ONTARIO PROSPECTORS ASSISTANCE PROGRAM

1999 FINAL SUBMISSION

SLATE FALLS PROJECT

North Bamaji Lake area, Patricia Mining Division

District of Kenora, Ontario

RECEIVED
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GEOSCIENCE ASSESSMENT OFFICE

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ABSTRACT:

The Slate Falls Property is located in the prolific Uchi Subprovince between the Red Lake and Pickle Lake Gold Camps which produced more than 20.8 million ounces of gold at a grade of 12.1 g Au/t.

The property is underlain by archean rocks of the Meen-Dempster Greenstone Belt. The property covers stratigraphy that is similar to and contemporaneous with the stratigraphy which hosts the Golden Patricia Gold Mine (1.2 million tonnes @ 16.47 g Au/t) 30 kilometres to the northeast.

The most significant results to date have been returned from the Trail and Sanderson Occurrences. Three chip samples taken across the Trail Zone, over a 35 metre strike length returned a weighted average of 20.6 g Au/t over 1.7 metres. Five chip samples taken across the Sanderson Zone, over a 200 metre strike length, returned a weighted average of 29.5 g Au/t over 1.68 metres. Backhoe trenching (this report) along the strike extension of the Sanderson Zone uncovered vein-shear systems up to 5 metres in width which returned an average of 22.77 g Au/t and 71.15g Ag/t from 13 grab samples and extended the Sanderson Zone to over 500 metres in strike length.

Petrographic work (this report) indicates the association of tellurides with the precious metals. The Au-Ag-Te association is characteristic of numerous lode gold deposits, including the Kirkland Lake Gold Camp which produced more than 24.2 million ounces of gold at a grade of 14.0 g Au/t. This recognition is of particular interest when the geological environments of Kirkland Lake are compared with this area. The Ontario Geological Survey has suggested that the gold deposits of the Kirkland Lake area are associated with regional breaks within Timiskaming-age (2690Ma) sedimentary units and alkaline felsic intrusions occupying fault controlled basins. Located between the

Golden Patricia Mine and the Slate Falls Property is a Timiskaming-age sedimentary basin intruded by an alkaline felsic stock (the Obaskaka Lake Pluton). Regional structures crossing the Slate Falls Property may be regional breaks similar to the Timiskaming-age Larder Lake-Cadillac Break of the Kirkland Lake area.

Despite the occurrence of bonanza grade gold and silver and the highly prospective nature of the area, it has received little previous systematic exploration. This may be due in part to two factors: 1) extensive but shallow overburden cover that limits outcrop exposure and 2) the area's traditional remoteness. These factors are less of a concern for exploration today because of the demonstrated effectiveness of mechanical stripping, geophysics and geochemistry on the property. As well, access and infrastructure are constantly being improved. Hydro-electricity, an airport and winter road are located within a few kilometres of the property and plans to extend an all weather road north to the property for timber harvest purposes are being finalized.

Ongoing exploration successes have continued to advance the Slate Falls Property beyond the grass roots stage. Results to date clearly demonstrate that these extensive shear-vein systems contain high grade gold and silver mineralization and that the Slate Falls Deformation Zone has excellent potential for hosting viable ore deposits.

A two phase exploration program is recommended to further evaluate the known mineralized structures and investigate priority targets.

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INTRODUCTION:

The Slate Falls Property is located 120 km north of Sioux Lookout Ontario in the Patricia Mining Division.

The property is underlain by supracustal rocks of the Meen-Dempster Greenstone Belt part of the Uchi Subprovince of the Superior Structural Province of the Canadian Shield.

The Uchi Subprovince has had a long history of producing economic mineral deposits including the Red Lake (18.6 million oz Au) and Pickle Lake Gold Camps (2.3 million oz Au). The property covers stratigraphy that is similar to and contemporaneous with the stratigraphy which hosts the Golden Patricia Gold Mine (1.2 million tonnes @ 16.47 g Au/t) 30 kilometres to the northeast.

The Slate Falls Property hosts numerous occurrences that have produced spectacular gold assays (up to 781 g Au/t) and silver assays (up to 1088 g Ag/t) commonly associated with polymetallic shear-vein systems .

An extensive regional gold bearing system, The Slate Falls Deformation Zone, is proposed as a structural control of gold mineralization.

The current study was undertaken from April 25, 1999 to January 8, 2000 and received partial funding from the Ontario Prospector's Assistance Program.

The current study was designed to: 1) demonstrate the continuity of the known mineralized structures along strike; 2) examine the structural elements related to the mineralized structures; 3) document the precious metal and base metal associations and distributions within the mineralized structures and, 4) investigate one of two geophysically inferred regional breaks.

The study included prospecting and mapping along cut lines, detailed mapping of existing trenches, mechanical stripping of the strike extensions of the Trail, Sanderson and L15 showings and a petrographic and microprobe study of a suite of samples from the polymetallic shear-vein systems.

Results from this study clearly demonstrate that these extensive shear-vein systems contain bonanza grade gold and silver mineralization and that the Slate Falls Deformation Zone has excellent potential for hosting viable ore deposits.

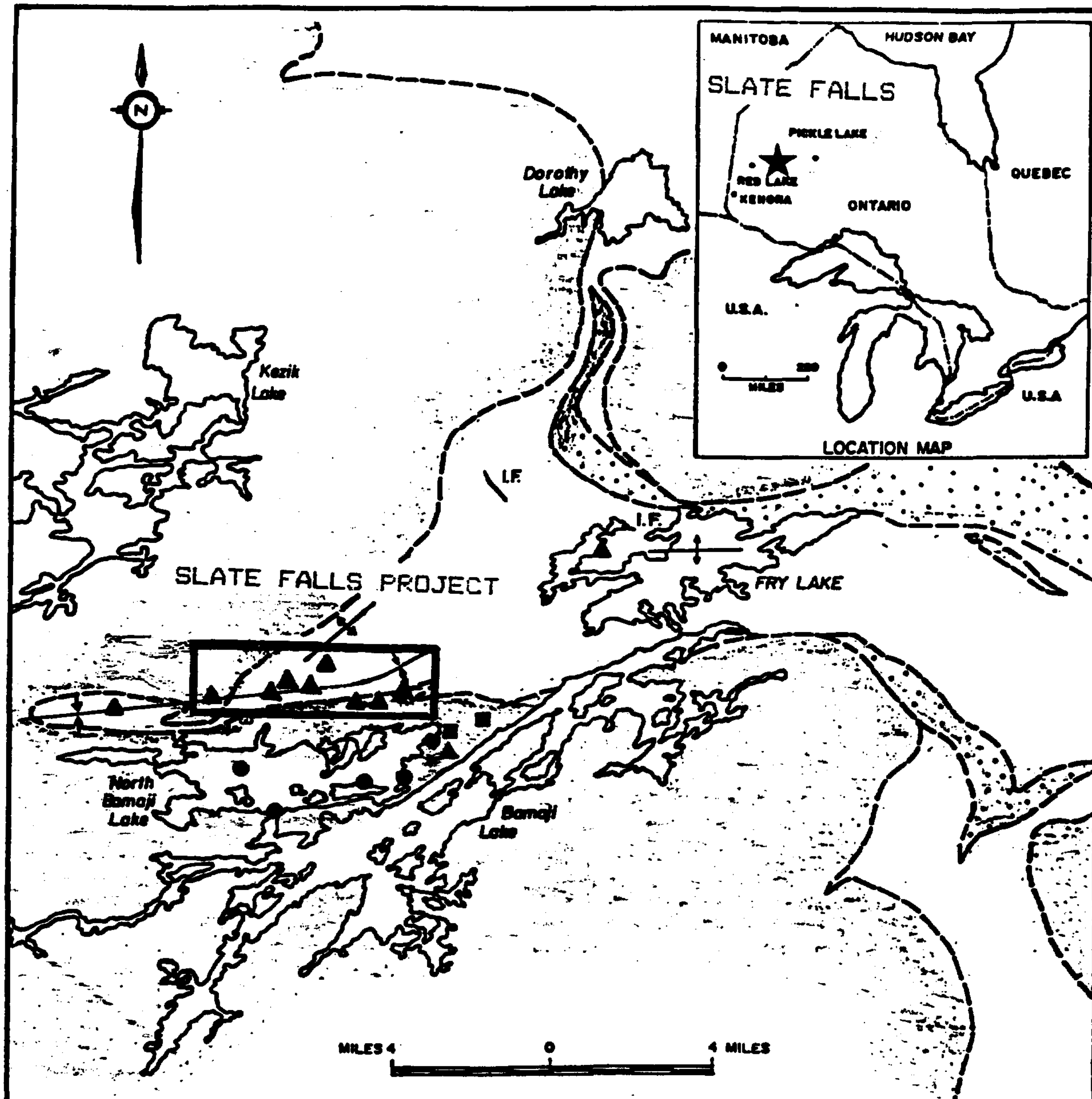
LOCATION:

The property is located proximal to the community of Slate Falls, which is about 120 km north of Sioux Lookout, 90 km west of Pickle Lake and 160 km east of Red Lake, Ontario, in the Patricia Mining Division (Figure 1).

Claim Map Sheets: G-2249 Wesleyan Lake in the Patricia Mining Division (Figure 2).
NTS: 52 O 3, 52 O 4
Latitude: 51 12'00"
Longitude: 91 30'00"

ACCESS:

Access is via float or ski-equipped plane charters from Sioux Lookout, Red Lake or Pickle Lake. An airport, capable of supporting Hurcules aircraft, is located 3 kilometres south of the property. Frequent air traffic from Sioux Lookout services the community of Slate Falls. Water access is possible throughout the lake systems of Wesleyan, Fry, Bamaji and North Bamaji Lakes, which connect with the lakes of the Cat River drainage system. A major hydro-electric transmission corridor, extending from Ear Falls to Pickle Lake, crosses just south of the property. During the winter Slate Falls is accessible by winter road from Sioux Lookout.



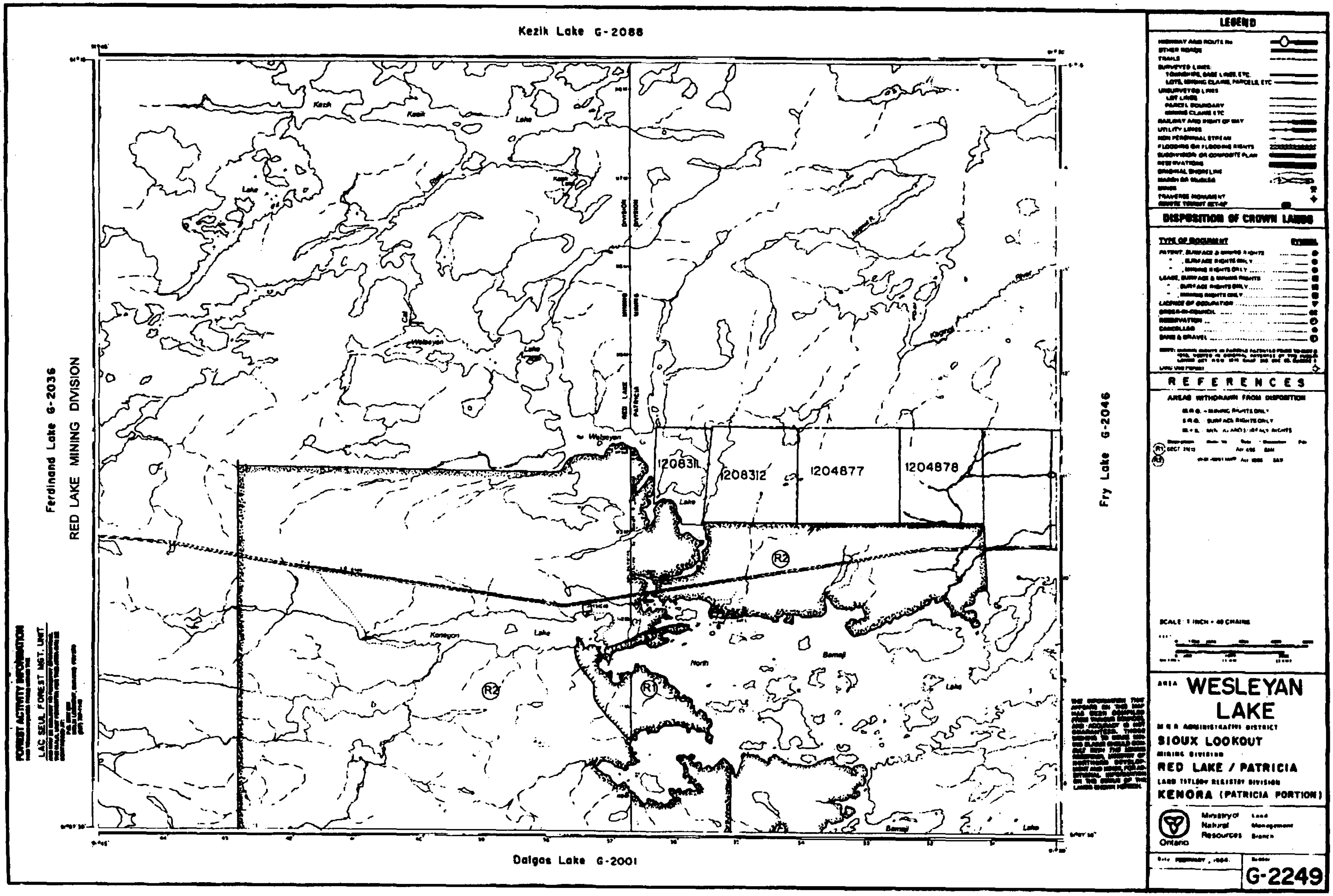
EXPLANATION

- I.F. IRON FORMATION
- VOLCANICS
- SEDIMENTS
- GRANITE
- ▲ GOLD, SILVER
- ● MOLYBDENITE, COPPER
- ■ URANIUM
- SYNCLINE
- ANTICLINE

LOCATION MAP

REGIONAL GEOLOGY, MINERAL SHOWINGS
AND PROPERTY LOCATION
FROM O.D.M. MAP 2218

FIGURE 1


Kezik Lake G-2088
Ferdinand Lake G-2036
RED LAKE MINING DIVISION
Fry Lake G-2046
Dalgas Lake G-2001
Kezik Lake
Wesleyan
Karegon Lake
North Bamaji Lake
1208311
1208312
1204877
1204878
R1
R2
LEGEND
DISPOSITION OF CROWN LANDS
REFERENCES
WESLEYAN LAKE
SIOUX LOOKOUT
RED LAKE / PATRICIA
KENORA (PATRICIA PORTION)
Ministry of Natural Resources
Ontario
G-2249
FOREST ACTIVITY INFORMATION
LAC SEUL FOREST MGT. UNIT

All weather logging roads extend to within 10 kilometres of Bamaji Lake and within 30 kilometres of the property. Plans to extend the all weather road north to the property for timber harvest purposes are being finalized.

PROPERTY:

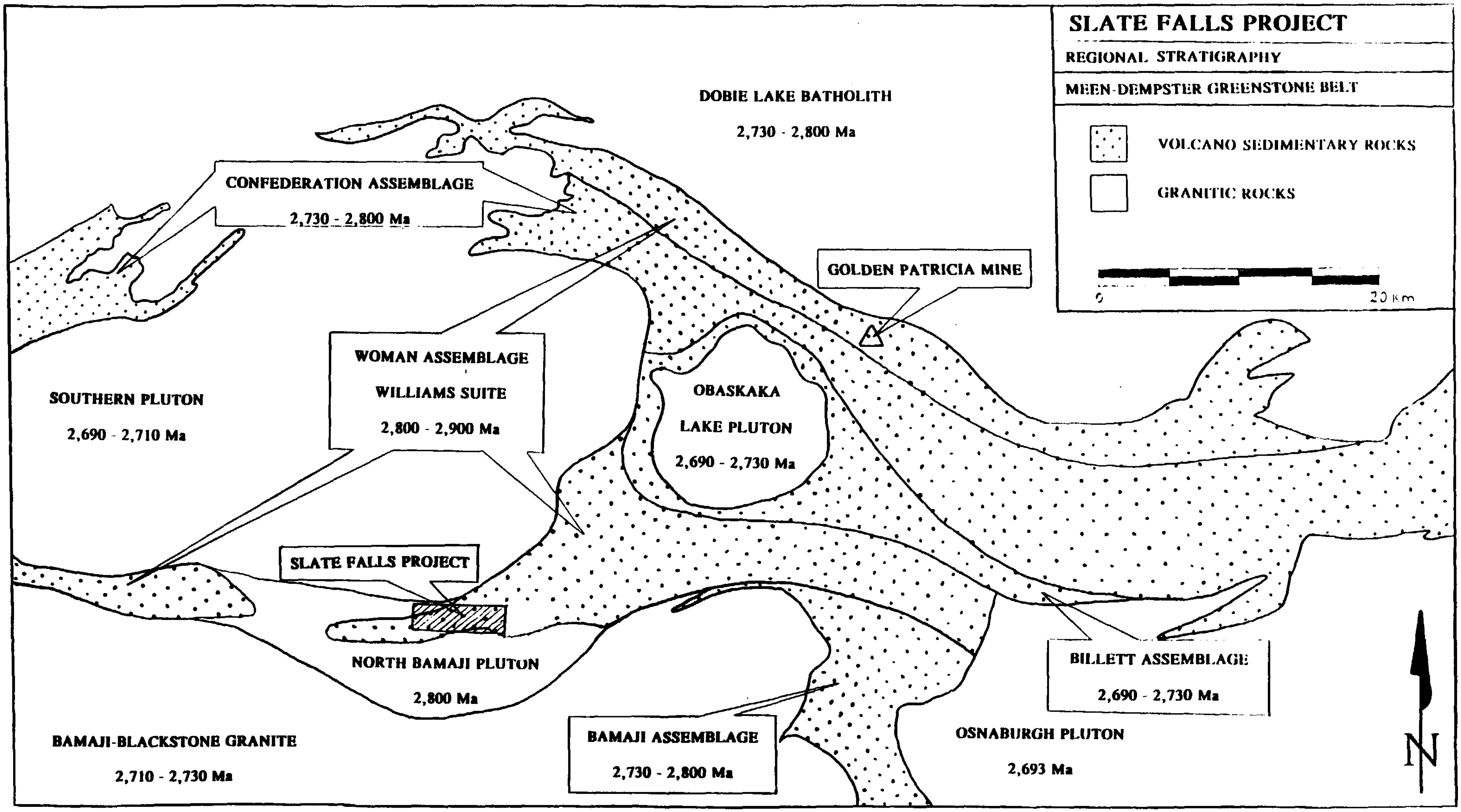
The Slate Falls Property consists of 4 contiguous unpatented mining claims which include 56 claim units and cover more than 2240 acres. The claims are recorded in the Patricia Mining Division as follows: 1208311, 1208312, 1204877 and 1204878.

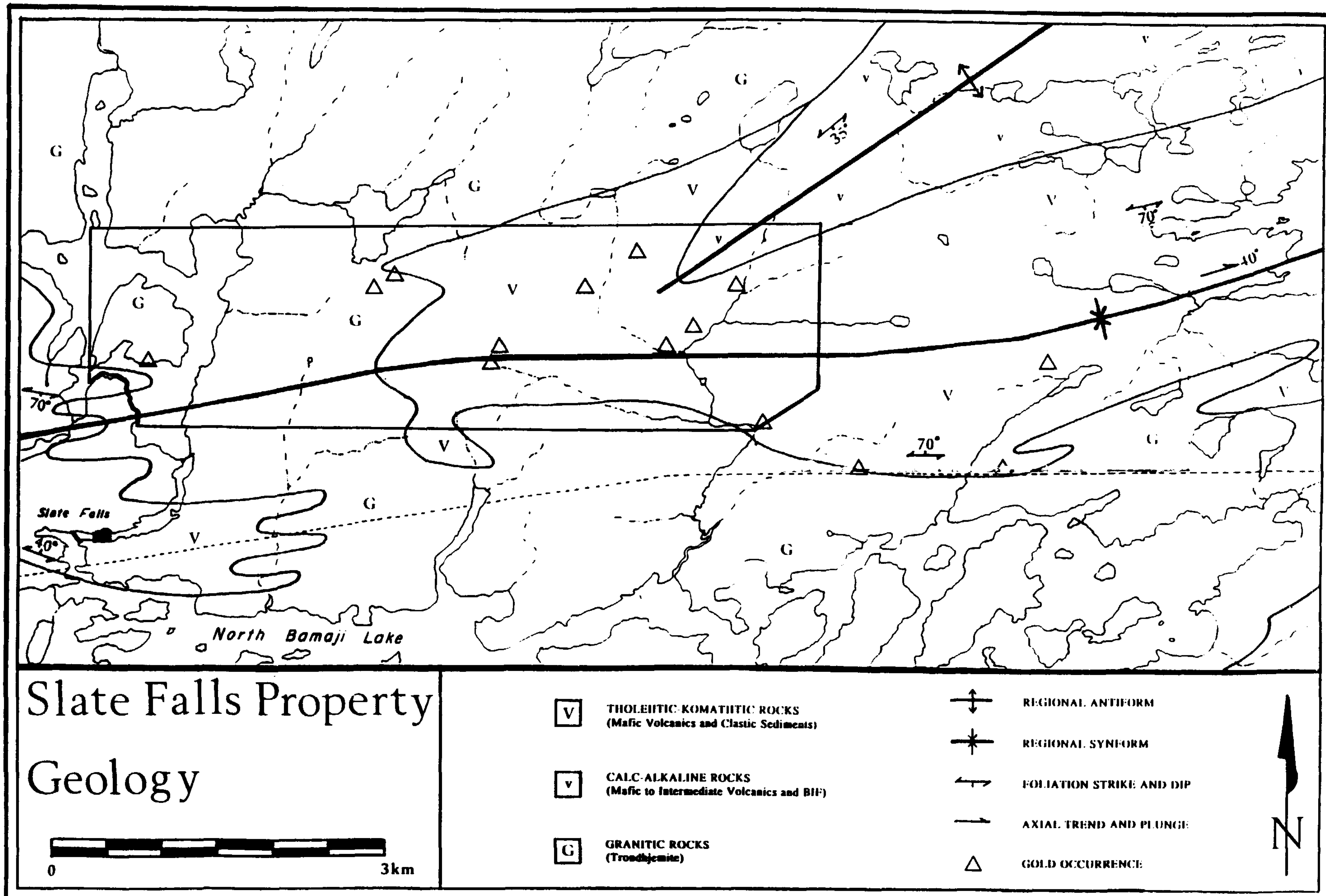
GEOLOGY:

The project area is underlain by archean rocks of the Williams Suite in the Woman Assemblage. These rocks comprise the south-western part of the Meen-Dempster greenstone belt in the Uchi Subprovince of the Superior Structural Province.

Figure 3 illustrates the stratigraphic and chronologic relationships of the Meen-Dempster belt and is based upon data from Stott et al 1991. Stott suggests that the Woman Assemblage represents the most primitive crustal rocks of the belt and that they are indicative of oceanic volcanism with local subaqueous to subaerial arc sequences.

The supracrustal rocks in this area are dominated by mafic volcanics with minor amounts of more felsic volcanics and clastic and chemical sediments. Wallace (1985) subdivides the volcanics on the basis of chemistry into two rock groups. A group of tholeiitic to komatiitic rocks underlays most of the property and is comprised predominantly of mafic volcanic units, clastic sediments and oxide and sulphide iron formations (Figure 4). A second group of calc-alkalic rocks, characterized by mafic and intermediate units and extensive banded iron formations, occurs north of the property.


SLATE FALLS PROJECT
REGIONAL STRATIGRAPHY
MEEN-DEMPSTER GREENSTONE BELT
VOLCANO SEDIMENTARY ROCKS
GRANITIC ROCKS
0
20 km
DOBIE LAKE BATHOLITH
2,730 - 2,800 Ma
CONFEDERATION ASSEMBLAGE
2,730 - 2,800 Ma
GOLDEN PATRICIA MINE
WOMAN ASSEMBLAGE
WILLIAMS SUITE
2,800 - 2,900 Ma
SOUTHERN PLUTON
2,690 - 2,710 Ma
OBASKAKA
LAKE PLUTON
2,690 - 2,730 Ma
SLATE FALLS PROJECT
NORTH BAMAJI PLUTON
2,800 Ma
BILLETT ASSEMBLAGE
2,690 - 2,730 Ma
BAMAJI-BLACKSTONE GRANITE
2,710 - 2,730 Ma
BAMAJI ASSEMBLAGE
2,730 - 2,800 Ma
OSNABURGH PLUTON
2,693 Ma
N



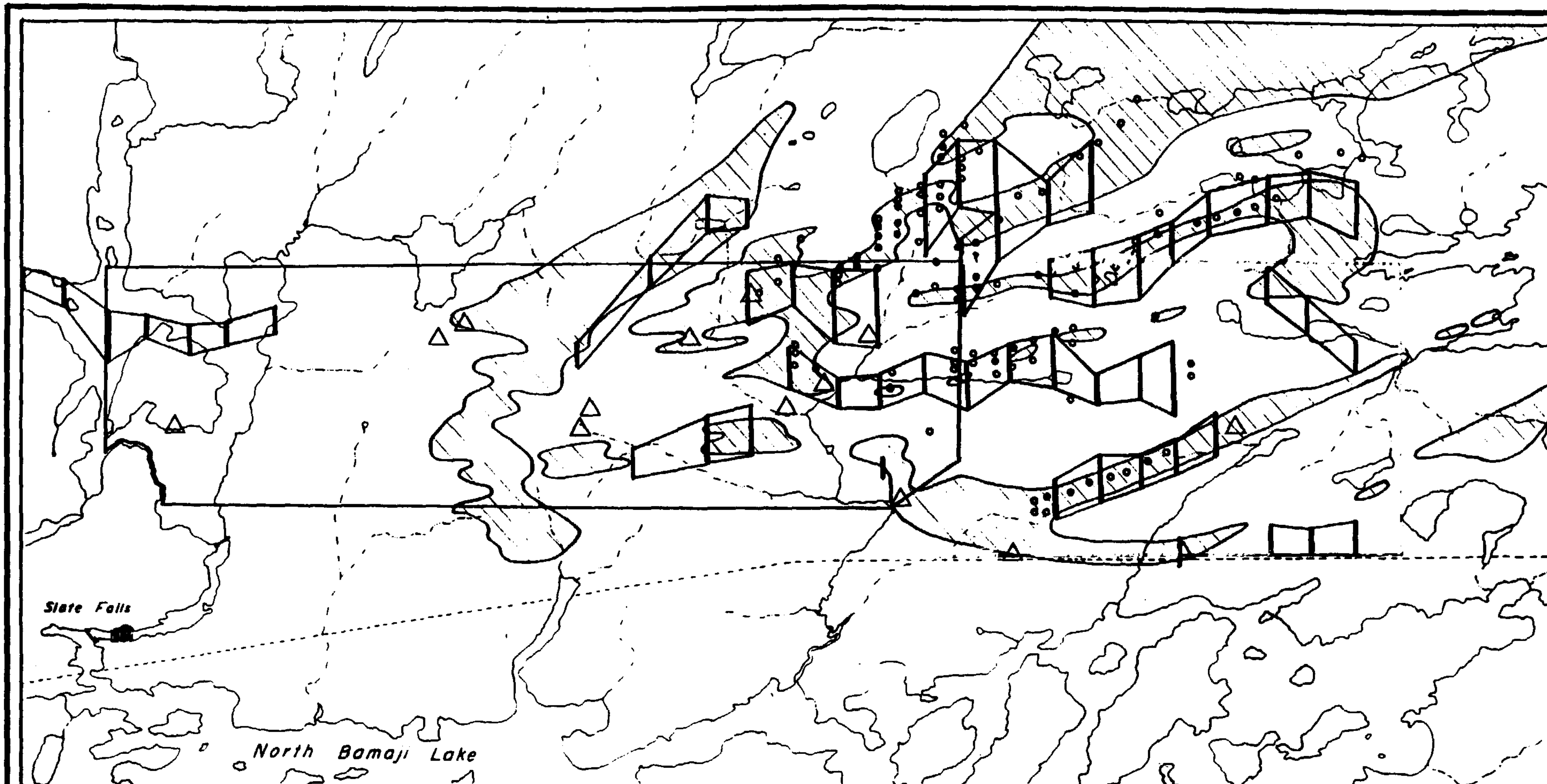
North Bamaji Lake
Slate Falls
Slate Falls Property Geology
0
3km
THOLEIITIC-KOMATIITIC ROCKS (Mafic Volcanics and Clastic Sediments)
CALC-ALKALINE ROCKS (Mafic to Intermediate Volcanics and BIF)
GRANITIC ROCKS (Trondhjemite)
REGIONAL ANTIFORM
REGIONAL SYNFORM
FOLIATION STRIKE AND DIP
AXIAL TREND AND PLUNGE
GOLD OCCURRENCE
N

A large body of trondhjemite, the North Bamaji Pluton, intrudes the greenstone in the Slate Falls area and is considered part of the supracrustal package. A broad transition zone occurs at the contact of the intrusion and is typified by an abundance of volcanic xenoliths and roof pendants within the pluton and numerous dykes within the volcanic rocks. The supracrustal rocks are flanked to the north and south by younger granitic complexes.

The supracrustal rocks display a regional foliation which generally strikes east-west with variable dips and is commonly observed to parallel lithological contacts. Two regional fold structures have been identified by Wallace (1985). The fold axial trace of the Rockmere-Wesleyan Synform strikes east-west across the length of the property with a gentle to moderate eastwardly plunging fold axis. The fold axis of an antiformal structure strikes northeast from the central-northern part of the property in the area of the Sanderson Showing. Magnetic patterns infer that more complex folding may be common within the stratigraphy (Figure 5).

Discrete zones of shearing occur throughout all rock types and generally strike east-west with subvertical dips. Zones of brittle fracturing tend to strike north-south to northeast-southwest across stratigraphy.

Regional metamorphic grade varies from lower greenschist facies in the interior of the greenstone belt to middle amphibolite facies adjacent to the granitic complexes.



Slate Falls Property

Geophysics

0 — 3km

- HIGH MAGNETIC ANOMALY
- AIRBORNE ELECTROMAGNETIC ANOMALY
- INDUCED POLARIZATION ANOMALY
- GOLD OCCURRENCE

N

ECONOMIC GEOLOGY:

Precious Metal Mineralization

The Uchi Subprovince hosts numerous important current and past producers of precious metals, which includes the Red Lake (47,421,690 tonnes produced @ 12.2 g Au/t) and Pickle Lake (6,071,443 tonnes produced @ 11.7 g Au/t) gold camps. The majority of these occurrences exhibit several common elements:

1) They are located within the oldest stratigraphic units of the Uchi subprovince (2,800 - 3,000 Ma).

2) The gold mineralization is found in shear zone systems or iron formations with quartz veining and sulphide mineralization.

3) Tholiitic to komatiitic volcanics associated with granitic intrusive rocks host the mineralized structures.

These elements are all found on the Slate Falls Property.

The Slate Falls Property hosts many significant precious metal occurrences which have produced spectacular gold and silver values (Figure 6).

The precious metals are associated with shear zones that commonly host quartz veining and sulphide mineralization. These shear zones are typically biotite, chlorite and muscovite-rich schists and may exhibit silica, carbonate, talc and epidote alteration. The shearing typically strikes east-west with subvertical dips, attains widths up to 6 metres and occurs in all rock types. Base metal assemblages including: Cu, Zn, Sb, and Pb are commonly found with the precious metals (Table 1).

