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Geochemistry of Grenville Marble in Southeastern Ontario

Ontario Geological Survey
Mineral Deposits Circular 28

W.T. Grant, V.C. Papertzian and P.W. Kingston

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Foreword

This report summarizes the results of a three-year investigation of the geology and geochemistry of Grenville marble in Southeastern Ontario.

This material is a source of building stone, crushed stone, terrazzo chips, poultry grit, lime, and magnesium metal. A recent increase in the demand for calcium carbonate with qualities of high brightness (whiteness) and purity has led to renewed exploration activity. This high-quality material has the potential for use as a filler in products such as paints, plastics, floor tile, paper finish, and glass.

The purpose of the investigative survey was threefold: a) to identify areas of high-purity marble suitable as an industrial mineral source; b) to assess the variability, both geochemically and geologically, of marble; and c) to determine regional calcium/magnesium trends within individual marble belts as a guide to industrial mineral and base-metal mineralization. To meet the urgent demand for the identification of marbles of high purity in the study area, emphasis was placed upon the rapid chemical analysis of a large sample population. As a follow-up, areas containing high-purity marbles, as indicated by regional samples, were mapped in detail to better define the extent of the high-purity marble.

Exactly 1912 samples were collected from lithologically homogeneous marble units, and these samples were chemically analyzed for up to 28 elements, plus Loss on Ignition, under the direction of the Geoscience Laboratories of the Ontario Geological Survey. Examination of the chemical data for the 1912 samples allowed the selection of 58 sites where CaO exceeds 54 weight percent and SiO_2 plus Al_2O_3 is less than 1 weight percent in marble; and an additional 12 sites where the ratio of CaO to MgO is on the order of 1.4 and SiO_2 plus Al_2O_3 is less than 1.5 weight percent in marble. Rocks of these compositions are chemically suitable for the filler, lime, and whiting industries, and are low in abrasiveness, a requirement for use as filler material. The 70 sites were mapped in detail to assess the possible tonnage potential, geological continuity, and chemical consistency over a wide area.

This investigation has been partly funded by the Ministry of Natural Resources and the Canada Department of Regional Economic Expansion under the Canada–Ontario Eastern Ontario Subsidiary Agreement.

V.G. Milne

Director
Ontario Geological Survey

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CONVERSION FACTORS FOR MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
		LENGTH			
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
		AREA			
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
		VOLUME			
1 cm^3	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.308 0	cubic yards	1 cubic yard	0.764 555	m^3
		CAPACITY			
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
		MASS			
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
		CONCENTRATION			
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in cooperation with the Coal Association of Canada.

Geochemistry of Grenville Marble in Southeastern Ontario

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Abstract

The history of industrial mineral exploration and production in Southeastern Ontario indicates a widespread occurrence of potentially exploitable Grenville marble. This marble makes up a large portion of the Central Metasedimentary Belt, of Precambrian age. This belt is a small part of the Grenville Province which trends northeast through Ontario, Quebec, and Labrador.

In order to aid industry in the exploration for high-quality calcium carbonate and calcium carbonate-hosted deposits, a regional sampling survey was conducted over much of Southeastern Ontario. Exactly 58 areas with greater than 54 weight percent CaO and less than 1 weight percent combined SiO_2 plus Al_2O_3, and 12 areas with a ratio of CaO to MgO of approximately 1.4 and less than 1.5 weight percent combined SiO_2 plus Al_2O_3 in marble were identified and mapped in detail. The marble was examined for its potential as industrial filler material, aggregate material, and building stone.

Quantitative statistical analysis of the chemical data was undertaken by computer to examine the elemental relationships of the different marble types, with the aim of identifying and characterizing carbonate-hosted deposits.

Résumé

L'historique de l'exploration et de la production minéralogique industrielle dans le Sud-Est de l'Ontario révèle la présence de nombreux gisements de marbre de Grenville exploitables. Ce type de marbre est un des principaux éléments qui composent la zone centrale de roche sédimentaire précambrienne métamorphisée. Cette zone ne représente qu'une partie de la province de Grenville qui traverse, en direction nord-est, l'Ontario, le Québec et le Labrador.

Afin d'aider l'industrie à découvrir des gisements de carbonate de calcium et des dépôts contenant du carbonate de calcium de qualité, une étude d'échantillonnage régionale a été effectuée sur la plupart du territoire du Sud-Est de l'Ontario. Cinquante-huit régions dont le marbre contenait plus de 54 pour 100 par poids de CaO et moins d'un pour cent par poids d'un combiné de SiO_2 et de Al_2O_3, et douze régions dont le marbre avait un rapport CaO–MgO d'environ 1,4 et qui contenait moins de 1,5 pour 100 par poids d'un combiné de SiO_2 et de Al_2O_3 ont été identifiées et cartographiées en détail. On a étudié les utilisations possibles du marbre comme matériau industriel de remblai, matériau d'agrégat et pierre de construction.

On a effectué au moyen d'un ordinateur une analyse statistique quantitative des données chimiques afin d'étudier la relation élémentaire des différents types de marbre en vue d'identifier et de caractériser les dépôts contenant du carbonate.

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Introduction

Throughout the history of industrial mineral exploration in Southeastern Ontario, marble has been a much sought-after commodity. Traditional uses of this material have been building stone, crushed stone, terrazzo chips, poultry grit, lime, and as a source of magnesium metal, to name a few. A recent increase in the demand for calcium carbonate material with qualities of high brightness (whiteness) and purity has led to renewed exploration activity. This high-quality material has the potential for use as a filler in paints, plastics, floor tile, paper finish, glass, and many other finished products of more limited quantity.

Marble belts throughout the study area occur at different levels within the Grenville stratigraphic column, alternating with different rock types of sedimentary, volcanic, and intrusive origin. Characteristics of each calcium carbonate rock type are determined by its history of development. Compositional and textural differences between marble types reflect differences in the original depositional environments, as well as differences in the metamorphic grade or type of metamorphism.

Marble is important, not only as a source rock for industrial minerals, but also as a host rock for secondary industrial minerals (for example, talc), base metals, uranium–thorium, and other types of deposits (Storey and Vos 1981). The calcium carbonate sampling survey undertaken in this study is similar to that of Storey and Vos (1981), covering a different but adjacent geographical area (Figure 1). To allow an easy comparison between the marble

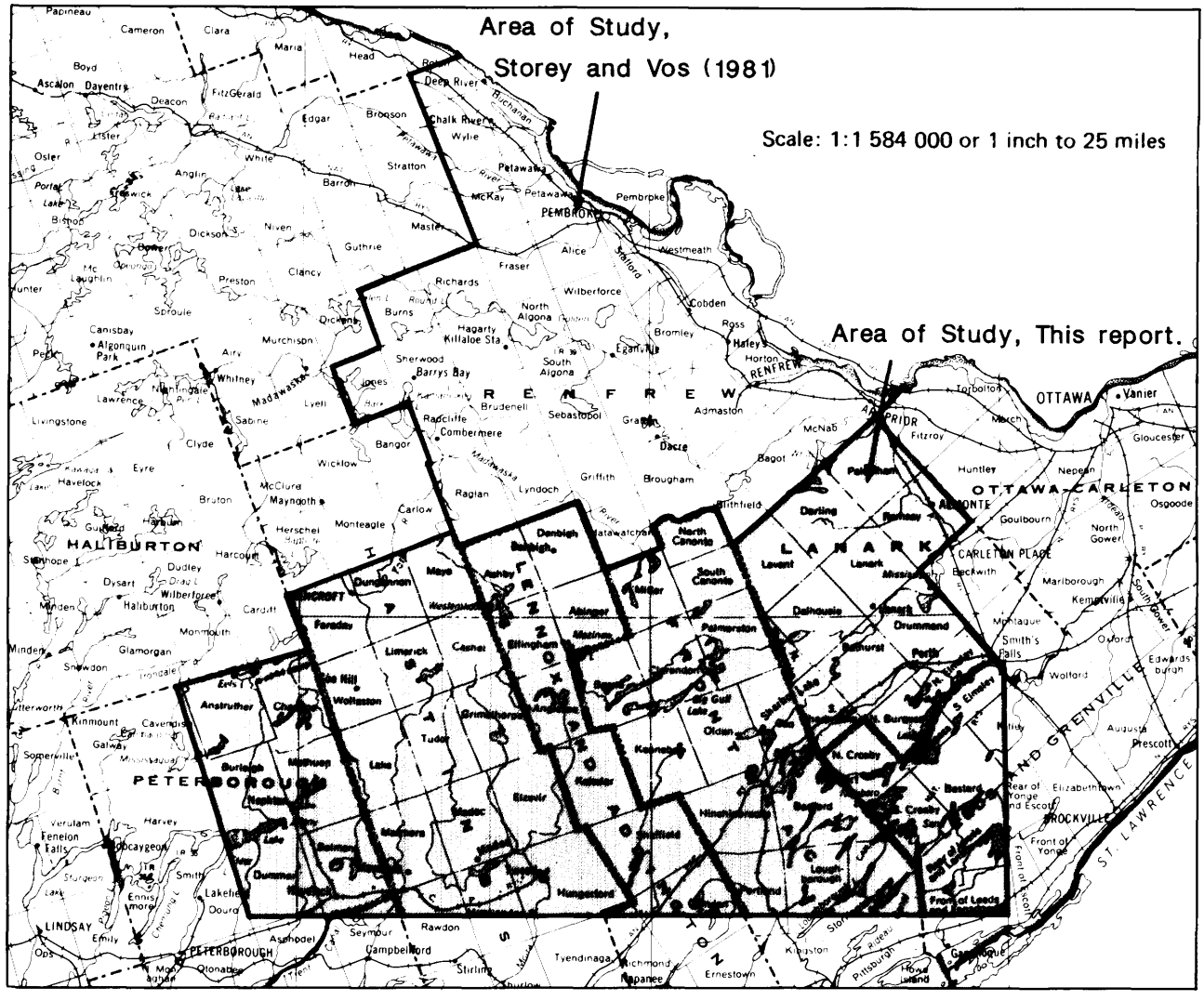


Figure 1. *Location map of the study area indicating the area of the calcium carbonate survey, as well as that of a previous calcium carbonate survey (Storey and Vos 1981).*

units discussed in the separate publications, this publication will follow the basic outline used by Storey and Vos (1981).

This publication includes a compilation (Appendix A) of the chemical data of 1912 samples collected over a period of four summers. This data has been previously published (Papertzian and Kingston 1982a, 1982b; Grant and Kingston 1984). From the complete sample group of 1912 samples, 58 sample locations indicating high-calcium (calcitic) marble and 12 sample locations with high-magnesium (dolomitic) marble samples—all of which were considered, from geochemistry, to have high development potential—were mapped in detail. These sample location maps are included within this publication.

The chemical data of all 1912 samples were examined by statistical analysis using histograms, correlation matrices, and X–Y plots. Original copies of the computer analysis may be examined at the Resident Geologist's Office, Southeastern District, Tweed.

Acknowledgments

The authors wish to thank the many landowners who allowed access to their respective properties. Field assistance was provided by Gordon Keep, Paul Barbour, and Rob Palkovits. Maps were drafted by Al Fulton and Leila Thatcher. Special thanks are directed to O.P. Lavin for his assistance in the computer analysis of the carbonate data. Discussions with Janet Springer of the Ontario Geological Survey were helpful in many portions of this project. M.A. Klugman deserves credit for initiating the project.

The study area is located within the Central Metasedimentary Belt (as defined by Wynne-Edwards 1962), which comprises rocks belonging to the Grenville Supergroup. The Central Metasedimentary Belt consists of metasedimentary, metavolcanic, and metaigneous rocks of Precambrian age. The regional metamorphic grade ranges from greenschist facies east of Madoc, to granulite facies in the Kingston–Gananoque area (Hewitt 1964a). The distribution of metamorphic grade is illustrated in Figure 2.

The Grenville Orogeny, at approximately 1000 Ma, imposed an overall northeastern structural trend over most of the Central Metasedimentary Belt (Stearn *et al.* 1979). The majority of the marble belts examined during this study show this northeastern structural trend (Figure 3), although some are also affected by more local structural events.

The Precambrian rocks of the Central Metasedimentary Belt are overlain in Southeastern Ontario by flat-lying Paleozoic sedimentary and carbonate rocks. The contact between the Precambrian and Paleozoic sedimentary rocks is unconformable, with a time gap of approximately 600 Ma (Holmes 1960).

SAMPLING AND MAPPING TECHNIQUES

In order to recognize the full potential of the sample analysis, a review of the methods used in regional sampling and in the mapping of specific sample areas is given below. A total of 1912 sets of data, equal to the number of samples collected and analyzed, was available for examination.

The total data set consists of two parts: Part 1, which includes geochemical data for 1778 samples (Papertzian and Kingston 1982a, 1982b); and Part 2, which includes geochemical data for 132 samples (Grant and Kingston 1984).

Most samples were taken from roadside outcrops or from quarries, with the exception of 50 samples which are identified by sample numbers ending in v, w, x, y, or z (Appendix A, Part 2). These are channel samples taken from outcrop surfaces in detailed map areas and were sampled to evaluate overall chemical consistency for a given area. Because it was not possible to clean the surfaces of these outcrops thoroughly, there may have been minor contamination.

The object of regional sampling was to sample the average material for each outcrop. However, above average marbles, in terms of whiteness and lack of impurities, have been commonly sampled.

Each detailed map included in this publication covers a limited area around the actual sample locations. These maps are intended to show the areal extent of the marble around the sample locations only, and do not give a detailed geological profile of each map area. The industrial minerals industry is primarily interested in the distinction between high-calcium marble and any other rock type closely associated with that marble, the latter of which to the industry is simply a contaminant that might make a deposit uneconomic. For this study, therefore, all rock types other than marbles were grouped using simplified field terms, which appear throughout the text and in the figures. Since sampling was restricted to roadside outcrops and quarries, better sampling areas may have been overlooked.

The marbles are generally grouped into calcitic and dolomitic marble types for the purpose of geological mapping. For convenience in the field, a simple acid test was used to distinguish between the two types. Outcrop descriptions that refer to impurities within the marble are based on visual examination in the field, representing average material in an outcrop.

MARBLE UNITS

Marble belts within the study area are variable in size, shape, and in both chemical and mineralogical composition. The size of the belts ranges from a few metres to several kilometres in width, and from a few hundred metres to tens of kilometres in length. Structurally, the belts differ according to the local geology and bounding structures, but most show a northeastern trend. Texturally, the marbles exhibit a wide variability, both between marble belts and within a single belt. The most dramatic examples of textural differences exist between low-grade regionally metamorphosed metasediment-hosted marble, and marble that has locally undergone contact metamorphism by the intrusion of igneous rocks.

Marbles associated with metasediments and metavolcanics are usually fine grained, grey in colour, and have fine dark and light grey laminations (Photo 1). These laminations and/or foliations are well defined and are often paralleled by elongate siliceous or dolomitic clots. Laminations are found in marbles that have been affected by low-grade metamorphism, and presumably reflect the original bedding of the carbonate unit. The laminated appearance is a result of alternating bands of variable grain size and impurity (predominantly graphite) content.

Marble that has been intruded by igneous bodies is normally coarse grained, and varies from white with shades of blue, to green, orange, or grey. This marble is characterized by an absence of planar structures, with the exception of flow foliation. Impurities such as graphite and phlogopite generally oc-

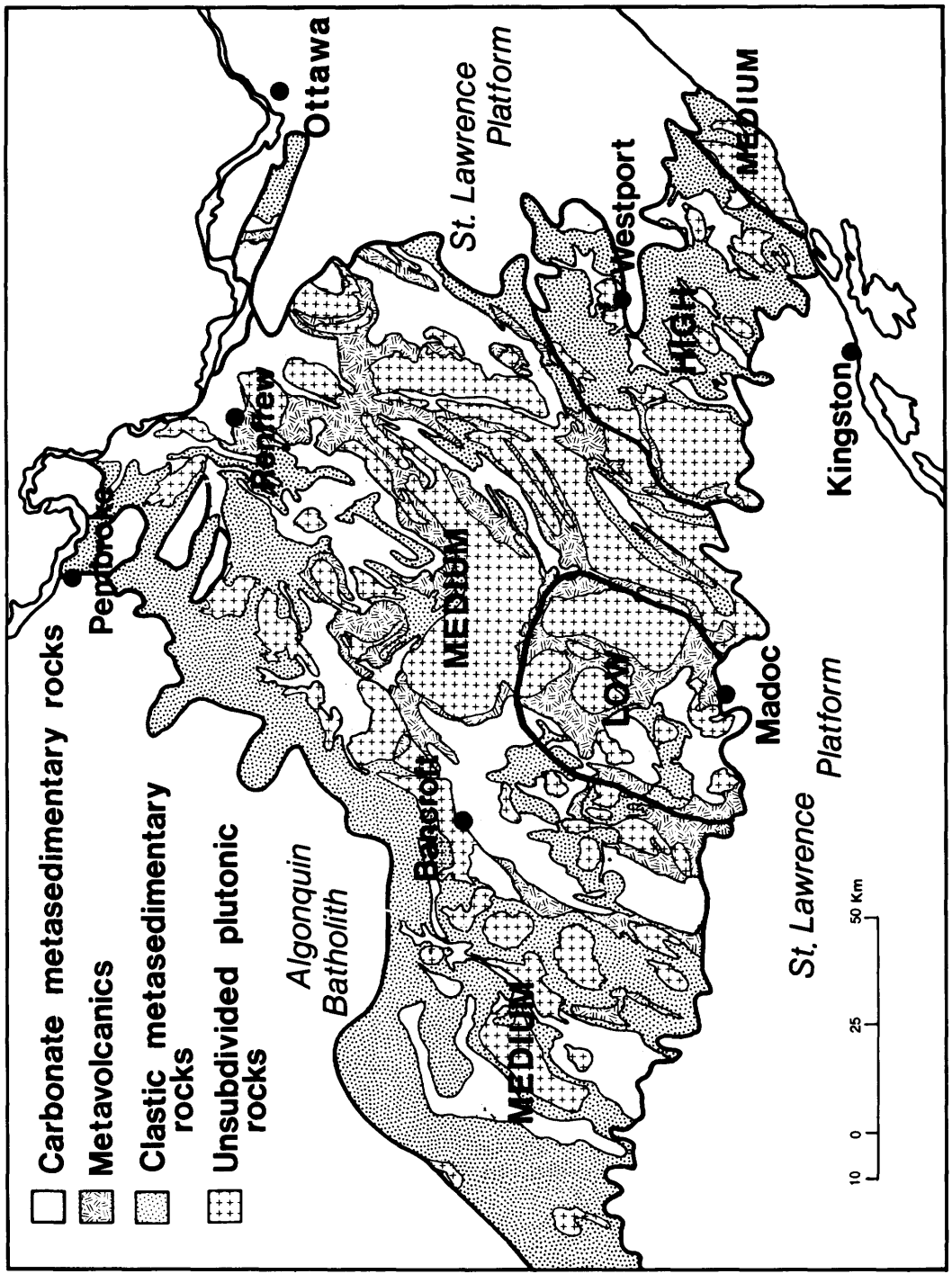


Figure 2. *Distribution of metamorphic grade in the Central Metasedimentary Belt, Grenville Province, Ontario (from Carter 1984).*

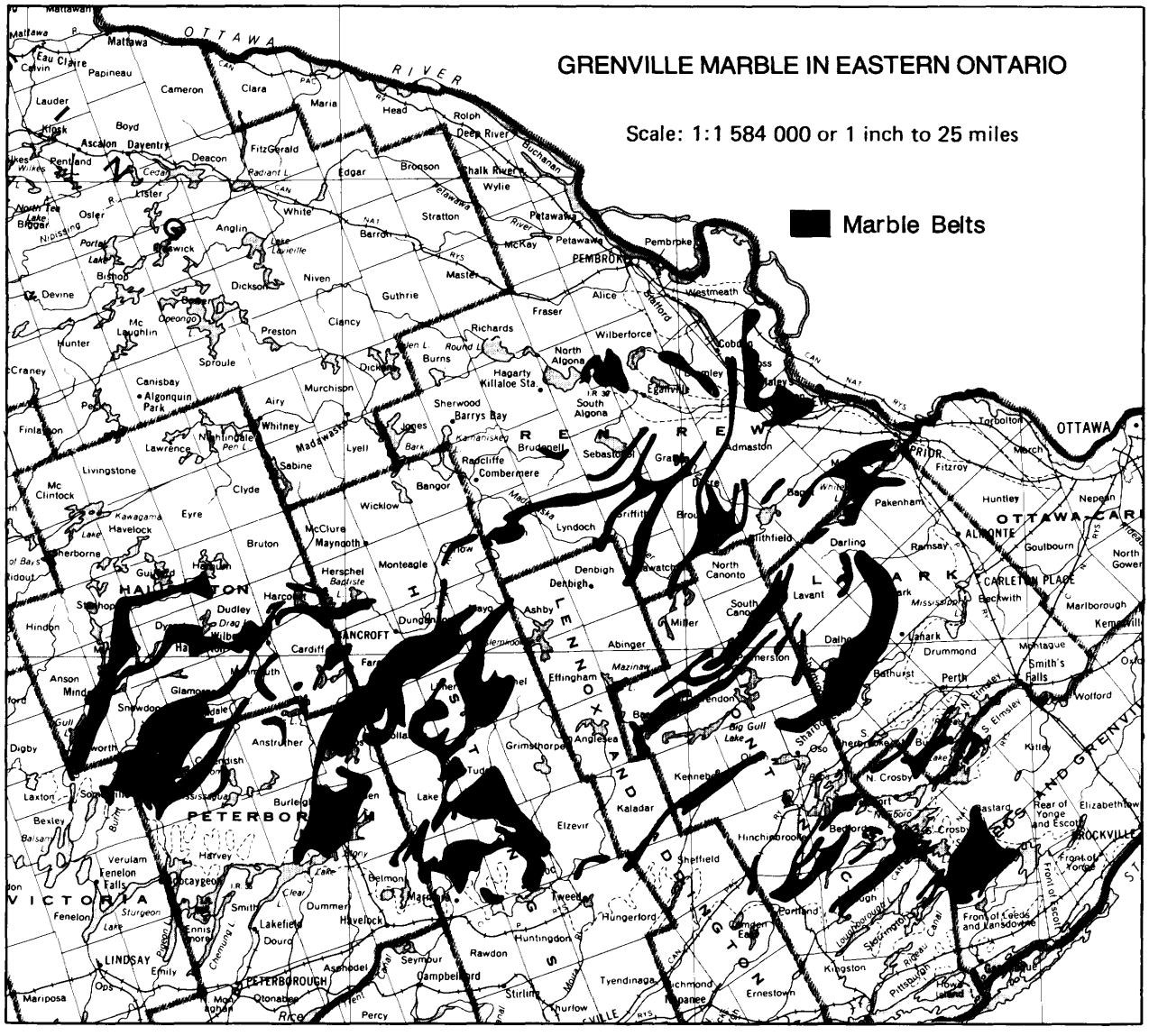


Figure 3. *Distribution of the major marble belts in the Central Metasedimentary Belt, Grenville Province, Ontario (Hewitt 1964c).*

cur along grain boundaries within the coarsely recrystallized material.

In many areas, such as around the Charleston Lake area (approximately 40 km south of Perth), it is apparent that it is the grade and not the type of metamorphism that is the major influence on marble texture. Where high-grade regional metamorphism is prevalent, marble is generally coarsely recrystallized into idioblastic grains.

There is a widespread occurrence of large silicate segregations and clots (5 to 50 cm in length) within the marble units (Photo 2). The grain size of the segregations is the same as that of the marble, and grains are often idioblastic. These segregations commonly occur far from any possible external source, and therefore are likely the result of the remobilization of silica within the calcium carbonate material during metamorphism. Two other suggestions as to the origin of these silicate segregations are: a) these clots were derived from a pegmatite (Wynne-Edwards 1962) or other similar intrusion; and b) these clots are relict sedimentary beds deformed during metamorphism (Harding 1951; Lumbers 1969).

Igneous intrusive rocks that are in contact with calcium carbonate rocks in the high-grade metamorphic regions are typically white and have a larger grain size than less altered equivalents. The whiteness of the intrusive rocks is likely due to the bleaching of feldspar by the migration of solutions from the carbonate material. Bleaching occurs as a result of the reduction of Fe^{+3} to Fe^{+2} in feldspar by fluids migrating near the intrusive contact (Wynne-Edwards 1962). It became evident during this study

Photo 1. *Grey laminated and contorted marble.*

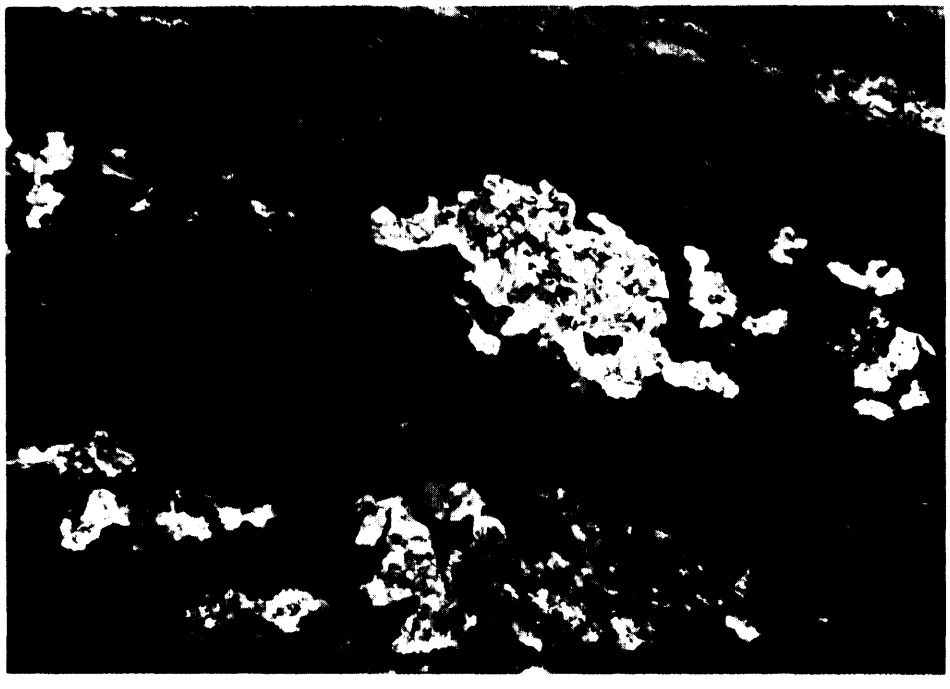


Photo 2. *Calc-silicate clots in dolomitic marble.*

that igneous intrusions into marble do not greatly alter the chemistry of the marble even near the contact where an alteration halo might be expected. Contacts are generally sharp and marble xenoliths within igneous host rocks do not seem to be altered chemically.

The frequent occurrence of dolomitic marble adjacent to metavolcanic units suggests that a relationship exists between these two rock types (Lumbers 1969). Dolomitic marbles associated with metavolcanics generally contain an abundance of silica or silicate stringers parallel to, and less com-

monly crosscutting, the foliation. It is unclear whether these stringers are due to the remobilization of silicate material within the marble, or if they are derived from fluids generated within the volcanic rocks during metamorphism and subsequently injected into the marble.

FIELD METHODS

Regional field sampling of marble with accompanying outcrop descriptions was begun in 1980. The majority of marble belts in the area are crosscut by roads, making it possible to obtain a section across most belts by roadside sampling. Care was taken to sample fresh outcrop where possible on an 800 m spacing along the roads. There was no special effort to sample the cleanest marble, but from later examination of the sample sites, it can be assumed that the marble sampled in the early part of the project is better than average for the sampled outcrop.

The marble belts were located by the use of existing geological maps: Map 2031, Ashby Township (Evans 1964); Map 51d, Grimsthorpe–Kennebec Area (Meen and Harding 1942); Map 1362A, Carleton Place (Reinhardt *et al.* 1973); Map 2142, Cashel Township (Lumbers 1968); Map 2019, Chandos Township (Shaw and Hewitt 1962); Map 1956-4, Clarendon–Dalhousie–Darling Area (Peach and Smith 1956); Map 2049, Denbigh Township (Evans 1964); Map 1955-8, Dungannon and Mayo Townships (Hewitt and James 1956); Map 2054, Gananoque Area (Hewitt 1964a); Map 27-1962, Gananoque (Wynne-Edwards 1962); Map 2106, Lake Township (Laakso 1968); Map 2167, Limerick Township (Lumbers 1969); Map 2053, Madoc Area (Hewitt 1964a); Map 2154, Madoc Township (Hewitt 1968); Map 560A, Marmora Township (Wilson 1940b); Map 1960e, Methuen Township (Hewitt 1960); Map 1947-5, Olden–Bedford Area (Harding 1951); Map 1089A, Perth (Wilson and Dugas 1961); Map 2168, Tudor Township (Lumbers 1969); Map 1182A, Westport Area (Wynne-Edwards 1967); Map 770, Haliburton–Bancroft Areas (Adams and Barlow 1910); Map 1957-1, Cardiff and Faraday Townships (Hewitt 1959); Map 1957B, Haliburton–Bancroft Area (Hewitt and Satterly 1957); Map 1363A, Arnprior (Hill *et al.* 1974); Map P.2487, Ardoch Area (Pauk 1982, 1987); Map 1956-4, Darling and Lavant Townships (Peach 1958); Map 52A, Haliburton Area (Satterly 1943); Map 559A, Madoc Area (Wilson 1940a); Map 2432, Kaladar Area (Wolff 1982a); Map 2449, Long Lake Area (Wolff 1982b).

Locations were selected for detailed mapping on the basis of total weight percent CaO, MgO, and combined SiO_2 plus Al_2O_3. Only those areas containing samples with greater than 54 weight percent CaO, less than 4 weight percent MgO, and less than 1 weight percent combined SiO_2 plus Al_2O_3 were mapped for high calcium carbonate potential. Areas with high dolomite potential were selected based on the ratio of CaO to MgO, with only those areas containing samples with the CaO/MgO ratio between 1.4 and 1.7 and with SiO_2 plus Al_2O_3 less than 1.5 weight percent being mapped.

Detailed map areas vary in scale depending on the number of samples at each site. Maps were drawn by plotting roads and trails and making pace and compass traverses from these roadways or from other known locations.

The locations of detailed map areas have been plotted on the charts accompanying this publication (*see* back pocket), or for more detailed locations the samples have been plotted on NTS maps (scale 1:50 000) on file at the Resident Geologist's Office, Southeastern District, Tweed.

ANALYTICAL METHODS

The majority of samples discussed in this publication (Part 1 data set) were submitted as pulps and analyzed by the Geoscience Laboratories of the Ontario Geological Survey, Toronto. The pulps for these samples were prepared in Tweed using a rock crusher and grinder under less than ideal laboratory conditions. For this reason some small inconsistencies in sample analyses have arisen. However, this does not affect the total CaO and MgO contents, which are of primary interest.

Nineteen elements were analyzed; in addition, the Loss on Ignition (LOI) was also determined. Major element contents were determined by X-ray fluorescence using a procedure developed for carbonate rock types (Papertzian and Kingston 1982a). This procedure allows for a complete range of MgO and CaO contents; however, marbles containing an abundance of impurities such as SiO_2, Al_2O_3, and total Fe_2O_3 may have quantities which fall outside of the calibration ranges. Calibration ranges for the major elements are indicated in Table 1.

Trace element contents were measured by a flame atomic absorption spectrometer. In the case where the trace element content is very high, the results of the analysis are given in weight percent rather than parts per million.

Detection limits for trace elements are indicated in Table 2.

Part 2 data set samples were analyzed by Barringer Magenta Limited under the direction of the Geoscience Laboratories of the Ontario Geological Survey. Major and trace element contents were determined using an Induced Couple Plasma (ICP) Spectroscopy System. This procedure involves the acid digestion of sample pulps while retaining solubles, then the testing of precipitates from solution by optical emission with the spectrometer to give the type and amount of element present. This method eliminates some of the problems of grind size encountered using rock powder pellets and X-ray Diffraction Spectroscopy (Riddle 1983). In addition to the 19 elements analyzed for Part 1 data set, F, S, Th, U, Mo, Ag, Be, Cd, and Zr were also determined for Part 2 data set. All channel samples collected (sample numbers ending in v, w, x, y, or z) were also tested for percentage reflectivities.

Detection limits are identical for the Barringer Magenta Limited and Ontario Geological Survey analyses for all trace elements with the exception of Ba, which has a detection limit of 30 ppm for the former. Major elements for Part 2 data set were analyzed with a complete calibration range, eliminating the possibility of having samples with elemental abundances above the calibration limit.

A complete set of chemical data for data Parts 1 and 2 are included in Appendix A.

DATA PROCESSING—ASSUMPTIONS

The nature of the data sets required that certain assumptions were made before the data was processed. Since data came from two separate laboratories, these data sets (Parts 1 and 2) were examined separately and were not collectively subjected to an averaging process in order that any discrepancies in analytical procedure or results would not affect the other set.

Only one sample, sample 1525b, was omitted from the total data set. Sample 1525b is a high-grade sphalerite sample and not a regional carbonate sample.

The large number of samples making up the data base (1912), combined with a minimum of 19 separate elements analyzed for each sample, has

TABLE 1. CALIBRATION RANGES FOR MAJOR ELEMENT ANALYSES OF SAMPLES.
Samples Analyzed Under the Direction of the Geoscience Laboratories, Ontario Geological Survey.

Major Elements	Calibration Ranges
SiO_2	0 - 20%
Al_2O_3	0 - 3%
Fe_2O_3	0 - 4%
MgO	0 - 22%
CaO	0 - 50%
Na_2O	0 - 1%
K_2O	0 - 1%
TiO_2	0 - 1%
MnO	0 - 1%
P_2O_5	0 - 1%

TABLE 2. DETECTION LIMITS FOR TRACE ELEMENT ANALYSES OF SAMPLES.
Samples Analyzed Under the Direction of the Geoscience Laboratories, Ontario Geological Survey.

Trace Element	Detection Limit
Cu	5 ppm
Zn	5 ppm
Pb	10 ppm
Ni	5 ppm
Co	5 ppm
Cr	5 ppm
Ba	10 ppm
Li	3 ppm
Sr	10 ppm

provided over 36 000 individual chemical analyses. The simple statistical calculations and plots are collectively intended only as a tool in understanding the data more fully.

The samples have been divided into a number of subsets based mainly upon their calcium, magnesium, and silica contents (*see* Figures 4 to 18). Chemical data for samples in each subset, or classification, were examined statistically to determine anomaly levels for specific elements, and to determine the relationships between the various elements. Individual element geochemistry map plots showing the geographical distribution of samples with anomalous levels of elements (*see* Figures 19 to 27) were useful in crudely defining areas of marble with anomalous elemental contents. Of greatest interest is the identification of high-quality marble with good economic potential.

Most of the elemental populations displayed a skewed distribution making it necessary to perform logarithmic transformations to normalize the data sets. Since many of the samples contain 0.00 weight percent for various elements, it was necessary to add 0.01 weight percent to many of the major elements (Na_2O, K_2O, TiO_2, MnO, and P_2O_5) in order that logarithmic transformations could be made. The only elements not needing a logarithmic transformation were CaO and MgO, as these elements displayed a normal, although bimodal, distribution.

Many of the samples have analytical values which fall outside of the range of instrument calibration or below the detection limits. Analyses with values below the respective detection limits have values of one half the detection limit assigned to them. Values above the calibration limit have an arbitrary value, slightly higher than the calibration limit, assigned to them (Table 3).

MARBLE GEOCHEMISTRY

There are many different methods of classifying calcium carbonate rocks. One of the most basic subdivisions is between unmetamorphosed carbonate sedimentary rocks and their metamorphosed marble equivalents. Within the marble group, classification may be further subdivided on the basis of texture, colour, type of metamorphism (contact versus regional), and geochemistry. One universally applied method of geochemical classification for all types of calcium carbonate rocks uses the ratio of CaO to MgO (CaO/MgO). Putting titles on the different carbonate rock types is somewhat arbitrary since the theoretical limits of CaO/MgO range from 1.39 (the ratio of ideal calcite to ideal dolomite) to infinity. The ratio of CaO to MgO can be converted to percent calcite and percent dolomite using the following equations:

$$\%\text{calcite} = \frac{100\frac{\text{CaO}}{\text{MgO}} - 139}{1.17 + \frac{\text{CaO}}{\text{MgO}}}$$

$$\%\text{dolomite} = 100 - \%\text{calcite}$$

These equations assume that the sample is composed of 100% calcium carbonate.

The geochemical classification used in this publication (Figure 4b) is an adaptation of the Ontario Geological Survey classification of unmetamorphosed carbonate sedimentary rocks (Figure 4a), and was used previously by Storey and Vos (1981). Samples are classified into one of four categories, based on geochemistry: dolomite marble, calcitic dolomite marble, dolomitic calcite marble, and calcite marble. This is a quantitative classification and contrasts with the qualitative field classification described earlier and used for the purpose of geological mapping.

Figure 5 shows the observed frequency distribution of marble composition in percent calcite for Part 1 data set samples (1778 samples). Percent calcite is calculated using the formula given above and ranges from 100 percent, the ideal composition of calcite ($CaCO_3$), to 0 percent, the ideal composition of dolomite ($CaMgCO_3$).

The histogram shows a bimodal distribution with two peaks, one falling in the dolomite marble classification and the second in the dolomitic calcite marble classification.

The bimodal distribution displayed in Figure 5 is also evident in the frequency histogram showing marble composition in percent calcite for Part 2 data set reconnaissance samples (Figure 6), although because fewer samples are represented, the bimodal distribution is less obvious. This suggests that marbles in the Faraday and Chandos townships area, where the Part 2 data set samples were collected, show a similar range and pattern of chemical composition as marbles in the whole of the study area.

Figure 7, the frequency histogram showing marble composition in percent calcite for channel samples taken in the detailed map areas (Part 2 data set), is unimodal with most samples falling in the

TABLE 3. VALUES ASSIGNED TO ANALYSES BELOW THE DETECTION LIMIT AND ABOVE THE CALIBRATION LIMIT.

SiO_2	greater than 16 weight percent	20 weight percent
Al_2O_3	greater than 4 weight percent	5 weight percent
Fe_2O_3	greater than 7.5 weight percent	10 weight percent
Na_2O	greater than 2.5 weight percent	3 weight percent
K_2O	greater than 1.8 weight percent	2 weight percent
Co	less than 5 ppm	3 ppm
Cr	less than 5 ppm	3 ppm
Cu	less than 5 ppm	3 ppm
Li	less than 3 ppm	2 ppm
Ni	less than 5 ppm	3 ppm
Pb	less than 10 ppm	5 ppm

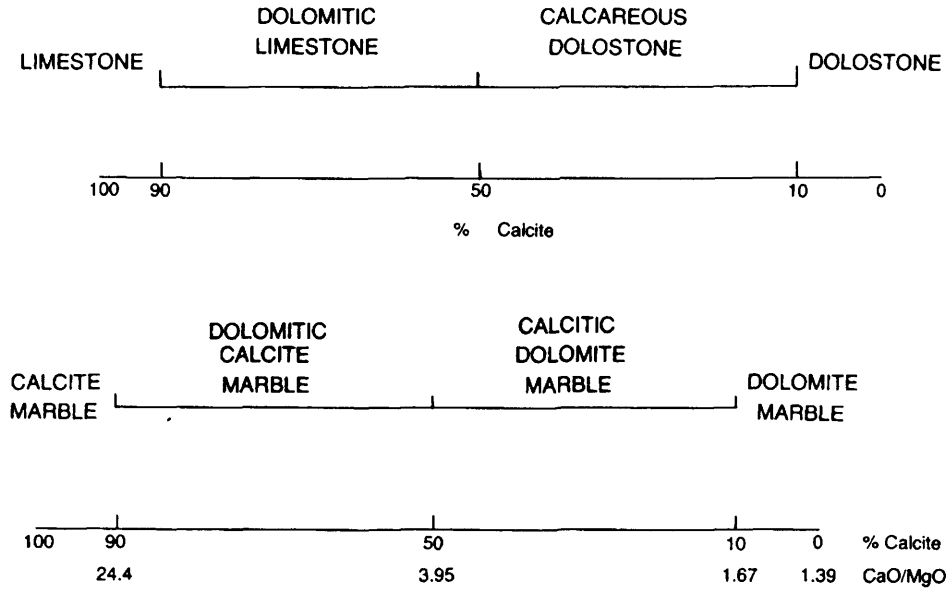


Figure 4. *Calcium carbonate and marble classification systems as used by Storey and Vos (1981). (a) Ontario Geological Survey calcium carbonate classification system. (b) Storey and Vos (1981) marble classification system.*

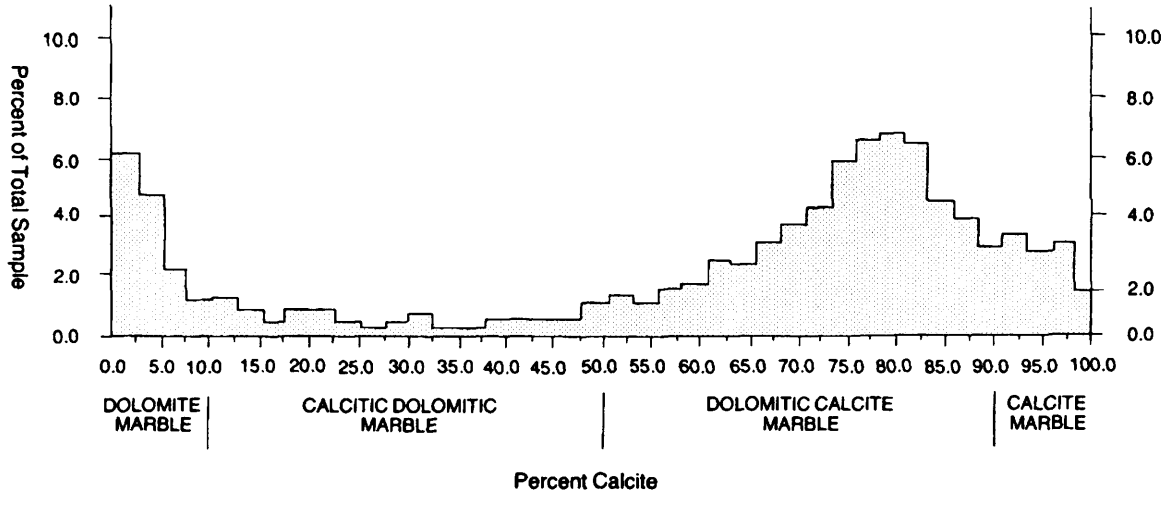


Figure 5. *Frequency histogram showing marble composition in percent calcite for Part 1 data set (1778 samples).*

range 75 to 87.5 percent calcite. The relatively narrow range of sample compositions of this group reflects the nonrandom sampling of potentially high-calcium marbles selected for detailed area mapping. The frequency histogram thus differs significantly from that of the total population of marble samples.

A bimodal distribution is observed in the frequency histogram of weight percent MgO (Figure 8) for Part 1 data set samples. The frequency histogram for weight percent MgO shows two major groupings of marble: a) the grouping in the 19 to 21 weight percent MgO range, which corresponds to the dolomite marble classification on the percent calcite frequency histogram of Figure 5; and b) the grouping in the 3 to 5.5 weight percent MgO range, which corresponds to the dolomitic calcite marble classification on the percent calcite frequency histogram of Figure 5. The frequency histogram for weight percent CaO (Figure 9) also shows a bimodal distribution, where the peak from 24 to 32 weight percent CaO is representative of a dolomite marble type, and the peak in the range 50 to 56 weight percent CaO corresponds to the dolomitic calcite marble type.

Figures 8 and 9 indicate the ideal compositions of calcite marble and dolomite marble such that a comparison of ideal compositions can be made with the observed compositions of samples classified as dolomitic calcite and dolomite marbles. Pure dolo-

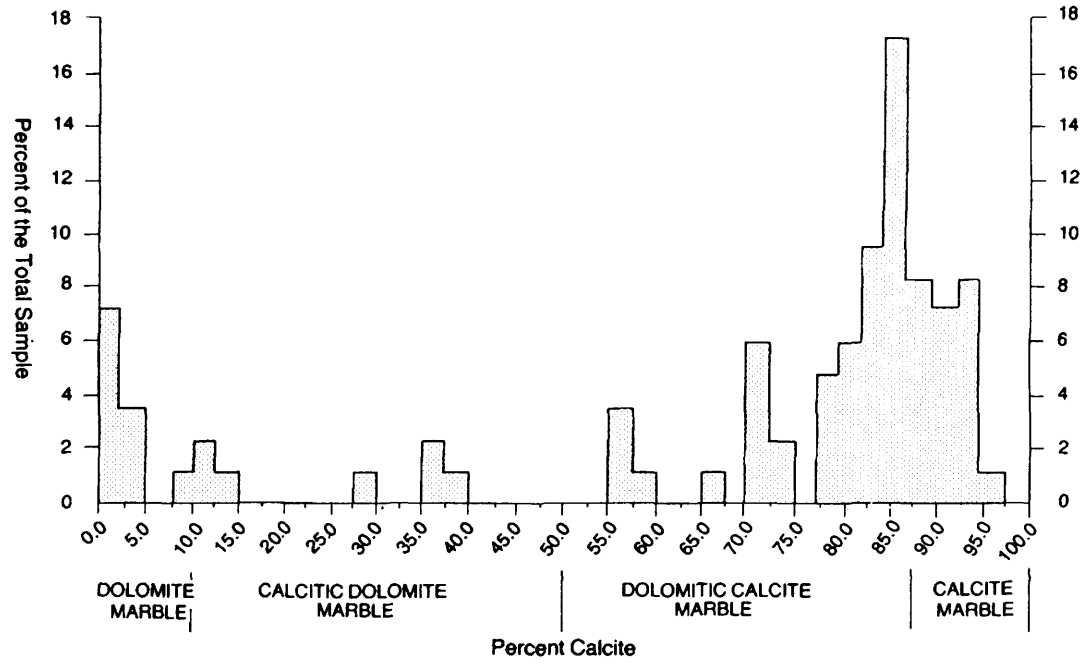


Figure 6. *Frequency histogram showing marble composition in percent calcite for Part 2 data set (82 samples).*

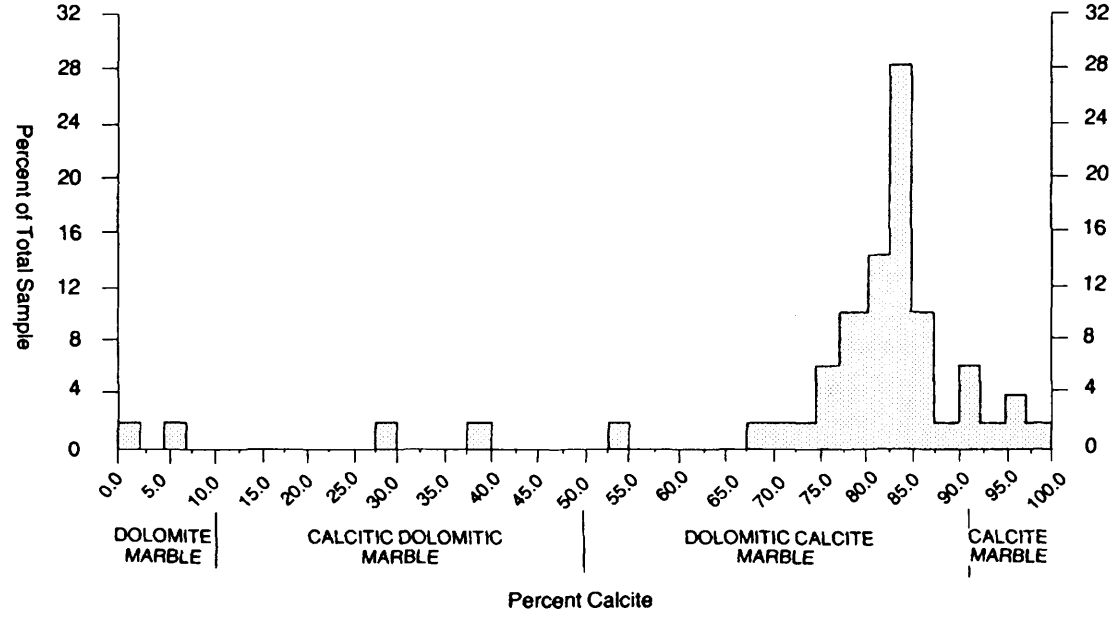


Figure 7. *Frequency histogram showing marble composition in percent calcite for Part 2 data set (50 channel samples).*

mite marble has an ideal MgO content of 21.6 weight percent and an ideal CaO content of 30.4 weight percent; pure calcite marble has an ideal CaO content of 56.0 weight percent and an ideal MgO content of 0.0 weight percent. Differences between the ideal values and the observed pure member compositions may be due to metamorphic effects causing the loss of CO_2 from the marble.

Figures 10 and 11 show, respectively, the observed frequency distribution of weight percent MgO and CaO, for the subset of "pure" dolomite marble samples, with weight percent SiO_2 less than 5, for Part 1 data set. Observed maxima compare closely with ideal values, suggesting that low-silica samples include those that have been unaffected or only slightly altered by the effects of metamorphism.

Figure 12, the frequency histogram for all samples in the pure calcite marble classification (CaO/MgO>24.4, SiO_2<5 percent) shows a relatively wide range of CaO content for pure calcite marble. The

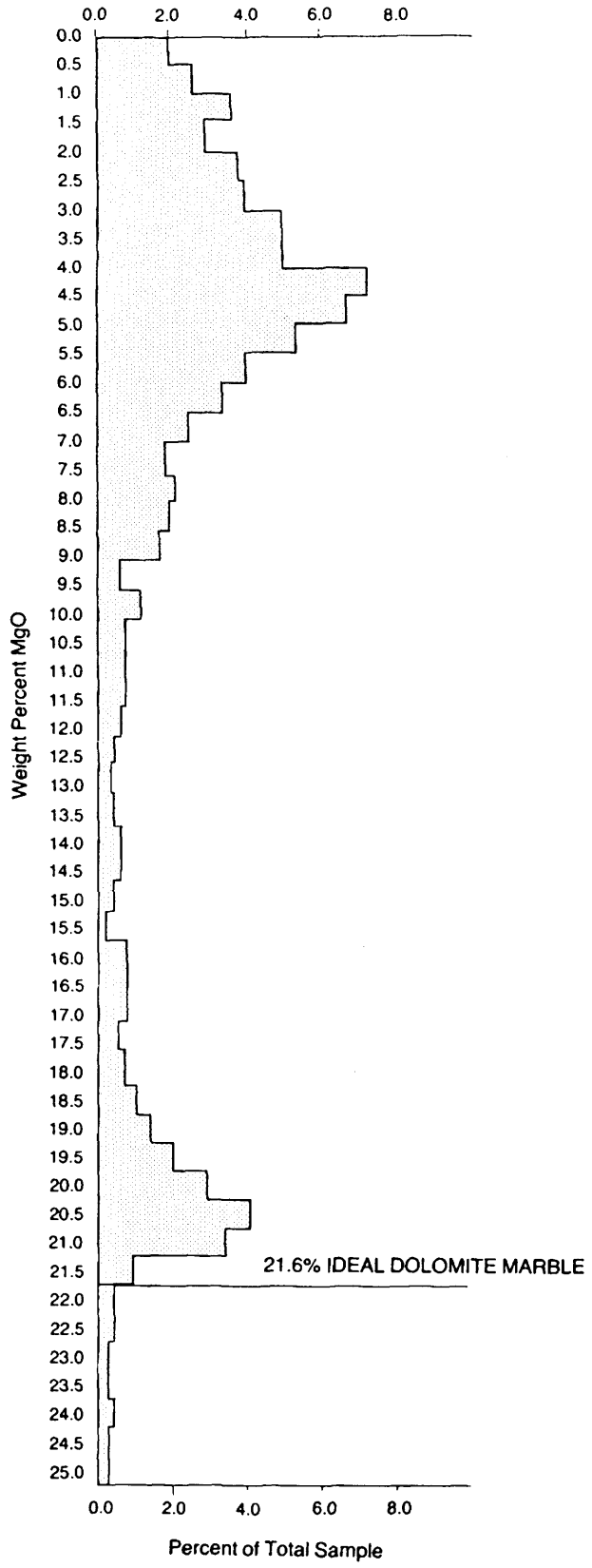


Figure 8. *Weight percent MgO frequency histogram, Part 1 data set (1778 samples).*

upper limit of 62 weight percent CaO for samples in this classification (6 weight percent above the ideal value) may be due to problems with the analytical method and/or loss of CO_2 during metamorphism resulting in a relative increase in CaO content.

Aside from the weight percent of CaO and MgO in a sample, one of the major factors influencing the potential value of a marble resource for industrial use is the abundance and type of contained impurities; the lower the impurity content, the better the marble. SiO_2 is generally the most abundant impurity in marble, with lesser amounts of Al_2O_3, Fe_2O_3, Na_2O, and K_2O being directly related to the amount of SiO_2 present.

Calc-silicate minerals present as impurities in marble are commonly formed as the result of either regional or contact metamorphism. These silicate minerals themselves often contain quantities of CaO and MgO as part of their chemical composition, which affects the overall ratio of CaO to MgO for the sample. If the metamorphic process was an open system, that is, a system in which elements such as SiO_2 have migrated in and out of the carbonate material, the elemental ratios are affected even more. This may result in some samples having a ratio of CaO to MgO of less than 1.39 (the ideal value for pure dolomite marble) which is not theoretically possible. A qualitative assessment of the data indicates that the MgO content remains relatively constant for a marble which has undergone silica enrichment during metamorphism; however, the CaO content decreases below the ideal composition of 31.4 weight percent CaO in dolomite marble, to between 24 and 26 weight percent (Figure 13). A number of other samples on this figure fall in the 8 to 20 weight percent range. These samples are not marbles but are actually carbonaceous metasediments.

TERNARY DIAGRAMS

Since SiO_2 content plays a key role in determining the potential of a particular marble for industrial use, it is necessary to include silica in the classification system. Storey and Vos (1981) used a CaO-MgO-SiO_2 ternary diagram (Figure 14) to classify the marble based upon the percentage of these three components, each normalized to 100 percent.

The numbers within the different blocks in the diagram correspond to the separate marble classifications (Table 4).

Categories 13 through 16 include all samples between 0 and 100 weight percent SiO_2 for a given ratio of CaO to MgO (Table 4), and as such are independant of SiO_2 content.

Each of the 19 elements in the analytical results (Part 1 data set) for 14 of the 16 marble types in Table 4 were examined statistically for the mean, standard deviation, error of the mean, skewness, kurtosis, maximum, minimum, and coefficient of variation (Appendix B). Categories 9 and 12 were

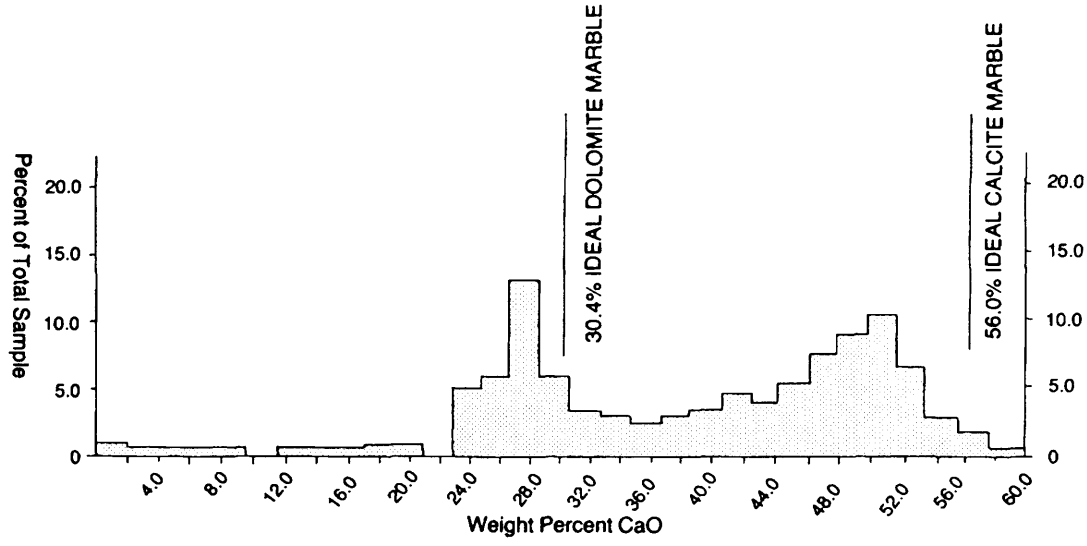


Figure 9. *Weight percent CaO frequency histogram, Part 1 data set (1778 samples).*

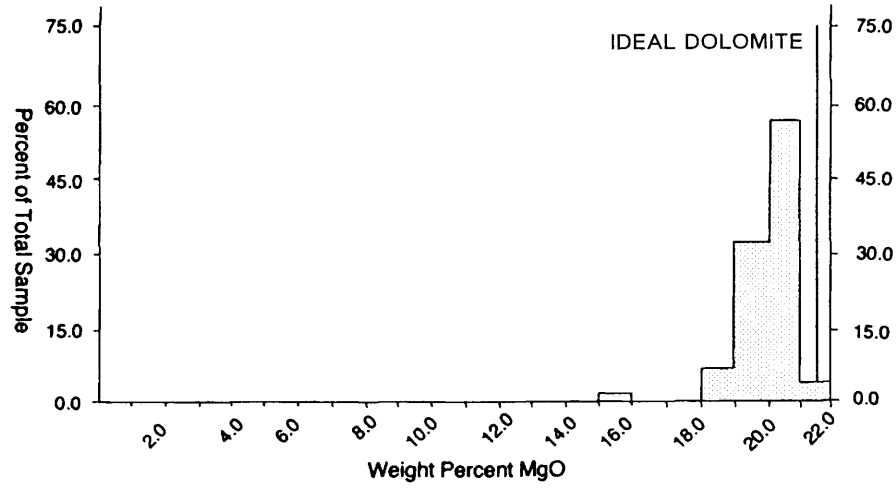


Figure 10. *Frequency histogram comparing observed MgO content for dolomite marble samples to weight percent MgO for ideal dolomite marble, Part 1 data set; samples with less than 5 weight percent SiO_2 (151 samples).*

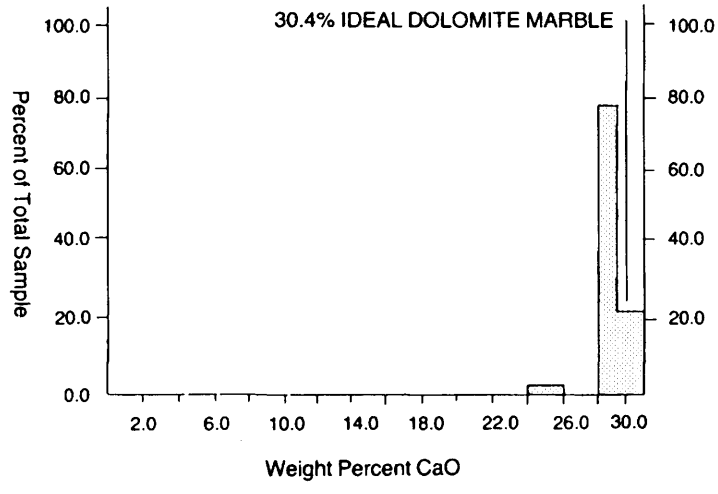


Figure 11. *Frequency histogram comparing observed CaO content for dolomite marble samples to weight percent CaO for ideal dolomite marble, Part 1 data set; samples with less than 5 weight percent SiO_2 (151 samples).*

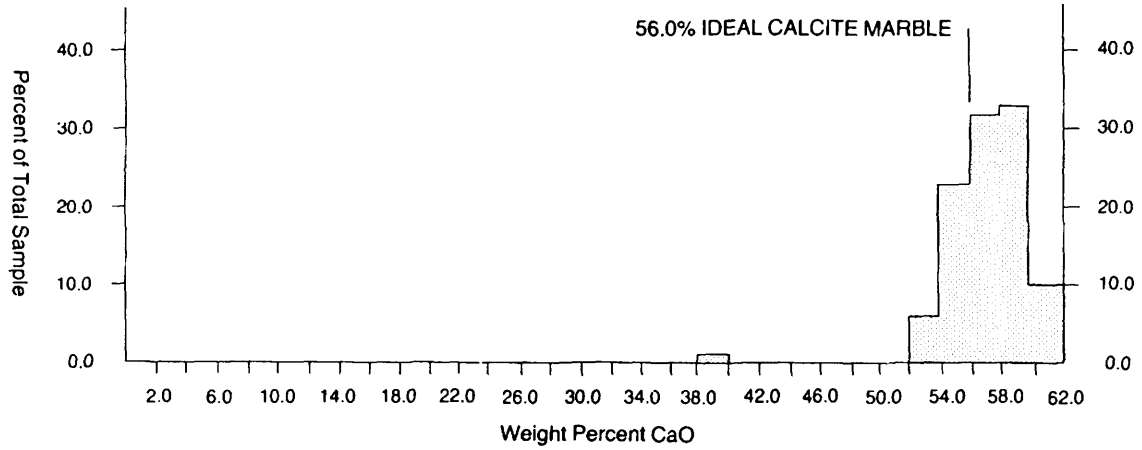


Figure 12. *Frequency histogram comparing observed weight percent CaO for calcite marble samples to weight percent CaO for ideal calcite marble, Part 1 data set; samples with less than 5 weight percent SiO_2 and CaO/MgO greater than 24.4 (87 samples).*

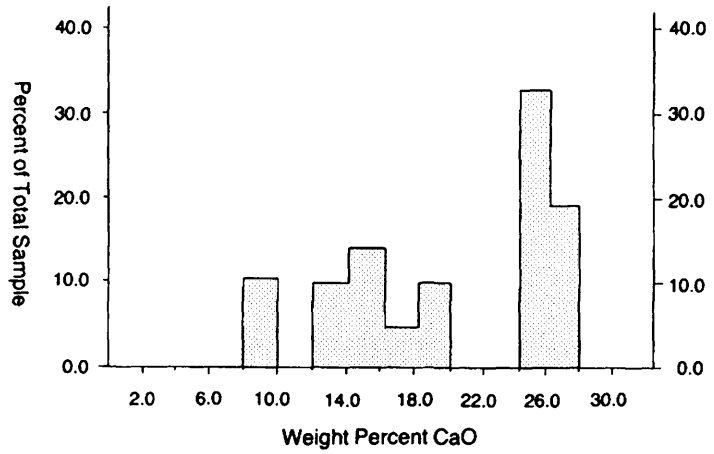


Figure 13. *Frequency histogram showing observed weight percent CaO content for calc-silicate calcitic dolomite marbles, Part 1 data set; samples with greater than 35 weight percent SiO_2 and CaO/MgO less than 1.67 (21 samples).*

not studied owing to the small number of samples within the groups, and the associated statistical errors involved in examining such a small population. The "non-marble" and "MgO greater than pure dolomite marble" categories, which are actually calcareous sedimentary or calc-silicate rocks, were not analyzed statistically because the focus of the study was on marbles.

The ternary diagram used in this publication differs slightly from the one used by Storey and Vos (1981) in that the SiO_2 content dividing siliceous from calc-silicate marble is adjusted upward to 35 percent from the arbitrary 31 percent value chosen by Storey and Vos (1981), such that all of the data plots below the calc-silicate field if all samples with greater than 20 percent SiO_2 are not included (Figure 15).

TERNARY DIAGRAM RESULTS

The ternary diagram for Part 1 data set (Figure 16) indicates a wide scatter in sample geochemistry. Groupings occur in the dolomitic calcite marble (No. 14) and dolomite marble (No. 16) fields with an obvious depletion of samples in the calcitic dolomite (No. 15) field. The 20 percent maximum calibration limit imposed on SiO_2 analyses has resulted in an anomalous set of sample compositions falling closer to the MgO apex than expected (Figure 16). This effect is minimized in Figure 17, where the chemical compositions of samples with SiO_2 greater than 20 weight percent were arbitrarily recalculated by setting the total weight percent to 100 percent and subtracting the weight percent of all other major elements as well as the Loss on Ignition (LOI), the remainder being the SiO_2 content plotted. This is a

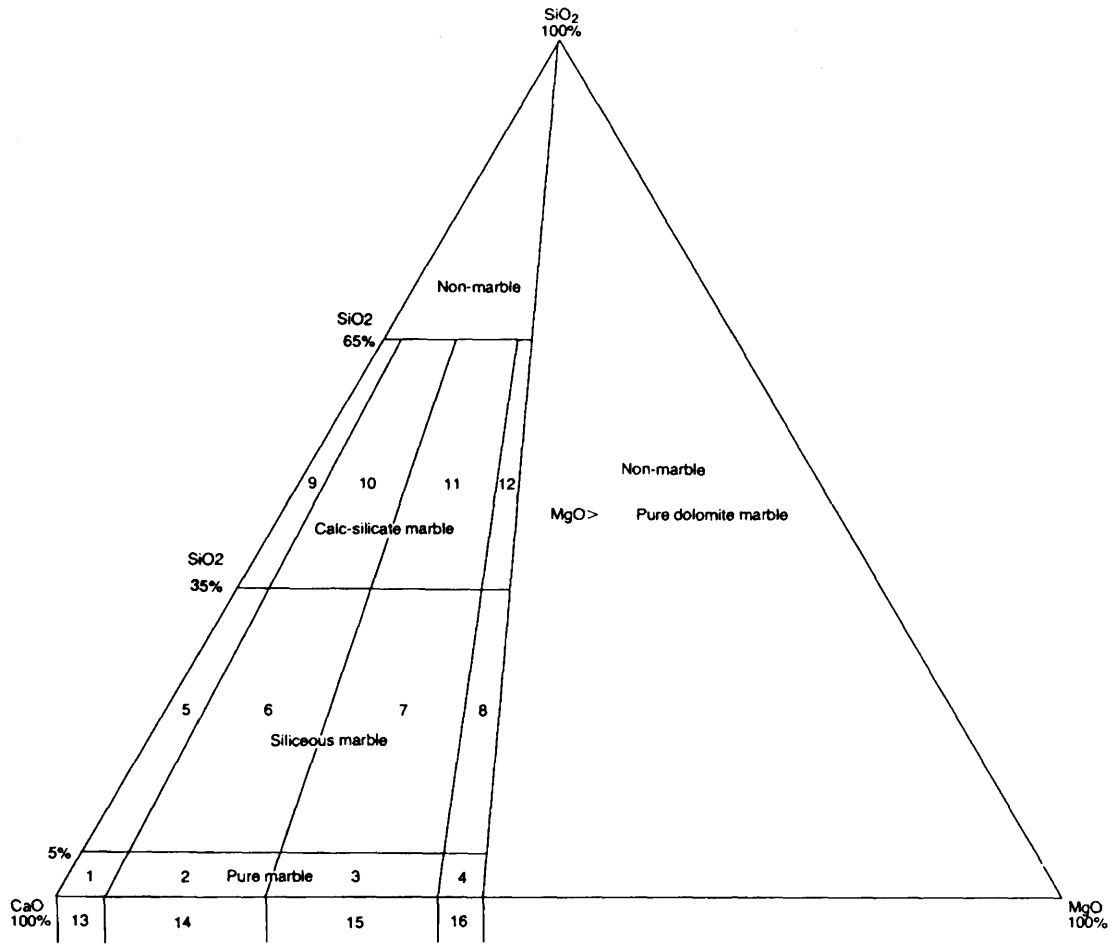


Figure 14. *CaO-MgO-SiO_2 ternary diagram classification system used in this publication (from Storey and Vos 1981).*

TABLE 4. MARBLE CLASSIFICATIONS AND NUMBER OF SAMPLES FOR CARBONATE ROCK TYPES.

