTOR

INSTRUMENT: SABRE MODEL 27
TRANSMITTING STATION: HAWAII 23.4 kHz AT 250° AZ.

..... geological contact: located, approximate, assumed
○ outcrop
⊙ old exploration working with dump
— backhoe trench 1982
== secondary road
--- old logging road

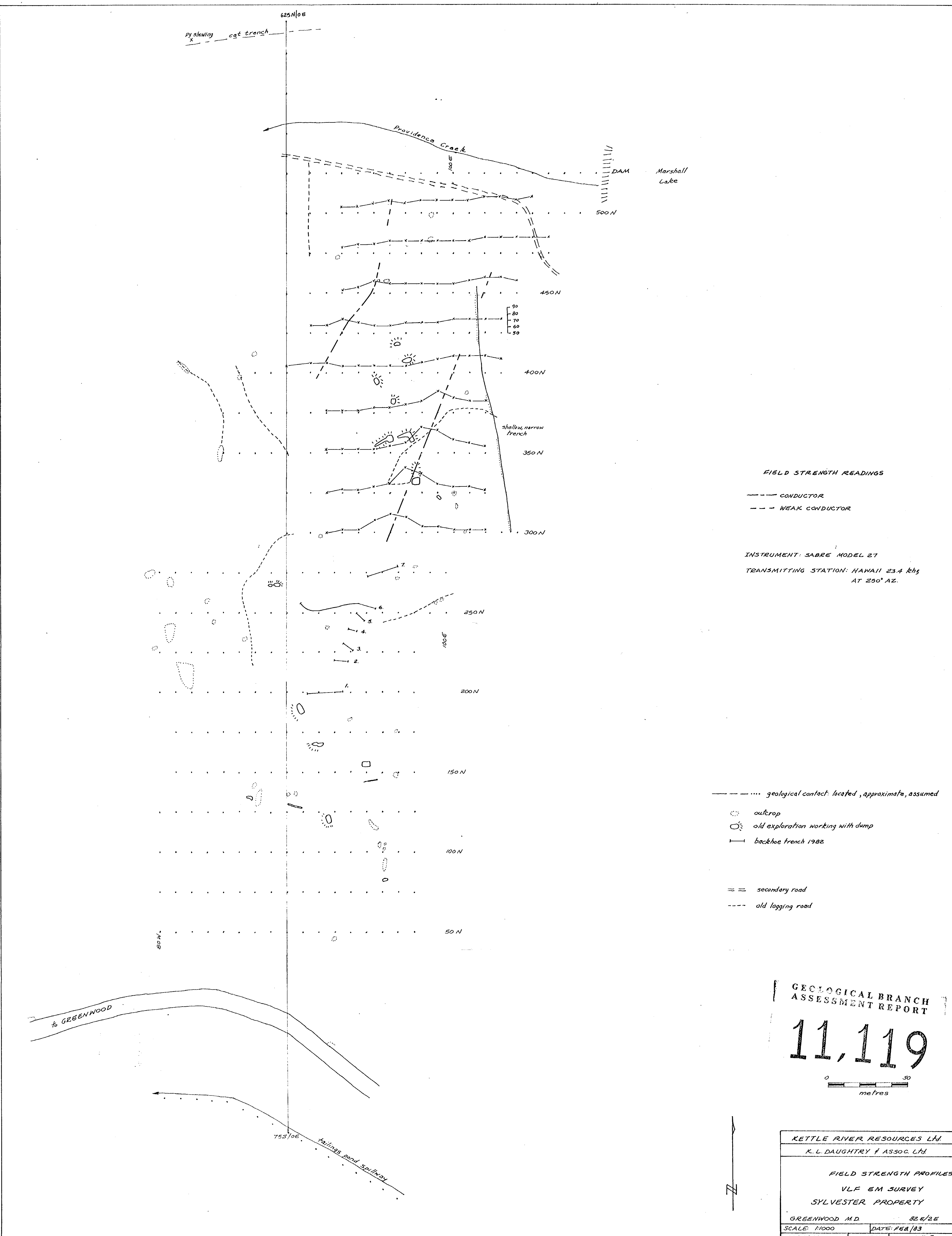
GEOLOGICAL BRANCH
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0 50
metres