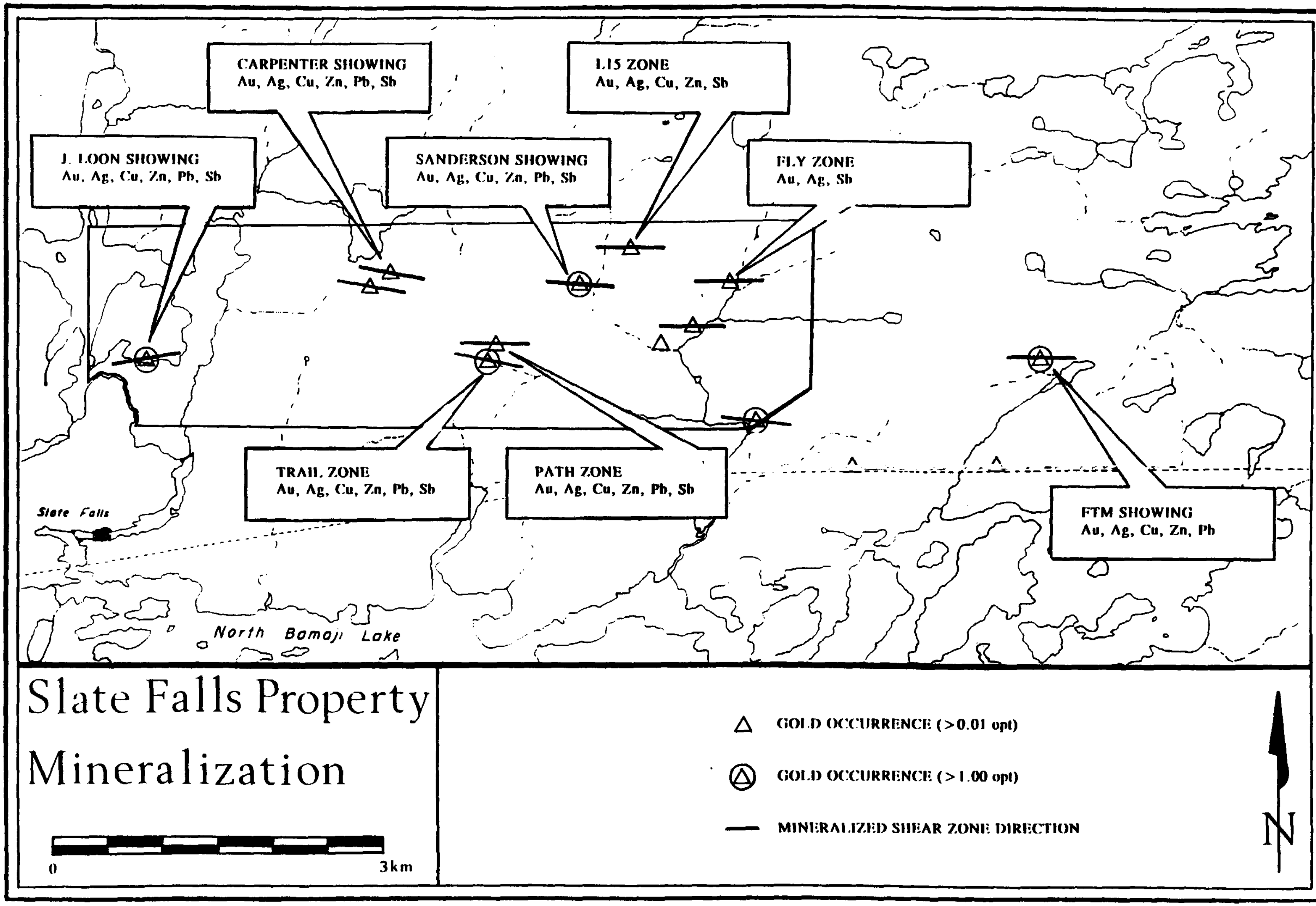

CARPENTER SHOWING
Au, Ag, Cu, Zn, Pb, Sb
L15 ZONE
Au, Ag, Cu, Zn, Sb
J. LOON SHOWING
Au, Ag, Cu, Zn, Pb, Sb
SANDERSON SHOWING
Au, Ag, Cu, Zn, Pb, Sb
FLY ZONE
Au, Ag, Sb
TRAIL ZONE
Au, Ag, Cu, Zn, Pb, Sb
PATH ZONE
Au, Ag, Cu, Zn, Pb, Sb
FTM SHOWING
Au, Ag, Cu, Zn, Pb
Slate Falls
North Bamaji Lake
Slate Falls Property
Mineralization
0
3km
GOLD OCCURRENCE (>0.01 opt)
GOLD OCCURRENCE (>1.00 opt)
MINERALIZED SHEAR ZONE DIRECTION
N

TABLE 1: LIST OF OCCURRENCES

(Au > 0.01opt, Ag > 0.10opt, Cu, Zn, Pb and Sb > 0.10%)

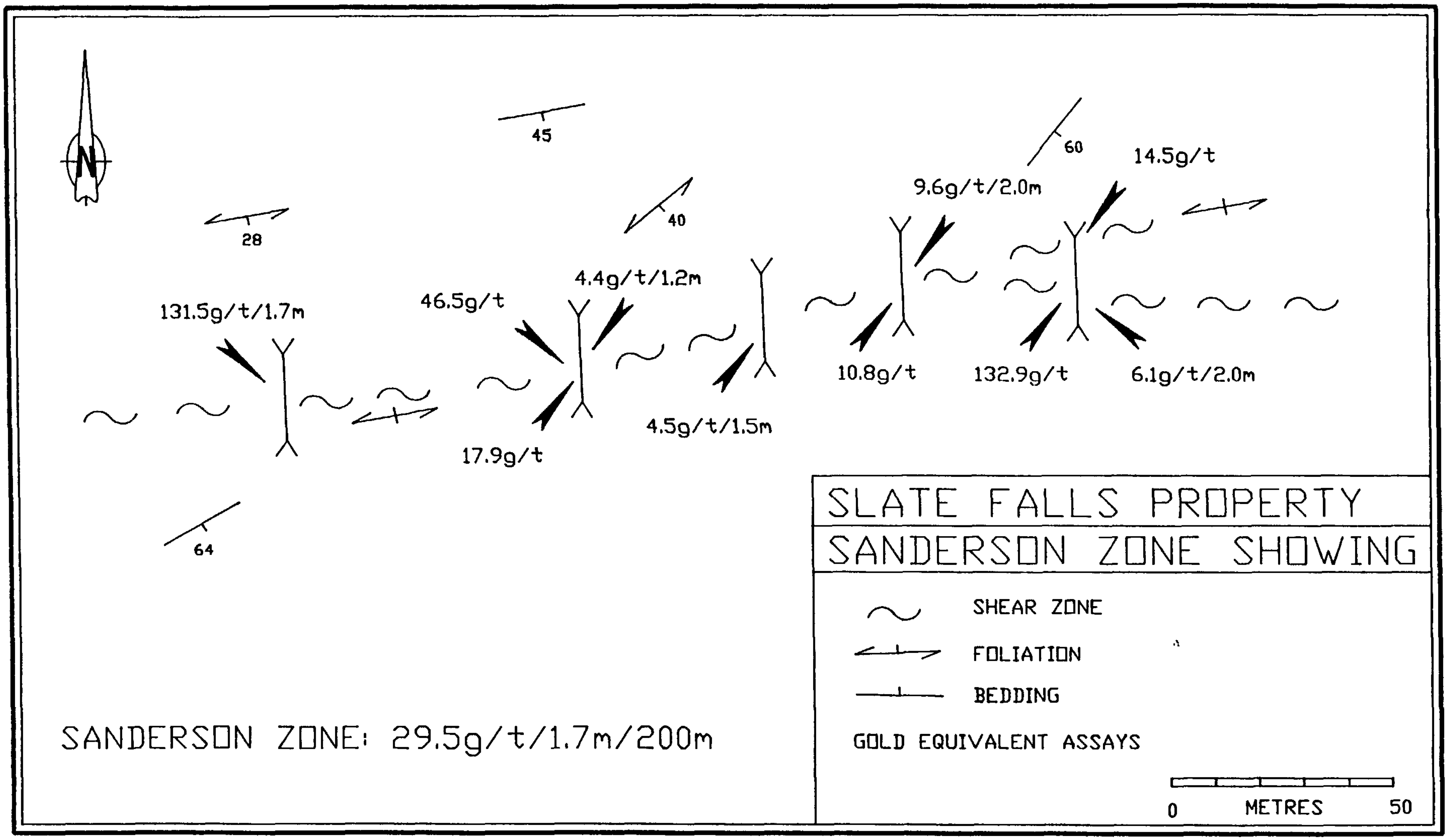
ANOMALOUS METALS	NAME/SAMPLE #	CLAIM #
Au, Ag, Cu, Zn, Sb, Pb	Sanderson	1204877-78
Au, Ag, Cu, Zn, Sb	J. Loon	1208311
Au, Ag, Cu, Zn, Sb	L 1	1208312
Au, Ag, Cu, Zn, Pb	Trail	1204877
Au, Ag, Cu, Zn, Pb	Path	1204877
Au, Ag, Cu, Zn, Pb	BAD-42	1204878
Au, Ag, Cu, Zn	L 15	1204878
Au, Ag, Cu, Zn	Carpenter	1204877
Au, Ag, Cu, Zn	Corner	1204878
Au, Ag	Fly	1204878
Au	Rayko-02	1204878
Ag,Zn	BAD-15,27	1204877-78
Ag	BAD-16a	1204877
Ag	Kahuna	1204878

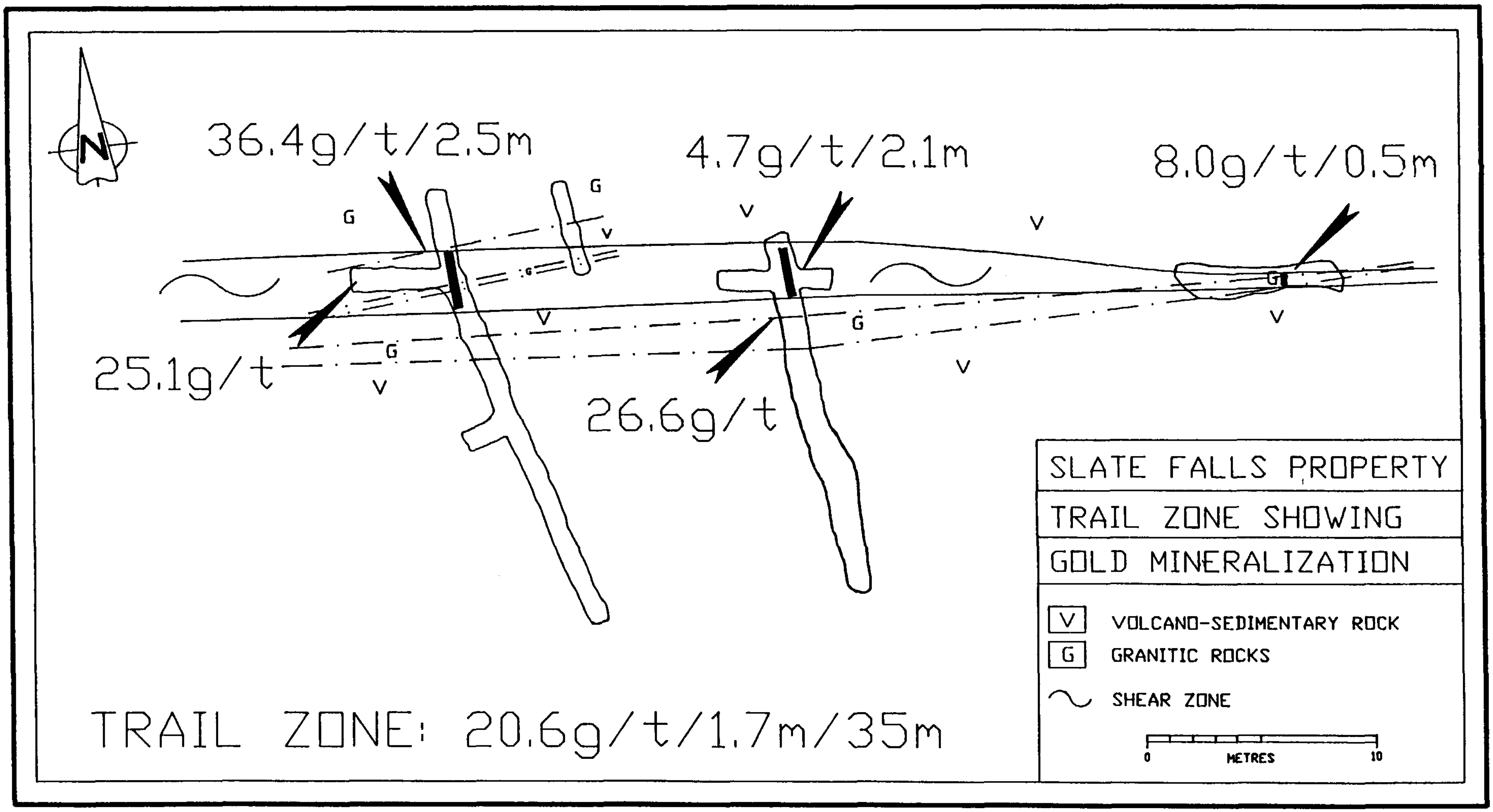
Much of the focus of previous sampling was placed on the polymetallic quartz veins with little regard for the hosting shear zones.

Results from the current program demonstrate that these veins occur in multiple parallel zones separated by only metres or tens of metres.

The Golden Patricia Mine produced 1.2 million tonnes @ 16.47 g Au/t from a single similar narrow high grade quartz vein.

The shear zones that host the high grade veins on the Slate Falls Property, despite receiving little attention, have returned assays up to 781 g Au/t in drilling and chip samples of sheared volcanic wall rock (excluding quartz vein) returned 4.0 g Au/t over 3.0 metres from the Trail Zone and 3.1 g Au/t over 2.5 metres from the Fly Zone.


N
45
60
14.5g/t
9.6g/t/2.0m
28
40
131.5g/t/1.7m
46.5g/t
4.4g/t/1.2m
10.8g/t
132.9g/t
6.1g/t/2.0m
17.9g/t
4.5g/t/1.5m
64
SLATE FALLS PROPERTY
SANDERSON ZONE SHOWING
SHEAR ZONE
FOLIATION
BEDDING
GOLD EQUIVALENT ASSAYS
0 METRES 50
SANDERSON ZONE: 29.5g/t/1.7m/200m


36.4g/t/2.5m
4.7g/t/2.1m
8.0g/t/0.5m
25.1g/t
26.6g/t
G
V
SLATE FALLS PROPERTY
TRAIL ZONE SHOWING
GOLD MINERALIZATION
V VOLCANO-SEDIMENTARY ROCK
G GRANITIC ROCKS
SHEAR ZONE
0 METRES 10
TRAIL ZONE: 20.6g/t/1.7m/35m

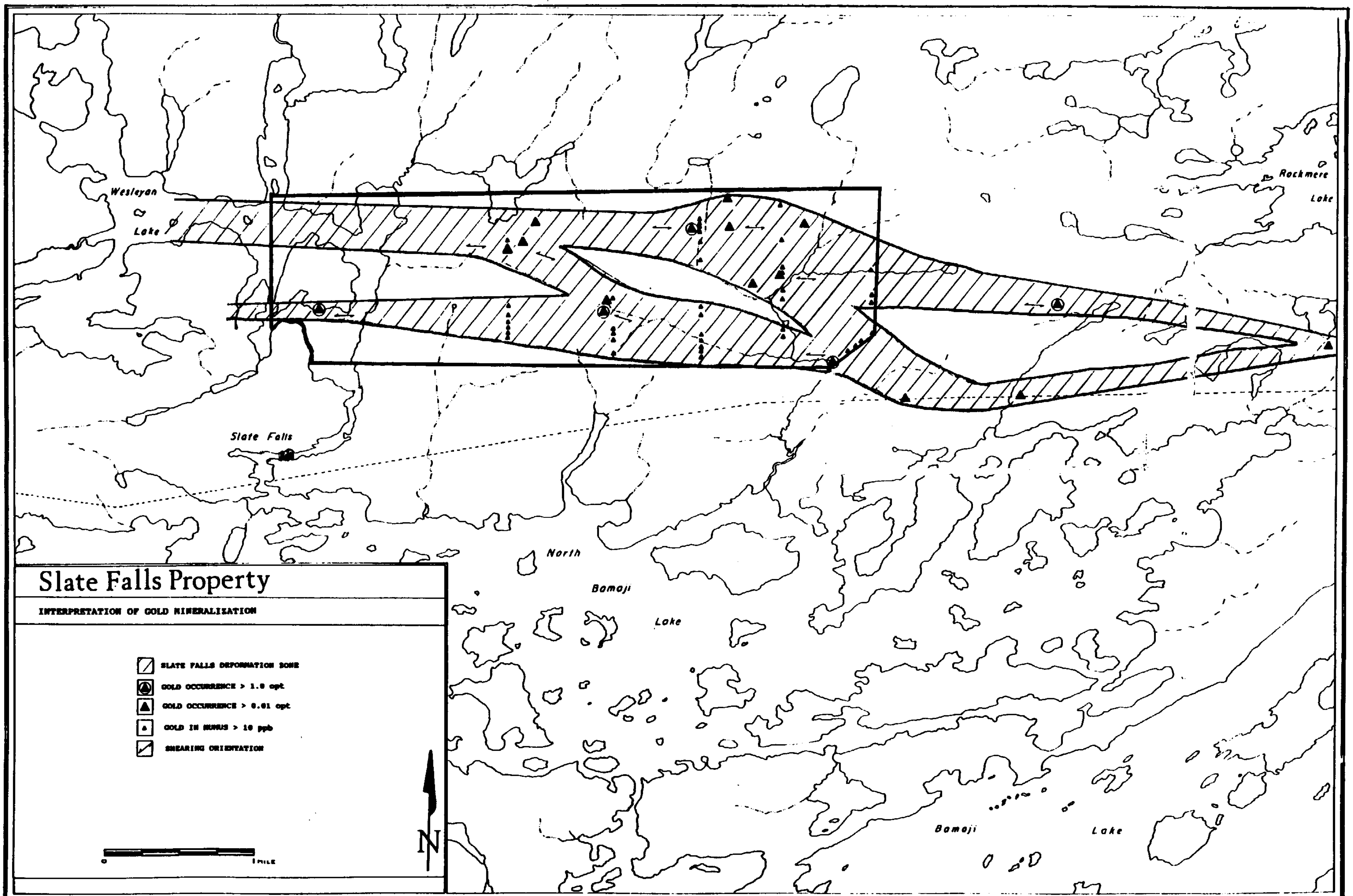
When the high grade veins are considered together with the hosting auriferous shear zones, the high potential of these structures becomes apparent. Chip samples of shear zone and vein from the Sanderson and Trail Zones returned assays of 117.9 g Au/t over 1.7 m and 33.0 g Au/t over 2.5 m respectively. Five chip samples taken across the Sanderson zone, over a 200 m strike length, returned a weighted average of 26.75 g Au/t over 1.68 m (figure 7). Three chip samples taken across the Trail zone, over a 35 m strike length returned a weighted average of 18.7 g Au/t over 1.7m (figure 8).

Most of the previous work concentrated on the Sanderson and Trail Zones which have returned the following significant gold values (grams per tonne):

The Sanderson Zone -	117.9, 107.6, 23.0, 18.3, 16.2, 14.6, 13.1, 11.2, 9.0, 7.5, 4.0, 2.5, 2.5, 2.2, 1.2, 1.2, 1.2
The Trail Zone -	781.2, 103.3, 75.9, 75.6, 70.3, 65.9, 38.6, 33.0, 24.3, 23.0, 22.7, 12.1, 10.9, 10.6, 10.0, 7.2, 06.5, 6.5, 6.5, 5.0, 4.4, 4.4, 1.9, 1.9

Along with these spectacular gold values, assays have also returned up to 1069.8 opt silver, 4% copper, and over 2% of zinc, lead and antimony which at times more than doubles the gold value of the assays.

An extensive regional gold bearing system, The Slate Falls Deformation Zone, is proposed to explain spatial, structural and mineralogical characteristics of the area's metalogony (Figure 9). The Slate Falls Deformation Zone is a geological domain in which there exists a high probability of encountering gold mineralization. It is a complex structure based upon structural measurements and metals


Wesleyan
Lake
Rockmere
Lake
Slate Falls
North
Bamaji
Lake
Bamaji
Lake
Slate Falls Property
INTERPRETATION OF GOLD MINERALIZATION
SLATE FALLS DEFORMATION ZONE
GOLD OCCURRENCE > 1.0 opt
GOLD OCCURRENCE > 0.01 opt
GOLD IN HUMUS > 10 ppb
SHEARING ORIENTATION
0
1 MILE
N

distribution as well as geophysical, topographical and geological inference of association and continuity of structure and mineralization. The Slate Falls Deformation Zone can be traced for over 10 km along strike, it contains important gold occurrences along its entire length and is best developed in the central part of this property, where it attains a width of 1.5 km.

Base Metal Mineralization

Numerous factors are present which indicate good potential for Cu-Zn VMS deposits on the Slate Falls Property. On a regional basis, many VMS style Cu-Zn occurrences have been documented; several of which are within a few kilometres of the eastern, southern and western boundaries of the property.

Geophysical surveys indicate that numerous conductive and magnetic stratigraphic horizons are present on the property (Figure 4). These trends are along strike of known base metal occurrences. Reconnaissance drill testing of these conductive horizons have intersected massive sulphide mineralization but no assays are available. High grade Cu and Zn, which are found in the numerous shear zones on the property may have been remobilized from VMS style Cu-Zn mineralization present in the stratigraphy. Recently identified Cu and Zn in humus anomalies correlate well with geophysical trends, elevated base metals in outcrop sampling and massive sulphides intersected in drilling.

PREVIOUS WORK:

The area now covered by the Slate Falls Property has been the subject of limited exploration since the 1920's. Much of this exploration has been regional in nature, primarily government mapping and airborne geophysical surveys. High grade gold and silver mineralization was first discovered during the 1960's. Hand trenching and small diameter diamond drilling (1190 metres) were carried out from 1966-1984. The Slate falls Property was staked in 1995 and continuous small budget programs have produced significant results that have advanced the project past the grass roots stage.

1920's:	Prospecting began in the area after discoveries were made around Red Lake to the west and Pickle Lake to the east.
1935:	Regional mapping by W. D. Harding for the Ontario Department of Mines covered the project area (O.D.M. Vol 44, Part 6, Map 441).
1960:	R. F. Emslie conducted regional mapping for the Geological Survey of Canada (G.S.C. Map 51-1960).
1966:	Cochenour Explorations Limited conducts stripping, hand trenching and nine diamond drill holes totalling 450m in length. Numerous mineralized zones and high grade gold was intersected. (OGS assessment files).

1970:	Canadian Onex Mines Limited flew a combined airborne magnetometer and electromagnetic survey. This was followed up in 1971 with a reconnaissance induced polarization and resistivity survey in the area north of North Bamaji Lake (Assessment Files, OGS).
1973:	Union Miniere Explorations conducts an airborne geophysical survey. Followed up with a single diamond drill hole that intersected massive sulphides and syenite in 1974. (Assessment Files, OGS).
1978:	Regional mapping program completed by Henry Wallace and OGS crew (Summary of Field Work, 1978, OGS Miscellaneous Paper 82, p.4-9).
1981:	Ground electromagnetic and magnetometer surveys conducted by St Joseph Explorations Limited on the Sanderson Option (Assessment Files, OGS).
1982:	R.P. Sage and F.W. Breaks map area in report on Cat Lake and Pic Lake Area (Geology of the Cat Lake and Pic Lake Area, 1982, OGS Report 207).
1983:	Sulpetro Minerals Limited conducts ground magnetometer and electromagnetic surveys on the Sanderson Option (Assessment Files, OGS).
1984:	Sulpetro Minerals Limited completes 681m diamond drilling program (14 ddhs) on the Sanderson Option, as well as, some manual trenching. Numerous mineralized zones and high grade gold and silver intersected (Assessment Files, OGS).

1985: OGS mapping of Slate Falls Area conducted by Henry Wallace, District of Kenora, Patricia Division (Geology of the Slate Falls Area, 1985, OGS Report 232, 85p).

1987: Canlorm Resources Limited conducts ground magnetometer and electromagnetic surveys on Wesleyan Lake Project-Carpenter Lake Occurrence area(Assessment Files, OGS).

1988: Canlorm Resources Limited conducts sampling and mapping of the Carpenter Occurrence trenches and area.(in house report by Ovalbay Geological Services).

1988: Goldfields Canadian Mining conducts airborne magnetometer and electromagnetic surveys (Assessment Files, OGS).

1989: UMEX Inc. conducts airborne magnetometer and electromagnetic surveys (Assessment Files, OGS).

1995-1998: B. D'Silva, P. Gertzbein and D. Parker performed a diverse program from May 1995 to Dec 1998 for which partial funding was received from the Ontario Prospectors Assistance Program.

Site selection, initial research, and compilation included searches of Ministry assessment files, government and industry reports and consultation with individuals.

During the course of the program, 8 claims were staked and recorded, approximately 6 km of trail were cleared and chained, and approximately 7 km of flagged lines were established to facilitate soil sampling and prospecting.

Numerous prospecting traverses were made, which included visits to the J. Loon, Carpenter, Trail, Path, Sanderson, L15, Fly, Kahuna, T-Lake, Loon, and FTM occurrences.

Trenches were cleaned and sampled on the Trail, Path, and Sanderson zones. A total of 247 humus samples and 123 rock samples were collected on 800 metre spaced reconnaissance lines and analyzed for 28 elements by ICAP and Au fire assay with AA finish.

Five flagged mini grids comprising a total of 16.3 kilometres were established over the main occurrences and their strike extensions. 498 humus and 60 rock samples were collected and analyzed for 28 elements by ICAP and Au fire assay with AA finish. This humus survey produced significantly fewer detectable gold results than the reconnaissance survey. The only apparent difference between the surveys was the method of sample preparation. In the recon survey the sample preparation method utilized nitre to remove the organics prior to fire assay. In the detailed survey, the sample preparation method utilized ashing to remove the organics prior to fire assay. This raises the possibility that the gold was driven off during the ashing of the sample. Reasampling of humus over the FTM and Flicka Fry Lake Occurrences returned five detectable gold in humus samples from 10 samples analyzed by Neutron Activation Analysis. This provides strong evidence that humus sampling is effective in the area and that sample preparation methods may have affected the analysis of the humus from the detailed grids.

In 1998, a total field magnetometer survey was carried out over the central part of the property.

1996-1997: Orezone Resources options the property and conducts an airborne EM and magnetic survey, prospecting and limited humus sampling, prepares a 200 metre spaced cut grid over most of the property and conducts mechanical stripping on the Sanderson and Trail zone areas.

WORK DONE:

The current study was undertaken from April 25, 1999 to January 8, 2000.

The current study was designed to:

1) demonstrate the continuity of the known mineralized structures along strike;

2) examine the structural elements related to the mineralized structures;

3) document the precious metal and base metal associations and distributions within the mineralized structures and,

4) investigate one of two geophysically inferred regional breaks.

The study included:

1) detailed mapping (1:100 scale, back pocket) of existing trenches of the Trail, Path and Sanderson Zones by consulting geologist D. Cullen;

2) Mechanical stripping and trench mapping (1:200 scale, back pocket) along the strike extensions of the Trail, Sanderson and L15 showings;

3) petrographic and microprobe analysis of a suite of 12 samples from the Trail, Sanderson and L15 zones by consulting geologist Dr. G. C. Wilson (appendix);

4) prospecting and mapping (1:2500 scale, back pocket) of about 15 line kilometres of grid that covered a 3.8 kilometre strike length of a geophysical anomaly thought to represent a regional fault structure by consulting geologists D. Courtney and D. Cullen and;

5) multi-element analysis of 56 rock samples by Accurassay Laboratories (Table 2)(appendix).

RESULTS:

The mechanical stripping program successfully exposed several new occurrences along the strike extensions of the Trail, Sanderson and L15 showings. Significant precious metal mineralization associated with multiple parallel polymetallic vein-shear zones were identified along the strike extensions of the known occurrences.

The most significant results were returned from the East Sanderson Area where vein-shear systems up to 5 metres in width returned an average of 22.77 g Au/t and 71.15g Ag/t from 13 grab samples.

Trenching of the east side of the outcrop area between the Trail and Path Zones exposed several strong shear zones. Sampling of these shear zones on both the east and west sides of this outcrop area produced consistently anomalous gold values. Further along strike to the east, trenching of the East Trail Showing exposed strong shear zones within volcanic and felsic intrusive rocks. Poly-metallic mineralization is present in quartz veins that returned anomalous values up to 1 g Au/t and 52 g Ag/t. The extension of the Trail vein-shear zone is believed to occur about ten metres to the south of this stripped area where bedrock dropped off quickly to >6 metres below surface beyond the reach of the backhoe.

SLATE FALLS PROJECT
1999 TRENCHING PROGRAM

Sample Number	Location	Au ppb	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Sb ppm
802	SAND E	<5	2	70	59	4	7
803	SAND E	757	21	432	415	191	19
804	SAND E	4140	145	3497	19964	5479	364
805	SAND E	10245	184	2364	2693	1232	86
806	SAND E	12722	164	3381	11455	634	107
807	SAND E	159669	99	4173	36765	26559	2240
808	SAND E	89603	91	2709	7047	8811	778
809	SAND E	3818	76	269	<1	<2	9
810	SAND E	9778	72	4672	24899	4500	4677
811	SAND E	3584	54	<1	<1	<2	<2
812	SAND E	227	5	75	40	23	39
813	SAND E	583	5	26	69	56	10
814	SAND E	901	7	24	34	20	7
815	L15 W	225	3	227	97	16	20
816	L15 W	752	47	8281	1039	81	28
817	L15 W	7275	38	2756	268	401	63
818	L15 W	515	229	11935	1168	1345	88
819	L15 W	69	20	609	157	322	257
820	L15 W	1204	51	746	4648	199	40
821	L15 W	1855	28	185	<1	146	20
822	L15 W	490	2	14	5	14	5
823	L15 W	1875	29	1457	111	120	77
824	L15	855	82	2074	659	3007	972
825	L15	447	114	3719	868	3653	2153
826	L15	2852	50	185	87	1118	33
827	L15	532	115	4147	1166	1378	1425
828	L15	2156	60	1118	878	67	92
829	L15	21	<1	<1	<1	14	10
830	L15	402	63	2294	880	1541	292
831	L15	518	73	2637	692	897	251
832	L15	443	30	4342	417	169	21
834	TRAIL E	200	12	641	25882	146	94
835	TRAIL E	361	13	1010	11410	106	52
836	TRAIL E	236	6	171	119	14	14
837	TRAIL E	1009	52	933	1574	814	334
838	TRAIL E	22	2	157	1701	56	5
839	TRAIL E	372	27	950	1643	389	71
840	TRAIL	111	5	155	122	52	15
841	TRAIL	11	2	88	101	14	16
842	TRAIL	28	1	199	120	21	16
843	TRAIL	767	53	410	13543	2352	71

Trenching of the L15 and west L15 areas exposed numerous parallel poly-metallic vein-shear zones with anomalous gold and silver values up to 7.27 g Au/t and 229 g Ag/t.

Detailed mapping of new and existing trenches indicates several important features associated with the mineralized structures:

1) The main mineralized structures are subvertical east-west striking and remarkably continuous along strike.

2) Northeast striking structures dip moderately southeastward and produce flexures of sinistral sense in the mineralized east-west structures. Mafic intrusive rocks appear to occupy some of these northeast structures. Mafic intrusives are cross cut by the mineralized east-west structures indicating that these northeast structures may predate the mineralized east-west structures but that late movement along the northeast structures has caused displacement of the mineralized east-west structures. These outcrop scale features appear to be related to regional scale lineaments that are evident across the property.