Classification Name	$\frac{CaO}{MgO}$	SiO_2	Number of Samples
1. Pure Calcite	G.T. 24.4	0 - 5%	87
2. Pure Dolomitic Calcite	3.95 - 24.4	0 - 5%	450
3. Pure Calcitic Dolomite	1.67 - 3.95	0 - 5%	52
4. Pure Dolomite	1.39 - 1.67	0 - 5%	151
5. Siliceous Calcite	G.T. 24.4	5% - 35%	95
6. Siliceous Dolomitic Calcite	3.95 - 24.4	5% - 35%	464
7. Siliceous Calcitic Dolomite	1.67 - 3.95	5% - 35%	101
8. Siliceous Dolomite	1.39 - 1.67	5% - 35%	90
9. Calc-Silicate Calcite	G.T. 24.4	35% - 65%	few
10. Calc-Silicate Dolomitic Calcite	3.95 - 24.4	35% - 65%	142
11. Calc-Silicate Calcitic Dolomite	1.67 - 3.95	35% - 65%	21
12. Calc-Silicate Dolomite	1.39 - 1.67	35% - 65%	few
13. Calcite Marble	G.T. 24.4	0 - 100%	189
14. Dolomitic Calcite Marble	3.95 - 24.4	0 - 100%	1057
15. Calcitic Dolomite Marble	1.67 - 3.95	0 - 100%	178
16. Dolomite Marble	1.39 - 1.67	0 - 100%	244
non-marble and MgO> pure marble			116

TABLE 5. CLASSIFICATION OF MARBLES AND SYMBOLS USED IN THE CALCIUM-MAGNESIUM (CaO/MgO) RATIO MAP (FIGURE 20).

Lower Boundary CaO/MgO	Upper Boundary CaO/MgO	Classification	Symbol	Frequency
<1.400	1.400	non-marble	-	111
1.400	1.670	dolomite marble	1	243
1.670	3.950	calcitic dolomite marble	2	178
3.950	24.400	dolomitic calcite marble	3	1058
24.400	over	calcite marble	4/+	190

geologically reasonable method of treating the samples examined, since hand specimen and field notes revealed no other abundant minerals (for example, barite or fluorite) other than calc-silicate minerals.

Errors arise in this method when the totals of elements are greater than 100 percent causing SiO_2 to be a negative amount. These samples do not plot on the diagram but are represented by the symbol "v" on the bottom side of the triangle.

Part 2 data set samples were plotted on a separate ternary diagram (Figure 18). Since there are no imposed calibration limits on this data set there is a continuous range of SiO_2 to approximately 90 weight percent. As for Part 1 data set, there are two major populations of marble: a) dolomitic calcite marble; and b) dolomite marble.

Since this data set includes regional marble samples as well as 50 channel samples taken in potentially "clean" marble areas, the diagram is weighted somewhat toward samples high in CaO and low in SiO_2.

GEOCHEMISTRY MAPS

The major influence on the chemistry and relative purity of a marble is the original composition of the carbonate sediment. Environments of deposition of carbonate material generally occur on a large scale, suggesting that material will be consistent over a large definable area. By plotting the geochemistry of regional samples on a generalized grid of the study area, it is possible to delineate regions of different (high, moderate, or low) impurity content. The majority of carbonate units encountered during this study are unchanged chemically from typical premetamorphic limestone/dolostone precursors, although mineral assemblages may be variable due to differences in the metamorphic history of the belts.

The geographical distribution of Part 1 data set samples ("1" on the figure) and Part 2 data set samples ("2" on the figure) is shown on Figure 19. The northwest section of this map contains most of the Part 2 samples and corresponds to Faraday and Chandos townships (Chart A , back pocket).

Figure 20 is a plot of the spatial distribution of samples of the different marble classifications based on the calcium to magnesium (CaO/MgO) ratio of individual samples (*see* Table 5 for legend). An examination of this figure reveals that areas of high-calcium marble, high-magnesium marble, or some gradation between the two marble end members, exist. Exploration for end member marble types may be aided by concentrating efforts in those locations where the preferred marble composition exists.

Table 6 shows the 95th and 98th percentile values of the major oxide and trace elements analyzed. Those samples with analytical values above the 95th percentile—that is, only those samples with elemental compositions in the top 5 percent—are considered to be anomalous, and are plotted on individual

TABLE 6. MAJOR ELEMENT AND TRACE ELEMENT ANOMALY VALUES AS DETERMINED USING THE 95TH AND 98TH PERCENTILES.

	Percentile	
Element	95th	98th
SiO_2	20%	20%
Al_2O_3	5%	5%
Fe_2O_3	5%	5%
MgO	20.5%	21.55%
	1330.63 ppm	1780.55 ppm
CaO	56%	58.28%
Na_2O	1.11%	1.79%
K_2O	1.25%	1.86%
TiO_2	0.309%	0.51%
P_2O_5	0.159%	0.21%
MnO	0.155%	0.19%
Ba	490 ppm	660 ppm
Co	10 ppm	14 ppm
Cr	27 ppm	42 ppm
Cu	26 ppm	39 ppm
Li	24 ppm	35 ppm
Ni	12 ppm	18 ppm
Pb	14 ppm	23 ppm
Sr	1330 ppm	1780 ppm
Zn	98 ppm	241 ppm
LOI*	46.63 ppm	47.7 ppm

**Loss on ignition*

element "geochemistry maps" (*see* Figures 21 to 27).

Anomaly plots of weight percent CaO and weight percent MgO (Figure 21 and Figure 22, respectively) are useful in delineating calcite marble and dolomite marble zones. Samples with values above the 95th percentile are plotted as "1", while other samples are represented by "-".

The major factor which establishes the potential of a particular marble type for any industrial use is the content of impurities. Figure 23 is a plot of the silica (SiO_2) content where "1" represents those samples with greater than 20 weight percent SiO_2. All other samples are represented by "-". The map shows groupings of silica-rich zones displaying areas of low marble potential.

There is a strong direct correlation between the calcium (CaO) and strontium (Sr) contents of samples; the area of concentration of samples with anomalous Sr contents (Figure 24) coincides with the area of concentration of anomalous CaO samples (Figure 21). It is likely that the marine environment which formed the high-calcium carbonate rocks also contained high concentrations of Sr. Of further note, a higher proportion of samples with anomalous Sr contents (greater than 1330 ppm) falls in the southeastern corner of the map than anomalous CaO samples. It is known that aragonite accommodates Sr in the mineral lattice much more readily than Ca (Pettijohn 1975), and therefore it is possible that the areas with anomalous quantities of Sr originally consisted of aragonite-rich carbonate rocks.

Figure 25 is a plot of samples with anomalous zinc (Zn) contents (designated as "1" on the figure). These include all samples with Zn contents greater than 98 ppm (the 95th percentile).

Figure 26 is a plot of samples with anomalous copper (Cu) contents (greater than 25 ppm). The locations of these samples coincide quite well with those of marble samples containing high-silica contents (Figure 23).

Figure 27 shows the distribution of samples with anomalous lead (Pb) contents, that is, all samples with greater than 13 ppm Pb. The majority of these samples fall in the southeastern portion of the study area, in an area approximately 40 km south of Perth.

CORRELATION MATRIX

The Pearson linear correlation coefficient (Lavin 1988) is a statistical method of checking for linear relationships between two variables. A value of +1.0 indicates a perfect positive or direct linear relationship between two variables; for example, if one element in a sample increases by 50 ppm, then the other element also increases 50 ppm. A value of -1.0 indicates a perfect negative or inverse linear relationship; for example, if one element increases by 50 ppm, the other decreases by 50 ppm. A value of 0.0 indicates a lack of any correlation between the two variables. There is also a full range of correlation values between -1.0 and +1.0, all indicating less-than-perfect linear relationships.

Since correlation coefficients are only valid for normally distributed data, most of the elemental data were transformed logarithmically before the Pearson coefficients were determined. This was necessary since most of the data sets were strongly skewed toward the right. The size of the data set determined the accuracy of the correlation coefficient, therefore making the matrix of Part 1 data set (Table 7) more reliable than that of Part 2 data set (Table 8).

Part 1 Data Set Results

The strongest correlations in this matrix exist between the elements that make up the impurities in the marble. There are positive linear relationships between all of the following elements: SiO_2, Fe_2O_3, Al_2O_3, Na_2O, K_2O, TiO_2, Co, Cr, and Li. Weaker positive correlations exist between Cu, Ni, Zn, and MnO. Inverse relationships exist between CaO, MgO, and the contaminant elements. There is a strong inverse relationship between MgO and Sr, the latter of which shows a direct linear correlation with CaO, its analogue. There is also a strong positive correlation between CaO and LOI.

Part 2 Data Set Results

Correlation coefficients in this matrix are larger than those in Table 7; the same association between all of the elements making up the impurities exist, although they are more pronounced in this matrix. The same positive correlation between LOI and CaO, and the inverse relationship between Sr and MgO, is also a feature of this matrix.

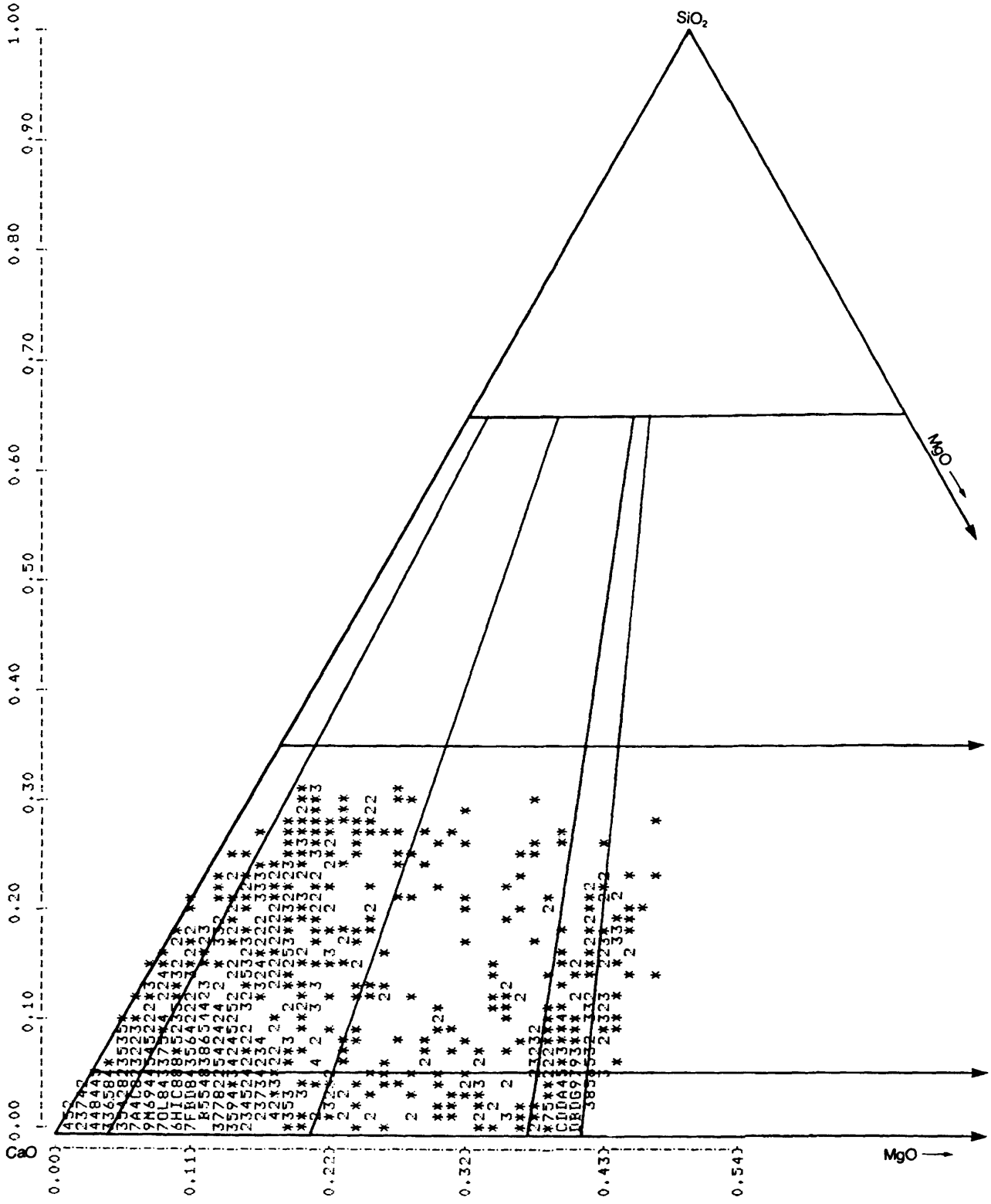


Figure 15. *CaO-MgO-SiO_2 ternary diagram, Part 1 data set; samples with less than 20 weight percent SiO_2. Normalized to 100%. Samples plotted as 2 to 9 represent 2 to 9 samples plotting in the same location on the diagram, respectively; samples plotted as A to Y represent 10 to 35 samples plotting in the same location; and samples plotted as Z represent more than 36 samples plotting in the same location.*

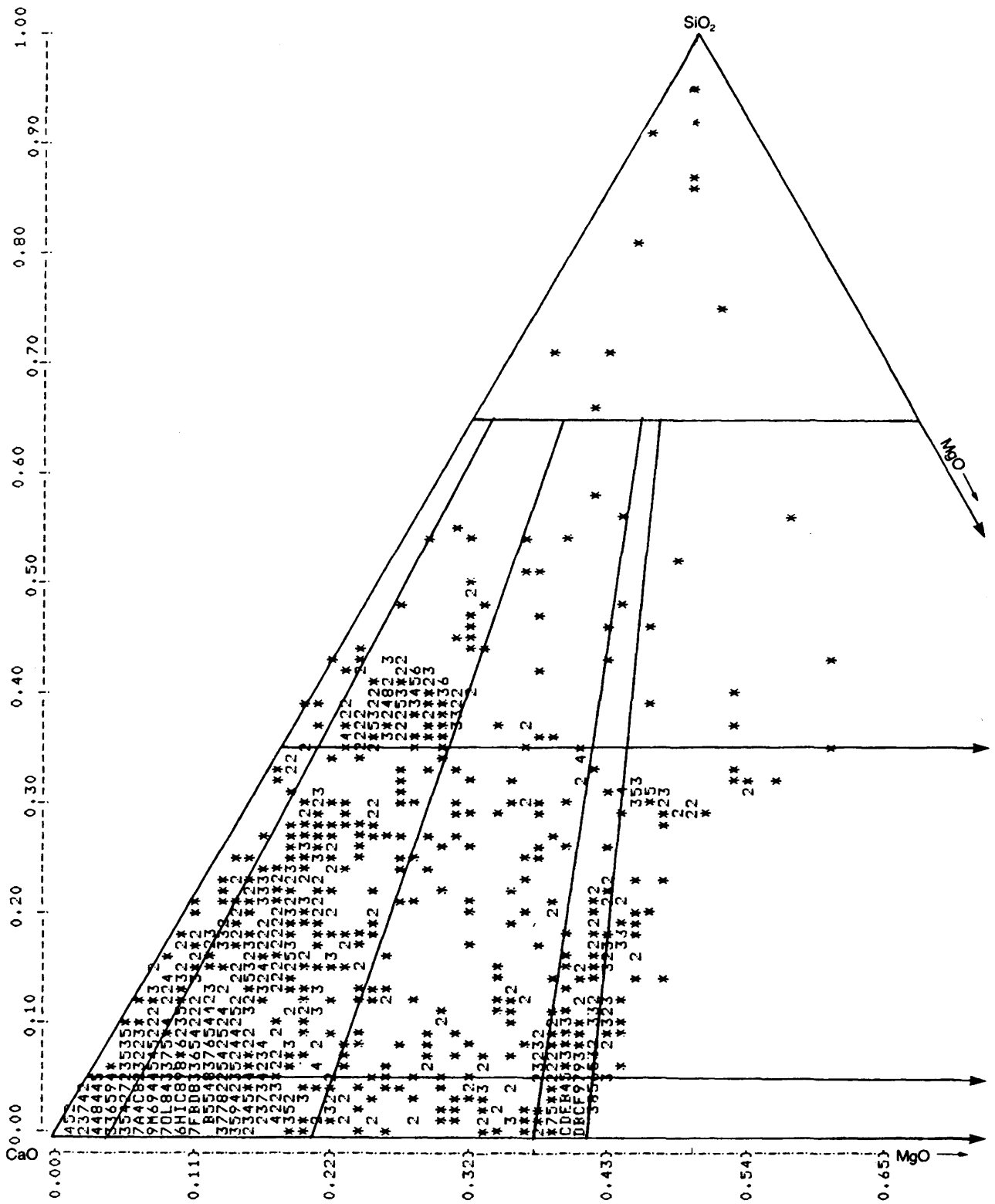


Figure 16. *CaO-MgO-SiO_2 ternary diagram, Part 1 data set (1778 samples). Normalized to 100%. Samples plotted as 2 to 9 represent 2 to 9 samples plotting in the same location on the diagram, respectively; samples plotted as A to Y represent 10 to 35 samples plotting in the same location; and samples plotted as Z represent more than 36 samples plotting in the same location.*

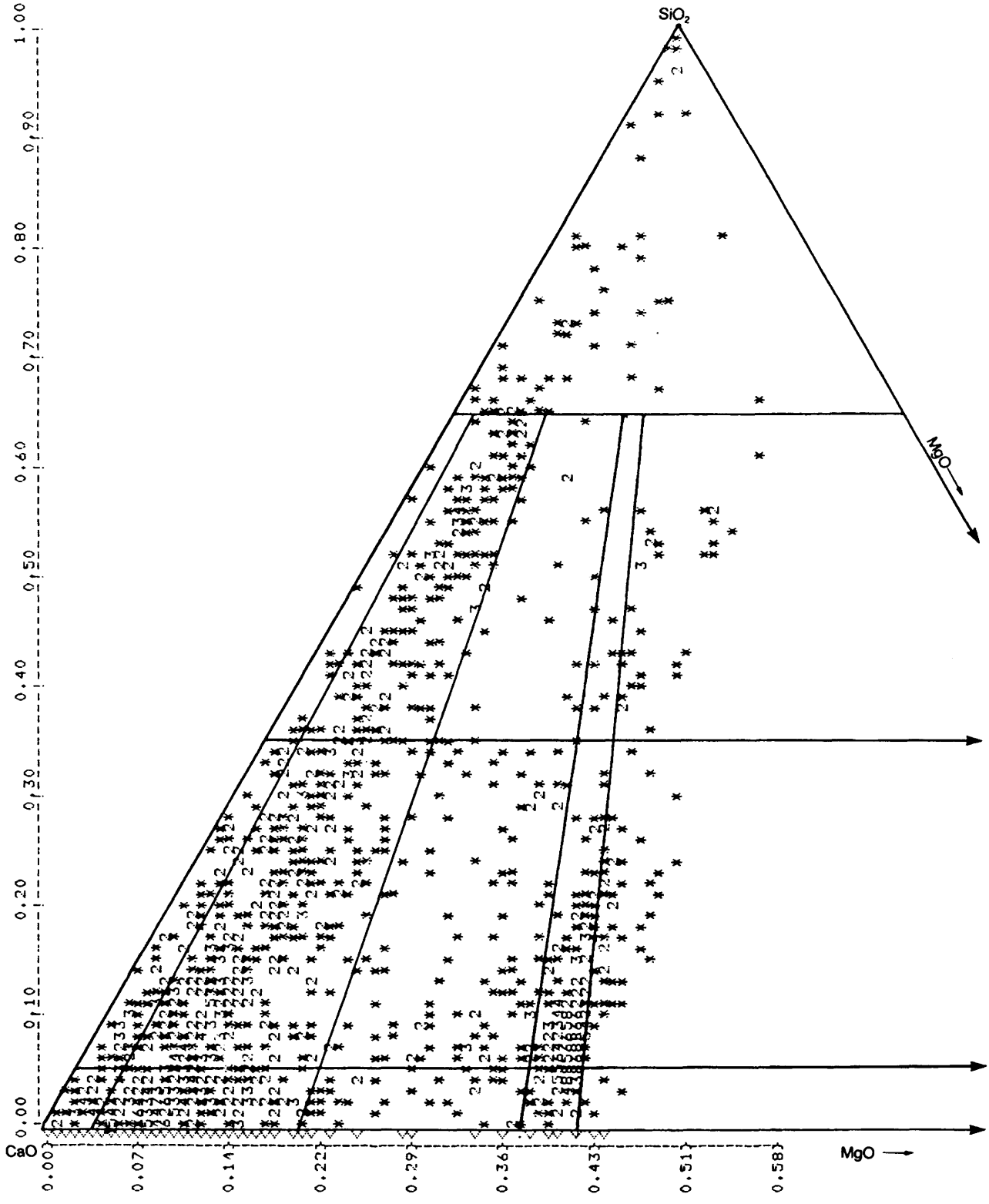


Figure 17. *CaO-MgO-SiO_2 ternary diagram, Part 1 data set (1778 samples). SiO_2 recalculated to 100% Total to eliminate the calibration limit effect. Samples plotted as 2 to 9 represent 2 to 9 samples plotting in the same location on the diagram, respectively; samples plotted as A to Y represent 10 to 35 samples plotting in the same location; and samples plotted as Z represent more than 36 samples plotting in the same location.*

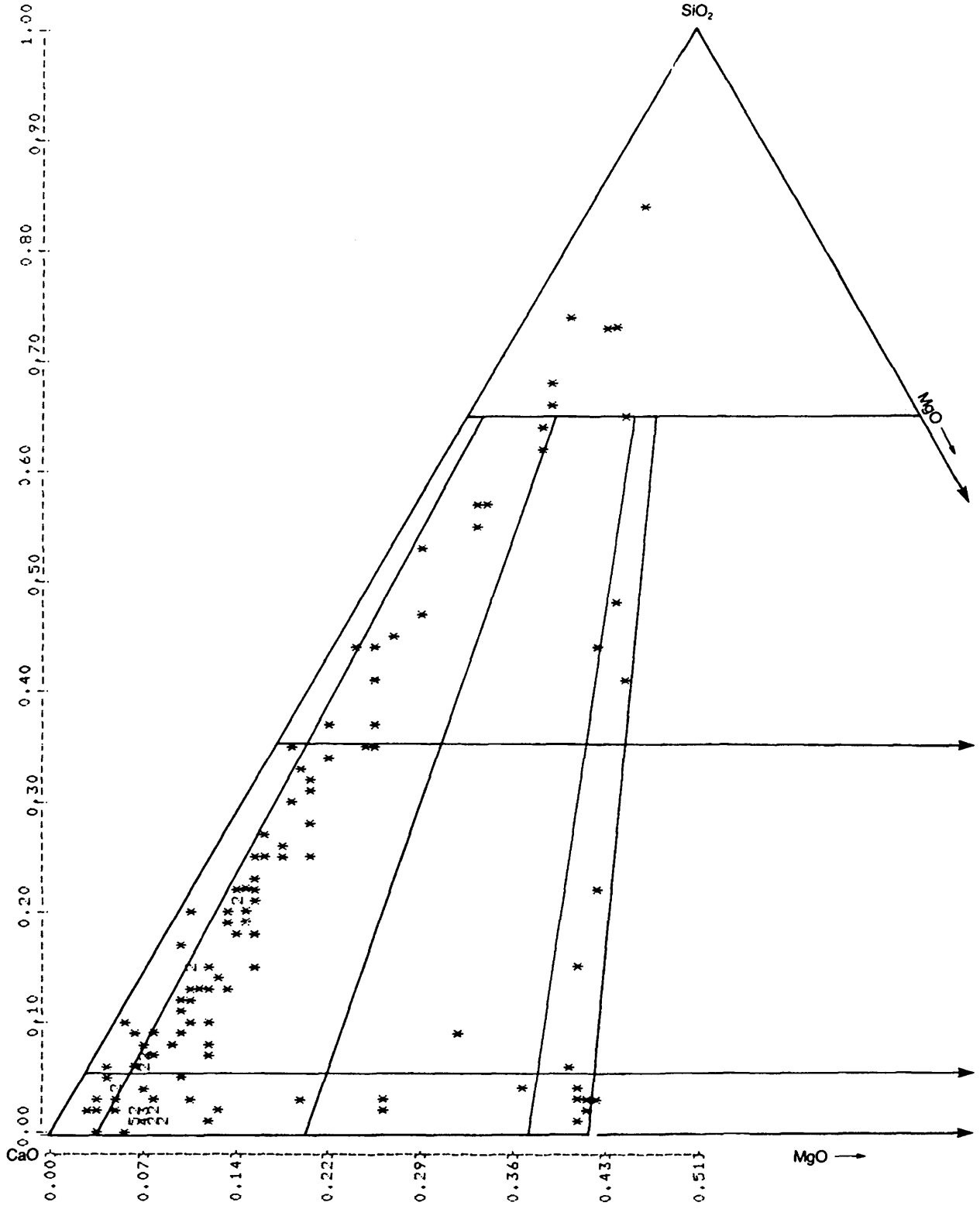


Figure 18. *CaO-MgO-SiO_2 ternary diagram, Part 2 data set (132 samples). Samples plotted as 2 to 9 represent 2 to 9 samples plotting in the same location on the diagram, respectively.*

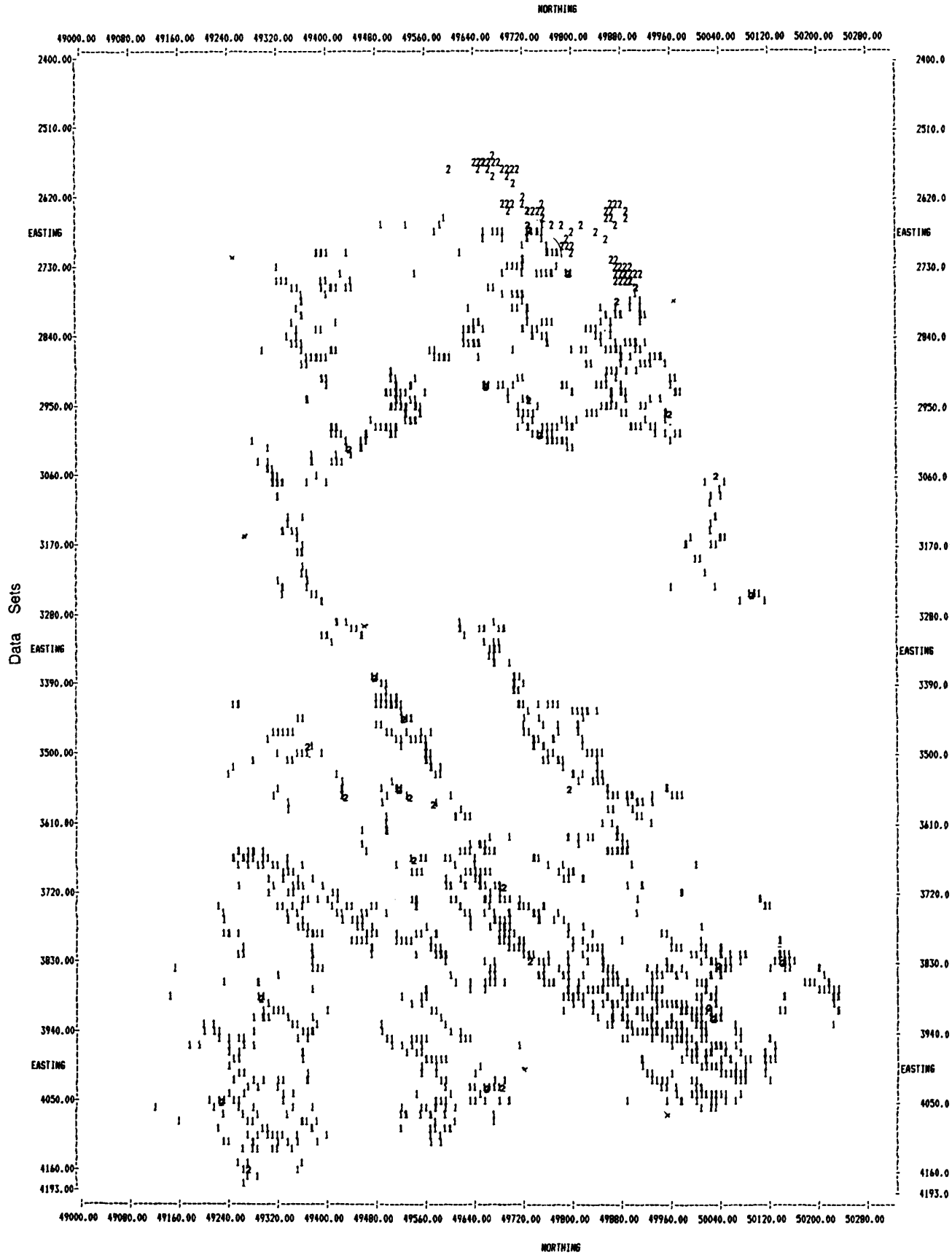


Figure 19. *Distribution of Part 1 (indicated by "1") and Part 2 (indicated by "2") data set samples.*

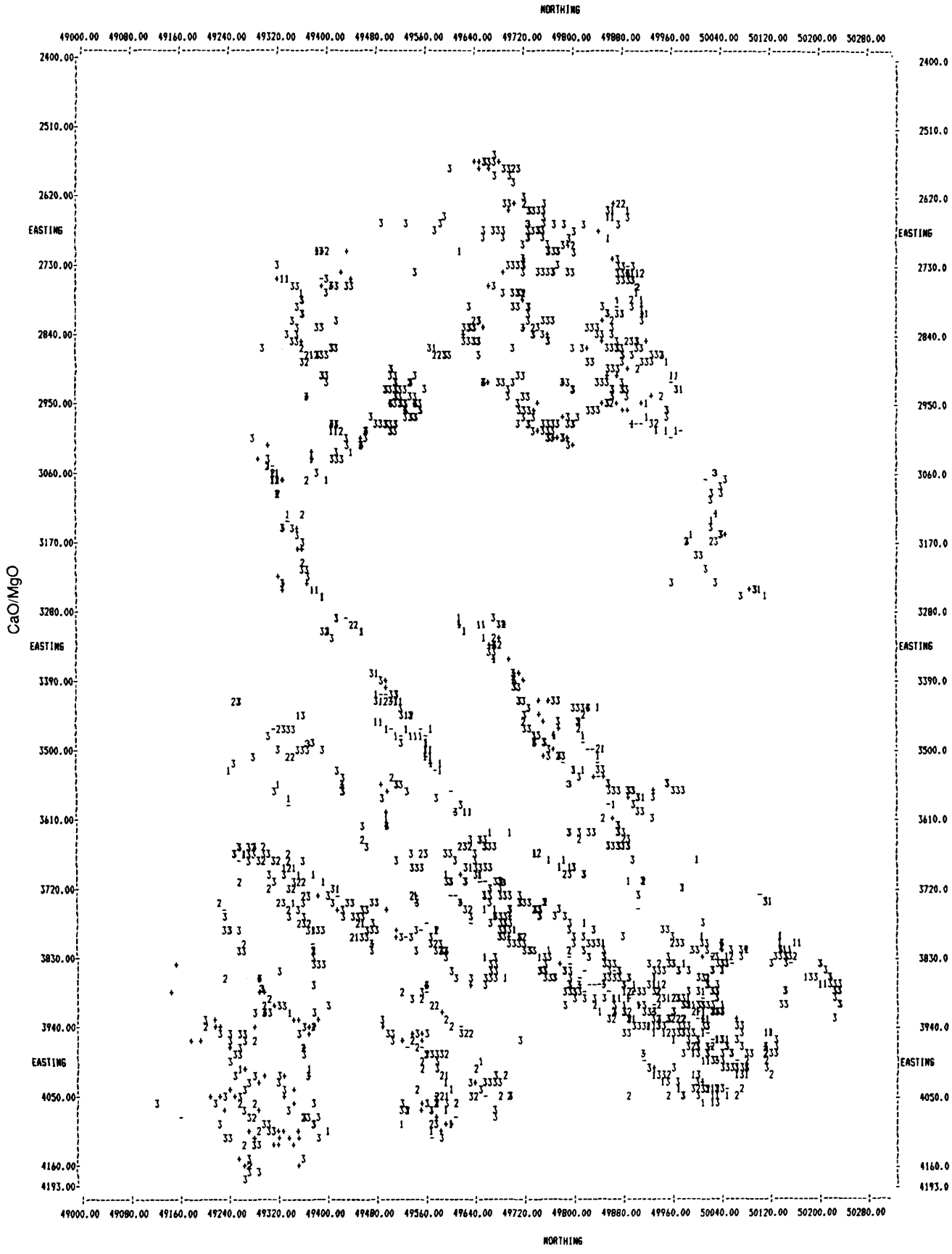


Figure 20. *Distribution plot of the different marble classifications based on the CaO/MgO ratio of samples. Table 5 lists the marble classifications.*

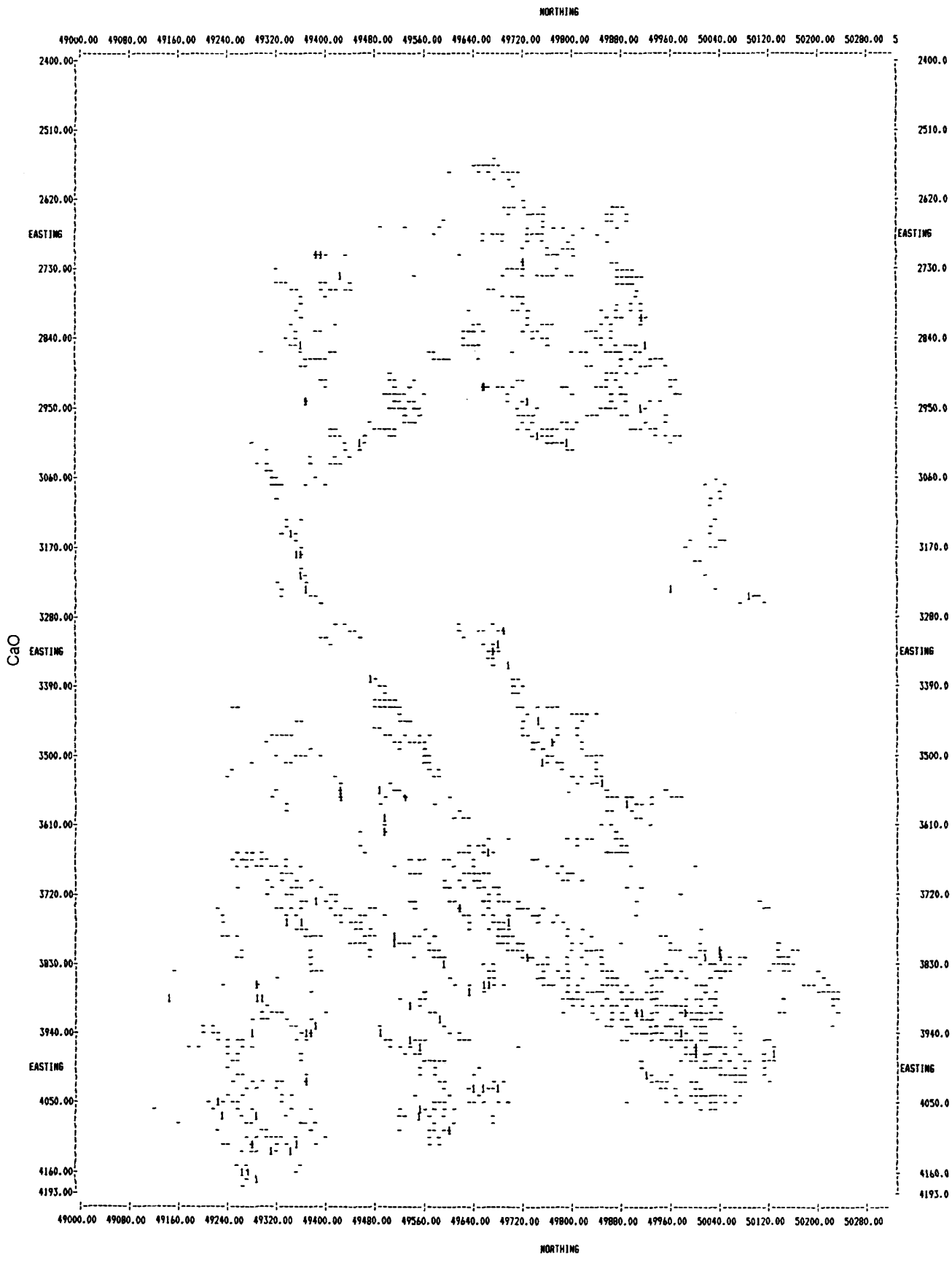


Figure 21. *Distribution plot of samples with anomalous CaO contents.*

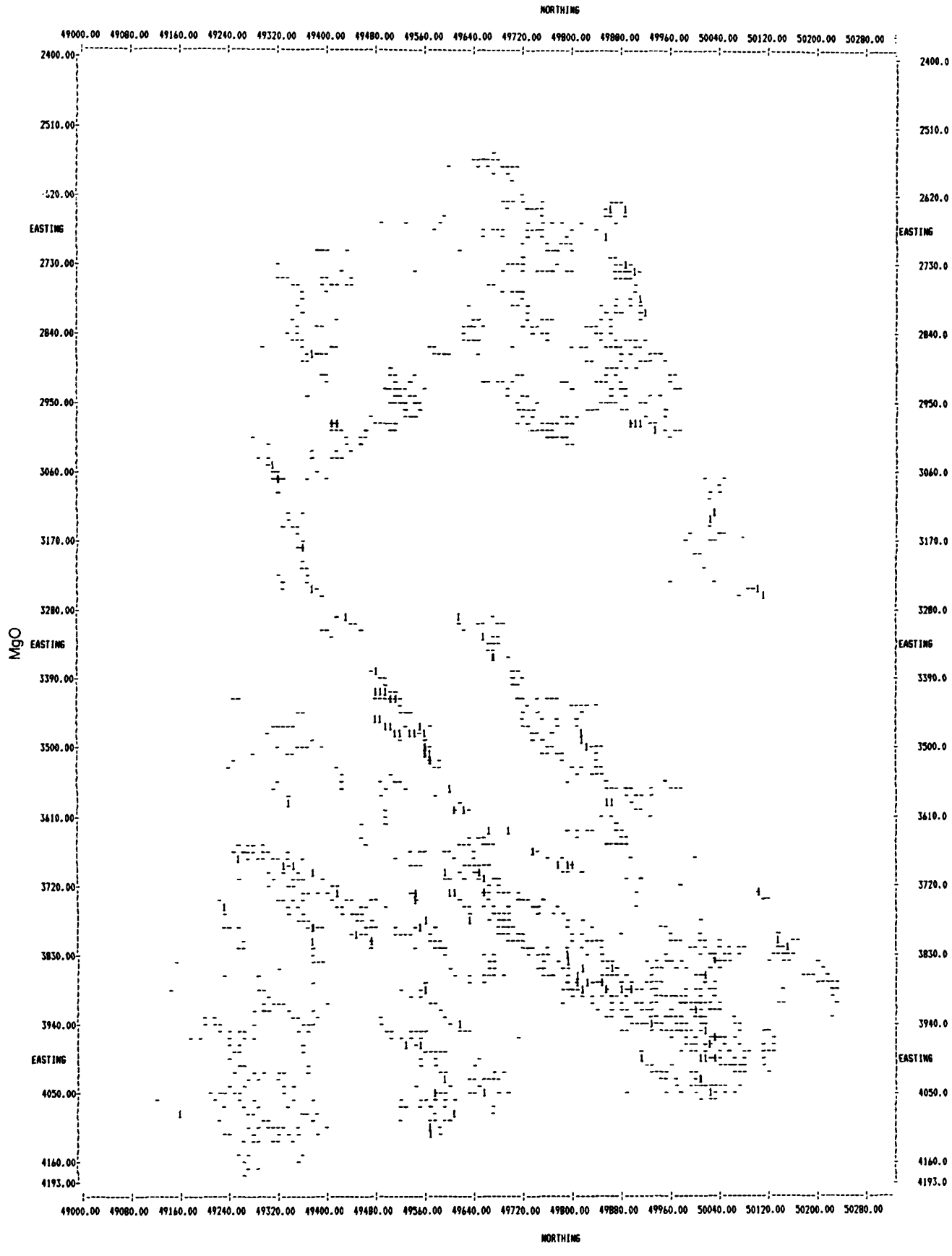


Figure 22. *Distribution plot of samples with anomalous MgO contents.*

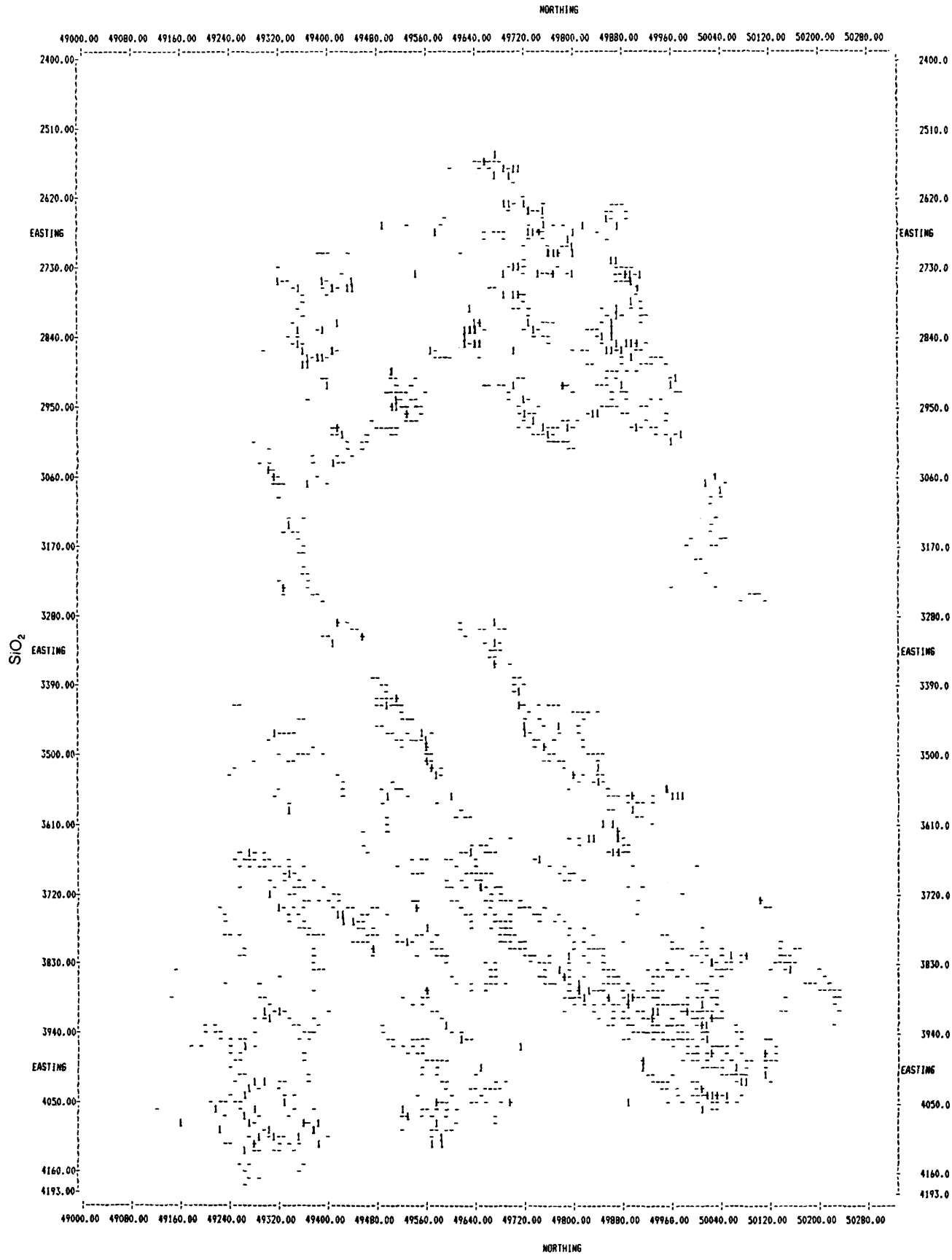


Figure 23. *Distribution plot of samples containing greater than 20% SiO_2.*

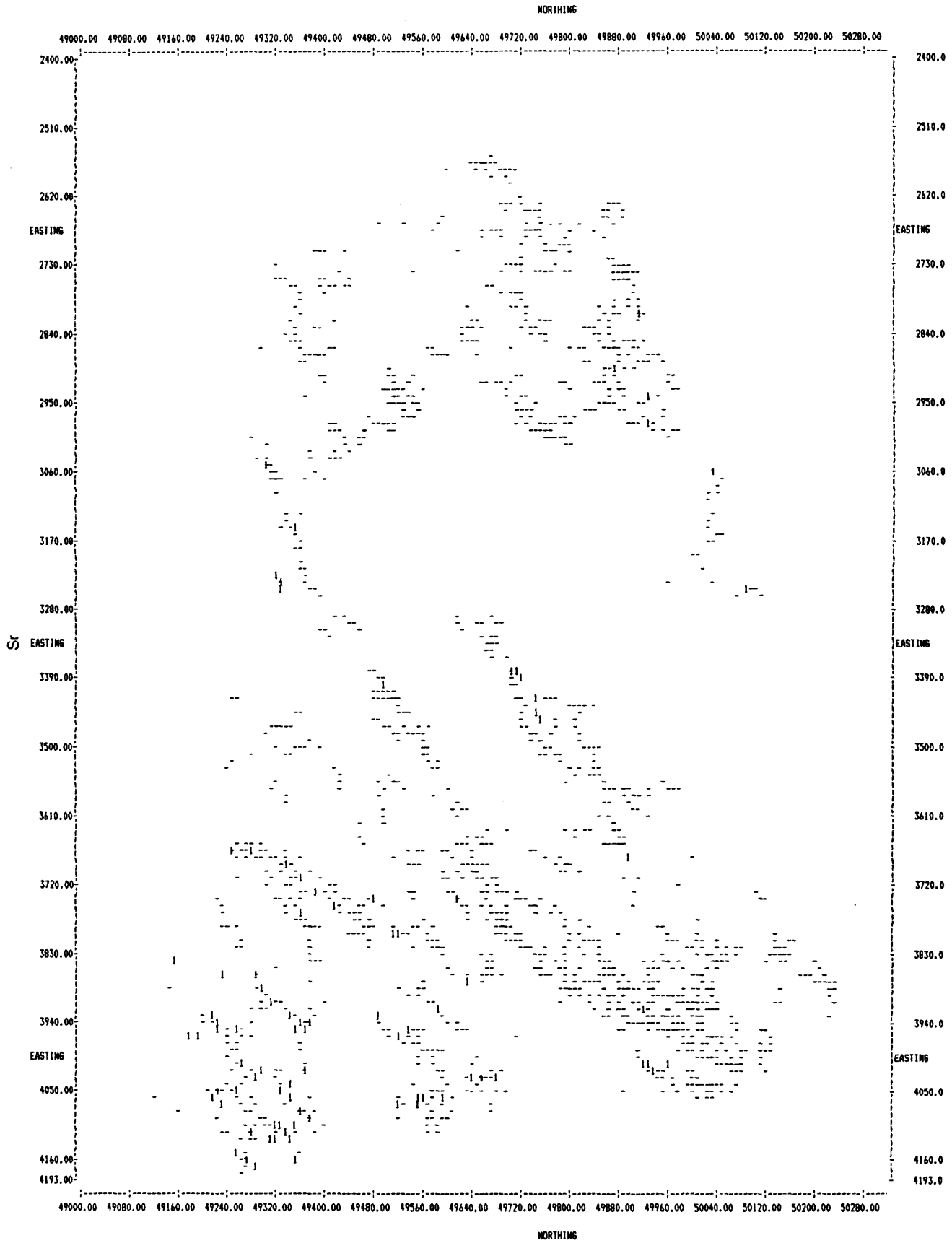


Figure 24. *Distribution plot of samples with anomalous Sr contents.*

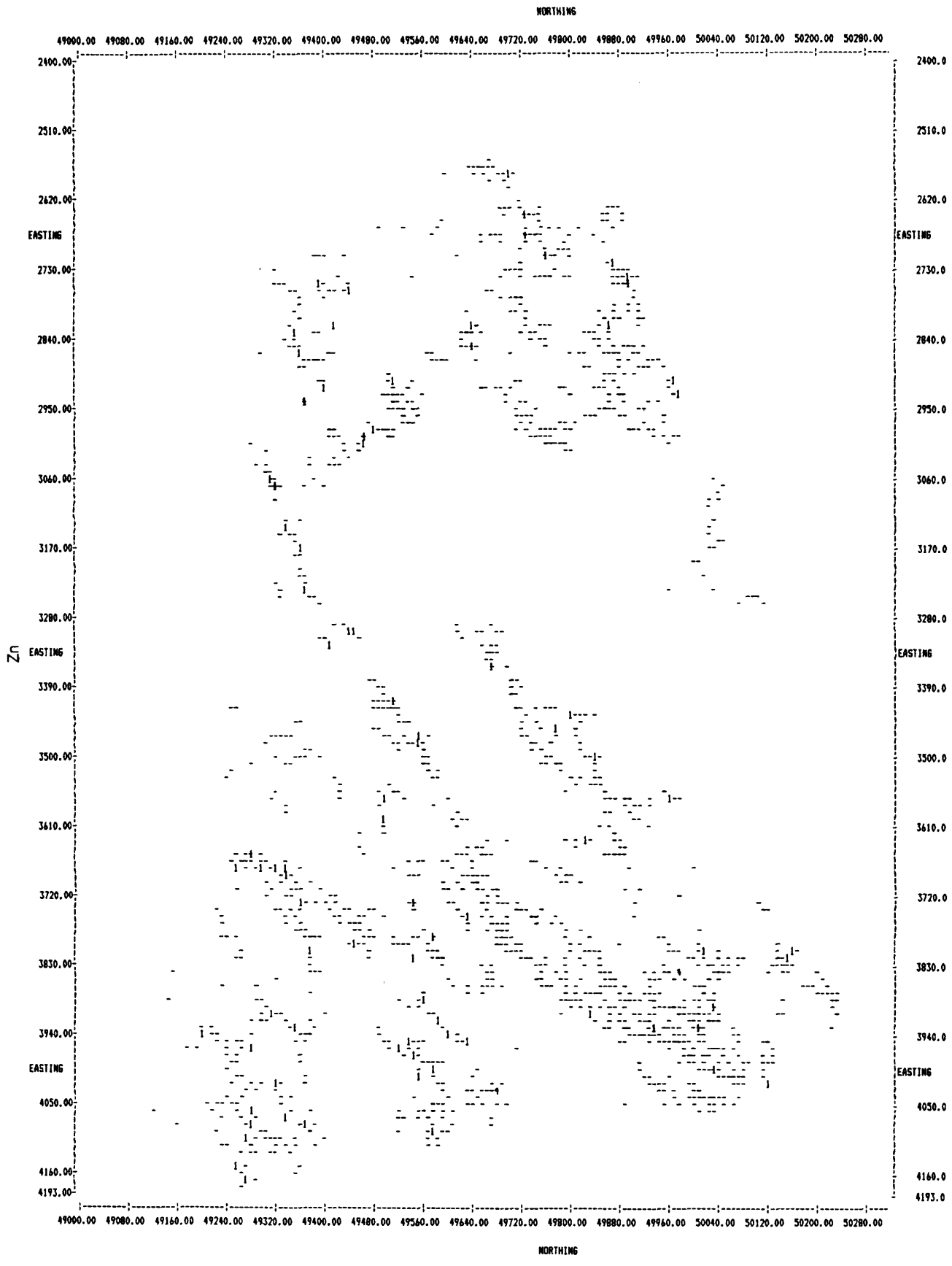


Figure 25. *Distribution plot of samples with anomalous Zn contents.*

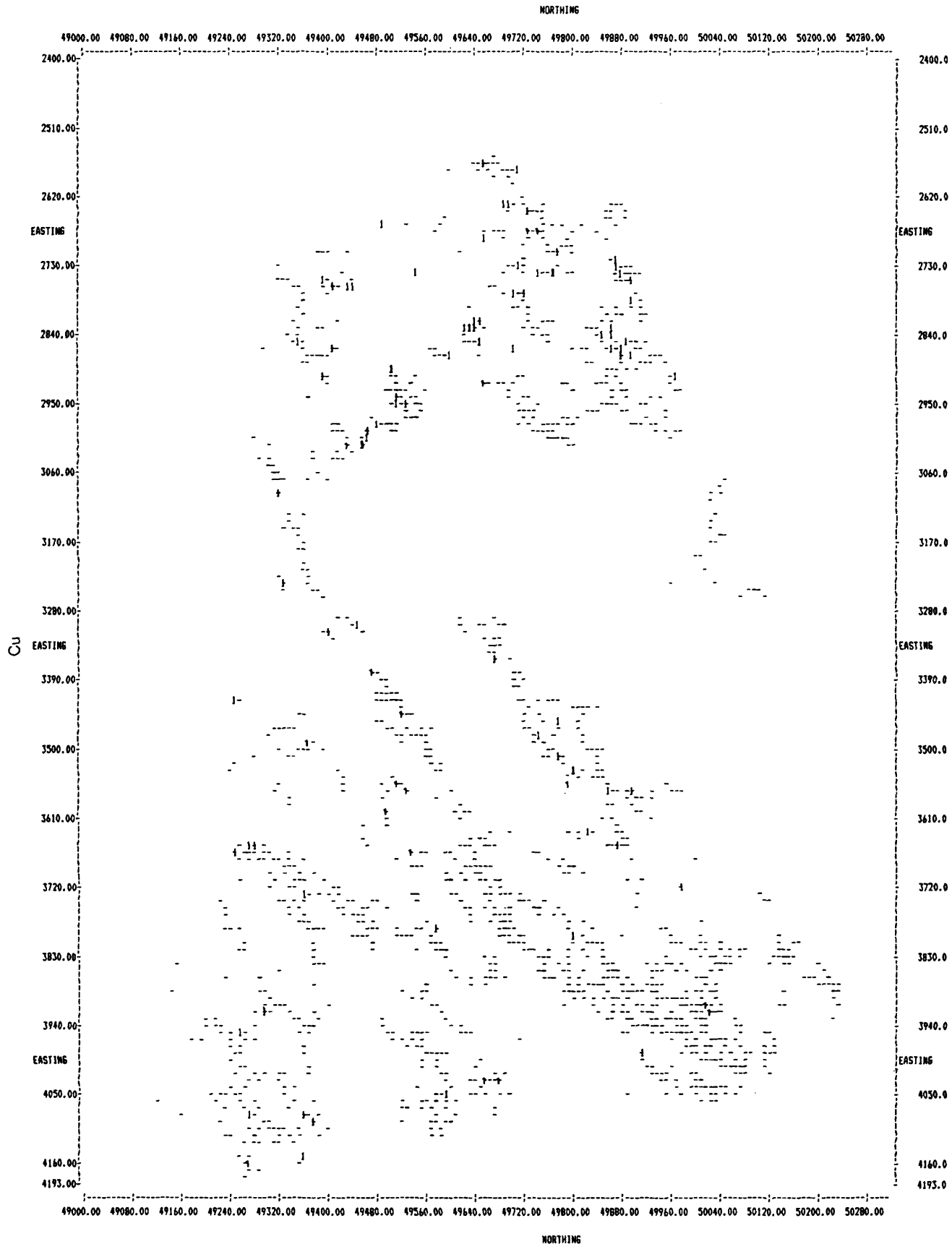


Figure 26. *Distribution plot of samples with anomalous Cu contents.*

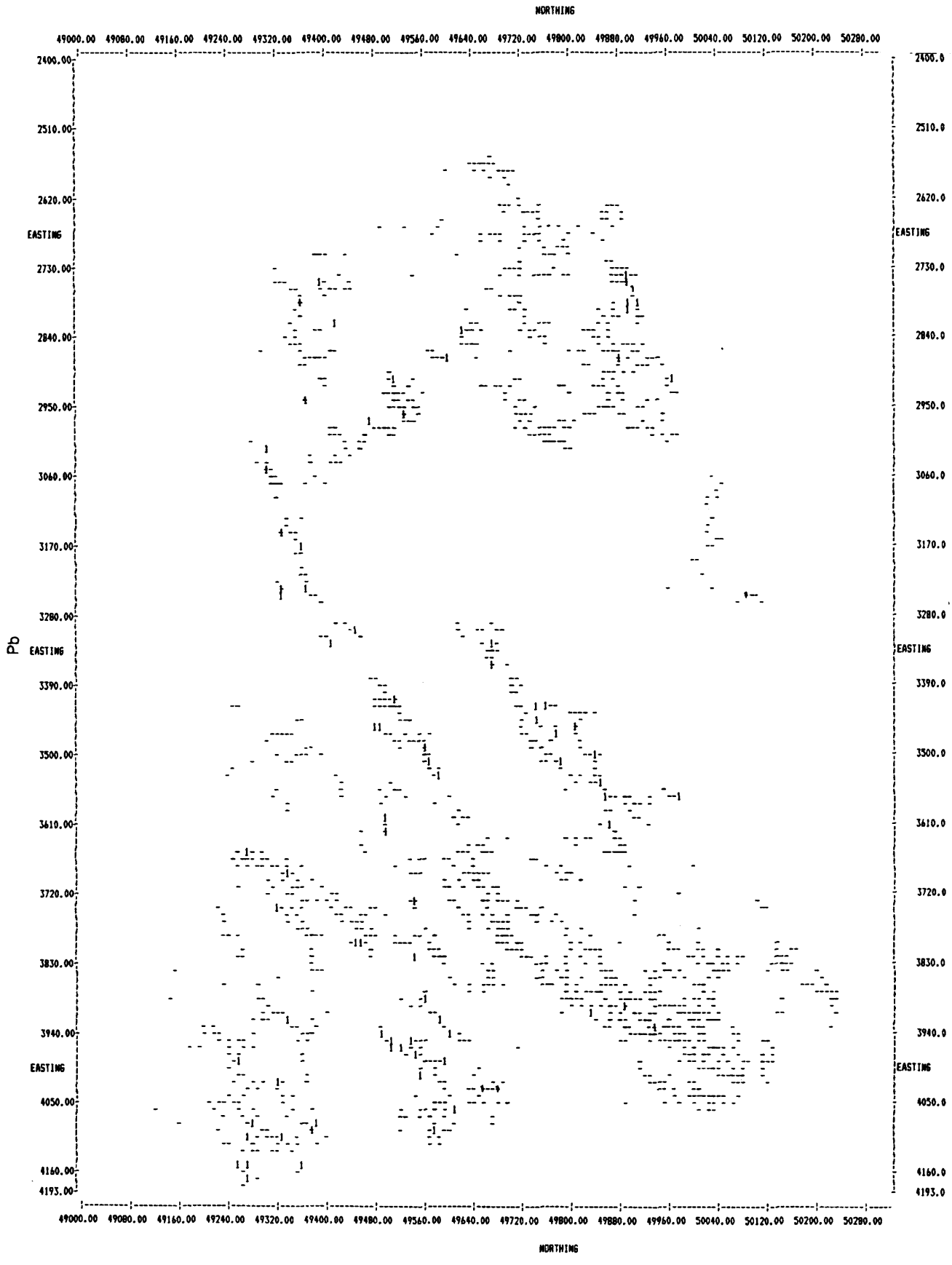


Figure 27. *Distribution plot of samples with anomalous Pb contents.*

TABLE 7. CORRELATION MATRIX, PART 1 DATA SET.

Grenville Carbonate Bedrock Data (MNR of 5378) Total Data Set -- April
Correlation Matrix: (99.0 Indicates Coefficient could not be calculated)

Bedrock Data (MNR of 5378) Total Data -- April
Matrix: (99.0 Indicates Coefficent could not be calculated)

L.Al_2O_3	L.Fe_2O_3	CaO	MgO	L.Na_2O	L.K_2O	L.TiO_2	L.P_2O_5	L.MnO	L.Ba	LCo	LCr	LCu	L.Li	LNi	LPb	LSr	L.Zn	LOI	
0.711	0.674	-0.474	-0.105	0.507	0.535	0.641	0.200	0.313	0.333	0.362	0.521	0.258	0.576	0.330	0.062	0.152	0.332	-0.654	L.SiO_2
	0.745	-0.370	-0.328	0.726	0.798	0.872	0.238	0.219	0.469	0.506	0.729	0.407	0.661	0.452	0.086	0.327	0.390	-0.607	L.Al_2O_3
		-0.602	0.074	0.591	0.573	0.753	0.177	0.549	0.245	0.495	0.634	0.337	0.544	0.445	0.073	0.069	0.460	-0.512	L.Fe_2O_3
			-0.585	-0.397	-0.249	-0.495	-0.207	-0.567	-0.022	-0.358	-0.354	-0.064	-0.330	-0.363	-0.025	0.390	-0.307	0.542	CaO
				-0.317	-0.327	-0.198	-0.039	0.433	-0.401	-0.127	-0.236	-0.234	-0.160	-0.075	-0.035	-0.642	0.017	0.192	MgO
					0.562	0.761	0.133	0.149	0.355	0.530	0.651	0.345	0.472	0.442	0.049	0.308	0.397	-0.639	L.Na_2O
						0.756	0.154	0.089	0.523	0.422	0.602	0.369	0.617	0.361	0.082	0.331	0.350	-0.472	L.K_2O
							0.184	0.273	0.428	0.590	0.790	0.406	0.646	0.544	0.095	0.242	0.450	-0.654	L.TiO_2
								0.069	0.158	0.254	0.176	0.146	0.139	0.302	-0.057	-0.044	0.064	-0.269	L.P_2O_5
									-0.045	0.267	0.210	0.155	0.129	0.198	0.060	-0.393	0.227	-0.171	L.MnO
										0.256	0.357	0.276	0.387	0.226	0.064	0.435	0.232	-0.344	L.Ba
											0.664	0.502	0.466	0.736	0.081	0.119	0.340	-0.501	LCo
												0.407	0.570	0.662	0.092	0.249	0.404	-0.565	LCr
													0.337	0.429	0.163	0.216	0.313	-0.232	LCu
														0.447	0.139	0.286	0.389	-0.543	L.Li
															0.117	0.090	0.336	-0.481	LNi
																0.069	0.379	-0.044	LPb
																	0.132	-0.116	LSr
																		-0.337	L.Zn

TABLE 8. CORRELATION MATRIX, PART 2 DATA SET.

Grenville Carbonate Bedrock Geochemistry Part 3 (Barringer ICP)
Correlation Matrix: (99.0 Indicates coefficient could not be calculated)

Carbonate Bedrock Geochemistry, Part 4 (Barringer ICP)
(99.0 Indicates coefficient could not be calculated)

Al_2O_3	Fe_2O_3	CaO	MgO	TiO_2	MnO	Na_2O	K_2O	P_2O_5	LOI	Reflect	Be	Cd	Cr	Co	Cu	Pb	Ni	Ba	Li	F	Sr	Th	Zr	V	Zn	Mo	S	
0.872	0.848	-0.665	-0.127	0.842	0.611	0.819	0.750	0.673	-0.833	-0.348	0.373	-0.538	0.436	0.023	0.015	0.084	0.505	0.603	0.666	0.103	0.168	0.250	0.822	0.818	0.535	-0.157	0.254	SiO_2
	0.896	-0.591	-0.266	0.951	0.534	0.867	0.843	0.783	-0.777	-0.475	0.459	-0.450	0.578	0.118	0.134	0.044	0.580	0.544	0.747	0.286	0.326	0.228	0.884	0.857	0.526	-0.162	0.286	Al_2O_3
		-0.680	0.079	0.860	0.710	0.877	0.702	0.741	-0.767	-0.425	0.345	-0.615	0.472	0.102	0.036	0.010	0.633	0.478	0.690	0.179	0.267	0.222	0.840	0.882	0.569	-0.209	0.226	Fe_2O_3
			-0.428	-0.552	-0.596	-0.671	-0.460	-0.516	0.786	0.066	-0.163	0.454	-0.274	0.022	-0.016	-0.107	-0.507	-0.412	-0.595	-0.179	0.231	0.078	-0.681	-0.670	-0.543	0.083	-0.241	CaO
				-0.339	0.205	-0.032	-0.340	-0.299	0.128	0.141	-0.280	-0.054	-0.410	-0.233	-0.310	0.016	-0.067	-0.198	-0.067	-0.129	0.536	0.365	-0.154	-0.163	-0.006	0.170	-0.032	MgO
					0.482	0.814	0.801	0.825	-0.804	-0.231	0.427	-0.441	0.651	0.182	0.195	0.044	0.611	0.547	0.715	0.326	0.349	0.241	0.833	0.868	0.546	-0.169	0.264	TiO_2
						0.616	0.368	0.448	-0.486	-0.180	0.094	-0.640	0.095	-0.064	-0.137	0.096	0.387	0.288	0.345	-0.235	-0.070	0.118	0.569	0.561	0.485	-0.207	0.040	MnO
							0.644	0.689	-0.730	-0.147	0.342	-0.575	0.477	0.094	0.011	-0.044	0.584	0.412	0.615	0.132	0.177	0.181	0.836	0.788	0.443	-0.227	0.186	Na_2O
								0.698	-0.691	-0.548	0.461	-0.351	0.434	0.154	0.079	0.032	0.449	0.631	0.744	0.371	0.273	0.227	0.750	0.689	0.369	-0.093	0.373	K_2O
									-0.748	-0.178	0.486	-0.332	0.647	0.365	0.265	0.048	0.701	0.562	0.686	0.344	0.263	0.301	0.728	0.824	0.548	-0.064	0.149	P_2O_5
										0.203	-0.385	0.429	-0.583	-0.159	-0.236	-0.127	-0.622	-0.572	-0.700	-0.299	-0.074	-0.176	-0.801	-0.833	-0.618	0.192	-0.214	LOI
											0.257	0.128	-0.128	0.273	-0.018	0.139	-0.047	-0.397	-0.376	-0.219	-0.112	0.145	-0.395	-0.310	0.034	-0.054	-0.468	Reflect
												-0.152	0.384	0.344	0.216	0.103	0.443	0.328	0.428	0.185	0.211	0.611	0.501	0.406	0.315	-0.025	-0.045	Be
													-0.038	-0.025	0.241	0.049	-0.393	-0.228	-0.287	0.216	0.010	-0.330	-0.564	-0.503	-0.336	0.2801	-0.067	Cd
														0.408	0.542	0.058	0.713	0.341	0.435	0.410	0.296	0.200	0.445	0.660	0.439	0.037	0.161	Cr
															0.406	0.118	0.608	0.053	0.190	0.141	0.139	0.448	0.044	0.243	0.229	0.255	-0.093	Co
																0.170	0.389	0.070	0.106	0.312	0.055	-0.001	0.34	0.232	0.227	0.128	0.057	Cu
																	0.094	0.103	0.246	0.056	0.010	0.007	0.080	0.036	0.504	0.060	-0.049	Pb
																		0.358	0.543	0.232	0.132	0.399	0.551	0.760	0.598	0.030	0.094	Ni
																			0.605	0.167	0.267	0.196	0.601	0.537	0.426	-0.085	0.323	Ba
																				0.459	0.225	0.113	0.713	0.675	0.561	-0.018	0.410	Li
																					0.269	-0.248	0.205	0.245	0.206	0.226	0.314	F
																						0.222	0.229	0.243	0.166	0.074	0.153	Sr
																							0.287	0.240	0.208	-0.037	-0.269	Th
																								0.795	0.556	-0.220	0.301	Zr
																									0.645	-0.127	0.232	V
																										-0.018	0.032	Zn
																											0.104	Mo

Recommendations for Exploration

The total amount of Precambrian marble in the study area is very large, and it is beyond the scope of this publication to examine more than a small percentage of the total outcrop area. The sampling program and mapping covered only those areas that were readily accessible. Of the 1912 samples taken during the regional sampling only 82 samples had their immediately surrounding areas mapped, representing only 4.3 percent of the sampled outcrops. This means that there was extremely limited coverage of all of the marble in all of the townships mapped.