KETTLE RIVER RESOURCES LTD.	
K. L. DAUGHTRY & ASSOC. LTD.	
TILT ANGLE PROFILES NW CONDUCTOR VLF EM SURVEY SYLVESTER PROPERTY	
GREENWOOD M.D.	82.5/2E
SCALE: 1:1000	DATE: F5B/83
DWN BY: WRG	PROJ. NO: F5B FIGURE NO: 4B



FIELD STRENGTH READINGS

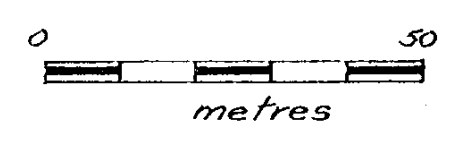
- CONDUCTOR
- - - WEAK CONDUCTOR

INSTRUMENT: SABRE MODEL 27
 TRANSMITTING STATION: HAWAII 23.4 khs
 AT 250° AZ.

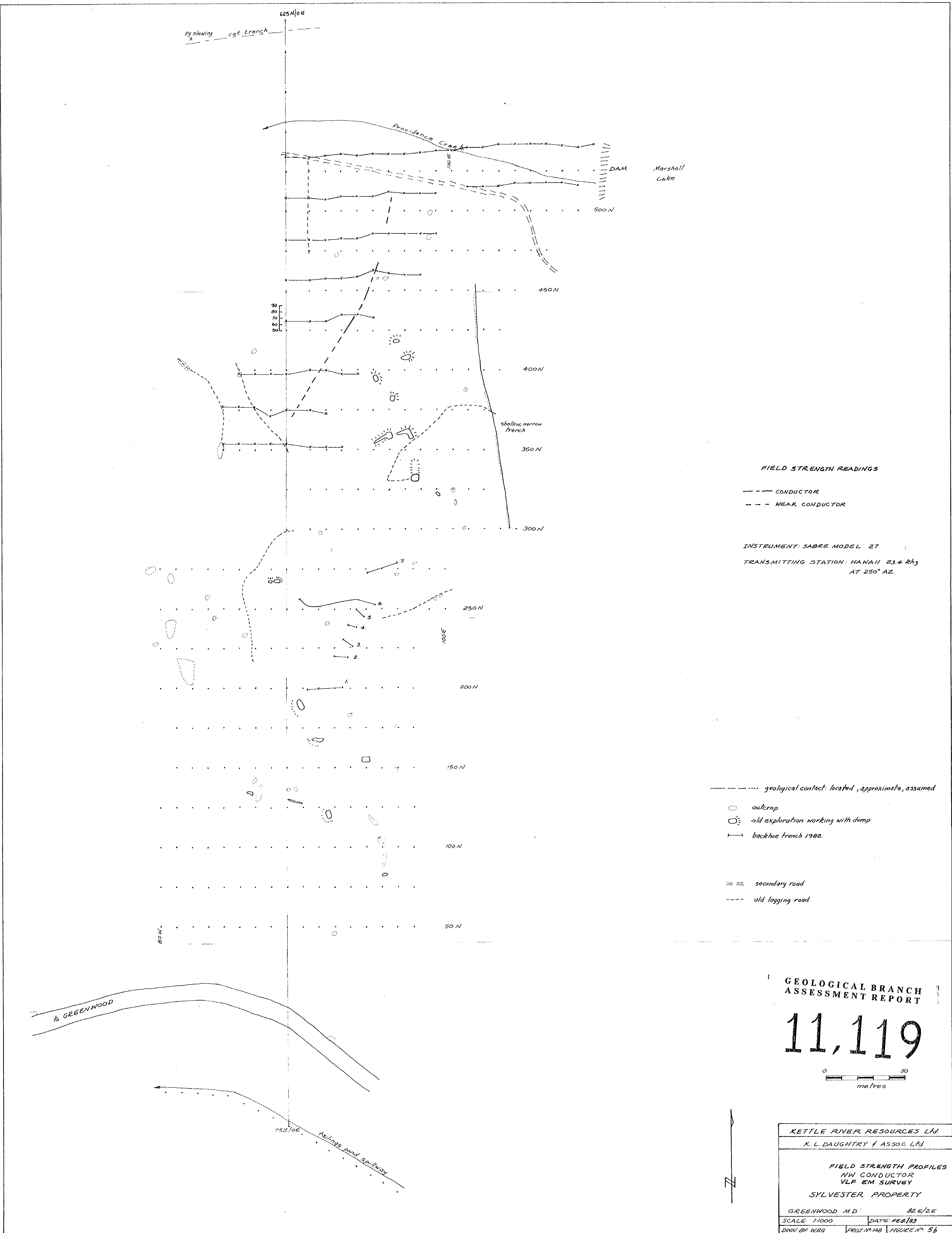
- geological contact: located, approximate, assumed
- outcrop
- old exploration working with dump
- backhoe trench 1982
- == secondary road
- - - old logging road