3) Felsic intrusive rocks are commonly associated with the mineralized east-west structures. Mineralization often follows intrusive contacts and is observed to cross cut intrusive units. Felsic intrusives occur in all orientations but east-west vertical dominates. Felsic intrusives become more abundant as the tronjhemite contact is approached.

4) Flat laying and shallowly dipping stratigraphy at the Trail and Sanderson Showings may indicate that fold hinge zones are prone to failure and thus likely hosts for the mineralized east-west structures.

Mapping and prospecting of the geophysically inferred regional break failed to identify outcrop over the anomaly area. The intense conductivity high and resistivity low indicated by the 1996 Aerodat airborne survey occupies a low laying topographic lineament that crosses lithologic contacts and is apparent both on land and under the waters of Wesleyan Lake. A similar and parallel anomaly is located 1 kilometre north of the anomaly investigated.

The petrographic and microprobe study indicates the presence of significant telluride mineralization, not previously recognized. Gold and silver appear to be present in only minor amounts within the poly-metallic sulphides. Silver displays a strong association with tellurides and it is speculated that the gold mineralization is also associated with tellurides and as coarse native gold.

CONCLUSIONS:

1) The Sanderson, Trail and L15 showings display multiple parallel vein-shear zones that are remarkably continuous along strike and contain potentially economic concentrations of precious and base metals.

2) Precious metal mineralization is dominantly associated with tellurides and as native gold with only minor concentrations occurring in the sulphides.

3) Bonanza grades of gold and silver can be expected throughout the mineralized vein-shear zones and as such results will tend to be erratic.

4) Three main structural controls on mineralization are apparent; i) mineralized east-west vertical vein-shear zones, ii) east-west vertical isoclinal hinge zones that commonly host the mineralized structures and, iii) north-east structures that create moderate southeast dipping sinistral flexures in the mineralized vein-shear zones

5) Two parallel east-west airborne geophysical trends (conductive high +/-resistivity low) are likely regional structural breaks. The anomalies show spatial relationships with known gold occurrences and may represent important controls for mineralization.

RECOMMENDATIONS:

A two phase exploration project is recommended in order to evaluate the known mineralized structures and to investigate priority targets.

Phase I

Phase I includes infilling of the cut grid from 200 to 100 metre line spacing. Geophysical surveys (magnetics, vlf and induced polarization), mapping and prospecting will be undertaken. Backhoe stripping followed by washing, detailed mapping and sampling will focus on known mineralized structures.

Phase II

Phase II will utilize diamond drilling to test priority targets. Large diameter core is recommended in order to improve recovery and sample size for analysis.

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Stott G. M. and Corfu F. 1991. Uchi Subprovince; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p145-238.

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Wilson, G. C. 1999. Ore Mineralogy of Polymetallic Veins from the Slate Falls Project, Uchi Subprovince, Northwestern Ontario.

Zalnieriunas, R. V. 1983. Report on Geological Survey, Bamaji Lake Option, For Sulpetro Minerals, MNDM Assessment Files.

APPENDIX I

Rock Sample Descriptions

SAMPLE 701B Grid Coords: 15+50E 0+05S
REPRESENTATIVE COMPOSITE GRAB
Sheared felsic intrusive, vfgr, fissile, mod to strong sericite alteration, mod iron oxide stain along cleavage.

SAMPLE 702B Grid Coords: 35+95E 2+35S
REPRESENTATIVE COMPOSITE GRAB
Sheared mafic volcanic, mod biotite alteration, local cm scale boudined qz vein with iron stain.

SAMPLE 703B Grid Coords: 36+05E 3+80S
REPRESENTATIVE COMPOSITE GRAB
Chlorite schist, strongly fissile, minor iron stain, local cm qz veins.

SAMPLE 704B Grid Coords: 46+10E 6+05S
REPRESENTATIVE COMPOSITE GRAB
Weakly sheared mafic volcanic, weak chlorite and degree of fissility.

SAMPLE 705B Grid Coords: 26+90E 0+07N
REPRESENTATIVE COMPOSITE GRAB
Qz vein in sheared & qz flooded felsic intrusive, hosted in sericite schist which is at leaset .8m wide (mostly still buried), py, cpy, sp, azurite, malachite, galena.

SAMPLE 86044 Grid Coords: 40+00E 5+81N
REPRESENTATIVE COMPOSITE GRAB
Mafic volcanic with thin (1-2cm) qz carb veining(irreg), mod to strong iron oxide stain & tr to 1% py, mod bio (alt'n?).

SAMPLE 86045 Grid Coords: 39+85E 0+25N
REPRESENTATIVE COMPOSITE GRAB
Mafic volcanic, weak to mod bleaching, thin irreg qz vein (0.5-1 cm) parallel to bedding (shallow dipping east), tr py

SAMPLE 86046 Grid Coords: 39+85E 0+25N
REPRESENTATIVE COMPOSITE GRAB
Trondhjemite with irreg qz vein.

SAMPLE 86047 Grid Coords: 39+85E 0+25N
REPRESENTATIVE COMPOSITE GRAB
Trodhjemite with qz veining.

SAMPLE 802 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
25 cm rusty shear in mafic volcanic, tr py

SAMPLE 803 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
30 cm rusty shear, 2 cm qv, 1% py.

SAMPLE 804 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qv, 1% py, tr cp, td.

SAMPLE 805 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qv, 1% py, 0.5% cp, tr td.

SAMPLE 806 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qv, 1-2% sp, 1% py, 1% cp.

SAMPLE 807 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qv, 1-2% py, 1% cp, 1% td.

SAMPLE 808 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
20 cm qv, 1-2% py, 2%cp, 2%sp, 3% td.

SAMPLE 809 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
15 cm qv, 1-2% py.

SAMPLE 810 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qv, 1-2% py, 1-2% cp, 5% sp, 2% td.

SAMPLE 811 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10-15 cm qv, tr py.

SAMPLE 812 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
1 m wide zone, intense shear, mafic volcanic, rusty, 1%py, 10% qs.

SAMPLE 813 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qs, 2% py.

SAMPLE 814 East Sanderson Trench
REPRESENTATIVE COMPOSITE GRAB
10 cm qv, 1-2% py.

SAMPLE 815 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
3 cm qs, 1% py, cp, td, in 60 cm rusty shear.

SAMPLE 816 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
0.7 m qv, malachite and black oxide, 1% cp.

SAMPLE 817 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
5 cm wide zone in 70 cm qv, 2% cp, tr malachite.

SAMPLE 818 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
50 cm qv, 3-4% cp, minor mal, 1% py, 1% td.

SAMPLE 819 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
40 cm qv, <1% cp, td, py.

SAMPLE 820 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
2-5 cm qs on both sides of porphyry, 1% py, 1%td, minor cp.

SAMPLE 821 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
15 cm grey-white qv, 1% td, tr py.

SAMPLE 822 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
2 cm qs in 30 cm shear, 10% black mineral (sp?)

SAMPLE 823 West L15 Area
REPRESENTATIVE COMPOSITE GRAB
5 cm cherty qv in 15 cm shear, 1-2% py.

SAMPLE 824 L15 Area
REPRESENTATIVE COMPOSITE GRAB
10 cm qz boudin in shear, <1% td, 1% py.

SAMPLE 825 L15 Area
REPRESENTATIVE COMPOSITE GRAB
20 cm qv, 2% td, 1% py.

SAMPLE 826 L15 Area
REPRESENTATIVE COMPOSITE GRAB
15 cm qv, 1-2% cp, 1% td, minor py & sp.

SAMPLE 827 L15 Area
REPRESENTATIVE COMPOSITE GRAB
15 cm qv, 2% td, 1% py, 1% cp.

SAMPLE 828 L15 Area
REPRESENTATIVE COMPOSITE GRAB
30 cm qv, 2% py, 1% cp, minor td.

SAMPLE 829 L15 Area
REPRESENTATIVE COMPOSITE GRAB
30 cm qv, 1-2% py.

SAMPLE 830 L15 Area
REPRESENTATIVE COMPOSITE GRAB
25 cm qv, 2-3% cp, 1-2% td, 1-2% py.

SAMPLE 831 L15 Area
REPRESENTATIVE COMPOSITE GRAB
20 cm qv, 1-2% cp, 1-2% td, 1% py.

SAMPLE 832 L15 Area
REPRESENTATIVE COMPOSITE GRAB
Rusty shear adjacent to qv.

SAMPLE 834 Trail East Area
REPRESENTATIVE CHIP (60 cm)
Rusty fault gouge with 3% py & 5% qs with 5-7% py, sp, ga, cp.

SAMPLE 835 Trail East Area
REPRESENTATIVE COMPOSITE GRAB
5 cm qs @ 834 location, 5-7% py, cp, sp, ga.

SAMPLE 836 Trail East Area
REPRESENTATIVE CHIP (.5 m)
Rusty fault gouge, 3-5% qs.

SAMPLE 837 Trail East Area
REPRESENTATIVE COMPOSITE GRAB
50% qs, 2-3% py, 1-2% cp, 1% sp, minor gal.

SAMPLE 838 Trail East Area
REPRESENTATIVE COMPOSITE GRAB
2-3% vfgr diss py.

SAMPLE 839 Trail East Area
REPRESENTATIVE CHIP (1 m)
Rusty sheared QE porphyry, 1-2 % py, 3-5% qs.

SAMPLE 840 Trail Zone Area
REPRESENTATIVE CHIP (0.7 m)
Rusty shear.

SAMPLE 841 Trail Zone Area
REPRESENTATIVE CHIP (0.5 m)
Rusty Shear

SAMPLE 842 Trail Zone Area
REPRESENTATIVE CHIP (1.7 m)
Rusty shear.

SAMPLE 843 Trail Zone Area
REPRESENTATIVE COMPOSITE GRAB
9 cm qv with 1-3% gal, py, cp.

APPENDIX II

Assay Certificates

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

1070 LITHIUM DRIVE, UNIT 2
THUNDER BAY, ONTARIO P7B 6G3
PHONE (807) 623-6448
FAX (807) 623-6820

Doug Parker
365 Lark St.
Thunder Bay, Ontario
P7B 1P4

Oct 5, 1999

Job# 9941000

SAMPLE # Accurassay	SAMPLE # Customer	Gold ppb	Gold Oz/t
1	801	Sample Not Received	
2	802	<5	<0.001
3	803	757	0.022
4	804	4140	0.121
5	805	10245	0.299
6	806	12722	0.371
7	807	159669	4.658
8	808	89603	2.614
9	809	3818	0.111
10	810	9778	0.285
11 Check	810	8391	0.245
12	811	3584	0.105
13	812	227	0.007
14	813	583	0.017
15	814	901	0.026
16	815	225	0.007
17	816	752	0.022
18	817	7275	0.212
19	818	515	0.015
20	819	69	0.002
21 Check	819	65	0.002
22	820	1204	0.035
23	821	1655	0.048
24	822	490	0.014
25	823	1875	0.055
26	824	855	0.025
27	825	447	0.013
28	826	2852	0.083
29	827	532	0.016

Certified By:

ACCURASSAY LABORATORIES
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Doug Parker
365 Lark St.
Thunder Bay, Ontario
P7B 1P4

Oct 5, 1999

Job# 9941000

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
30	828	2138	0.062
31 Check	828	2156	0.063
32	829	21	<0.001
33	830	402	0.012
34	831	518	0.015
35	832	443	0.013
36	833	Sample Not Received	
37	834	200	0.006
38	835	361	0.011
39	836	236	0.007
40	837	904	0.026
41 Check	837	1009	0.029
42	838	22	<0.001
43	839	372	0.011
44	840	111	0.003
45	841	11	<0.001
46	842	28	<0.001
47	843	767	0.022
48	DT1	<5	<0.001

Certified By:

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Doug Parker
365 Lark St.
Thunder Bay, Ontario
P7B 1P4

Oct. 21, 1999

Job #9941000

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Mg %
802	1.7	2.50	7	<5	20	0.4	<3	1.32	<.5	24	176	70	3.69	0.02	5	1.66
803	21.3	1.62	13	<5	94	0.3	<3	0.21	1.6	19	287	432	6.04	0.19	2	1.47
804	145.4	0.17	85	<5	24	<.1	21	0.31	190.7	8	401	3497	2.25	0.06	<1	0.17
805	184.0	0.13	25	<5	23	<.1	11	0.16	32.1	5	381	2364	1.44	0.01	<1	0.13
806	164.4	0.36	20	<5	31	0.1	20	0.45	155.7	13	390	3381	1.93	0.07	<1	0.28
807	99.2	0.12	156	<5	24	<.1	35	0.05	296.1	5	354	4173	2.25	<.01	<1	0.08
808	91.2	0.28	96	<5	23	<.1	17	0.09	53.6	6	411	2709	1.64	0.01	<1	0.26
809	76.1	0.04	10	<5	20	<.1	<3	0.02	<.5	<2	382	269	0.94	<.01	<1	0.03
810	71.8	0.07	181	<5	26	<.1	19	0.03	211.3	5	753	4672	1.87	0.01	1	0.04
811	53.9	0.09	<2	<5	9	<.1	<3	0.25	<.5	2	302	<1	0.99	<.01	4	0.09
812	4.5	0.42	7	14	963	0.1	<3	0.25	<.5	7	312	75	1.51	0.05	2	0.54
813	5.3	0.22	2	<5	<1	<.1	<3	0.37	<.5	4	183	26	1.17	0.03	<1	0.25
814	6.9	0.13	3	<5	11	<.1	<3	0.12	1.2	4	357	24	0.96	0.03	13	0.13
815	2.9	1.20	9	<5	25	0.2	<3	0.46	0.6	19	344	227	3.21	0.08	<1	1.03
816	47.0	3.54	3	7	61	0.7	<3	1.45	8.9	34	418	8281	6.74	2.69	13	2.96

SAMPLE #	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Zn ppm
802	1062	<1	0.09	58	574	4	7	<5	0.06	<5	8	0.40	93	<2	59
803	974	2	0.03	30	454	191	19	<5	0.04	<5	<1	0.32	172	<2	415
804	216	33	0.02	21	2740	5479	364	<5	0.02	<5	<1	0.03	14	<2	19964
805	102	6	0.01	14	338	1232	86	<5	0.02	<5	<1	0.01	14	<2	2693
806	249	27	0.02	19	1484	634	107	<5	0.02	<5	<1	0.04	25	<2	11455
807	178	63	0.02	18	4757	26559	2240	<5	0.02	<5	<1	0.02	12	<2	36765
808	263	18	0.02	19	1093	8811	778	<5	0.02	<5	<1	0.03	22	<2	7047
809	72	<1	0.01	13	280	<2	9	<5	0.01	<5	<1	<.01	4	<2	<1
810	137	45	<.01	24	3115	4500	4677	<5	0.02	<5	<1	<.01	2	<2	24899
811	140	<1	0.01	12	31	<2	<2	<5	0.01	<5	<1	<.01	5	<2	<1
812	650	1	0.04	26	187	23	39	<5	0.02	<5	5	0.09	42	<2	40
813	290	<1	<.01	13	172	56	10	<5	0.01	<5	<1	0.03	19	<2	69
814	212	2	<.01	16	<10	20	7	<5	<.01	<5	<1	0.02	9	<2	34
815	637	<1	0.04	79	761	16	20	<5	0.04	<5	<1	0.11	96	25	97
816	2420	7	0.04	165	1719	81	28	<5	0.03	<5	108	0.49	147	<2	1039

Certified By:

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Doug Parker
365 Lark St.
Thunder Bay, Ontario
P7B 1P4

Oct. 21, 1999

Job #9941000

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Mg %
817	37.7	0.61	19	<5	710	0.1	5	0.20	2.0	8	367	2756	1.79	0.44	<1	0.47
818	229.3	0.48	10	<5	290	0.3	38	1.44	12.2	9	658	11935	2.67	0.32	55	0.43
819	20.2	0.03	41	<5	14	<.1	<3	0.26	1.4	<2	310	609	0.40	<.01	<1	0.02
820	50.7	0.29	9	<5	16	0.1	4	0.10	29.9	5	283	746	1.30	0.06	<1	0.22
821	27.5	0.86	9	<5	12	0.2	5	0.19	<.5	12	368	185	2.37	0.02	<1	0.81
822	2.4	0.11	4	<5	13	<.1	<3	0.10	<.5	2	248	14	0.48	<.01	<1	0.06
823	29.4	0.33	4	<5	25	0.2	<3	0.20	2.1	10	325	1457	4.04	0.02	<1	0.14
824	81.9	0.04	133	<5	10	<.1	<3	0.17	5.8	<2	359	2074	0.62	<.01	<1	0.03
825	113.7	0.09	376	<5	16	<.1	7	0.02	7.9	<2	216	3719	1.12	0.04	<1	0.10
826	49.8	0.05	8	<5	9	<.1	13	0.10	1.5	<2	339	185	0.56	0.01	<1	0.03
827	115.0	0.27	96	<5	18	0.1	<3	0.54	12.1	6	167	4147	1.33	0.16	<1	0.31
828	59.7	0.03	33	<5	42	<.1	<3	0.20	6.6	2	219	1118	0.59	<.01	<1	0.03
829	<.3	0.03	<2	<5	12	<.1	<3	0.05	<.5	<2	198	<1	0.35	0.01	<1	0.03
830	62.8	0.24	63	<5	17	<.1	4	0.10	8.6	5	320	2294	1.11	<.01	<1	0.16
831	73.0	0.46	67	<5	14	0.1	9	0.14	7.9	9	290	2637	1.51	<.01	<1	0.39

SAMPLE #	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Zn ppm
817	395	2	0.03	38	105	401	63	<5	0.02	<5	22	0.09	28	<2	268
818	775	9	0.04	41	805	1345	88	<5	0.03	<5	45	0.07	32	<2	1168
819	87	<1	0.02	11	84	322	257	<5	0.02	<5	<1	<.01	3	<2	157
820	185	14	0.02	18	569	199	40	<5	0.02	<5	<1	0.03	22	<2	4848
821	424	5	0.02	48	12	146	20	<5	0.03	<5	<1	0.06	60	<2	<1
822	176	1	0.02	13	<10	14	5	<5	0.02	<5	<1	0.02	7	<2	5
823	210	1	0.03	37	<10	120	77	<5	0.03	<5	<1	0.14	44	13	111
824	96	8	0.01	12	<10	3007	972	<5	0.02	<5	<1	<.01	3	<2	659
825	60	8	0.01	9	<10	3653	2153	<5	0.02	<5	<1	0.02	8	268	868
826	106	2	0.01	12	<10	1118	33	<5	0.01	<5	<1	<.01	2	<2	87
827	233	5	0.03	16	454	1378	1425	<5	0.01	<5	<1	0.06	25	<2	1166
828	160	<1	0.02	9	<10	67	92	<5	0.01	<5	7	<.01	4	<2	878
829	86	<1	<.01	8	<10	14	10	<5	<.01	<5	<1	<.01	2	<2	<1
830	129	5	0.03	17	303	1541	292	<5	0.02	<5	<1	0.03	21	<2	880
831	169	4	0.03	27	139	897	251	<5	0.03	<5	<1	0.05	38	165	692

Certified By: ____________

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Oct. 21, 1999

Job #9941000

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Mg %
832	29.8	5.53	8	8	38	0.8	<3	0.77	6.7	51	350	4342	7.32	0.08	4	4.65
834	11.7	3.36	38	9	71	0.6	<3	0.51	240.4	43	291	641	7.21	2.19	4	3.33
835	13.2	1.93	20	<5	117	0.5	4	2.17	109.3	24	190	1010	3.89	0.94	4	1.82
836	5.5	2.88	15	7	115	0.6	<3	0.65	1.2	30	248	171	6.09	0.53	12	3.04
837	51.5	0.31	137	<5	56	0.2	<3	0.19	12.2	<2	436	933	1.81	0.25	18	0.15
838	1.8	0.50	9	<5	45	0.2	<3	0.49	10.1	6	89	157	1.16	0.29	5	0.26
839	27.0	1.09	41	<5	81	0.4	5	0.97	11.6	14	117	950	2.67	0.64	4	0.96
840	5.2	1.62	17	<5	224	0.3	3	0.41	0.9	19	207	155	3.10	0.41	51	1.26
841	2.1	3.81	21	7	503	0.4	<3	0.35	0.8	34	204	88	6.00	1.25	7	2.94
842	1.4	3.42	24	<5	199	0.4	<3	0.64	1.0	34	202	199	5.65	0.63	3	2.43
843	53.3	0.28	33	<5	42	0.1	<3	0.55	122.4	6	237	410	1.59	0.01	32	0.21
DT1	<.3	0.46	<2	<5	19	0.1	<3	0.90	<.5	3	161	<1	0.67	0.08	4	0.19

SAMPLE #	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Zn ppm
832	1552	12	0.18	86	941	169	21	<5	0.05	<5	32	0.42	375	<2	417
834	1732	37	0.07	95	3979	148	94	<5	0.05	<5	3	0.39	248	<2	25682
835	1134	19	0.14	48	2693	106	52	<5	0.06	<5	18	0.16	95	<2	11410
836	1624	3	0.04	77	502	14	14	<5	0.04	<5	10	0.31	227	<2	119
837	119	4	0.03	15	358	814	334	<5	0.03	<5	14	0.01	9	<2	1574
838	175	3	0.05	12	468	58	5	<5	0.03	<5	6	0.04	10	<2	1701
839	645	5	0.04	37	605	389	71	<5	0.03	<5	9	0.12	58	<2	1643
840	621	1	0.06	43	92	52	15	<5	0.03	<5	12	0.21	90	<2	122
841	1337	4	0.05	74	414	14	16	<5	0.04	<5	7	0.33	169	<2	101
842	1202	1	0.08	95	499	21	16	<5	0.04	<5	8	0.30	174	<2	120
843	277	22	0.02	14	1685	2352	71	<5	0.03	<5	17	0.02	12	<2	13543
DT1	213	<1	0.02	13	133	<2	<2	<5	0.01	<5	67	0.02	4	<2	<1

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Sep 16, 1999

Job# 9940942

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
1	DES-1	42	0.001
2	DES-2	19	<0.001
3	DES-3	24	<0.001
4	DES-4	89	0.003
5	DES-5	38	0.001
6	DES-6	31	<0.001
7	701	8	<0.001
8	702	<5	<0.001
9	703	6	<0.001
10	704	<5	<0.001
11 Check	704	<5	<0.001
12	705	668	0.019
13	86044	<5	<0.001
14	86045	<5	<0.001
15	86046	<5	<0.001
16	86047	<5	<0.001

Certified By: ____________

APPENDIX III

Petrographic Report

by

G. C. Wilson

ORE MINERALOGY OF POLYMETALLIC VEINS FROM THE SLATE FALLS PROJECT, UCHI SUBPROVINCE, NORTHWEST ONTARIO

On behalf of
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By

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TGSL Project 1999-08

(25 pages, 3 tables, 6 figures and Descr. 2394-2405)

Key features of samples are reviewed in the 'texture' and 'summary' sections of each description. The details are presented in condensed form: a glossary of terms is appended.

ABSTRACT

The mineralogy of a set of rocks from the Slate Falls property was investigated. The variably-sheared quartz veins display a combination of rather simple gangue and complex ore mineralogy, with 15 or more ore minerals, exclusive of secondary oxidized phases. A set of 12 polished thin sections was prepared and studied in transmitted and reflected light, with particular emphasis on the ore mineral assemblages. Semiquantitative observations made by electron microprobe in energy-dispersive mode constrain the distribution of a number of important elements in the mineralization, including Cu, Zn, Ag, Bi and Te. The sulphosalt tetrahedrite was encountered as expected but, in addition to this mineral and the common base-metal sulphides, a range of other sulphides and tellurides was also identified. New findings include the occurrence of telluride minerals and Ag sulphide, phases which appear to control Ag contents in the suite, since little if any native gold or electrum was discovered and the tetrahedrite has ≤ 1 wt.% Ag.

In addition to the most prominent ore minerals (pyrite, sphalerite, chalcopyrite with some galena and tetrahedrite) traces of argentite were identified, as well as a suite of at least four Te-rich minerals; native tellurium, the Ag telluride hessite and two Bi tellurides, tentatively identified as pale wehrlite and yellowish tetradymite. Traces of cubanite were located in chalcopyrite, and one minute grain of (?) native gold. Pyrrhotite and marcasite were found only in samples 10 and 11, respectively. Secondary phases include covellite, goethite and (?) malachite and linarite.

The respective Ag contents of the tetrahedrite and the galena are probably some two and three to four orders of magnitude less than those of hessite and argentite. Thus small amounts of the easy-to-overlook grey ore minerals may control the Ag balance in high-grade samples. The scarcity of native gold in 12 polished sections is such that, if grades $>>10$ ppm Au are common, it is suggested that an unrecognized Au host (such as a telluride) may be present. Te is a rare element, with a clarke (crustal average abundance) on a par with gold itself. The presence of locally-abundant tellurides has several implications, e.g., 1) the presence of Ag and possibly Au -bearing tellurides is relevant to deposit metallurgy, and offers an explanation for the sparse occurrence of native gold despite locally high grades; 2) Te itself is an indicator element for at least one phase of the local mineralization; 3) the Au-Ag-Te association is noted worldwide in Cenozoic epithermal systems (such as Cripple Creek, Colorado; the Emperor mine, Fiji) and some Archean lode deposits (such as Kirkland Lake). These deposits all seem to share a genetic link to alkaline trends in felsic magmatism, and a re-examination of local granitoids is in order; it would be interesting to know if there are any small syenitic stocks or dykes or other alkali-rich intrusive bodies in the area. Lastly, if sufficient mm-scale telluride grains can be found in quartz matrix, there is potential for sale of mineral specimens to keen collectors, a cash-flow boost for a small-scale exploration or mining project.

Note: This report is designed in modular fashion: the abstract and main text should provide the bulk of the essential information. Detailed sample descriptions can be scanned for increasingly specific levels of data. Within these, the mineral proportions, textural and summary data may be read first, and individual mineral data found as required.

Frontispiece

Figure 1. **Sulphides, Trail West showing** **Sample 1**

Pyrite and pitted sphalerite rimmed by bright blue covellite in quartz. Magnification 40x, long-axis FOV 2.8 mm, PPL, RL.

INTRODUCTION

A suite of 12 samples was received from the Slate Falls area, located 120 km north of Sioux Lookout. The suite represents seven of some 14 mineral occurrences exposed on the Slate Falls property, an east-west-oriented matrix of claim groups located just north of North Bamaji Lake, extending eastwards from Wesleyan Lake towards Rockmere Lake (Parker, 1996). The area lies within the Archean Meen-Dempster greenstone belt in the Uchi subprovince of the Superior craton, and the area has been subject to intermittent exploration for gold, silver and base metals (Cu, Zn, Mo), uranium and thorium since the 1920s (Wallace, 1977, 1978, 1985).

The Slate Falls property is thought to lie along a major east-west regional structure termed the Slate Falls deformation zone (Parker, 1996). Polymetallic mineralization displays local high values of Au and Ag, Cu, Pb, Zn and Sb. Most of the earlier work on the property targeted the FTM, Trail and Sanderson zones. Amongst local claims and occurrences the Sanderson option is well-known, and has returned locally high Au, Ag and Cu values from an east-west shear with narrow quartz veins, cutting mafic metavolcanics (Wallace, 1977; Janes *et al.*, 1992). The Au and Ag values at the Sanderson option are associated with sulphides and sulphosalts; pyrite, sphalerite, tetrahedrite, pyrrhotite and galena (Wallace, 1978). Wallace (1985, pp.71-72) noted that it lies in an east-west shear zone at least 500 m long, with the quartz veins filling shear zones cutting mostly mafic metavolcanic flows and minor felsic intrusives (a porphyritic biotite trondhjemite). Some native gold and azurite have been reported, as well as ≈2-5 percent sulphides, dominated by pyrite. Grab samples from Sanderson, especially the Zn-rich, tetrahedrite-bearing samples 5 and 7, comprises some of the most interesting and potentially important mineralization described in the present study.

There is little mention of native gold, tellurides or arsenopyrite in the region, although the latter is associated with elevated Au values at the Flicka Red Lake Au occurrence on Fry Lake (Wallace, 1978). Local Mo-bearing veins are said to be recrystallized, thus appearing granular and little sheared (Sutherland, 1978). This is in contrast to some of the best mineralized material on the Slate Falls property, as at Sanderson East. The polymetallic quartz veins described in this report may thus represent an earlier mineralizing episode (perhaps syn- to late-tectonic), as opposed to the molybdenite, related to the deuteric-hydrothermal stage of cooling of the voluminous, somewhat younger, post-tectonic granitoid plutons of the region. An apparently similar deposit in the district is the Golden Patricia mine, which opened on 01 October 1988. Within the narrow (<2 m), laterally extensive ore zone, Au occurs as micron- sized native gold in quartz, as inclusions in pyrite, and especially as coarse gold in microveinlets, with a constant Au:Ag ratio $\approx 10:1$ (Szasz-Taylor, 1990; Rodd and Hutchinson, 1991).

The samples and the occurrences where they were collected are listed in Table 1, and the estimated modal proportions (in volume percent) are presented in Table 2.

GANGUE MINERALS

Because nine of the samples are largely or entirely quartz-vein material, little can be said of the host rocks, which are represented only in samples 2, 3 and 4. The wallrocks are all foliated, somewhat pyritic schists with variable proportions of biotite, muscovite and chlorite, $\pm$ minor carbonate. The vein quartz varies in degree of strain and recrystallization, and is most sheared in samples 7-10 and 12, from the Sanderson East, L15 and FTM occurrences (Table 1). Parker (1996) describes typical host rocks as sheared schists with biotite, muscovite and chlorite, $\pm$ carbonate, talc and epidote. The FTM sample is clearly the 'odd one out' in the suite, being a sheared quartz-tourmaline vein with only a trace of pyrite. Otherwise, the veins are quartz-dominated with variable content of sulphides, minor carbonate and other minerals.

ORE MINERALS

The suite was also examined in reflected light. In order to characterize the ore minerals with the maximum confidence, selected grains were also analysed by energy-dispersive x-ray techniques on an electron microprobe (the ETEC Autoprobe at the Department of Geology, University of Toronto). The microprobe findings are presented in each description and the key findings are summarized in Table 3.

Pyrite is generally the most voluminous ore mineral, only occasionally equalled or exceeded in abundance by sphalerite and/or chalcopyrite. The sphalerite contains modest to low Fe contents, in the range 0-7 wt.%. Native gold, in the smallest trace, was tentatively identified by optical means in sample 1 alone. In this same sample, the energy spectrum obtained on the electron microprobe suggests that the hessite may contain a trace of gold, but this is not reliable, as the 'gold' could reflect S in the pyrite host of the hessite grains. If these samples yield high Au assays then it appears likely that Au is present as very localized coarse gold or electrum, a significant 'nugget effect'. In contrast to gold, some definite constraints were placed on the mineralogical residence of silver in the suite. Grab samples from the area have assayed in excess of 1000 ppm Ag, and, in the absence of abundant native gold or electrum, either the tetrahedrite or the galena might be suspected as the principal host. However, microprobe observations on all three samples in which tetrahedrite was detected indicate that the sulphosalt contains no more than ≈ 1 wt.% Ag, and the metal is locally concentrated in the telluride hessite (ideally, 62.84 wt.% Ag) and the sulphide argentite (87.06 wt.% Ag).

The discovery of tellurides (very sparse in sample 1, abundant in sample 7) has implications for the economics, genesis, and applicable exploration strategies related to such shear-hosted mineralization as the Sanderson occurrences. The tellurides often occur together, grain size 10 μm to 2 mm, with essential proportions of Bi, Ag and Te (some Au, Pb and S may also be present, but more sophisticated analysis would be required to confirm this). Additional ore minerals include secondary species; sulphides such as covellite and oxidized phases such as malachite, goethite and (?) linarite. Selected mineralogical features are displayed in Figures 1-6.