Most of the main marble belts have had at least one detailed area mapped within them. It is hoped that a study of the mapped areas can indicate which belts have the best potential for an economic marble deposit. However, it was evident as a result of the study that the marble changes dramatically, both chemically and mineralogically, over a relatively small area. Hence, detailed mapping of each belt may reveal areas of high-grade marble, even if the marble belt is composed mainly of marble of poor grade.

Many of the white marble units are associated either with an intrusion nearby, or are found in areas of high-grade metamorphism. Detailed geological mapping provides the information necessary to identify these target areas. The higher grade of metamorphism results in the recrystallization of the marble and very often, in a coarse grain size. Almost all of the fine-grained marbles, which are more suitable for building stone, are light to dark grey in colour.

Also of note is that pure marble, particularly calcite marble, is more susceptible than either dolomite or siliceous marble to weathering. Therefore, less pure marble outcrops extensively whereas pure marble is hidden by overburden. A certain amount of diamond drilling will be necessary to explore beneath the surface for the more pure marble, once an area of good economic potential has been located.

Marble Map Area Descriptions

Table 9 is a compilation of the symbols used in the marble map area figures. Rock names are also indicated. It should be reiterated here that for the purpose of geological mapping, marble was classified as either calcitic or dolomitic based on a simple acid test in the field. The geochemical classification described earlier is based on the geochemical analysis of samples collected and is not of relevance in this section.

Table 10 lists the townships which were inventoried during the course of the study. Townships which include areas which have been mapped in detail (*see* Figures 28 to 97) are indicated with an asterisk.

CALCITIC MARBLE MAP AREAS

Table 11 is a list of the calcitic marble map areas mapped during the course of the survey. Calcitic marble map areas were selected on the basis of the total weight percent of CaO, MgO, and SiO_2 of appropriate samples. Selected samples met the requirements of greater than 54 weight percent CaO, less than 5 weight percent MgO, and less than 1 weight percent SiO_2.

MAP AREA 31

Location

North-central Madoc Township.

Map reference: NTS 31C/12; UTM 301200mE, 4943450mN, Zone 18.

Access

Two kilometres east of Highway 62, on the first road south of Keller Bridge, Concession VII, Lot 22.

Regional Geology

This map location is situated within the large marble belt in Madoc Township. Amphibolite and para-amphibolite units, as well as metasediments, occur throughout the marble belt (Hewitt 1968).

Local Geology

The detailed map area is made up entirely of calcitic and dolomitic marble (Figure 28). Dolomitic units up to 50 m in width are oriented roughly parallel to

TABLE 9. LEGEND AND SYMBOLS USED FOR SAMPLE LOCATION MAPS (FIGURES 28 TO 97).

LEGEND

1. ..... Calcitic marble
2. ..... Dolomitic marble
3. ..... Metasediments (Archean)/Sediments (Paleozoic)
4. ..... Metamorphosed intrusive rocks
5. ..... Silicate segregations
6. ..... Silicification zone
7. ..... Metavolcanics

SYMBOLS

	Outcrop boundary		Sand/gravel pit
×	Small outcrop		Building, church
	Road or highway	N/O	No outcrops
	Trail (one lane)		Tailings, waste rock
65°	Foliation, strike and dip		Pit, trench
	Hydro or telephone lines		Bridge
	Swamp		Abandoned rail line
31	Sample location		Shaft
OSL	Original sample location	DDH	Diamond-drill hole
	Interpreted geological contact		Footpath
	Quarry		

TABLE 10. LIST OF TOWNSHIPS INVENTORIED.

Anstruther	Front of Leeds & Lansdowne	* North Sherbrooke
Ashby	* Hinchinbrooke	* Olden
Barrie	Hungerford	* Oso
Bastard	Huntingdon	Pakenham
* Bathurst	Kaladar	* Palmerston
Bedford	* Kennebec	Pittsburgh
Belmont	Lake	Portland
Burleigh	* Lanark	* Ramsay
Camden East	Lavant	Rawdon
* Cashel	* Limerick	* Rear of Leeds & Lansdowne
Chandos	Loughborough	* Sheffield
* Clarendon	* Madoc	* South Burgess
* Dalhousie	* Marmora	South Canonto
* Darling	* Mayo	* South Crosby
* Denbigh	Methuen	* South Elmsley
Drummond	Miller	* South Sherbrooke
* Dungannon	* North Burgess	* Storrington
* Elzevir	North Crosby	* Tudor
* Faraday	* North Elmsley	Wollaston

Townships with detailed map areas included in this publication are indicated with an asterisk.

TABLE 11. LIST OF CALCITIC MARBLE MAP AREAS. THESE WERE SELECTED ON THE BASIS OF THE TOTAL WEIGHT PERCENT OF CaO, MgO, AND SiO_2 OF APPROPRIATE SAMPLES. SELECTED SAMPLES MET THE REQUIREMENTS OF HAVING GREATER THAN 54 WEIGHT PERCENT CaO, LESS THAN 5 WEIGHT PERCENT MgO, AND LESS THAN 1 WEIGHT PERCENT SiO_2.

31	566	1082
104a	586,588	1119,1129
134/1308	689,692	1162
244,261,265	697,698,699	1176,1184,1206,1211
313,401	746,1912	1240/1241,1249/1250
347	770	1259
352	818a/819	1530,1704,1716
356,367	1005	1563,1575,1763/1764/1767
424/425/426/427	1038,1069	1680
480,489,497/498/499	1055,1079	1797
483	1076	1891/1892/1893,1903
516,710/711/731/733		

the marble foliation. Contacts between the calcitic and dolomitic units are sharp, suggesting that the dolomitic marble is part of the original sedimentary sequence and is not the result of metamorphic processes. Calcitic marble in the area is either fine grained and grey, with only minor amounts of visible phlogopite, or a less pure variety containing pyrite, phlogopite, and quartz, the latter as irregularly shaped clots and boudins.

Previous Geological Work

Madoc Township has been mapped by Miller and Knight (1914), Wilson (1940a), Hewitt and Satterly (1957), Hewitt (1964a), and Hewitt (1968).

Chemistry

Regional samples taken from within this marble belt (samples 9 to 46, Appendix A) show that much of the marble contains greater than 5 weight percent SiO_2. Many samples are dolomitic in composition, the majority of which contain low (less than 5 percent) SiO_2 contents. SiO_2 occurs locally as silica and silicate clots and bands through much of the dolomitic marble. Samples 35a and 35b (Appendix A) have anomalously high Cu and Co contents, while other samples in the belt have background levels of trace and metallic elements. Three locations in the detailed map area were channel sampled to test overall marble consistency. Each of the three channel samples 31x, 31y, and 31z, contains appreciably greater amounts of SiO_2 than the original sample 31, and consequently each has a lower CaO content. Reflectivity measurements on the three channel samples also give very low values due to the grey colour of the marble.

Potential

Although much of the marble in the map area contains a high SiO_2 content, detailed mapping of the belt has revealed local areas of high-quality marble. It is expected that other such zones occur throughout this marble belt.

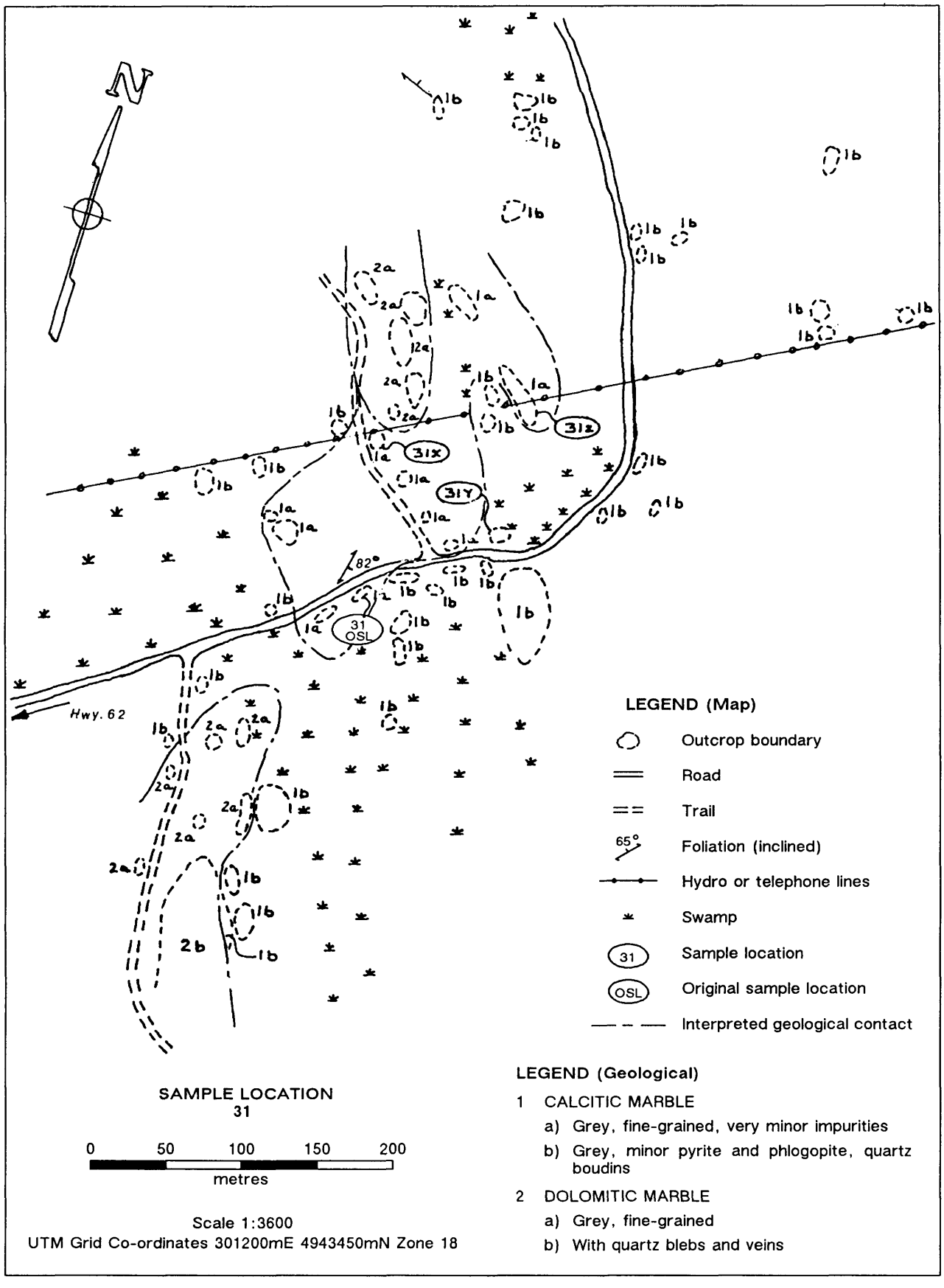


Figure 28. *Location Map, Sample 31.*

MAP AREA 104a

Location

North-central Tudor Township.

Map reference: NTS 31C/13; UTM 291700mE, 4965700mN, Zone 18.

Access

On Highway 62, 300 m south of Beaver Creek, Concession XVIII, Lot 16.

Regional Geology

This sample location is in a relatively narrow east-northeast-trending marble belt bounded by metasediments and metavolcanics. North and east of the marble belt a metasedimentary unit interfingers with the marble.

Local Geology

Detailed mapping (Figure 29) shows that there are several metasedimentary units within the main marble zone. The metasediments are similar to the marble in both texture and colour. Marble is predominantly dark grey with lighter grey laminations. Several zones of brecciation (Photo 3) occur in the area with considerable deformation near the breccia zones. Fracturing is common in the deformed marbles; fractures are filled with white calcite. Marble purity is generally very high with only minor amounts of pyrite visible.

Previous Geological Work

Tudor Township has been mapped by Hewitt and Satterly (1957) and Lumbers (1969).

Chemistry

Regional samples within this marble belt (samples 104 to 106, Appendix A) all contain high CaO contents along with low MgO and SiO_2 levels. Trace and metallic element contents are at or below background levels. Two channel samples, samples 104y and 104z, were taken to test marble consistency. Both samples have low SiO_2 and high CaO contents. The grey colour of the material results in an average reflectivity for the two samples of only 33 percent.

Photo 3. *Brecciated marble in map area 104a.*

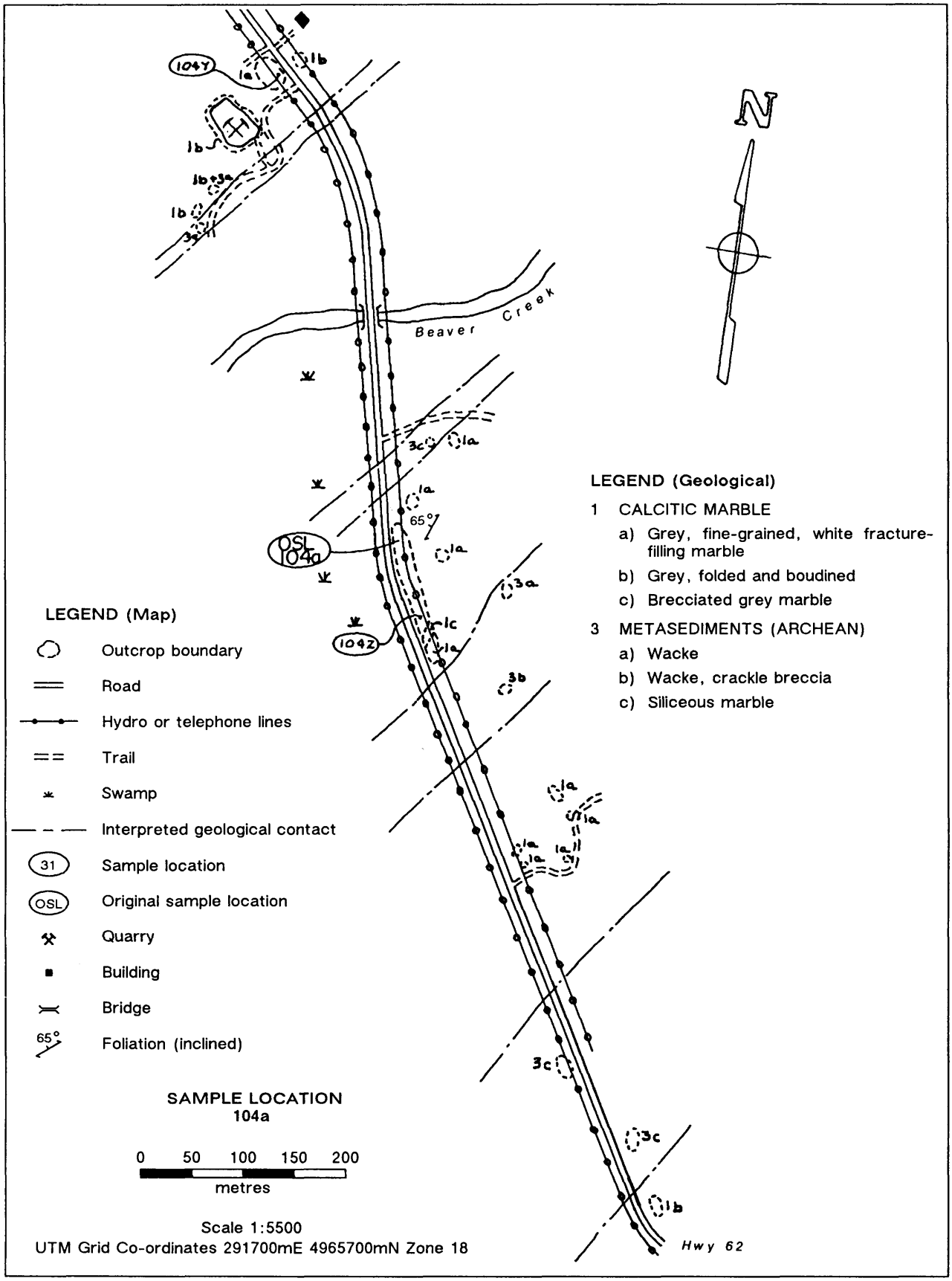


Figure 29. *Location Map, Sample 104a.*

MAP AREA 134/1308

Location

North-central Hinchinbrooke Township.

Map reference: NTS 31C/10.

134—UTM 356800mE, 4942450mN, Zone 18.

1308—UTM 356600mE, 4942350mN, Zone 18.

Access

Both samples were taken along a west-trending gravel road, 1.5 km south of Wagerville, Concession IX, Lot 19.

Regional Geology

These samples are from a narrow west-trending marble belt. The marble belt is near the southern edge of a much wider amphibolite unit, also trending west between the McLean Pluton and the Hinchinbrooke Complex (Wolff 1982b). This amphibolite complex is interpreted to be a metavolcanic sequence by Wolff (1982b).

Local Geology

Detailed mapping (Figure 30) indicates that marble is conformable with metavolcanics, metasediments, and igneous gneiss. Marble occurs as a single belt, while other units tend to repeat across strike. The carbonate material is dominantly white with shades of orange and buff colour, depending on the impurity content. Much of the marble contains serpentine, phlogopite, and muscovite with a close association between the presence of serpentine and orange-coloured marble. Locally, minor amounts of disseminated pyrite, along with calc-silicate clots, occur within serpentine- and phlogopite-bearing marble.

Previous Geological Work

Hinchinbrooke Township has been mapped by Harding (1951), Hewitt (1964a), and Wolff (1982b).

Chemistry

Regional samples in this marble belt (samples 134 and 1306 to 1308) indicate a fairly uniform, high CaO content with a low SiO_2 content. This is also evident in the two channel samples, which average 3.5 weight percent SiO_2 with approximately 50 weight percent CaO. Reflectivity measurements for the two channel samples are 70 and 77 percent.

Potential

The chemistry of individual marble samples suggests that there is a good potential for filler-type material throughout the entire belt. This is somewhat misleading due to the presence of calc-silicate clots locally and the interfingering of metasedimentary and metavolcanic units. Most of the marble is in fact rather impure and would require some type of beneficiation to provide a good marble product.

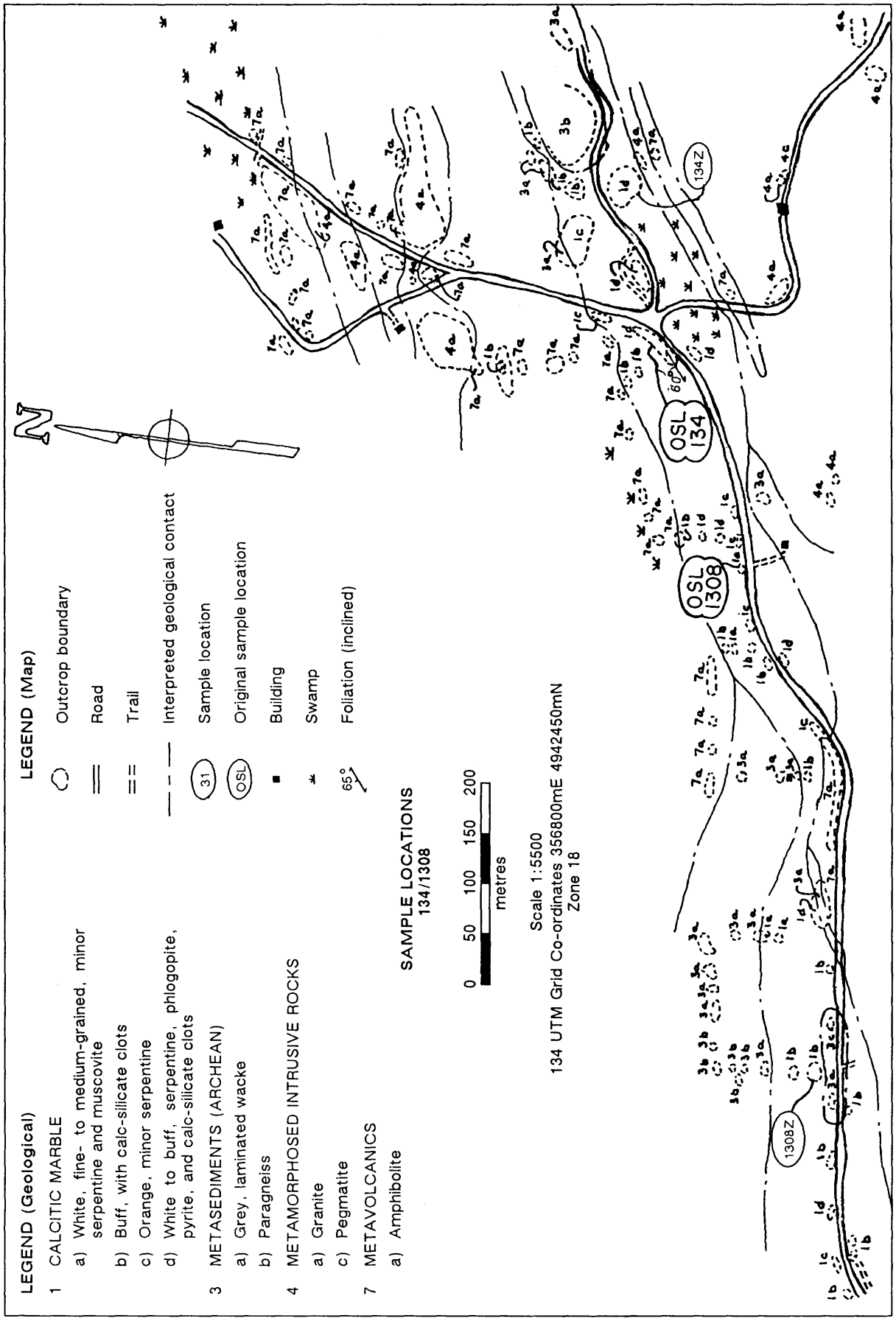


Figure 30. *Location Map, Samples 134 and 1308.*

MAP AREAS 244, 261, AND 265

Location

244—3 km north of St. Ola, Limerick Township.

261—4 to 4.5 km north of Gunter, Cashel Township.

265—2 km north of Gunter, west side of Gunter Lake, Cashel Township.

Map reference: NTS 31C/13.

244—UTM 293800mE, 4973000mN, Zone 18.

261—UTM 300850mE, 4979000mN, Zone 18.

265—UTM 299300mE, 4974600mN, Zone 18.

Access

244—On a poor one-lane road which runs up to the north end of St. Ola Lake, Concession V, Lot 8.

261—On a ministry access road, 4 km north of Gunter, Concession VIII, Lot 17.

265—On a new ministry access road, on the west side of Gunter Lake, Concession IV, Lot 25.

Regional Geology

All three sample locations are part of a large marble belt extending northeast through Limerick and Cashel townships. The area is crosscut by numerous faults with different orientations but with apparently little offset. The marble is dominantly light grey or grey laminated with a fine grain size. Accessory minerals include fine-grained graphite, pyrite, phlogopite, and tremolite. Regional metamorphism is in the greenschist to lower amphibolite range (Lumbers 1969).

Local Geology

244—Detailed mapping at this location (Figure 31) shows an area of fine-grained grey marble, commonly laminated with light and dark layers, and with very minor impurities. The impurities that are evident in the carbonate rocks are fine-grained pyrite and phlogopite. Within the map area are several small amphibolite units which are conformable to marble laminations.

261—The dominant lithologies occurring within this area are metasediments (amphibolite) and marble, the latter being the predominant rock type (Figure 32). These two units interfinger with one another across the local map area. Much of the amphibolite is coarse grained with calcite in the groundmass, and apparently is the metamorphosed equivalent of dirty calcareous sediments. The marble composition is highly variable across strike and therefore it is likely that it was originally composed of relatively thin beds. The presence of marble and metasediment breccias indicate that minor faulting has occurred across the map area.

265—The portion of the large marble belt from which this sample was taken is underlain by fine-grained grey laminated marble (Figure 33), very similar in appearance to the marble at sample locations 244 and 261. The material at sample location 265 contains very minor impurities. Muscovite occurs along foliation planes. Occurring across the map area are several narrow amphibolite units which are conformable to marble laminations. Lumbers (1969) has interpreted these units to be metamorphosed mafic sills. It seems more likely that these are metamorphosed calcareous sedimentary rocks which were originally interbedded with the limestone.

Previous Geological Work

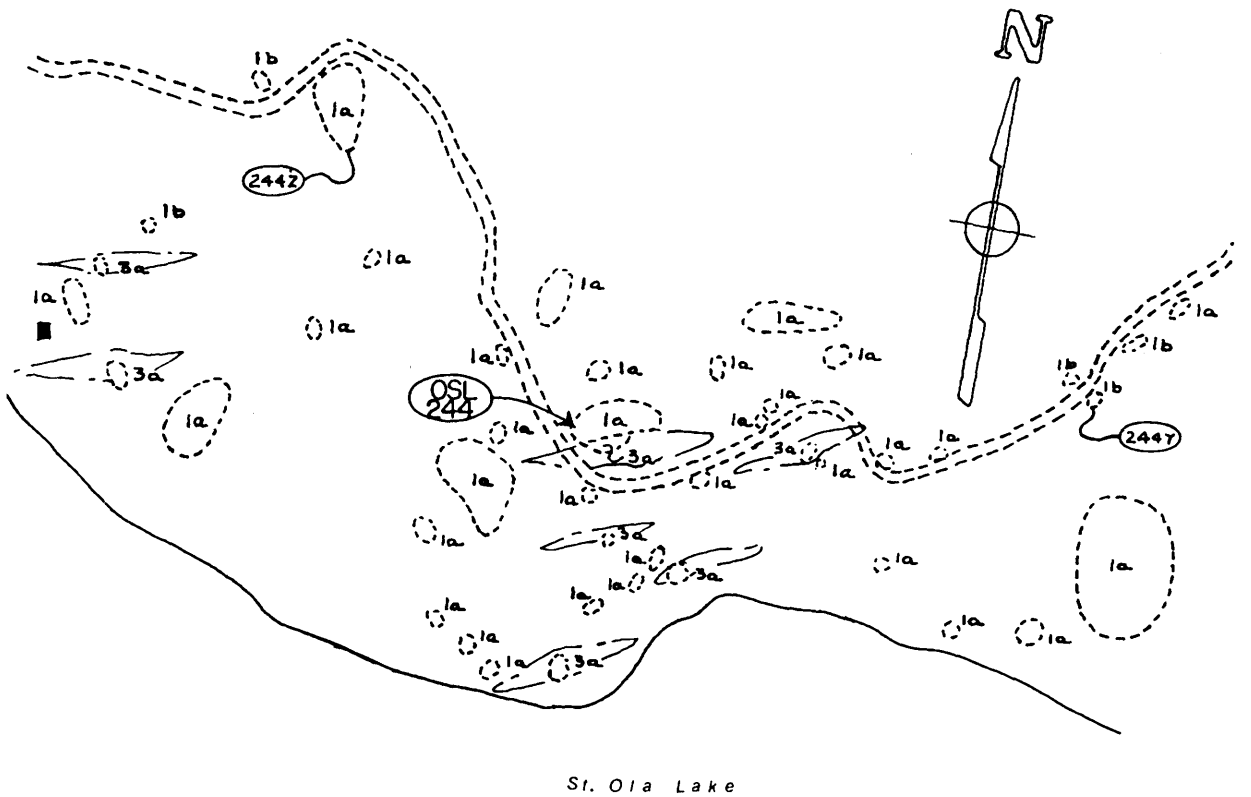
Limerick Township has been mapped by Hewitt and Satterly (1957) and Lumbers (1969). Cashel Township has been mapped by Lumbers (1968), and in part by Hewitt and Satterly (1957) and Hewitt (1964a).

Chemistry

Regional marble chemistry in this belt (samples 235 to 276, 280 to 283, and 326 to 331) is highly variable across strike, with numerous metasedimentary units occurring within the carbonate rocks. The dominant marble type is calcitic marble, with only minor dolomitic marble. Trace and metallic element contents are very low throughout the entire belt. Channel samples within map areas 244 and 265 indicate higher SiO_2 contents than the original samples. The grey colour results in low reflectivities (43 percent, 48 percent, and 29 percent for samples 244y, 244z, and 265z, respectively).

Potential

The entire marble belt is composed of grey fine-grained marble with conformable metasediments. Certain marble zones have very high CaO contents, but the grey colour and presence of metasediments and amphibolite render the marble less than desirable as filler material.



LEGEND (Geological)

1 CALCITIC MARBLE
- a) Grey, fine-grained, minor pyrite and phlogopite
- b) Grey and buff, laminated

3 METASEDIMENTS (ARCHEAN)
- a) Hornblende amphibolite

LEGEND (Map)

- == Trail
- Outcrop boundary
- ■ Building
- (31) Sample location
- (OSL) Original sample location
- — - — Interpreted geological contact

SAMPLE LOCATION
244

0 50 100 150 200
metres

Scale 1:3600
UTM Grid Co-ordinates 293800mE 4973000mN Zone 18

Figure 31. *Location Map, Sample 244.*

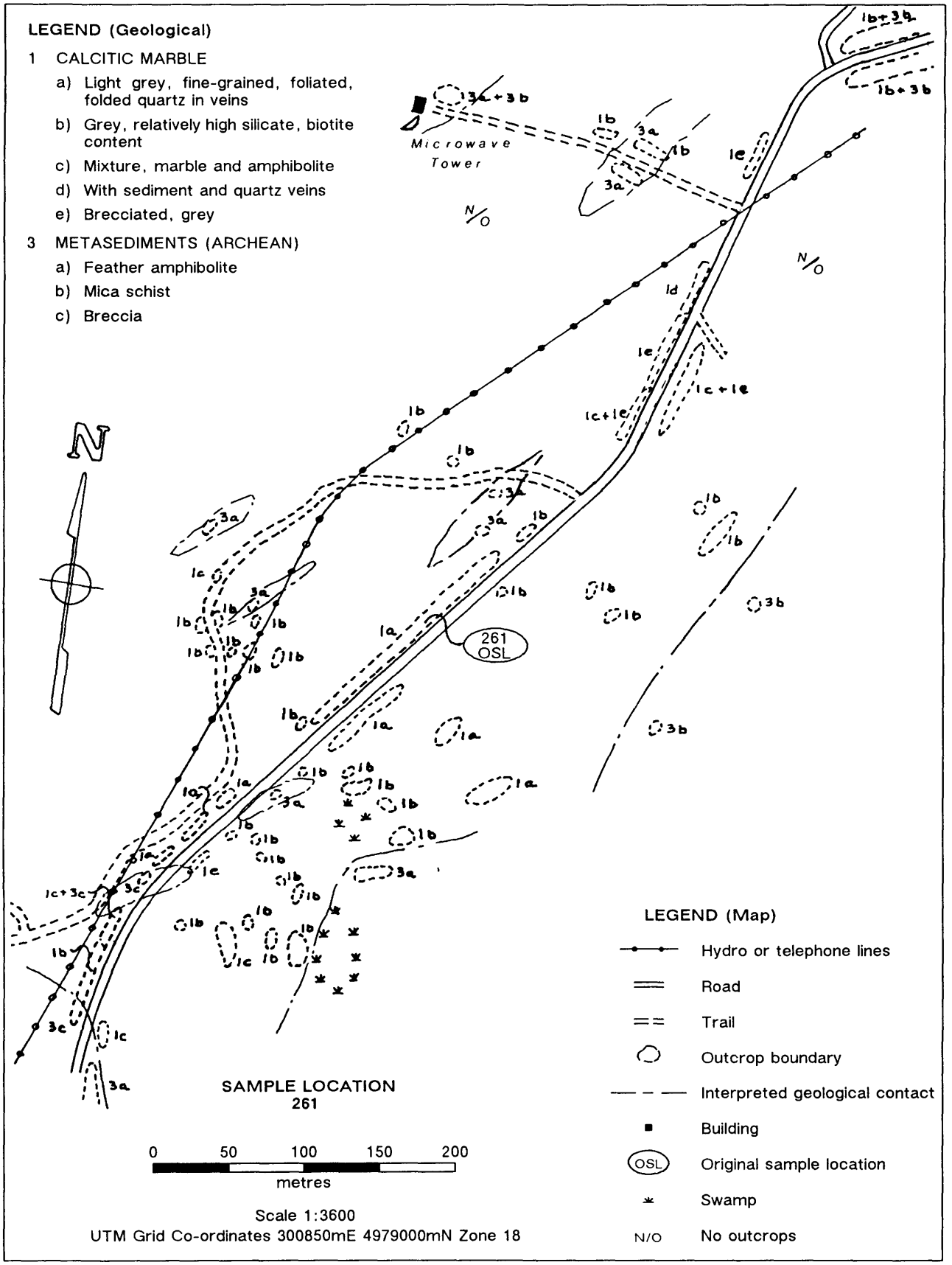


Figure 32. *Location Map, Sample 261.*

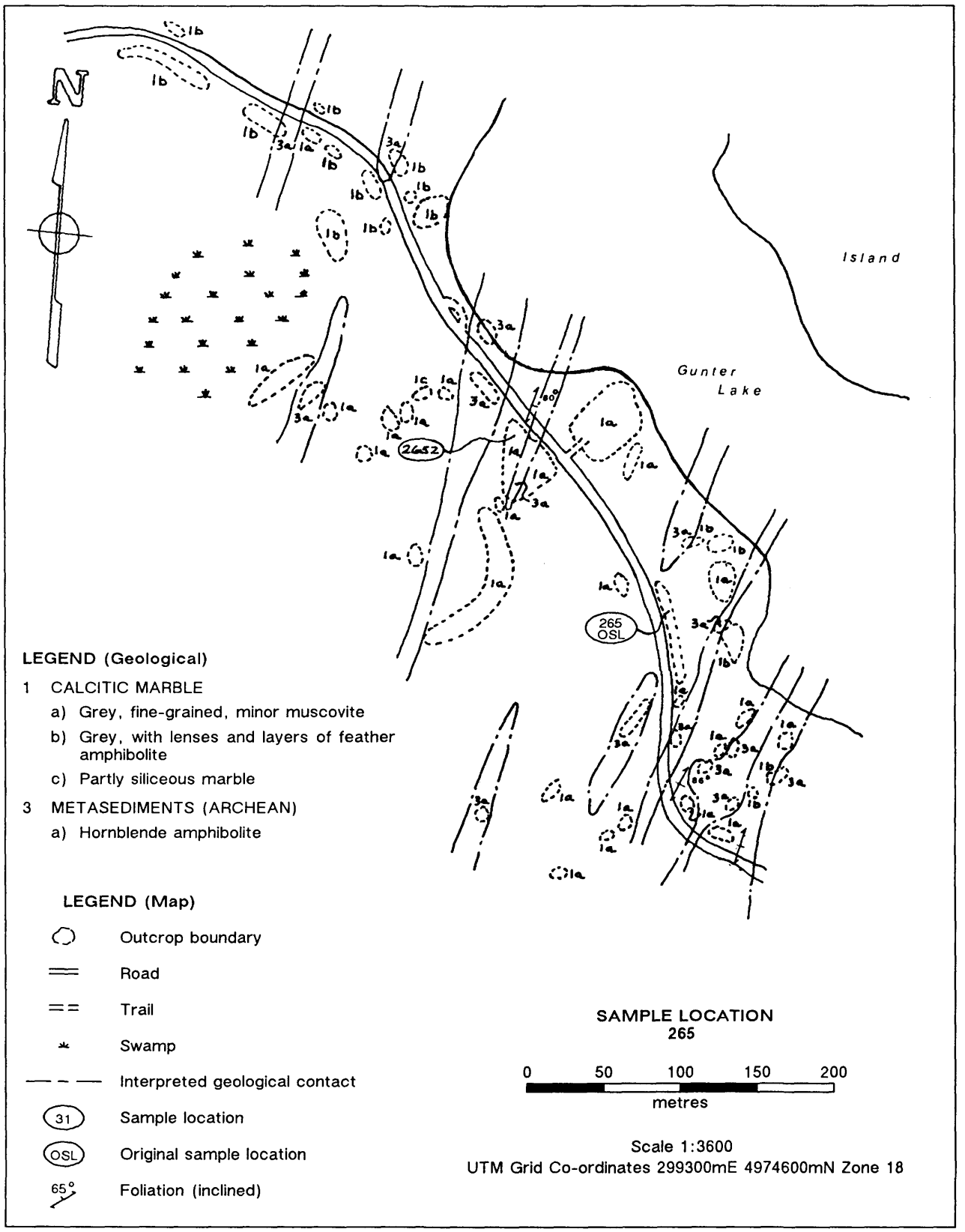


Figure 33. *Location Map, Sample 265.*

MAP AREAS 313 AND 401

Location

Mayo Township.

Map reference: NTS 31F/4.

313—UTM 295750mE, 4994920mN, Zone 18.

401—UTM 294850mE, 4991580mN, Zone 18.

Access

South on a gravel road from Highway 500 at New Hermon.

313—On Sharrow Lake, Concession VIII, Lot 15.

401—On Foster Lake, Concession VI, Lot 10.

Regional Geology

The marble belt from which these samples were taken crosses east-northeast through Mayo Township. The belt is bounded on both sides, and partially interfingers with, Hermon Formation metasediments (Hewitt and James 1956). Within the belt are several conformable metamorphosed mafic volcanic rock units. The metasedimentary and metavolcanic units are variable in thickness and length.

Local Geology

313—In the detailed map area (Figure 34), marble is predominantly light grey and fine grained with only minor impurities disseminated throughout. Interbedded with this marble variety are grey coarse-grained and grey laminated marble units.

401—Within this area (Figure 35) is a large paragneiss unit made up mainly of coarse-grained plagioclase and quartz crystals. Often there are large marble blocks contained within the paragneiss units, but the relationship between the two is difficult to determine. The marble appears to have flowed around and into the paragneiss, at times incorporating rafts of paragneiss into the marble. The marble is generally grey, fine grained, and contains local zones of amphibolite.

Previous Geological Work

Mayo Township has been mapped by Adams and Barlow (1910), Hewitt and James (1956), and Hewitt and Satterly (1957).

Chemistry

Much of the marble in this belt (samples 300 to 313 and 400 to 402) is relatively free of silica; however, the marble composition is variable. A large number of samples taken from this area are from dolomitic marble units, particularly toward the northeastern end of the belt. Samples 311, 312, 313, and 400, which come from units within the belt, have less than 2 weight percent SiO_2 and greater than 50 weight percent CaO (Appendix A). Trace and metallic element contents are below background throughout most of the belt. Channel samples taken in calcitic marble in map area 313 indicate a high SiO_2 content. Reflectivity, as expected, is only in the 50 percent range as the marble is grey.

Potential

The greyness of the marble and the presence of paragneiss and/or amphibolite in both of these areas make the marble unfavourable for filler material. Chemically the material has good qualities, and therefore with beneficiation the material may have some potential.

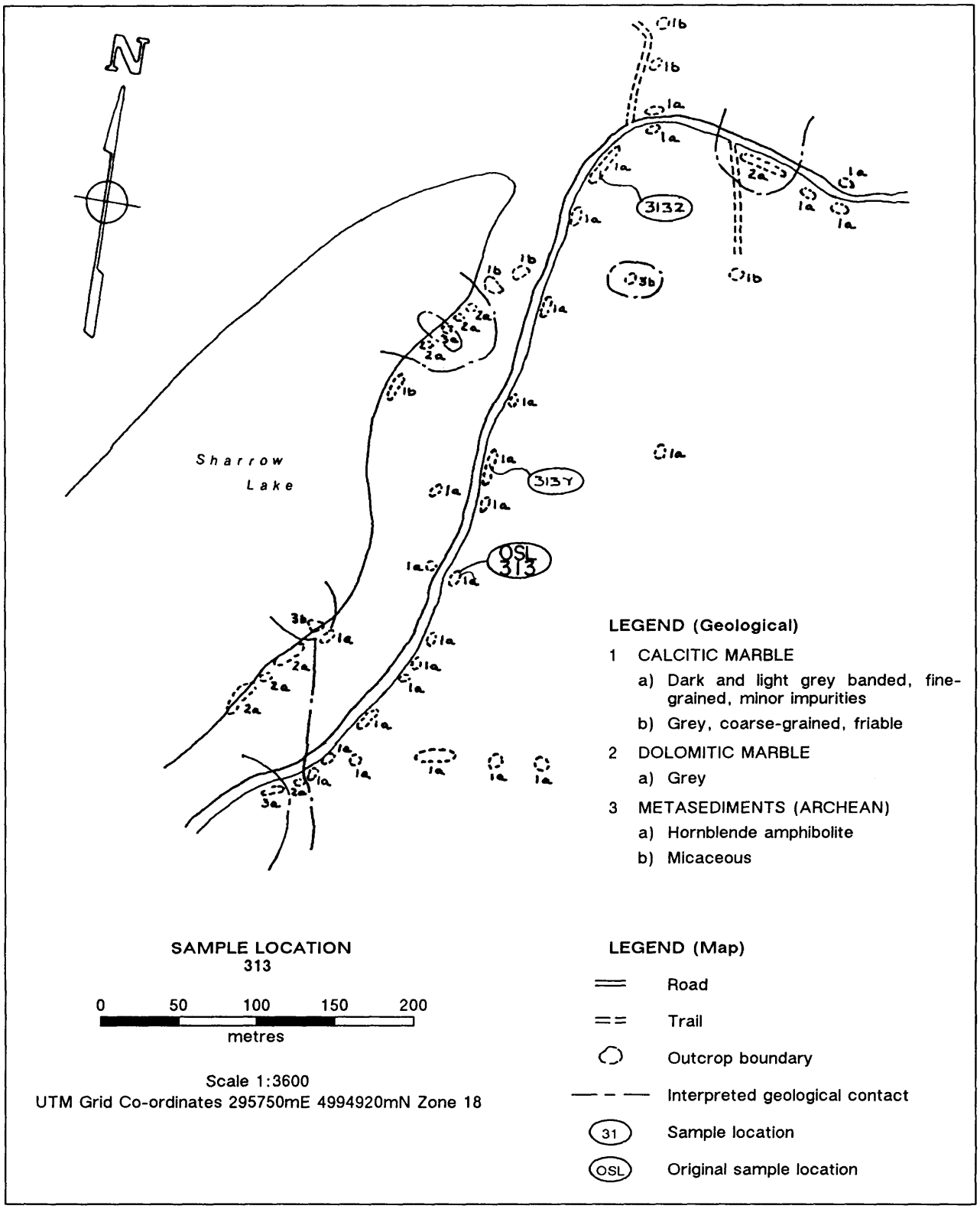


Figure 34. *Location Map, Sample 313.*

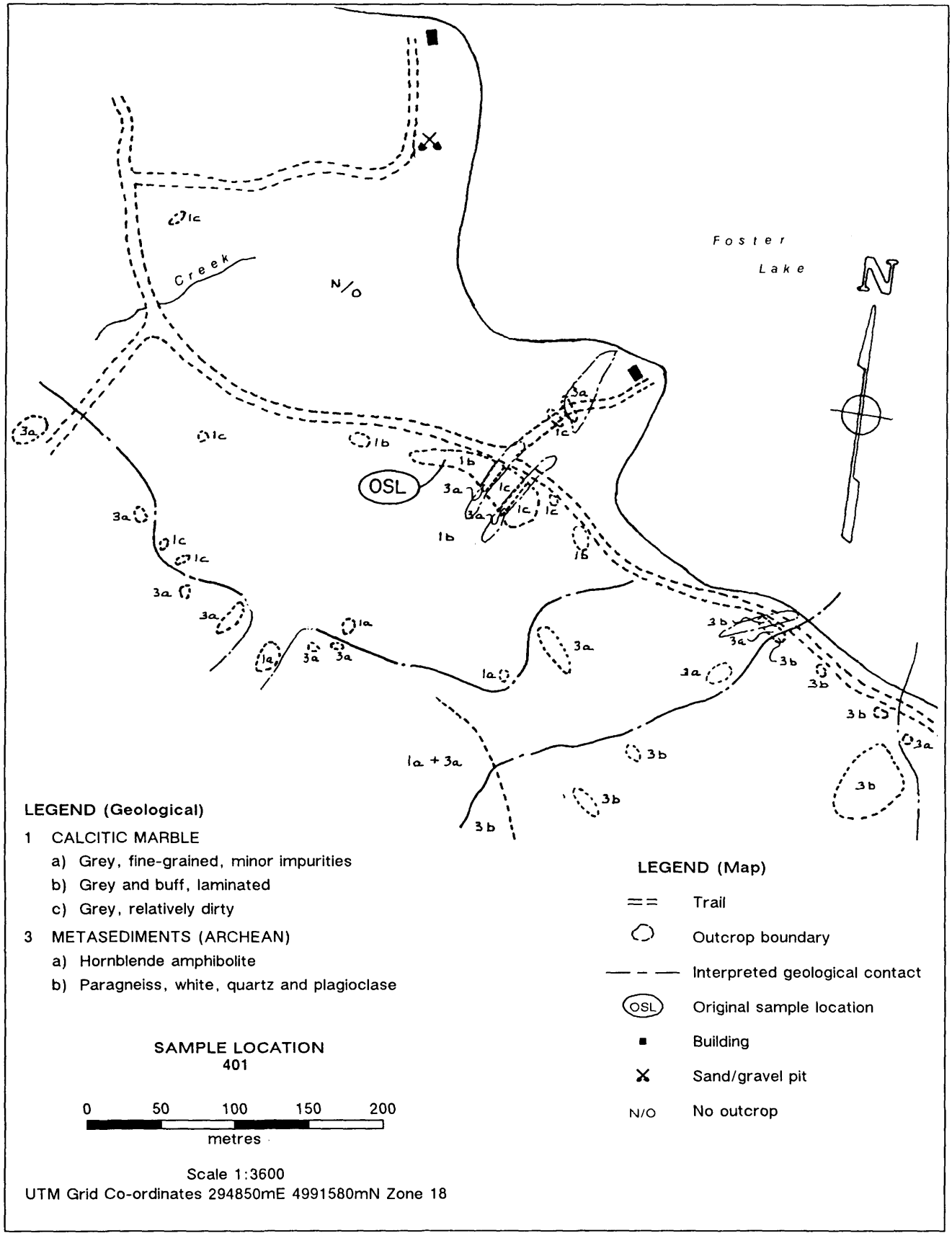


Figure 35. *Location Map, Sample 401.*

MAP AREA 347

Location

East-central Sheffield Township.

Map reference: NTS 31C/10; UTM 350150mE, 4936700mN, Zone 18.

Access

At a hunt camp along a narrow seasonal road, a few hundred metres northeast of the main gravel road and 200 m south of Slave Lake, Concession XV, Lot 11.

Regional Geology

Marble belts in this area are generally narrow and discontinuous, pinching and swelling within the host granitic rocks. Numerous occurrences of base metal sulphide minerals are within, or very near to, these marble zones.

Local Geology

Sample 347 was taken from the waste rock dump at the Lennox Mine Zinc Occurrence (Figure 36). Marble occurs both as long narrow bands and as wide discontinuous units. Sphalerite is contained within calcitic and dolomitic marble (Carter 1984). The marble is predominantly white with disseminated sphalerite, phlogopite, and pyrite. Contacts between the marble and the granite are generally sharp, often with an interfingering of the two. The total amount of marble covers an area of 300 m by 200 m.

Previous Geological Work

Sheffield Township has been mapped by Hewitt (1964a), and the Lennox Mine Zinc (Slave Lake) Occurrence has been mapped by Sangster (1970) as part of an unpublished MSc thesis, and by Carter (1984).

Chemistry

The sample taken at this location contains low amounts of trace and metallic elements, including zinc. Most of the samples taken from this marble belt (samples 1266, 1267, and 1300 to 1303) contain approximately 54 percent CaO and 5 percent MgO, with 1 to 2 percent SiO_2. None of the samples taken indicate higher than average amounts of Zn or any other metallic element. Two channel samples in this map area indicate SiO_2 contents of less than 1 percent. Reflectivity measurements for the two samples are 49 percent and 55 percent, respectively.

Potential

Marble in this area is good in colour and in CaO/MgO ratio. Impurities are disseminated and rarely total more than 2 percent. In the detailed map area marble tonnage is low, but more extensive marble units in the surrounding area may be of comparable quality.

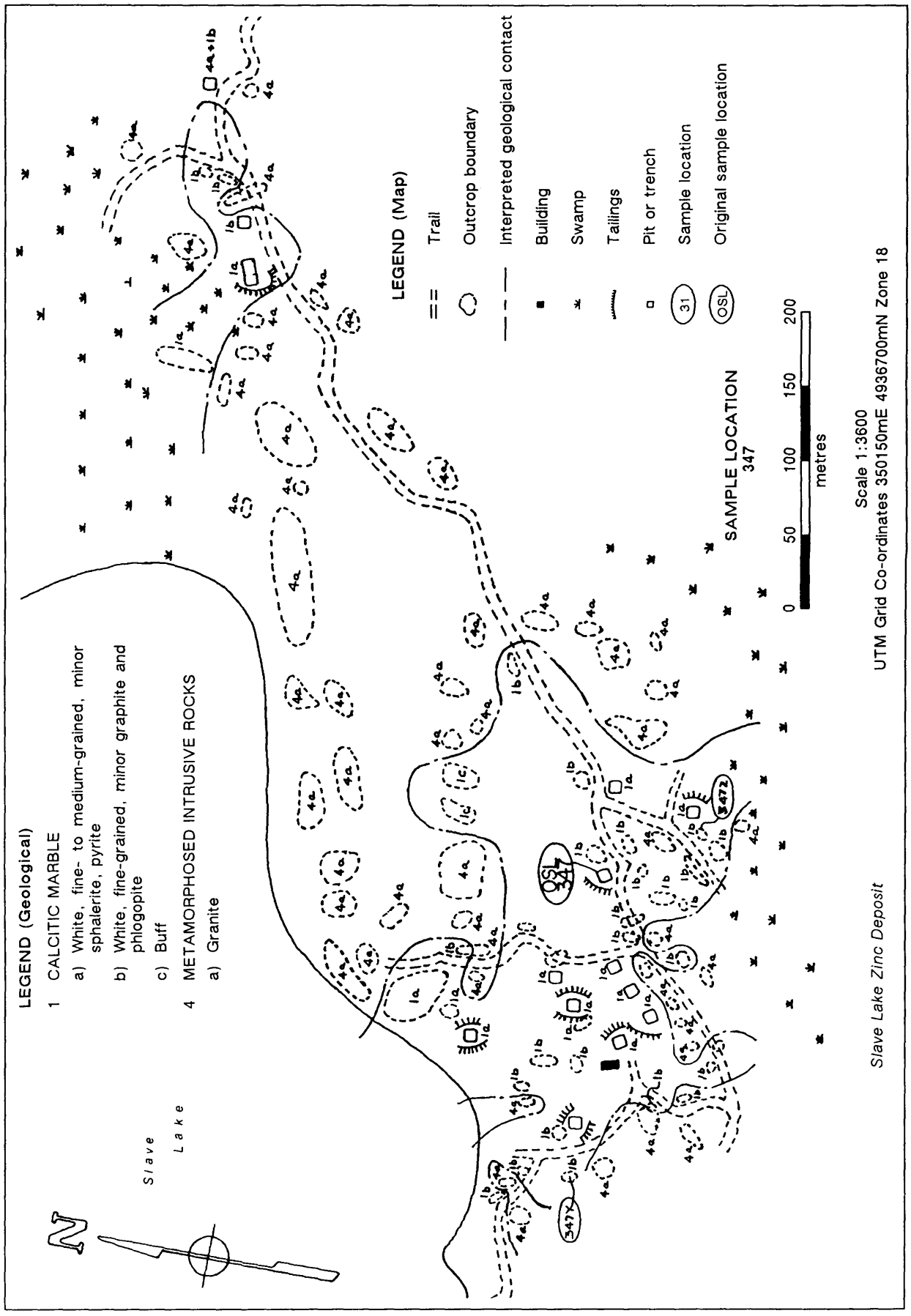


Figure 36. *Location Map, Sample 347.*

MAP AREA 352

Location

Southeast corner of Burleigh Township, approximately 1.5 km west of Petroglyphs Provincial Park.

Map reference: NTS 31D/9; UTM 732510mE, 4941170mN, Zone 17.

Access

Four kilometres west of Stonyridge, on a good paved road. The sample was taken at the bridge crossing Eels Creek.

Regional Geology

This sample comes from a north- to northeast-trending marble belt which is 6 to 8 km wide by tens of kilometres in length. Minor conformable amphibolite beds lie within the marble along with a narrow granitic gneiss unit. The marble is flanked to the west by granitic gneiss, to the east by paragneiss and amphibolite, and to the south by granitic gneiss which is partially overlain by Paleozoic sedimentary rocks.

Local Geology

Detailed mapping of this area (Figure 37) indicates that there are two distinctive marble types. One is grey with light grey laminations, local quartz-feldspar veining, and minor amounts of phlogopite and graphite. The second unit, from which the sample was taken, is white with only minor impurities and a medium grain size. There is a thin unit of granite running adjacent to the white marble band. It is probable that the granitic intrusion caused more complete recrystallization of the white marble. Within the grey marble units are small bands of amphibolite conformable to the marble. Impurities within the marble are mainly biotite, phlogopite, and graphite, usually totalling no more than 5 percent.

Previous Geological Work

Burleigh Township has been mapped by Adams and Barlow (1910), Satterly (1943), and Hewitt and Satterly (1957).

Chemistry

Samples taken from this marble belt (samples 349 to 354 and 1450 to 1454), with the exception of sample 352, tend to have a high SiO_2 contents. CaO/MgO is in the range of 8 to 12 for most of the samples, while trace and metallic element contents are low in all samples.

Potential

Marble in this area is poor in quality, with the exception of the white marble band described above, which is highly calcitic and low in impurities. More work is required in the area to determine the extent and chemical consistency of the white marble band.

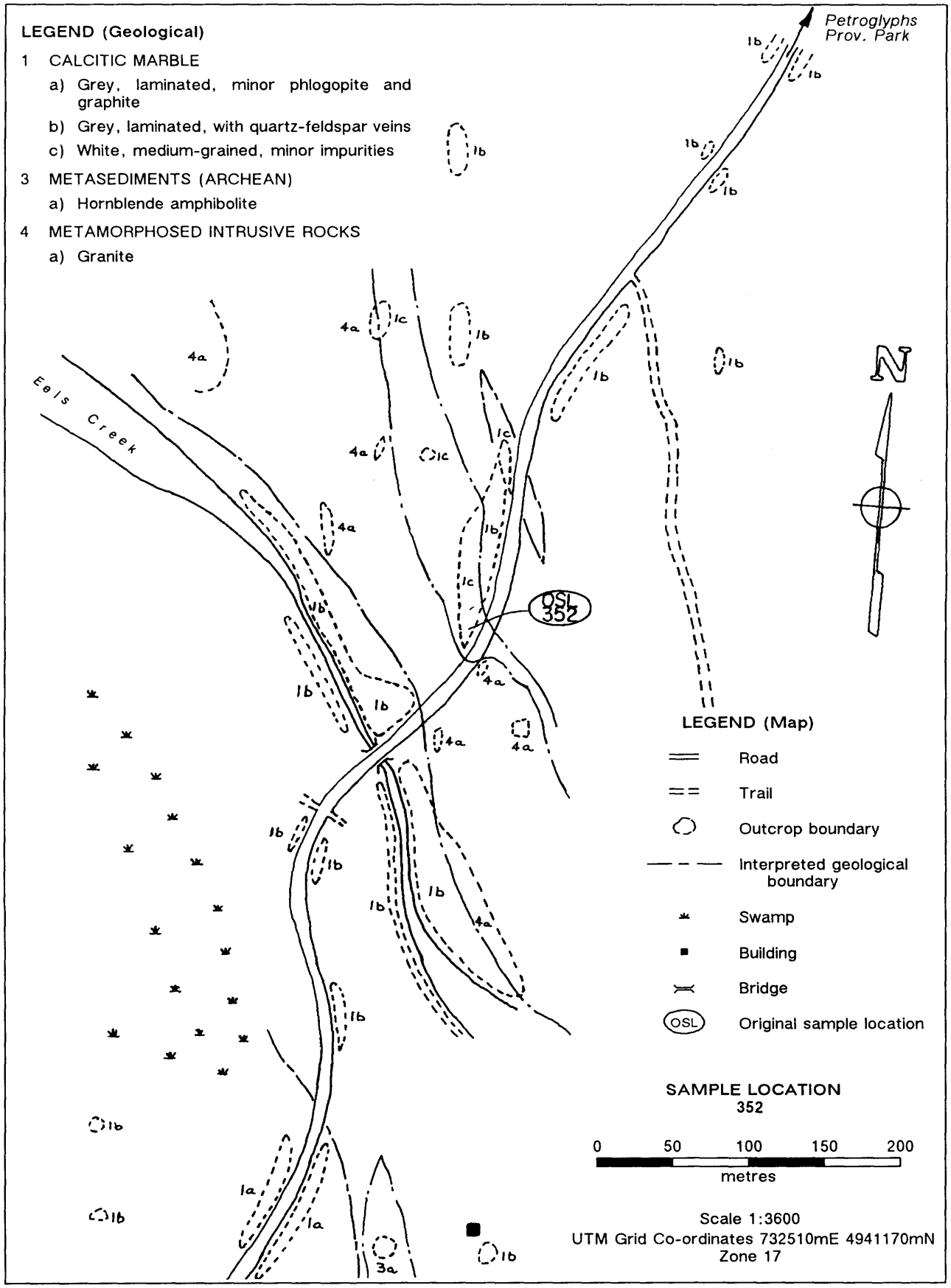


Figure 37. *Location Map, Sample 352.*

MAP AREAS 356 AND 367

Location

Both of the marble samples come from a marble belt in Kennebec Township.

Map reference: NTS 31C/10.

356—UTM 344300mE, 4952250mN, Zone 18.

367—UTM 337650mE, 4947300mN, Zone 18.

Access

356—This sample was taken along the abandoned railway that runs through Arden. It was sampled at the intersection of the railway line with a dead end cottage road, Concession VI, Lot 15.

367—This sample was taken on a rough one-lane trail which runs parallel to Highway 7, through Elm Tree, Concession I, Lot 10.

Regional Geology

Both of these samples come from a northeast-trending marble belt which is part of a much wider metasedimentary belt. Much of the metasedimentary unit has been intruded by granite, which now flanks the metasedimentary belt to the north and south and pinches the metasedimentary belt out at the southwestern edge of the belt. The marble is bounded to the north by metasediments and amphibolite metavolcanics. Within the marble belt are many conformable metasedimentary layers up to a few hundred metres wide and hundreds of metres long.

Local Geology

356—The marble of this detailed map area (Figure 38) is predominantly light grey to white. There is a band of dolomitic marble which runs conformable to the local structural trends. This marble contains considerable silicate material as clots and mafic material which appears to have been rafted from a nearby source during metamorphism. The calcitic marble is interbedded with dolomitic marble and is buff coloured, containing blebs of quartz and disseminated pyrite.

367—The marble in this map area (Figure 39) is dominantly grey with fine laminations of a lighter grey marble. Much of the marble is relatively impurity free, with only minor pyrite and phlogopite. Diopside crystals up to 5 cm in length occur locally. Some of the marble outcrops contain silicate boudins and clots, but these are not confined to any particular horizon.

Previous Geological Work

Kennebec Township has been mapped by Meen and Harding (1942), Hewitt (1964a), and Wolff (1982a).

Chemistry

Most of the marble samples from this marble belt (samples 355 to 367 and 428 to 456) are dolomitic in composition, with the more calcitic material occurring at the northern edge of the belt. Regionally, the closeness of the sample location to a metasedimentary unit tends to influence the amount of silicate material in the sample; samples close to the metasediment-marble contact have a higher impurity content due to the gradational nature of the contact. Trace element and base metal contents in this belt are at or very near to background levels. Channel sampling in these map areas indicates rather uniform compositions. Sample 356z has less than 1 weight percent SiO_2 along with a high CaO content, with 60 percent reflectivity. Each of samples 365x, 365y, and 365z have a low SiO_2 content, a high CaO content, and a reflectivity between 60 percent and 64 percent.

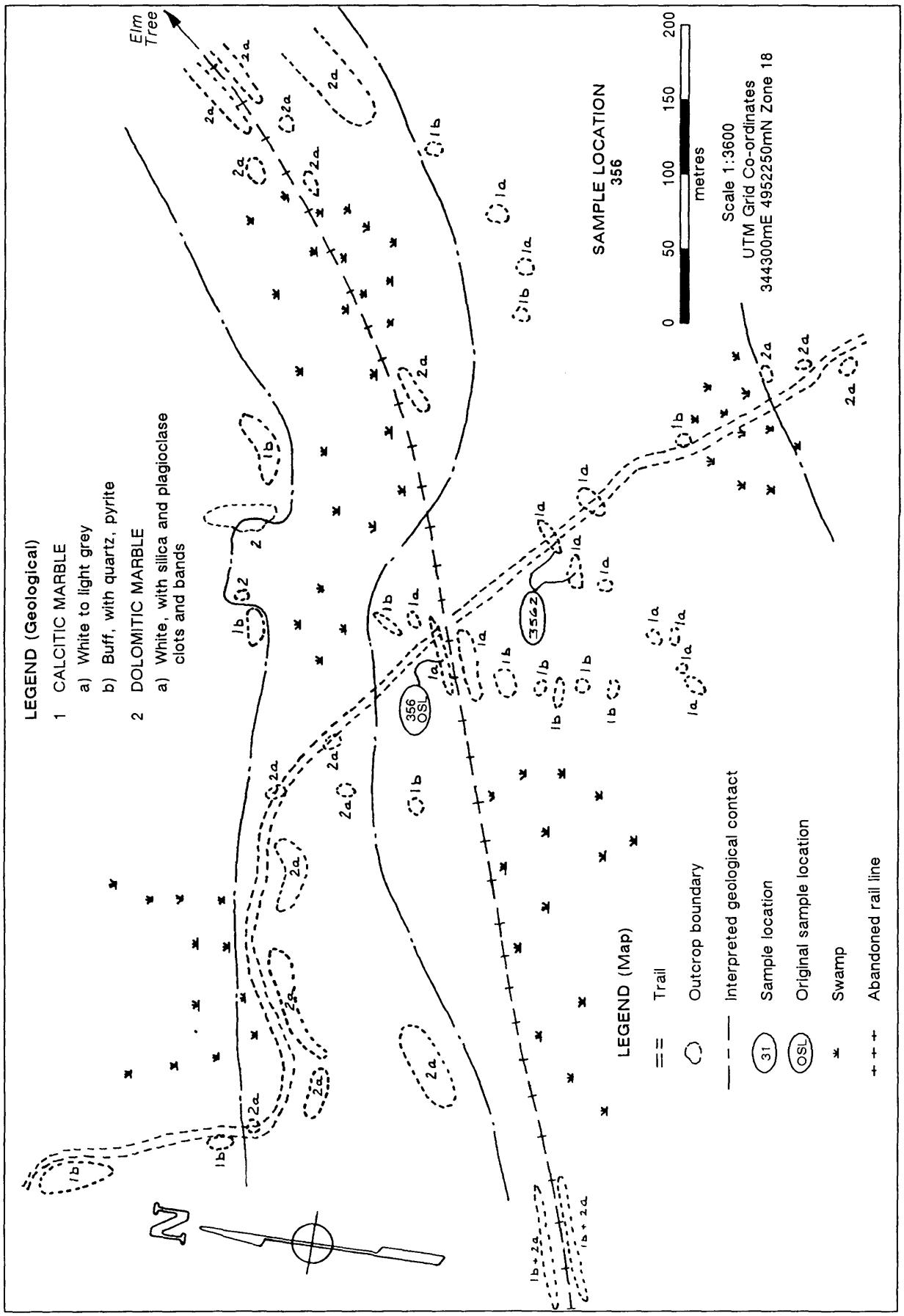


Figure 38. *Location Map, Sample 356.*

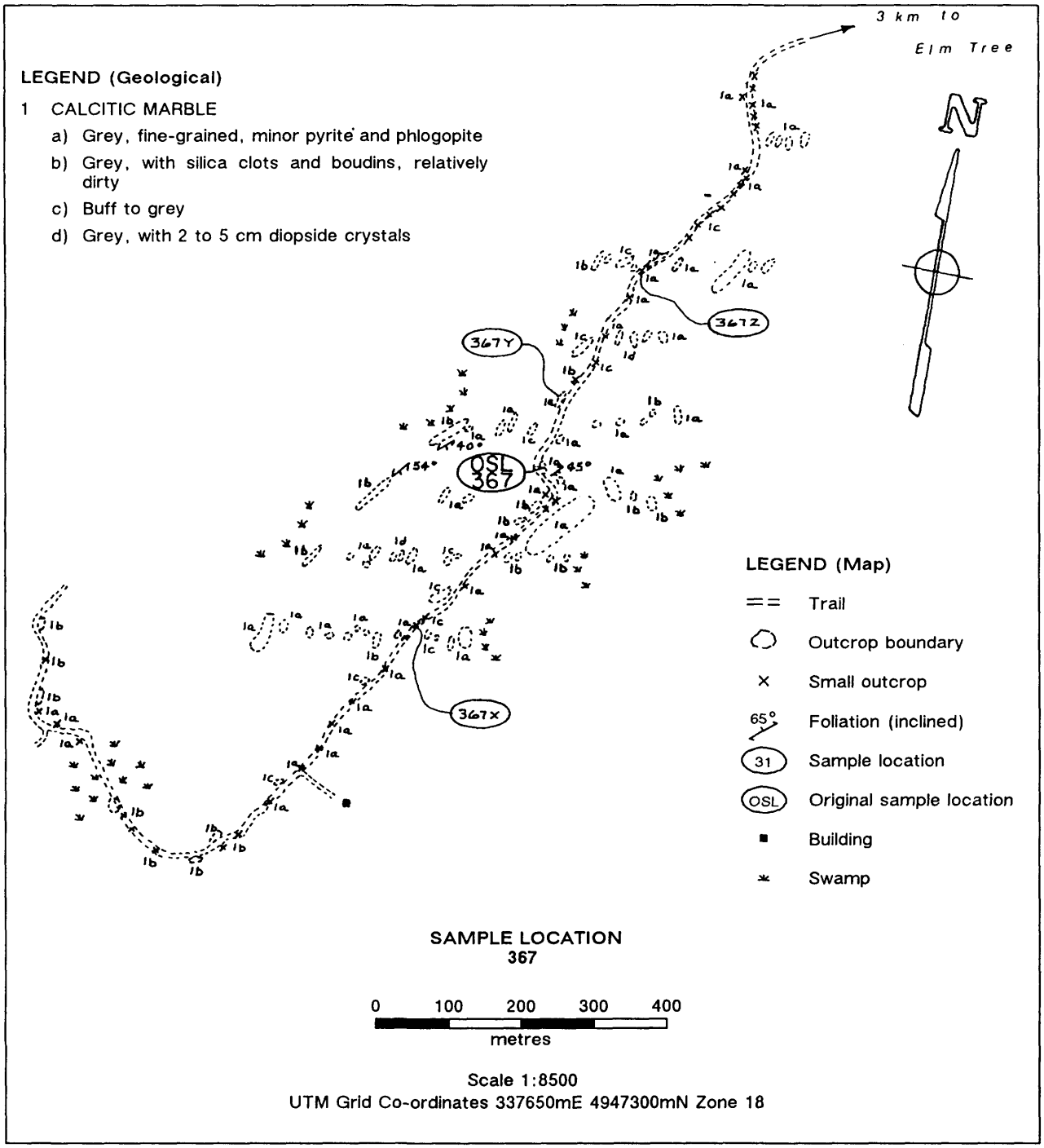


Figure 39. *Location Map, Sample 367.*

MAP AREA 424/425/426/427

Location

The Bonter Marble Quarry, east-central Marmora Township.