GEOLOGICAL BRANCH
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FIELD STRENGTH PROFILES	
VLF EM SURVEY	
SYLVESTER PROPERTY	
GREENWOOD M.D.	82/25
SCALE: 1/1000	DATE: FEB/83
DWN. BY: WRG	PROJ. # 48 FIGURE # 5a



FIELD STRENGTH READINGS

- CONDUCTOR
- - - WEAK CONDUCTOR

INSTRUMENT: SABRE MODEL 27
 TRANSMITTING STATION: HAWAII 23.4 kHz
 AT 250° AZ.

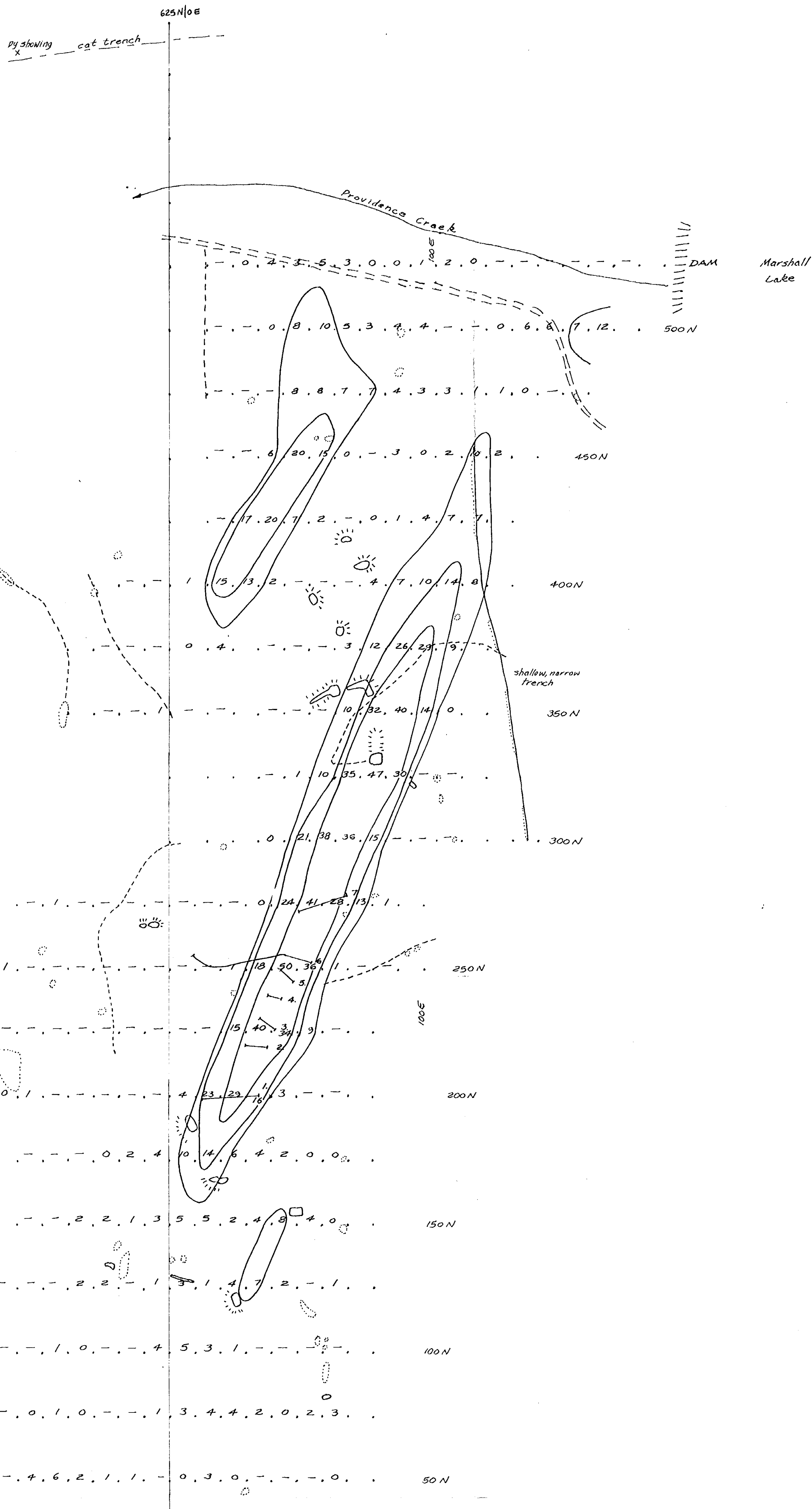
- geological contact: located, approximate, assumed
- outcrop
- ☉ old exploration working with dump
- └─ backhoe trench 1982
- == secondary road
- - - old logging road