CONCLUSIONS AND RECOMMENDATIONS

The microprobe survey described in this report is adequate for all practical exploration purposes, identifying as it does the principal host minerals of all obviously-anomalous metals with the important exception of gold. The virtual absence of gold may be due to a strong 'nugget effect', with relatively few and coarse flakes of native gold or electrum. This becomes less likely if many samples are relatively rich (>10 ppm Au). The apparent lack of such sulphides and arsenides as arsenopyrite, loellingite and niccolite precludes another typical host situation for high gold values. The complex mineralogy of sample 7 suggests the unproven possibility of some

Au occurrence in tellurides, either at low (≤1%) levels in the identified minerals or in as-yet-unrecognized Au-rich species such as calaverite, petzite and sylvanite.

If subsequent development warrants a major metallurgical study of the showings, a detailed and quantitative mineral-chemical follow-up could be a cost-effective precursor (in the cost range CAN$3-10,000). It would involve *in-situ* electron and proton microprobe analysis, serving to assay both economic and 'problem' elements in each mineral, down to detection limits from 0.1 wt.% (1000 ppm) to as little as 5 ppm (depending on the combination of element and host mineral involved). The element list for analysis of the sulphide- sulphosalt-telluride assemblages would include some or all of the following, covering four mass regions of the periodic table; 1) S - 2) Mn, Fe, Co, Ni, Cu, Zn, As, Se - 3) Ag, Cd, In, Sb, Te - 4) Au, Hg, Tl, Pb and Bi. The proton probe (PIXE) would provide accurate analyses for e.g., Cd and In in sphalerite, and Ag in sulphides, as well as scan for additional elements such as Ga and Ge. Wavelength-dispersive electron microprobe analysis (planned for this report but ruled out by logistical factors) can separate overlapping heavy elements in the energy spectra of both sulphides and tellurides. The weak point of these technologies is Au analysis; detection limits for Au are very seldom better than 20 ppm for the proton probe, 200 ppm for the electron probe. If Au is not revealed at these levels then ion microprobe (SIMS) analysis may be required. However, the inexpensive expedient of making several polished mounts from one or more high-grade samples will maximize the chance of finding coarse gold or gold-rich tellurides.

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TABLE 1. SAMPLE LIST

With names of each of seven showings on the Slate Falls property. Note that the lists of mineralizing elements may be partial, are based on direct observations, and exclude gold, for which the mineralogical data are inadequate.

Descr.	*Sample*	*Identification*	*(and select element enrichments)*
Trail West			
2394	1	Sulphidic quartz vein	(Zn,Pb,Cu,Ag,Te)
2395	2	Quartz vein in pyrite-biotite-chlorite schist	(Cu,Zn)
2396	3	Biotite schist	(Zn,Cu)
2397	4	Quartz-veined muscovite schist	(Cu,Pb)
Sanderson West			
2398	5	Banded quartz-carbonate-sulphide vein	(Zn,Pb,Cu,Sb,As)
2399	6	Quartz vein	(Cu)
Sanderson East			
2400	7	Sheared quartz vein	(Zn,Cu,Ag,Sb,Te,Bi)
2401	8	Sheared quartz vein	(Zn,Cu,Pb,Sb,As,Ag)
L15 West			
2402	9	Sheared quartz vein	(Cu,Pb)
L15 East			
2403	10	Sheared quartz vein	(Cu,Zn)
Corner			
2404	11	Quartz vein	(Cu,Zn)
FTM			
2405	12	Sheared quartz-tourmaline vein	(-)

TABLE 2. MODAL MINERALOGY AND ROCK NAMES FOR ALL SAMPLES, SLATE FALLS PROPERTY

Descr.	*Sample*	*Qz*	*Chl*	*Bi*	*Carb*	*Py*	*Chalc*	*Sphal*	*Tet*	*Tell±Au*	*CuSul*	*Ox*	*Others*	*Rock type*
2394	1	97	-	-	-	1	1	1	-	Tr.	Tr.	Tr.	Gal	Sulphidic quartz vein
2395	2	91	4	2	2	1	Tr.	Tr.	-	-	Tr.	Tr.	K-feld, musc	Quartz vein in py-bi-chl schist
2396	3	60	5	30	3	2	Tr.	Tr.	-	-	-	Tr.	Ap	Biotite schist
2397	4	76	-	4	1	3	Tr.	-	-	-	-	Tr.	Musc 16, gal	Quartz-veined muscovite schist
2398	5	75	-	-	5	10	Tr.	3	Tr.	-	Tr.	-	Musc 5, gal 2	Banded quartz-carb-sulphide vein
2399	6	99	-	1	Tr.	Tr.	Tr.	-	-	-	-	Tr.	-	Quartz vein
2400	7	90	-	-	-	Tr.	Tr.	9	1	Tr.	Tr.	-	Arg	Sheared quartz vein
2401	8	99	Tr.	-	Tr.	1	Tr.	Tr.	Tr.	-	-	Tr.	Musc, gal	Sheared quartz vein
2402	9	99	-	-	1	Tr.	Tr.	-	-	-	-	-	Musc, gal	Sheared quartz vein
2403	10	92	4	-	-	Tr.	1	Tr.	-	-	-	Tr.	Pyrr 2, sphen 1, clzo, musc	Sheared quartz vein
2404	11	94	3	Tr.	3	Tr.	Tr.	Tr.	-	-	-	Tr.	Marc, musc	Quartz vein
2405	12	80	-	-	-	Tr.	-	-	-	-	-	-	Tour 20	Sheared quartz-tourmaline vein

Estimated modal mineralogy:

Based on 12 polished thin sections from 12 hand specimens. Visually-estimated contents in area (volume) percent, or noted 'Tr.' for trace amounts (<<1%).

Abbreviations:

Ap=apatite, arg=argentite, bi=biotite mica, carb=carbonates, chalc=chalcopyrite, chl=chlorites, clzo=clinozoisite, CuSul= minor Cu-bearing sulphides: covellite and cubanite, gal= galena, K-feld=alkali feldspars, marc=marcasite, musc= muscovite mica, ox=all secondary oxidized phases (goethite, malachite, linarite), py=pyrite, pyrr= pyrrhotite, qz=quartz, sphal=sphalerite, sphen=sphene (titanite), Tell+Au= tellurides plus gold, tet=tetrahedrite and tour=tourmaline.

TABLE 3. ELECTRON MICROPROBE DATA

1. **Sulphosalts: tetrahedrite** is the only recognized species.

Sample 5. Cu 38%, Sb 22%, S 28%, As 6%, Fe 1%, Zn 5%, Ag<1% (n=3).
Sample 7. Cu 36%, Sb 30%, S 28%, As <1%, Fe 4%, Zn 2%, Ag<1% (n=4).
Sample 8. Cu 30%, Sb 26%, S 31%, As 6%, Fe 3%, Zn 3%, Ag 1% (n=3).

2. **Sphalerite:**

Sample 1. Dark brown: ≈7 wt.% Fe and up to a few tenths of 1% Cd. The pale grains are probably low-Fe, as sample 5.
Sample 5. Pale brown: near-pure ZnS, <1% Fe.
Sample 7. Rich orange-brown, ≈4-7 wt.% Fe.
Sample 8. Rich brown, pale against the dark sphalerite of sample 1, ≤1% Fe.

3. **Tellurides** and (?) **native gold**:

Sample 1. Hessite blebs in pyrite. Trace of native gold possible, unconfirmed.
Sample 7. Wehrlite (? - a form of BiTe), native Te, hessite (Ag_2Te) and tetradymite (? - a second Bi-Te phase with minor but essential S).

See individual descriptions for details.

N.B. The microprobe data presented here are not definitive, as the only option at the time of analysis was an energy-dispersive reconnaissance without proper calibration for quantitative data collection. However, the data should be viewed as representative of the mineral chemistry, particularly with regard to the nature of the sulphosalt (tetrahedrite, with a minor proportion of the tennantite molecule, and Ag content always well below 2 wt.%, recognized distinctly only in sample 8). Minimum detection limits for each element are probably in the range 0.1-1 wt.%. These data, coupled with the local identification of tellurides, provide a good indication of the principal host minerals of several elements of possible economic value and metallurgical relevance, such as Ag, Cu and Zn, As and Sb. There appear to be two forms or generations of sphalerite, the inference from sample 1 being that the later generation is both paler in colour and of lower Fe content.

Figure 2. **Silver telluride, Trail West showing** **Sample 1**

The silver telluride hessite (the large inclusion in the centre) plus lesser galena and chalcopyrite form small rounded blebs in pyrite. Magnification 160x, long-axis FOV 0.7 mm, PPL, RL.

Figure 3. Sulphides and tetrahedrite, Sanderson West showing Sample 5

Pyrite with tiny blebs of chalcopyrite, and adjacent tetrahedrite (pale grey) and sphalerite (dark grey, with anhedral white galena). Magnification 40x, long-axis FOV 2.8 mm, PPL, RL.

Figure 4. **Coarse tellurides, Sanderson West showing** **Sample 7**

Coarse intergrowth of tellurium-rich ore minerals and other phases. The pinkish centre of the image is native tellurium, intergrown with pale BiTe (wehrlite?). The subrounded, dull grey inclusions are hessite, Ag_2Te, partially swathed with another Bi-Te phase (tetradymite?). The dark grey inclusions are tetrahedrite. Magnification 80x, long-axis FOV 1.4 mm, PPL, RL.

Figure 5. **Telluride intergrowth, Sanderson West showing** **Sample 7**

Dark exsolved lamellae of the silver telluride hessite in coarse, pale BiTe (wehrlite?). Magnification 160x, long-axis FOV 0.7 mm, PPL, RL.

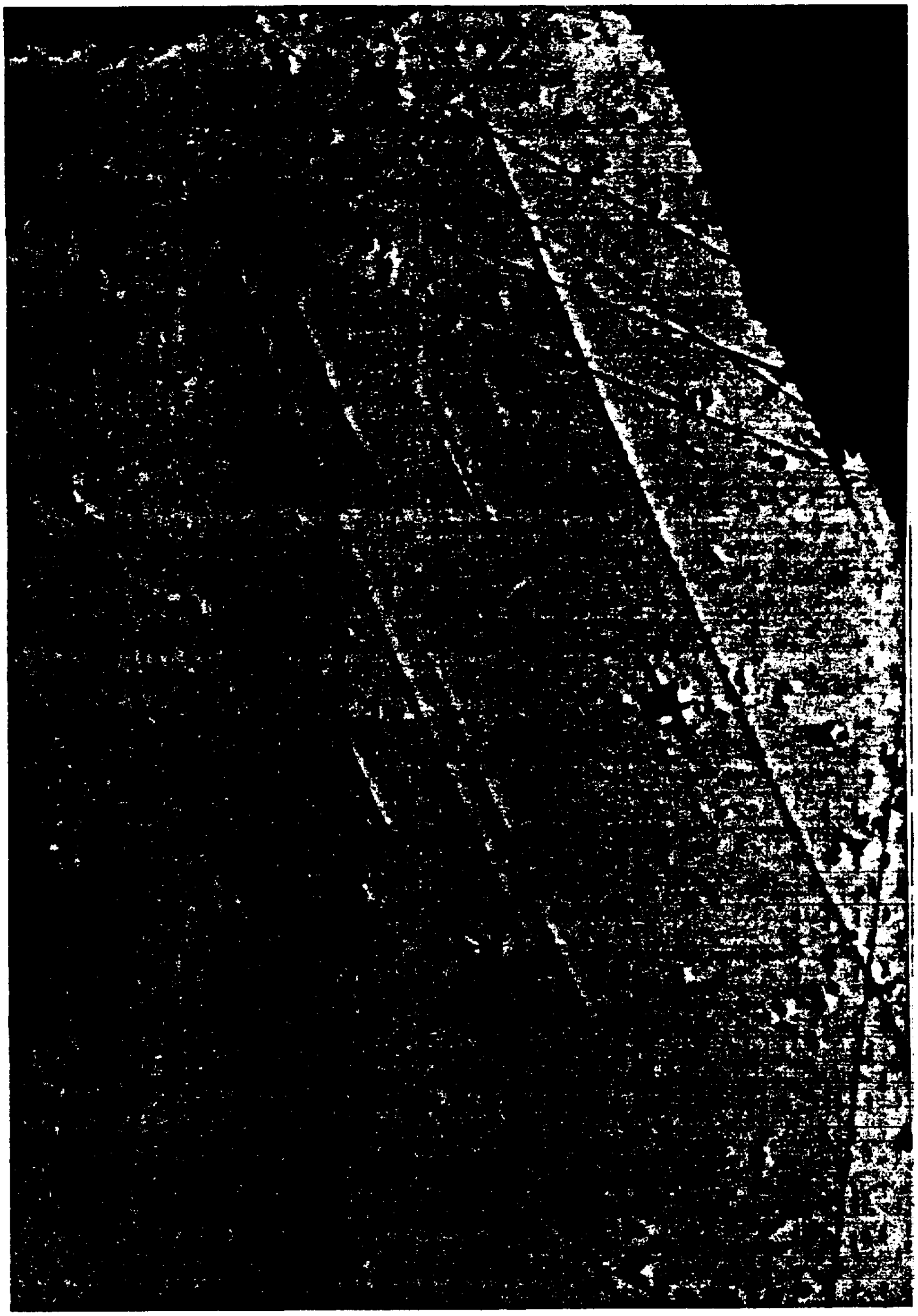


Figure 6. **Sulphides, Corner occurrence** **Sample 11**

Angular pyrite and adjacent chalcopyrite, partially replaced by goethite. Magnification 80x, long-axis FOV 1.4 mm, PPL, RL.

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; 1 **Description ; 2394**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Trail West showing

Format ; PTS - 34 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Milky to orange-stained, rusty-weathering vein quartz, appears granular, recrystallized. Trace of chlorite-biotite schist wallrock. With pyrite, galena, sphalerite, chalcopyrite, goethite and malachite. HS, 1 offcut. Not appreciably magnetic, no eff in dil HCl.

Major Minerals;
* Quartz- Variable gs: with some irregular, strained prismatic qz, quite coarse, to 4.5x1.5 mm. The majority of the vein material, enclosing most of the sulphide mineralization, appears in large measure recrystallized, gs 300-1000 μm, with equant granules displaying minimal strain. Strained qz may be turbid with many tiny fluid inclusions, most only 3-10 μm wide, some with vapour bubbles. 97%.

Minor and Accessory Minerals (3%);
* Sphalerite- Two forms of Zn sulphide are present. 1) Rich, deep or-brn isot sphal, grey in RL, orange in TL (may be very dark) with vfgr chalcopyrite disease, in irregular masses to 3.5x2.2 mm. Chalc blebs to 25x15 μm, most no more than 1-5 μm in size. 2) Pale brn, (?) slightly later sphal, the largest grain 550x275 μm. No very pale sphal was located for EDS EPM - the data for the dark sphal suggest ZnS with ≈7 wt.% Fe and up to a few tenths of 1% Cd. 1%.
* Pyrite- Often subrounded, equant, with small rounded inclusions of qz plus other sulphides: chalc, sphal with chalcopyrite disease. Max gs 1.4x1.0 mm. 1%.
* Chalcopyrite- Yl, anh sulphide, in part along fractures, to 1100x500 μm. EDS EPM => looks like rather pure chalc (the usual finding). 1%.
* Galena- Grey with distinctive cubic cleavage pits. High refl, isot, irregular masses to 1.2x1.2 mm, chalc/cov on margins. Gal and py both appear 'normal' in EDS spectra: gal may have 1% Cd, but less Ag / Se (?). Abundant Tr.
* Covellite- Deep bl, distinctive secondary sulphide, on py, dark sphal and gal grain margins. Intense bl birl and or aniso, ragged lamellar internal structures, to 550x500 μm. Curiously, the best development is on sphal, not chalc. Tr.
* Goethite- or-brn internal reflections, on py grain margins and fractures. Tr.
* Malachite (?)- Secondary Cu salt(s) on the HS, no typical material recognized in PTS. However, grn material - partial rims up to 500x120 μm on one sulphide aggregate - is probably mal or kindred Cu salt (bir lower than expected). Tr.
* Hessite- Aniso, pale grey, rounded blebs in py, max gs 35x25 μm, PH<<py. Brownish in XP. First thought to be stibnite; EDS EPM => all Ag, Te, no Sb, As, S. Ag_2Te. Two blebs in small rounded py grain, with a third bleb of gal. Rare Tr.
* Native gold (?)- Tiny blebs on edges of fgr qz, isot, yl, with chalc and other sulphides, to 15x12 μm. EDS EPM => hessite may carry minor (≈1%?) Au. Rare Tr.

Texture; Variably recrystallized vein quartz with abundant disseminated sulphide mineralization. The sulphide paragenesis appears to be early pyrite, then dark sphalerite, galena, pale sphalerite, and chalcopyrite (much of the latter now altered to covellite).

Summary; A recrystallized, sulphidic quartz vein with (in declining order of abundance) evidence of mineralization in Zn, Pb + Cu, Te and Ag ± Cd and Au.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 13, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; 2 **Description ; 2395**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Trail West showing

Format ; PTS - 35 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Granular white qz vein with py, sphal and trace chalc, go and mal staining. HS, 1 offcut. Not appreciably magnetic, white carb with rapid eff in dil HCl. Some carb is ironstained: ankerite? Sharp foliation-parallel contact with dark, fgr schistose pyritic host, rich in chl and bi.

Major Minerals;
* Quartz- Mostly (88%) cgr vein qz, max gs 3.3x1.7 mm. Much of the qz is partly recrystallized, more equant and less strained, gs generally 100-600 μm, less strained and with fewer inclusions than the original coarse vein qz. Minor (3%) fgr granular qz in the foliated wallrock. 91%.

Minor and Accessory Minerals (9%);
* Chlorite- Most abundant wallrock phase, esp in a band along vein wall. Ragged flakes to 800x200 μm, LF, str ext, anomalous 1st-o greenish grey int colour, pale grn-colourless pleo, chl variety ripidolite. A few flakes in the vein itself. 4%.
* Biotite- Small brn pleo mica flakes, max gs 220x100 μm. Abundant in thin band in the wall rock, separated from the vein wall by a thin chloritic selvage. 2%.
* Carbonate- Coarse rhombohedral carb in the vein, max gs 4.2x1.2 mm, encloses chalc near vein wall. Calcitic, although some material in HS looks rusty enough to be ankeritic. Also traces of fgr granular carb in the wallrock. 2%.
* Pyrite- Mostly in the wall rock as abundant, fgr disseminated sulphide. Mostly subh, max gs 220x220 μm. Rare chalc inclusions. 1%.
* K-feldspar- Colourless tabular prisms of moderate negative relief, RI<qz, in qz vein. Incl ext, kaol alteration, wide biaxial -ve figure, $\delta \approx 0.006$, somewhat fractured: max gs 3.5x0.6 mm. Orthoclase K-feld. Tr.
* Chalcopyrite- Yl, rimmed by carb in qz vein. Anh masses to 600x400 μm. Tr.
* Goethite- Thin rims of secondary oxide on chalc. Tr.
* Muscovite- Colourless, max gs 400x75 μm, in vein near wall, LS, str ext. Tr.
* Malachite- Abundant on fracture planes in the vein qz. Only small traces seen in the PTS as bright grn high-bir fracture fillings up to 60 μm thick. Tr.
* Sphalerite- Seen as mm-size black crystals along vein wall in HS. Only a trace of vfgr granular material seen in PTS. Tr.
* Cubanite- Thin pinkish plates exsolved from chalc host, 5 μm wide. Rare Tr.

Texture; The quartz vein (≈98% quartz, 2% carbonate, plus feldspar, pyrite and other sulphides and chlorite) cuts the schistose wallrock (based on a small area the mode is very roughly 40% chlorite, 30% quartz, 20% biotite and 10% pyrite) along a sharp contact parallel to the well-defined foliation. The vein displays partial recrystallization, less developed than in sample 1. Primary sulphide mineralization is concentrated along the vein near the wall: later malachite follows this contact, while late rusty pyrite plus possible ankerite lie on brittle fractures cutting the vein at a high angle.

Summary; A granular foliation-parallel quartz vein cutting pyritic, fine-grained biotite-chlorite schist, the host rock displaying mm-scale layers alternately dominated by chlorite and biotite. Cu and Zn values are evident.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 13, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; **3**

Description ; 2396
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Trail West showing

Format ; PTS - 25 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; A rather friable biotite schist, with dark brn sphal, traces of brassy py, and rusty (?) ankeritic carb. 4 small chips. Not appreciably magnetic, moderate eff in dil HCl.

Major Minerals;
* Quartz- Granular, uniaxial +ve figure, max gs 320x220 μm. Much of the material is vfgr (15-50 μm) and thus it is hard to exclude the possible existence of other phases, such as feldspars. 60%.
* Biotite- Pale brn pleo mica flakes, the pleo haloes yl rather than brn (the PTS is rather thin). Max gs 750x500 μm. Individial prism sections to at least 500x60 μm. 30%.
* Chlorite- Pale, LF, str ext, chl variety ripidolite. Monomineralic clots to at least 700x500 μm. Lenticles to 1200x250 μm. Individual flakes may be bent, a feature clearly visible near the ext position. Anomalous greenish-grey 1st-o int colour. 5%.

Minor and Accessory Minerals (5%);
* Carbonate- Granular, extreme bir, colourless, twinkles on rotation. Generally small anh granules, 100-200 μm in dia. 3%.
* Pyrite- Equant, rounded, subh to anh sulphide grains, max gs 240x180 μm. 2%.
* Sphalerite- Rich brn sphal, irregular, max gs 1000x800 μm. Abundant Tr.
* Chalcopyrite- Anh yl sulphide found esp as minor inclusions in equant py. Max gs 450x450 μm. Abundant Tr.
* Goethite- Secondary Fe oxide. Tr.
* Apatite- High relief, low bir. Tr.

Texture; Both sample and section are rather small, but the data reveal a felsic schist, the foliation defined by skeins of small biotite mica flakes, which weave a fabric through the fine-grained quartz-rich bulk of the rock. Other features, such as a 2.7x0.8-mm lenticle of granular carbonate, are aligned within the dominant foliation.

Summary; A carbonate- and chlorite-bearing biotite schist with minor values of Zn and Cu - compared with sample 2, this sample reinforces the suspicion that the small sample of wallrock in (2) may represent a chloritic vein selvage imprinted on biotite schist wallrock.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 13, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample **; 4** **Description ; 2397**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Trail West showing

Format ; PTS - 33 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Pale, granular, recrystallized qz vein penetrates along the foliation of a pale sericite schist. Small HS, 1 offcut. Not appreciably magnetic, minor disseminated carb grains display eff in dil HCl. Py and gal are the principal sulphides (the latter not represented in the PTS).

Major Minerals;
* Quartz- Coarse vein qz (60% of PTS) and fgr granular qz in the felsic schistose wall rock (16%). Some large (max gs 2.7x1.2 mm) ragged and somewhat strained qz grains occur in the veining, aligned with long axes parallel to vein walls. More abundant is equant vein qz, mostly 100-400 μm in dia, with somewhat irregular grain boundaries but little sign of strain. The qz in the wallrock is equant, mostly 15-120 μm in dia. 76%.
* Muscovite- Colourless mica flakes define foliation in wall rock. Max gs at least 120x30 μm, LF, 2nd-o int colours, str ext, most flakes only 10-100 μm long. 16%.

Minor and Accessory Minerals (8%);
* Biotite- Brn pleo mica flakes, mostly on the vein selvages, not in vein centre nor concentrated within the actual wall rock. Distinctly pleo, max gs at least 450x80 μm, basal cleavage planes sometimes appears highlighted, perhaps by vfgr Fe oxide (?). 4%.
* Pyrite- The fgr sulphide in schistose screens of wall rock in essentially sulphide-free vein qz (some py may appear in veining in the larger sample). Fractured grains to 700x250 μm and relatively rounded grains to 400x240 μm. 3%.
* Carbonate- Relatively cgr rhombohedral colourless calcitic carb in qz vein margins, with rather cgr biotite flakes. Max gs 600x500 μm, symm ext on cleavage traces. 1%.
* Chalcopyrite- Yl sulphide, max gs 120x80 μm, in vein qz. Tr.
* Galena- Dark, sub-mm cubes seen with py in a spur of the qz vein sampled in the PTS. Tr.
* Goethite- Secondary oxide, bl-grey in RL, forms rim on chalc. Tr.

Texture; Felsic schistose country rock cut by relatively coarse-grained quartz veining. The most complex mineralogy is located at the vein margins, with an abundance of carbonate, biotite and sulphide adhering to the vein walls.

Summary; A quartz-veined muscovite schist, the veining injected parallel to foliation, with biotite-rich selvages developed on sinuous vein margins. Anomalous in Cu and Pb due to fine-grained chalcopyrite blebs and small cubes of galena.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 13, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; 5 **Description ; 2398**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Sanderson West showing

Format ; PTS - 32 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; High-grade mineralization (?): cgr py with granular brn sphal, anh gal and another grey ore mineral (fahlore?) in banded qz-carb- sulphide vein. HS, 2 offcuts. Not appreciably magnetic, minor scattered carb grains display eff in dil HCl. Trace dusty yl and bl (?) As and Cu stains.

Major Minerals;
* Quartz- The vein qz is mostly equant and granular, 100-400 μm in dia. However, on vein margins and in certain patches quite different habits are apparent; a strained 3.6x1.6 mm grain is indicative of the coarse qz. A streak of qz parallel to shear planes in the rock is darkened by planes of μm-scale mineral and fluid inclusions oriented normal to the shear direction, and elsewhere planes of shearing slice through the qz in vein-parallel direction. 75%.
* Pyrite- Subh grains to 3.2x2.2 mm, 2.1x1.7 mm, but also in vfgr patches. May be somewhat deformed. Includes a swarm of small, subrounded grains in gs range 25-300 μm. 10%.
* Carbonate- Granular masses to at least 600x350 μm, may be intergrown with fgr py and bi. Colourless, extreme bir, twinkles on rotation, calcitic carb. 5%.
* Muscovite- The mica (LS, str ext, bright 3rd-o int colours) shows very pale brownish to colourless pleo (very pale compared with normal biotite), max gs 350x200 μm, sometimes intergrown with carb and/or anh sulphides. 5%.

Minor and Accessory Minerals (5%);
* Sphalerite- Medium to pale yl tint in TL, medium grey in RL. Anh, max gs circa 1000x350 μm. EDS EPM suggests near-pure ZnS. 3%.
* Galena- Anh masses to 800x500 μm. Grey, may surround py. 2%.
* Tetrahedrite- Grey sulphosalt, duller than gal but more refl and lighter grey than sphal. PH<py but >sphal,gal (should be <sphal). Anh masses to 1.6x1.2 mm. EDS EPM => uncalibrated analysis (wt.%): Cu 38%, S 28%, Sb 22%, As 6%, Zn 5%, Fe 1%, Ag not visible. Tr.
* Covellite- Distinctive bl sulphide, to 60x50 μm. Tr.
* Chalcopyrite- Tiny yl blebs in py, max gs 35x15 μm. Tr.

Texture; A sulphidic quartz vein cutting carbonatized and pyritized muscovite schist. The veining appears to be pre- to syn-tectonic, extensively sheared and only partly recrystallized. Overall ore-mineral paragenesis: pyrite, then tetrahedrite, then galena and sphalerite, then chalcopyrite and covellite. Galena, especially susceptible to remobilization, is in part streaked out in the foliation direction (chalcopyrite would also respond in this manner, were it more abundant). Shear planes, quartz veining and the wall-rock foliation are all crudely parallel.

Summary; A sheared quartz- carbonate- sulphide vein with Zn, Pb, Cu values (plus As, Sb from fahlore), cutting a deformed muscovite schist host rock which is extensively carbonatized and pyritized.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 13, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; 6 **Description ; 2399**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Sanderson West showing

Format ; PTS - 31 µm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Pale grey, granular vein qz. Small HS broken into 5 chips, 1 offcut. Not appreciably magnetic, minor fracture-related carb displays eff in dil HCl. Traces of buff mica, vfgr py, and a sky-blue Cu salt (the Pb Cu sulphate linarite, or less likely, the Cu sulphate chalcanthite?).

Major Minerals;
* Quartz- In the finer material, equant, essentially unstrained grains dominate, max gs 550x500 µm, uniaxial +ve figure. Coarser grains tend to be angular and quite highly strained, max gs ≈3.5x2.2 mm, with scalloped grain boundaries indicative of incipient recrystallization. 99%.

Minor and Accessory Minerals (1%);
* Biotite- Impersistent stringers of very pale brn pleo biotite, max gs 250x50 µm. 1%.
* Chalcopyrite- Very minor, rounded yl sulphide grains in qz, max gs only 15x10 µm. Tr.
* Carbonate- Colourless (?) calcitic carb, small granules to ≈300x100 µm. May occur in close proximity to the mica. Tr.
* Pyrite- Fgr py seen in HS. Tr.
* Linarite (?)- Bright blue flecks of a (?) Cu-rich sulphate phase seen in HS. Tr.

Texture; The quartz displays a range of textures, consistent with variable recrystallization from coarse, strained prisms to smaller, equant and unstrained crystals.

Summary; Granular, partially recrystallized vein quartz, relatively pure silica. Probably with anomalous Cu ± Pb assay, but not on the same level as the heavily mineralized sample 5.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 13, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; 7 **Description ; 2400**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Sanderson East showing

Format ; PTS - 35 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Granular milky vein qz. Abundant sphal (rich chocolate brn colour, crystalline) and lesser py, (?) fahlore and 'galena' (which turns out to be tellurides). HS, 1 offcut. Not appreciably magnetic, no eff in dil HCl. Orange rusty weathered surface.

Major Minerals;
* Quartz- Highly sheared qz, max gs 3.6x2.7 mm. The domains are elongate, lenticular, with incipient recrystallization of strained crystals marked by mortar texture, interlocking grain boundaries with an amplitude of 10-20 μm. 90%.
* Sphalerite- The sphal is rich or-brn in PPL, cleaved by innumerable partings into angular domains as large as 80x40 μm. Compact masses intergrown with qz, up to 10 mm in width. Grey, cracked surfaces in RL, or-brn internal reflections in isot matrix. EDS EPM reveals modest Fe content, maybe ≈4-7 wt.% (with higher Fe in the darker grains). PH of sphal and tet >> tellurides. 9%.

Minor and Accessory Minerals (1%);
* Tetrahedrite- Tabular, isot, max gs 2.2x0.6 mm, irregular masses to 4x3 mm, medium grey hue. Intergrown with coarse sphal. EDS EPM => uncalibrated analysis of (wt.%) Cu 36%, Sb 30%, S 28%, Fe 4%, Zn 2%, no As or Ag detected (4 points - in contrast, the mean of 3 points on fahlore in sample 5 had less Sb and Fe and more As and Zn). PH>>tellurides. 1%.
* Bi telluride 1 (wehrlite, BiTe?)- At higher power, strongly aniso in bl to maroon-brn tints (NOT isot altaite or gal). Grey-white, high refl, BiTe by EDS EPM, max gs 2.1x0.9 mm, 1.7x0.5 mm, 1.5x0.3 mm. Largest is intergrown with native Te. Abundant Tr.
* Native tellurium (Te)- On end of 1200x200 μm sphal, isolated by a 80x60 μm grain of pale BiTe. 140x80 μm, pale brn, aniso, EDS EPM => Te (<1% Bi or Pb, no Au or Hg). In Precambrian terrain, may be oxidation product of tellurides. Abundant Tr.
* Pyrite- Fgr, pale yl sulphide. Tr.
* Chalcopyrite- Small yl blebs form necklaces on margins of earlier, coarser sulphides. Tr.
* Hessite (Ag_2Te)- Medium grey-brn exsolution lamellae in pale BiTe, aligned in host lattice, individual lamellae often spear- or paddle-shaped, dark bl-brn pleo, up to 220 μm x 30 μm. EDS EPM => Ag,Te. Also rounded blebs to 450x400 μm. Tr.
* Covellite- Distinctive bl sulphide in fracture planes. Tr.
* Argentite- Pale bluish-grey veinlets of soft sulphide cutting sphal, 10-25 μm wide. EDS EPM => Ag and S peaks, no Cu, Fe, Sb or As, Cd, Te, Bi... Cubic Ag_2S. Tr.
* Bi telluride 2 (tetradymite, Bi_2Te_2S?)- Distinctly yl against other tellurides. High refl. Forms partial rim on hessite in pale BiTe. Speckled or pitted appearance, max gs 200x50 μm. EDS EPM suggests Bi and Te, no Au or Sb, maybe trace Ag, maybe no S. Rare Tr.