Map reference: NTS 31C/12; UTM 293400mE, approximately 4936600mN, Zone 18.

Access

Turn east on the one-lane road at Malone, situated 1 km southeast of Malone, Concession XI, Lot 16.

Regional Geology

All samples were taken from the Bonter Marble Quarry near Malone. This quarry is situated within a narrow marble belt trending approximately N30°E. In the past, marble from this quarry was used for terrazzo chips, poultry grit, and in the pulp and paper processing industry. The marble is bounded by granite gneiss, with minor amounts of diorite on both sides.

Local Geology

Marble within the detailed map area is generally white with variable amounts of phlogopite, graphite, and minor silicate minerals (Figure 40). Grey bands and streaks within the marble are concentrations of graphite. In the quarry from which sample 425 was taken, there is a 2 cm wide band of long-fibered asbestos, which has a woody appearance. In the quarry from which sample 426 was taken, there are several mafic veins crosscutting the marble, some of which are incompletely boudined (Photo 4). Magnetite occurs in both massive and banded forms in a test pit slightly east of the northernmost quarry. In other zones there are hematite-stained patches, siliceous pyrite-rich bands, and marbles containing clots of silicate material. The contact between the metamorphosed intrusive granite and diorite, and the marble is generally very well defined and sharp, with only minor silicate contamination of the marble.

Previous Geological Work

Marmora Township has been mapped by Wilson (1940b) and Hewitt and Satterly (1957).

Chemistry

Only one of the four samples taken at this quarry had more than 0.43 weight percent SiO_2. The other three samples have very high CaO and low MgO contents. The fourth sample, sample 425, has almost 10 weight percent SiO_2 along with a high CaO content. Trace and metallic element contents are low in all four samples.

Potential

It may be assumed that the best material has been removed from this area, but mapping reveals that there is still a considerable quantity of high-calcium marble in the quarry area. It is very likely that other, very similar marble zones exist within the immediate area as well as in western Madoc Township.

Photo 4. *Deformed mafic dike in grey streaked white marble, in map area 424/425/426/427.*

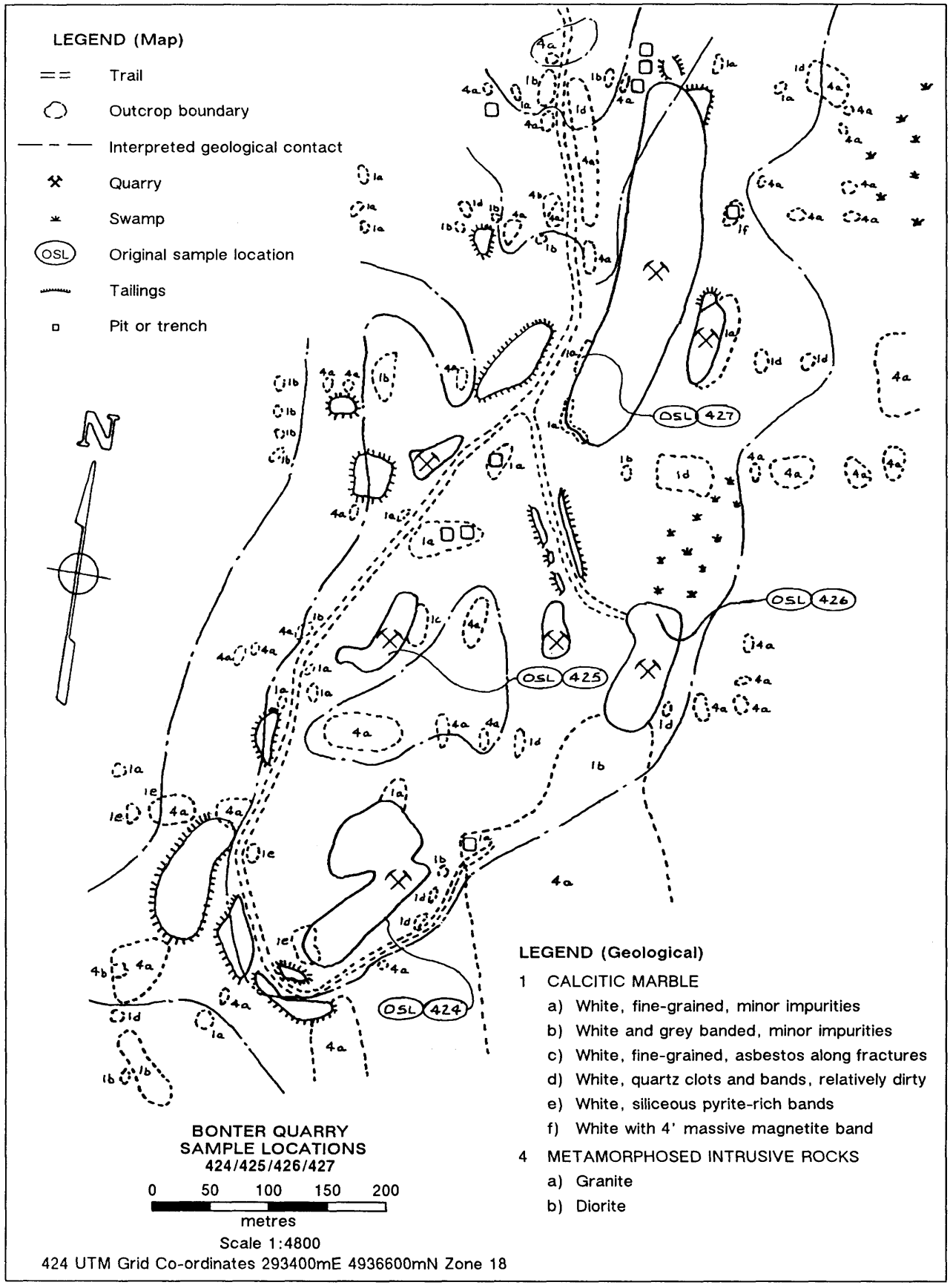


Figure 40. *Location Map, Samples 424, 425, 426, and 427.*

MAP AREAS 480, 489, AND 497/498/499

Location

480—On Highway 509, Oso Township.

489—3 km northwest of Silver Lake, Oso Township.

497/498/499—3 to 4 km north of Silver Lake, Oso Township.

Map reference: NTS 31C/15.

480—UTM 265350mE, 4966400mN, Zone 18.

489—UTM 268950mE, 4966150mN, Zone 18.

497—UTM 371200mE, 4967700mN, Zone 18.

498—UTM 371000mE, 4968300mN, Zone 18.

499—UTM 371850mE, 4968200mN, Zone 18.

Access

480—5 km south of Clarendon Station, Highway 509, Concession II, Lot 24.

489—On a one-lane farm road, 1 km north of the main gravel road, Concession V, Lot 23.

497/498/499—On the main gravel road, 3 km north of Silver Lake.

497—Concession VI, Lot 24.

498—Concession VI, Lot 24.

499—Concession VII, Lot 24.

Regional Geology

All of the samples come from a generally north-northeast-trending metasedimentary-marble belt with an irregular shape caused by the intrusion of igneous rocks. The igneous rocks range in composition from granite to diorite. Throughout the area there are numerous metasedimentary units, some of which are continuous across several hundred metres, while others are only a few metres in length. Metasedimentary rock types include paragneiss, hornblende amphibolite, and chlorite-biotite schist. Calcitic marble in the belt is predominantly light grey with a relatively uniform composition and structure. Dolomitic marble occurs as discrete bands within the calcitic marble but is insignificant in quantity.

Local Geology

480—Marble within the detailed map area is generally light grey with minor disseminated phlogopite and pyrite (Figure 41). This material grades into contaminated marble containing minor quartz and mica, and finally into an interbedded grey marble and amphibolite. Individual metasedimentary units are up to 100 m in surface width.

489—Road outcrops in this map area (Figure 42) indicate that the marble is uniform in composition with only minor metasediments occurring at the north end of the map area. Impurities within the marble are only minor with a gradation to slightly more silica-rich material in certain bands. Laminations are from 1 to 3 cm in thickness across all of the marble units.

497/498/499—This part of the marble belt (Figure 43) is largely uniform in appearance and composition. "Clean" marble contains only minor phlogopite, while "impure" marble contains several percent silica, biotite, plus calc-silicate minerals as clots and boudins. Dolomitic marble is similar in appearance to calcitic marble. Small discontinuous bands of metasediments occur within the marble. The marble in this area is virtually identical to the marble in map areas 480 and 489.

Previous Geological Work

Oso Township has been mapped by Harding (1951) and Hewitt (1964a).

Chemistry

The majority of samples from this marble belt (samples 474 to 500) are calcitic and rarely contain more than 3 percent SiO_2. There are several dolomitic samples located at the southern side of the belt. Trace and metallic element contents are low throughout this belt.

Detailed channel sampling in map area 497/498/499 reveals that this area has a uniformly low SiO_2 content and a high CaO content. Reflectance in these samples ranges from 60 to 70 percent.

Potential

Most of the marble in this belt contains nearly 5 weight percent MgO, but only minor amounts of other contaminant elements. The light grey colour is persistent across strike as is the marble purity, but the calc-silicate clots and boudins which are scattered throughout the detailed map areas may raise the average total impurity content of the marble.

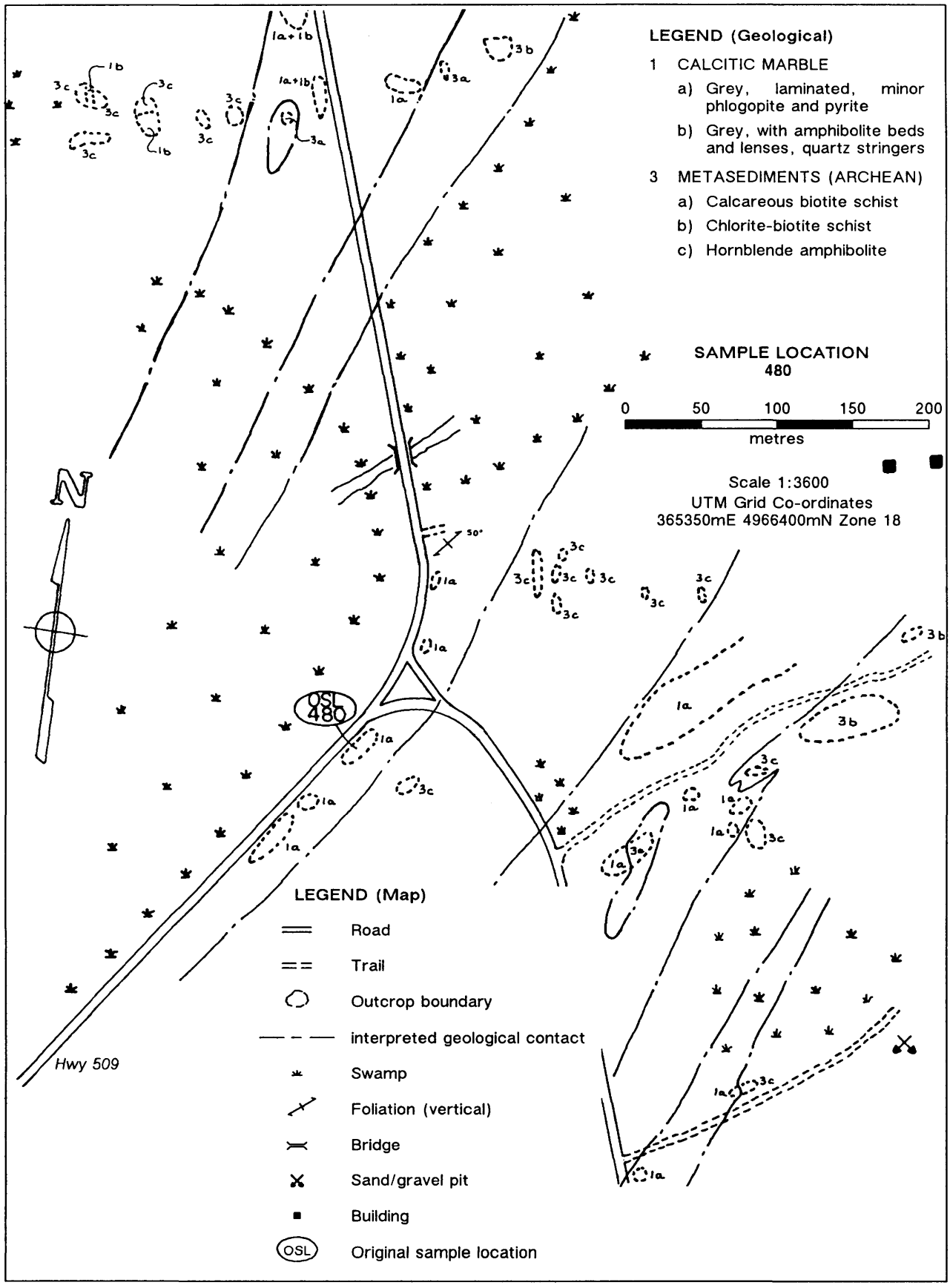


Figure 41. *Location Map, Sample 480.*

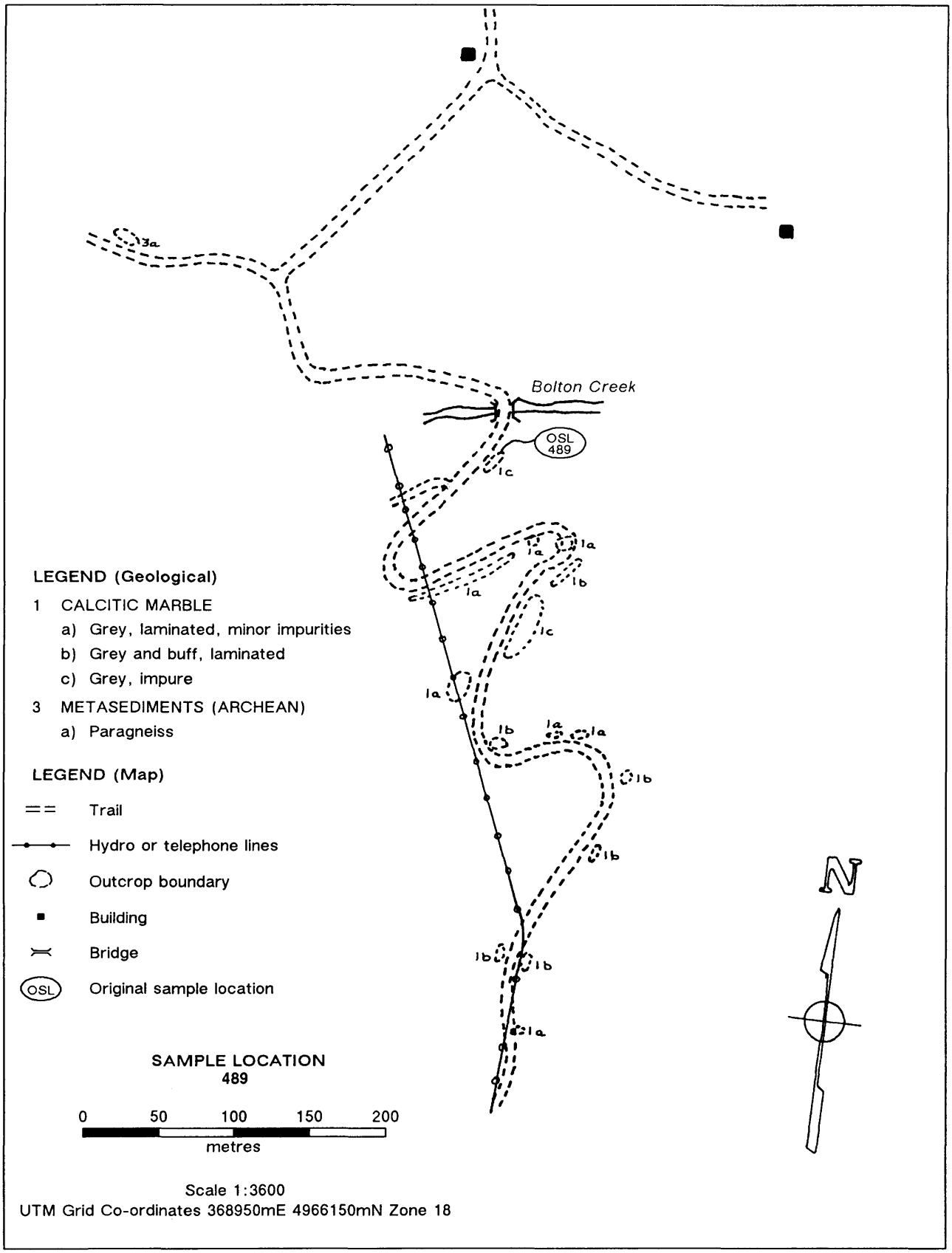


Figure 42. *Location Map, Sample 489.*

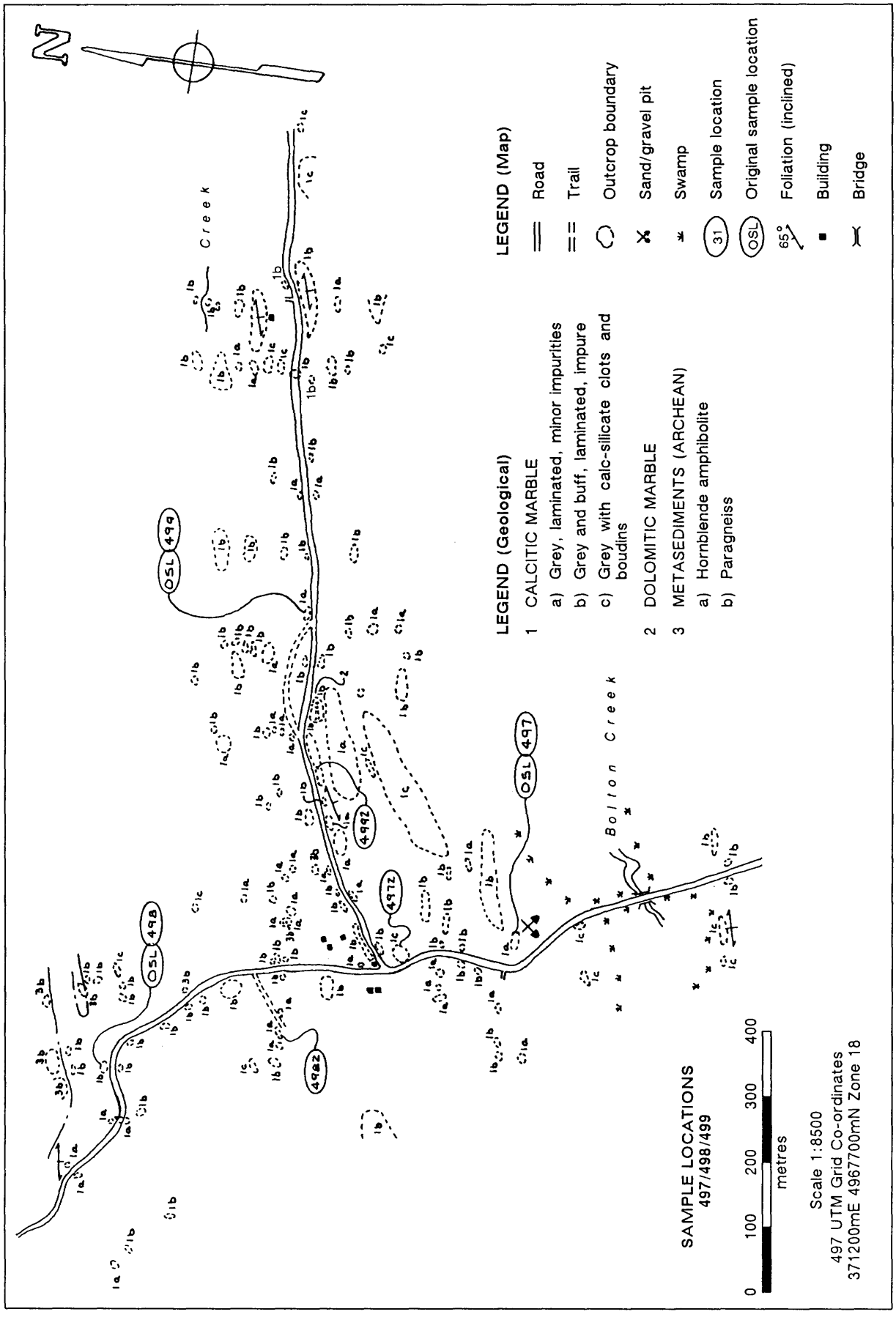


Figure 43. *Location Map, Samples 497, 498, and 499.*

MAP AREA 483

Location

Olden Township.

Map reference: NTS 31C/15; UTM 357800mE, 4957450mN, Zone 18.

Access

On Highway 7, 5 km east of the Mountain Grove turnoff, Concession V, Lot 16.

Regional Geology

This sample was taken from a linear marble belt which runs east-northeast in the vicinity of Sharbot Lake. The belt is conformable with metasediments and metavolcanics. These conformable rock units are intruded throughout by small granitic bodies.

Local Geology

Detailed mapping at this sample location (Figure 44) delineates a fine-grained laminated grey marble interbedded with fine-grained wacke. Impurities within the marble include fine-grained pyrite and phlogopite, with zones of narrow quartz veining. Contacts with the wacke tend locally to be gradational, with calcareous sedimentary rocks at the contacts.

Previous Geological Work

Olden Township has been mapped by Harding (1951), Hewitt (1964a), and Wolff (1982b).

Chemistry

Regional samples within this marble belt (samples 451, 452, 457 to 470, and 483) are generally calcitic in composition with only minor occurrences of dolomitic marble. Trace and metallic element contents are low throughout the belt. One channel sample from the detailed map area shows a low SiO_2 content along with a high CaO content. Reflectivity is low at 53 percent, which is expected since the marble is consistently grey.

Potential

The marble immediately around the detailed sample site is unfavorable as filler material due to its grey colour. The marble belt widens along strike and it is possible that more favorable material exists farther along the belt.

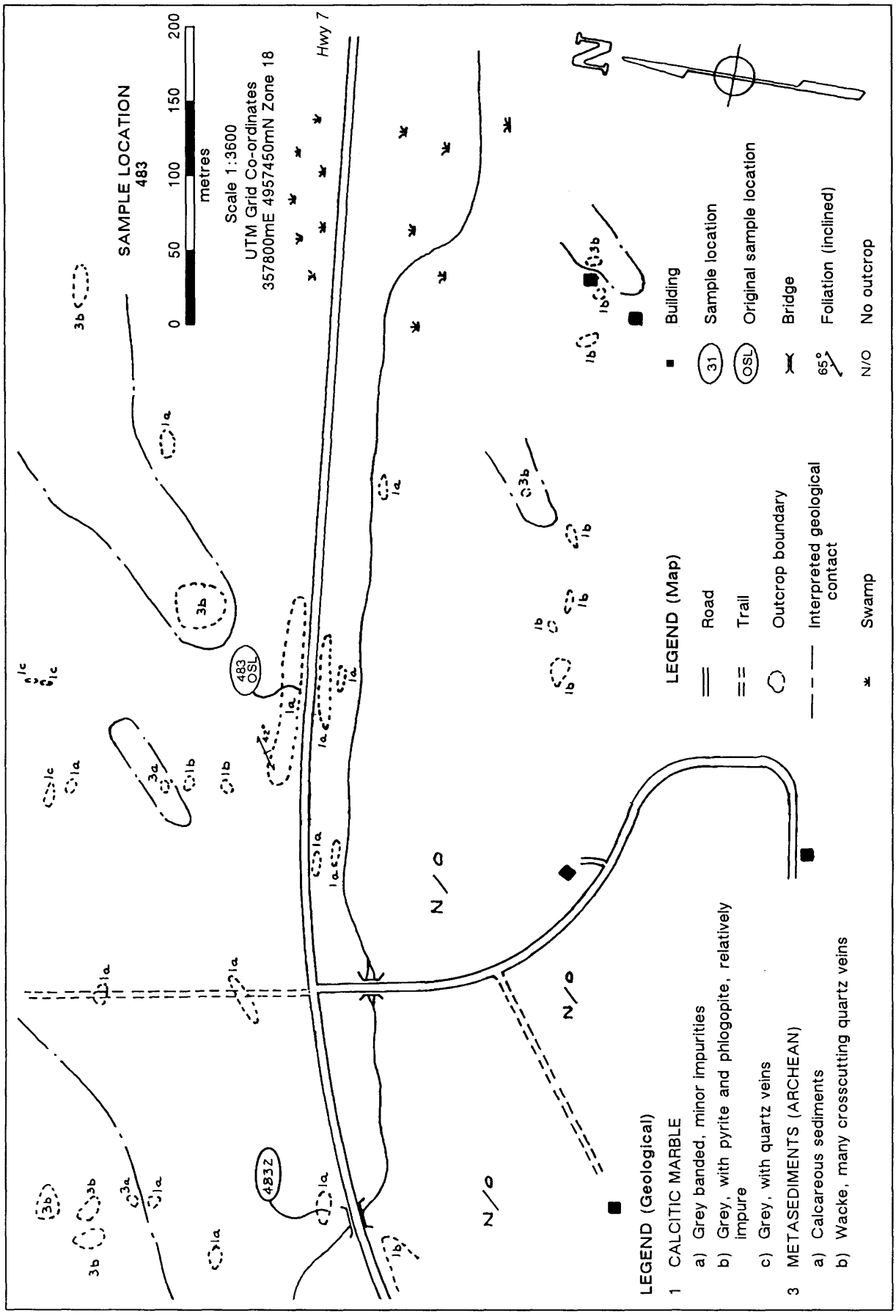


Figure 44. *Location Map, Sample 483.*

MAP AREAS 516 AND 710/711/731/733

Location

516—South of Actinolite, Elzevir Township.

711—Elzevir Township.

Map reference: NTS 31C/11.

516—UTM 314950mE, 4934200mN, Zone 18.

711—UTM 317950mE, 4936200mN, Zone 18.

Access

516—A few hundred metres south of Actinolite on Highway 37, Concession IV, Lot 1.

711—From a small marble quarry on the north side of Highway 7, approximately 3 km east of the Highway 37–Highway 7 intersection, Concession VII, Lot 2.

Regional Geology

These samples were taken from a thin marble belt which runs through Actinolite toward Kaladar. The belt is bounded by granite and paragneiss to the north and south and in part by metavolcanics which pinch out just north of the original sample location for sample 710. Minor metasediments and metavolcanics lie conformably within the white medium- to coarse-grained calcitic marble.

Local Geology

516—This portion of the marble belt is 150 to 200 m wide on the surface and is bounded on both sides by metasediments (Figure 45). The marble is white and fine to medium grained, with only minor amounts of disseminated phlogopite and graphite. To the south of this area are two former marble workings held by Vermont Marble:

1. Fardom Marble Quarry, which shipped marble blocks and building stone, is located on the west side of Skootamatta River, 1 km south of Actinolite.
2. The second location of marble workings is located 2 km south of Actinolite on the east side of the river.

At each of these locations, white marble with minor impurities is found. At the Fardom Quarry, mafic blocks and bands locally disrupt the marble horizon.

711—This area (Figure 46) was mapped on a regional scale to show the large area of good calcitic marble potential. The mineral rights to much of this area are held at present by Vermont Marble. Metasediments make up the northern boundary of the marble belt while the southern boundary is metamorphosed granite. Just south of Highway 7 at the eastern edge of the map is an old marble showing with two test sample locations from previous exploration. The marble belt tends to get wider east of this location, where a small zone of blue marble is seen.

Previous Geological Work

Elzevir Township has been mapped by Wilson (1940a), Meen and Harding (1942), and Hewitt (1964a).

Chemistry

Most of the samples taken from this belt (samples 515 to 518 and 710 to 716) have high CaO contents (greater than 54 weight percent), with less than 2 weight percent SiO_2. There are also several conformable dolomitic marble bands within the belt which are also white and are relatively free of impurities. Most of the samples have low trace and metallic element contents with the exception of sample 710, which contains anomalous quantities of lead and zinc (113 ppm Pb, 810 ppm Zn).

Potential

The history of work in this marble belt and the widespread occurrence of white clean marble indicates that this entire belt has a high potential for industrial filler-type marble. Vermont Marble has two holdings in the area; one is 2 km south of Actinolite, and the other is 1.5 km east of the Highway 37 turnoff along Highway 7.

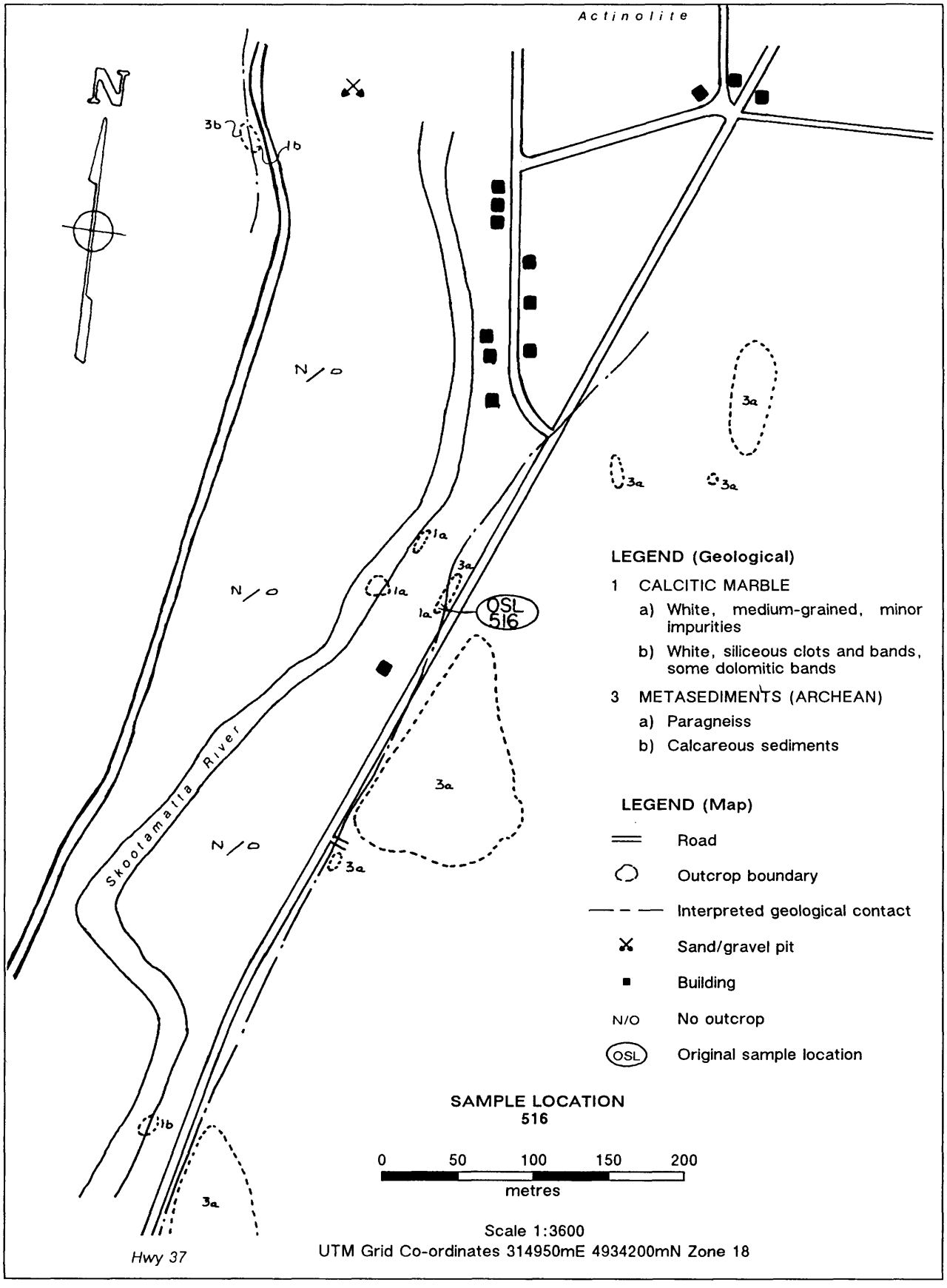


Figure 45. *Location Map, Sample 516.*

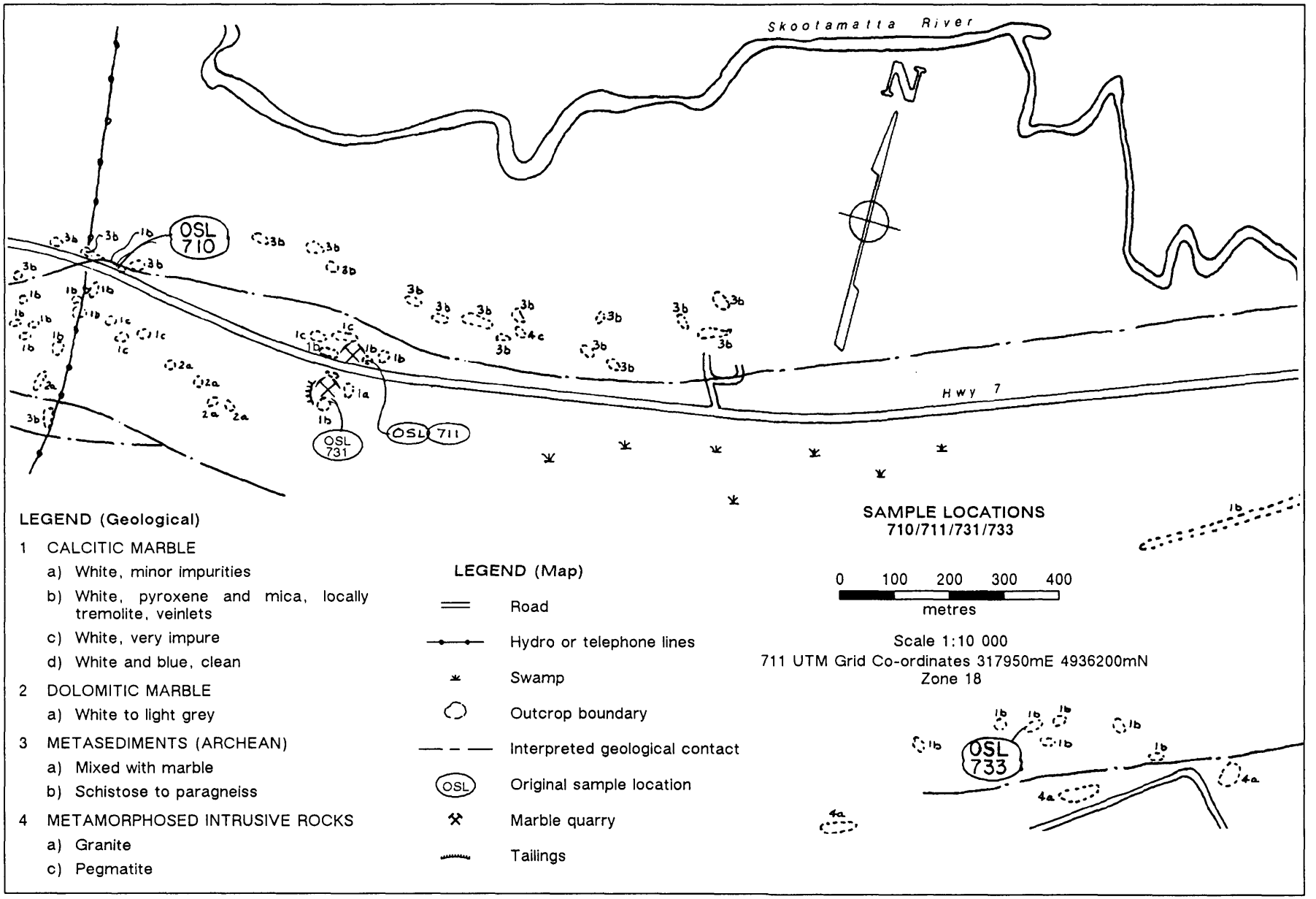


Figure 46. *Location Map, Samples 710, 711, 731, and 733.*

MAP AREA 566

Location

At the east bank of Malcolm Lake, Clarendon Township.

Map reference: NTS 31C/15; UTM 351400mE, 4975350mN, Zone 18.

Access

This sample was taken on the west side of Highway 506, at Malcolm Lake.

Regional Geology

This sample was taken from a northeast-trending marble belt which is located at Malcolm Lake. This belt ranges in width from 1 to 1.5 km, and is bounded on both sides by metavolcanics (Pauk 1982, 1987).

Local Geology

The marble in this area is white to grey with minor graphite, phlogopite, quartz, and plagioclase as accessory minerals. The detailed map area (Figure 47) covers a zone of grey laminated marble which contains inclusions of calc-silicate material and conformable interbeds of metasediments.

Previous Geological Work

Clarendon Township has been mapped by Smith (1958), Hewitt (1964a), and Pauk (1982, 1987).

Chemistry

Most of the samples taken from this marble belt (samples 566 to 580 and 661 to 664) contain relatively high contents of Al_2O_3 and SiO_2. Dolomitic marble samples from this belt also contain high amounts of impurities. Trace and metallic element contents are at or below background levels for marble.

Potential

Marble in the sample area is relatively impure, with high SiO_2 and Al_2O_3 contents. It is unlikely that this material could be used as an industrial filler, although it is very possible that other areas within this belt are less impure.

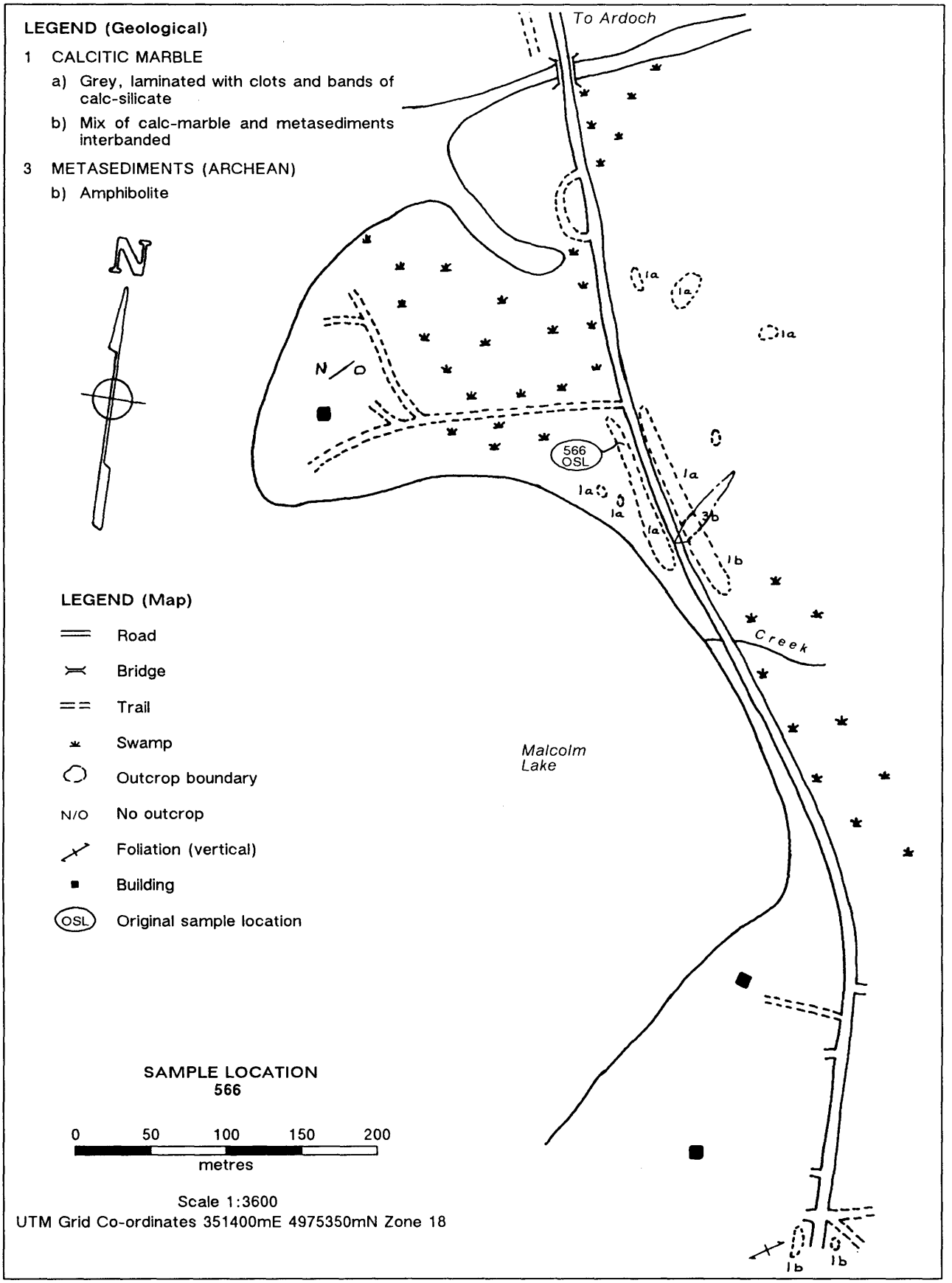


Figure 47. *Location Map, Sample 566.*

MAP AREAS 586 AND 588

Location

Oso Township.

Map reference: NTS 31C/10.

586—UTM 366300mE, 4956300mN, Zone 18.

588—UTM 367000mE, 4953900mN, Zone 18.

Access

586—On Highway 38, 3 km south of Sharbot Lake, Concession I, Lot 9.

588—On Highway 38, halfway down St. Georges Lake, Concession I, Lot 5.

Regional Geology

These samples were taken from small marble units contained within metamorphosed granitic intrusive rocks. The marbles are generally coarse grained and white, with minor disseminated graphite.

Local Geology

586—Marble occurrences in the detailed map area consist of several small marble zones which tend to be discontinuous (Figure 48). The purest marble is white and contains minor serpentine and phlogopite. There are also small units of coarse-grained white marble containing clots of quartz and feldspar. Orange marble is found near the contacts with metamorphosed intrusive rocks, and is usually associated with a high serpentine content (several percent).

588—This sample was taken from a marble belt running parallel to St. Georges Lake (Figure 49). The marble is bounded to the east by metamorphosed intrusive rocks of anorthositic to dioritic composition. The marble is predominantly white, with a medium to coarse grain size. Much of the marble contains disseminated phlogopite and graphite. The more impure marbles contain up to 0.5 m diameter clots of serpentine-rich material, which lends an orange hue to the marble.

Previous Geological Work

Oso Township has been mapped by Harding (1951) and Hewitt (1964a).

Chemistry

Marble composition varies from calcitic to dolomitic, and the silica contents of the different marble zones (samples 586 to 589, 701, 702, and 720, range from less than 1 percent to greater than 10 percent. The dominant marble type is calcitic marble, with up to 8 percent MgO and low SiO_2. Trace and metallic element contents are low throughout the area. The one channel sample from this map area, sample 588z, yields 5 percent SiO_2 with a low reflectivity (59 percent) due to the impurities.

Potential

The relatively large percentage of silicate minerals and other impurities makes this marble an unlikely source for filler material. It is possible that other marble zones contained within the metamorphosed intrusive rocks have lower impurity contents, and if so, the whiteness of the marble would be ideal.

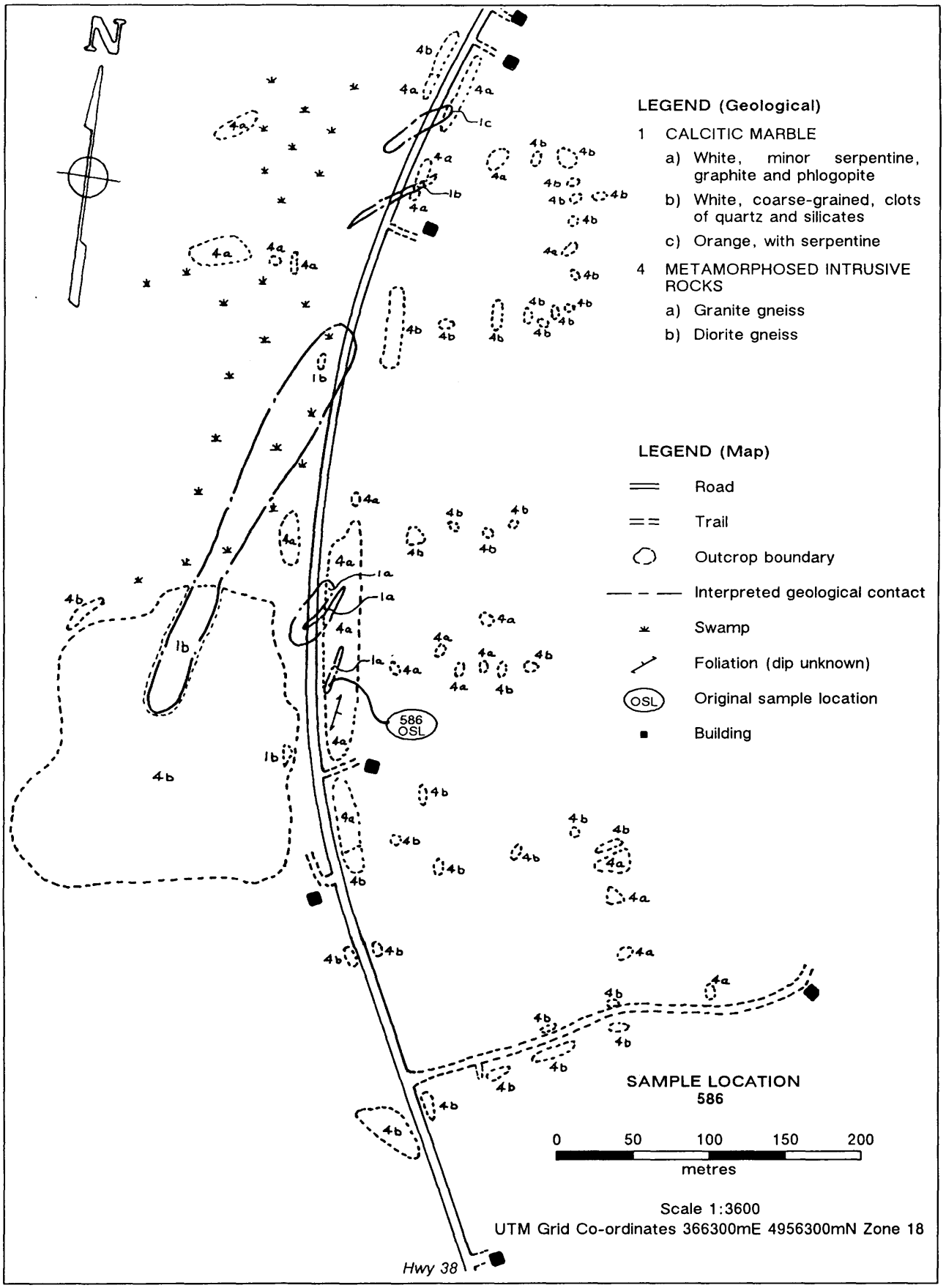


Figure 48. *Location Map, Sample 586.*

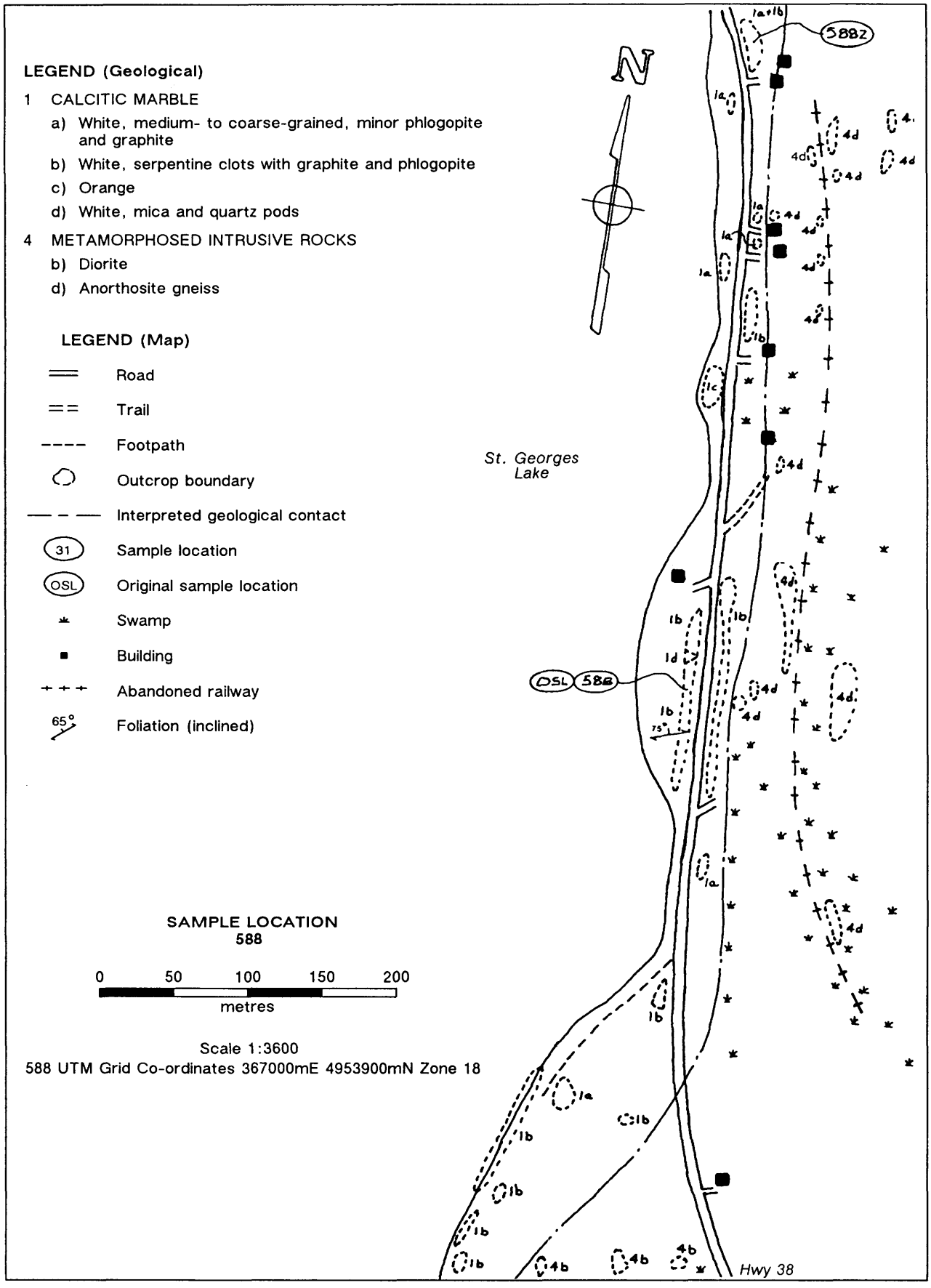


Figure 49. *Location Map, Sample 588.*

MAP AREAS 689 AND 692

Location

Both samples are within the same marble belt on the west side of the Mountain Grove Intrusion, Olden Township.

Map reference: NTS 31C/10.

689—UTM 356200mE, 4952550mN, Zone 18.

692—UTM 355600mE, 4950800mN, Zone 18.

Access

689—On a paved road, 4 km south of Mountain Grove, Concession III, Lot 6.

692—On a gravel road running west from the paved road, Concession III, Lot 6.

Regional Geology

This marble belt is in contact with the Mountain Grove Intrusion to the north, east, and south. The original texture and grain size of the marble has been modified by this dioritic intrusion, as exemplified for example by the trend of the foliation, which is parallel to the diorite-marble contact. The marble belt is flanked to the west and southwest by a narrow (200 m) metasedimentary unit and by mafic metavolcanics. One small finger of the McLean Pluton extends into the south-central portion of the marble belt.

Local Geology

689—The detailed map area consists almost entirely of white to light grey calcitic marble (Figure 50). The light grey colour is largely due to the presence of fine-grained graphite, which is concentrated in narrow bands parallel to the foliation. Dolomitic marble clots within the calcitic marble are recognized by a mottled texture, caused by the resistance of dolomite to weathering. These clots are often boudined parallel to the local foliation. Most of the marble is fine to medium grained, with only minor graphite and phlogopite as impurities. There is a narrow silicification zone at the intrusive contact, near the south end of the map area.

692—The marble belt narrows to only a few metres until it is finally truncated by the Mountain Grove Intrusion. The geology of this area consists of white to light grey calcitic marble with minor graphite and phlogopite, intruded and crosscut by metamorphosed granitic intrusions (Figure 51). The intrusive contact is partially silicified in places, but with only a few metres of alteration. There are also several narrow discontinuous schist units throughout this area.

Previous Geological Work

Olden Township has been mapped by Harding (1951), Hewitt (1964a), and Wolff (1982b).

Chemistry

There are four samples (samples 689 to 692) within a few hundred metres of the contact of the marble with the Mountain Grove Intrusion that have greater than 52 percent CaO and less than 1 percent SiO_2. All of the samples contain very low trace and metallic element contents.

Channel sampling within the two areas indicates that the SiO_2 content is variable across the zone. In map area 689, SiO_2 contents range from 1 percent to over 6 percent, while CaO contents are high (greater than 52 percent) throughout. Reflectivity is also variable, ranging from 44 to 77 percent.

Potential

The main part of the marble zone is made up of clean white to light grey marble, and warrants further investigation. There is minor graphite and phlogopite in the marble; however, this becomes less abundant in some bands.

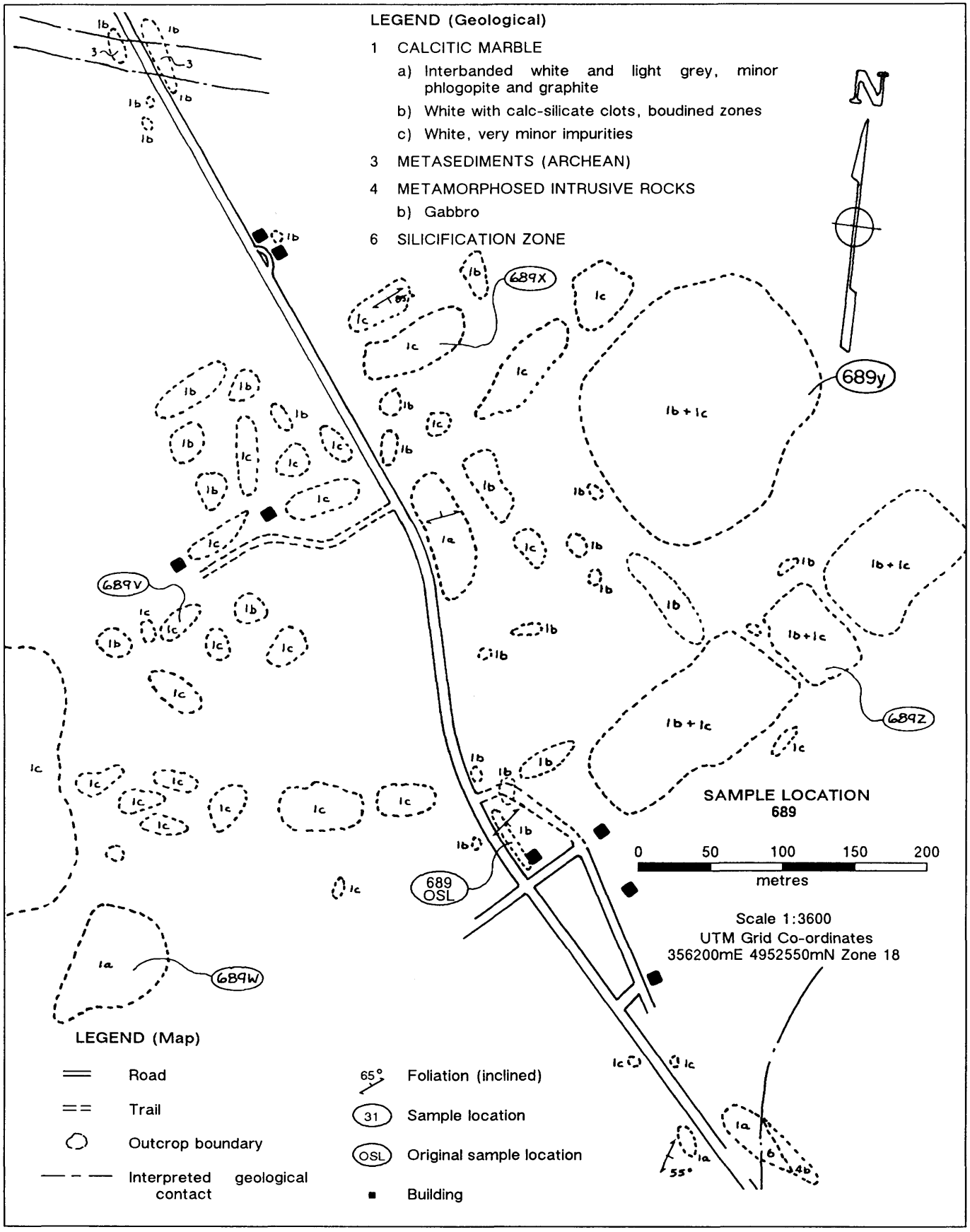


Figure 50. *Location Map, Sample 689.*

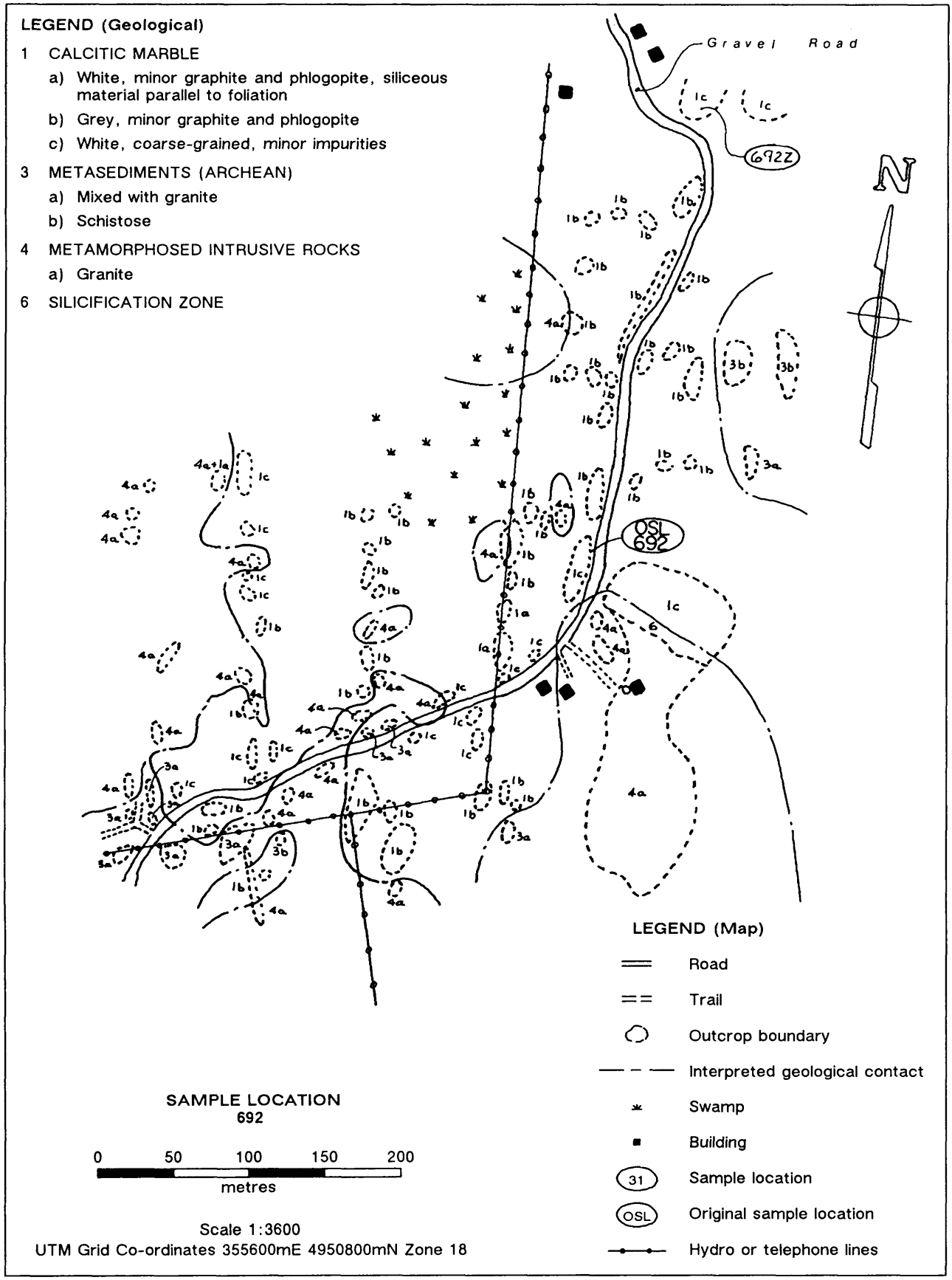


Figure 51. *Location Map, Sample 692.*

MAP AREAS 697, 698, AND 699

Location

All samples are from the northeast end of Long Lake, Olden Township.

Map reference: NTS 31C/10.

697—UTM 359700mE, 4949750mN, Zone 18.

698—UTM 362000mE, 4949300mN, Zone 18.

699—UTM 361600mE, 4949800mN, Zone 18.

Access

697—This is the former Long Lake Zinc Mine, Concession V, Lot 2.

698—On the main paved road from Mountain Grove, Concession VI, Lot 1.

699—On the main paved road from Mountain Grove, Concession VII, Lot 1.

Regional Geology

All of these samples are from small marble units surrounded by granitic and dioritic intrusive rocks. These marble units are remnants of a much larger marble belt which was intruded by a granitic/dioritic intrusion.

Local Geology

697—The marble unit from which this sample was taken occurs as an inlier within the Mountain Grove Intrusion (Figure 52). The marble is white, massive, and is medium to coarse grained with only minor phlogopite and black sphalerite. The marble unit is 150 to 200 m in surface width and approximately 650 m long.

698—The marble unit from which this sample was taken is in an intrusive unit adjacent to the Mountain Grove Intrusion. The marble unit strikes north-northeast with a maximum width of 50 m and a length of 400 m (Figure 53). There is also a thin parallel marble band about 100 m east of this main unit, which is only a few metres wide. Marble is generally coarse grained and white, with minor graphite plus phlogopite. The marble is blue to light green in colour at the southern end.

699—This sample is from a very small marble unit (Figure 54) that occurs within the Mountain Grove Intrusion. There is no evidence that the chemical composition of the marble has changed from that of its premetamorphic precursor; however, there is a zonation to clean white coarse-grained marble near the intrusive contacts, which may have been the result of restricted hydrothermal circulation at the marble-intrusive rock boundary.

Previous Geological Work

Olden Township has been mapped by Harding (1951), Hewitt (1964a), and Wolff (1982b).

Chemistry

Most of the marble samples (samples 697 to 700) taken from units within the Mountain Grove Intrusion and surrounding McLean Pluton are quite pure with less than 1 percent SiO_2. It is likely that the intrusion of the Mountain Grove Intrusion caused the recrystallization of the marble, thereby eliminating minor impurities from the crystal structure and leaving a purer end member marble.

Trace element and base metal contents are anomalous only at the Long Lake Zinc Mine (map area 697).