**GEOLOGICAL BRANCH
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FIELD STRENGTH PROFILES NW CONDUCTOR VLF EM SURVEY SYLVESTER PROPERTY	
GREENWOOD M.D.	82/E/2E
SCALE: 1:1000	DATE: FEB/83
DRAWN BY: WRG	PROJECT NO: 11119
	FIGURE NO: 56



FRASER VALUES
 - FILTERED TILT ANGLE READINGS
 - CONTOURED AT 7, 14, 28
 - NEGATIVE NUMBER

INSTRUMENT: SABRE MODEL 27
 TRANSMITTING STATION: HAWAII 23.4 kHz
 AT 250° AZ.

- geological contact: located, approximate, assumed
- outcrop
- old exploration working with dump
- └─ backhoe trench 1982
- == secondary road
- old logging road

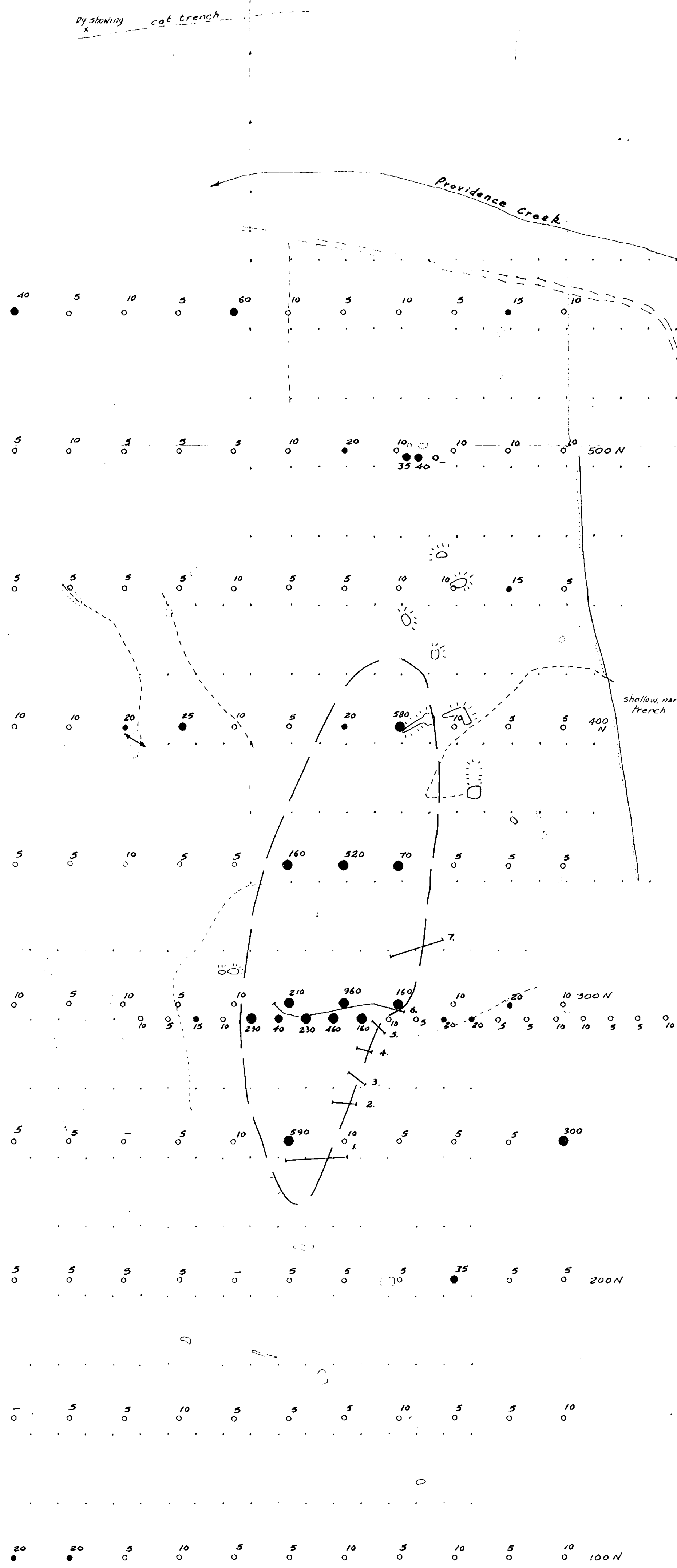
**GEOLOGICAL BRANCH
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0 50
metres