Texture; Highly sheared vein quartz, irregular crystals with sutured grain boundaries, a complex mortar texture superposed on a general elongation of parallel domains which are generally quite small, say 300x100 to 600x200 μm in section, with larger scattered grains to 5.0x1.4 mm. With mm-scale grains of tetrahedrite and intergrowths of at least four tellurium minerals.

The anhedral BiTe may abut sphalerite and tetrahedrite. The fahlore may be rimmed by hessite, and occur with other discrete inclusions of hessite in a common host of BiTe intergrown with native tellurium. The hessite has a distinctive yellow to orange to blue 'tartan fire', due to presence of cubic relicts in a monoclinic mass. Tentative paragenesis for the ore minerals: early trace pyrite, then tetrahedrite and sphalerite, then chalcopyrite, tellurides and argentite (the latter in veinlets cutting sphalerite). Possible telluride sequence: hessite first, then tetradymite, wehrlite and tellurium.

Summary; Sheared quartz vein with abundant sphalerite, coarse tetrahedrite and tellurides with values of Zn, Cu, Ag and other metals (e.g., Sb in fahlore, Te and Bi in tellurides). The work confirms hessite, argentite, native tellurium, and one to two Bi tellurides (wehrlite ± tetradymite).

No firm evidence yet for other possible phases, e.g., rucklidgeite, $(Bi,Pb)_3Te_4$ or joseite-A,B (Bi-Te-S minerals), stuetzite or empressite (Ag tellurides), volynskite (Ag-Bi telluride), hedleyite ($Bi_{14}Te_6$), Au±Ag tellurides or altaite. The latter (PbTe) is a relatively common telluride and it might well be found in this environment.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 14, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; 8 **Description ; 2401**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Sanderson East showing

Format ; PTS - 35 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Granular, part-recrystallized milky qz vein with shiny pyrite plus trace of fgr steel-grey mineral. Some sulphide on late fracture in the qz. Goethite and malachite on exterior. HS 1 offcut. Not appreciably magnetic, rapid eff in dil HCl, restricted to trace of fracture-hosted calcite.

Major Minerals;
* Quartz- Lenticular, strained domains, max gs 1.4x0.6 mm, 1.6x0.45 mm, in common orientation, with elaborate sutured grain boundaries. Contains tiny (3-10 μm) primary and secondary fluid inclusions, the latter in distinct planes in the host. 99%.

Minor and Accessory Minerals (1%);
* Pyrite- Small anh to subh grains, max gs 240x160 μm. 1%.
* Tetrahedrite- Grey grains to ≈800x180 μm. PH<py,sphal. The mean of uncalibrated EDS EPM analyses on 3 grains indicates a composition near (all elements in wt.%) Cu 30%, Sb 26%, S 31%, Fe 3%, Zn 3%, As 6%, Ag 1%. **A rock of specific gravity 3 containing this tetrahedrite (S.G.≈5) would have bulk Ag content of ≈17 ppm from each 0.1 vol.% of the sulphosalt (+500 ppm Cu, 430 ppm Sb and 100 ppm As).** Tr.
* Sphalerite- Rich brn in TL, medium to dark grey in RL, masses to 2.2x0.5 mm. Pale compared with the sphal of sample 1, 3 points analysed by EDS EPM indicate very low-Fe, near-pure ZnS with ≤1 wt.% Fe. Tr.
* Chlorite- Pale grn pleo chl, LF, str ext, chl variety ripidolite. Lenticle, 2.5x0.5 mm, within the fabric, constituent flakes in diverse orientations. Tr.
* Calcite- A fgr colourless carb, small granular masses to 500x500 μm, found beside chl lenticle within the pervasive qz fabric. Tr.
* Chalcopyrite- Anh yl sulphide, max gs 750x550 μm. Tr.
* Galena- With triangular cleavage pits, in fractures in the qz, to 650x150 μm. Tr.
* Muscovite- A 200x40 μm flake in chl, bright 3rd-o int colours, LS, str ext. Tr.
* Goethite- In HS, not seen in PTS (some yl material on fractures is probably burnt adhesive, an artifact of sample prep.). Tr.
* Malachite- In HS, not seen in PTS. Tr.

Texture; Sample is composed largely of highly-strained quartz in elongate, lenticular domains, with mortar texture on grain boundaries. Extinction bands traverse most grains on rotation in crossed polars. The quartz grains define a pronounced shear fabric, within which are entrained minor sheaves and lenticles of chlorite and granules of calcite. The traces of sulphides such as sphalerite may lie along one of two conjugate shear directions, oblique to the long axes of the quartz, along planes of especially fine-grained silica.

Summary; Sulphide-bearing, highly sheared quartz vein. The quartz fabric suggests that this could be from the same vein or veining event as sample 7. Values of Zn + Cu + Pb + fahlore-related metals (Sb, Ag, As).

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 14, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample **; 9**

Description ; 2402
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, L15 West showing

Format ; PTS - 31 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Brassy chalc and py in milky qz vein, variably ironstained, with minor greenish black (?) chloritic shears or wallrock pendants within the qz. Trace of gal on rusty (?) vein margin, not seen in PTS. Small HS, 1 offcut. Not appreciably magnetic, no eff in dil HCl.

Major Minerals;
* Quartz- Elongate lenticular domains of sheared qz, max size at least 8.5x3.8 mm, with mortar texture between the larger entities. The domain boundaries are commonly decorated by small equant granules of recrystallized silica, often only 10-50 μm in dia. Minute dark minerals / fluid inclusions are abundant in trails within the larger strained qz domains. 99%.

Minor and Accessory Minerals (1%);
* Carbonate- Granular colourless to very pale brownish carb, max gs 900x700 μm. Extreme bir, twinkles on rotation. 1%.
* Chalcopyrite- Irregular masses of yl sulphide to 1600x220 μm, elongated within the host qz fabric. Tr.
* Pyrite- Subh grains to 140x80 μm. Tr.
* Galena- Clearly visible on (?) vein margin in HS, but not in PTS. Tr.
* Muscovite- Mica flake, 300x30 μm, bright 3rd-o int colours, LS, str ext, aligned along a boundary between coarse qz domains. Tr.

Texture; The quartz vein most probably had a primary depositional texture of coarse prismatic crystals, maximum length at least 8-10 mm. Shearing and incipient recrystallization have initiated a grain size reduction, never completed, to many elongate domains typically 0.1 mm to a few mm in length. Sulphides and mica occur along the planes of the shear fabric between the oriented quartz domains.

Summary; Sheared quartz vein with Cu and Pb values, chalcopyrite being the most abundant sulphide.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 14, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample **; 10** **Description ; 2403**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, L15 East showing

Format ; PTS - 31 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Rusty qz vein with traces of disseminated sulphides (pyrr, py, sphal and chalc). HS, 1 offcut. Weakly magnetic, because of presence of pyrr, no eff in dil HCl. Host rock appears to be a schist with chl and musc. The vein appears to be granular, and cut by later fractures.

Major Minerals;
* Quartz- Variable gs, locally equant and largely recrystallized but generally in ragged, somewhat elongate domains with mortar texture on grain boundaries. Max gs 500x350 μm, often with ext bands subparallel to the long axes of the grains. 92%.

Minor and Accessory Minerals (8%);
* Chlorite- Pale grn chl, variety ripidolite, LF, str ext, greenish-grey in XP, with minor purplish patches. Sheaves of well-formed flakes to 1100x300 μm. Two EDS spectra reveal major Mg, Al and Si plus lesser Fe as the four principal cations. 4%.
* Pyrrhotite- Anh, clove-brn, strongly aniso sulphide, masses to 800x600 μm. Pyrr and chalc confirmed by EDS EPM (pyrr S/Fe peak height ratio ≈2.5:1, cf. 5:1 for py on this system). 2%.
* Chalcopyrite- Irregular clots of yl sulphide, max gs ≈750x300 μm. 1%.
* Sphene- Granular masses to 400x300 μm, often with chl, pale brn pleo grains of very high relief and bir, max gs 120x70 μm. Quite distinctive, presumably indicative of pre-existing Fe-Ti oxides, confirmed by EDS EPM. 1%.
* Goethite- Granular yl Fe oxide, high relief and bir, max gs 80x70 μm, forming microscopic boxworks around and near sulphides. Presumably derived by alteration of py / other sulphides. EDS EPM => Fe, no S (not jarosite). Tr.
* Sphalerite- Fgr brn isot sulphide, masses to 200x100 μm. Tr.
* Pyrite- Traces of fgr isot sulphide. Tr.
* Clinozoisite- Pale yl, fairly high relief, unusual yl and bl tones in 1st-o int colours, isolated in the qz, max gs 250x150 μm. Epidote-family mineral. Tr.
* Muscovite- Colourless, LS, str ext, max gs 70x10 μm. Rare Tr.

Texture; A sheared quartz vein with bands of variable grain size. The vein is cut by planes enriched in chlorite, sulphides and sphene, oriented both parallel and transverse to the principal quartz-crystal fabric.

Summary; Sheared quartz vein cut by planes decorated with chlorite, sulphides and granular sphene, with Cu and Zn values in the sulphides.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 14, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; **11** **Description ; 2404**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, Corner occurrence

Format ; PTS - 32 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Milky white granular qz vein in chl schist. HS, 1 offcut. Not appreciably magnetic, rapid eff in dil HCl, from tiny, widespread calcite granules. Mineralization in the vein: py, deep brn sphal, plus staining of malachite and goethite. Vein encloses chl-rich clots and seams.

Major Minerals;
* Quartz- Granular vein qz, mostly equant, extensively recrystallized, essentially unstrained, with polygonal boundaries, 100-400 μm in dia. Somewhat strained or turbid grains also present, max gs at least 600x350 μm. Qz in the schistose wall rock is also equant, unstrained, gs mostly 30-100 μm. 94%.

Minor and Accessory Minerals (6%);
* Carbonate- Found esp in wallrock. Colourless, extreme bir, twinkles on rotation, max gs ~300x150 μm. Small, anh granules also found throughout the qz vein. 3%.
* Chlorite- Major component of wallrock, found also in the vein. LF, str ext, chl variety ripidolite. Flakes to 450x450 μm, greenish-grey in XP. 3%.
* Biotite- Ragged flakes to 350x60 μm, brn, pleo, in wallrock with chl, defining the pronounced foliation. Tr.
* Pyrite- Partly oxidized to go on fractures. max gs 700x400 μm. Tr.
* Chalcopyrite- Anh yl sulphide masses to 900x200 μm. Tr.
* Marcasite- Low refl relative to py, max gs 400x350 μm, assoc with chalc and marginal go alteration. Tr.
* Sphalerite- Fgr translucent or-brn Zn sulphide, isot, with brn internal reflections, max gs 300x300 μm. Tr.
* Goethite- Fracture-filling alteration, rims and complete pseudomorphs after fgr py and marc. Tr.
* Malachite- Green staining on HS. Tr.
* Muscovite- Flakes in vein to 200x70 μm. Tr.
* Chlorite 2- Anomalous deep bl 1st-o int colour, small flakes in vein. LS, str ext, max gs 150x50 μm, chl variety penninite. Tr.

Texture; Quartz vein cutting foliated wallrock composed of roughly equal proportions of chlorite flakes and granular carbonate, plus lesser quartz and biotite mica. Sulphides occur in both vein and wallrock. The vein quartz in this sample is appreciably recrystallized, with polygonal grains and many 120° triple junctions.

Summary; Quartz vein cutting a chlorite-carbonate schist, the contact parallel to the foliation in the schist, with Cu and Zn values.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 14, 1999

TURNSTONE **PETROGRAPHIC DESCRIPTION** **Status; CONFIDENTIAL**

Sample ; **12** **Description ; 2405**
TGSL Project; 1999-08

Client/job ; Doug Parker, Thunder Bay
Locality ; Northwest Ontario - Slate Falls project, Uchi subprovince.

Collection details; HS, FTM occurrence

Format ; PTS - 33 μm - by U. of T. DOG, Toronto, Ont
Hand specimen data; Black and white, rusty-weathering qz-tour vein. The qz appears to be brecciated, the fractures infilled by large volumes of lustrous greenish-black tour. 2 chips, 1 offcut. Not appreciably magnetic, no eff in dil HCl. Late fractures (not in PTS) are decorated by thin films of pale py.

Major Minerals;
* Quartz- Highly strained qz, much subgrain development, innumerable tiny mineral and fluid inclusions 2-10 μm in dia. The largest grains are prisms up to 3.0x1.6 mm or more, with mortar texture on grain boundaries and complex, undulose ext indicative of high strain. 80%.
* Tourmaline- Marked pleo from pale brn to strong brownish grn, max absorption with prism length normal to the polarizer. High relief, max gs ≈800x200 μm, except for one unusually perfect prism, 1100x130 μm, LF, str ext, 2nd-o bl int colour, $\delta \approx 0.022$, tour variety schorl. Basal parting normal to prism length, visible in the most euh prisms. Masses composed of ragged prisms, individual prism development usually rather indistinct. 20%.

Minor and Accessory Minerals (Tr.);
* Pyrite- Small sulphide grains, max gs 350x120 μm, on qz-tour interfaces. Tr.

Texture; Highly sheared quartz vein with abundant tourmaline. A possible sequence of events is as follows: 1) quartz vein emplaced in (unknown) wall rock, 2) deformation of the vein and constituent crystals, with brittle fracturing, allowing 3) infill and cementation by tourmaline, with minor fracturing of the latter, filled in turn by fine-grained quartz, and 4) cooling and later brittle fracturing, without appreciable displacement or further mineralization, except by traces of limonitic oxide.

Summary; Mineralogically simple, strongly sheared quartz-tourmaline vein with trace pyrite, but no obvious metal values.

Age; Late Archean
Petrography; GCW, Turnstone Geological Services Ltd, TO
Nov 14, 1999

=== NOTES ===

COURIER deliveries; please use street address, quote Tel. number:
47 Pellissier Street South, Campbellford, Ontario, Canada K0L 1L0
Tel (705)-653-5223
***
GCW at the University of Toronto;
IsoTrace Laboratory: fax (416)-978-4711, phone (416)-978-4041
e-mail gcw@quartz.geology.utoronto.ca

52004NE2002 2.20710 WESLEYAN LAKE 020

TO: JIM MCAULEY (877) 670-1555
FROM: DOUG PARKER 2 PAGES
RE: 2.20710 FEBRUARY 10, 2001

MR. MCAULEY,

TYPE OF EQUIPMENT USED: CATERPILLAR 225

EQUIPMENT, OPERATORS, LABOURERS AND SUPPLIES WERE PROVIDED BY THE BAMAJI LAKE ECONOMIC DEVELOPMENT CORPORATION UNDER THE SUPERVISION OF DARRIN CORBIER. STRIPPING AND TRENCHING FIELD PROGRAM RAN FROM AUGUST 30 TO OCTOBER 5 1999.

LEGEND FOR 1:2500 SCALE MAPPING ATTACHED.

PETROGRAPHIC SAMPLES DO NOT CORRESPOND TO ASSAYED SAMPLES.

SAMPLE 702B IS CORRECTLY LOCATED ON MAP, SAMPLE DESCRIPTION SHOULD READ 33+95E, 2+35S.

SINCERELY YOURS,

D. Parker

RECEIVED
FEB 12 2001
GEOSCIENCE ASSESSMENT OFFICE

LEGEND FOR 1:2500 SCALE MAPS

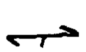
ROCK TYPES

MV	MAFIC VOLCANIC
SED	SEDIMENT
GB	GABBRO
TR	TRONDHJEMITE
FP	FELDSPAR PORPHYRY
QFP	QUARTZ FELDSPAR PORPHYRY

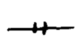
CHL	CHLORITE	PY	PYRITE
SER	SERICITE	SP	SPHALERITE
CARB	CARBONATE	CPY	CHALCOPYRITE
FSP	FELDSPAR	AZ	AZURITE
BIO	BIOTITE	MAL	MALACHITE
QZ	QUARTZ	GN	GALENA

BED'G	BEDDING	FGR	FINE GRAINED
FRAC'G	FRACTURING	WK	WEAK
FRD	FRACTURED	MASS	MASSIVE
ALT	ALTERED	OXID	OXIDIZED
BAND'G	BANDING	Fe Ox	IRON OXIDE
UNALT'D	UNALTERED	STR	STRONG
HOMOG	HOMOGENOUS	V	VERY
OCC'L	OCCASSIONAL	O/C	OUTCROP
MOD	MODERATE	DK	DARK
EOL	END OF LINE	M	METRE
CK	CREEK	MM	MILLIMETRE
FOL'N	FOLIATION	CM	CENTIMETRE
XENO	XENOLITH	PEND	ROOF PENDANT

~ SHEARING

 STRIKE AND DIP OF FABRIC

 " " " " BEDDING

 " " " " FRACTURE

x [702B] SAMPLE LOCATION AND NUMBER

2.20710

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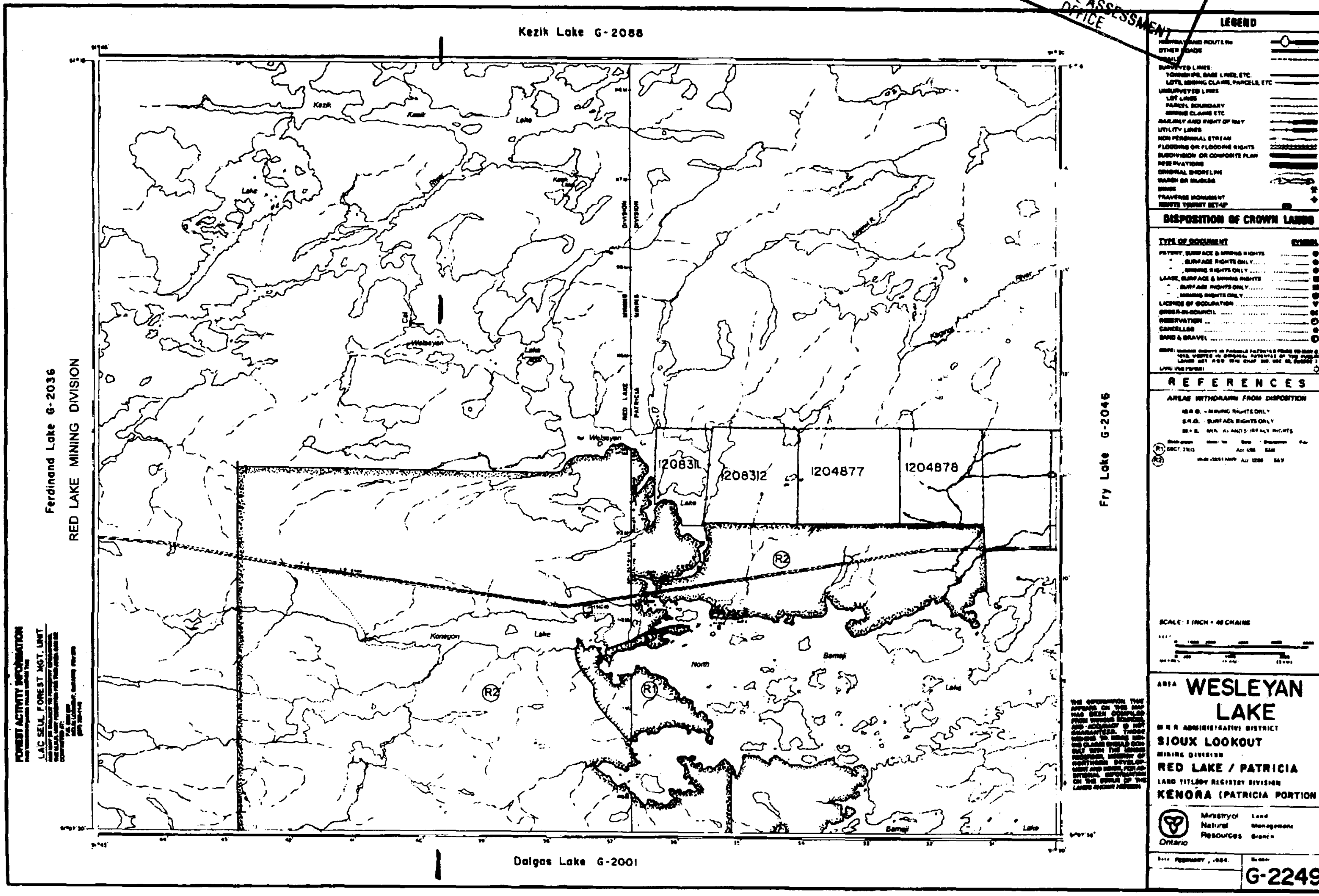
NOV 15 2000
GEOSCIENCE ASSESSMENT OFFICE



Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) W0030.00066

Assessment Files Research Imaging

ıbsection 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this ıent work and correspond with the mining land holder. Questions about this collection nent and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

52004NE2002 2.20710 WESLEYAN LAKE 900

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

2.20710

1. Recorded holder(s) (Attach a list if necessary)

Name DOUGLAS P. PARKER	Client Number 179595
Address 365 LARK STREET	Telephone Number 807-345-5860
THUNDER BAY ON	Fax Number " " "
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☐ Geotechnical: prospecting, surveys, assays and work under section 18 (regs)
☒ Physical: drilling stripping, trenching and associated assays
☐ Rehabilitation

		Office Use
Work Type TRENCHING		Commodity
		Total $ Value of Work Claimed 33,190
Dates Work Performed From 25 04 99 (Day Month Year) To 08 01 00 (Day Month Year)		NTS Reference
Global Positioning System Data (if available)	Township/Area WESLEYAN LAKE	Mining Division PATRICIA
	M or G-Plan Number G 2249	Resident Geologist District Thunder Bay North

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name DOUGLAS P. PARKER	Telephone Number
Address AS ABOVE	Fax Number
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

RECEIVED
NOV 15 2000
GEOSCIENCE ASSESSMENT OFFICE

4. Certification by Recorded Holder or Agent

I, D. PARKER (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent D. Parker		Date Nov 14, 2000
Agent's Address AS ABOVE	Telephone Number	Fax Number

0241 (03/97)

2522.

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.		Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
eg	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8,892	$ 4,000	0	$4,892
1	1208312	16	3190			3190
2	1204877	16	15000			15000
3	1204878	16	15000			15000
4						
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6						
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9						
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12						
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14						
15						
	Column Totals	48	33190			33190

I, DOUGLAS P. PARKER (Print Full Name) do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
D. Parker	Nov 14, 2000

6. Instruction for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☒ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

0241 (03/97)

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NOV 15 2000
GEOSCIENCE ASSESSMENT OFFICE

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use)
W0030.00066

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

2.20710

Work Type	Units of work (Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.)	Cost Per Unit of work	Total Cost
GEOLOGIST; MAPPING, SUPERVISION, REPORT	52 MANDAYS	$225/DAY	11700
PETROGRAPHIC STUDY			2486
BOAT RENTAL	11 DAYS	$25/DAY	275
BACKHOE	75 HOURS	$120/hr	9000
LABOUR	149 HOURS	$13/hr	1936
4 WHEEL RENTAL (ATV)	22 DAYS	$25/DAY	550
Associated Costs (e.g. supplies, mobilization and demobilization).			
SUPPLIES			201
SAMPLE SHIPMENT			41
ASSAYS			1679
Transportation Costs			
TRUCK MILAGE	2435 Km	30¢/Km	730
AIR CHARTER			2318
Food and Lodging Costs			
ACCOMODATION			1707
FOOD			567
		Total Value of Assessment Work	33190

RECEIVED
NOV 15 2000
GEOSCIENCE ASSESSMENT OFFICE

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total $ value of worked claimed.

Note:

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, DOUGLAS P. PARKER (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as ______ (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature	Date
D. Parker	Nov 14/00

0212 (03/97)

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9845
Fax: (877) 670-1555

March 19, 2001

DOUGLAS PATRICK PARKER
365 LARK STREET
THUNDER BAY, Ontario
P7B-1P4

Dear Sir or Madam:

Submission Number: 2.20710

		Status
Subject: Transaction Number(s):	W0030.00066	Approval After Notice

---

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact JIM MCAULEY by e-mail at james.mcauley@ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

Lucille Jerome

ORIGINAL SIGNED BY
Lucille Jerome
Acting Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 15783
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.20710

Date Correspondence Sent: March 19, 2001 **Assessor:** JIM MCAULEY

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W0030.00066	1208312	WESLEYAN LAKE	Approval After Notice	March 15, 2001

Section:
12 Geological GEOL
10 Physical PTRNCH

The revisions outlined in the Notice dated January 29, 2001 have been corrected. Accordingly, assessment work credit has been approved as outlined on the Declaration of Assessment Work Form accompanying this submission.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

Correspondence to:
Resident Geologist
Thunder Bay, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
DOUGLAS PATRICK PARKER
THUNDER BAY, Ontario

Correspondence ID: 15783

MINISTRY OF NORTHERN DEVELOPMENT AND MINES
PROVINCIAL MINING RECORDER'S OFFICE

MINING LAND TENURE MAP

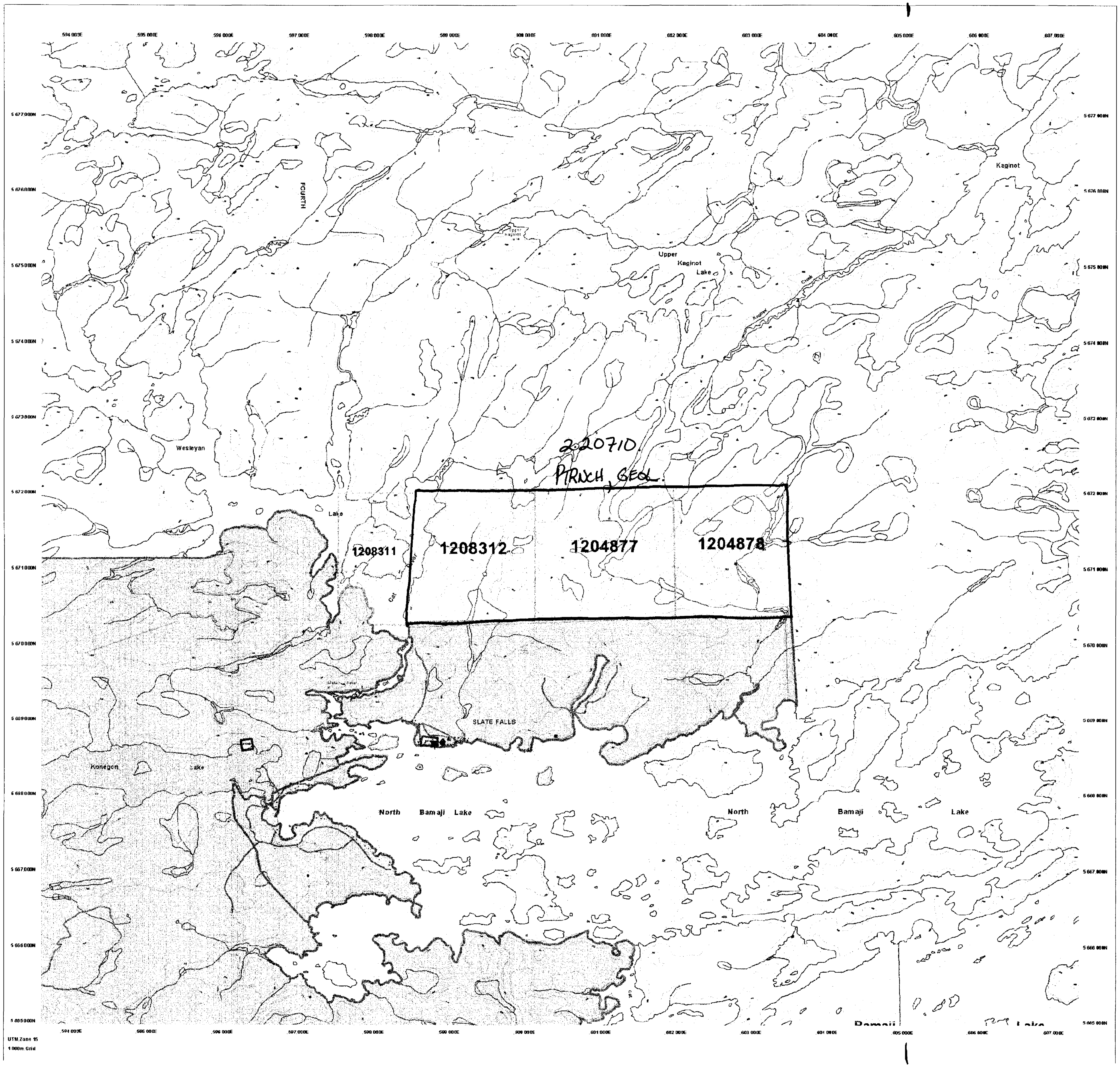
Date / Time of Issue Mar 19 2001 11:13h Eastern

TOWNSHIP / AREA WESLEYAN LAKE AREA

PLAN G-2249

ADMINISTRATIVE DISTRICTS / DIVISIONS

Mining Division	Patricia
Land Titles/Registry Division	KENORA
Ministry of Natural Resources District	SIOUX LOOKOUT



TOPOGRAPHIC

Administrative Boundaries; Township; Concession, Lot; Provincial Park; Indian Reserve; Cliff, Pit and Pile; Contour; Contour - Approx., Auxiliary, Depression; Shaft; Mine Headframe; Railway; Road; Trail; Natural Gas Pipeline; Hydro Line; Communication Line; Wooded Area; Monument - Cadastral, Horizontal, Vertical, Control

LAND TENURE

Freehold Patent: Surface And Mining Rights; Surface Rights Only; Mining Rights Only

Leasehold Patent: Surface And Mining Rights; Surface Rights Only; Mining Rights Only

Licence of Occupation: Uses not Specified; Surface And Mining Rights; Surface Rights Only; Mining Rights Only

Land Use Permit; Order in Council; Water Power Lease Agreement

1234567 Mining Claim

LAND TENURE WITHDRAWALS

1234 Areas Withdrawn from Disposition

Mining Act Withdrawal Types: Wsm Surface and Mining Rights Withdrawn; Ws Surface Rights Only Withdrawn; Wm Mining Rights Only Withdrawn

Order in Council Withdrawal Types: W'sm Surface and Mining Rights Withdrawn; W's Surface Rights Only Withdrawn; W'm Mining Rights Only Withdrawn

IMPORTANT NOTICES

0 Km 2.0 Km

LAND TENURE WITHDRAWAL DESCRIPTIONS

Identifier	Type	Date	Description
223	Wsm	Jan 1 2001	M&S N0130 5001 W SL 03/01 NWR
228	Wsm	Jan 1 2001	M&S N9130 5001 W-SL-03/01 NWR
236	Wsm	Jan 1 2001	M+S WITHDRAWAL SECT 31(b) APR.4/05
241	Wsm	Jan 1 2001	M+S WITHDRAWAL SECT 31(b) APR.4/85

IMPORTANT NOTICES

Areas under which special regulations, limitations or conditions exist that affect normal prospecting, staking and mineral development activities.