Potential

Marble in the area is white with a coarse grain size, indicating that the quality is good for industrial filler material. However, the marble zones examined are small in size, and a nearby larger zone would need to be discovered in order that the area be considered as having economic potential.

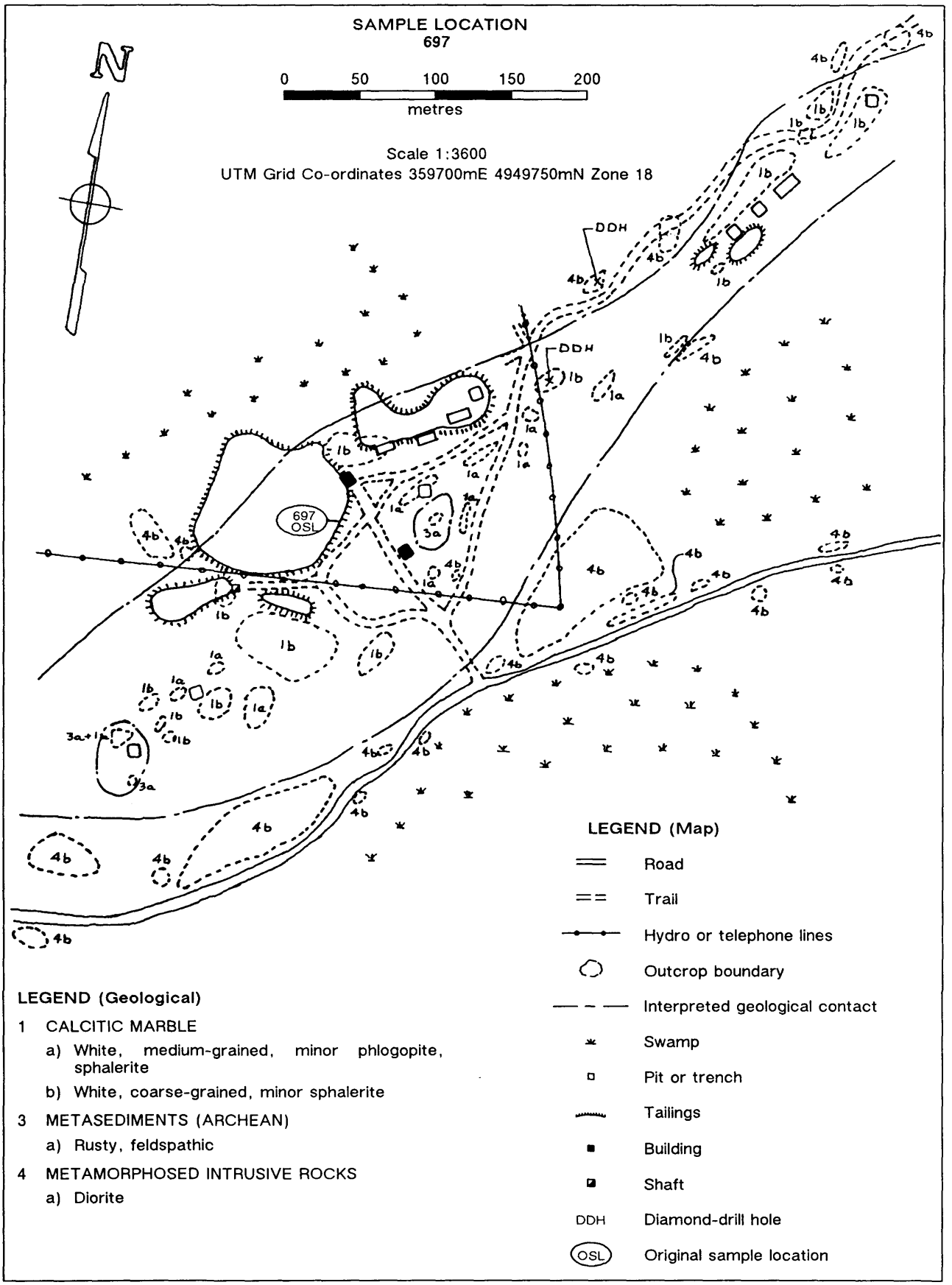


Figure 52. *Location Map, Sample 697.*

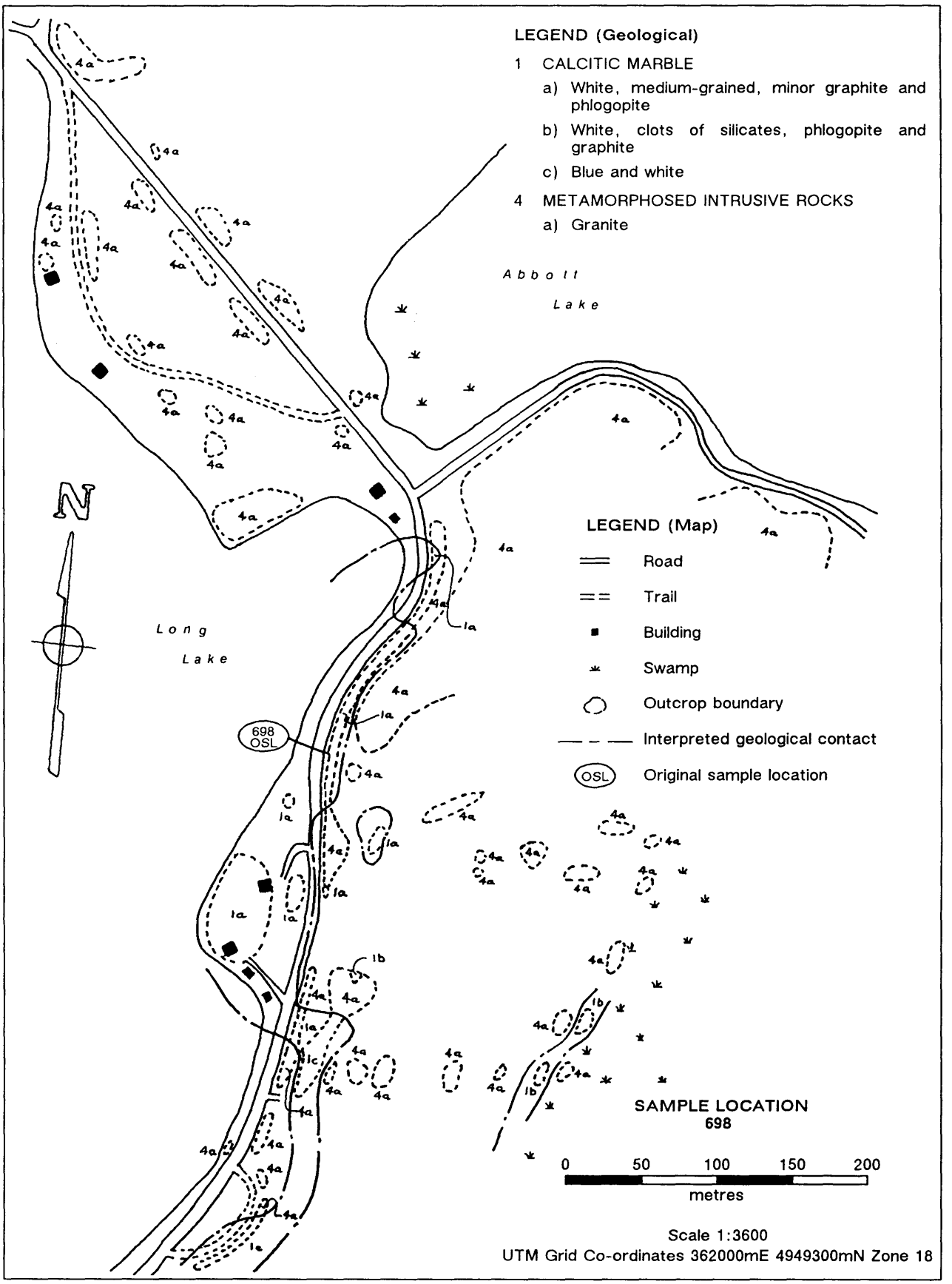
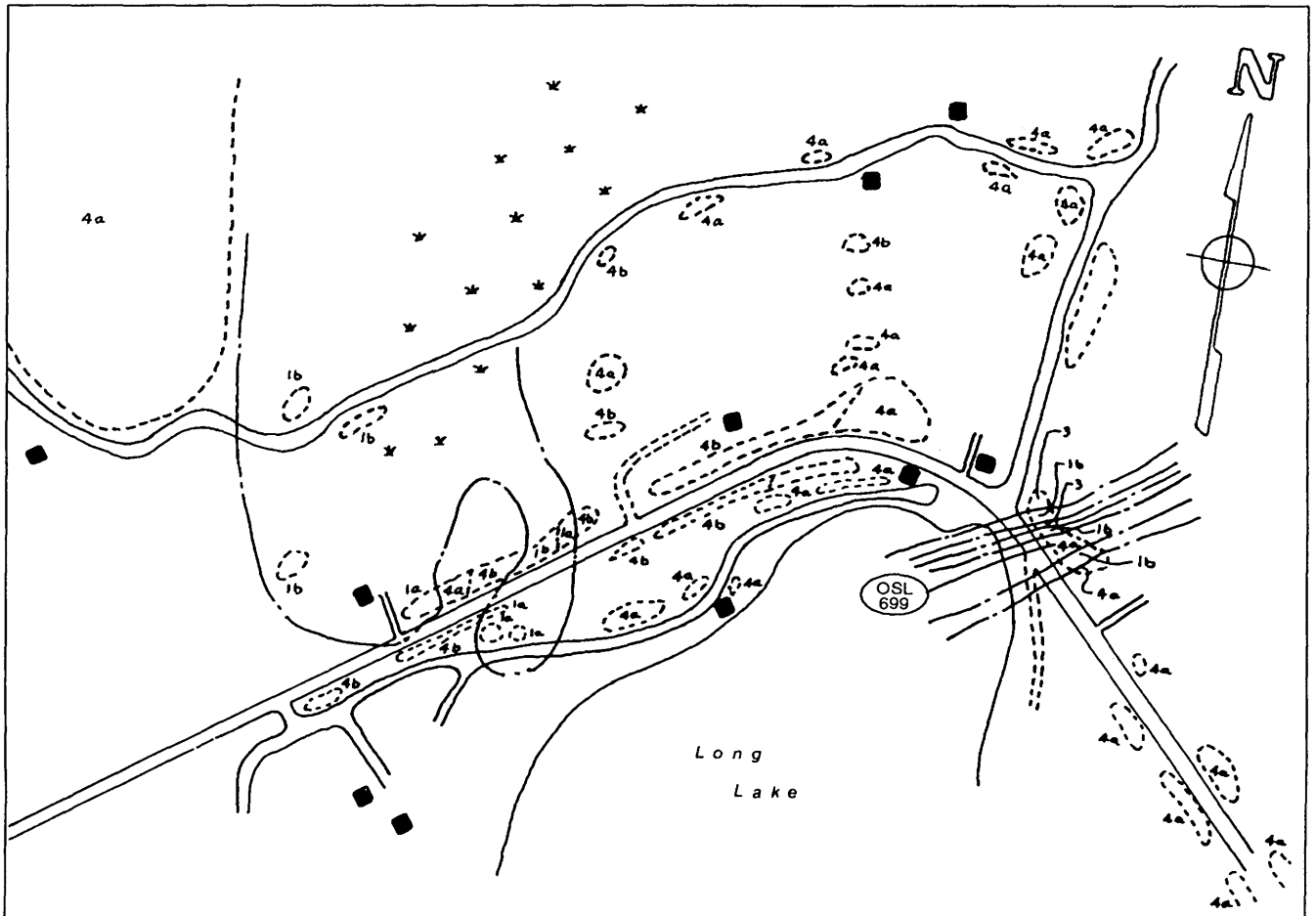


Figure 53. *Location Map, Sample 698.*



LEGEND (Geological)

1 CALCITIC MARBLE
- a) White, minor impurities, euhedral pyrite
- b) White, relatively dirty

3 METASEDIMENTS (ARCHEAN)

4 METAMORPHOSED INTRUSIVE ROCKS
- a) Granite
- b) Diorite

LEGEND (Map)

- Road
- Trail
- Outcrop boundary
- Interpreted geological contact
- Building
- Swamp
- OSL — Original sample location

SAMPLE LOCATION
699

0 50 100 150 200
metres

Scale 1:3600
UTM Grid Co-ordinates 361600mE 4949800mN Zone 18

Figure 54. *Location Map, Sample 699.*

MAP AREAS 746 AND 1912

Location

746—South-central Dalhousie Township.

1912—Northwest Bathurst Township.

Map reference: NTS 31C/16.

746—UTM 385470mE, 4979190mN, Zone 18.

1912—UTM 381870mE, 4972570mN, Zone 18.

Access

746—3 to 4 km west of Playfairville on County Road 12, Concession V, Lot 1.

1912—11 km southwest of Fallbrooke on a gravel road, Concession XI, Lot 4.

Regional Geology

These samples are part of a wide northwest-trending metasedimentary-marble belt which is several kilometres in length. Flanking the marble portion of the belt is metasedimentary hornblende amphibolite paragneiss and paragneiss-marble migmatite. The marble is white to light grey and is dolomitic to calcitic in composition.

Local Geology

746—Marble in this detailed map area is predominantly light and dark grey laminated, with lesser amounts of dolomitic and white calcitic marble (Figure 55). Fine-grained grey marble in the area has minor visible impurities while coarser grained white marble contains visible pyrite, biotite, and minor amphibole. Outcrop is sparse in this area making it impossible to determine by examination of the surface geology alone the extent of white versus grey marble.

1912—Marble in this area (Figure 56) can be subdivided into two categories: a) white with minor impurities; and b) grey with minor impurities. Only one marble outcrop that would be considered impure occurs in the map area. White marble has a grain size of up to 3 mm and contains only minor amounts of graphite, pyrite, and phlogopite. Grey marble has a grain size of up to 8 mm and contains minor graphite and muscovite. Minor occurrences of dolomitic marble appear throughout the belt but cannot be traced over any distance. The marble unit terminates to the east with a paragneiss unit, which in turn is bounded by a metamorphosed granitic intrusion to the east.

Previous Geological Work

Dalhousie Township has been mapped by Smith (1958) and Hewitt (1964a). Bathurst Township has been mapped by Wilson and Dugas (1961) and Hewitt (1964a).

Chemistry

Marble samples taken throughout the entire belt (samples 725 to 806 and 1910 to 1928) are dominantly of calcitic composition, with less than 2 percent SiO_2. MgO content ranges from 6 to 8 percent. The marble of this belt contains low trace and metallic element contents.

One channel sample from each of these map areas has a low SiO_2 content and a high CaO content. Reflectivity is in the range of 61 to 68 percent.

Potential

Map area 746 tends to be dominated by fine-grained grey marble of high purity but low brightness. Map area 1912 has both white and light grey marble with only minor impurities occurring over a large area. It is possible that further investigation across strike would show an even larger amount of white marble. Up to 20 percent tremolite occurs in some outcrops and may be of interest as a by-product of marble extraction.

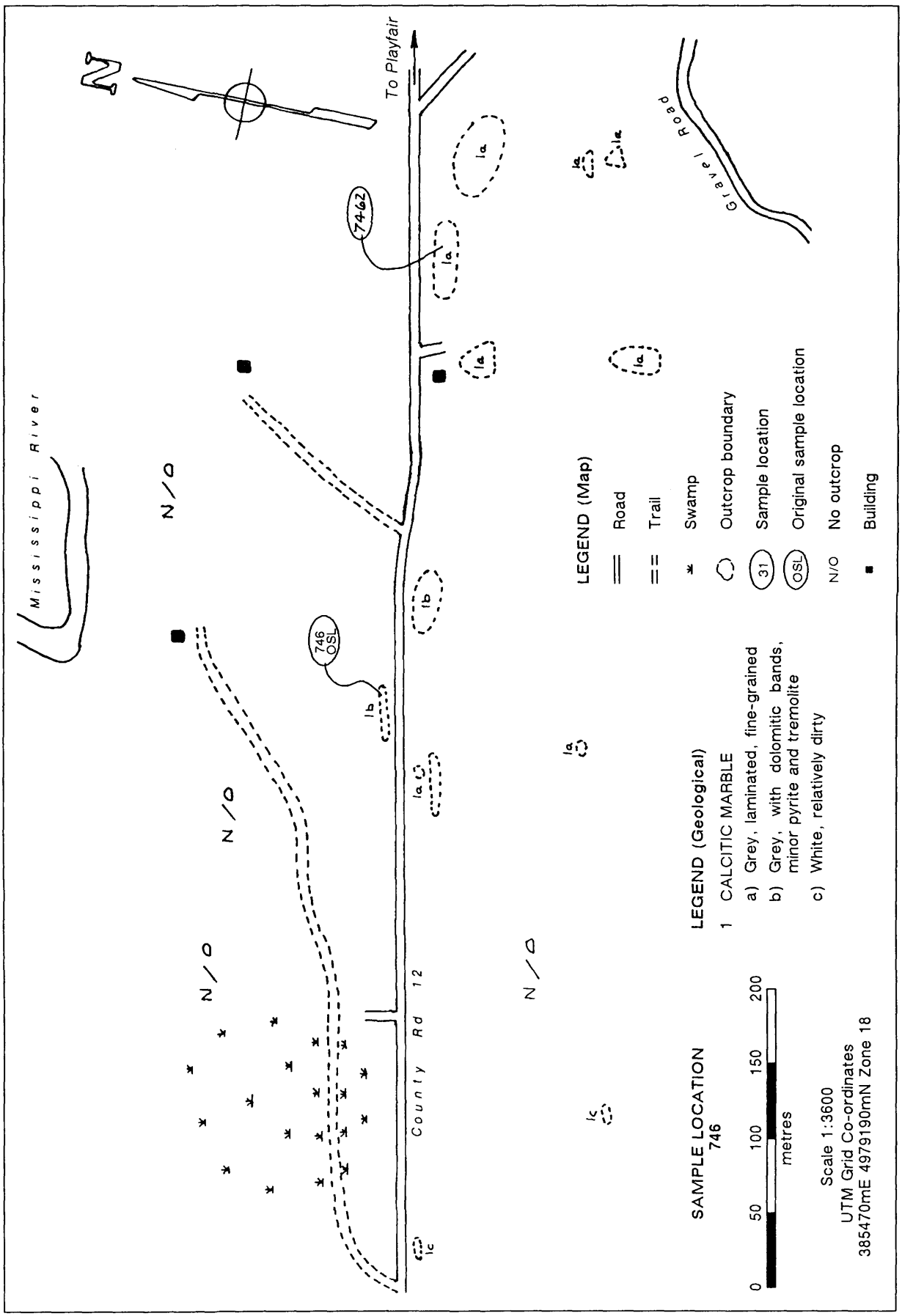


Figure 55. *Location Map, Sample 746.*

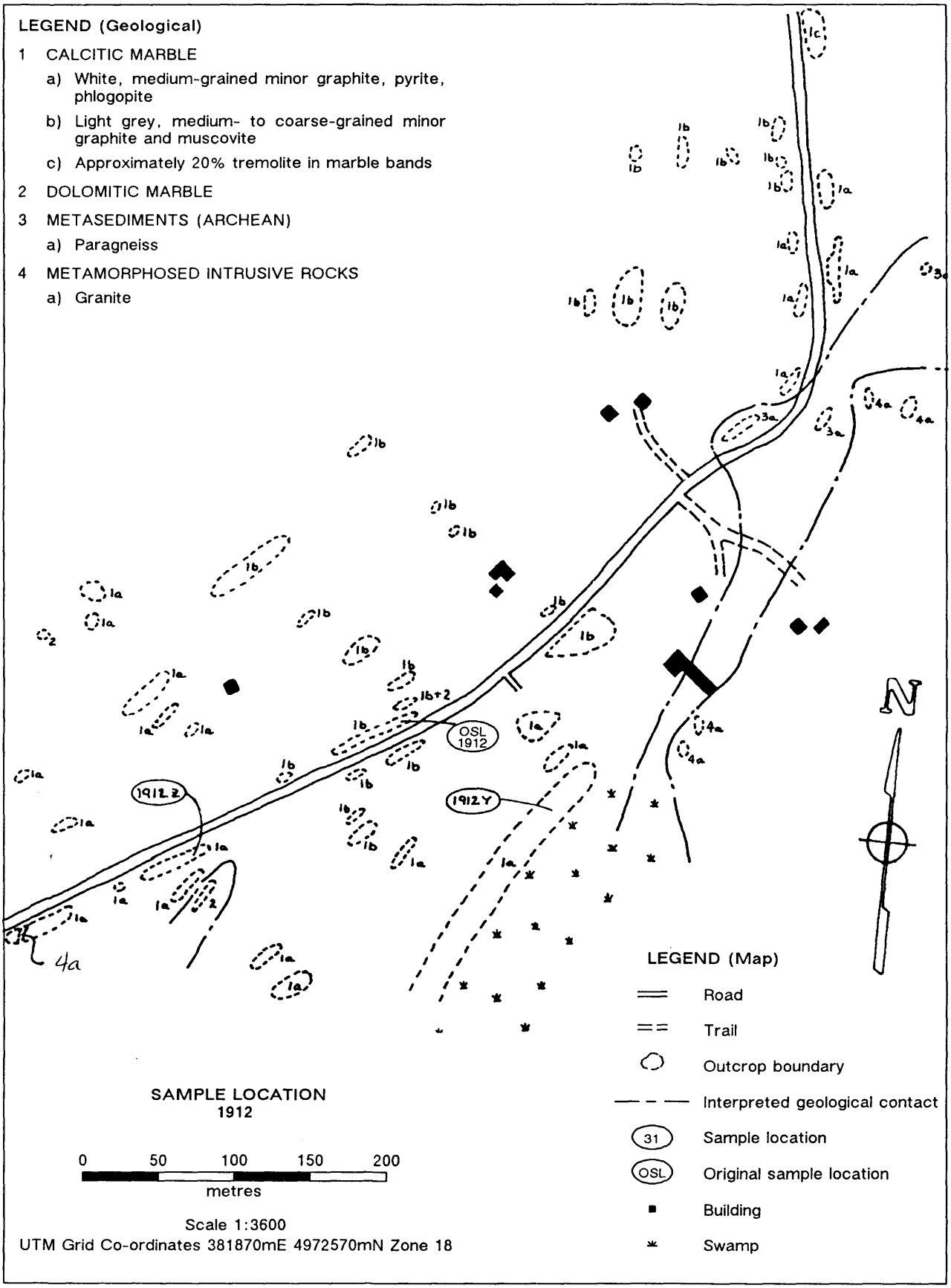


Figure 56. *Location Map, Sample 1912.*

MAP AREA 770

Location

Southern end of Dalhousie Township.

Map reference: NTS 31C/15; UTM 379200mE, 4981900mN, Zone 18.

Access

Approximately 1 km east of Dalhousie Lake, 2 km north of McDonalds Corners, on a northwest-trending road, Concession VII, Lot 11.

Regional Geology

This sample was taken from a wide marble belt which trends northeast across the southeastern corner of Dalhousie Township into Lanark and Ramsay Townships. This belt has numerous narrow metasedimentary, amphibolitic, and metaigneous units running parallel to, and contained within it. The belt is several kilometres wide in some areas and up to 20 km in length. It is flanked to the southeast by amphibolite where it is partially overlain by Ordovician sedimentary rocks, and to the northwest by metadiorite and amphibolite.

Local Geology

Detailed mapping indicates that the area is underlain predominantly by white calcitic marble (Figure 57). Occurring within the marble are several narrow granitic dikes, most trending in a north-northeast direction. Only minor impurities occur within the marble, with the exception of a couple of narrow tremolite-rich zones.

Previous Geological Work

Dalhousie Township has been mapped by Smith (1958) and Hewitt (1964a).

Chemistry

Samples from this portion of the marble belt (samples 725 to 806) have generally low SiO_2 contents. CaO contents are in the range of 51 to 54 weight percent, with MgO contents up to 5 weight percent. Trace and metallic element contents are low throughout the area.

Potential

The whiteness and chemistry of this marble makes it attractive as a filler material, although the presence of granitic veins is unfavourable. Exploration outside of the immediate sample location area might locate larger volumes of high-purity white calcitic marble.

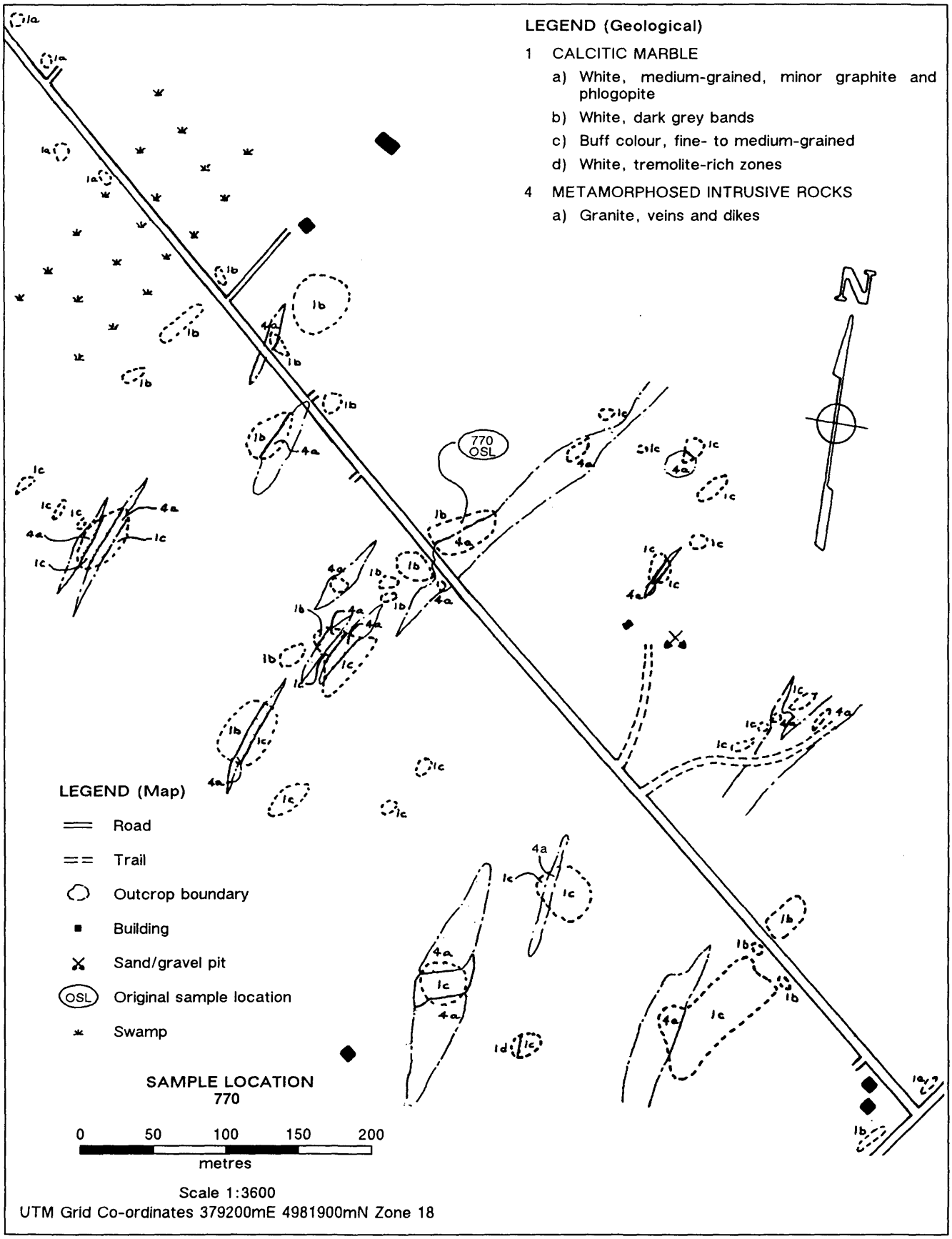


Figure 57. *Location Map, Sample 770.*

MAP AREA 818a/819

Location

Both samples were taken from the northeast corner of Denbigh Township

Map reference: NTS 31F/3.

818a—UTM 325080mE, 5009350mN, Zone 18.

819—UTM 324990mE, 5008500mN, Zone 18.

Access

Samples were taken along Highway 41 approximately 19 km north-northeast of Denbigh.

818a—Concession XIV, Lot 4.

819—Concession XV, Lot 4.

Regional Geology

The marble sampled in this area is part of the Dungannon Formation (Evans 1964), which is composed of two parallel units which are conformable to the surrounding metasediments. The metasedimentary unit flanking the marble on both sides is part of the Hermon Formation (Evans 1964) and interfingers with the marble. The area has been intruded by granitic rocks to the east of the sample location and also to the northwest by a separate granitic body. Marble in the belt is largely calcitic in composition, and contains minor graphite.

Local Geology

In the detailed map area (Figure 58), the calcitic marble is white with minor graphite and silicate minerals. There are a number of discontinuous dolomitic units, usually enclosed within the calcitic marble. There are also several hornblende amphibolite units conformable to the marble units, and one unit of garnetiferous mica schist near the south end of the map area. Some of the marble outcrops in the area also contain quartz and calc-silicate clots, which are randomly distributed throughout.

Previous Geological Work

Denbigh Township has been mapped by Evans (1964).

Chemistry

Most of the regional samples taken from this area (samples 816 to 820) are highly calcitic with CaO greater than 54 percent and SiO_2 less than 2 percent. Dolomitic marble occurs in the northern end of the belt, and also has a low SiO_2 content. Trace element and base metal contents are low throughout the marble belt.

Channel sampling in the map area indicates a nonuniform marble chemistry with SiO_2 ranging from 2 to 9 percent. Chemically, 818z is a dolomitic marble with CaO/MgO$\approx$1.4. Reflectivity for both samples is high (74 to 76 percent).

Potential

The colour and fine grain size of the marble gives it good potential as filler-type material. However, the belt should be explored along strike in order to delineate those favourable areas where the dolomitic and metasedimentary units are absent.

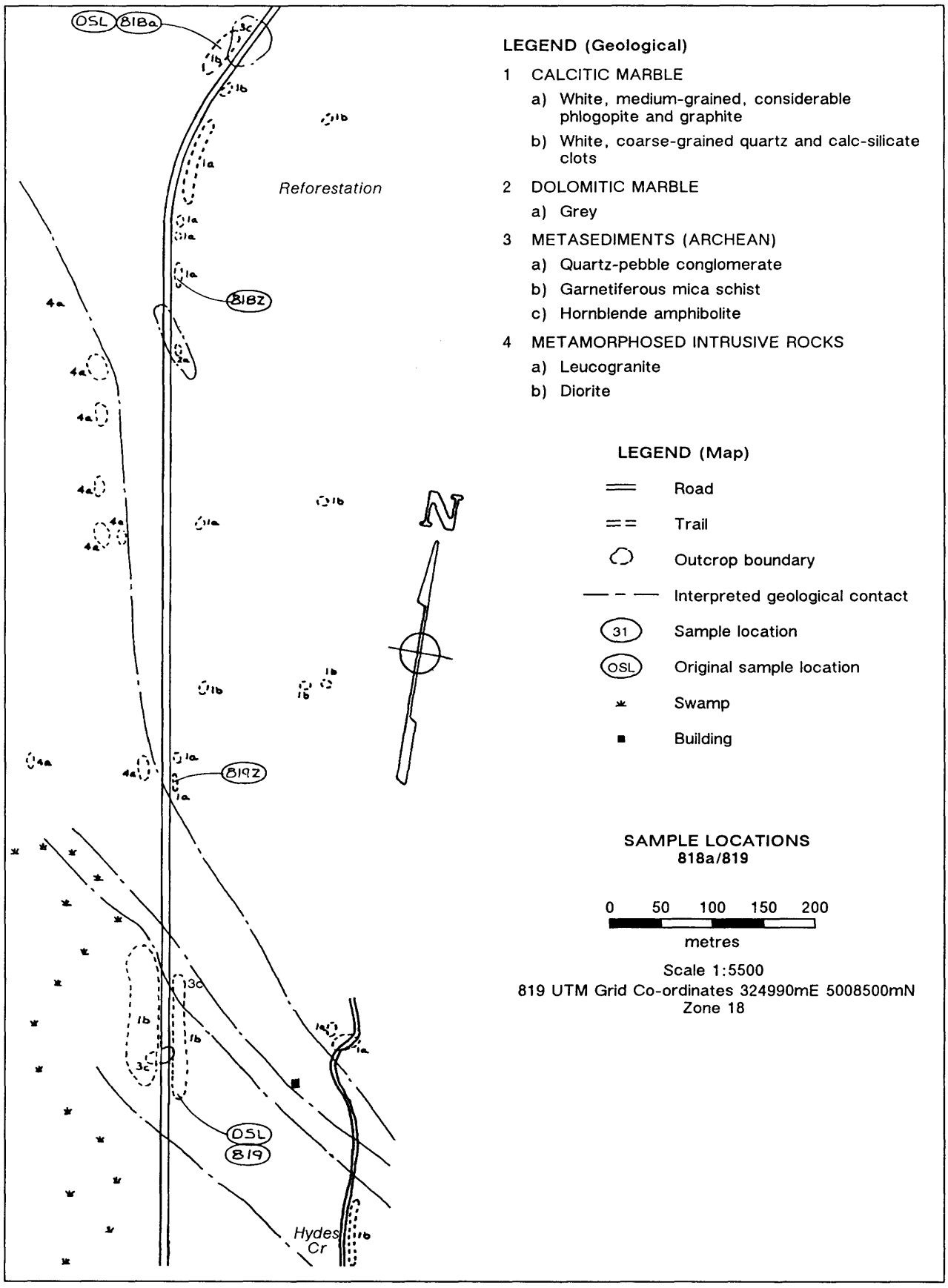


Figure 58. *Location Map, Samples 818a and 819.*

MAP AREA 1005

Location

Southeast corner of Storrington Township.

Map reference: NTS 31C/9; UTM 388750mE, 4914300mN, Zone 18.

Access

On a gravel road, 6 km west of Highway 15 at Ida Hill, Concession VII, Lot 6.

Regional Geology

This sample was taken from a relatively small marble unit, approximately 1 km wide by 3 km long. The unit is bounded to the southeast by leucocratic intrusive rocks and to the northwest by paragneiss. Several small paragneiss units occur within the marble unit.

Local Geology

Outcrops are scarce in the detailed map area (Figure 59), as much of the area is low lying geographically. The marble is very coarse grained, containing minor graphite and phlogopite as disseminated flakes. In some outcrops, areas of white silicate and calc-silicate material occur within the marble unit. These may be rafted blocks of a nearby unit or calc-silicate pods which formed *in situ*.

Previous Geological Work

Storrington Township has been mapped by Hewitt (1964a), and in part by Wynne-Edwards (1962, 1967).

Chemistry

Most of the samples from this belt (samples 1004 to 1021) have high SiO_2 contents and CaO/MgO ratios in the range of 8 to 40. The Sr contents are high in most of the samples from this belt, while other trace and metallic element contents are low.

Potential

Marble from this small unit contains considerable amounts of silicate material as clots and lenses. It is unlikely that the marble from this area could be used as filler-type material; however, it is possible that cleaner marbles do exist within the main belt to the north.

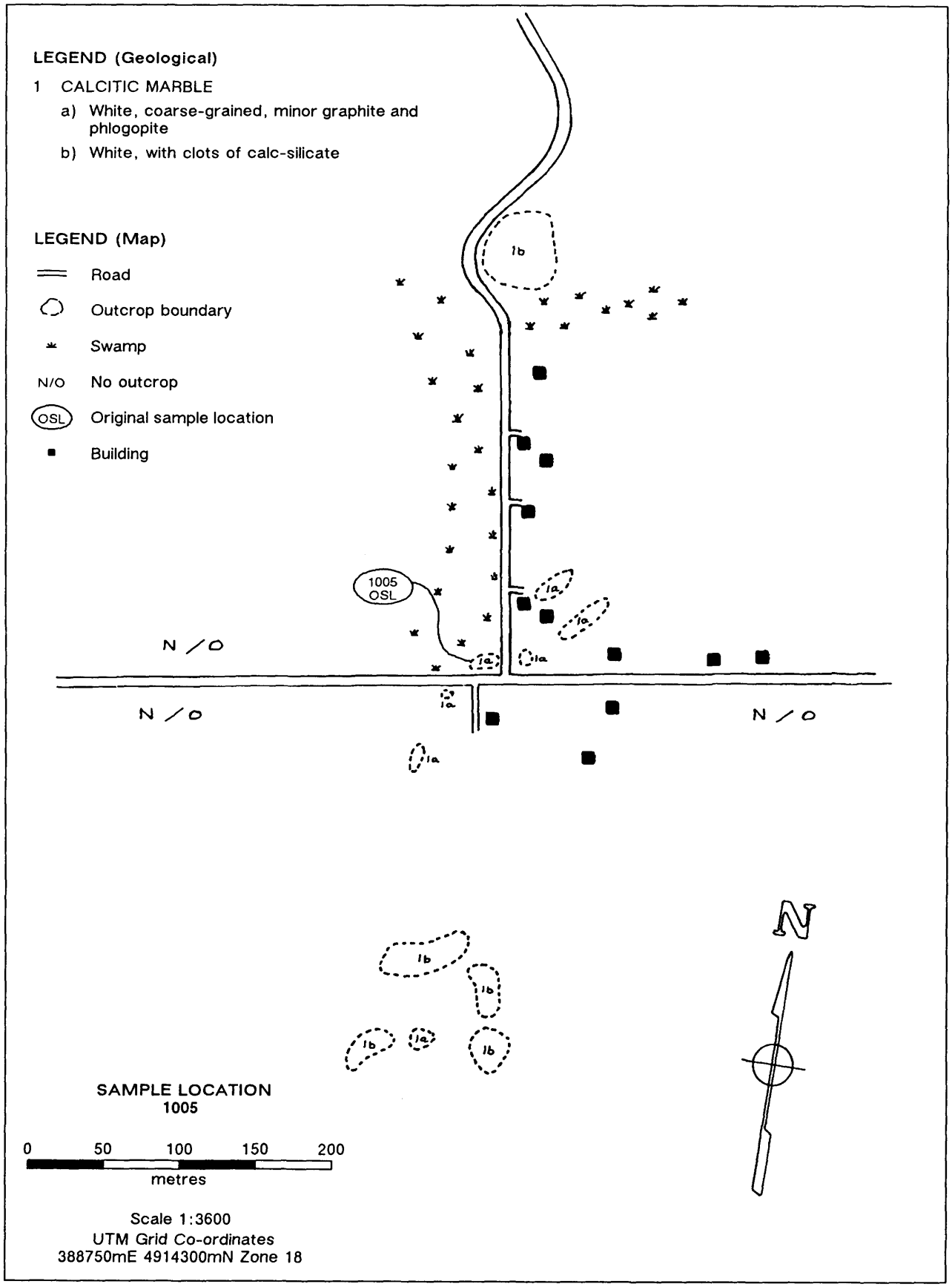


Figure 59. *Location Map, Sample 1005.*

MAP AREAS 1038 AND 1069

Location

1038—Northwestern Rear of Leeds and Lansdowne Township.

1069—Southwestern Rear of Leeds and Lansdowne Township.

Map reference:

1038—NTS 31C/8; UTM 404800mE, 4922100mN, Zone 18.

1069—NTS 31C/9; UTM 407100mE, 4929050mN, Zone 18.

Access

1038—On Highway 32, 1.5 km north of South Lake.

1069—On the road through Lyndhurst, 300 m northwest of Grippen Lake.

Regional Geology

These samples were taken from the central portion of a wide northeast-trending metasedimentary-marble belt which underlies most of Rear of Leeds and Lansdowne Township. Within this wide belt are several igneous intrusions, some of which are conformable to the structure of the belt.

Local Geology

1038—Marble in this map area is white and coarse grained with varying amounts of graphite, pyrite, and phlogopite (Figure 60). Within the marble are small metasedimentary layers which are a few centimetres to a metre in thickness. Siliceous metasedimentary layers divide the marble into several narrow bands. In the southern portion of the map area is a Paleozoic conglomerate and red sandstone cap rock.

1069—This sample was taken from the southern end of the marble belt where it tends to widen to several hundred metres from the approximately 100 m width in the northern part of the belt. Within the map area (Figure 61) are several rusty schist (metasedimentary) units only a few centimetres in width and usually only 1 m in length. The marble belt is flanked to the east and west by syenitic intrusive rocks which grade locally to a more dioritic composition. Marble is coarse grained, white, and very friable. Impurities include graphite, phlogopite, and small clots of silicate material.

Previous Geological Work

Rear of Leeds and Lansdowne Township has been mapped by Hewitt (1964a) and in part by Wynne-Edwards (1962, 1967).

Chemistry

Most of the samples taken in this belt (1011 to 1021, 1038 to 1040, 1069, and 1118 to 1132) have high SiO_2 and low CaO contents. Two of the samples have high Sr contents, while the rest have low trace and metallic element contents.

One channel sample taken in area 1038 has a greater than 5 percent SiO_2 content, with a reflectivity of only 56 percent.

Potential

In the immediate areas surrounding the sample locations, the high impurity content in the marble makes it unfavourable as a filler material. It is possible that other areas in the marble belt have lower impurity contents, and an emphasis should be put on locating these areas.

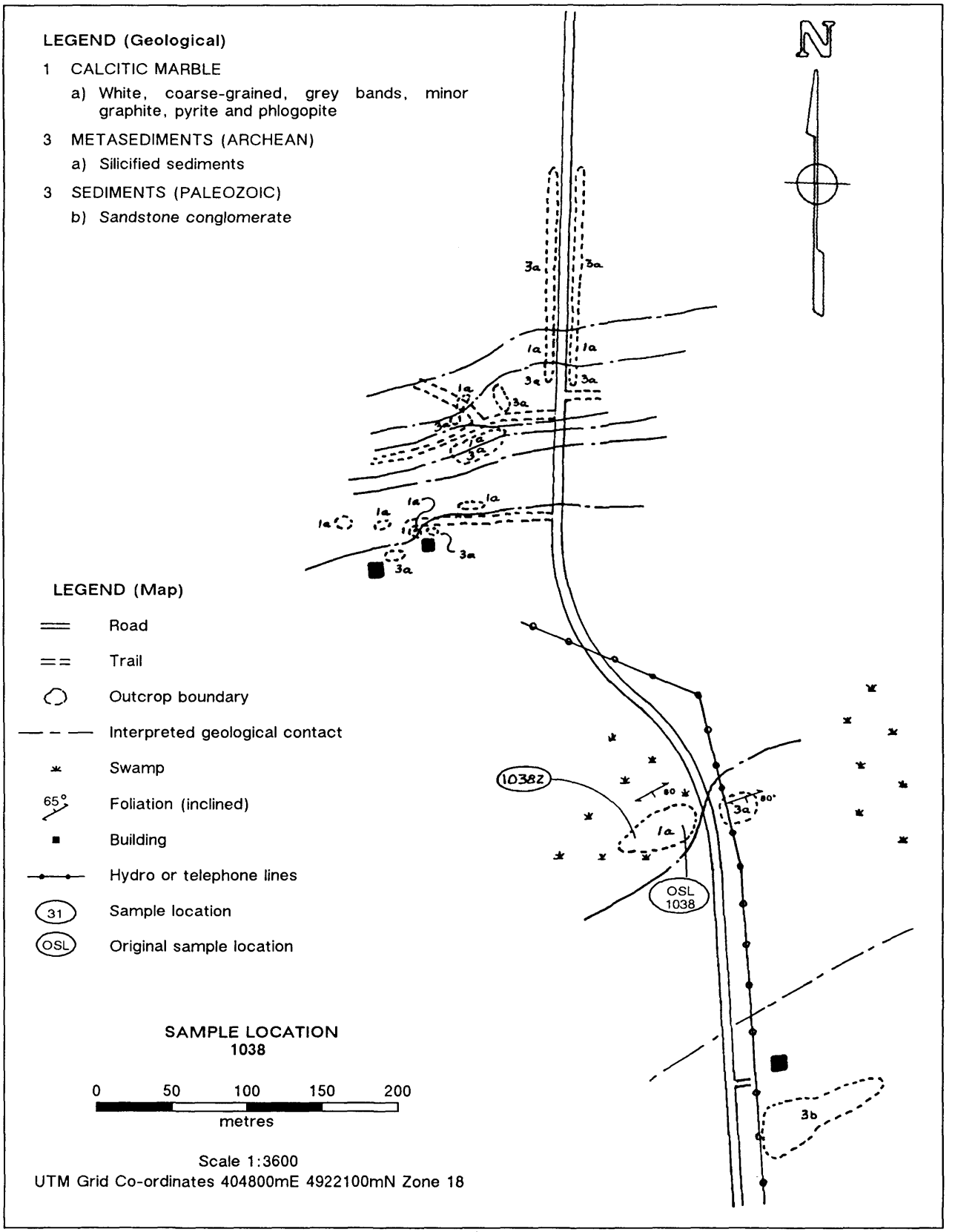


Figure 60. *Location Map, Sample 1038.*

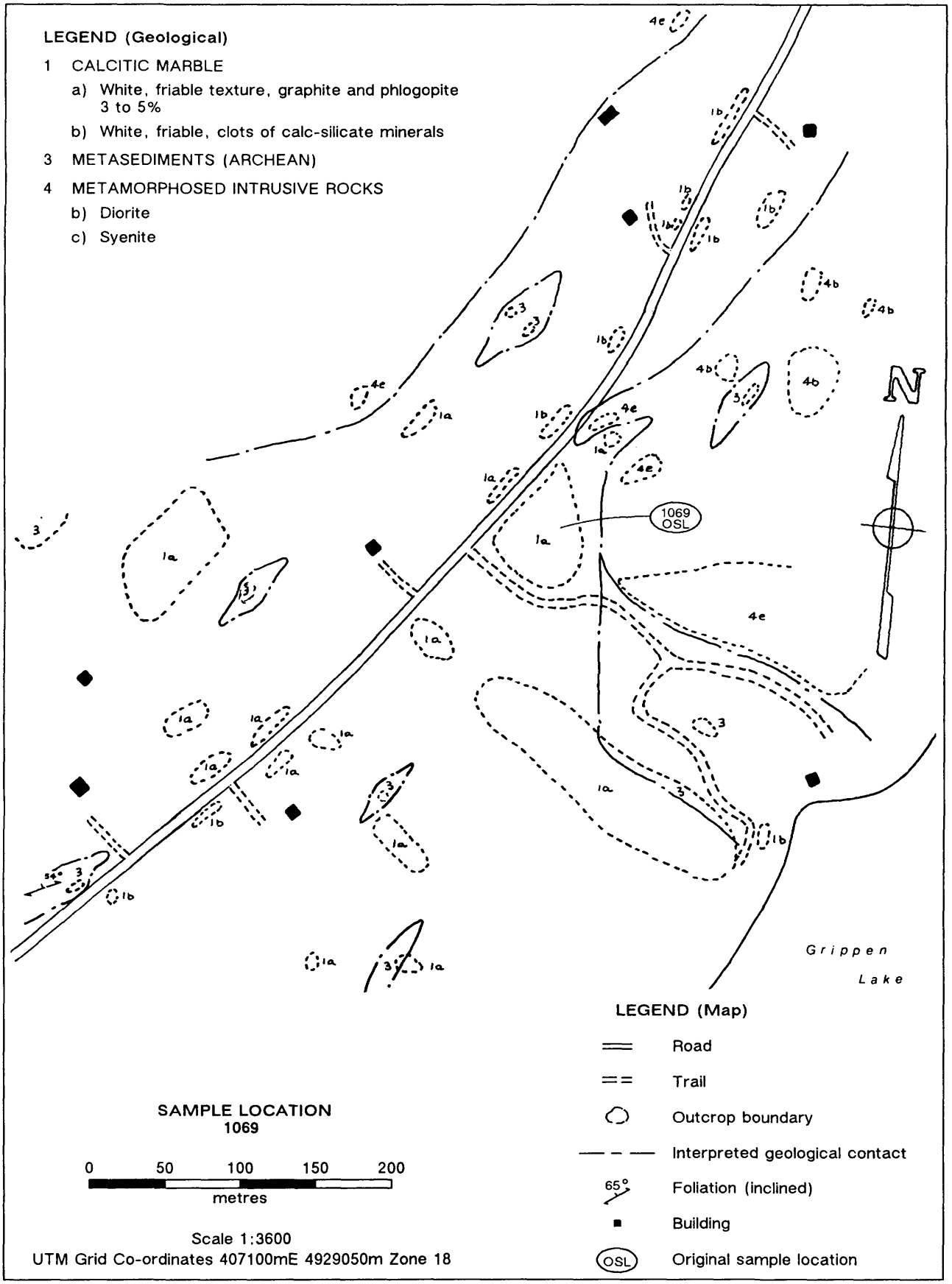


Figure 61. *Location Map, Sample 1069.*

MAP AREAS 1055 AND 1079

Location

South-central part of Rear of Leeds and Lansdowne Township.

Map reference:

1055—NTS 31C/8; UTM 416100mE, 4926700mN, Zone 18.

1079—NTS 31C/9; UTM 416700mE, 4928850mN, Zone 18.

Access

1055—On the main road running through Lansdowne, 500 m west of Mud Bay, Concession VII, Lot 14.

1079—The south shore of Killingbeck Lake, a few hundred metres west of Charleston Lake Provincial Park, Concession VII, Lot 14.

Regional Geology

These samples were taken from a relatively narrow marble belt trending north-northeast through Charleston Lake (40 km south of Perth). Map area 1079 is flanked by paragneiss on both sides, and map area 1055 is almost completely surrounded by coarsely crystalline leucocratic granite.

Local Geology

1055—This detailed map area (Figure 62) has relatively coarse-grained white and buff-coloured marble. The eastern section of the map area is underlain by leucocratic granitic intrusive rocks. Much of the marble is relatively clean with only minor phlogopite, muscovite, and graphite. Orange marble in the area is associated with narrow serpentine zones.

1079—This map area (Figure 63) has a relatively small amount of marble, which is flanked by a narrow band of felsic igneous material (felsite) and by garnetiferous gneiss. The marble is coarse grained, white, and contains minor graphite and phlogopite. Some of the calcitic marble contains minor amounts of dolomitic marble. The felsite dikes are discordant with the marble and paragneiss.

Previous Geological Work

Rear of Leeds and Lansdowne Township has been mapped by Hewitt (1964a) and in part by Wynne-Edwards (1962, 1967).

Chemistry

SiO_2 content within this relatively small marble zone (samples 1054 to 1057 and 1079) ranges from 1 to nearly 10 percent, although most samples have only 3 to 4 weight percent. CaO content is near 50 percent while MgO is less than 4 percent. Trace and metallic element contents are low throughout, with the exception of sample 1054 (Appendix A) which has a high Sr content.

Channel sampling in the area indicates a uniform chemistry, with SiO_2 between 1 and 2 percent. Sample 1055z has a low (41 percent) CaO content. Reflectivity is between 60 and 62 percent, which is low for white marble.

Potential

The whiteness and low impurity content of the marble make it an attractive source of filler material. It should be noted that this area is an important tourist park region.

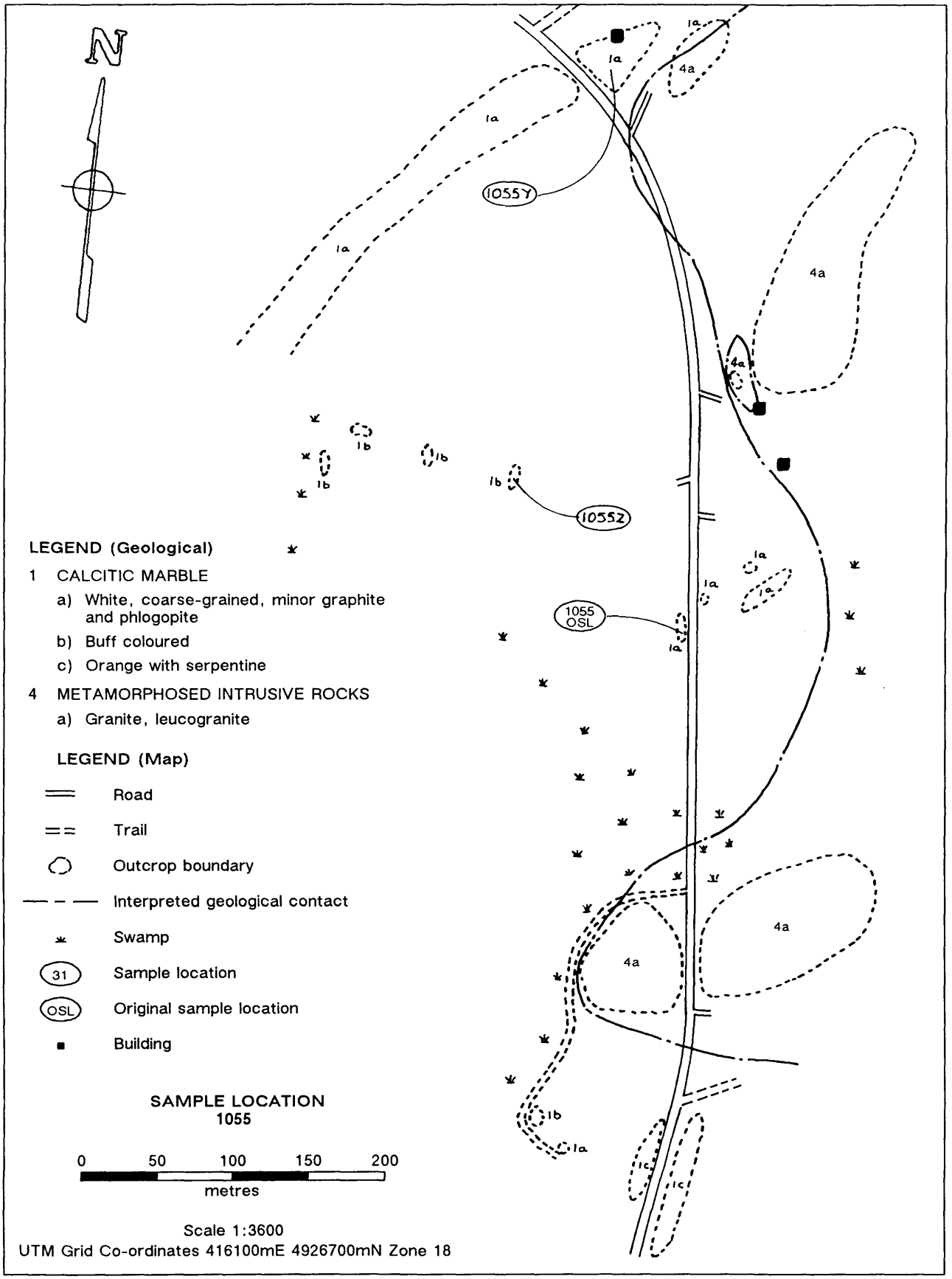


Figure 62. *Location Map, Sample 1055.*

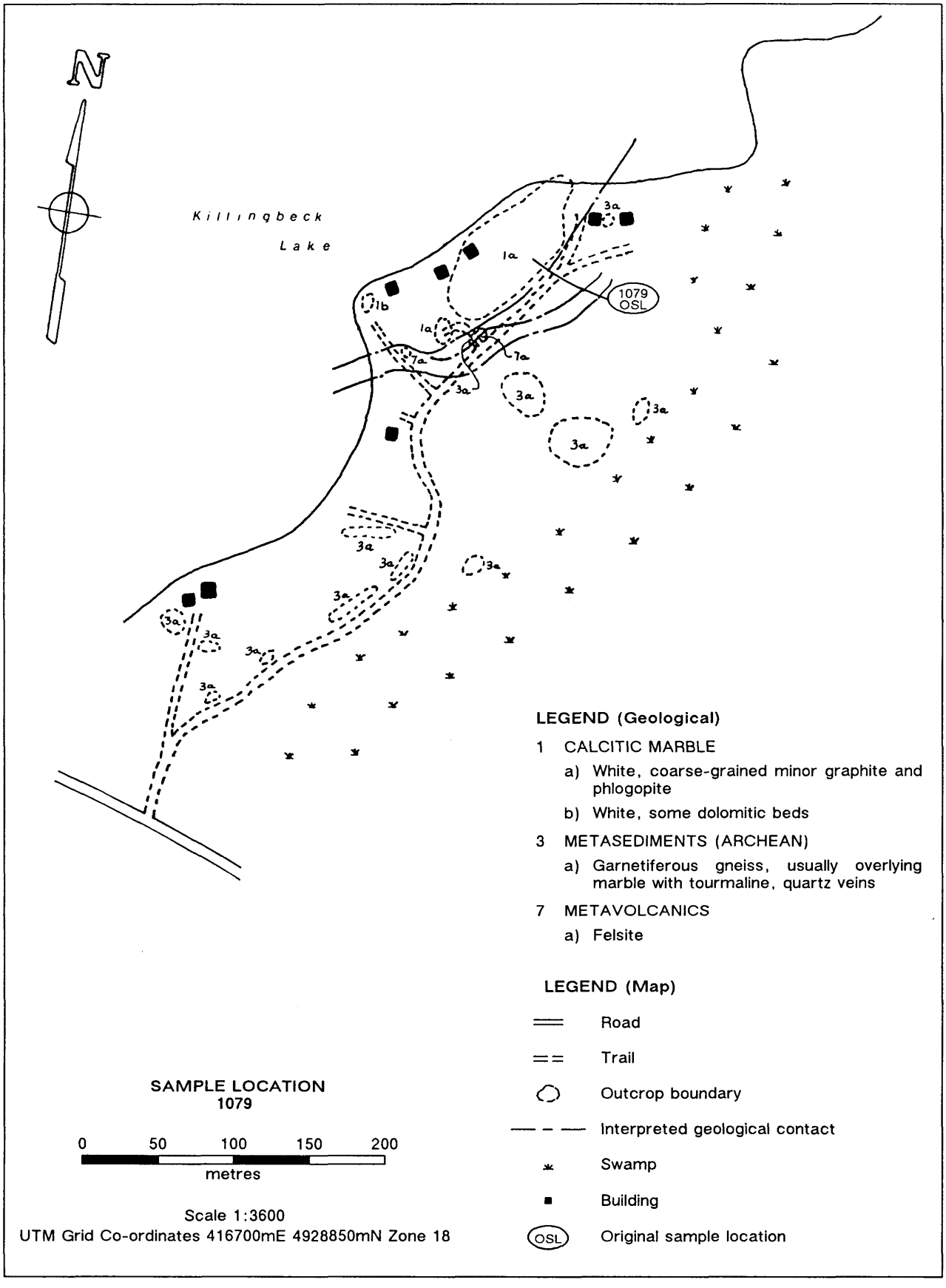


Figure 63. *Location Map, Sample 1079.*

MAP AREA 1076

Location

Rear of Leeds and Lansdowne Township.

Map reference: NTS 31C/9; UTM 411350mE, 4928350mN, Zone 18.

Access

5 km south of Lyndhurst on Leeds and Grenville Road 3, Concession VIII, Lot 2.

Regional Geology

Marble within this belt is generally coarse, white, and massive in texture. Within the belt are numerous small "white pegmatite" clots, and also larger white pegmatitic bodies of medium grain size (Wynne-Edwards 1962).

Local Geology

The detailed map area (Figure 64) indicates that several concordant igneous bodies occur within the marble unit. Marble is white and coarse grained with minor phlogopite and graphite. Clots of coarse-grained plagioclase (pegmatite), or "silicate segregations", occur in nearly all of the marble outcrops. Several of these segregations contain graphite and tourmaline as well as silicate minerals. Marble inclusions within the clots indicate that the segregations formed *in situ*.

Previous Geological Work

Rear of Leeds and Lansdowne Township has been mapped by Wynne-Edwards (1962, 1967) and Hewitt (1964a).

Chemistry

Marble samples in this belt (1048, 1049, 1076, 1078, and 1080) to have very high CaO contents and low MgO contents. CaO/MgO ranges from 1.4, which is the ratio for pure dolomite (and hence dolomitic marble), up to 120, indicating a highly calcitic marble. Almost all of the calcitic marble samples contain high Sr contents (greater than 1000 ppm), while the dolomitic marble samples have low Sr values (less than 400 ppm). All other metallic and trace element contents are very low.

Potential

The large amount of silicate material present in clots and pegmatitic bodies suggests that the marble in this area has a low potential for the development of fillers.

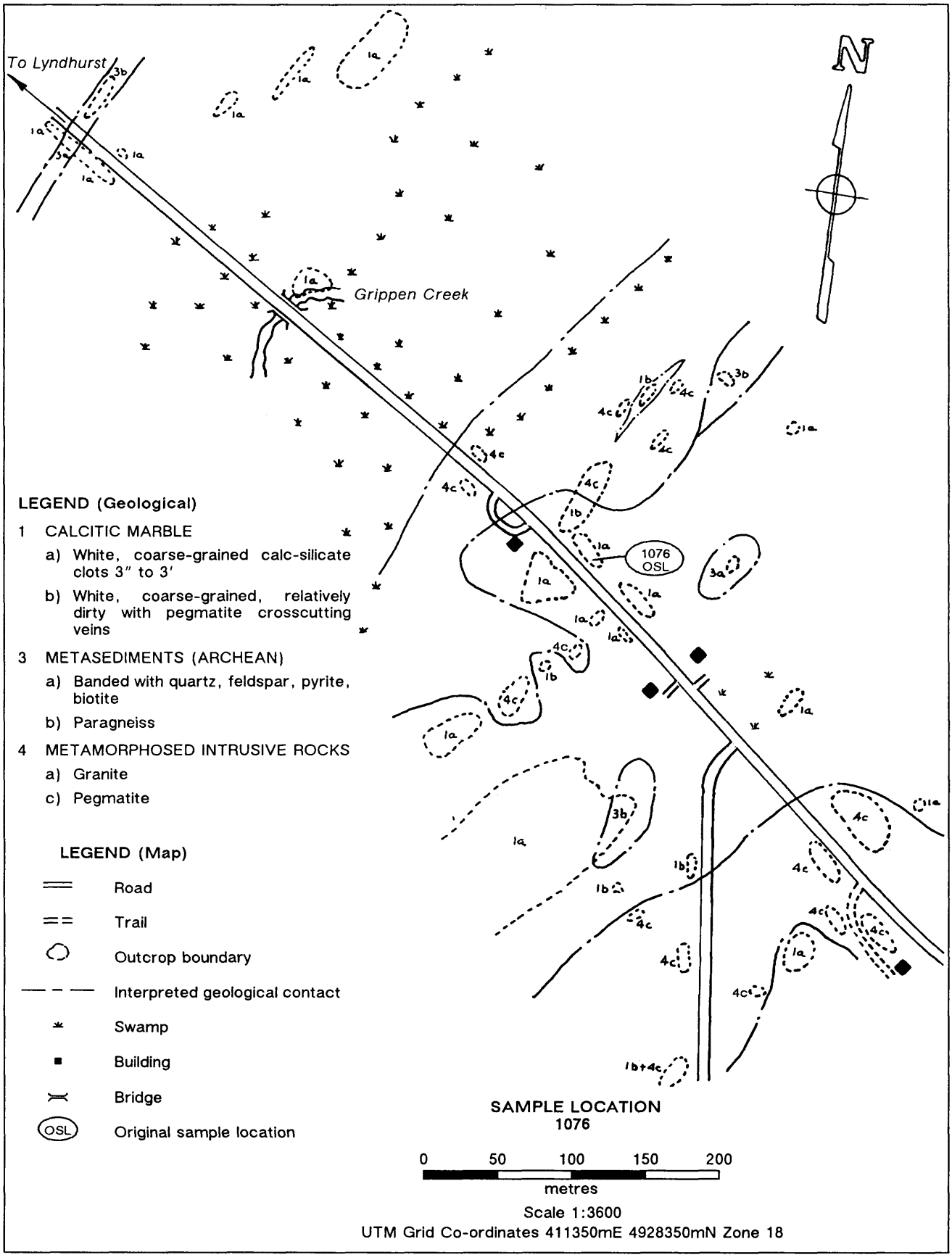


Figure 64. *Location Map, Sample 1076.*

MAP AREA 1082

Location

Rear of Leeds and Lansdowne Township.

Map reference: NTS 31C/9; UTM 412650mE, 4931150mN, Zone 18.

Access

A gravel road, 3 km southeast of Lyndhurst, Concession IX, Lot 6.

Regional Geology

This sample was taken from a large metasedimentary belt located west of Charleston Lake. The marble component of this belt was intruded by the Lyndhurst quartz monzonite intrusion. Marble is interbedded with metasediments and is intruded locally by leucocratic igneous rocks. These white igneous rocks are always associated with marbles in the Westport area (Wynne-Edwards 1967).

Local Geology

The sample taken from this location did not fit the original chemical limits of marble units chosen for mapping and detailed examination, but field examination of the area indicated that there was good-quality material present. There is a strong structural orientation of marble and metasediments in the map area indicating a strike of N30°E (Figure 65). Metasedimentary units are discontinous, as are silicate segregations. Marble is white and coarse grained, containing minor amounts of graphite and phlogopite. Silicate segregations occur from less than 1 cm to approximately 1 m in size, and appear to have formed within the marble rather than being rafted blocks of a nearby unit.

Previous Geological Work

Rear of Leeds and Lansdowne Township has been mapped by Wynne-Edwards (1962, 1967) and Hewitt (1964a).

Chemistry

Several of the samples in this belt (1070 to 1075, 1077, 1081 to 1085) have CaO/MgO ratios greater than 20. SiO_2 content varies across the belt, as does MgO content. Most samples have low trace and metallic element contents except for Sr, which is anomalously high (greater than 1000 ppm) in the calcitic marbles.

Potential

There appears to be several zones of high CaO/MgO ratios in the belt, but only zones containing few if any metasedimentary and silicate inclusions are of interest. More detailed mapping may reveal these zones.