KETTLE RIVER RESOURCES LTD.	
K. L. DAUGHTRY & ASSOC. LTD.	
FRASER VALUES VLF EM SURVEY SYLVESTER PROPERTY	
GREENWOOD M.D.	82.8/2E
SCALE 1:1000	DATE: FEB/83
DRAWN BY: WRG	PROJ. NO. 48 FIGURE NO. 6





VALUES IN PPB GOLD

- non anomalous
- weakly anomalous 15-20 ppb
- moderately anomalous 25-50 ppb
- strongly anomalous 55+ ppb

main anomalous area outlined

- less than 5 ppb

- outcrop
- old exploration working with jump
- backhoe trench, 1982
- glacial striations

== secondary road

--- old logging road

N.B. geochem grid different from VLF grid



GEOLOGICAL BRANCH
ASSESSMENT REPORT

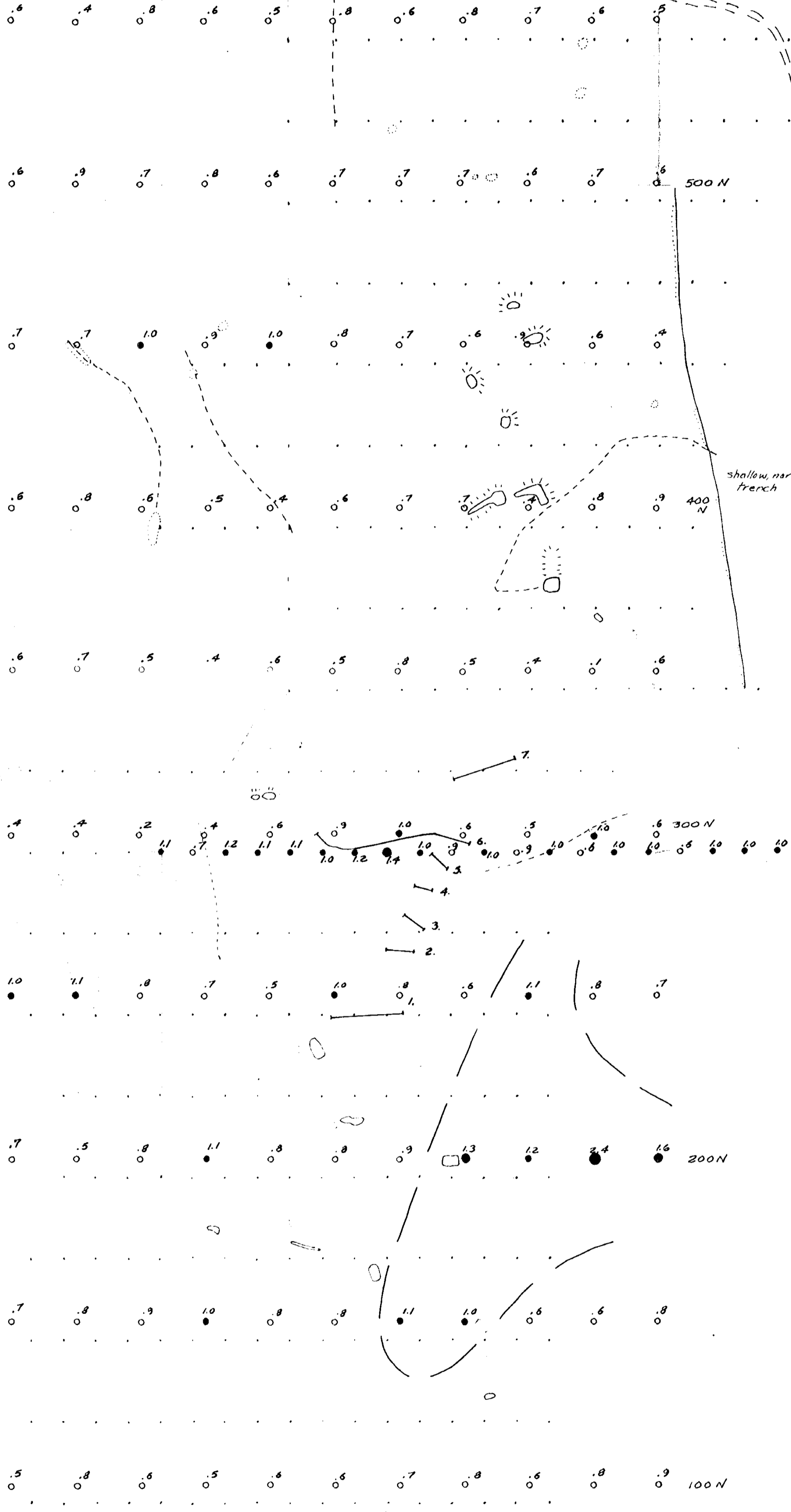
11,119
metres

KETTLE RIVER RESOURCES LTD	
K. L. DAUGHTRY & ASSOC LTD	
GOLD IN SOILS	
SYLVESTER PROPERTY	
GREENWOOD M.D.	82/25
SCALE 1:1000	DATE FEBRUARY/83
DRAWN BY WRG	PROJ. NO. 48 FIGURE NO. 7

Showing cat trench

Providence Creek

DAM Marshall Lake



VALUES IN PPM SILVER

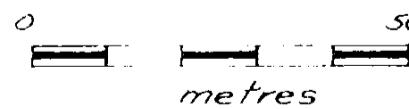
- non anomalous
- weakly anomalous 1.0 - 1.2 ppm
- moderately anomalous 1.3 - 1.6 ppm
- strongly anomalous 1.7 + ppm