Those wishing to stake mining claims should consult with the Provincial Mining Recorders' Office of the Ministry of Northern Development and Mines for additional information on the status of the lands shown hereon. This map is not intended for navigational, survey, or land title determination purposes as the information shown on this map is compiled from various sources. Completeness and accuracy are not guaranteed. Additional information may also be obtained through the local Lands Titles or Registry Office, or the Ministry of Natural Resources.

The information shown is derived from digital data available in the Provincial Mining Recorders' Office at the time of downloading from the Ministry of Northern Development and Mines web site.

General Information and Limitations

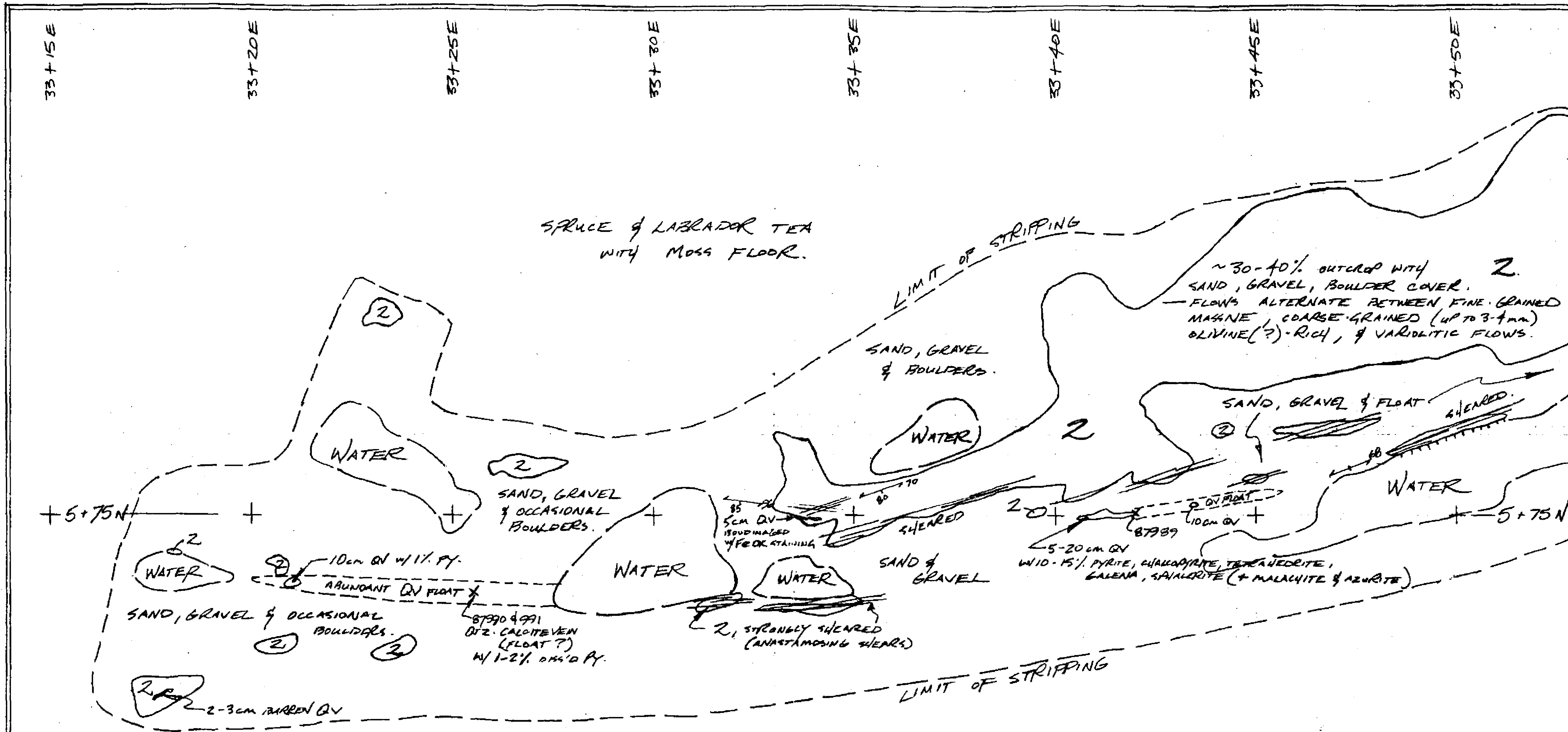
Contact information:
Provincial Mining Recorders' Office Toll Free
Willet Green Miller Centre Tel: 1 (888) 415-9845
933 Ramsey Lake Road Fax: 1 (877) 670-1444
Sudbury, ON P3E 6B5
Home Page: www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

Map Datum: NAD 83
Projection: UTM (6 degree)
Topographic Data Source: Land Information Ontario
Mining Land Tenure Source: Provincial Mining Recorders' Office

This map may not show unregistered land tenure and interests in land including certain patents, leases, easements, right of ways, flooding rights, licenses, or other forms of disposition of rights and interest from the Crown. Also certain land tenure and land uses that restrict or prohibit free entry to stake mining claims may not be illustrated.

52O04NE2002 2.20710 WESLEYAN LAKE 200

52004NE2002 2.20710 WESLEYAN LAKE 210



LEGEND

2	MAFIC FLOWS (FINE-GRAINED MASSIVE, COARSE-GRAINED OLIVINE(?)-RICH, & VARIOLITIC)
80 / 70	FOLIATION/SHEARING WITH STRIKE & DIP
QV	QUARTZ VEIN
	SHEARING
	OUTCROP
X 87989	SAMPLE LOCATION & NUMBER

N

SLATE FALLS PROPERTY

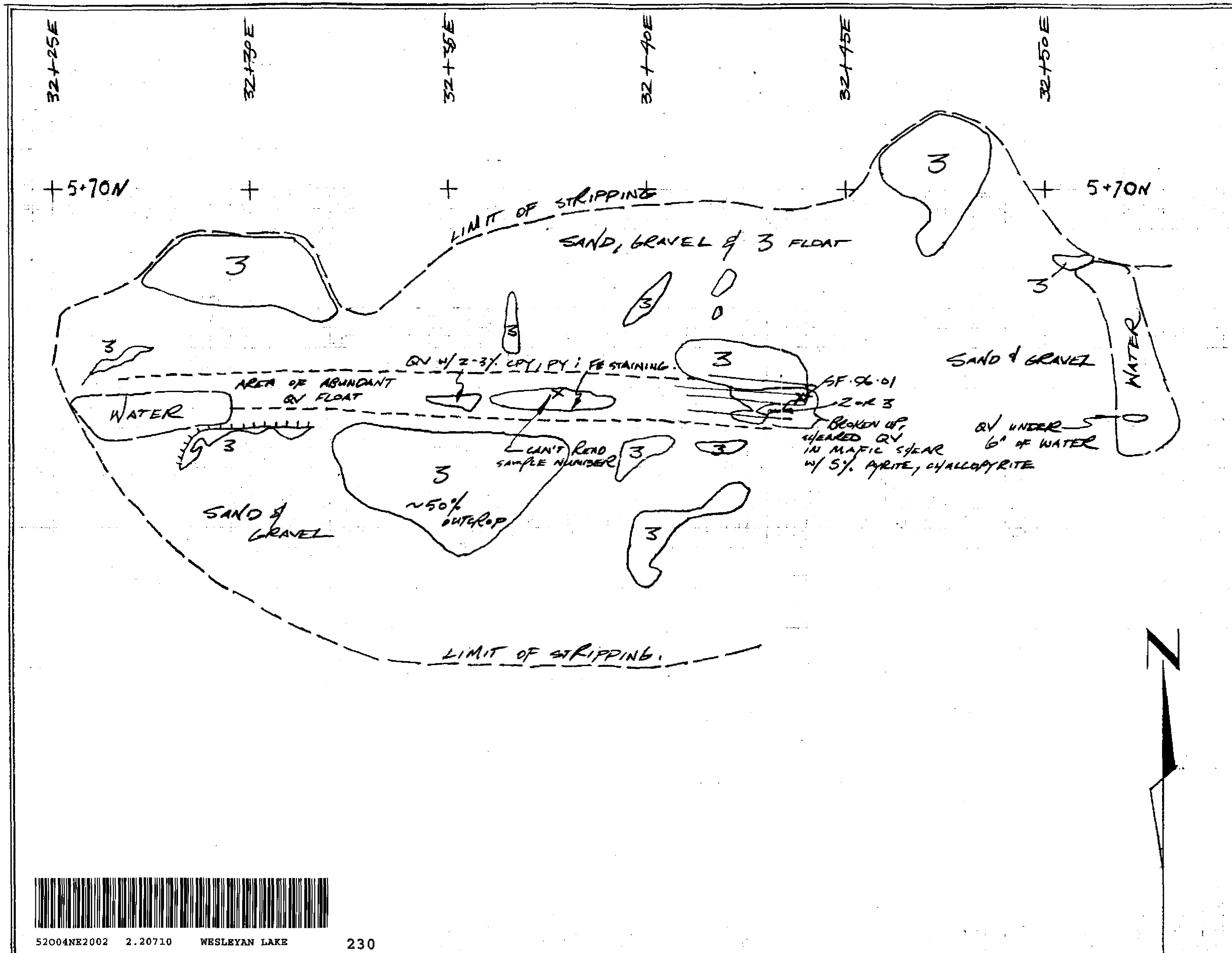
SANDERSON ZONE

DATE: SEPT '99 | MAPPED: D.CULLEN

SCALE

0 1 2 3 4 5 6
METRES

52004NE2002 2.20710 WESLEYAN LAKE 220



LEGEND

3 — AMYGDULAR MAFIC FLOW

SYMBOLS

X SF-96-01 — SAMPLE LOCATION & NUMBER

QV — QUARTZ VEIN

SHEARING

OUTCROP

LEDGE

AREA OF ABUNDANT FLOAT

SLATE FALLS PROPERTY

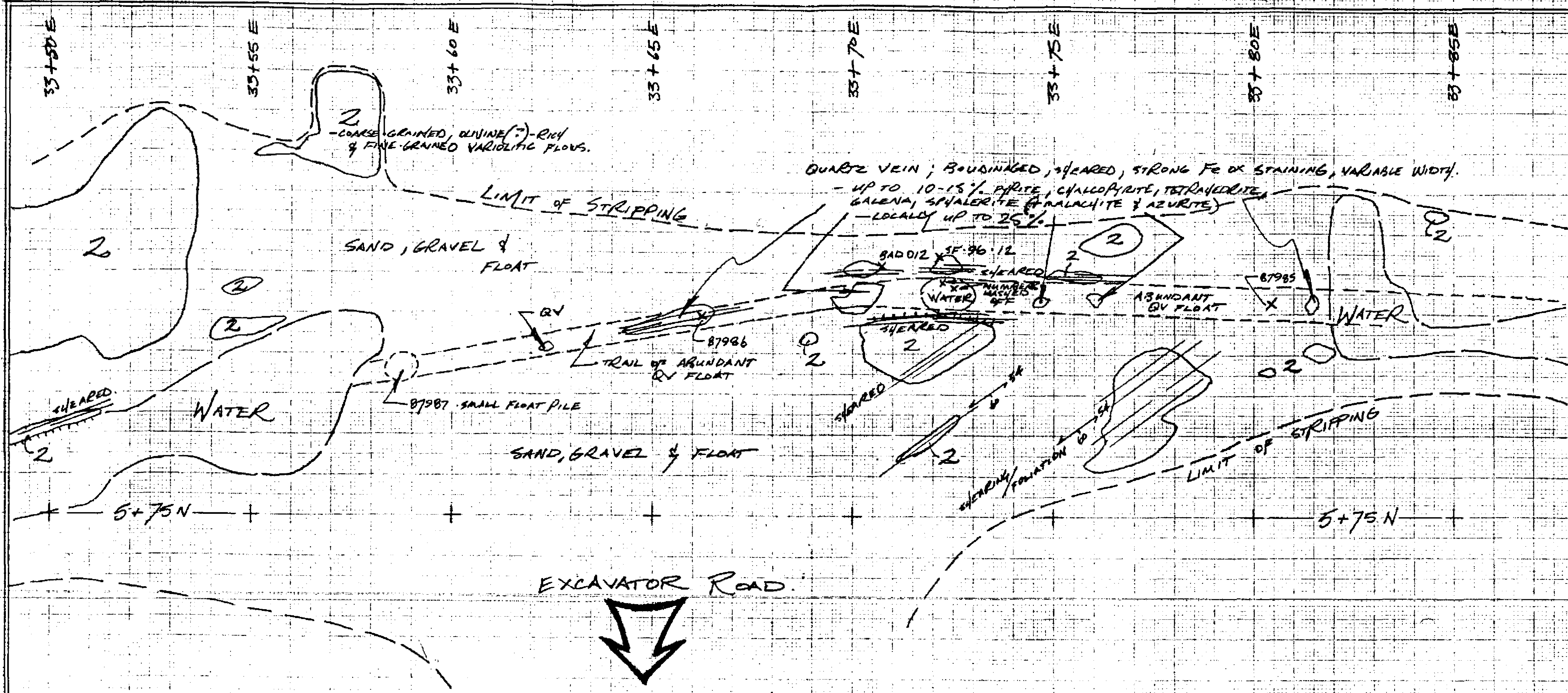
SANDERSON ZONE

DATE: SEPT '99 | MAPPED: D. CULLEN

SCALE

0 1 2 3 4 5 6

METRES



LEGEND

2	MAFIC VOLCANICS (FINE-GRAINED MASSIVE, COARSE-GRAINED OLIVINE-RICH(?), & VARIOLITIC FLOWS)
60 / 54	FOLIATION/SHEARING STRIKE & DIP
QV	QUARTZ VEIN
	SHEAR
X 87986	SAMPLE LOCATION & NUMBER
	OUTCROP.
	LEDGE

NOTES:

1. GRID CO-ORDINATES ARE TIED IN TO 1997 GRID.
2. AREAS SHOWN AS OUTCROP ARE USUALLY PARTLY COVERED.

N

SLATE FALLS PROPERTY

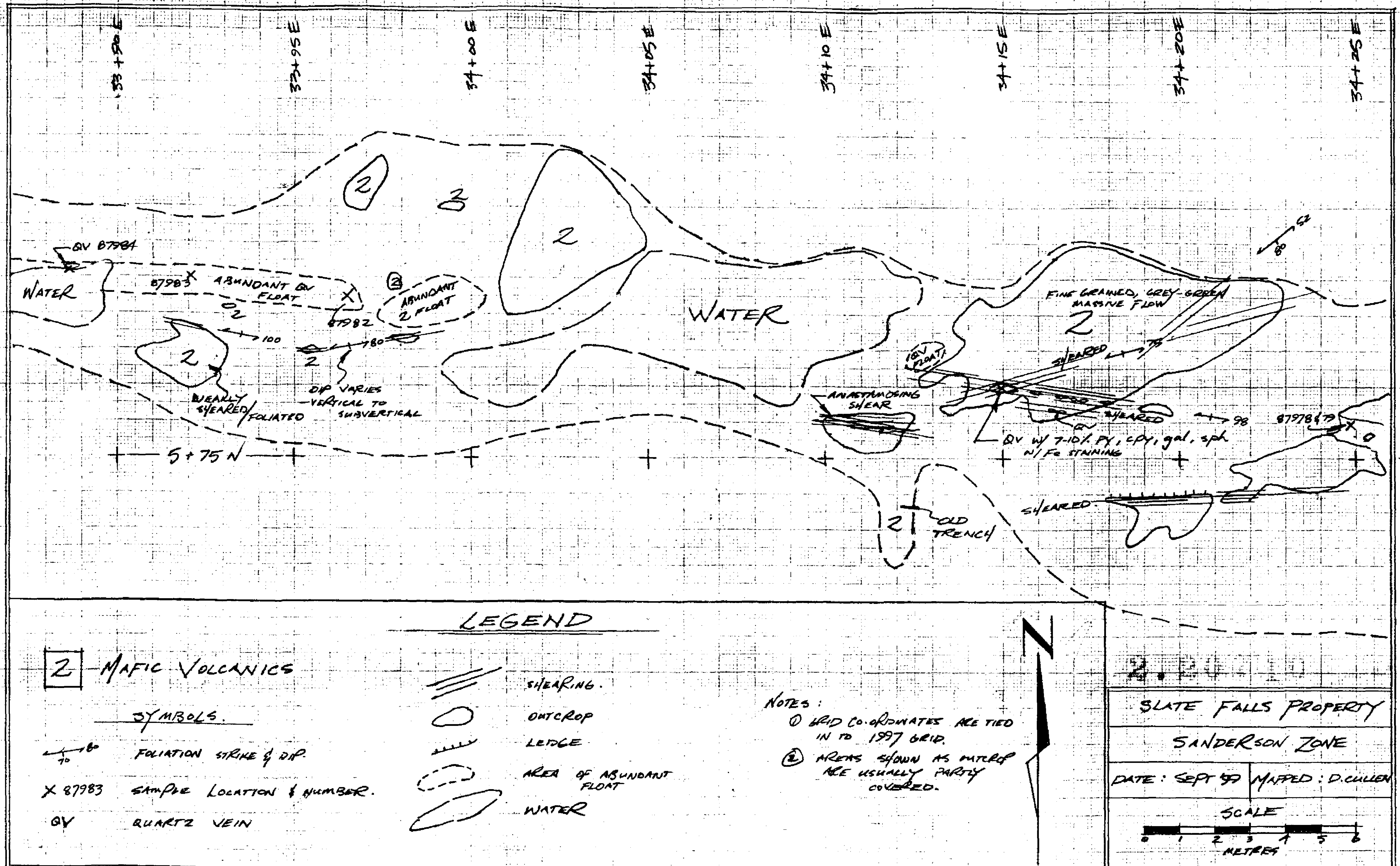
SANDERSON ZONE

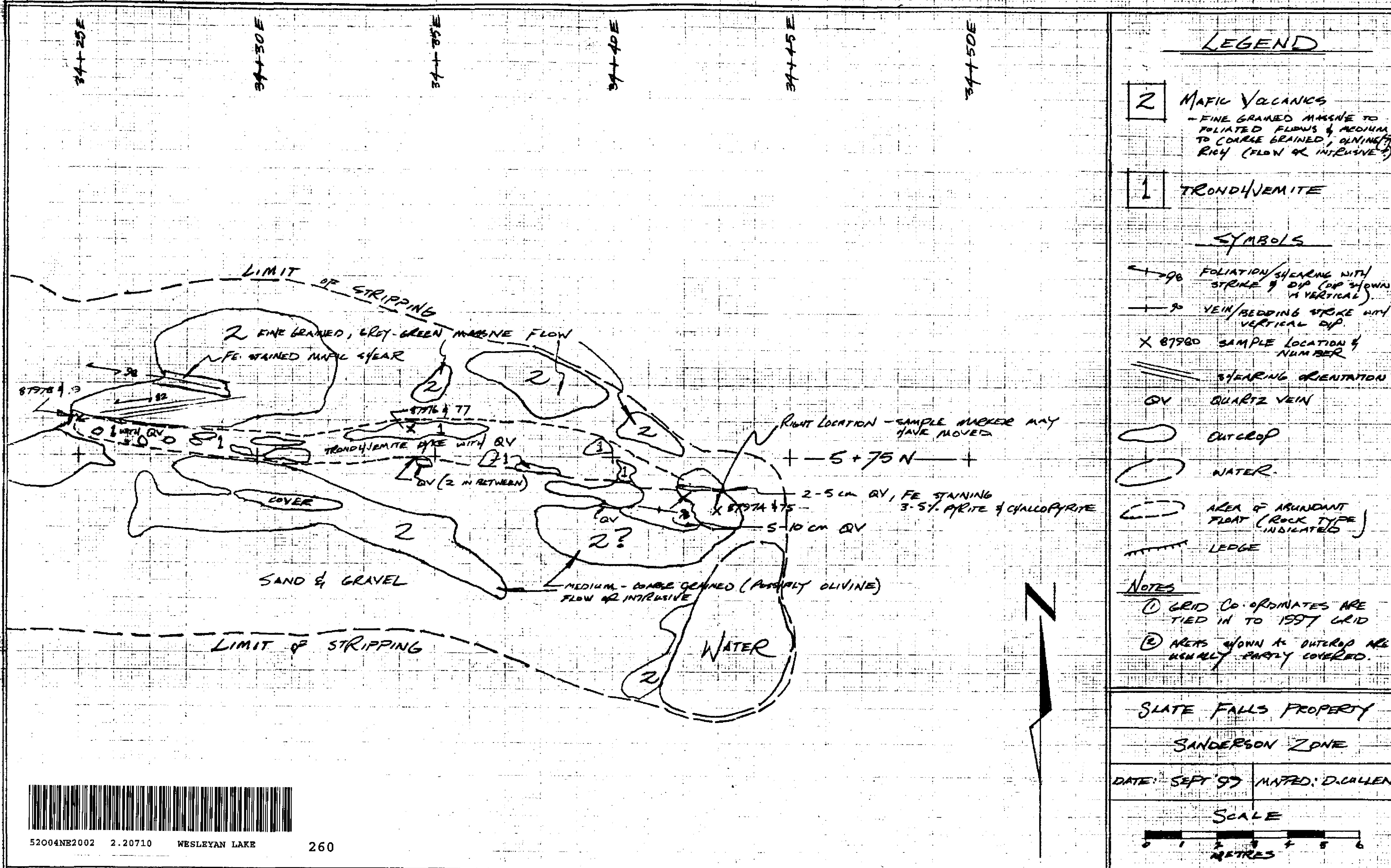
DATE: SEPT '97 | MAPPED: D. CULLEN

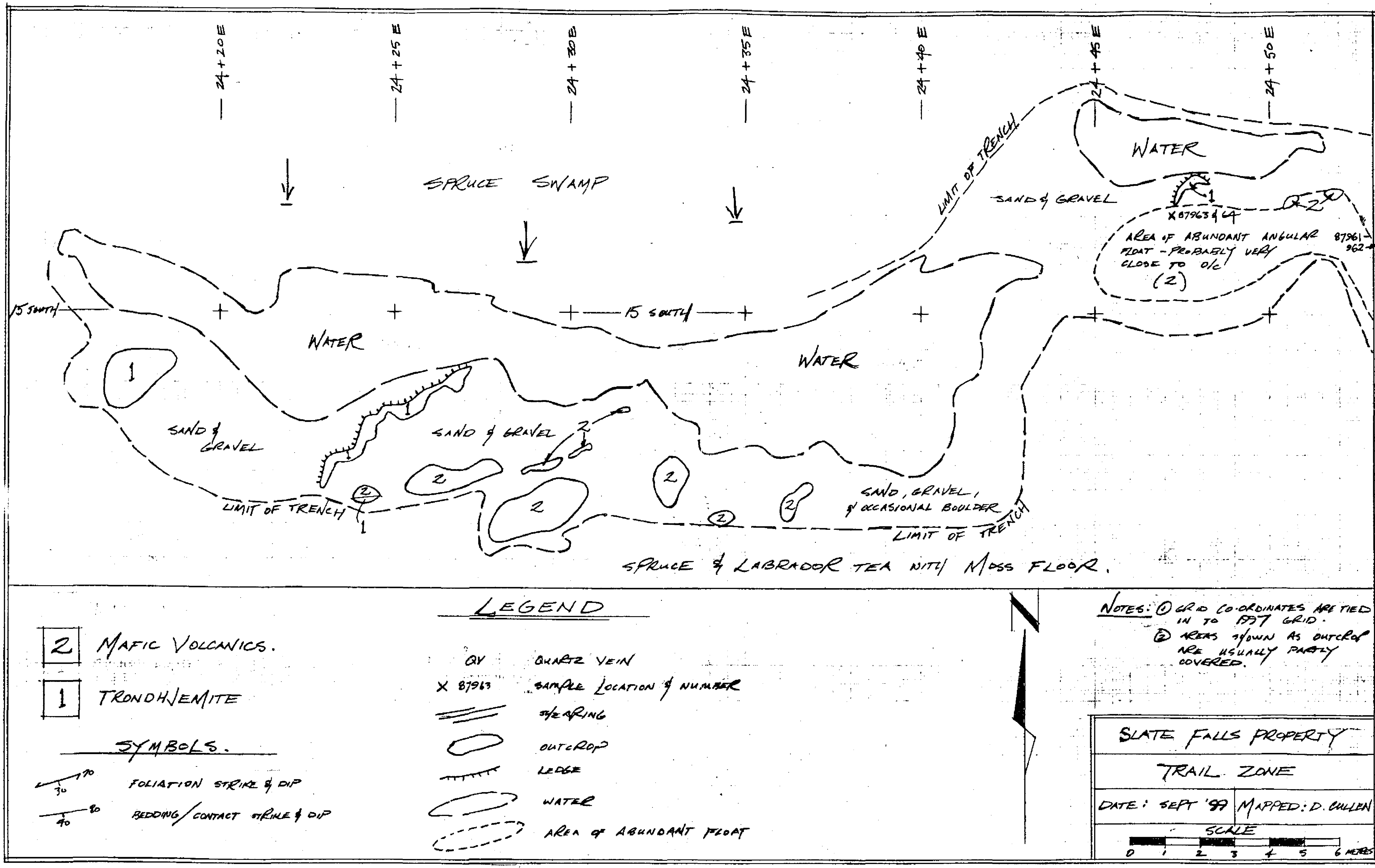
SCALE

0 1 2 3 4 5 6 METRES.

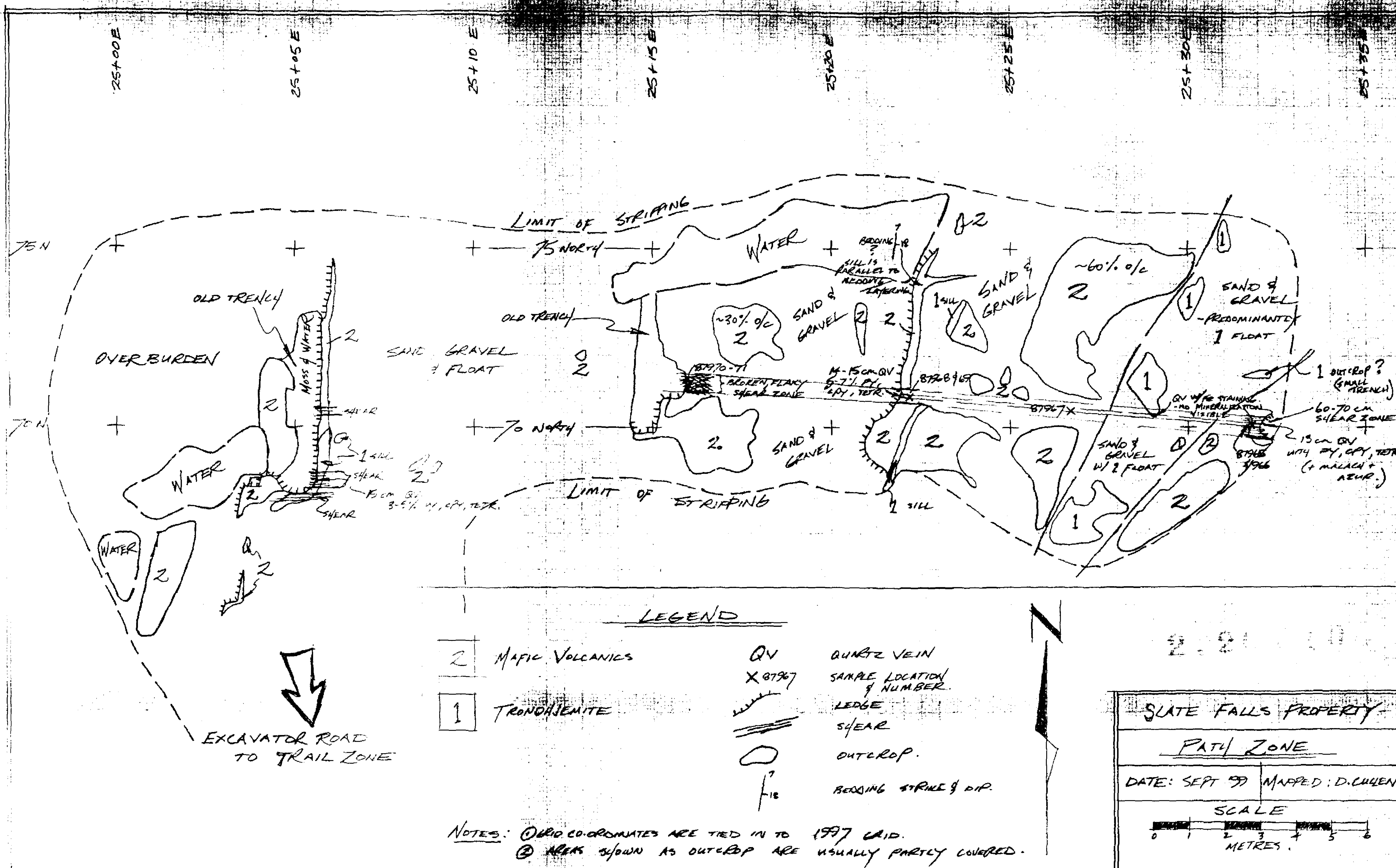
52004NE2002 2.20710 WESLEYAN LAKE


33+95E
34+00E
34+05E
34+10E
34+15E
34+20E
34+25E
QV 87984
WATER
87983
ABUNDANT QV FLOAT
87982
ABUNDANT 2 FLOAT
WATER
FINE GRAINED, GREY-GREEN MASSIVE FLOW
SHEARED
ANASTAMOSING SHEAR
QV W/ 7-10% PY, CPY, gal, sph W/ Fe STAINING
87978 & 79
WEAKLY SHEARED/FOLIATED
DIP VARIES VERTICAL TO SUBVERTICAL
5+75N
SHEARED
OLD TRENCH
LEGEND
2 MAFIC VOLCANICS
SYMBOLS.
FOLIATION STRIKE & DIP.
X 87983 SAMPLE LOCATION & NUMBER.
QV QUARTZ VEIN
SHEARING.
OUTCROP
LEDGE
AREA OF ABUNDANT FLOAT
WATER
NOTES:
① GRID CO-ORDINATES ARE TIED IN TO 1997 GRID.
② AREAS SHOWN AS OUTCROP ARE USUALLY PARTLY COVERED.
N
SLATE FALLS PROPERTY
SANDERSON ZONE
DATE: SEPT 99
MAPPED: D.CULLEN
SCALE
0 1 2 3 4 5 6
METRES