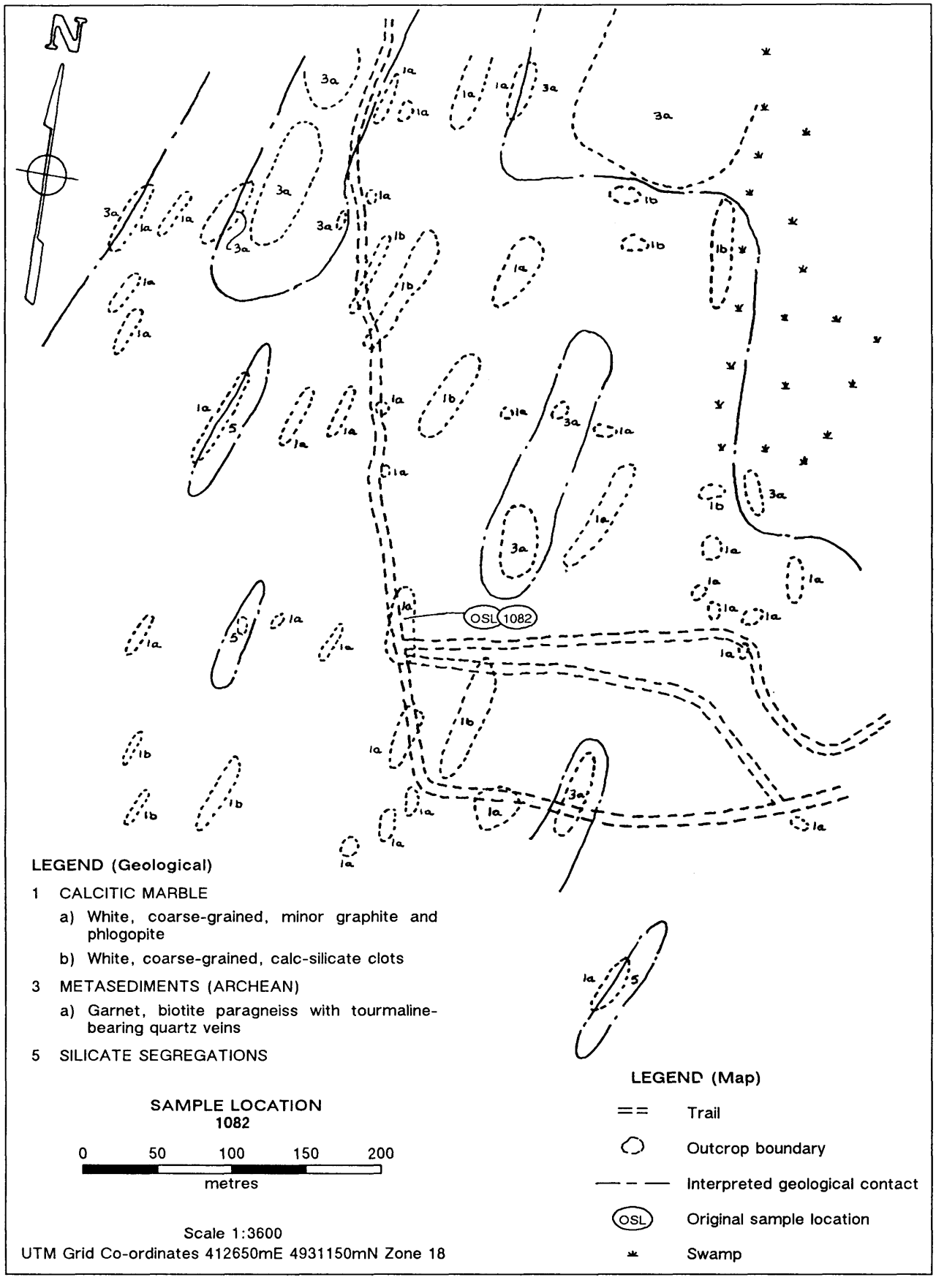


Figure 65. *Location Map, Sample 1082.*

MAP AREAS 1119 AND 1129

Location

1119—Northwest corner of South Crosby Township.

1129—Northwest corner of Storrington Township.

Map reference: NTS 31C/9.

1119—UTM 393100mE, 4938250mN, Zone 18.

1129—UTM 389000mE, 4929500mN, Zone 18.

Access

1119—2 km northwest of Chaffeys Locks at Indian Lake, Concession IX, Lot 21.

1129—On a gravel road, 9 km southwest of Chaffeys Locks, Concession XIII, Lot 10.

Regional Geology

This marble unit is part of a much wider metasedimentary belt trending northeast. The marble is flanked on both sides by quartz-feldspar gneiss and paragneiss. Within the marble is a unit of white intrusive rock, a common association which has been described at other localities. There are minor paragneiss units within the marble belt.

Local Geology

1119—The marble unit in this map area is approximately 100 m wide (Figure 66), with narrower units to the west of this main band. The northwest edge of this marble unit is bounded by white plagioclase-rich rocks (silicate segregations) which are exclusively associated with the marble zones. The southeastern edge of the marble belt is bounded by dioritic and gabbroic intrusive rocks, which are dark grey in colour with some minor white silicate pods. Marble is predominantly white with grey bands, and contains minor amounts of graphite and phlogopite.

1129—The marble zone is much wider in this map area (Figure 67) but has the same structure as that of map area 1119. There are no major metasedimentary units and only one small occurrence of white silicate material (unit 5) as a discontinuous pod. Marble is white with only minor phlogopite and graphite; siliceous clots also occur in some outcrops. Chlorite and muscovite also occur locally.

Previous Geological Work

South Crosby Township has been mapped by Wynne-Edwards (1962) and Hewitt (1964a). Storrington Township has been mapped by Hewitt (1964a) and by Wynne-Edwards (1962, 1967).

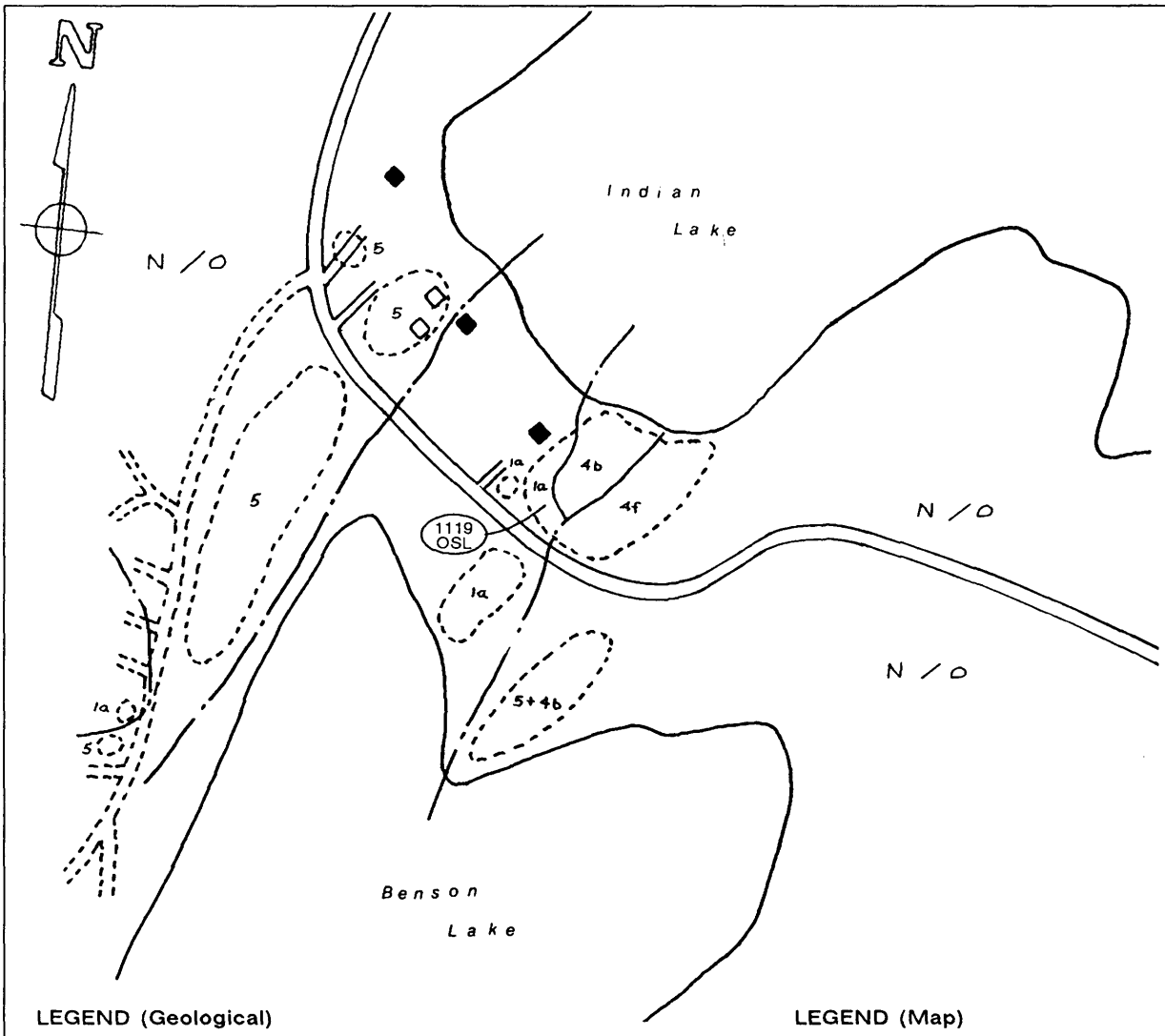
Chemistry

Most of the samples taken from this belt (samples 1115 to 1132) have high CaO contents and correspondingly low MgO contents. SiO_2 contents range from less than 1 percent to greater than 20 percent, but most samples have SiO_2 around 2 percent. Nearly all of the samples have very high Sr contents, but other trace and metallic element contents are low.

Channel sampling in the area indicates that the bedrock consists of an impure calcitic marble, with CaO/MgO ratios between 4 and 10. SiO_2 composes up to 10 percent of the total sample. Reflectivity is also low (56 to 60 percent).

Potential

The high CaO/MgO ratio and overall fairly low SiO_2 content in the marble make this an area of interest. Marble is generally white, and it may be possible to find zones where silicate clots do not exist.



LEGEND (Geological)

1 CALCITIC MARBLE
- a) White, medium-grained with grey bands, minor graphite and phlogopite

4 METAMORPHOSED INTRUSIVE ROCKS
- b) Diorite
- f) Gabbro

5 SILICATE SEGREGATIONS

LEGEND (Map)

═══	Road
═ ═	Trail
⬭	Outcrop boundary
— — —	Interpreted geological contact
N/O	No outcrop
(OSL)	Original sample location
■	Building
▫	Test pit

SAMPLE LOCATION
1119

0 25 50 75 100
metres

Scale 1:2400
UTM Grid Co-ordinates 393100mE 4938250mN Zone 18

Figure 66. *Location Map, Sample 1119.*

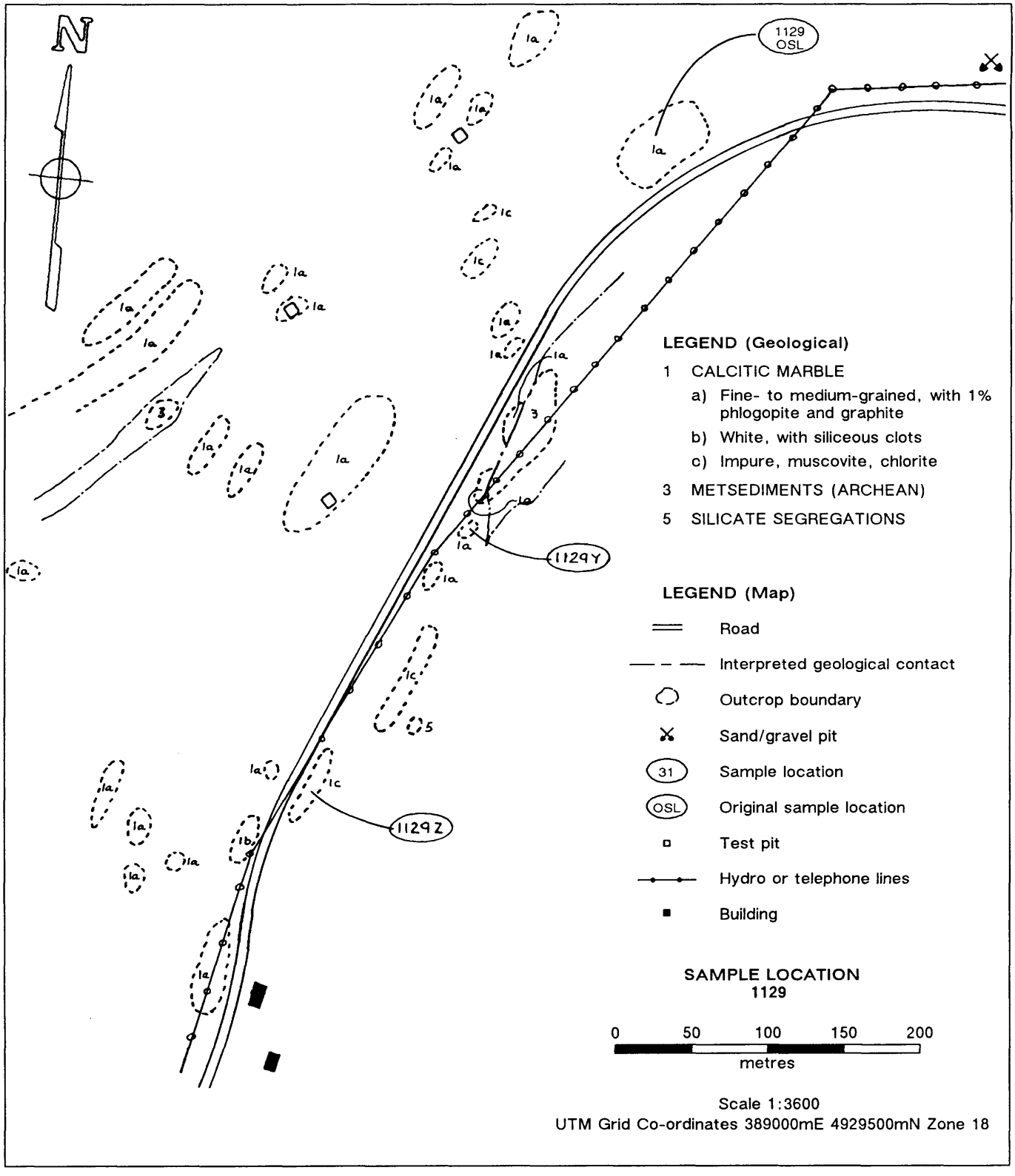


Figure 67. *Location Map, Sample 1129.*

MAP AREA 1162

Location

West-central North Burgess Township.

Map reference: NTS 31C/9; UTM 394650mE, 4954550mN, Zone 18.

Access

Along a gravel road, 1 km south of Black Lake, Concession V, Lot 26.

Regional Geology

The marble in this area is intruded by red monzonite displaying a conical zonation from red (away from the marble) to white (at the marble-monzonite contact), near the intrusive margins. North of the marble are migmatites made up of granite and metasediments.

Local Geology

The detailed map area shows that relatively little marble occurs in the area (Figure 68). Monzonite makes up the largest part of the bedrock and contains numerous pods and lenses of rusty metasediments and marble. Marble and metasedimentary units tend to be continous toward the western margins of the area. Marble is white and contains varying amounts of graphite and phlogopite. Some small zones have greater than 20 percent silicate material. Dolomitic marble occurs near the northern limit of the map, adjacent to the rusty metasediments.

Previous Geological Work

North Burgess Township has been mapped by Hewitt (1964a), and in part by Wilson and Dugas (1961).

Chemistry

The chemical composition of the marble in this area (samples 1150 to 1166) 1166) is inconsistent. A few samples are of calcitic marble type, but the majority have a wide range of CaO and MgO values with the CaO/MgO ratio ranging from 1.4 to 40. Several samples in the belt have high Sr contents, but this occurs only in those samples with high CaO/MgO ratios. Two samples also have high lead contents; it is interesting to note that these samples have relatively high SiO_2 contents as well.

Potential

Marble quality is quite variable throughout the unit, making it unlikely that a large section of good-quality marble could be found. It is more likely that several small high-grade zones exist.

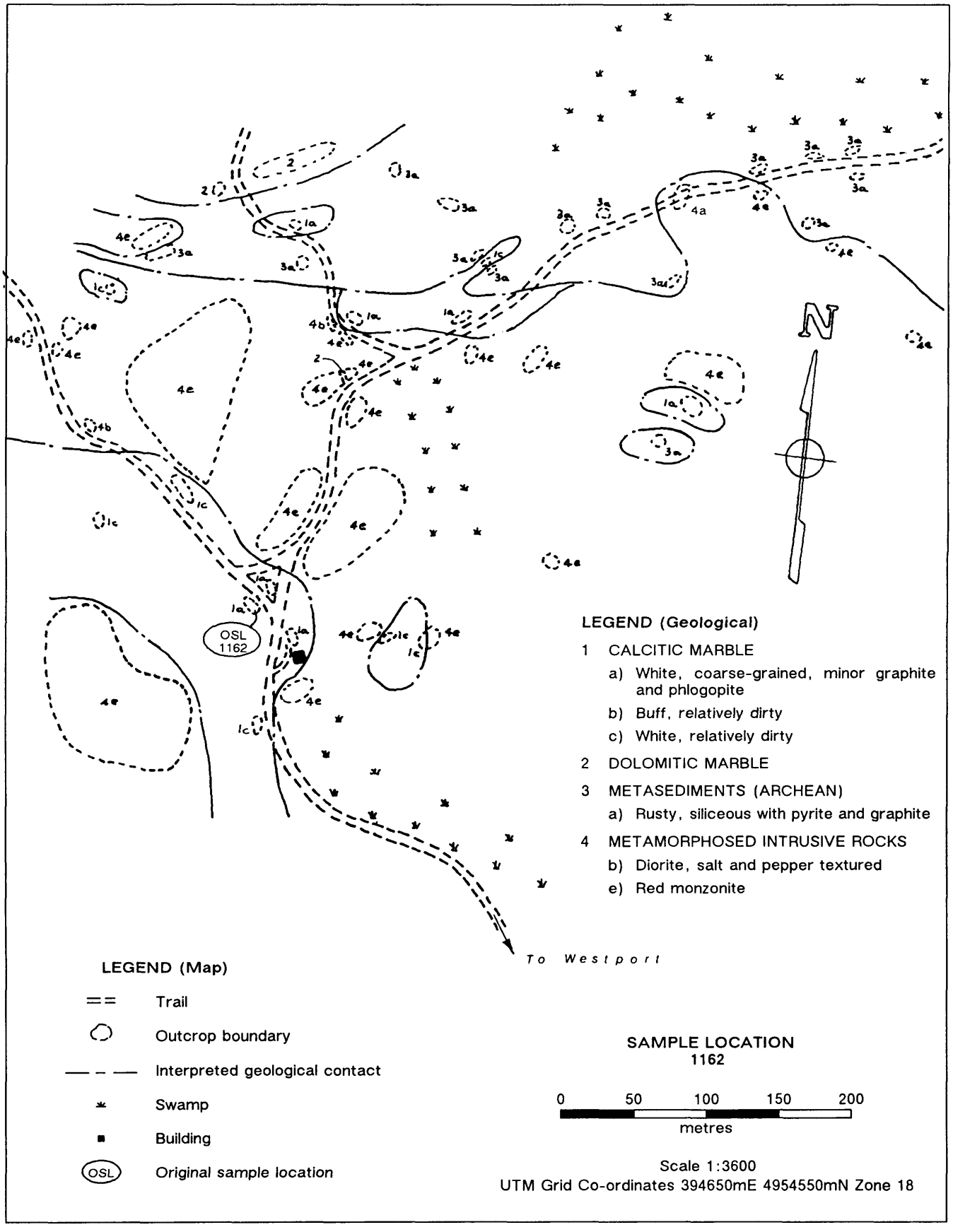


Figure 68. *Location Map, Sample 1162.*

MAP AREAS 1176, 1184, 1206, AND 1211

Location

1176—Southeast corner of South Burgess Township.

1184—Southwest corner of South Elmsley Township.

1206—On Otty Lake, North Burgess Township.

1211—North of Otty Lake, North Elmsley Township.

Map reference: NTS 31C/16.

1176—UTM 407190mE, 4957080mN, Zone 18.

1184—UTM 409900mE, 4960100mN, Zone 18.

1206—UTM 403100mE, 4965290mN, Zone 18.

1211—UTM 403000mE, 4967920mN, Zone 18.

Access

1176—On a north-trending gravel road running about 3 km west of Highway 15, off an east-trending paved road which starts at the southern end of Otter Lake, Concession VI, Lot 2.

1184—On a cottage road on the west side of Otter Lake, Concession II, Lot 29.

1206—Concession VII, Lot 2.

1211—In Maple Glen Estates, northwest of Otty Lake, Concession IV, Lot 29.

Regional Geology

The marble found in this area is part of a metasedimentary belt which occurs on both sides of Rideau Lake. Much of the belt is overlain by Paleozoic sandstone and conglomerate. The marble ranges in texture from fine to coarse grained and in colour from medium grey to white.

Local Geology

1176—This detailed map area (Figure 69) has very little marble outcrop, as the area is relatively flat. The marble is overlain by quartz sandstone of Paleozoic age, which occurs over most of the map area east of the road. The marble sampled is white with only minor impurities; however, there is only one outcrop of this marble. It is possible that the Paleozoic sandstone overlies white marble over a much larger area, but only subsurface exploration could determine this. There is minor dolomitic marble that is fine grained with nearly 5 percent impurities in the western portion of the map area.

1184—Detailed mapping of this area shows predominantly grey fine-grained marble (Figure 70). Most of this marble has a high impurity content. The marble close to the metasedimentary units tends to be brown with many small blebs of quartz throughout. Underlying the marble are calcareous metasediments, and overlying it is a thin unit of Paleozoic sandstone and conglomerate.

1206—Marble in this area is predominantly white (Figure 71) but ranges from pure white with only minor graphite and phlogopite, to impure buff with siliceous clots and bands. Some of the area is overlain by Paleozoic conglomerate which grades laterally into poorly sorted sandstone and conglomerate. Garnet-biotite paragneiss units within the marble tend to be discontinuous, trend northwest, and are normally less than 30 m wide.

1211—Marble in this detailed area is generally white (Figure 72), and grain size ranges from medium to coarse. The area is cut by granitic pegmatite veins which are up to 2 m wide. Some small units of dolomitic marble occur within the calcitic marble; however, these tend to be very thin. Overlying the area toward the northwest is Paleozoic sandstone and conglomerate.

Previous Geological Work

South Burgess and North Burgess townships have been mapped by Hewitt (1964a), and in part by Wynne-Edwards (1967) and by Wilson and Dugas (1961). South Elmsley and North Elmsley townships have been mapped by Wilson and Dugas (1961) and by Hewitt (1964a).

Chemistry

Samples 1206 and 1211 were taken from a marble unit (samples 1199 to 1213) that has relatively consistent CaO and MgO contents and a high CaO/MgO ratio. The area also has a consistently low SiO_2 content. The trace and metallic element contents are also low, with the exception of Sr. In several of the samples Sr is above 1000 ppm, but there seems to be no correlation with any other element except that the marble samples with a high Sr content are calcitic and not dolomitic.

Samples 1176 and 1184 are from a marble unit (samples 1172 to 1192) that is made up of interbedded calcitic and dolomitic marble. Two other samples from this marble unit have anomalously high metallic contents: sample 1177, a calcitic marble, has a high Sr content; and sample 1179, a dolomitic marble, has a high Cu content.

The channel sample taken at location 1206 has a high SiO_2 content and a correspondingly low CaO content. SiO_2 ranges between 1 and 5 percent in the channel samples taken at location 1211.

Reflectivity in all three samples (samples 1206z, 1211y, and 1211z) ranges from 60 to 66 percent.

Potential

Of the four areas mapped, only one yielded a poor-quality marble (sample 1184). Each of the other areas has development potential assuming that the marble is of adequate quality, although for each,

factors other than marble quality must be taken into account. For example, sample 1211 was taken from an area that has been surveyed into building lots, with a number of houses already constructed. The area from which sample 1176 was taken is overlain by Paleozoic material and will need to be drilled before the areal extent of the marble can be determined. Sample 1206 was taken from an area of predominantly clean marble with the exception of several paragneiss units within the marble.

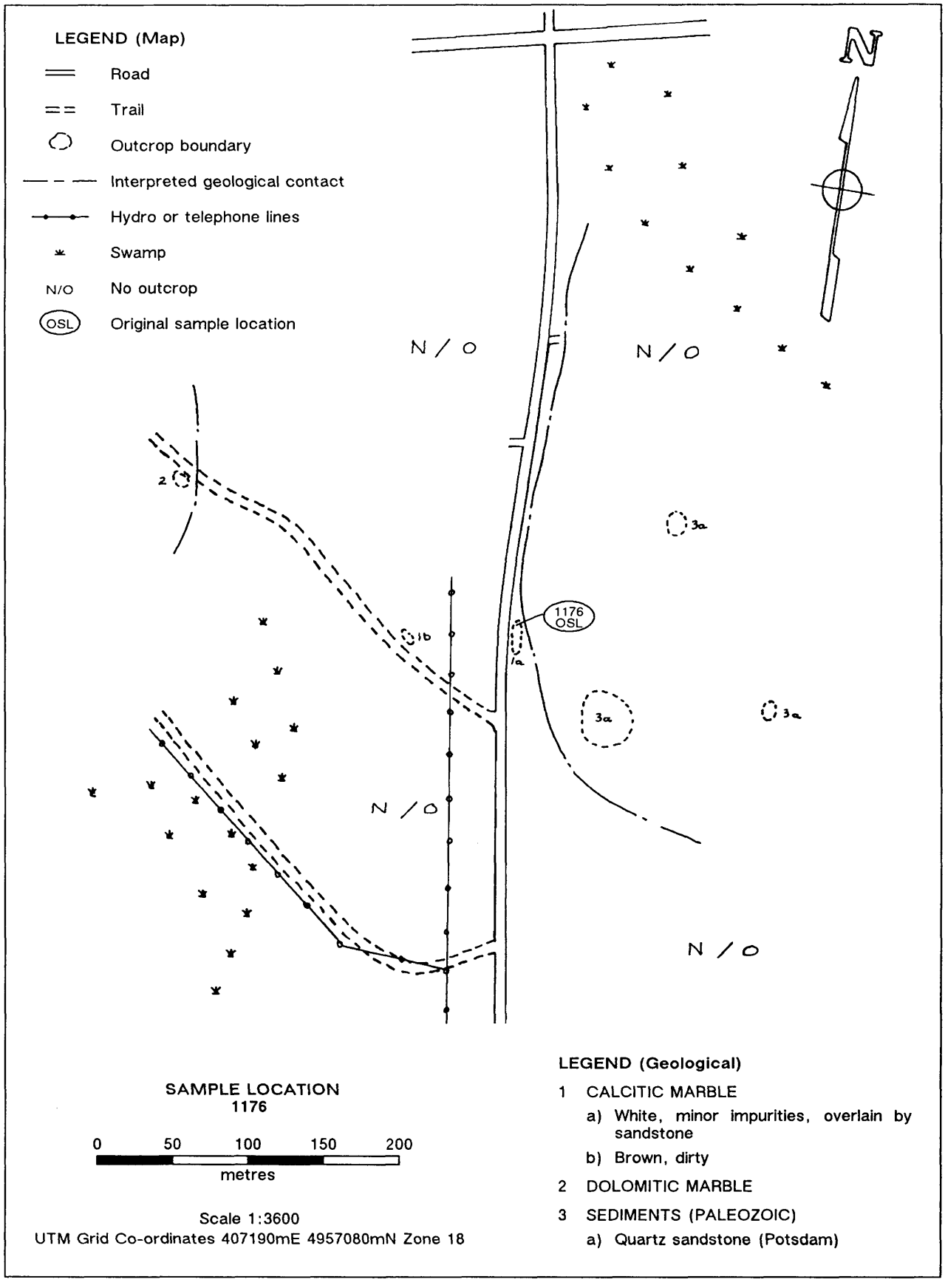


Figure 69. *Location Map, Sample 1176.*

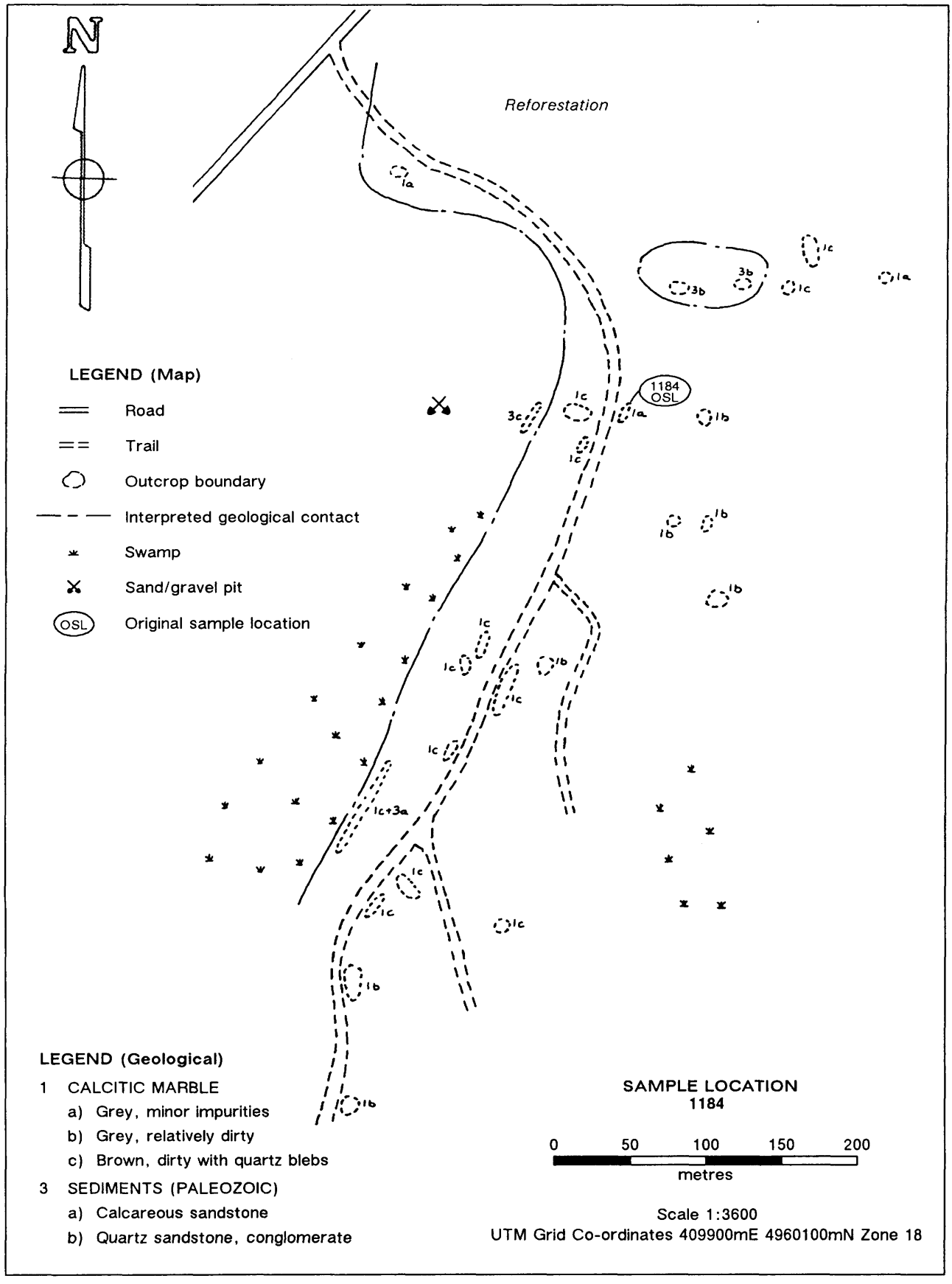


Figure 70. *Location Map, Sample 1184.*

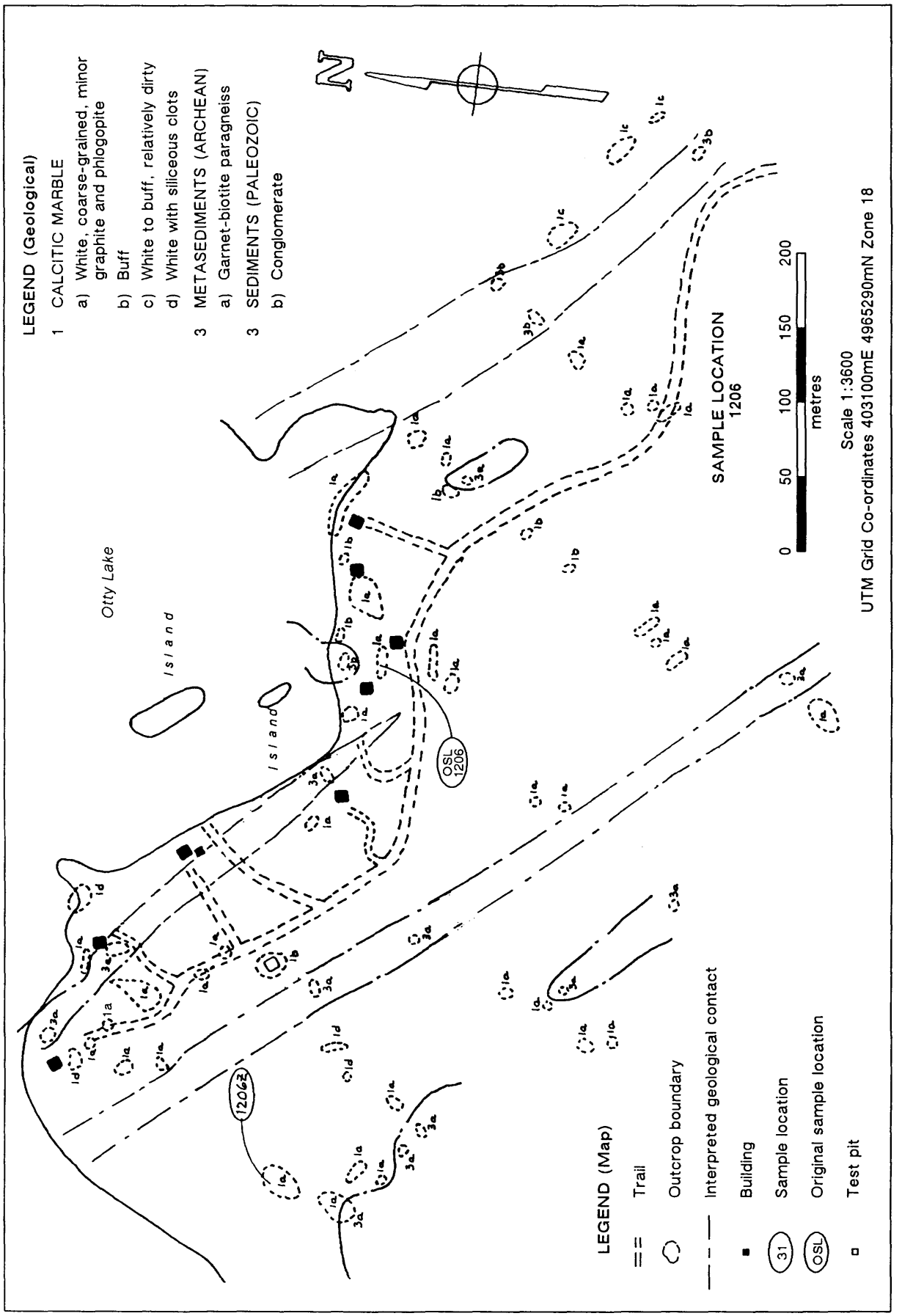


Figure 71. *Location Map, Sample 1206.*

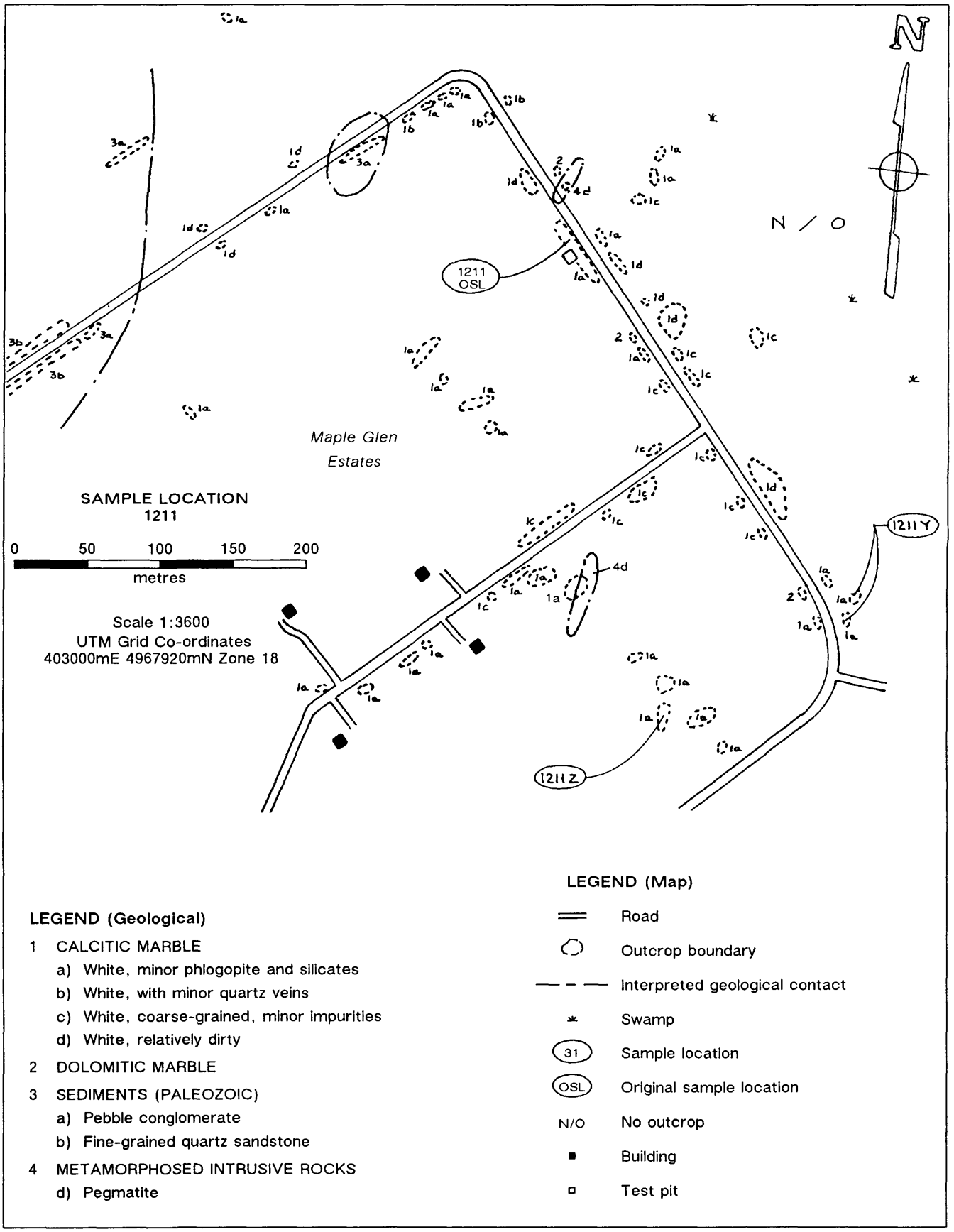


Figure 72. *Location Map, Sample 1211.*

MAP AREAS 1240/1241 AND 1249/1250

Location

All four samples were taken in west-central Bathurst Township.

Map reference: NTS 31C/16.

1240—UTM 385530mE, 4967440mN, Zone 18.

1241—UTM 384380mE, 4967180mN, Zone 18.

1249—UTM 386850mE, 4966100mN, Zone 18.

1250—UTM 385860mE, 4965250mN, Zone 18.

Access

1240/1241—1 km apart, 1.5 km west of Brooke, on Highway 7.

1249/1250—On a northeast-trending gravel road, 1 to 2 km south of Brooke.

1240—Concession VI, Lot 3.

1241—Concession VI, Lot 2.

1249—Concession V, Lot 4.

1250—Concession V, Lot 2.

Regional Geology

All four samples were taken from a stratigraphically complex marble zone which trends roughly northeast. Within and around the zone are small intrusions of granite, diorite, and syenite. Also within the marble unit are both syenite-marble and amphibolite-marble migmatites.

Local Geology

1240/1241—Within this detailed map area (Figure 73) are a number of north-trending marble units, each normally up to a maximum width of 125 m. On a large scale these units make up two distinctive migmatite units; one is a granite-marble migmatite, and the other is an amphibolite-marble migmatite. Granitic units are relatively wide (100 to 150 m), while the metasedimentary amphibolite and paragneiss units tend to be comparatively thin (50 m). Marble in the area is impure, much of it containing clots and disseminations of serpentine and diopside. Dolomitic marble occurs within a calcitic unit and is discontinuous.

1249/1250—Road outcrops indicate that the geology of this area is very similar to the geology at map area 1240/1241. Map area 1249 (Figure 74) is bounded to the northwest by granite. Marble here is coarse grained with only minor amounts of graphite and phlogopite. Marble in map area 1250 is white to orange in colour, and is bounded to the northwest by amphibolite.

Previous Geological Work

Bathurst Township has been mapped by Wilson and Dugas (1961) and Hewitt (1964a).

Chemistry

With the exception of only one or two samples, marble in this unit is highly calcitic with CaO/MgO ratios of 10 to 20 and with SiO_2 ranging from 0.3 percent to over 10 percent. All samples in this marble unit (samples 1240 to 1244 and 1248 to 1252) have low trace and metallic element contents.

Potential

The migmatitic nature of the marble and the presence of biotite, serpentine, diopside, and other impurities within it suggests that this area would yield poor-quality filler material.

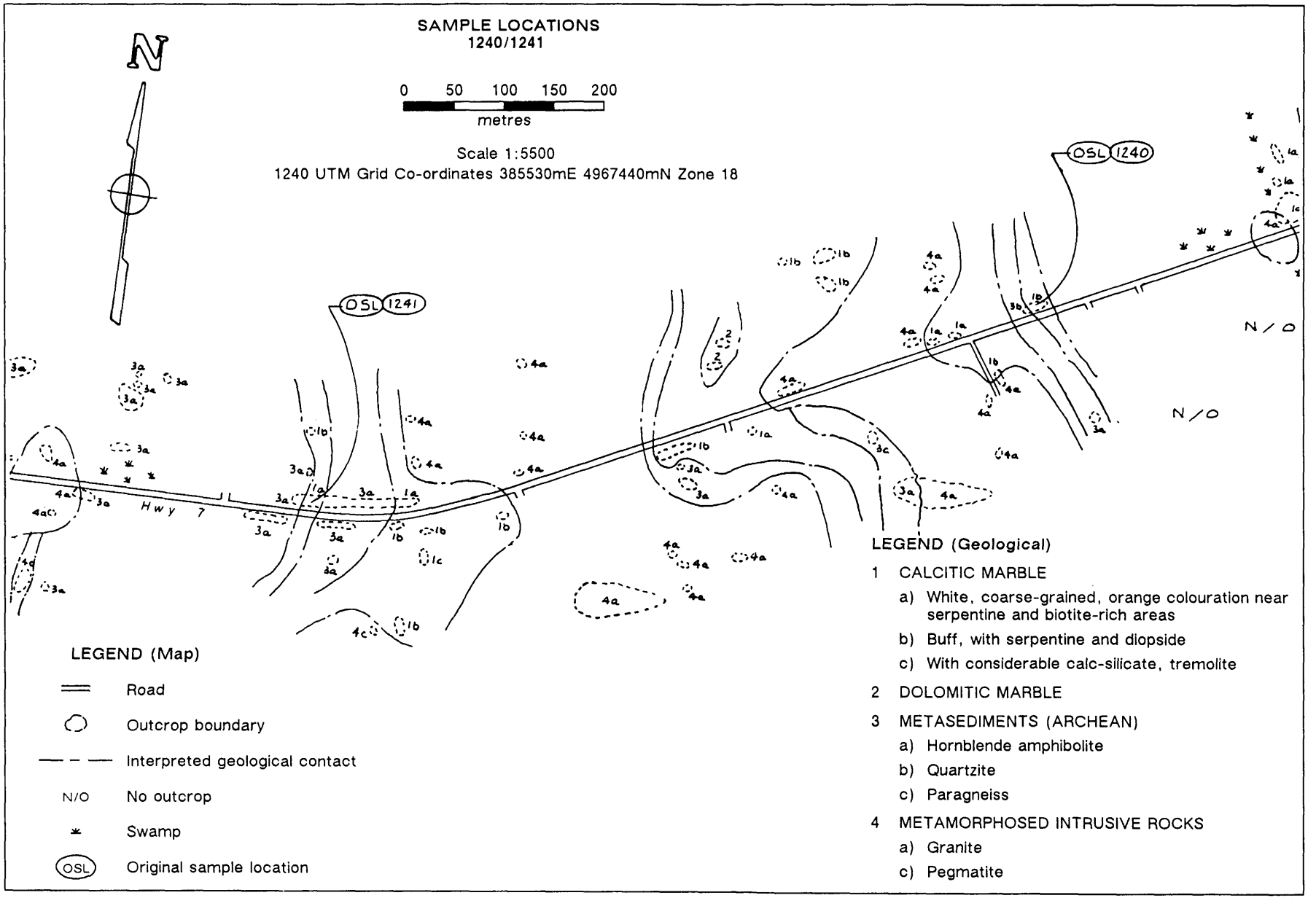


Figure 73. *Location Map, Samples 1240 and 1241.*

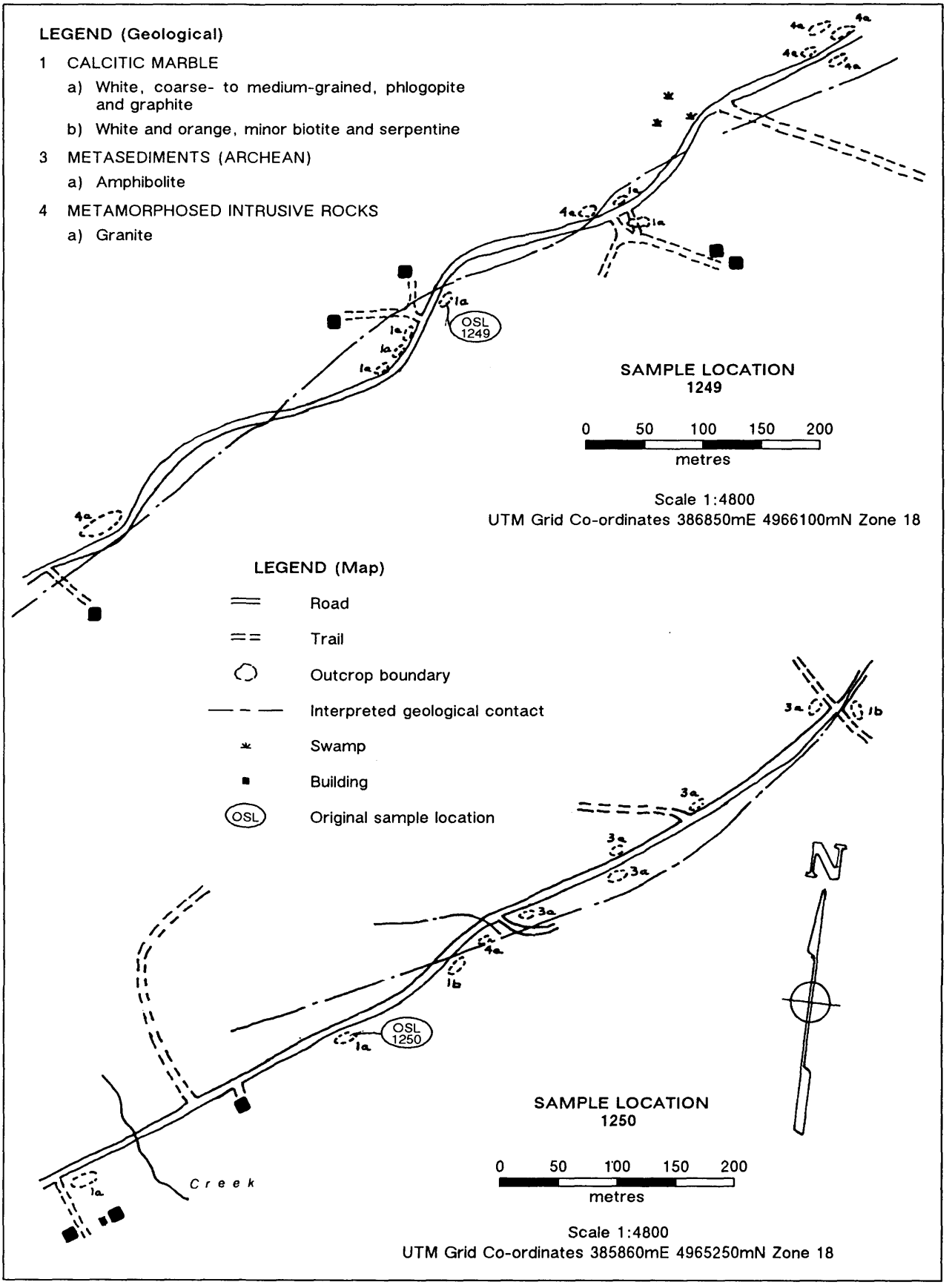


Figure 74. *Location Map, Samples 1249 and 1250.*

MAP AREA 1259

Location

Northeast corner of South Sherbrooke Township.

Map reference: NTS 31C/16; UTM 383100mE, 4958900mN, Zone 18.

Access

On a gravel road, 1 km southwest of Christie Lake, between Christie and Farrell lakes, Concession II, Lot 13.

Regional Geology

This marble belt is bounded by migmatitic rocks on both sides. The migmatites change from marble-paragneiss to syenite-paragneiss as the distance from the marble belt increases.

Local Geology

Detailed mapping of the area (Figure 75) shows that the paragneiss units are not conformable with the marble belt and are deformed, possibly during the final metamorphic episode. Marble in the area is white, containing phlogopite and graphite. Small zones of grey and white laminated marble containing graphite and phlogopite occur locally.

Previous Geological Work

South Sherbrooke Township has been mapped by Hewitt (1964a) and in part by Wilson and Dugas (1961).

Chemistry

Nearly all of the samples in this belt (samples 1259, 1276, 1277, 1284, 1285, and 1287) have high CaO/MgO ratios, averaging near 10. The MgO content ranges from 4 to 7 percent for calcitic marble, and the SiO_2 content for most of these samples is less than 1 percent. Only a few samples in this marble belt are dolomitic in composition, with one of these samples (sample 1281, Appendix A) containing anomalously high Cu and Zn contents. The other samples in this area have low trace and metallic element contents.

Potential

Marble in this belt is clean and calcitic, but the presence of silicate segregations may make the marble unusable. It is likely, however, that zones exist where these silicate segregations do not occur, making the marble much more suitable as filler-type material.

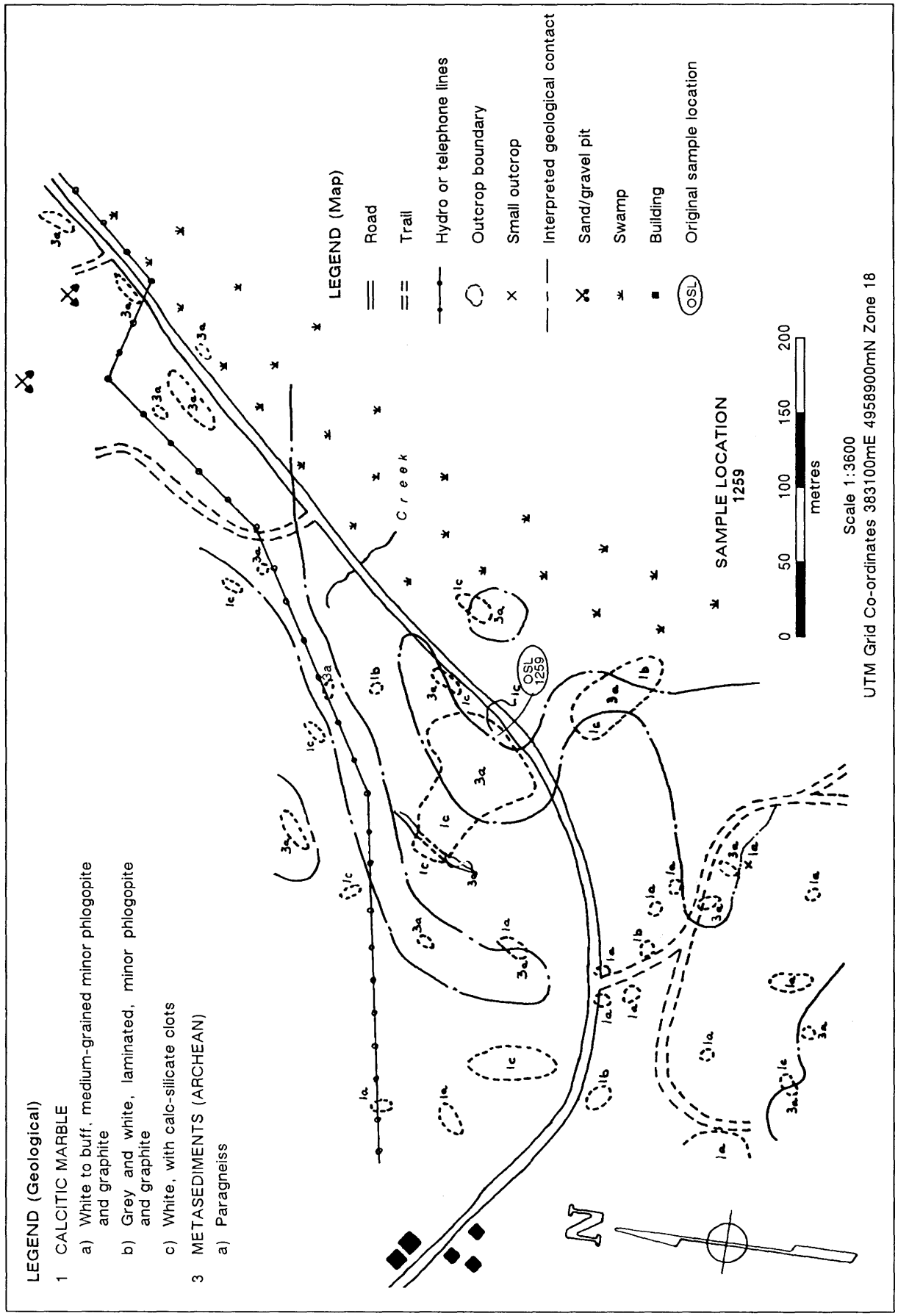


Figure 75. *Location Map, Sample 1259.*

MAP AREAS 1530, 1704, AND 1716

Location

1530—Northeast Lanark Township.

1704, 1716—South-central Darling Township.

Map reference: NTS 31F/1.

1530—UTM 384110mE, 4995970mN, Zone 18.

1704—UTM 384250mE, 5002940mN, Zone 18.

1716—UTM 385600mE, 5002600mN, Zone 18.

Access

1530—1 km southwest of Cedardale.

1704, 1716—Both samples are 1 to 1.5 km northeast of Tatlock.

1530—Concession III, Lot 23.

1704—Concession VI, Lot 6.

1716—Concession VII, Lot 4.

Regional Geology

These samples were taken from an extensive marble belt running north-northeast through Lanark Township. Within the marble belt are several metadiorite, metagabbro, and metasedimentary units. Adjacent to the marbel is a unit consisting of amphibolite and garnet amphibolite. Marble throughout the belt is predominantly grey and fine grained, and a number of tremolitic and dolomitic beds occur locally. The overall width of the belt increases toward the northwest. There are several intrusive sills within this area.

Local Geology

1530—Marble within this detailed map area (Figure 76) occurs as a 100 to 300 m wide unit, which widens toward the southwest. Paragneiss units flank the marble belt on both sides; paragneiss pods also occur within the marble. Dolomitic units occur at the margins of, and as beds within, the calcitic marble. Most of the marble in this area is coarse grained and white, with only minor graphite and silicate minerals.

1704—The marble belt in this area (Figure 77) is irregular in shape, ranging in width from 100 to 300 m. Marble also occurs as smaller pods and bands within amphibolite units outside of the main marble belt. Most of the marble is grey with only minor impurities, although there are some zones with a relatively high amphibole content.

1716—This section of the large marble belt (Figure 78) is made up of interbedded amphibolite and marble. Discontinuous units of schist and paragneiss occur within the amphibolite. Marble is predominantly light grey, much of it containing very minor impurities.

Previous Geological Work

Lanark Township has been mapped by Reinhardt *et al.* (1973). Darling Township has been mapped by Peach (1958), and in part by Goudge (1938) and Reinhardt *et al.* (1973).

Chemistry

There were many samples taken from this marble belt (samples 1500 to 1665 and 1691 to 1727); the marble is apparently chemically homogeneous throughout the area. The marbles tend to be either calcitic (with a CaO content near 50 percent and an MgO content of 5 percent) or dolomitic (CaO~30 percent, MgO~20 percent), but rarely is there an intermediate between the two end members. All samples contain low trace and metallic element contents except for sample 1525b (Appendix A), which is a dolomitic marble containing 19 percent Zn. This was a high-grade sample taken from a known zinc occurrence. The two channel samples from map area 1704 (samples 1704y and 1704z) yield reflectivities of 72 and 61 percent, respectively. Sample 1704y has a dolomitic marble composition with a very low SiO_2 content.

Potential

The grey colour of the marble and the presence of amphibolite and metasedimentary units as pods and layers within the marble belt suggests that this portion of the marble belt does not have filler potential. Sample 1530 is from a narrow zone of marble which shows the greatest potential and which seems to widen toward the southwest.

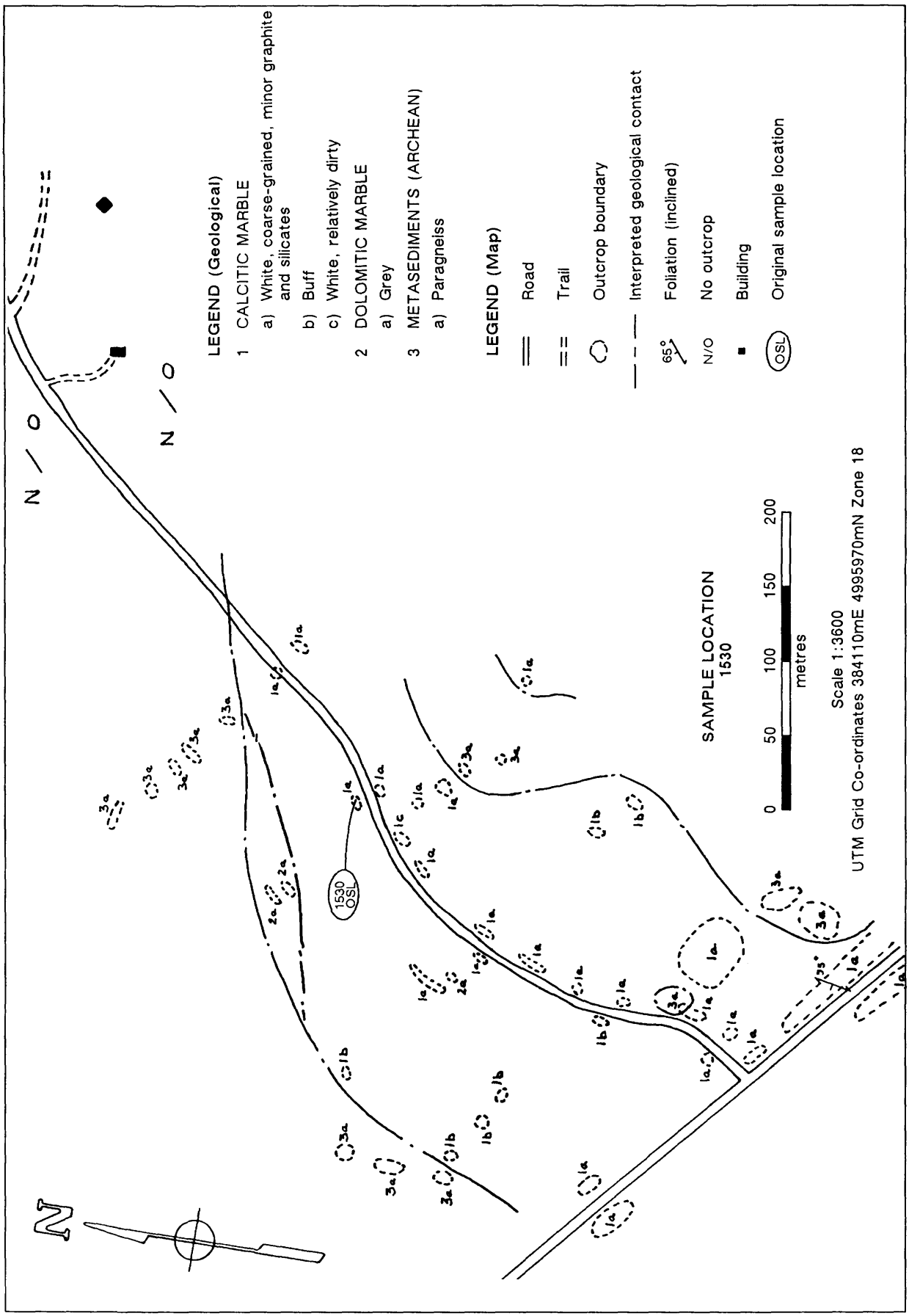


Figure 76. *Location Map, Sample 1530.*

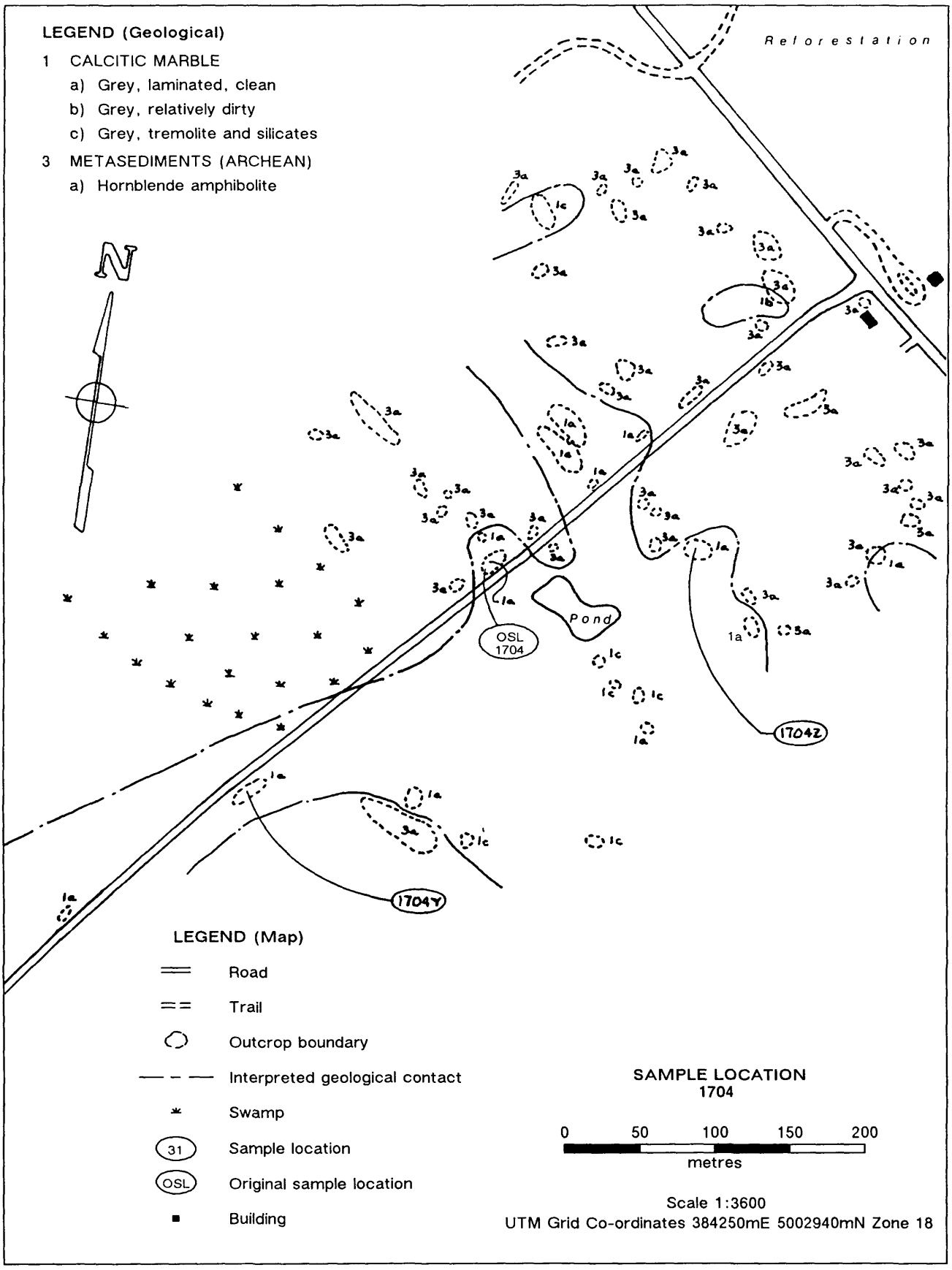


Figure 77. *Location Map, Sample 1704.*

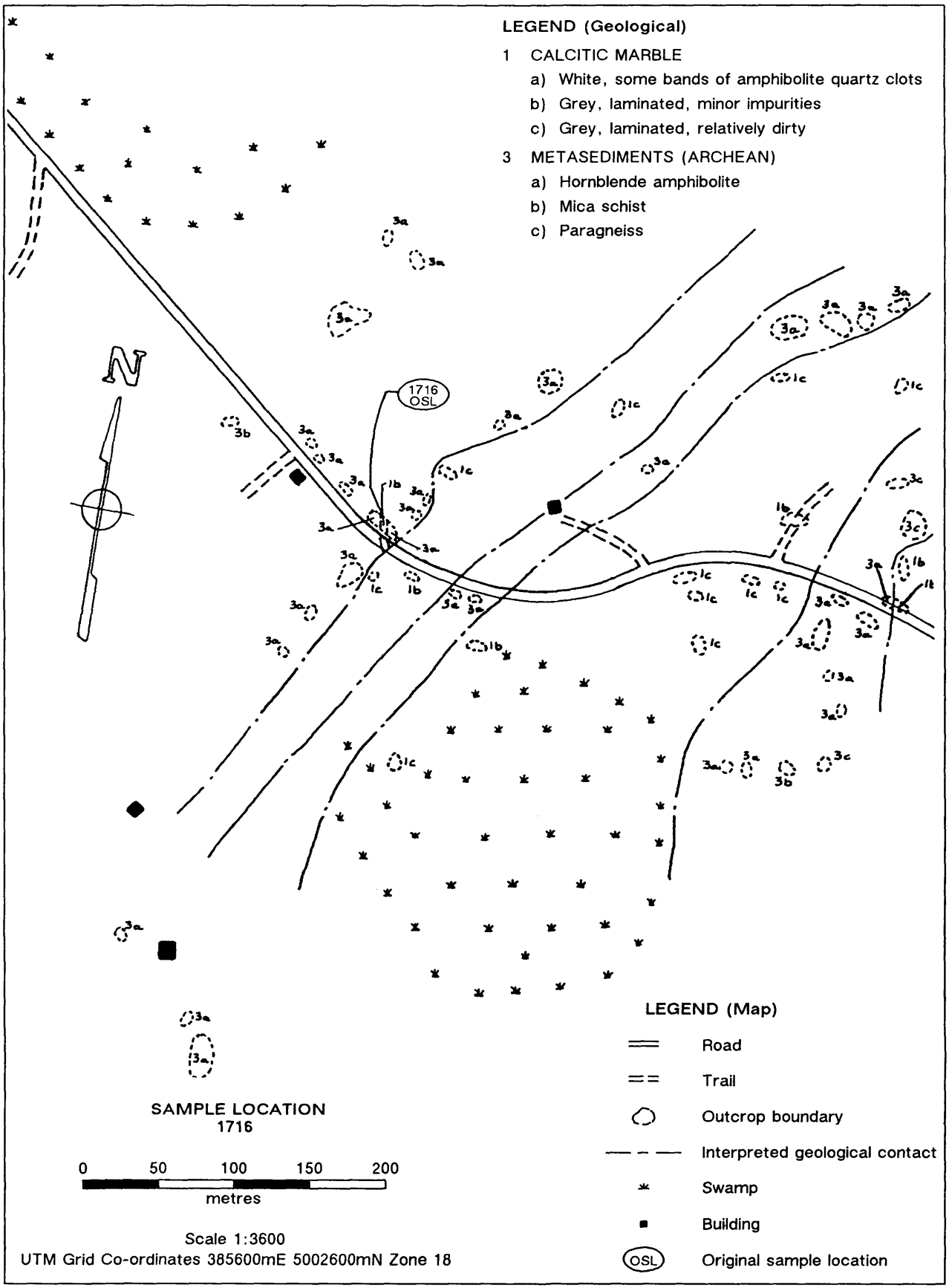


Figure 78. *Location Map, Sample 1716.*

MAP AREAS 1563, 1575, AND 1763/1764/1767

Location

1563, 1575—Northeast Lanark Township.