main anomalous area outlined

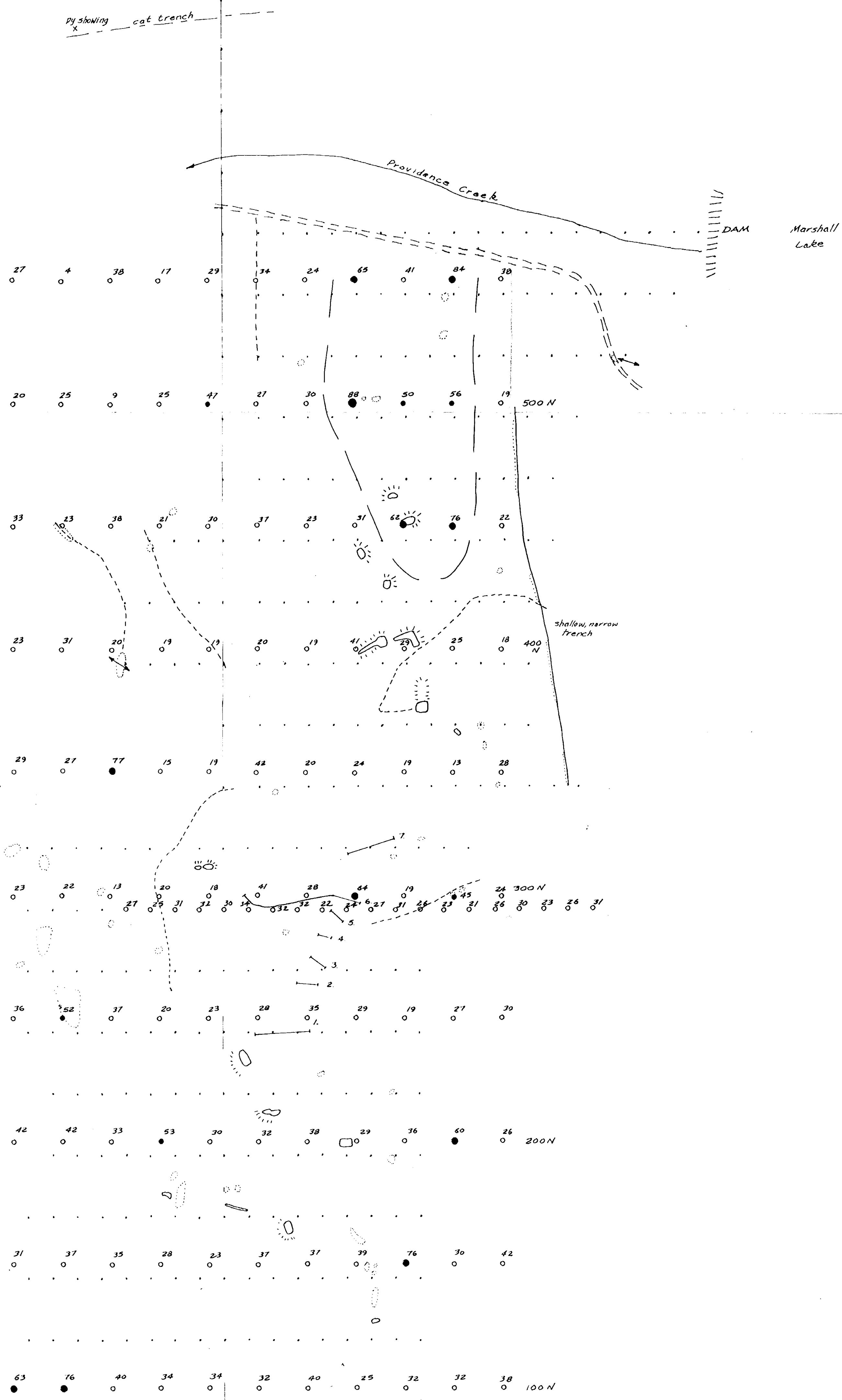
- outcrop
- old exploration working with dump
- backhoe trench, 1982
- ← glacial striations
- == secondary road
- old logging road

GEOLOGICAL BRANCH ASSESSMENT REPORT

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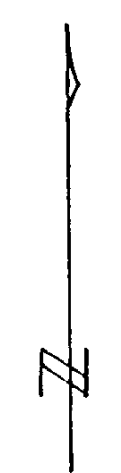
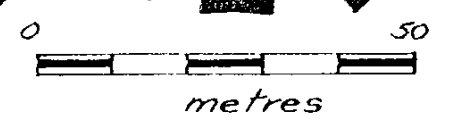


KETTLE RIVER RESOURCES LTD	
K. L. DAUGHTRY & ASSOC. LTD	
SILVER IN SOILS	
SYLVESTER PROPERTY	
GREENWOOD M.D.	82/6/25
SCALE 1/1000	DATE FEBRUARY/83
DRAWN BY M.R.G.	PROJ. NO. 48
	FIGURE NO. 8



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KETTLE RIVER RESOURCES LTD.	
K. L. DAUGHTRY & ASSOC. LTD.	
COPPER IN SOILS	
SYLVESTER PROPERTY	
GREENWOOD M.D.	82.6/25
SCALE 1:1000	DATE FEBRUARY/83
DRAWN BY WRG	PROJ. NO. 48 FIGURE NO. 9