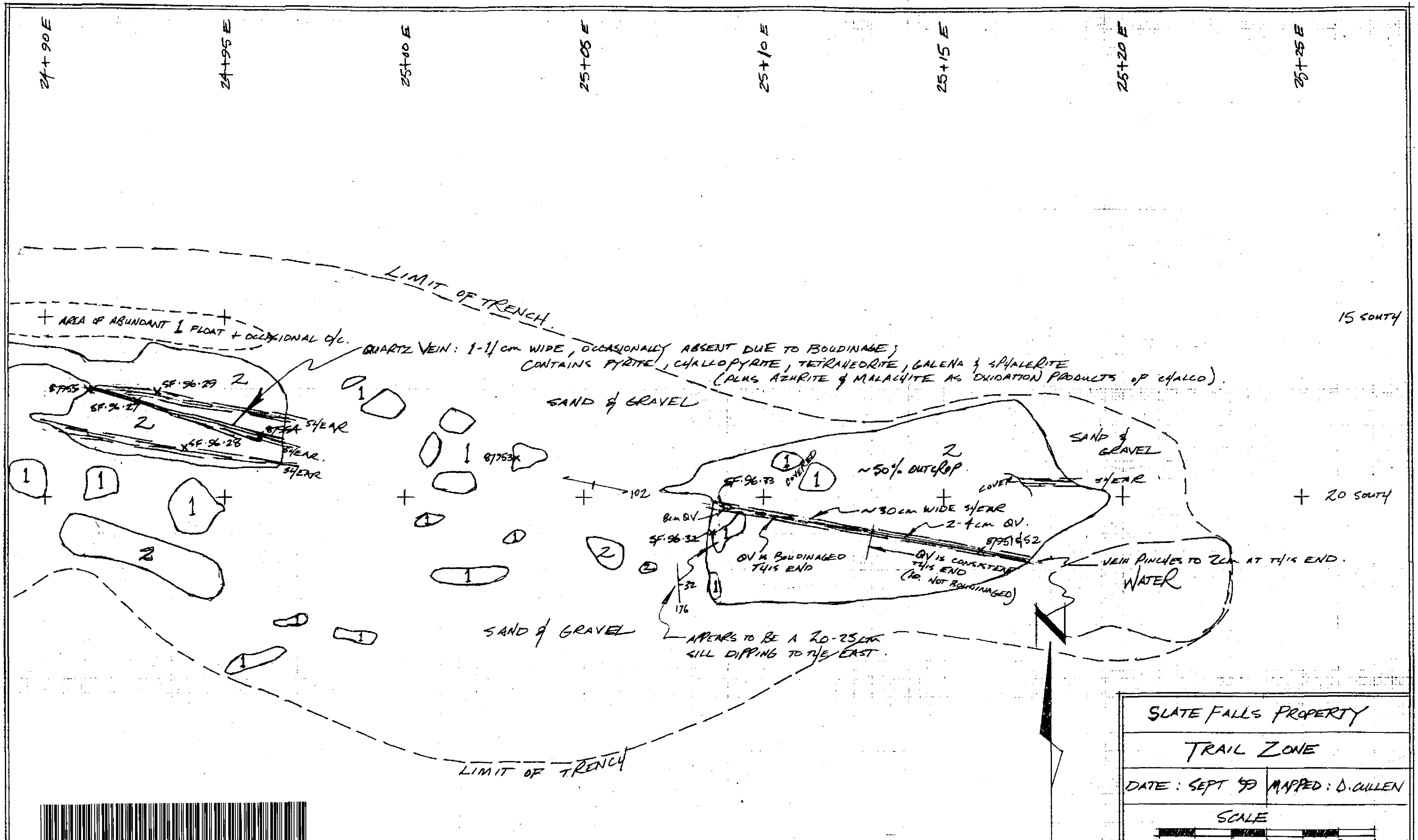

34+25E
34+30E
34+35E
34+40E
34+45E
34+50E
LIMIT OF STRIPPING
2 FINE GRAINED, GREY-GREEN MASSIVE FLOW
FE STAINED MAFIC SHEAR
TRONDHJEMITE DYKE WITH QV
QV (2 IN BETWEEN)
COVER
SAND & GRAVEL
MEDIUM - COARSE GRAINED (POSSIBLY OLIVINE) FLOW OR INTRUSIVE
RIGHT LOCATION - SAMPLE MARKER MAY HAVE MOVED
5+75N
2-5 cm QV, FE STAINING 3-5% PYRITE & CHALCOPYRITE
5-10 cm QV
WATER
LIMIT OF STRIPPING
LEGEND
2 MAFIC VOLCANICS - FINE GRAINED MASSIVE TO FOLIATED FLOWS & MEDIUM TO COARSE GRAINED, OLIVINE(?) RICH (FLOW OR INTRUSIVE?)
1 TRONDHJEMITE
SYMBOLS
FOLIATION/SHEARING WITH STRIKE & DIP (DIP SHOWN IS VERTICAL)
VEIN/BEDDING STRIKE WITH VERTICAL DIP.
X 87980 SAMPLE LOCATION & NUMBER
SHEARING ORIENTATION
QV QUARTZ VEIN
OUTCROP
WATER
AREA OF ABUNDANT FLOAT (ROCK TYPE INDICATED)
LEDGE
NOTES
① GRID CO-ORDINATES ARE TIED IN TO 1997 GRID
② AREAS SHOWN AS OUTCROP ARE USUALLY PARTLY COVERED.
SLATE FALLS PROPERTY
SANDERSON ZONE
DATE: SEPT '99 MAPPED: D.CALLEN
SCALE
0 1 2 3 4 5 6
METRES



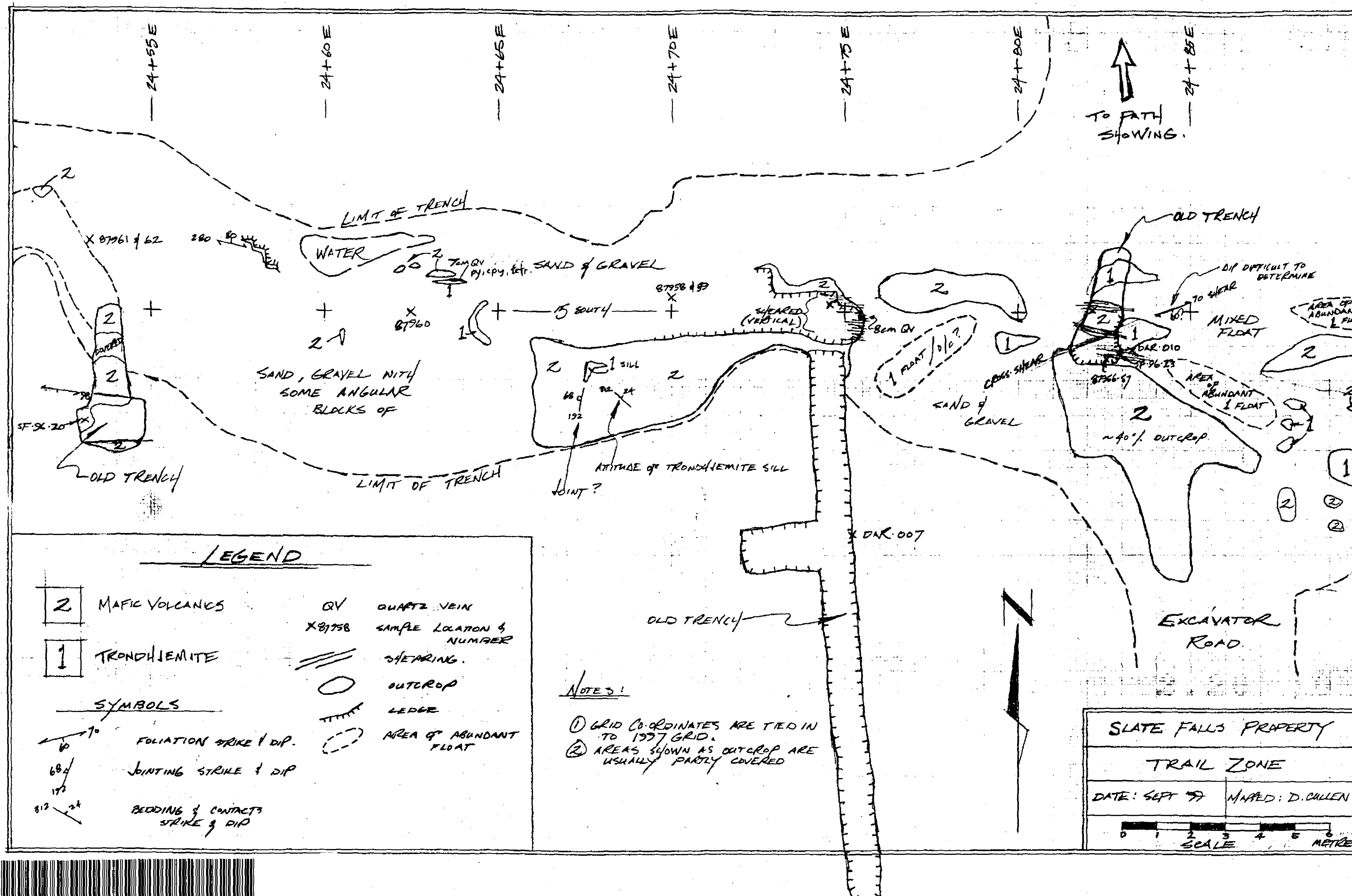
52004NE2002 2.20710 WESLEYAN LAKE 270



52004NE2002 2.20710 WESLEYAN LAKE 280

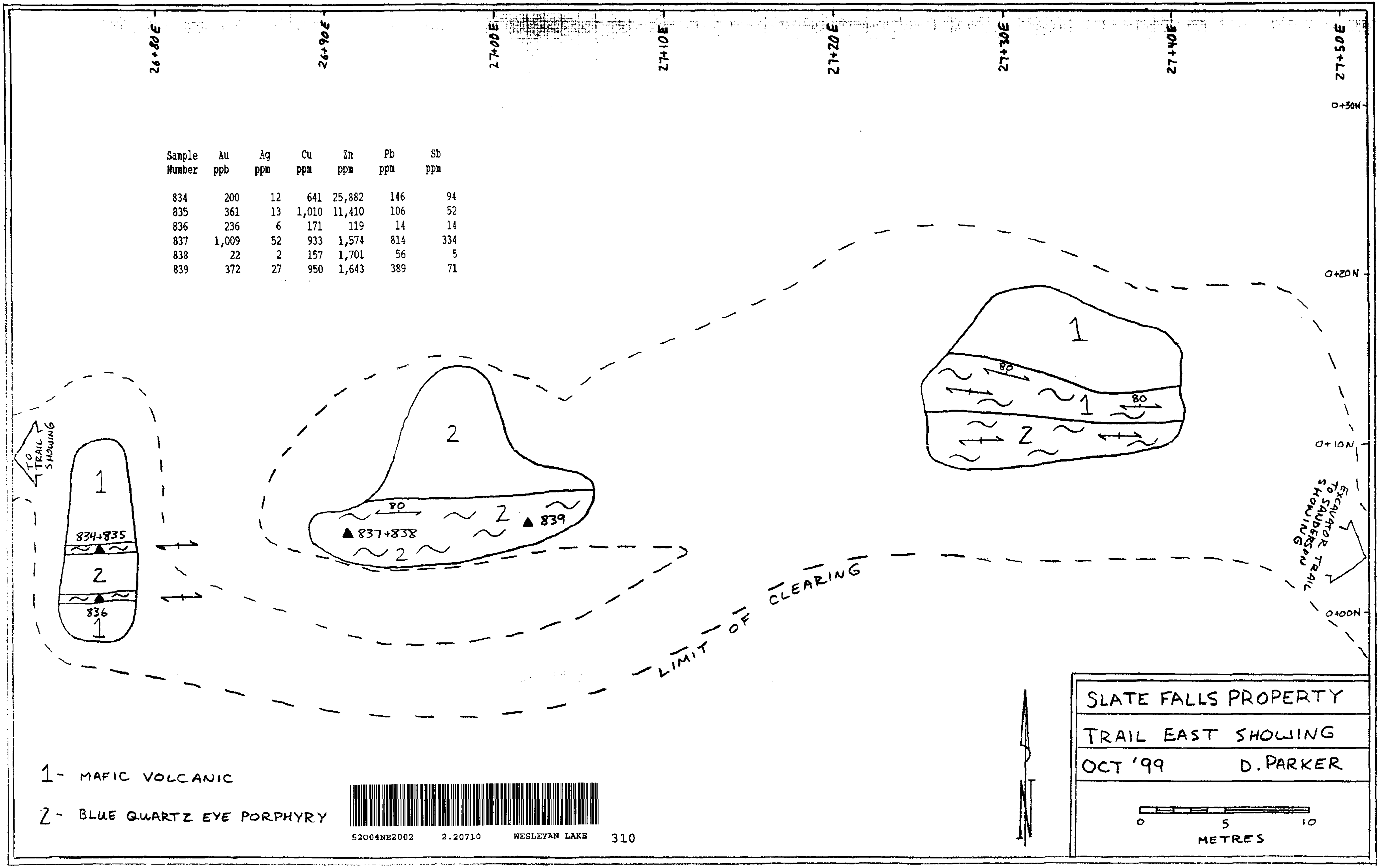


52004NE2002 2.20710 WESLEYAN LAKE 290

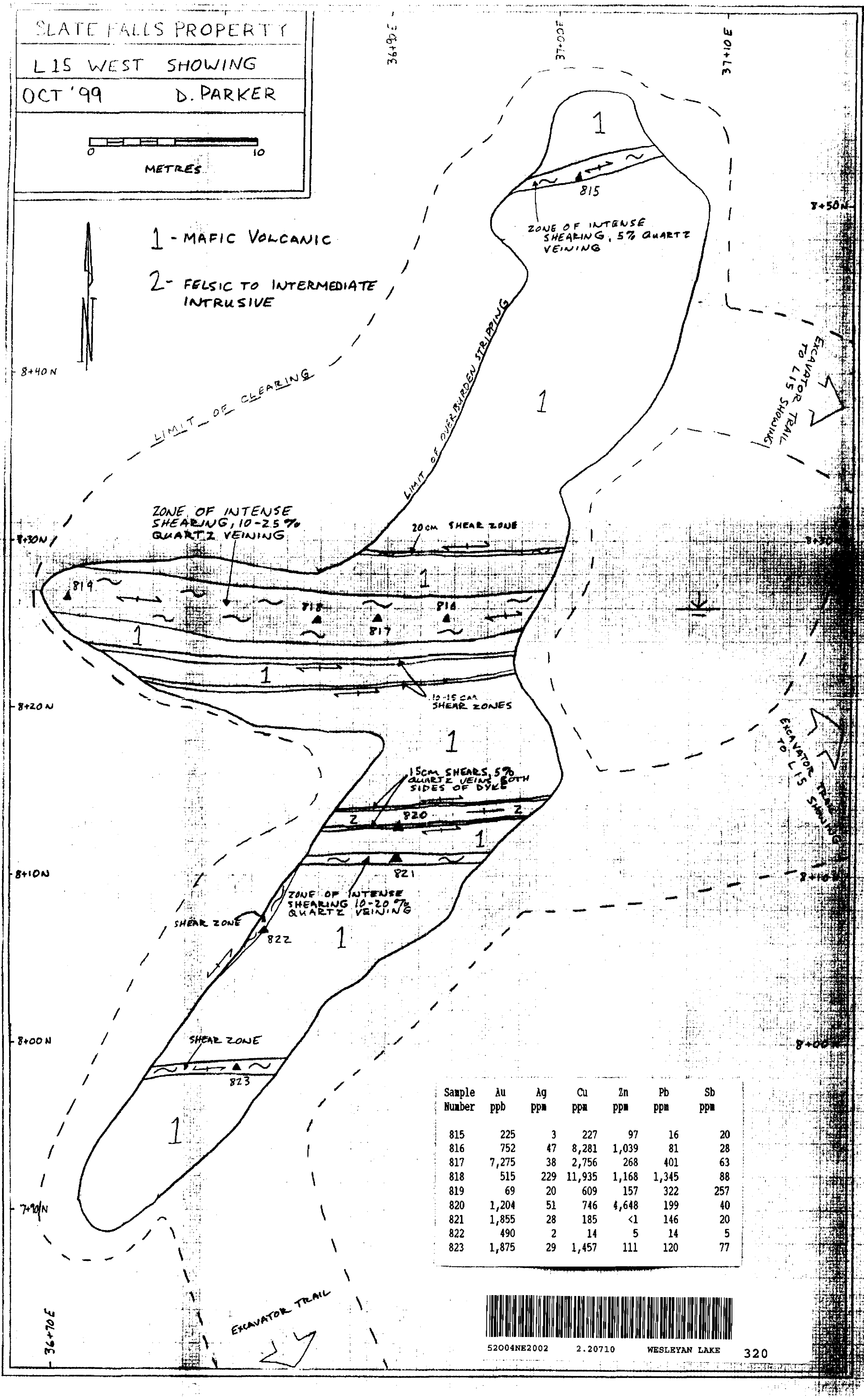


52004NE2002 2.20710 WESLEYAN LAKE 300

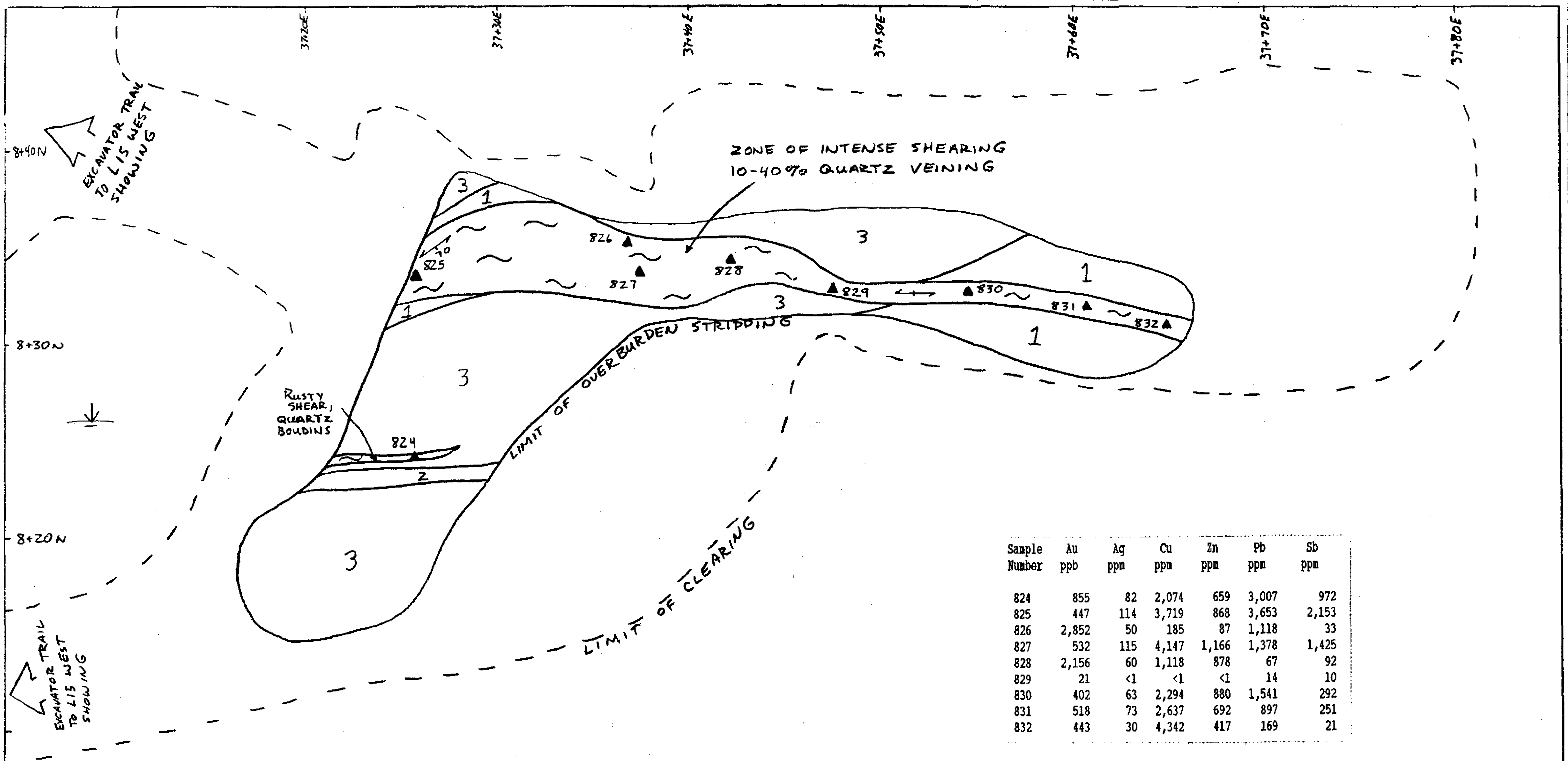
Sample Number	Au ppb	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Sb ppm
834	200	12	641	25,882	146	94
835	361	13	1,010	11,410	106	52
836	236	6	171	119	14	14
837	1,009	52	933	1,574	814	334
838	22	2	157	1,701	56	5
839	372	27	950	1,643	389	71



52004NE2002 2.20710 WESLEYAN LAKE 310



Sample Number	Au ppb	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Sb ppm
815	225	3	227	97	16	20
816	752	47	8,281	1,039	81	28
817	7,275	38	2,756	268	401	63
818	515	229	11,935	1,168	1,345	88
819	69	20	609	157	322	257
820	1,204	51	746	4,648	199	40
821	1,855	28	185	<1	146	20
822	490	2	14	5	14	5
823	1,875	29	1,457	111	120	77



Sample Number	Au ppb	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Sb ppm
824	855	82	2,074	659	3,007	972
825	447	114	3,719	868	3,653	2,153
826	2,852	50	185	87	1,118	33
827	532	115	4,147	1,166	1,378	1,425
828	2,156	60	1,118	878	67	92
829	21	<1	<1	<1	14	10
830	402	63	2,294	880	1,541	292
831	518	73	2,637	692	897	251
832	443	30	4,342	417	169	21

SLATE FALLS PROPERTY

L15 SHOWING

OCT '99 D. PARKER

0 10 METRES

1 - MAFIC VOLCANIC

2 - FELSIC-INTERMEDIATE INTRUSIVE

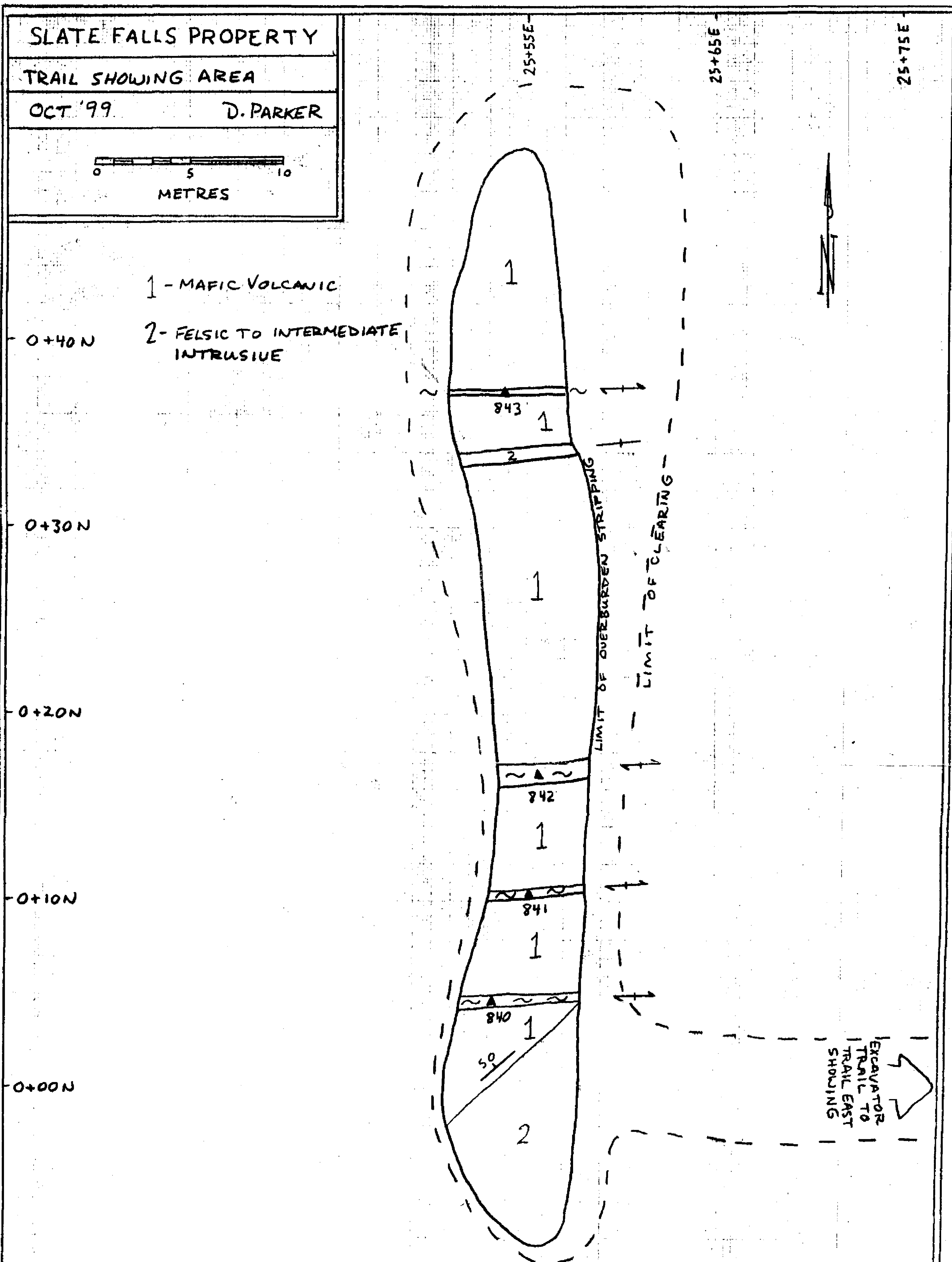
3 - MAFIC INTRUSIVE

SLATE FALLS PROPERTY

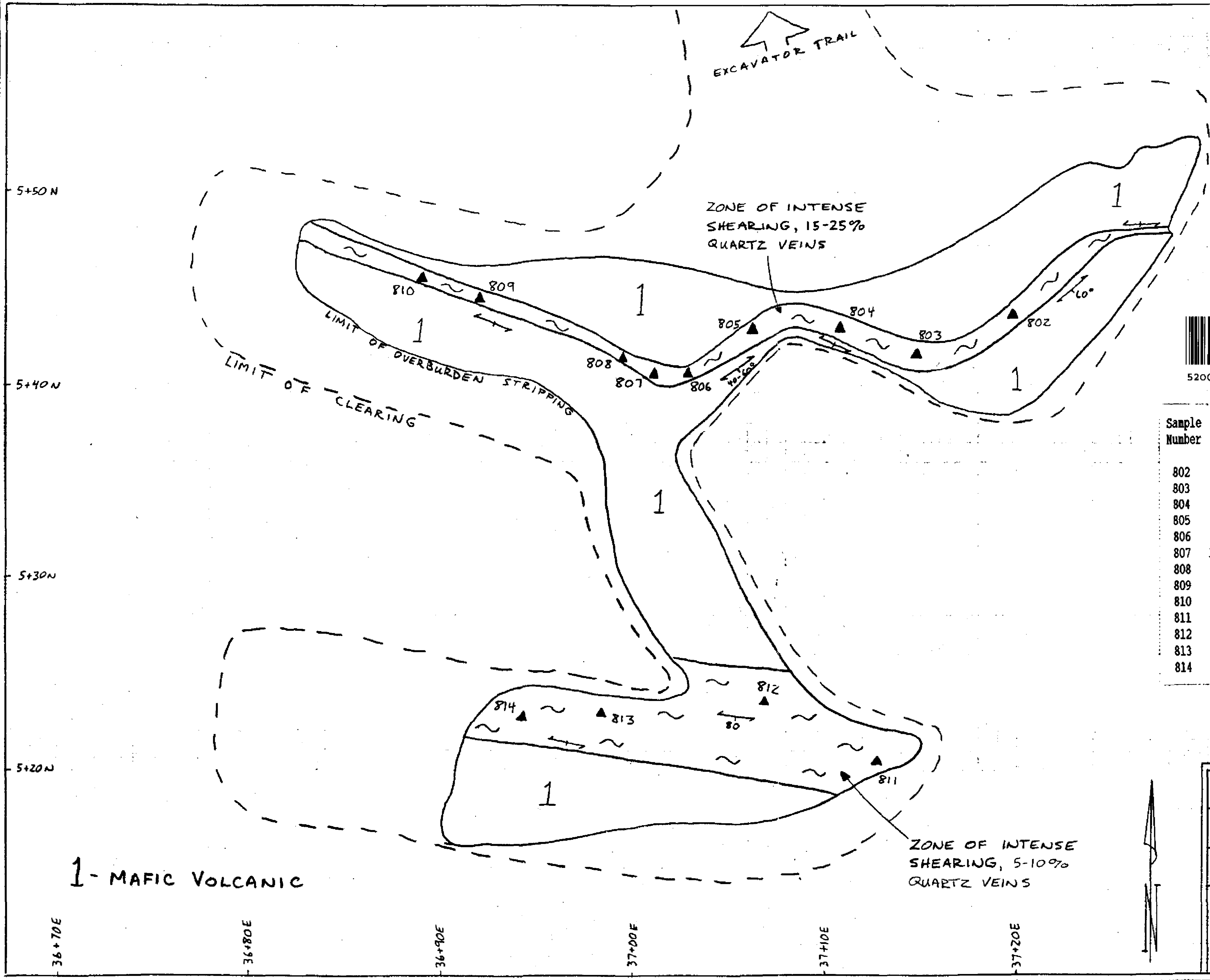
TRAIL SHOWING AREA

OCT '99 D. PARKER

0 5 10
METRES



Sample Number	Au ppb	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Sb ppm
840	111	5	155	122	52	15
841	11	2	88	101	14	16
842	28	1	199	120	21	16
843	767	53	410	13,543	2,352	71



52004NE2002 2.20710 WESLEYAN LAKE 350

Sample Number	Au ppb	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Sb ppm
802	<5	2	70	59	4	7
803	757	21	432	415	191	19
804	4,140	145	3,497	19,964	5,479	364
805	10,245	184	2,364	2,693	1,232	86
806	12,722	164	3,381	11,455	634	107
807	159,669	99	4,173	36,765	26,559	2,240
808	89,603	91	2,709	7,047	8,811	778
809	3,818	76	269	<1	<2	9
810	9,778	72	4,672	24,899	4,500	4,677
811	3,584	54	<1	<1	<2	<2
812	227	5	75	40	23	39
813	583	5	26	69	56	10
814	901	7	24	34	20	7