1764—West-central Ramsay Township.

Map reference: NTS 31F/1.

1563—UTM 390900mE, 5001630mN, Zone 18.

1575—UTM 391970mE, 5002500mN, Zone 18.

1764—UTM 398610mE, 5001230mN, Zone 18.

Access

1563—A narrow township road, Concession X, Lot 22.

1575—A narrow township road, Concession XI, Lot 22.

1764—5 km southeast of Clayton, near the intersection of Lanark County Road 16 and Lanark County Road 9, Concession II, Lot 15.

Regional Geology

These samples were taken from the northeastern end of the large marble belt which underlies most of Lanark Township. Within the marble belt are many amphibolite (paragneiss) bands, all trending northeast along the marble belt. Marble in the belt is predominantly light grey with a medium to fine grain size.

Local Geology

1563—The geology of this detailed map area (Figure 79) consists chiefly of calcitic marble. This material is grey, with a fine grain size and only minor visible mica and amphibole. Laminations are relatively narrow (1 to 3 mm) but are pronounced due to the alternating of light and dark grey marble. Dolomitic marble occurs in the southwest of the map area and tends to be very similar in appearance to calcitic marble, except that it has weathered to a sugary-textured surface.

1575—This part of the large marble belt (Figure 80) consists entirely of fine-grained grey marble. Dolomitic marble occurs in the northern part of the map area and is interbedded there with calcitic marble. Calcitic marble is predominantly grey and laminated, with only minor mica and amphibole.

1763/1764/1767—Marble in this map area (Figure 81) tends to be coarser in grain size than marble in the previous two map areas. This medium-grained marble is generally white, with 2 to 4 cm wide, fine-grained grey bands occurring locally. The white marble contains only minor amounts of graphite and phlogopite. Silicate segregation units, which occur in many of the marble belts mapped and are found locally within the white marble unit of this map area, range in size from less than 1 m in the longest dimension to outcrops tens of metres across. This unit is generally very rich in plagioclase feldspar, and also contains quartz and minor accessory minerals.

Previous Geological Work

Lanark Township has been mapped by Reinhardt *et al.* (1973). Ramsay Township has been mapped by Reinhardt *et al.* (1973) and in part by Hill *et al.* (1974).

Chemistry

Material in this part of the marble belt (samples 1740 to 1777 and 1550 to 1581) is largely of two different compositions. Dolomitic marble generally has a CaO/MgO ratio of approximately 1.4, and calcitic marble has a CaO/MgO ratio near 10. Sample 1065 has anomalously high contents of Cr, Cu, and especially Zn. All other samples in this area have low trace and metallic element contents. Three channel samples were taken from map area 1575, and one was taken from map area 1563. All channel samples have low SiO_2 and high CaO contents. Reflectivity is in the range 60 to 71 percent.

Potential

All of the detailed map areas have high-calcium marble with a low silicate content. The area would have good potential in a market for off-white coloured filler material, or it could be used as an alternative material to limestone.

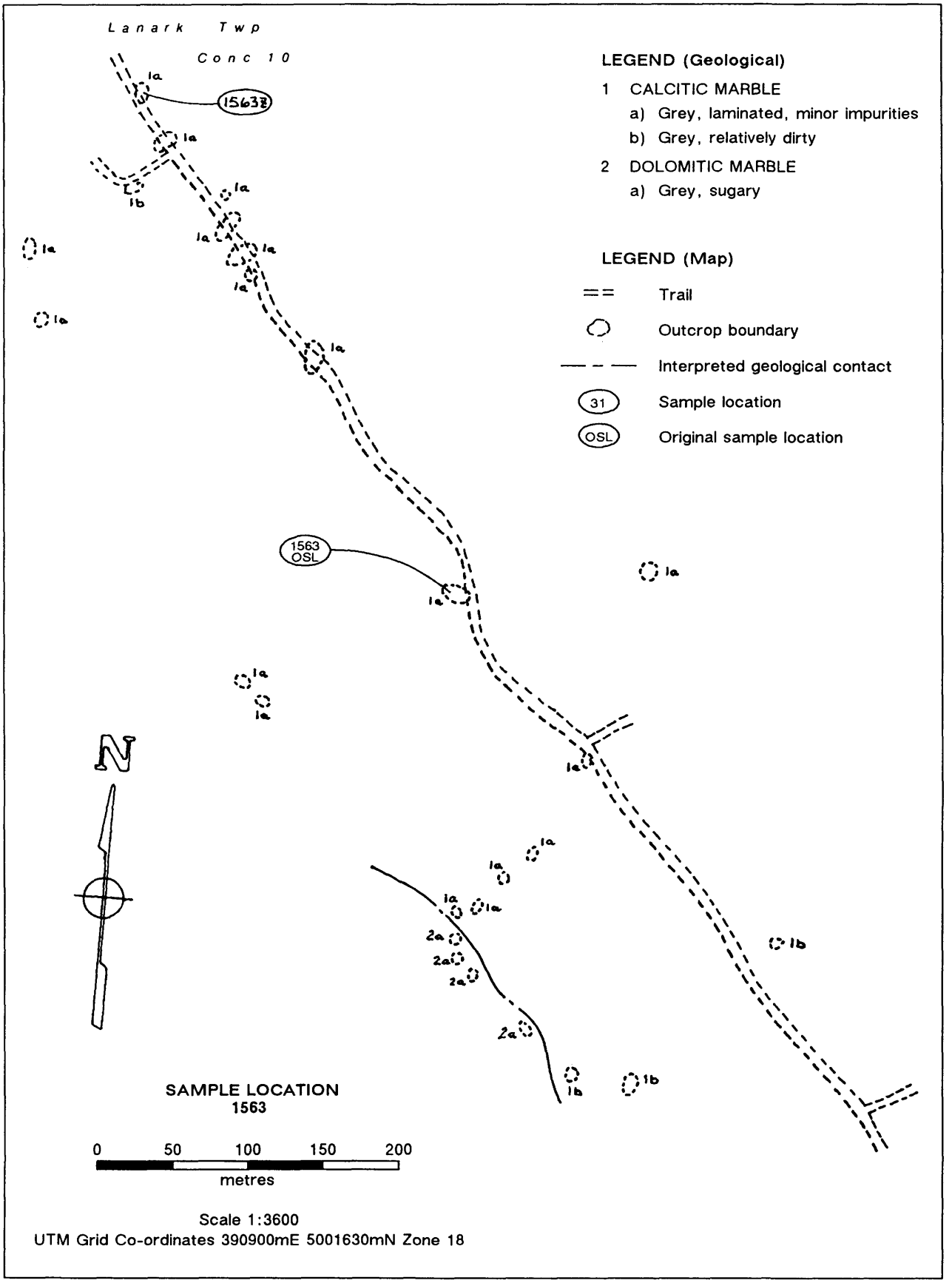


Figure 79. *Location Map, Sample 1563.*

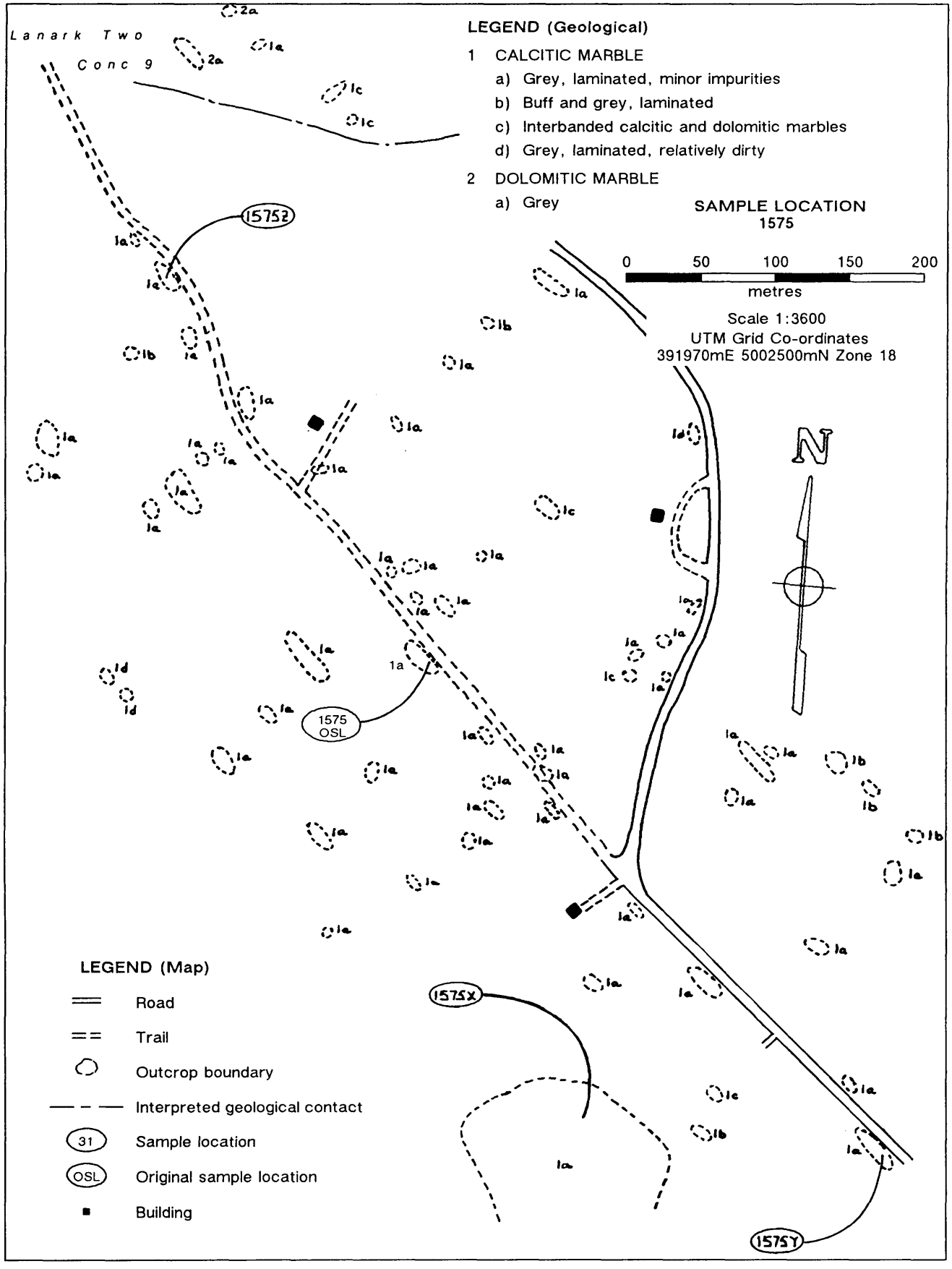


Figure 80. *Location Map, Sample 1575.*

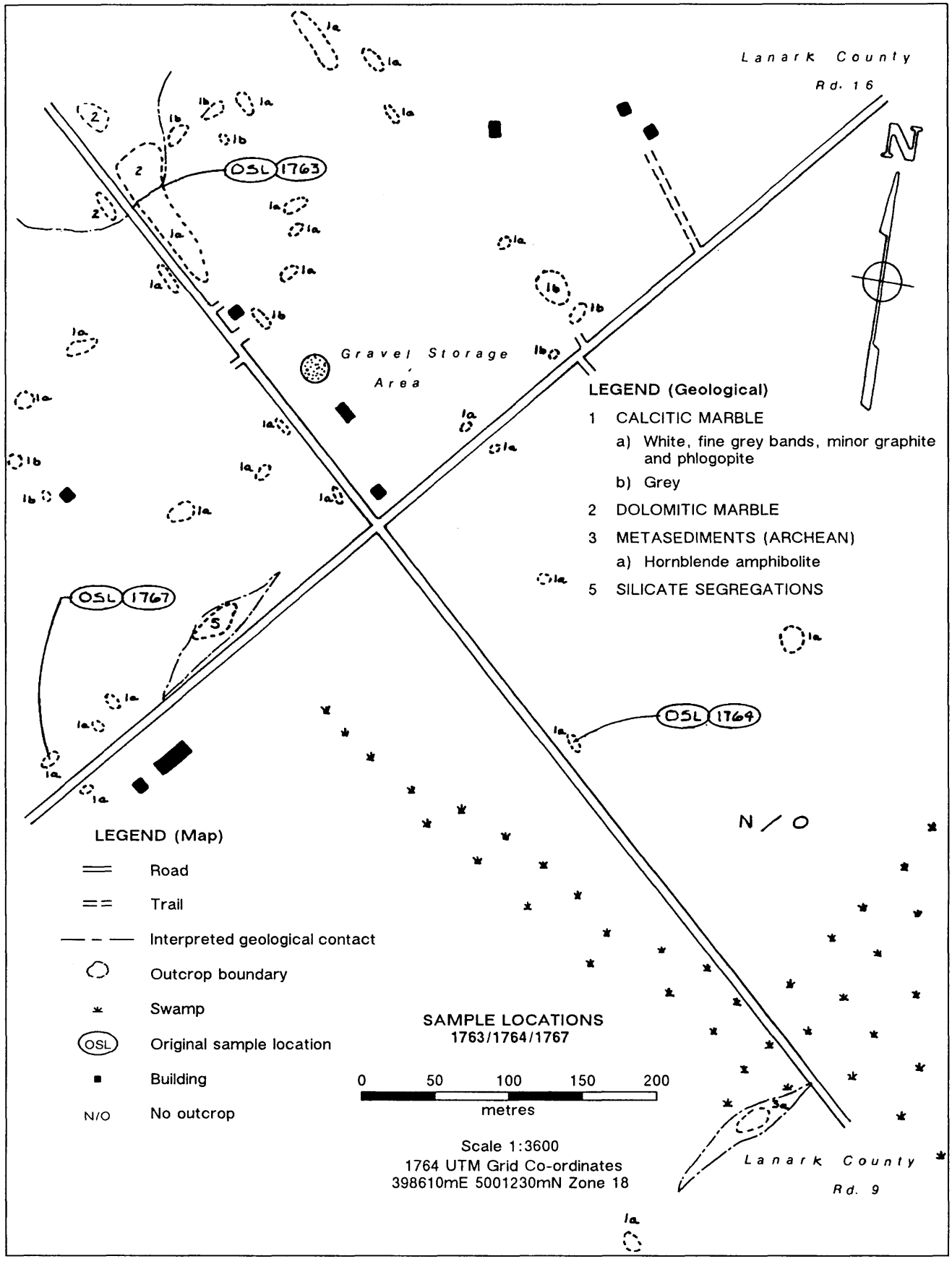


Figure 81. *Location Map, Samples 1763, 1764, and 1767.*

MAP AREA 1680

Location

Northeast Darling Township.

Map reference: NTS 31F/8; UTM 383510mE, 5013190mN, Zone 18.

Access

A gravel road, 300 m south of Lowney Lake, Concession XI, Lot 19.

Regional Geology

The marble belt from which sample 1680 was taken is bounded to the south by metavolcanics and to the north by metamorphosed granitic intrusive rocks. The marble is predominantly grey, fine grained and has been intruded by small bodies of dioritic composition.

Local Geology

Detailed mapping in the area (Figure 82) shows no intrusive rocks but only grey, and grey laminated marble of medium grain size. Impurities in the marble are minor, including pyrite, phlogopite, graphite, and locally, calc-silicate minerals. Dolomitic marble occurs as discontinuous bands in calcitic marble.

Previous Geological Work

Darling Township has been mapped by Peach (1958) and in part by Goudge (1938) and Reinhardt *et al.* (1973).

Chemistry

Most of the marble in this belt (samples 1673 to 1690 and 1824 to 1845) is dolomitic with a CaO/MgO ratio near 1.4. On a regional scale, calcitic marble appears to be restricted to narrow bands within the dolomitic material, as compared to the predominantly calcitic marble composition with minor dolomitic marble seen in the detailed map area. The SiO_2 content is low across the belt, except near the contact with the metavolcanics. The trace and metallic element contents are low throughout the belt. The two channel samples from the area have low SiO_2 and high CaO contents. Reflectivity ranges from 60 to 73 percent.

Potential

Marble is generally very pure with a predominantly grey dolomitic or calcitic composition. A market specific to these qualities or a method of beneficiating the marble to increase whiteness would be needed.

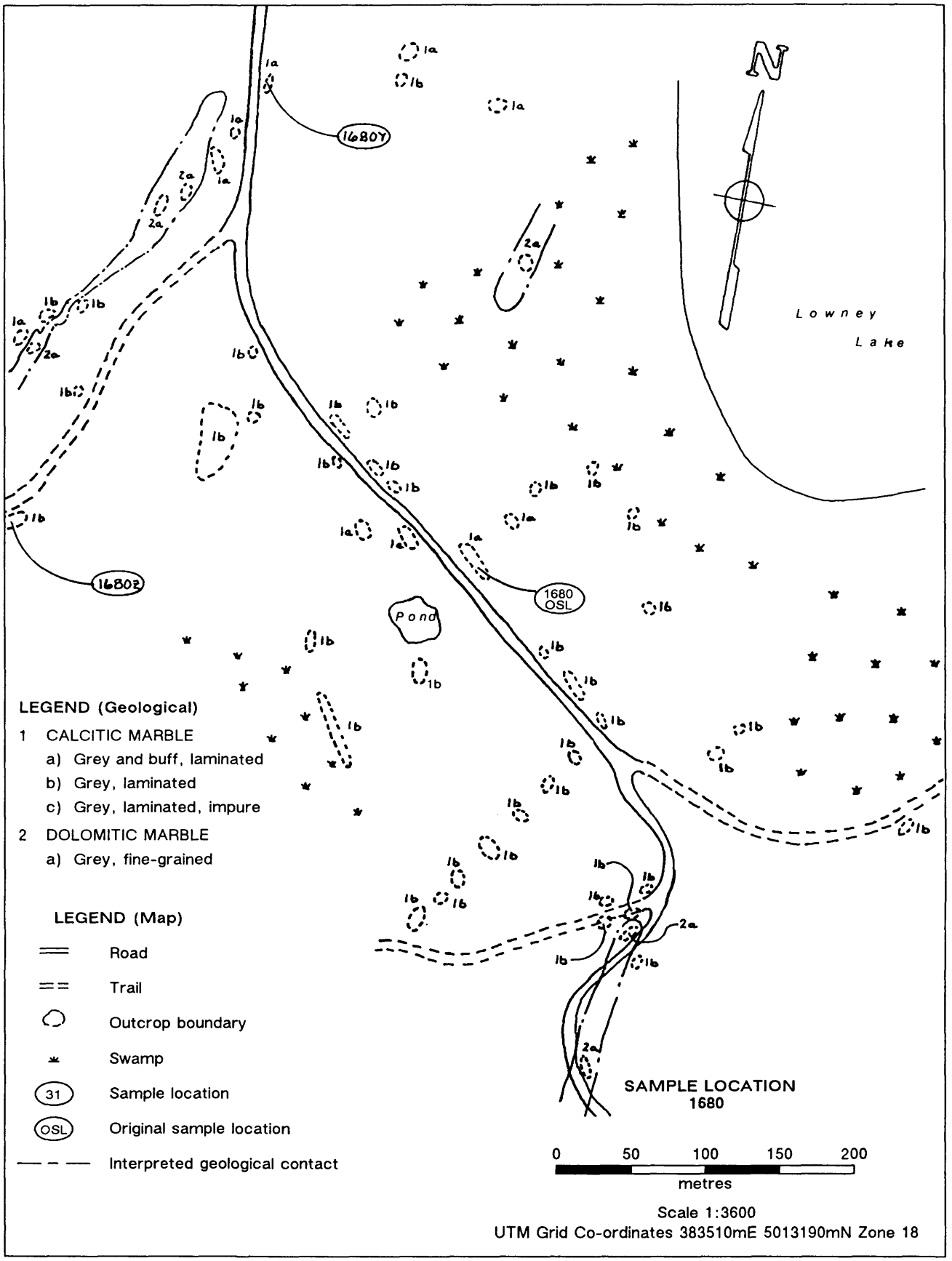


Figure 82. *Location Map, Sample 1680.*

MAP AREA 1797

Location

Central Ramsay Township.

Map reference: NTS 31F/1; UTM 404270mE, 5000760mN, Zone 18.

Access

From the former Carleton Lime Products or Bonnechere Lime Marble Quarry in south-central Ramsay Township, 1.3 km southeast of Galbraith, Concession IV, Lot 7.

Regional Geology

The marble belt from which sample 1797 was taken is just east of the large marble belt running through Lanark Township. It is separated from the main marble belt by a northeast-trending sequence of granodiorite, migmatite, and amphibolite. Within the marble belt are bands of amphibolite, which run parallel to the belt.

Local Geology

This sample was taken from an abandoned marble quarry (Figure 83). There are several small quarries or test pits surrounding the quarry which have had only limited exploration work done on them. Several thin, less than 50 m wide amphibolite units trend subparallel to the marble foliation. Most of the marble is coarse to medium grained with minor graphite, phlogopite, and muscovite.

Previous Geological Work

Ramsay Township has been mapped by Reinhardt *et al.* (1973) and in part by Hill *et al.* (1974). Short descriptions of this quarry are provided by Hewitt (1964b) and Hewitt and Vos (1972).

Chemistry

Most of the regional samples from this marble belt (samples 1778 to 1802) have low impurity contents. Trace and metallic element contents are also low in most samples (for example, sample 1797, Appendix A). The one exception is sample 1788 (Appendix A) which has a Ba content of 2880 ppm. This sample also has a high SiO_2 content.

Potential

Much of the marble has been quarried from this area, but indications are that much more good white marble is present. The marble may have to be beneficiated to remove the small quantities of graphite and mica impurities.

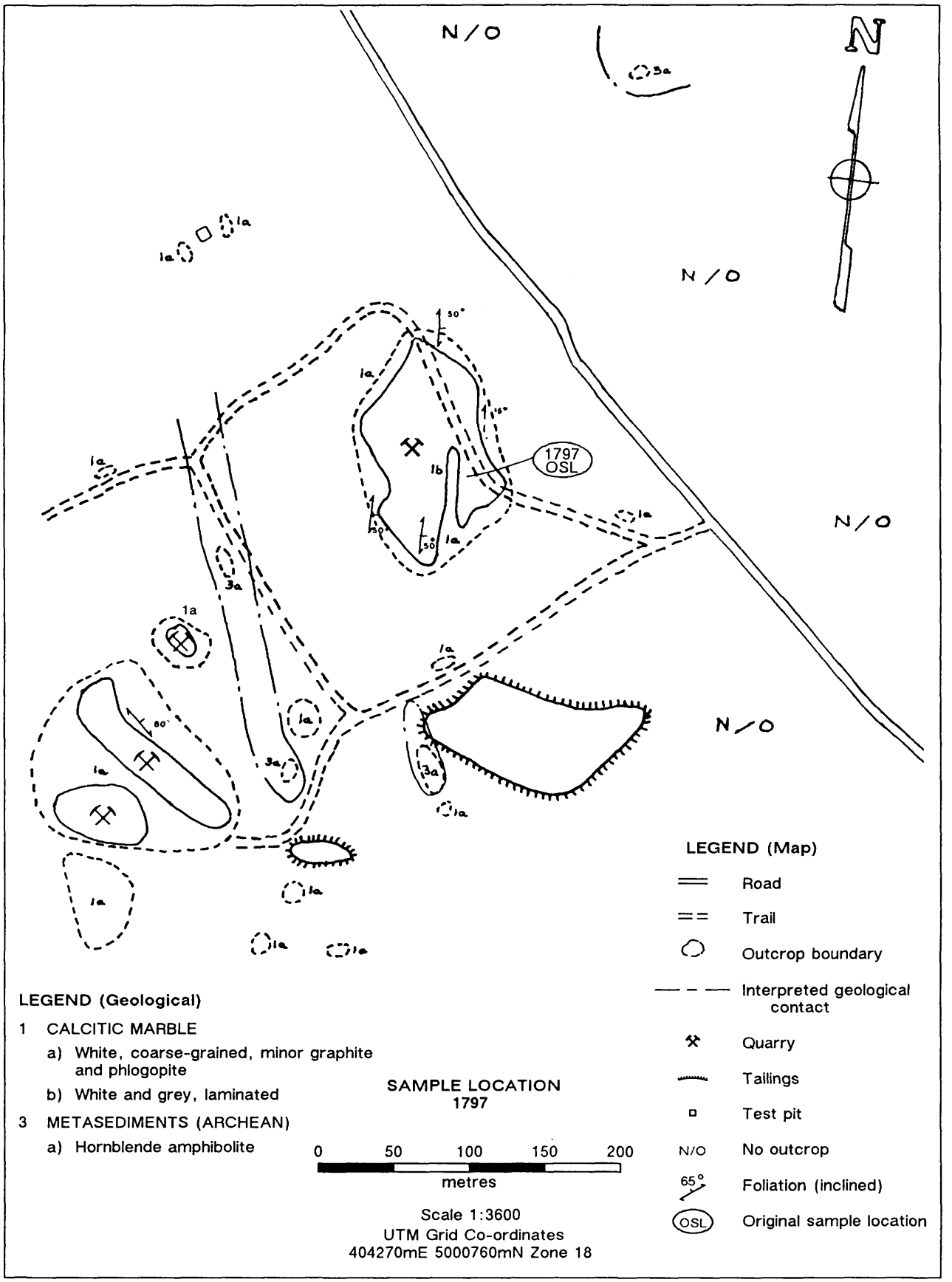


Figure 83. *Location Map, Sample 1797.*

MAP AREAS 1891/1892/1893 AND 1903

Location

All samples are from the northern corner of South Sherbrooke Township.

Map reference: NTS 31C/15.

1891—UTM 380150mE, 4968300mN, Zone 18.

1892—UTM 380050mE, 4969050mN, Zone 18.

1893—UTM 380100mE, 4969400mN, Zone 18.

1903—UTM 377850mE, 4969350mN, Zone 18.

Access

1891/1892/1893—Go east at the last intersection. All samples were taken from around the next intersection.

1903—Take the second concession road off the road through Maberly. The sample was taken at the first intersection, Concession XI, Lot 16.

1891—Concession IX, Lot 18.

1892—Concession IX, Lot 19.

1893—Concession X, Lot 19.

Regional Geology

These samples were taken from a relatively wide marble belt which trends roughly northeast through northern South Sherbrooke Township. Within the marble belt are concordant paragneiss units and semiconcordant granitic and pegmatitic bodies. The marble in the belt consists generally of fine- to medium-grained granoblastic calcitic marble.

Local Geology

1891/1892/1893—Detailed mapping in this area (Figure 84) shows that much of the marble in this area is fine grained and grey, with alternating light and dark grey laminations. More coarsely crystalline marble is generally white, with minor amounts of graphite and phlogopite. Small units of dolomitic marble and silicate segregations also occur locally. The silicate segregations occur within the marble as pods or blocks of white plagioclase-rich rock. Thin metasedimentary units cut the marble, striking roughly in an easterly direction. In the middle of the map area is a 300 to 350 m wide granite body that has not apparently altered the adjacent marbles.

1903—Marble in this local map area (Figure 85) is grey laminated with a variable impurity content. Grey and buff laminated marble occurs throughout the area, and is generally low in impurity content. Narrow beds of dolomitic marble occur primarily in the southeast portion of the map area. Granite and pegmatite units intrude conformably into the marble.

Previous Geological Work

South Sherbrooke Township has been mapped by Hewitt (1964a) and in part by Wilson and Dugas (1961).

Chemistry

Most of the samples taken from this marble belt (samples 493, 494, and 1880 to 1904) have low SiO_2 contents, usually less than 2 weight percent. Most of the "calcitic marble" samples in this area are actually of dolomitic calcitic marble composition, with the MgO content ranging from 4 to 9 weight percent. Trace and metallic element contents are low in all samples in this belt.

Potential

The number of metasedimentary and metaigneous units within this grey marble make this an unfavourable area for filler material. It is possible that areas with no contaminants exist, possibly across strike in the belt.

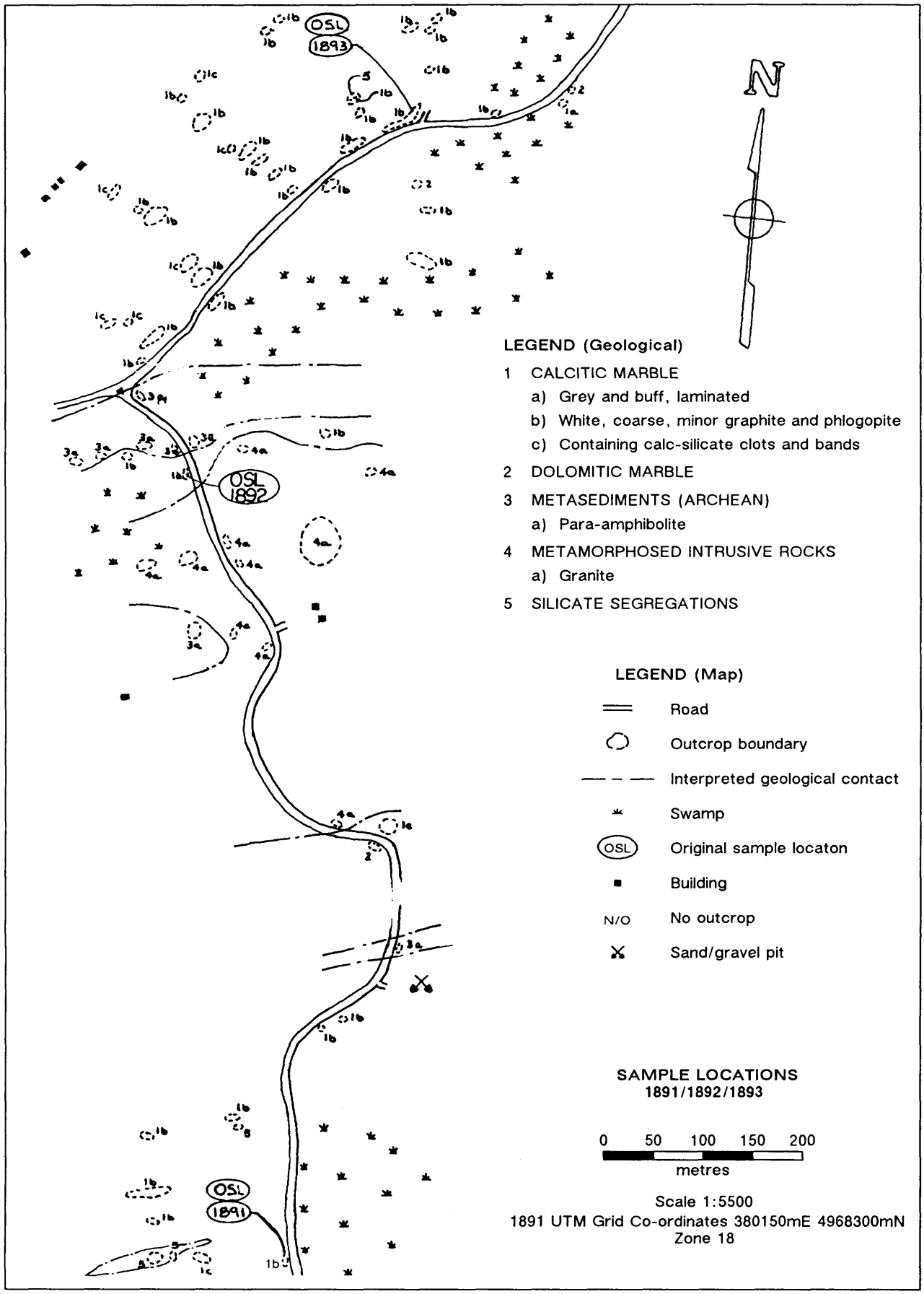


Figure 84. *Location Map, Samples 1891, 1892, and 1893.*

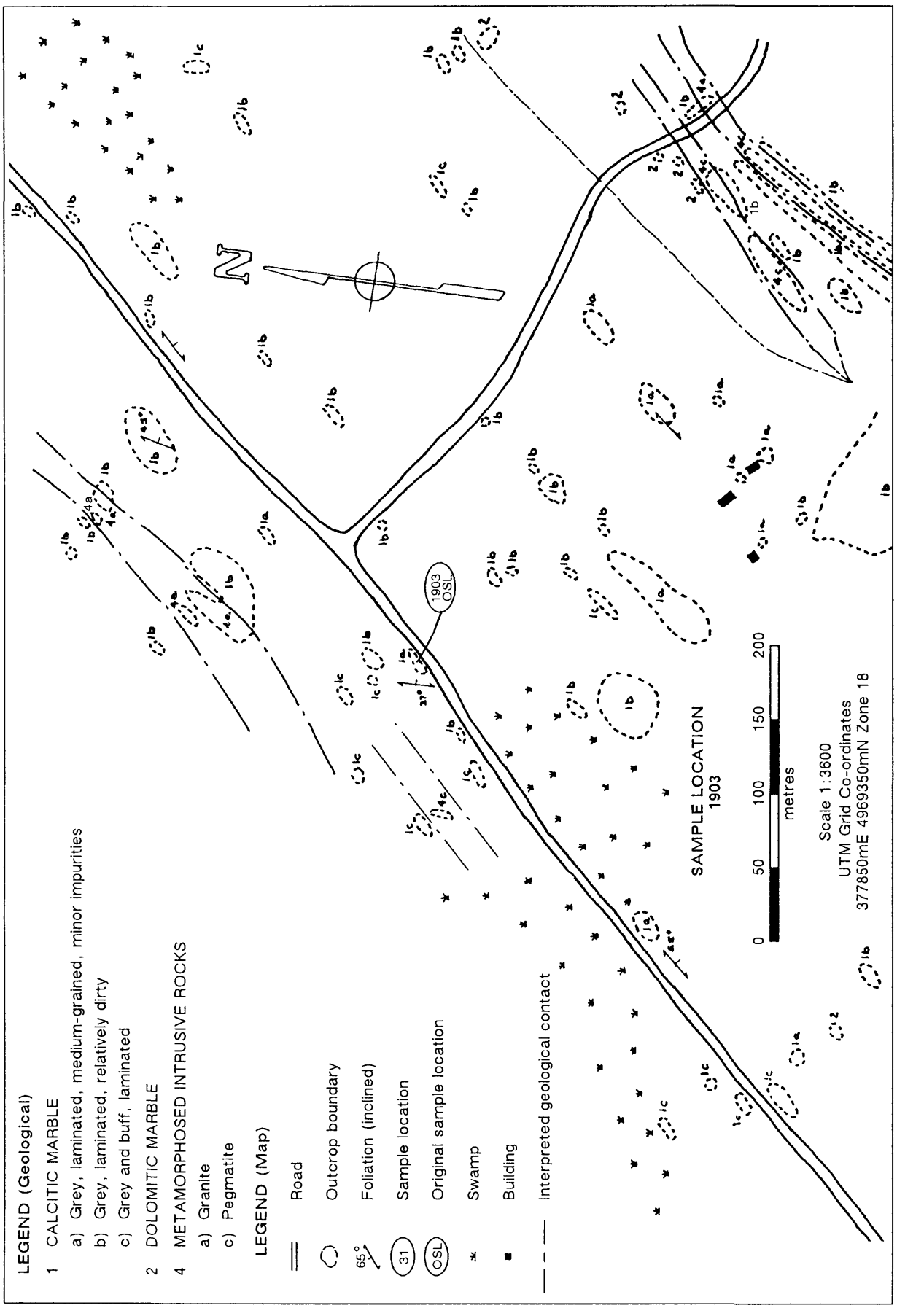


Figure 85. *Location Map, Sample 1903.*

DOLOMITIC MARBLE MAP AREAS

Table 12 is a list of the dolomitic marble map areas mapped during the course of the survey. Dolomitic marble map areas were selected on the basis of the chemical contents of the three predominant elements, CaO, MgO, and SiO_2 in marble. In order to warrant mapping, the marble from these areas had to fit the requirements of containing less than 1.5 weight percent SiO_2, with the CaO/MgO ratio on the order of 1.4.

TABLE 12. LIST OF DOLOMITIC MARBLE MAP AREAS.

3
44/45a/45b
306
419
439
455
460
604
683
684
708/709
835

MAP AREA 3

Location

Southeast corner, Madoc Township.

Map reference: NTS 31C/11; UTM 307050mE, 4931700mN, Zone 18.

Access

1 km south of Highway 7, one concession east of the Madoc turnoff, Concession IX, Lot 1.

Regional Geology

Sample 3 was taken from the southern extension of the main marble belt that runs through Madoc Township. The belt is bounded to the south by a granitic intrusion and to the north by metasediments. Numerous small metasedimentary and intrusive rock units outcrop within the belt.

Local Geology

This area is underlain chiefly by dolomitic marble with some narrow calcitic marble bands (Figure 86). Most of the carbonate rock is white, with lesser amounts of fine-grained grey marble. Impurities within the dolomitic marble can total up to 20 percent, occurring as clots and bands of silicate material. The nature of the contact with the granite is unknown, as a long linear swamp overlies the area adjacent to the granite.

Previous Geological Work

Madoc Township has been mapped by Wilson (1940a) and Hewitt (1964a, 1968).

Chemistry

The majority of samples from this area (samples 2 to 8, 47, and 188 to 198) are dolomitic in composition, containing upwards of 2 weight percent SiO_2. Trace and metallic element contents are low in most samples (for example, sample 3, Appendix A). Sample 188c (Appendix A) is the exception in this region of the marble belt, with almost 0.2 weight percent Cu.

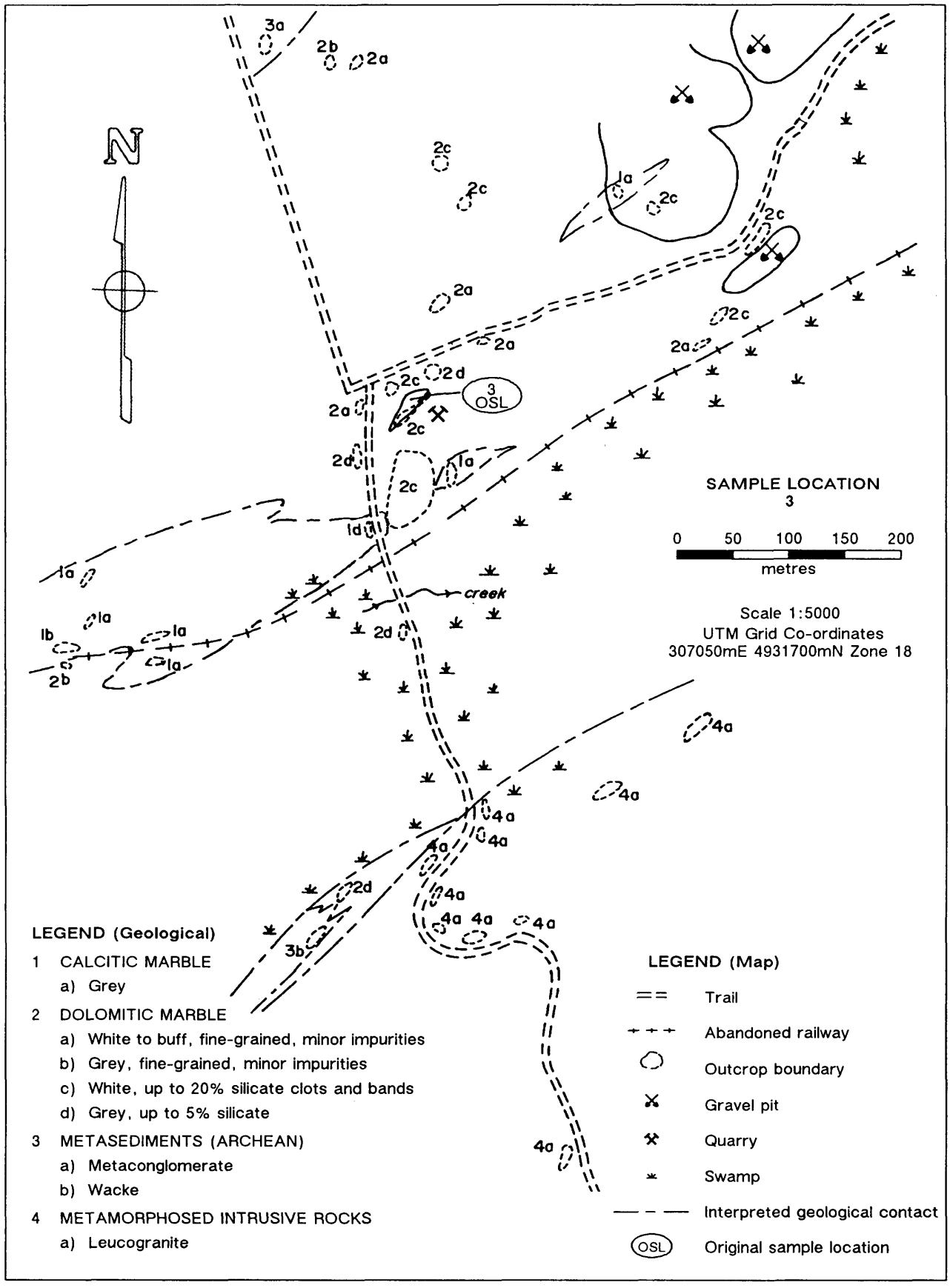


Figure 86. *Location Map, Sample 3.*

MAP AREA 44/45a/45b

Location

West-central Madoc Township.

Map reference: NTS 31C/12.

44—UTM 298500mE, 4940750mN, Zone 18.

45a/45b—UTM 298350mE, 4940800mN, Zone 18.

Access

Turn west at Fox Corners from Highway 62; sample 44 has been taken from one of the two small test pits, Concession V, Lot 19. Samples 45a and 45b were taken from a roadside outcrop approximately 200 m east of the Moira River. The samples were taken from separate marble units occurring within the outcrop.

Regional Geology

These samples were taken from a marble unit which covers most of the central portions of Madoc Township. The marble is intruded to the north and south by granite and is overlain in the vicinity by Paleozoic carbonate rocks. Within the marble are small units of metasediments and metavolcanics.

Local Geology

Detailed mapping in the area (Figure 87) has revealed the presence of marbles of both calcitic and dolomitic composition. Calcitic marble varies from grey fine grained to white crystalline, and grades from only minor impurities to greater than 30 percent impurities. Talc-muscovite occurs in at least one location within the dolomitic marble. The marble grades toward the west to impure marble, where it is interbedded with minor wacke.

Previous Geological Work

Madoc Township has been mapped by Miller and Knight (1914), Wilson (1940a), Hewitt and Satterly (1957), Hewitt (1964a), and Hewitt (1968).

Chemistry

Regional samples from this belt (samples 17 to 45) vary considerably in marble composition. Samples vary from pure calcite marble at sample location 3 (2 km southeast of location 44) to pure dolomite marble at sample location 44; SiO_2 content varies from nearly 0 percent to greater than 20 percent SiO_2. Trace and metallic element contents are at background levels throughout the entire belt.

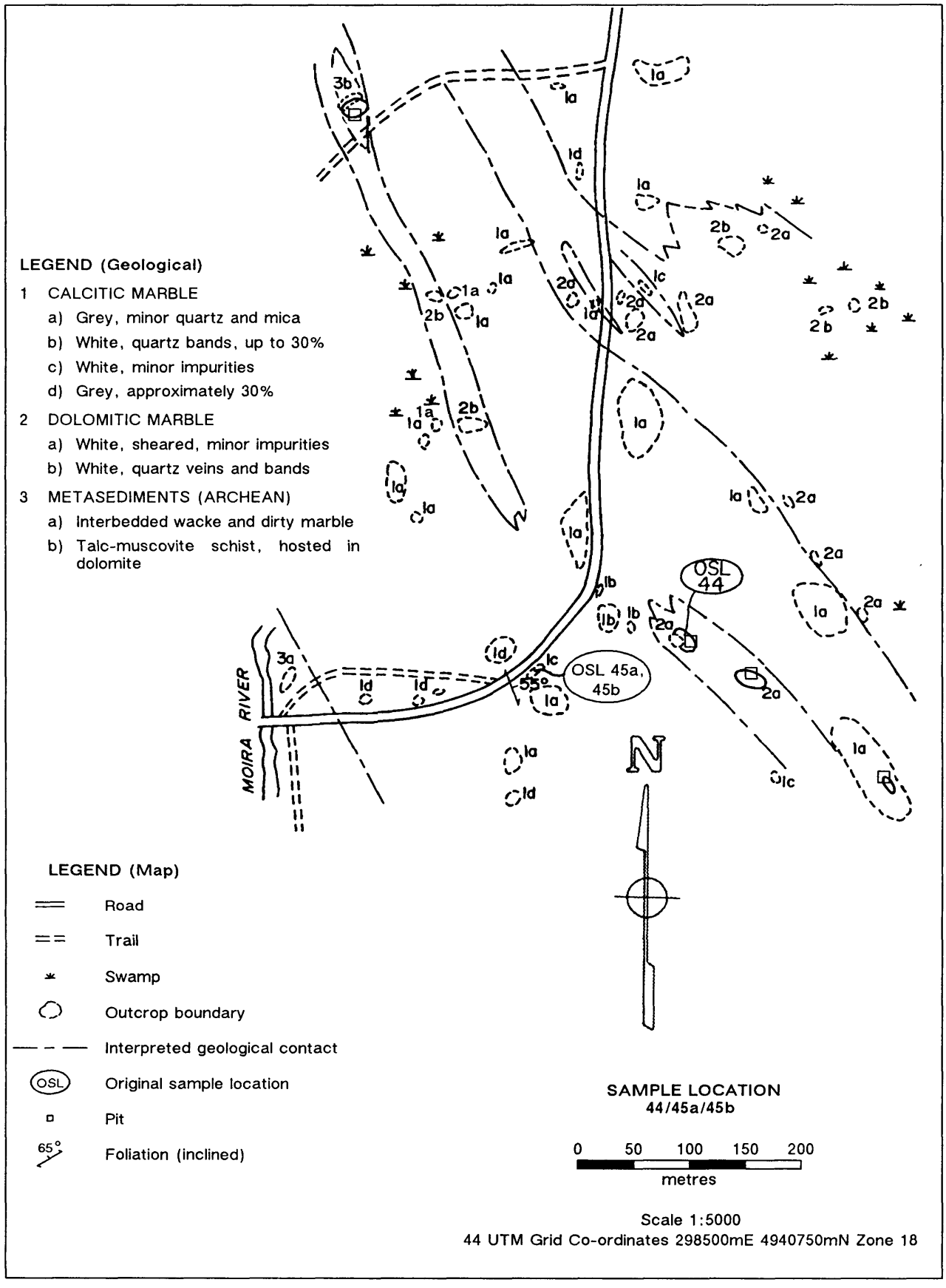


Figure 87. *Location Map, Samples 44, 45a, and 45b.*

MAP AREA 306

Location

East-central Mayo Township.

Map reference: NTS 31F/4; UTM 298500mE, 4940750mN, Zone 18.

Access

Less than 1 km north of Gin Lake and east of the southern tip of Wannamaker Lake. Approximately 6 km south of McArthurs Mills along a gravel road, Concession VII, Lot 22.

Regional Geology

Sample 306 was taken from a marble belt trending northeast across Dungannon and Mayo townships. The belt is from 2 to 3 km in length. The marble belt is bounded by metasediments on all sides, with only minor intrusive rocks in the marble zone. Many metasedimentary units occur concordantly within the marble unit, although these are generally discontinuous along strike. Marble samples taken across the belt are predominantly dolomitic in composition.

Local Geology

This map area is made up of several units of calcitic and dolomitic marble, with intercalated metasediments (Figure 88). Most of the marble is dolomitic, with only minor amounts of interbedded calcitic marble. The marble is for the most part grey, with varying amounts of pyrite, phlogopite, and calc-silicate material in clots. Metasedimentary units include hornblende amphibolite, hornblende-garnet amphibolite, and quartzite. These units are normally between 50 and 75 m wide, with some of the smaller units pinching out along strike.

Previous Geological Work

Mayo Township was mapped by Hewitt and James (1956) and Hewitt (1964a).

Chemistry

Most of the samples from this belt (samples 300 to 313) are dolomitic in composition, with low trace and metallic element contents (for example, sample 306, Appendix A). Silica content is variable throughout the belt, ranging from nearly 0 to greater than 20 weight percent.

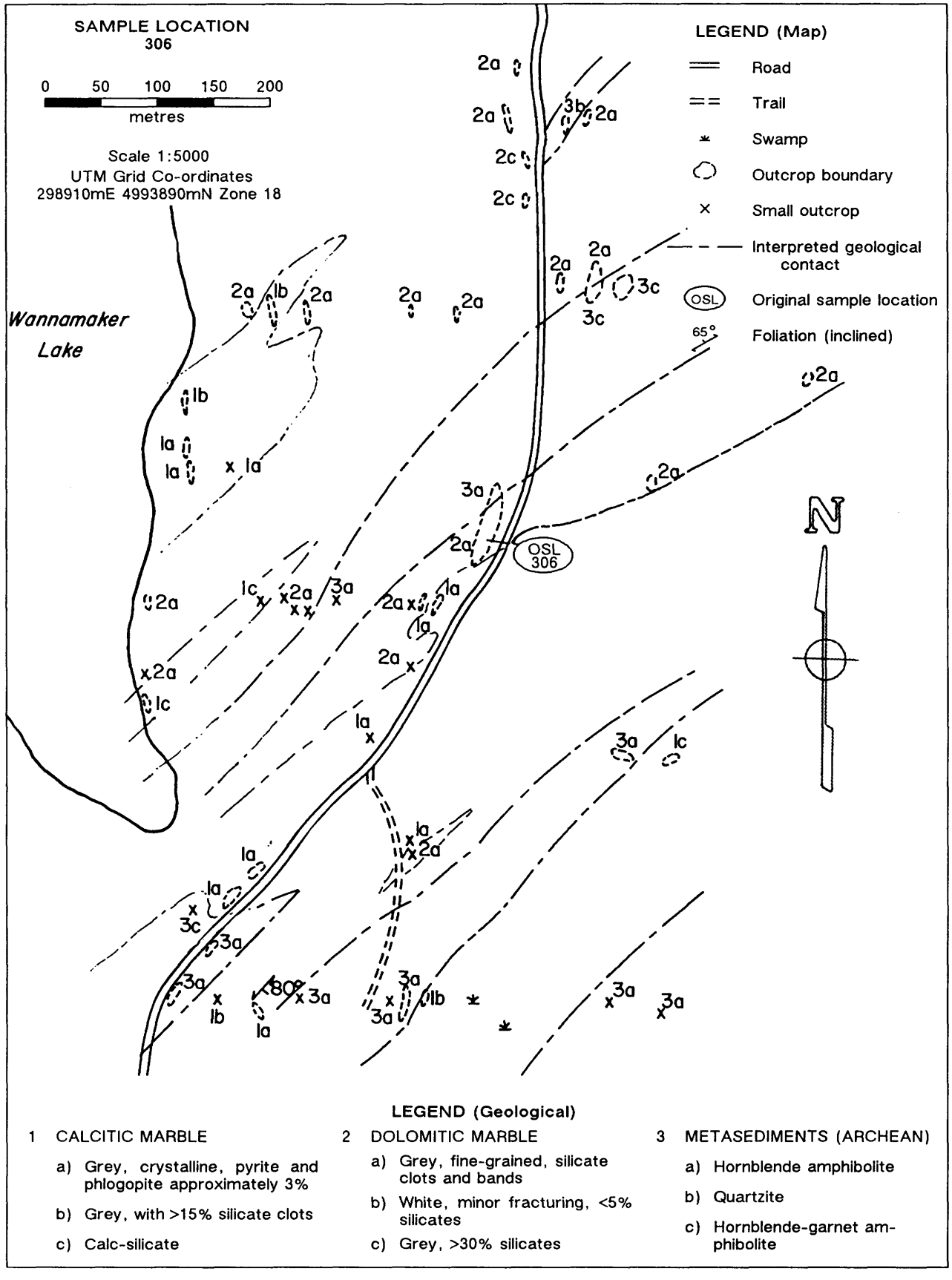


Figure 88. *Location Map, Sample 306.*

MAP AREA 419

Location

Northeast portion of Dungannon Township.

Map reference: NTS 31F/4; UTM 278860mE, 4991200mN, Zone 18.

Access

Sample 419 was taken from the former McMillan Quarry, approximately 1.4 km east on a quarry road, 1.5 km west of York River, Concession X, Lot 28.

Regional Geology

Sample 419 is from an areally extensive marble belt which runs through Faraday, Dungannon, and Mayo townships in an east-northeasterly direction. The marble is interbedded with para-amphibolite and paragneiss, which occur as bands ranging from a few metres up to 0.5 km in width.

Local Geology

Detailed mapping indicates that the marble zone is very narrow, with the true width being represented closely by that of the quarry (Figure 89). The quarry is approximately 20 m wide by 40 m long, and is flanked on both sides by paragneiss and/or biotite schist. The marble band dips 60° northwest with the metasedimentary bands. Marble within the quarry is white and dolomitic in composition, with some minor ptygmatic silicate folds. Quarried blocks are up to a metre square without fracturing. Marble at the east of the map area is calcitic, coarse grained, and orange in colour. Minor amounts of tremolite and graphite occur within this orange marble.

Previous Geological Work

Dungannon Township has been mapped by Hewitt and James (1956). McMillan Quarry has been mapped by Hewitt (1964c).

Chemistry

Regional samples taken in this portion of the marble belt (samples 408 to 420) have varying silica contents ranging from less than 1 percent to over 20 percent by weight. Marble samples also range in composition from calcitic to dolomitic. Sample 412 (Appendix A) has a high Cu content (2040 ppm), although this sample also has a high SiO_2 content. Sample 415 (Appendix A) has a high Sr content (2290 ppm). All other samples have low trace and metallic element contents (for example, sample 419, Appendix A).

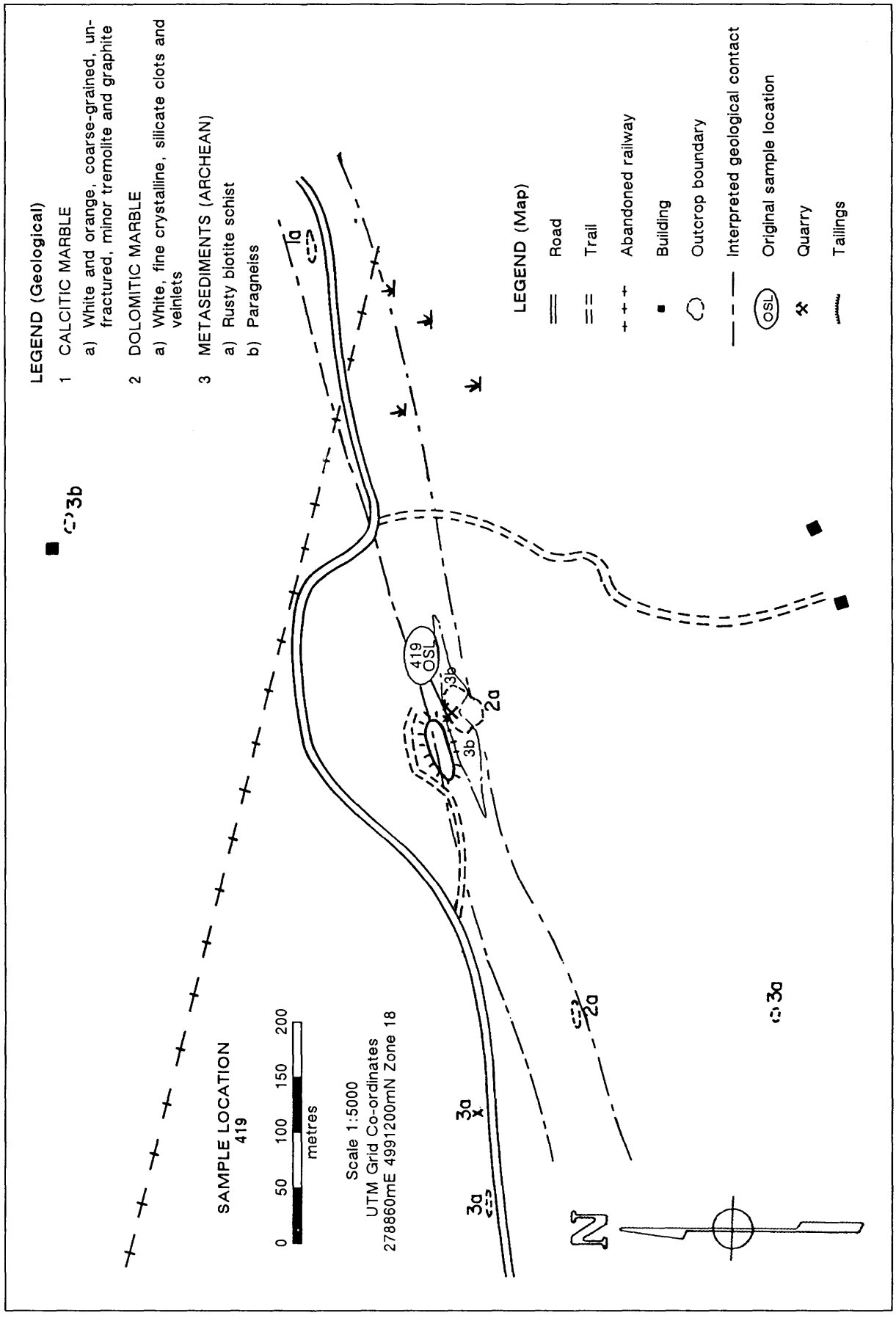


Figure 89. *Location Map, Sample 419.*

MAP AREA 439

Location

South-central Kennebec Township.

Map reference: NTS 31C/10; UTM 345200mE, 4948150mN, Zone 18.

Access

South of Highway 7, on a road running on the south side of Salmon River, east end of Horseshoe Lake, Concession IV, Lot 6.

Regional Geology

Sample 439 is from a narrow northeast-trending marble belt bounded to the north and south by metasediments. This narrow belt is slightly south of a much wider belt just south of Highway 7. Both belts contain pegmatite dikes and numerous metasedimentary bands, all concordant with the marble structure.

Local Geology

Detailed mapping indicates that the marble occurs as a narrow unit with inclusions of amphibolite and pegmatite (Figure 90). Most of the marble is coarse grained and dolomitic in composition, with various amounts of silicate, amphibolite, and biotite. Metasediments flanking the marble belt are generally schistose, and contain biotite, hornblende, and quartz.

Previous Geological Work

Kennebec Township has been mapped by Meen and Harding (1942) and Hewitt (1964a).

Chemistry

The narrow marble band from which sample 439 was taken (samples 434 to 439) is predominantly dolomitic in composition, with up to 5 percent silica. Trace and metallic element contents are low throughout this unit. A wide belt north of this narrow band, which is not shown on the map, is also predominantly dolomitic although there are several calcitic marble samples from the belt. Silica content ranges up to 20 weight percent for several of the calcitic marble samples. These samples normally have higher trace and metallic element contents, typical of impure marbles.

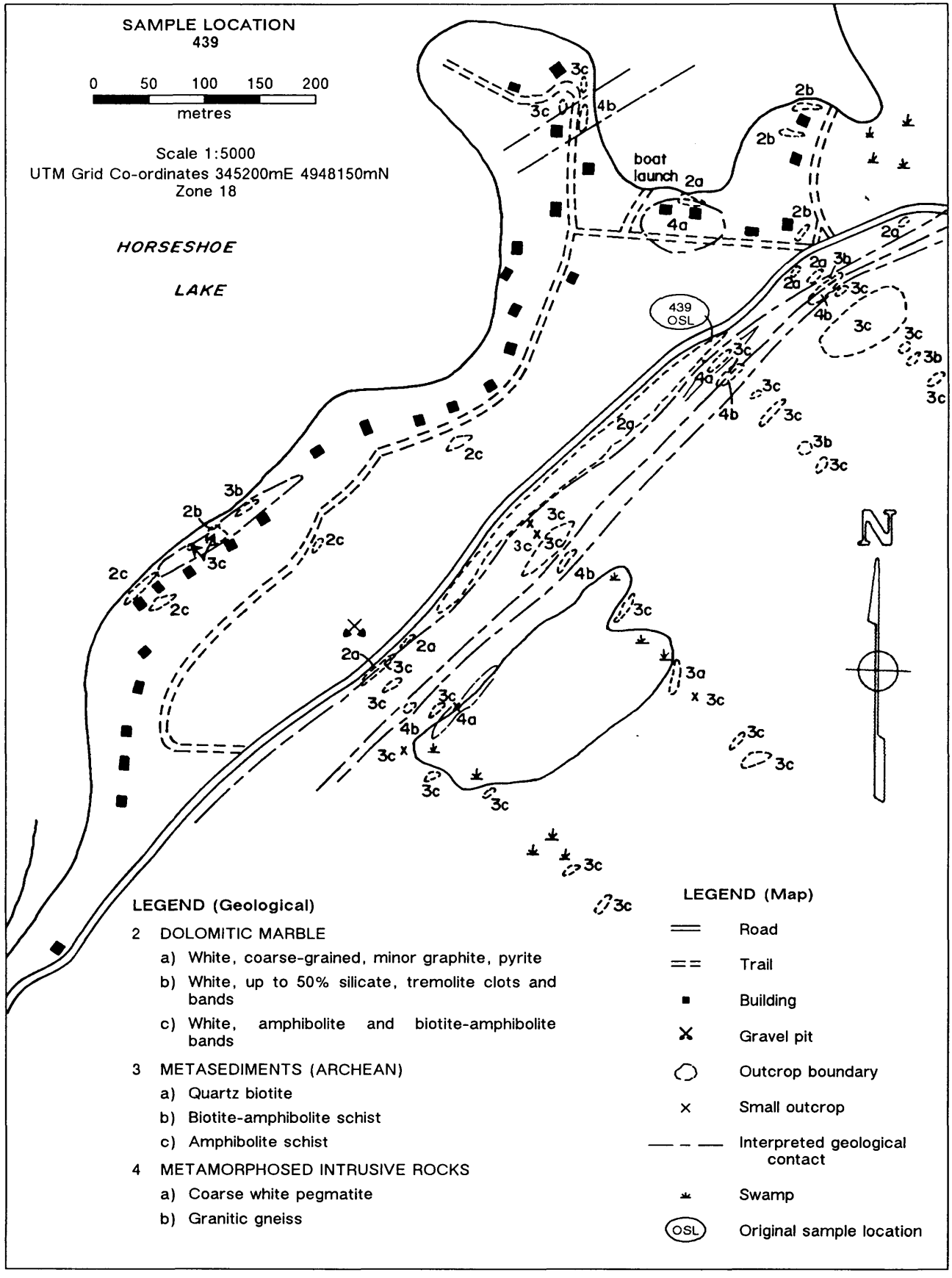


Figure 90. *Location Map, Sample 439.*

MAP AREA 455

Location

West-central Olden Township (at the Kennebec Township boundary).

Map reference: NTS 31C/10; UTM 350550mE, 4956000mN, Zone 18.

Access

South of Highway 7, west of Mountain Grove, 1 km east of Big Clear Lake, Concession I, Lot 17.

Regional Geology

This sample is from a northeast-trending marble belt which runs through Kennebec and Olden Townships. The belt is flanked to the north and south by metasediments, with granitic intrusive rocks adjacent to and within the marble belt. Small metasedimentary units occur within the marble running parallel to the marble belt.

Local Geology

Detailed mapping of this area (Figure 91) shows that the area is underlain mainly by white dolomitic marble. Most of the marble has greater than 5 percent silicate minerals occurring as clots and bands. Metaigneous pegmatite and granite occur within the marble as relatively small units. These intrusive rocks apparently have been altered by reactions with the carbonate material to form a white coarsely crystalling rock type.

Previous Geological Work

Olden Township has been mapped by Harding (1951) and Hewitt (1964a).

Chemistry

Samples in the marble belt (samples 358 to 367 and 442 to 462) have silica contents ranging from less than 1 weight percent to over 20 weight percent. Samples also range from calcitic to dolomitic in composition. Trace and metallic element contents are low throughout the belt with the exception of Sr, which is anomalous in several of the calcitic marble samples. Visual examination along different areas of this belt reveals that silicate banding is prevalent in most of the dolomitic marble.