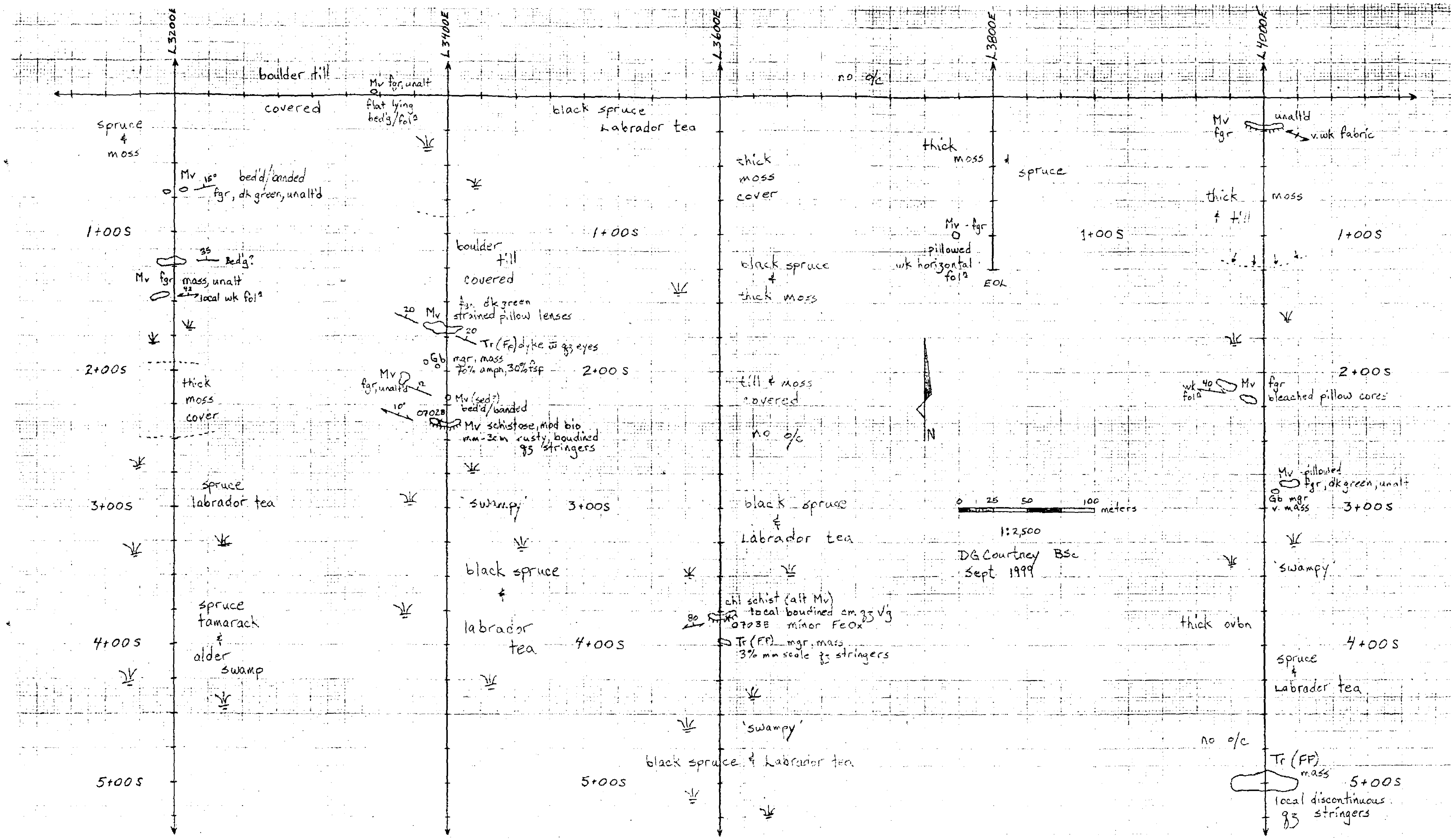
SLATE FALLS PROPERTY

SANDERSON EAST SHOWING

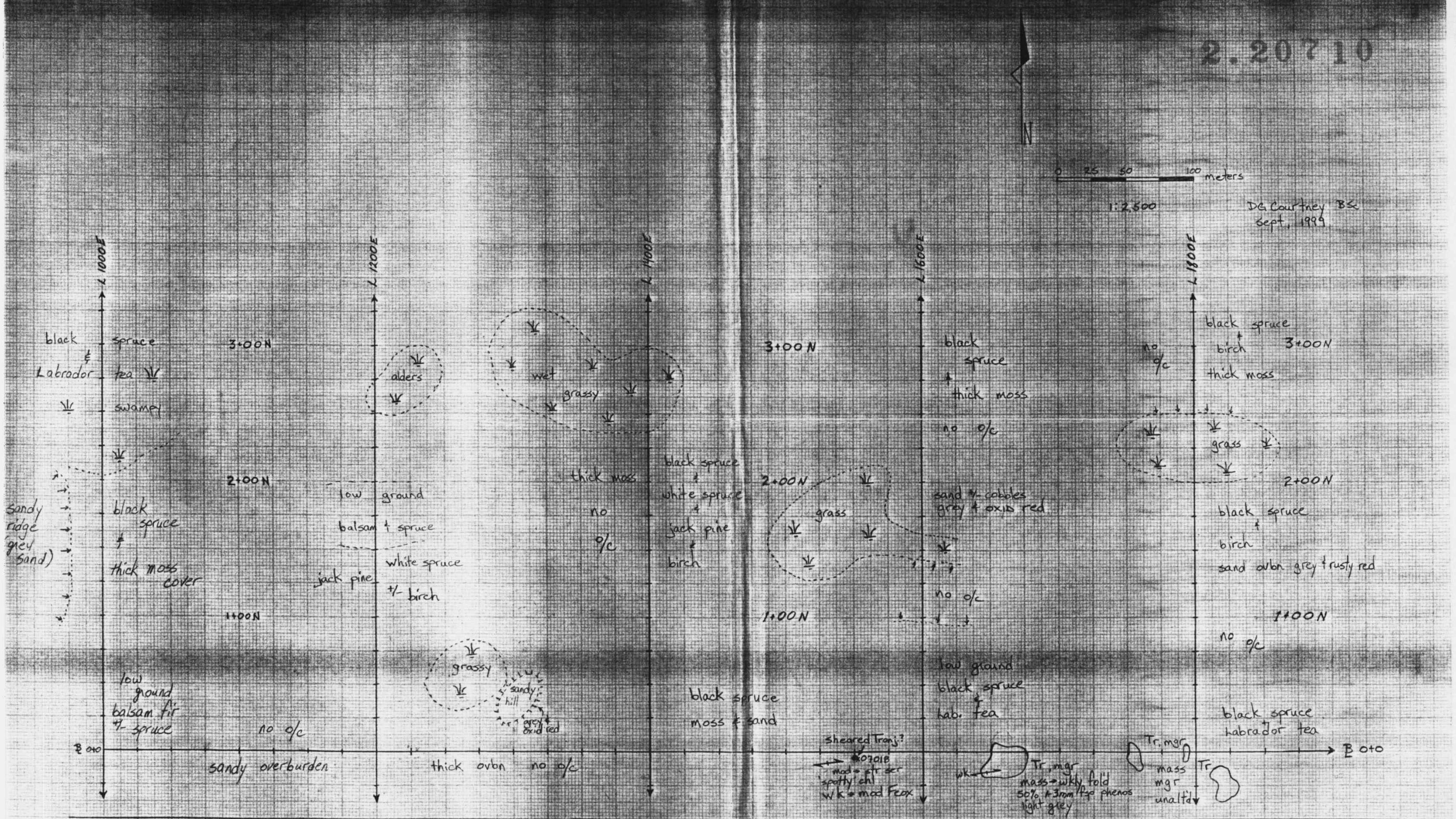
OCT '99 D. PARKER

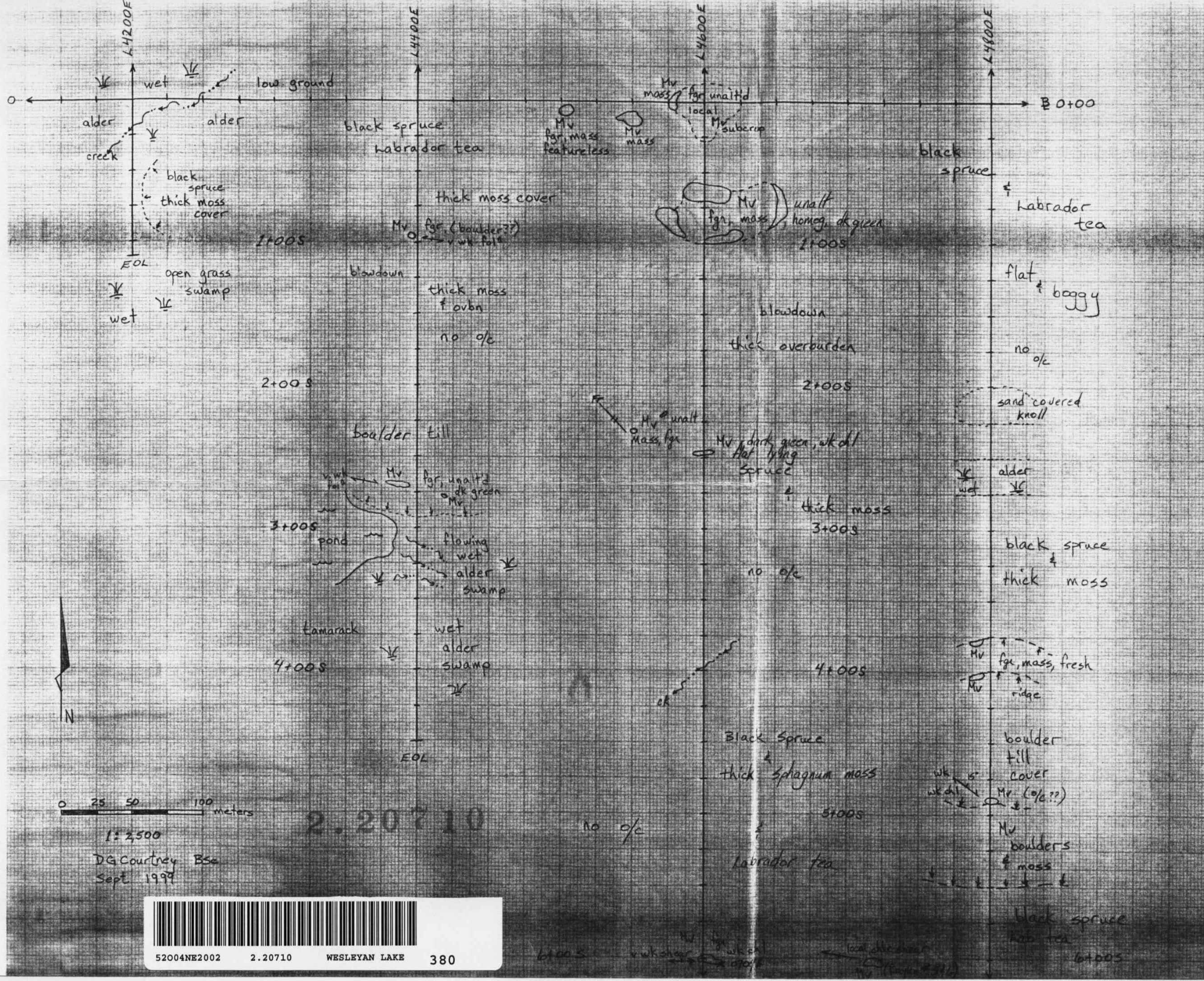
0 5 10

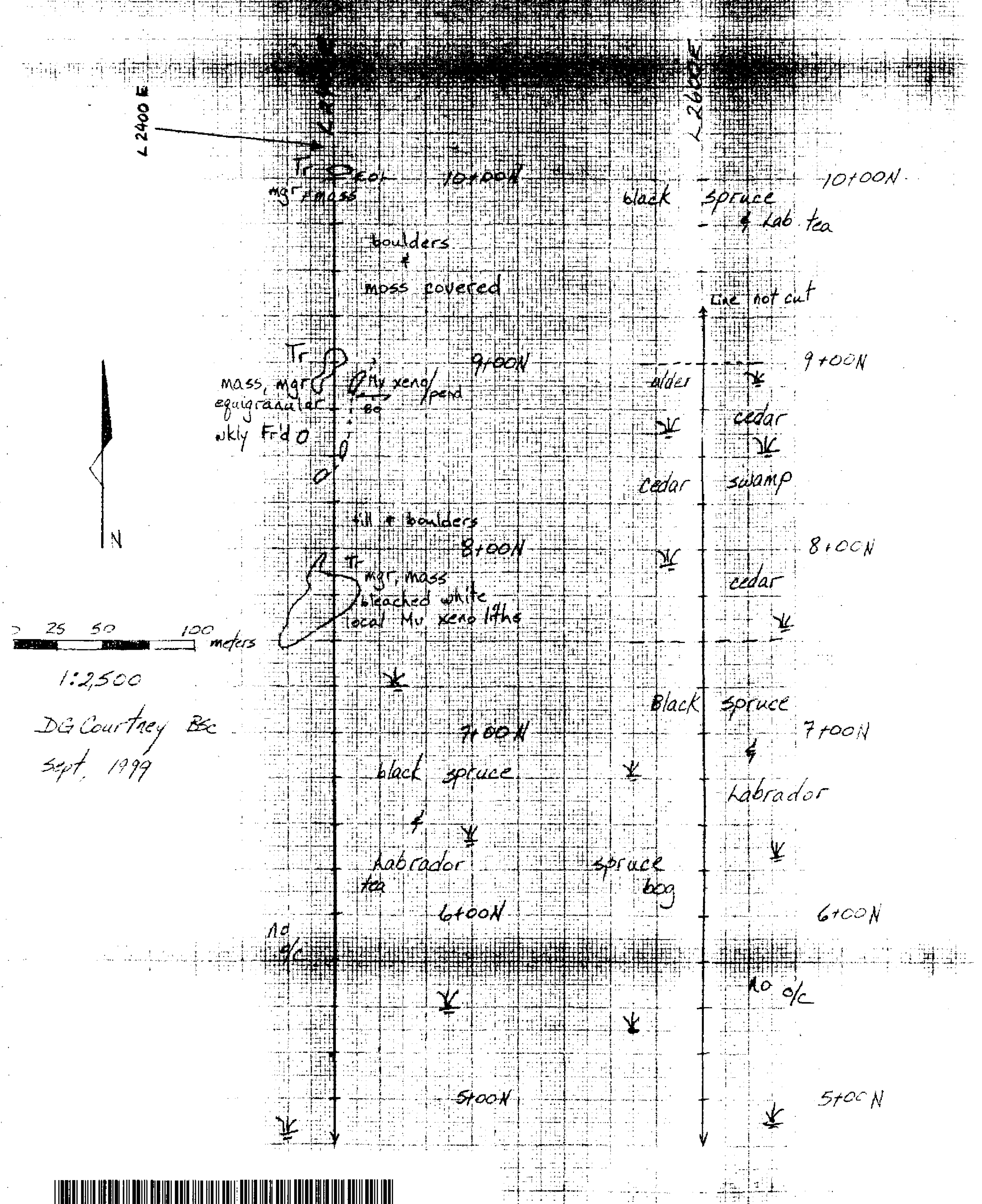
METRES



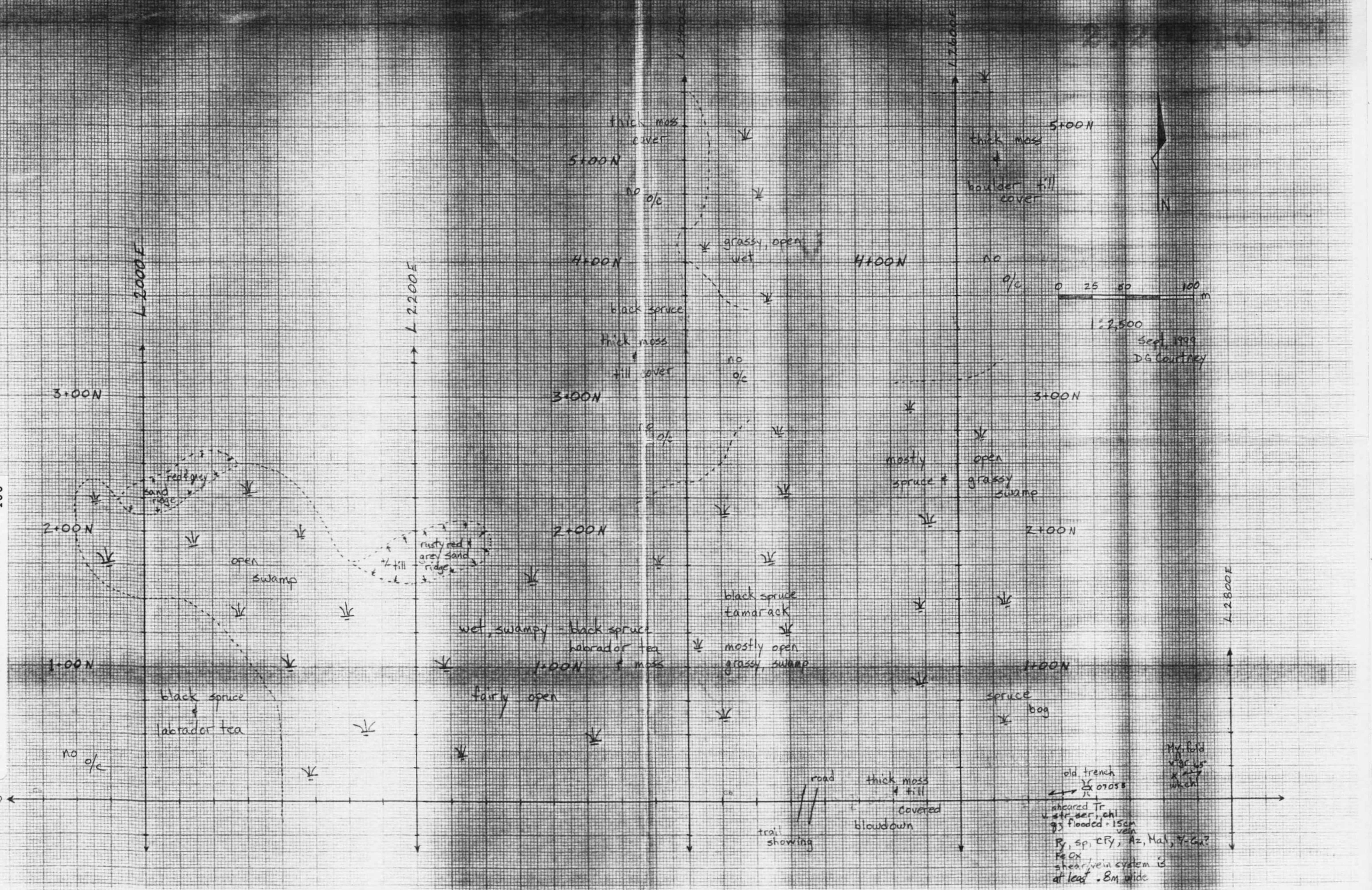
L3200E
L3400E
L3600E
L3800E
L4000E
boulder till
covered
Mv fgr, unalt
flat lying bed'g/fol'n
black spruce
Labrador tea
no o/c
spruce & moss
Mv 15° bed'd/banded fgr, dk green, unalt'd
thick moss cover
thick moss & spruce
Mv fgr
unalt'd
v.wk fabric
thick & till
moss
1+00S
35 Bed'g?
Mv fgr mass, unalt
local wk fol'n
boulder till covered
black spruce & thick moss
Mv - fgr
pillowed
wk horizontal fol'n
EOL
20 Mv
fgr, dk green strained pillow lenses
20
Tr(Fe) dyke w qz eyes
Gb mgr, mass 70% amph, 30% fsp
2+00S
Mv fgr, unalt'd
12
10°
Mv (sed?) bed'd/banded
07028
Mv schistose, mod bio
mm-3cm rusty, boudined qz stringers
till & moss covered
no o/c
N
wk 40 fol'n
Mv
fgr
bleached pillow cores
Mv pillowed fgr, dk green, unalt
Gb mgr v. mass
spruce labrador tea
'swampy'
3+00S
black spruce & Labrador tea
0 25 50 100 meters
1:2,500
DG Courtney BSc
Sept 1999
'swampy'
black spruce & labrador tea
spruce tamarack & alder swamp
chl schist (alt Mv)
local boudined cm qz V'g
80
07038 minor FeOx
Tr (FF) mgr, mass
3% mm scale qz stringers
thick ovbn
4+00S
spruce & Labrador tea
'swampy'
no o/c
black spruce & Labrador tea
Tr (FF) mass
5+00S
local discontinuous qz stringers

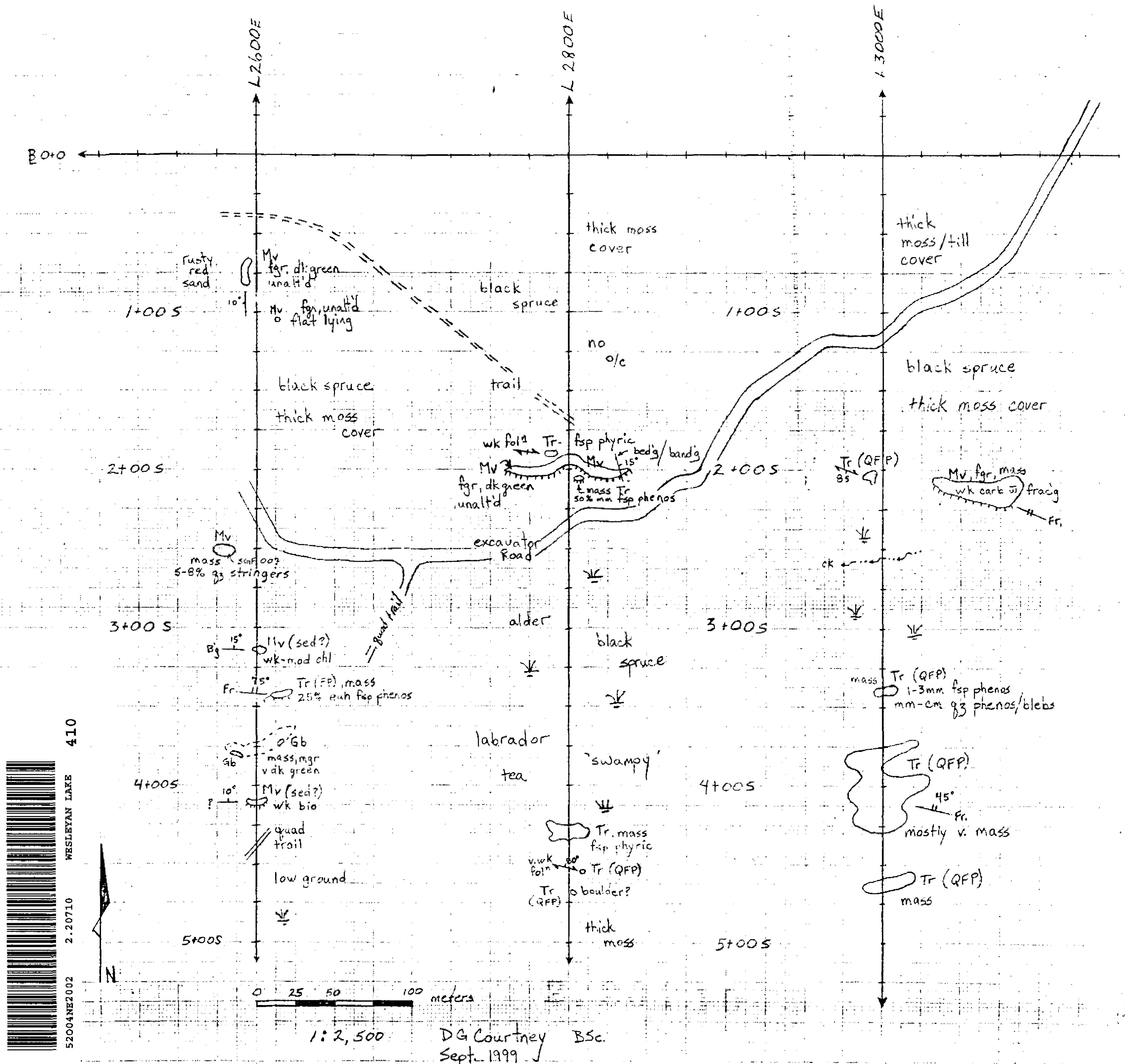

2.20710
N
0 25 50 100 meters
1:2,500
DG Courtney BSc
Sept, 1999
L 1000E
L 1200E
L 1400E
L 1600E
L 1800E
3+00N
2+00N
1+00N
B 0+0
black & Labrador spruce tea swampy
alders
wet grassy
black spruce + thick moss
no o/c
black spruce + birch
thick moss
grass
sandy ridge (grey sand)
black spruce + thick moss cover
low ground
balsam + spruce
jack pine
white spruce
+/- birch
thick moss
no o/c
black spruce + white spruce + jack pine + birch
grass
sand + cobbles grey + oxid red
black spruce + birch
sand ovbn grey + rusty red
no o/c
no o/c
grassy
sandy hill
grey oxid red
low ground balsam fir +/- spruce
no o/c
black spruce moss + sand
low ground black spruce + lab. tea
black spruce Labrador tea
sandy overburden
thick ovbn
no o/c
Sheared Tronj?
07018
wk
Tr, mgr
mass → wkly fold
light grey
Tr, mgr
mass
mgr
unaltd
Tr


L4200E
L4400E
L4600E
L4800E
B 0+00
low ground
wet
alder
creek
black spruce
thick moss cover
EOL
open grass swamp
black spruce
Labrador tea
Mv
fgr, mass
featureless
Mv mass
mass
fgr unalt'd
local
subcrop
thick moss cover
Mv fgr (boulder??)
v wk fol
unalt
homog, dk green
fgr, mass
1+00S
blowdown
thick moss & ovbn
no o/c
thick overburden
flat & boggy
2+00S
sand covered knoll
boulder till
Mv unalt
Mass, fgr
Mv dark green, wk cl
flat lying
spruce
& thick moss
3+00S
pond
Mv fgr, unalt'd dk green
v wk fol
flowing
wet alder swamp
alder
no o/c
black spruce & thick moss
tamarack
wet alder swamp
4+00S
ck
Mv fgr, mass, fresh
ridge
Black Spruce & thick Sphagnum moss
boulder till cover
Mv (o/c ??)
wk
wk cl
Mv boulders & moss
5+00S
no o/c
& Labrador tea
black spruce
lab tea
6+00S
v wk shear
N
0 25 50 100 meters
1: 2,500
DG Courtney BSc
Sept 1999
2.20710

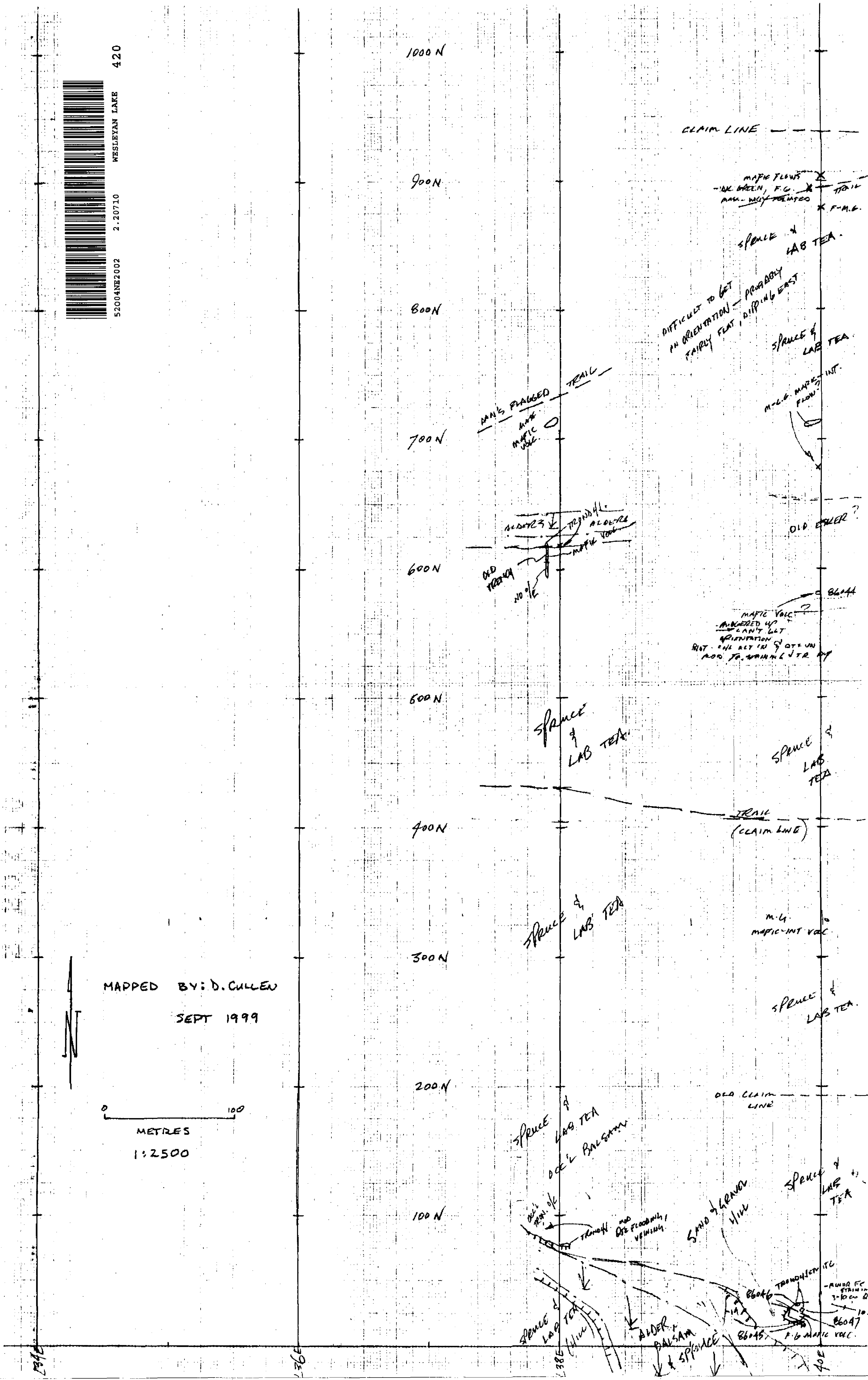


52004NE2002 2.20710 WESLEYAN LAKE 390


L 2000E
L 2200E
L 2400E
L 2600E
L 2800E
E 0+00
1+00N
2+00N
3+00N
4+00N
5+00N
N
0 25 50 100 m
1:2,500
Sept. 1999
D.G. Courtrey
thick moss cover
no o/c
grassy, open wet
black spruce
thick moss & till cover
thick moss & boulder till cover
red/grey sand ridge
open swamp
rusty red grey sand ridge
+/- till
wet, swampy - black spruce labrador tea & moss
black spruce tamarack
mostly open grassy swamp
mostly spruce & open grassy swamp
black spruce & labrador tea
fairly open
spruce bog
road
trail showing
thick moss & till covered
blowdown
old trench
07058
sheared Tr
str ser, chl
q3 flooded + 15cm vein
Py, sp, cPy, Az, Mal, +/- Gn?
Fe Ox
shear/vein system is at least .8m wide
My fold
wk chl



L2600E
L 2800E
L 3000E
B 0+0
1+00S
2+00S
3+00S
4+00S
5+00S
1+00S
2+00S
3+00S
4+00S
5+00S
rusty red sand
Mv fgr. dk green unalt'd
Mv fgr, unalt'd flat lying
thick moss cover
black spruce
no o/c
thick moss/till cover
black spruce
thick moss cover
trail
wk fol'n
Tr-
fsp phyric
bed'g/band'g
Mv
fgr, dk green unalt'd
mass Tr
50% mm fsp phenos
Tr (QFP)
Mv, fgr, mass
wk carb
frac'g
Fr.
Mv
mass
5-8% qz stringers
excavator Road
quad trail
ck
alder
black spruce
Mv (sed?)
wk-mod chl
Tr (FP), mass
25% euh fsp phenos
Fr.
mass
Tr (QFP)
1-3mm fsp phenos
mm-cm qz phenos/blebs
Gb
mass, mgr
v dk green
labrador tea
'swampy'
Tr (QFP)
45°
Fr.
mostly v. mass
Mv (sed?)
wk bio
quad trail
low ground
Tr, mass
fsp phyric
v.wk fol'n
Tr (QFP)
Tr (QFP)
boulder?
thick moss
Tr (QFP)
mass
N
0 25 50 100 meters
1:2,500
DG Courtney BSc.
Sept. 1999



52004NE2002 2.20710 WESLEYAN LAKE 420
1000 N
CLAIM LINE
900 N
MAFIC FLOWS
F-M.G.
SPRUCE & LAB TEA.
TRAIL
DIFFICULT TO GET AN ORIENTATION - PROBABLY FAIRLY FLAT, DIPPING EAST
800 N
SPRUCE & LAB TEA.
M-C.G. MAFIC-INT. FLOW?
TRAIL
MAFIC VOLC.
700 N
OLD CLAIM LINE?
TRENCH
ALDERS
MAFIC VOLC.
OLD TRENCH
600 N
86044
MAFIC VOLC.?
CAN'T GET ORIENTATION
500 N
SPRUCE & LAB TEA.
SPRUCE & LAB TEA
TRAIL
(CLAIM LINE)
400 N
SPRUCE & LAB TEA
M.G. MAFIC-INT VOLC.
300 N
MAPPED BY: D. CULLEN
SEPT 1999
N
SPRUCE & LAB TEA.
200 N
OLD CLAIM LINE
0 100
METRES
1:2500
SPRUCE & LAB TEA
OCC'L BALSAM
SPRUCE & LAB TEA
SAND & GRAVEL HILL
100 N
86046
86047
86045
F.G. MAFIC VOLC.
SPRUCE & LAB TEA HILL
ALDER, BALSAM & SPRUCE
34E
36E
38E
40E