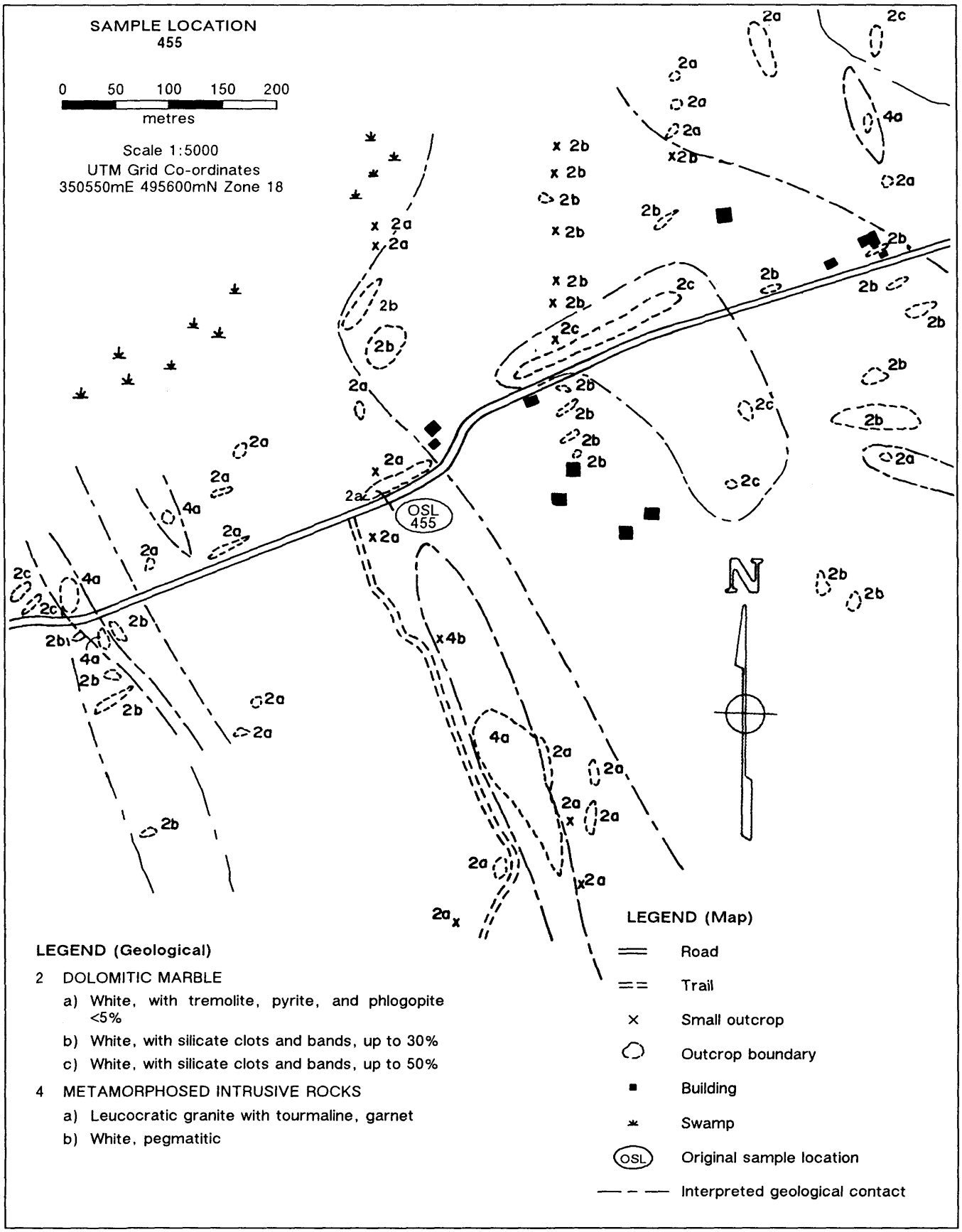


Figure 91. *Location Map, Sample 455.*

MAP AREA 460

Location

West-central Olden Township.

Map reference: NTS 31C/15; UTM 351800mE, 4957100mN, Zone 18.

Access

On the south side of Highway 7, 1.5 km west of the Mountain Grove turnoff, Concession II, Lot 18.

Regional Geology

This sample is from an east-trending marble belt located north of White Lake. The unit is approximately 1 km wide by several kilometres in length. It is bounded by granite gneiss toward the north and metasediments to the south. Metasedimentary and metaigneous units are intercalated within the marble unit; however, these units are discontinuous along strike. Regional samples taken from this belt are predominantly dolomitic in composition.

Local Geology

The detailed map area (Figure 92) is underlain predominantly by white dolomitic marble with varying amounts of amphibole, biotite, and silicate clots. Good clean white marble occurs adjacent to leucogranite outcrops suggesting that there is a connection between the presence of the intrusive rocks and the marble purity. Intrusive rocks are generally concordant to marble foliation in the area, and are discontinuous along strike. Tremolite is associated with locally occurring silica-rich bands.

Previous Geological Work

Olden Township has been mapped by Harding (1951) and Hewitt (1964a).

Chemistry

Samples taken throughout the marble belt are predominantly dolomitic in composition although several calcitic marble samples are present. Silica contents are generally high, while trace and metallic element contents are low.

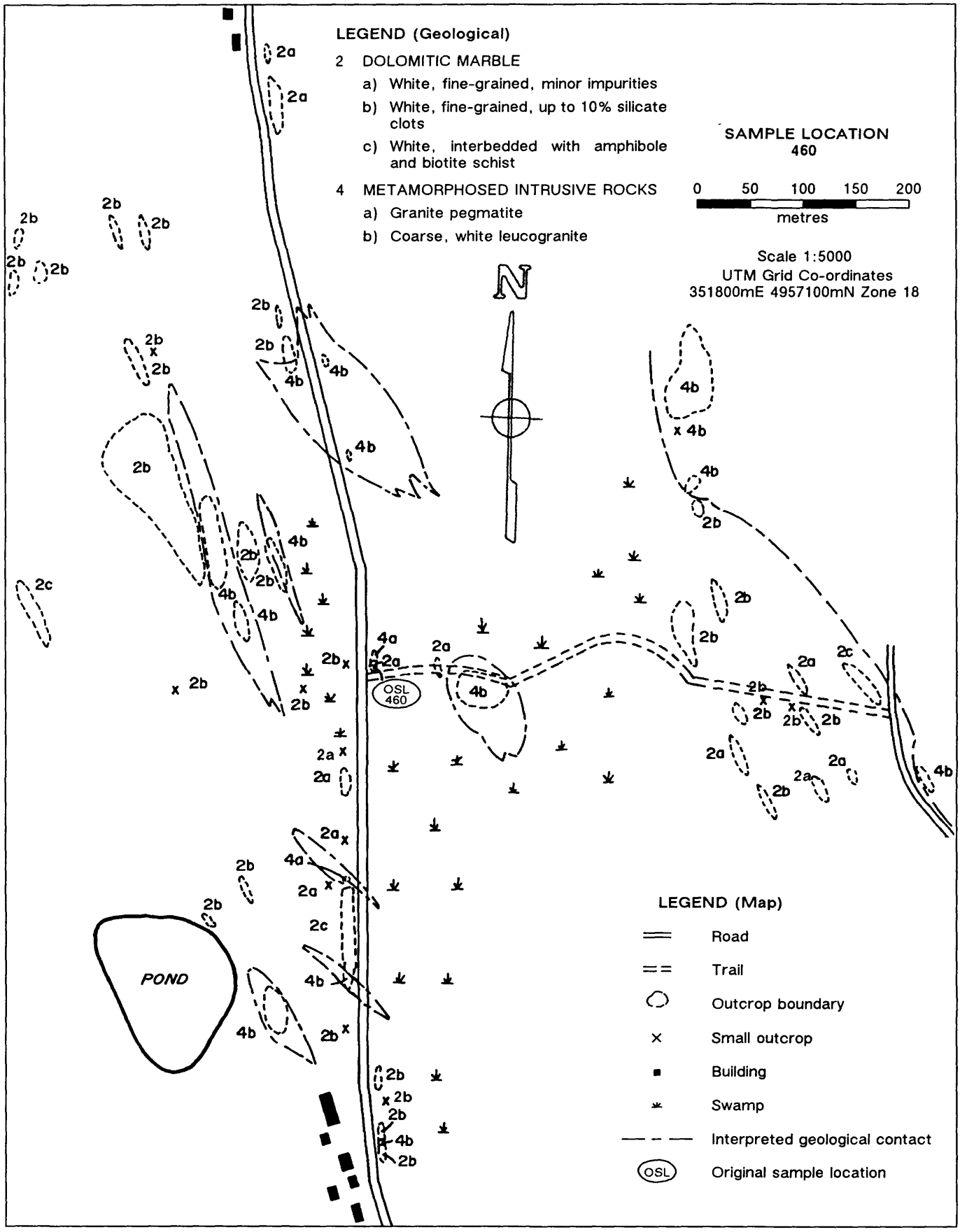


Figure 92. *Location Map, Sample 460.*

MAP AREA 604

Location

Northeast corner of Clarendon Township.

Map reference: NTS 31C/15; UTM 348200mE, 4981350mN, Zone 18.

Access

On the paved road running from Plevna to Ompah, approximately 200 m west of the power line, Concession IV, Lot 38.

Regional Geology

Sample 604 is from the marble unit located centrally within the Ferleigh Syncline. This band is a northeast-trending unit bounded to the north by amphibolite and to the south by amphibolite and paragneiss.

Local Geology

Detailed mapping of this area (Figure 93) reveals that the majority of marble samples are dolomitic with a fine grain size. Silicate clots are prevalent throughout the area, ranging from only a few percent to over 50 percent. Minor amounts of tremolite and biotite occur throughout most of the marble. Amphibolite occurs only in one location and is only exposed over a couple of metres.

Previous Geological Work

Clarendon Township has been mapped by Peach and Smith (1956), Hewitt (1964a), and Pauk (1982, 1987).

Chemistry

Regional sampling in this belt (samples 358 to 367 and 442 to 462) shows that a gradation occurs from dolomitic marble at the southwest end of the belt to calcitic marble toward the northeast. Impurities range from less than 1 percent in a single dolomitic marble sample to over 20 percent for several calcitic marble samples. Trace and metallic element contents are low for all of the samples in this belt.

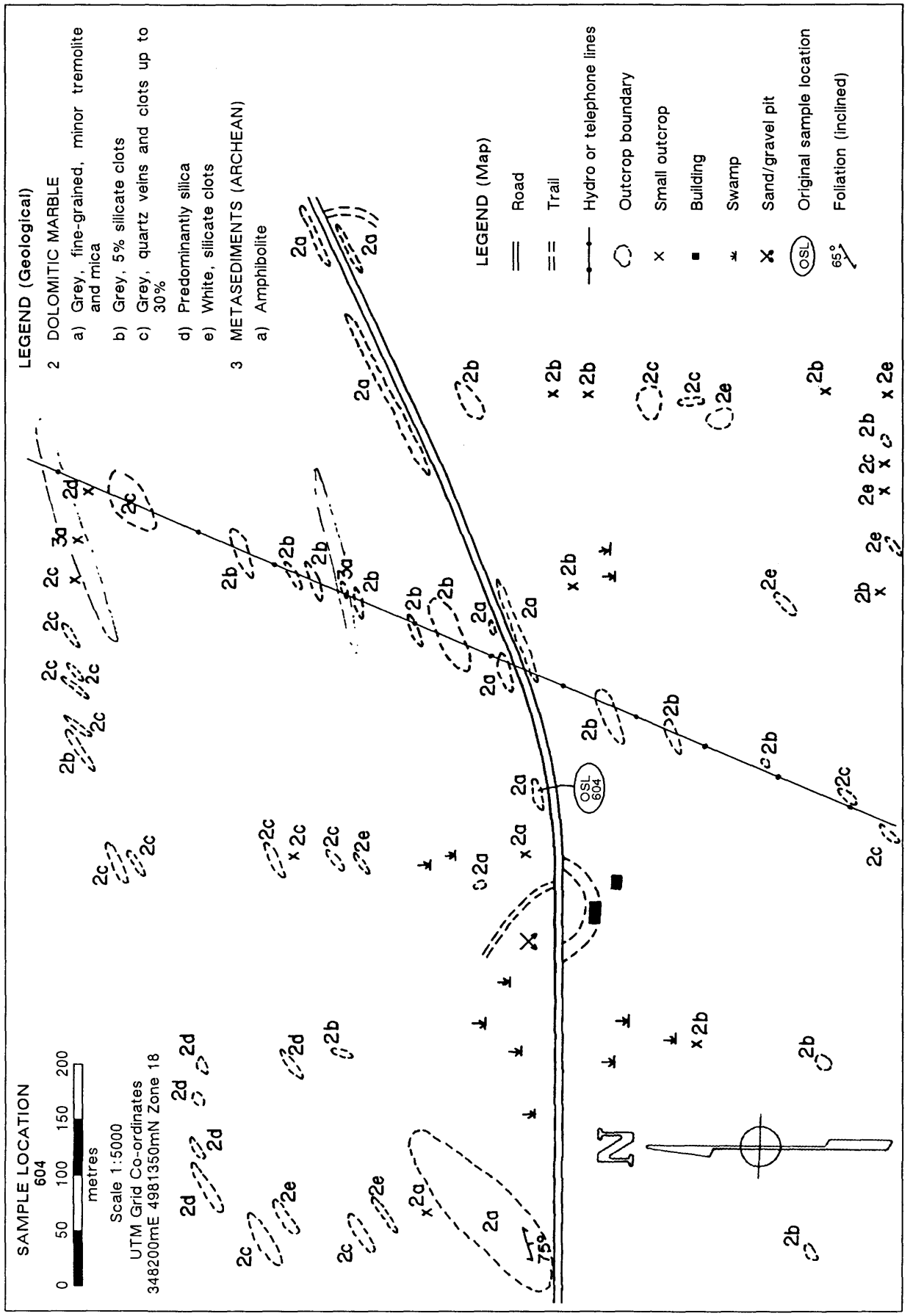


Figure 93. *Location Map, Sample 604.*

MAP AREA 683

Location

East-central Palmerston Township.

Map reference: NTS 31C/15; UTM 368300mE, 4979000mN, Zone 18.

Access

A gravel road approximately 1 km northeast of Snow Road Station, 0.5 km west of North Sherbrooke Township boundary, Concession XI, Lot 12.

Regional Geology

Sample 683 is from a long narrow belt extending northeast from Mississippi Station to Gordon Rapids. The belt rarely exceeds 1 km in width. It is bounded by mafic intrusive rocks to the east and granitic rocks toward the west. Within the belt are several narrow discontinuous amphibolite units. Almost all of the regional samples in this belt were taken from dolomitic marble.

Local Geology

The detailed map area (Figure 94) is underlain by dolomitic rocks of varying purity. Granitic intrusive rocks are in contact with the marble, trending generally north. Neither the marble nor the granite have been altered at their contact. Minor amounts of amphibolite lie in sharp contact with the marble. The majority of marble outcrops are characterized by the presence of silicate material in clots and bands, with lesser amounts of tremolite, chlorite, and pyrite.

Previous Geological Work

Palmerston Township or portions of Palmerston Township have been mapped by Smith (1958), Hewitt (1964a), and Pauk (1982, 1987).

Chemistry

Samples from this marble belt (samples 682 to 686 and 1846 to 1849) are dolomitic in composition, and generally have low SiO_2 contents. Trace and metallic element contents are low in all of the samples in the belt.

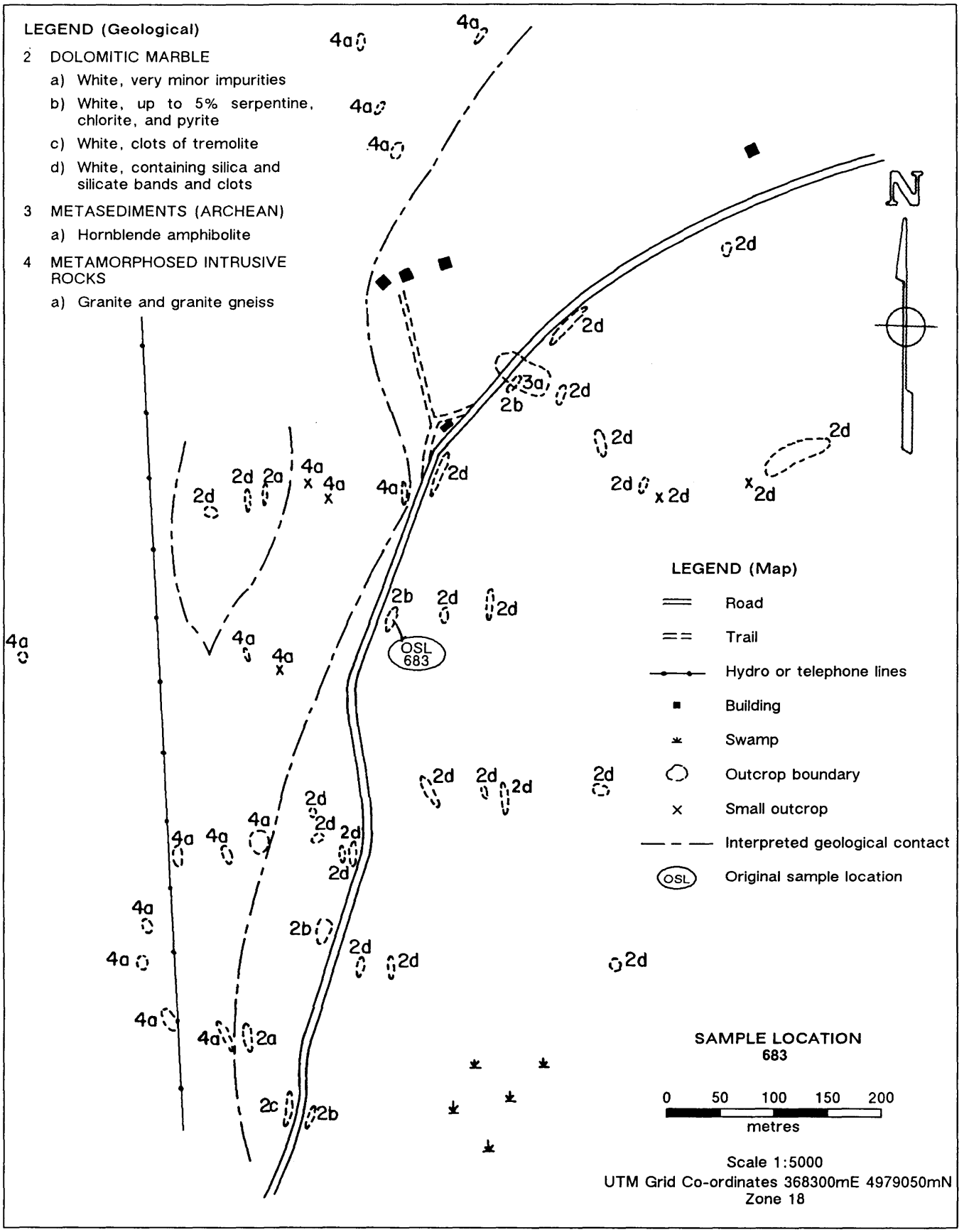


Figure 94. *Location Map, Sample 683.*

MAP AREA 684

Location

Northwestern edge of North Sherbrooke Township.

Map reference: NTS 31C/15; UTM 368950mE, 4979750mN, Zone 18.

Access

On a gravel road approximately 500 m east of Palmerston–North Sherbrooke Township Line, east of Snow Road Station.

Regional Geology

Sample 684 comes from a narrow northeast-trending marble belt. The belt ranges between 0.5 and 1 km in width, and is approximately 20 km in length. The belt is bounded to the northwest by granitic intrusive rocks and to the southeast by mafic intrusive rocks. Within the marble are several, predominantly hornblende amphibolite, bands.

Local Geology

Detailed mapping around the original sample location (Figure 95) indicates that the marble belt is only 150 m wide. All marble outcrops are dolomitic in composition, with silicate clots making up between 5 and 25 percent of the total rock. There is very little alteration of the granite at its contact with the marble.

Previous Geological Work

North Sherbrooke Township has been mapped by Smith (1958) and Hewitt (1964a).

Chemistry

Regional sampling of this narrow belt (samples 682 to 686 and 1846 to 1849) shows that a gradation occurs from dolomitic marble at the southwest end of the belt to calcitic marble at the northeast end. Dolomitic marble sampled a distance away from silicate clots contain up to 3 weight percent SiO_2. Calcitic marble in this belt contains a much higher SiO_2 content, with a varying MgO content. Trace and metallic element contents are low in all samples in this belt.

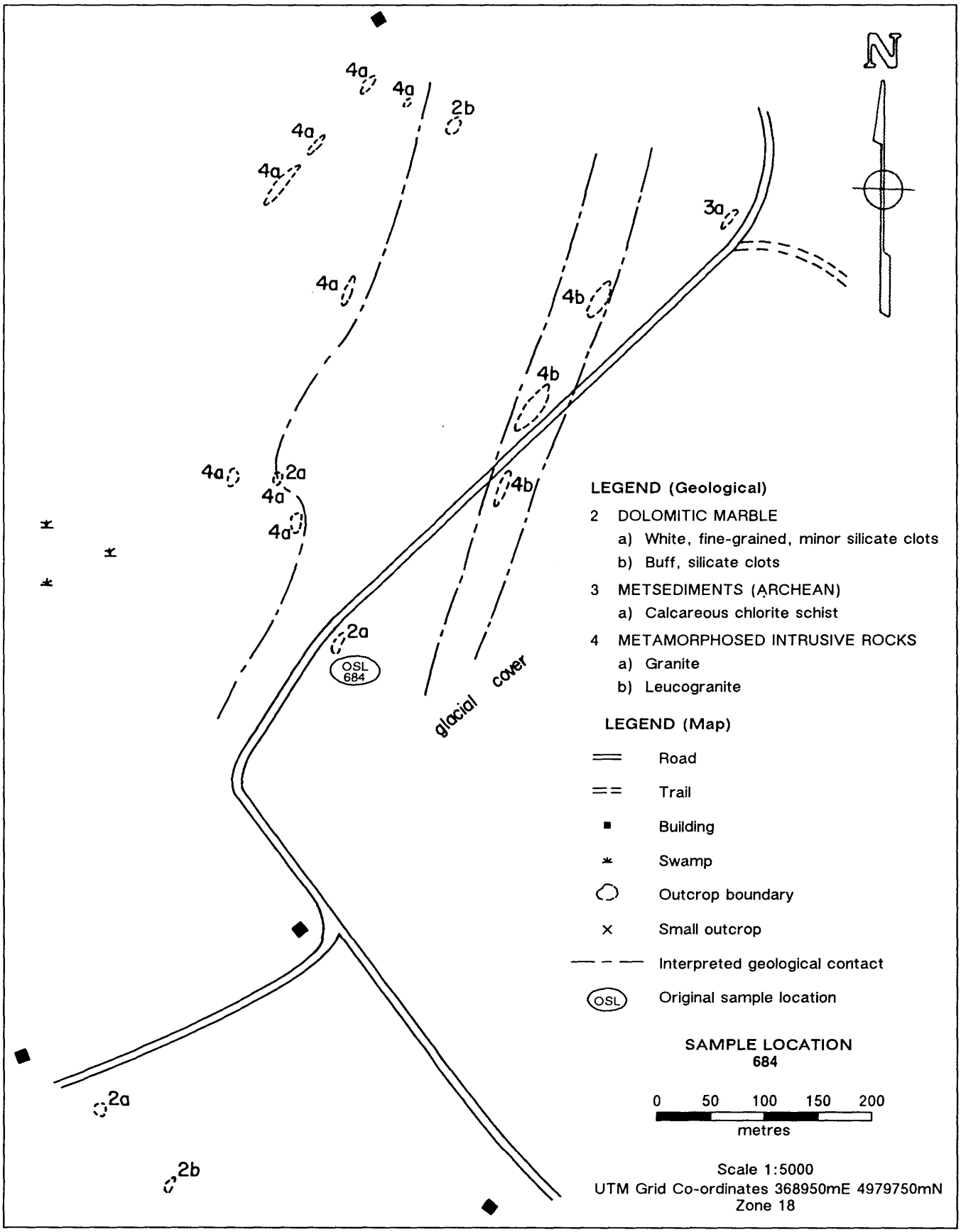


Figure 95. *Location Map, Sample 684.*

MAP AREA 708/709

Location

Southeast corner of Palmerston Township.

Map reference: NTS 31C/15.

708—UTM 366400mE, 4973600mN, Zone 18.

709—UTM 366300mE, 4973300mN, Zone 18.

Access

Approximately 3 km north of Clarendon Station on a north-trending road, Concession VIII, Lot 4.

Regional Geology

This map area includes part of a narrow marble belt which trends northeast from Mississippi Station to Gordon Rapids. This belt is bounded by mafic intrusive rocks to the west and by granitic intrusive rocks to the east. This marble belt forms a zone of intense shearing between dioritic and granitic intrusive rocks (Smith 1958).

Local Geology

The detailed map area (Figure 96) is underlain by dolomitic marble of varying impurity content, and by hornblende amphibolite which is in sharp contact with the marble. Impurities within the dolomitic marble occur as silicate clots and bands, often in excess of 50 percent. Calcitic marble contains minor amounts of tremolite along with silicate clots. Hornblende amphibolite occurs in the southwest section of the map in contact with the marble, and also as a discontinuous lens within the marble.

Previous Geological Work

Palmerston Township has been mapped by Smith (1958), Hewitt (1964a), and Pauk (1982, 1987).

Chemistry

The majority of samples taken from within the marble belt (samples 687, 688, 708, and 709) are dolomitic in composition. These samples have low impurity contents with SiO_2 less than 1 weight percent. Trace and metallic element contents are low throughout this belt.

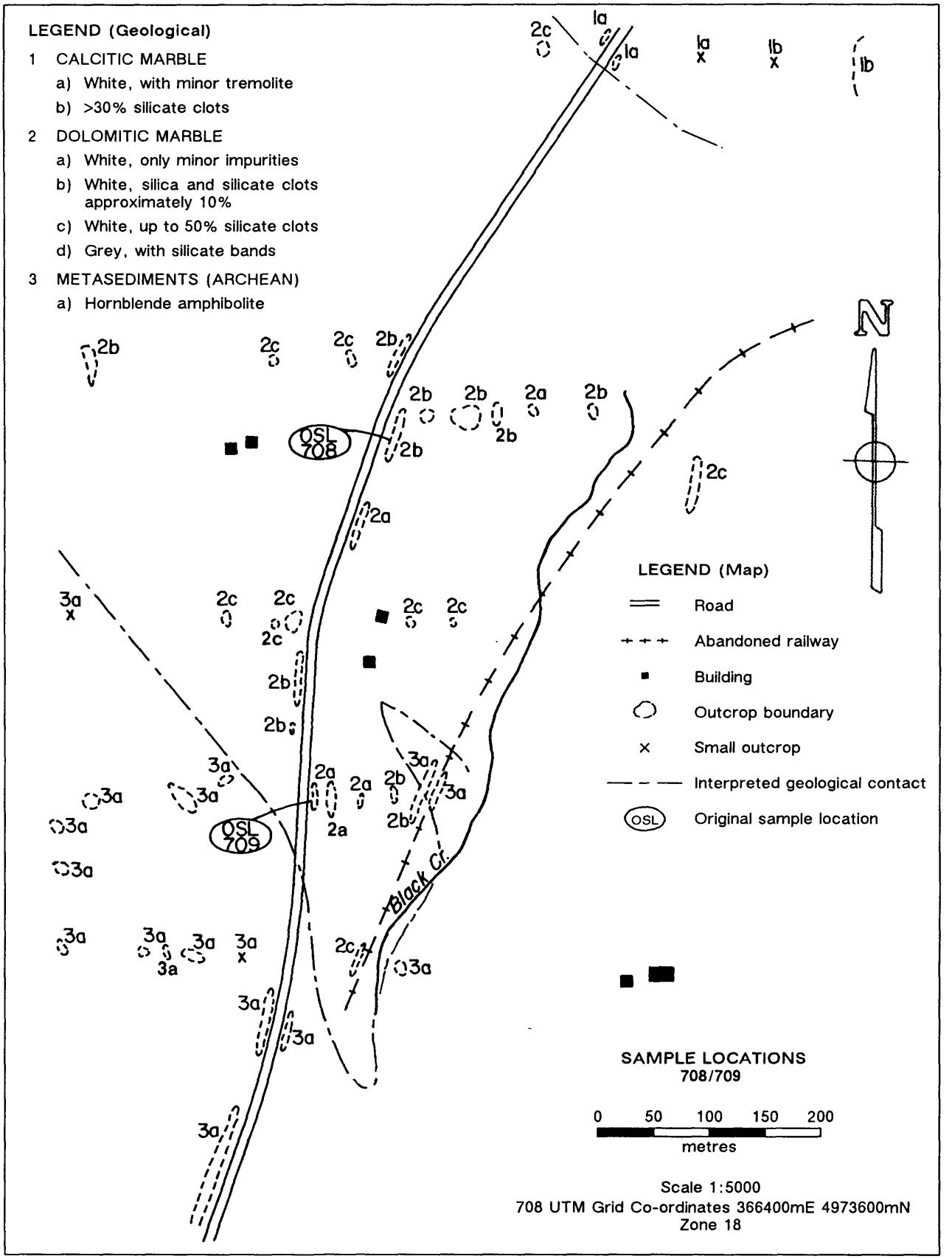


Figure 96. *Location Map, Samples 708 and 709.*

MAP AREA 835

Location

Northeast corner of Faraday Township.

Map reference: NTS 31F/4; UTM 264400mE, 4988900mN, Zone 18.

Access

2 km north of Highway 28, 300 m east of Monck Road, Concession B, Lot 28.

Regional Geology

Nearly half of Faraday Township is underlain by marble of differing compositions. The marble is interbedded with metasediments and intrusive rocks of mafic and granitic composition. The belt from which this sample was taken is slightly north of a larger marble belt. It is separated from the larger belt by a band of metasediments.

Local Geology

Detailed mapping of the area (Figure 97) reveals that the area is underlain by massive white marble of calcitic and dolomitic composition. The least contaminated marbles of calcitic and dolomitic composition contain minor amounts of phlogopite and pyrite. Impure marble contains clots and bands of silicate and calc-silicate material. Small pegmatitic bodies occur within the marble without any visible alteration around them.

Previous Geological Work

Faraday Township has been mapped by Adams and Barlow (1910), Hewitt and Satterly (1957), and Hewitt (1959).

Chemistry

Most of the samples from this belt (samples 833 to 843) have low SiO_2 contents with either calcitic or dolomitic compositions. Trace and metallic element contents are low throughout the entire area.

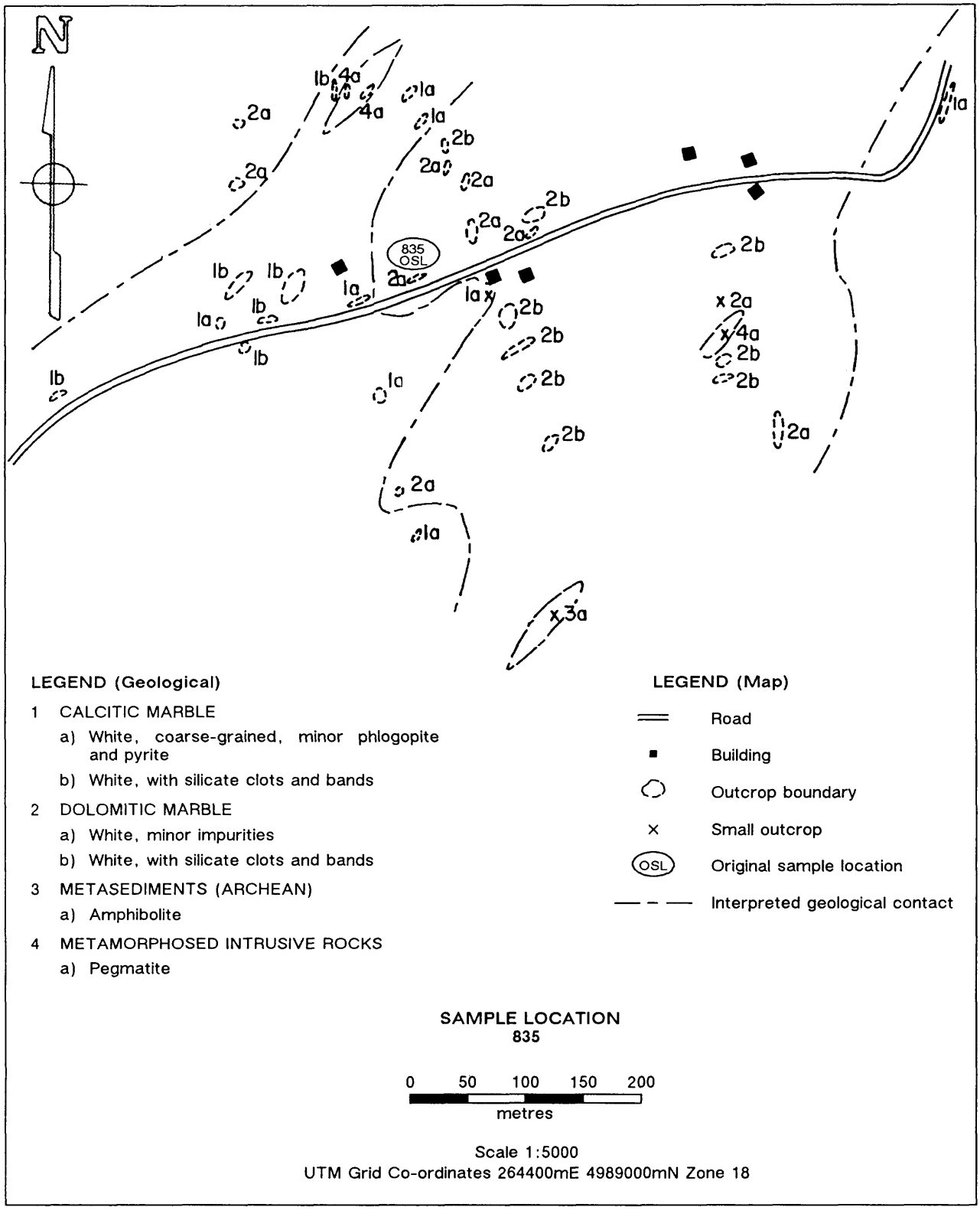


Figure 97. *Location Map, Sample 835.*

Appendix A

Analytical Results

This appendix includes the analytical results of 1912 marble samples collected in Southeastern Ontario. The locations of these samples are plotted on Chart A (back pocket).

Sample numbers 31x through 1912z are channel samples taken from the detailed map areas (Figures 28 through 97). Sample locations are plotted on the relevant detailed map area figures. Channel samples were taken perpendicular to the strike over 1 to 2 m distances.

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
2	1.28	29.62	20.55	0.08	0.08	0.01	0.01	0.05	0.01	0.01	39.2
3	0.01	29.85	20.81	0.07	0.12	0.01	0.01	0.01	0.01	0.01	40.4
4	20.00	24.52	13.64	1.63	4.51	0.37	0.01	0.20	0.11	0.04	30.6
6	12.50	26.08	17.76	1.78	1.61	0.31	0.01	0.10	0.10	0.27	35.9
7	6.42	43.37	2.20	0.52	1.28	0.21	0.01	0.08	0.03	0.05	35.8
8	1.27	53.81	1.48	0.53	2.39	0.16	0.01	0.36	0.01	0.05	41.5
9	2.03	55.88	1.31	0.72	0.10	0.42	0.01	0.02	0.02	0.01	40.6
10	10.50	47.00	1.73	0.25	0.05	0.02	0.01	0.04	0.01	0.01	35.1
11	9.20	27.31	19.06	0.26	0.87	0.06	0.01	0.05	0.01	0.01	40.6
13	2.71	28.38	19.21	1.01	0.99	0.25	0.01	0.04	0.04	0.01	44.9
14	5.51	48.84	2.68	1.24	0.76	0.10	0.18	0.03	0.04	0.03	40.5
15	20.00	9.85	4.77	5.00	5.73	2.00	0.13	0.07	0.97	0.18	10.3
18	20.00	28.44	2.96	5.00	2.88	0.68	0.73	0.05	0.30	0.11	24.3
19	12.00	38.23	2.77	5.00	0.89	0.75	0.13	0.02	0.09	0.04	35.1
20	4.35	50.47	2.95	1.12	0.51	0.12	0.08	0.01	0.04	0.01	39.7
21	7.95	27.22	18.24	1.05	1.92	0.50	0.01	0.06	0.03	0.01	12.0
24	11.40	37.93	3.88	2.53	1.71	0.26	0.46	0.04	0.10	0.04	34.3
27	1.40	29.28	20.39	0.68	0.43	0.12	0.01	0.05	0.22	0.07	44.8
28	3.80	28.66	20.09	0.44	0.37	0.09	0.01	0.04	0.02	0.01	43.7
29	20.00	24.06	12.25	0.37	0.21	0.02	0.01	0.04	0.01	0.01	18.7
30	14.20	37.31	4.76	2.89	0.45	2.00	0.01	0.02	0.09	0.07	33.7
31	0.74	54.85	3.71	0.18	0.17	0.05	0.01	0.02	0.01	0.01	42.9
32	15.10	31.46	5.42	5.00	1.77	1.42	0.03	0.04	0.19	0.10	34.7
33	5.30	27.63	19.17	1.46	1.21	0.75	0.01	0.04	0.05	0.01	42.7
34	5.16	52.06	0.89	1.03	0.42	0.10	0.18	0.06	0.02	0.01	40.3
35A	5.08	47.57	2.48	1.97	0.53	0.47	0.13	0.06	0.11	0.04	40.0
35B	4.60	48.23	2.10	1.81	0.58	0.45	0.13	0.07	0.08	0.01	40.2
36	1.32	57.34	1.60	0.56	0.11	0.10	0.03	0.02	0.01	6.00	42.3
37	9.03	39.22	5.47	2.58	0.82	0.80	0.01	0.03	0.07	0.05	38.4
38	6.89	46.61	1.49	1.60	0.75	0.18	0.34	0.04	0.08	0.01	38.6
39	6.85	48.72	1.07	1.02	0.71	0.11	0.12	0.06	0.02	0.03	38.3
40	10.60	39.72	2.63	3.32	0.71	0.54	0.58	0.03	0.09	0.03	35.5
41	7.32	44.89	3.72	1.39	0.90	0.23	0.20	0.04	0.05	0.01	37.5
42A	12.50	27.01	19.06	0.10	0.01	0.01	0.01	0.01	0.01	0.01	36.8
42B	0.88	29.62	20.89	0.27	0.16	0.07	0.01	0.01	0.01	0.01	45.1
43	20.00	29.41	4.82	5.00	3.32	2.00	0.01	0.05	0.32	0.11	30.1
44	0.01	29.96	21.03	0.18	0.10	0.01	0.01	0.03	0.01	0.01	46.6
45A	2.04	53.92	2.86	0.61	0.27	0.29	0.01	0.03	0.01	0.01	43.2
45B	4.38	50.42	0.92	1.50	0.79	0.06	0.62	0.02	0.26	0.15	39.0
46	2.49	29.29	20.36	0.19	0.06	0.01	0.01	0.04	0.01	0.01	44.4
47A	20.30	30.26	16.29	0.08	0.01	0.01	0.01	0.06	0.01	0.01	29.1
47B	0.01	30.70	20.17	0.09	0.01	0.01	0.01	0.03	0.01	0.01	46.4
48	7.81	40.76	5.94	2.69	1.25	0.69	0.04	0.04	0.12	0.04	38.2
49	12.90	37.54	3.05	5.00	1.08	0.79	0.41	0.03	0.10	0.03	33.1
50	8.64	40.35	6.01	2.96	0.91	0.49	0.21	0.03	0.11	0.04	37.1
51	14.20	40.15	4.46	3.58	0.84	0.89	0.01	0.05	0.09	0.01	36.6
52	6.38	44.91	5.19	1.36	0.69	0.27	0.07	0.03	0.03	0.01	39.8
53	1.09	52.61	4.70	0.26	0.19	0.01	0.01	0.03	0.01	0.01	43.0
54	5.69	45.42	3.86	2.20	0.94	0.48	0.14	0.07	0.10	0.05	39.8
55	2.68	49.61	4.26	0.76	0.84	0.02	0.13	0.03	0.01	0.01	41.8
56	5.75	47.61	3.10	1.60	0.44	0.28	0.28	0.03	0.04	0.01	39.0
57	8.72	40.51	7.80	5.00	0.27	1.25	0.01	0.02	0.07	0.05	37.5
58	3.42	48.28	5.16	0.63	0.64	0.08	0.01	0.02	0.02	0.01	41.7
59	9.41	42.06	4.05	1.01	1.12	0.19	0.01	0.03	0.03	0.07	37.5
60	1.96	52.73	3.55	0.67	0.42	0.04	0.01	0.02	0.01	0.01	41.7
61	2.69	45.78	7.65	0.75	0.42	0.31	0.01	0.03	0.02	0.03	42.5

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
2	5	20	150	220	6	3	3	3	3	306900	4932200	18
3	5	15	90	80	8	3	3	3	3	307050	4931700	18
4	5	38	400	120	10	3	13	6	3	305900	4931000	18
6	5	92	320	100	7	3	10	20	3	305500	4931600	18
7	5	17	1000	450	6	3	3	10	3	300370	4927800	18
8	26	28	220	170	12	3	6	3	3	301800	4930350	18
9	5	11	570	350	12	3	6	3	3	302900	4937200	18
10	5	10	170	330	7	3	3	4	3	303300	4937300	18
11	5	14	70	80	6	3	3	4	3	303900	4937600	18
13	5	15	60	90	9	3	8	4	3	306900	4939600	18
14	5	32	600	140	12	3	9	6	3	306400	4938400	18
15	5	24	80	740	3	3	98	23	17	306750	4937000	18
18	5	46	370	250	16	3	39	21	12	304150	4940600	18
19	5	27	480	440	15	3	11	13	6	303900	4941400	18
20	5	40	410	160	10	3	10	6	3	303700	4942400	18
21	5	14	40	70	7	3	6	4	3	303200	4943800	18
24	5	31	540	130	6	3	17	12	3	303000	4941700	18
27	5	18	140	60	6	3	8	3	3	299750	4940800	18
28	5	23	140	60	6	3	6	3	3	299650	4941300	18
29	5	14	110	200	3	3	3	4	3	299600	4942550	18
30	5	34	60	120	6	3	10	39	3	300500	4943300	18
31	5	19	230	80	9	3	3	4	3	301200	4943450	18
32	5	34	280	150	36	3	20	16	11	301550	4945750	18
33	5	14	50	60	14	3	10	6	3	301700	4945750	18
34	5	19	560	100	8	3	3	3	3	301300	4945800	18
35A	5	44	310	220	320	21	8	4	10	301100	4945750	18
35B	5	42	300	220	920	29	8	4	14	301100	4945750	18
36	5	14	490	120	11	3	6	3	3	300800	4945950	18
37	5	220	300	190	36	3	7	8	8	300550	4946050	18
38	5	16	450	160	7	3	7	4	3	299900	4946300	18
39	5	53	540	120	20	3	6	4	3	299650	4946350	18
40	5	520	490	280	25	3	8	3	6	299450	4946500	18
41	5	28	490	160	9	3	3	6	3	299150	4946600	18
42A	5	14	140	170	3	3	3	3	3	298100	4941200	18
42B	5	20	320	160	3	3	3	13	3	298100	4941200	18
43	5	51	530	360	8	6	10	12	3	298100	4941800	18
44	5	20	140	80	3	3	3	3	3	298500	4940750	18
45A	5	13	360	130	6	3	8	4	3	298350	4940800	18
45B	5	12	500	140	8	6	3	3	3	298350	4940800	18
46	5	34	250	80	3	3	3	3	3	298500	4941100	18
47A	5	34	2070	110	3	3	3	6	3	304950	4930400	18
47B	17	38	1230	140	11	3	3	4	3	304950	4930400	18
48	45	42	420	320	12	3	26	12	6	297500	4947400	18
49	5	150	290	230	26	10	10	14	6	297950	4948050	18
50	5	32	450	270	8	3	15	14	3	298600	4949050	18
51	5	48	290	170	10	3	9	11	3	298750	4949500	18
52	5	24	440	220	6	3	8	8	3	298850	4949850	18
53	5	20	420	220	8	3	3	4	3	298650	4950500	18
54	5	34	350	250	18	3	11	10	7	299000	4950600	18
55	5	50	690	210	8	3	7	4	3	299200	4951100	18
56	5	19	440	230	6	3	8	12	3	299250	4950750	18
57	5	21	340	200	8	3	8	22	3	298550	4950800	18
58	5	88	410	130	16	3	6	4	3	297900	4951450	18
59	5	32	390	120	3	3	13	5	3	297450	4952700	18
60	5	17	450	120	15	3	6	4	3	297300	4953300	18
61	5	22	280	190	8	3	6	6	3	297000	4953600	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
62	7.64	46.22	1.25	1.99	0.69	0.35	0.11	0.04	0.07	0.03	38.4
63	9.97	41.33	2.19	1.74	1.20	0.39	0.19	0.06	0.08	0.07	35.9
64	20.00	26.40	2.75	5.00	2.69	0.80	1.72	0.05	0.43	0.21	21.3
65	13.30	35.63	4.17	3.15	1.87	0.62	0.31	0.04	0.15	0.08	32.6
66	11.80	35.85	4.60	5.00	1.88	0.43	0.43	0.03	0.21	0.14	32.7
67	1.59	54.75	2.84	0.33	0.19	0.08	0.01	0.02	0.01	0.03	42.7
68	9.38	41.20	3.49	1.98	1.06	0.49	0.01	0.03	0.05	0.04	43.1
69	9.54	38.91	3.39	3.15	1.81	0.72	0.20	0.03	0.14	0.07	33.5
70	20.00	24.03	5.02	5.00	4.82	1.07	1.74	0.03	0.58	0.23	14.9
71	1.98	55.62	1.99	0.51	0.26	0.08	0.01	0.02	0.01	0.01	42.4
72	20.00	30.00	7.50	5.00	3.49	0.14	0.42	0.04	0.39	0.19	24.3
73	13.90	34.11	4.43	5.00	2.27	0.62	0.24	0.04	0.62	0.11	30.7
74	11.30	38.00	2.95	5.00	1.82	0.76	0.37	0.03	0.17	0.07	33.1
75	13.60	35.22	4.81	2.19	2.41	0.57	0.01	0.06	0.11	0.05	33.0
76	10.40	36.77	4.92	5.00	0.85	0.41	0.90	0.03	0.12	0.05	35.2
77	10.50	37.90	6.27	1.75	1.38	0.26	0.01	0.02	0.07	0.01	36.6
78	10.80	34.92	7.82	5.00	2.98	0.74	0.01	0.03	0.19	0.09	33.7
79	20.00	26.46	3.28	5.00	4.10	0.70	0.82	0.08	0.32	0.14	22.5
80	15.80	31.69	4.93	5.00	2.53	0.89	0.42	0.03	0.21	0.11	29.8
81	0.95	50.81	5.25	0.42	0.53	0.01	0.01	0.03	0.01	0.01	43.2
82	13.50	33.37	4.18	5.00	2.60	0.59	0.69	0.03	0.26	0.12	30.0
83	2.86	46.35	6.85	0.64	0.68	0.13	0.01	0.02	0.02	0.01	42.2
84	7.31	44.94	3.90	1.66	0.90	0.23	0.01	0.02	0.04	0.01	38.9
85	14.70	32.89	6.32	5.00	1.99	0.97	0.28	0.02	0.21	0.04	30.9
86	15.70	34.51	4.25	5.00	2.35	0.78	0.01	0.06	0.11	0.06	30.5
87	5.13	47.21	4.18	1.34	0.66	0.27	0.14	0.02	0.04	0.01	39.5
88	14.60	30.77	8.41	5.00	2.44	0.78	0.58	0.02	0.25	0.07	30.3
89	7.94	39.60	6.01	3.22	1.02	0.38	0.39	0.02	0.11	0.05	37.4
90	11.90	38.57	3.09	5.00	1.63	0.37	0.27	0.06	0.14	0.05	33.1
91	13.80	39.27	1.37	2.80	1.18	0.18	0.45	0.03	0.11	0.01	33.1
92	7.22	45.41	3.22	1.49	0.81	0.24	0.06	0.03	0.05	0.03	38.5
93	10.40	37.61	4.45	2.41	1.86	0.57	0.19	0.04	0.13	0.03	34.9
94	8.28	42.55	4.31	1.78	0.88	0.24	0.16	0.03	0.06	0.04	37.7
95	15.50	32.48	5.23	5.00	2.40	0.73	0.35	0.03	0.16	0.03	32.3
96	8.38	42.85	4.86	1.36	0.70	0.28	0.02	0.04	0.05	0.03	38.5
97	5.91	42.28	7.10	1.04	1.05	0.28	3.00	0.04	0.04	0.05	40.2
98	9.85	39.94	3.71	2.32	1.34	0.42	0.17	0.02	0.07	0.08	35.5
99	12.20	38.07	4.14	2.31	1.19	0.15	0.35	0.02	0.10	0.04	34.9
100	10.00	41.83	2.24	2.27	1.67	0.20	0.28	0.06	0.10	0.07	35.4
101	11.10	38.63	6.61	2.31	2.10	0.62	0.07	0.02	0.09	0.04	33.1
102	15.50	28.46	9.70	5.00	2.98	0.87	0.61	0.04	0.18	0.09	31.1
103	6.19	47.16	2.27	1.67	1.11	0.27	0.20	0.03	0.07	0.03	38.6
104A	0.56	58.74	2.48	0.27	0.11	0.16	0.01	0.01	0.01	0.01	43.3
104B	0.73	59.10	1.50	0.28	0.16	0.16	0.01	0.02	0.01	0.01	42.6
104C	2.19	54.93	2.96	0.71	0.07	0.45	0.01	0.03	0.01	0.01	40.1
105	5.70	50.11	1.91	1.20	0.37	0.69	0.01	0.03	0.02	0.03	39.2
106	2.67	53.86	2.97	0.83	0.24	0.48	0.01	0.02	0.02	0.01	42.1
107	20.00	25.09	4.03	5.00	5.80	1.16	1.16	0.06	0.49	0.17	18.7
108	20.00	24.02	3.78	5.00	5.84	1.32	1.94	0.06	0.56	0.26	12.9
109	20.00	24.14	5.21	5.00	5.61	2.00	1.38	0.03	0.64	0.23	15.0
110	15.70	31.99	2.52	5.00	2.73	0.41	1.20	0.08	0.22	0.10	31.3
111	20.00	31.85	2.32	5.00	2.26	1.19	0.01	0.06	0.21	0.08	32.2
112	9.66	43.85	0.82	1.56	1.14	0.05	0.31	0.09	0.06	0.05	35.7
113	16.40	31.17	6.18	5.00	1.79	1.13	0.44	0.02	0.22	0.11	28.4
114	20.00	26.57	3.03	5.00	3.94	0.62	1.42	0.10	0.36	0.19	21.1
115	13.60	35.35	3.01	5.00	2.30	1.02	0.03	0.04	0.23	0.11	31.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
62	22	78	440	220	23	3	7	4	3	296100	4953050	18
63	5	52	420	120	6	3	13	6	3	296600	4952900	18
64	5	40	410	380	6	8	36	13	3	296200	4952700	18
65	5	39	500	240	7	3	11	10	3	295800	4952400	18
66	5	31	400	240	10	6	15	8	3	295350	4952400	18
67	5	24	530	110	8	3	6	4	3	295100	4952250	18
68	5	28	390	170	3	3	10	5	6	294600	4951850	18
69	5	38	450	300	3	3	8	12	3	294200	4951200	18
70	5	72	460	520	70	14	41	20	11	294700	4950800	18
71	5	16	430	110	6	3	8	3	3	294900	4950650	18
72	5	78	460	110	13	9	37	12	3	295150	4950400	18
73	5	49	450	210	3	7	22	16	10	292900	4951300	18
74	5	38	490	240	12	6	24	12	8	292550	4951400	18
75	5	28	310	290	3	3	7	8	3	290350	4950700	18
76	14	990	380	230	16	6	14	14	9	290800	4950800	18
77	5	38	560	230	3	3	14	9	6	291550	4951100	18
78	5	65	490	310	3	3	22	18	8	292000	4951250	18
79	5	58	290	220	36	9	26	14	13	293500	4951250	18
80	5	44	420	320	3	6	12	15	3	293300	4950500	18
81	5	18	460	140	6	3	3	3	3	292950	4949600	18
82	5	45	450	330	11	8	20	13	7	293300	4949800	18
83	5	30	390	150	7	3	6	6	3	294300	4952300	18
84	5	39	510	260	6	3	9	10	3	293100	4952300	18
85	5	46	450	390	6	6	25	16	10	292600	4952700	18
86	5	48	350	200	22	7	16	20	7	292050	4953200	18
87	5	24	500	160	8	3	7	8	3	291700	4953450	18
88	5	68	510	360	17	6	28	26	10	291400	4953750	18
89	5	34	500	240	6	3	14	18	3	291100	4954100	18
90	5	34	640	180	3	3	28	10	9	294700	4954400	18
91	5	17	510	120	6	3	17	6	3	294600	4954550	18
92	5	20	610	180	3	3	10	8	3	294750	4954600	18
93	5	32	570	370	3	3	21	9	3	295300	4954800	18
94	5	27	510	180	8	3	11	8	3	296250	4955200	18
95	5	46	310	240	8	3	24	18	8	296300	4955400	18
96	5	26	580	350	12	3	9	10	3	296700	4954700	18
97	5	30	530	330	13	3	6	8	3	296900	4954100	18
98	5	22	510	240	27	10	11	12	12	294950	4952800	18
99	5	26	460	200	6	6	15	6	3	294300	4953200	18
100	5	27	460	160	3	3	15	8	3	293900	4954050	18
101	5	42	420	310	3	3	11	19	3	293200	4956250	18
102	5	71	170	130	13	7	18	20	3	287750	4958550	18
103	5	21	540	150	6	3	12	7	3	287500	4958900	18
104A	5	14	200	130	6	3	3	6	3	291700	4965700	18
104B	5	14	230	130	3	3	3	4	3	291700	4965600	18
104C	10	14	230	150	3	3	3	3	3	291700	4965600	18
105	5	18	130	180	7	3	10	6	3	291400	4966250	18
106	5	22	620	130	7	3	7	4	3	291300	4965200	18
107	5	66	370	320	32	13	18	16	9	284950	4965100	18
108	5	88	380	470	64	11	32	22	7	285250	4964600	18
109	5	111	360	700	3	12	28	28	10	285400	4963900	18
110	5	38	480	140	3	8	19	8	3	285000	4962800	18
111	5	21	400	300	3	3	15	6	3	285250	4962350	18
112	5	14	450	150	3	3	9	3	3	283400	4965200	18
113	5	52	540	470	3	3	12	17	3	282100	4964800	18
114	5	48	320	230	32	10	29	10	8	282350	4964700	18
115	5	38	420	260	11	8	18	11	7	287600	4964900	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
116	20.00	30.74	3.79	5.00	1.87	0.90	1.08	0.05	0.21	0.12	37.3
117	20.00	24.16	13.99	5.00	4.47	0.32	0.86	0.05	0.20	0.09	12.1
118	13.00	41.36	1.44	1.59	0.81	0.02	0.38	0.05	0.05	0.04	33.4
119	7.35	41.26	4.61	2.17	1.73	0.56	0.33	0.06	0.07	0.04	37.7
120	9.84	39.51	4.27	2.48	1.10	0.67	0.07	0.09	0.12	0.07	33.8
121	6.21	43.85	8.32	1.04	0.89	0.10	0.01	0.04	0.03	0.05	36.8
122	1.80	57.61	1.04	0.43	0.47	0.07	0.01	0.04	0.01	0.01	42.2
123	10.40	37.15	14.91	0.65	0.42	0.01	0.01	0.17	0.02	0.06	36.3
124	20.00	24.45	4.75	5.00	4.05	1.13	0.86	0.04	0.37	0.15	17.8
125	9.37	40.98	2.47	3.38	1.40	0.93	0.01	0.05	0.10	0.05	37.3
126	11.90	37.02	2.64	3.12	1.07	0.53	0.22	0.05	0.10	0.06	35.0
127	10.20	35.37	5.15	2.84	3.79	0.69	0.20	0.17	0.15	0.06	34.3
128	6.85	42.36	5.00	1.70	0.94	0.50	0.10	0.03	0.06	0.04	38.7
129	20.00	24.29	13.97	2.96	3.60	0.06	1.22	0.06	0.10	0.20	29.9
130	2.63	28.93	20.51	0.35	0.58	0.11	0.01	0.04	0.01	0.01	45.2
131	20.00	24.06	6.20	5.00	4.17	1.79	1.38	0.04	0.51	0.16	16.8
132	20.00	32.09	3.56	2.76	2.00	0.14	0.09	0.05	0.13	0.06	30.6
133A	3.98	29.82	20.11	0.14	0.11	0.01	0.01	0.12	0.01	0.07	17.2
133B	20.00	26.05	17.86	0.14	0.23	0.01	0.01	0.07	0.01	0.01	42.8
134	0.52	54.35	4.75	0.21	0.10	0.05	0.01	0.02	0.01	0.01	43.2
135A	1.16	59.69	1.07	0.13	0.01	0.01	0.01	0.01	0.01	0.01	35.9
135B	5.26	44.96	2.38	1.75	2.28	0.57	0.01	0.01	0.09	0.10	42.2
136	2.00	59.07	1.68	0.15	0.01	0.01	0.01	0.02	0.01	0.01	42.0
137	2.96	29.03	20.19	0.49	0.41	0.02	0.01	0.06	0.01	0.01	45.6
138	5.01	50.73	4.18	0.96	0.61	0.45	0.01	0.04	0.02	0.01	39.2
139	20.00	25.21	5.11	5.00	3.33	1.36	1.26	0.04	0.19	0.05	21.8
140	20.00	26.81	6.85	5.00	5.61	0.20	1.40	0.05	0.34	0.12	23.9
141	12.80	35.22	3.25	5.00	1.55	0.45	0.79	0.04	0.20	0.10	31.8
142	9.85	39.66	3.60	5.00	1.38	0.84	0.16	0.03	0.12	0.05	37.2
143	20.00	27.06	4.07	5.00	4.38	1.35	0.78	0.10	0.37	0.15	24.1
144	15.90	30.98	6.24	5.00	2.93	1.09	0.67	0.05	0.24	0.12	29.9
145	20.00	33.19	2.42	5.00	2.78	0.52	0.84	0.11	0.17	0.07	30.7
146	7.41	43.23	4.12	2.32	1.29	0.31	0.44	0.03	0.08	0.05	38.0
147	20.00	30.62	5.98	5.00	1.76	0.03	1.21	0.03	0.16	0.07	25.8
148	20.00	32.72	3.18	5.00	1.75	0.32	1.46	0.03	0.24	0.11	28.1
149	4.50	49.32	4.68	0.92	0.41	0.33	0.09	0.05	0.02	0.04	41.0
150	20.00	9.88	5.54	5.00	10.00	1.19	3.00	0.06	0.78	0.19	6.7
151	20.00	25.45	4.47	5.00	5.63	0.72	0.91	0.08	0.38	0.11	21.5
152	2.22	56.22	1.38	0.81	0.28	0.13	0.01	0.04	0.01	0.02	42.4
153	9.24	40.46	3.41	5.00	0.50	0.59	0.41	0.02	0.13	0.06	34.7
154	1.40	55.26	3.72	0.34	0.17	0.13	0.01	0.02	0.01	0.01	43.4
155	20.00	32.96	3.98	5.00	1.75	1.08	0.64	0.03	0.21	0.09	31.2
156	20.00	31.28	4.32	5.00	2.48	0.65	0.75	0.05	0.22	0.09	29.2
157	14.40	32.94	3.40	5.00	2.67	0.49	0.56	0.07	0.16	0.06	30.9
158	9.87	38.06	7.14	2.96	2.11	2.00	0.01	0.04	0.13	0.05	34.8
159	20.00	24.47	5.35	5.00	6.04	0.16	3.00	0.07	0.37	0.15	11.3
160	3.77	50.99	4.10	0.89	0.42	0.50	0.01	0.03	0.01	0.01	40.2
161	1.85	54.49	3.77	0.45	0.17	0.02	0.01	0.01	0.01	0.01	42.1
162	13.70	35.41	3.70	5.00	3.01	0.37	0.38	0.07	0.18	0.08	28.6
163	12.70	39.07	4.21	1.47	0.99	0.67	0.01	0.09	0.04	0.03	34.0
164	4.29	50.06	5.22	1.39	0.39	0.43	0.01	0.03	0.04	0.01	38.8
165	20.00	26.91	3.30	5.00	4.17	0.83	0.96	0.08	0.29	0.16	17.2
166	7.13	42.09	5.14	1.84	1.93	0.37	0.17	0.03	0.10	0.04	35.5
167	20.00	26.30	0.26	5.00	1.07	2.00	0.23	0.08	0.05	0.09	11.0
168	20.00	24.03	4.46	5.00	5.37	0.49	3.00	0.05	0.49	0.23	8.2
169	10.30	36.56	4.57	2.93	2.02	0.42	0.59	0.04	0.17	0.08	33.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
116	5	33	420	2320	24	9	15	4	3	391750	4930500	18
117	5	94	480	180	12	10	17	18	6	391050	4929800	18
118	5	27	360	100	10	3	3	3	3	391300	4929200	18
119	5	20	290	340	8	3	10	10	3	391550	4928300	18
120	5	58	480	11500	32	3	10	10	3	391500	4929600	18
121	5	20	240	190	18	3	3	3	3	392050	4929900	18
122	5	52	330	130	8	3	3	14	3	394500	4928000	18
123	5	148	90	60	6	3	6	3	3	396700	4927900	18
124	5	44	430	480	23	13	28	40	10	396450	4926500	18
125	5	27	480	220	8	3	11	12	3	395250	4926150	18
126	5	16	3230	1960	44	3	12	11	3	394750	4925950	18
127	5	48	500	190	3	10	13	14	3	397300	4925450	18
128	14	26	420	190	7	3	9	8	3	398400	4925850	18
129	5	10	120	50	3	3	3	3	3	287800	4936400	18
130	5	14	40	60	6	3	3	6	3	287600	4937200	18
131	5	82	310	500	20	12	21	30	13	287300	4938000	18
132	5	38	350	240	3	3	8	12	3	287650	4938400	18
133A	5	38	70	120	3	3	3	3	3	331850	4945650	18
133B	5	38	70	90	3	3	3	3	3	331850	4945650	18
134	5	15	250	150	6	3	3	3	3	356800	4942450	18
135A	5	10	80	130	8	3	3	3	3	270570	4939330	18
135B	5	14	110	120	10	9	19	12	9	270570	4939330	18
136	5	12	90	120	7	3	3	3	3	270920	4938610	18
137	5	12	40	80	6	3	3	3	3	270910	4938020	18
138	5	28	360	140	7	3	3	14	3	279730	4935420	18
139	5	46	320	270	18	8	9	24	3	287880	4936160	18
140	5	44	240	120	13	12	18	18	12	288230	4936830	18
141	5	26	420	140	48	3	16	12	3	290250	4938890	18
142	5	33	560	270	10	3	7	14	3	290750	4939100	18
143	5	104	330	2080	23	10	11	18	3	291560	4939770	18
144	5	48	600	430	18	8	12	15	3	291110	4940150	18
145	5	32	240	170	8	6	16	10	6	287350	4939100	18
146	5	21	470	160	6	3	8	8	3	286950	4939950	18
147	5	44	390	120	16	3	10	3	3	286600	4940600	18
148	5	42	520	220	34	7	22	10	3	285850	4940700	18
149	5	30	410	300	8	3	3	11	3	285750	4941300	18
150	5	98	190	340	10	10	82	35	28	286300	4936000	18
151	5	67	310	260	35	6	52	18	15	285100	4935450	18
152	5	13	460	160	10	3	3	3	3	284800	4936150	18
153	5	19	470	410	6	3	8	12	3	284600	4934300	18
154	5	12	500	300	11	3	3	3	3	284100	4933900	18
155	17	280	410	230	19	3	10	24	3	282100	4941500	18
156	5	41	500	330	21	3	7	10	3	282400	4938850	18
157	5	42	310	250	8	7	17	12	7	282450	4938000	18
158	5	48	380	300	3	6	14	30	3	283650	4935100	18
159	5	105	480	260	14	15	33	4	15	282850	4934800	18
160	5	16	450	300	14	3	6	3	3	281750	4934450	18
161	5	14	410	250	6	3	6	3	3	280700	4935800	18
162	5	50	420	300	6	6	20	6	3	280700	4935800	18
163	5	25	550	310	22	8	8	12	6	278750	4936300	18
164	19	38	320	230	8	3	8	10	3	278900	4935700	18
165	5	69	360	520	12	14	31	14	16	273100	4970100	18
166	5	18	560	300	9	3	10	8	3	273300	4969250	18
167	5	40	140	1210	10	3	6	3	3	273600	4968400	18
168	5	93	420	270	43	17	75	12	31	273450	4971300	18
169	5	23	530	290	11	6	13	10	6	273800	4971650	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
170	8.36	43.23	2.91	2.16	1.43	0.41	0.10	0.03	0.10	0.04	33.2
171	5.31	50.33	4.13	0.39	0.35	0.02	0.01	0.03	0.01	0.01	39.2
172	2.43	56.20	1.70	0.64	0.21	0.15	0.01	0.04	0.01	0.03	40.4
173	1.38	55.15	3.10	0.36	0.27	0.06	0.01	0.03	0.01	0.01	41.5
174	6.03	47.62	2.78	1.15	1.23	0.12	0.01	0.06	0.04	0.04	35.6
175	8.90	43.03	3.77	1.49	0.41	0.04	0.51	0.02	0.02	0.01	34.4
176	8.78	41.76	2.35	2.27	1.78	0.32	0.31	0.04	0.16	0.04	33.8
177	20.00	26.65	3.20	5.00	4.06	0.83	1.30	0.08	0.46	0.20	18.1
178	11.80	42.07	4.46	0.99	0.65	0.07	0.20	0.05	0.02	0.01	32.9
179	7.84	40.60	5.15	2.13	1.30	0.39	0.36	0.02	0.09	0.01	36.0
180	20.00	27.77	3.74	5.00	3.39	1.00	0.80	0.04	0.39	0.09	20.9
181	20.00	26.37	4.13	5.00	4.15	0.53	1.15	0.06	0.36	0.15	18.6
182	3.61	50.35	3.96	0.83	0.26	0.18	0.09	0.02	0.03	0.02	41.1
183	7.69	41.41	4.56	2.05	1.75	0.14	0.36	0.04	0.10	0.04	33.9
184	4.74	49.67	2.53	1.10	0.62	0.19	0.08	0.04	0.03	0.03	2.5
185A	5.06	48.58	3.82	0.58	0.74	0.14	0.01	0.07	0.01	0.01	39.0
185B	10.80	31.26	12.20	0.69	3.85	0.26	0.01	0.08	0.03	0.01	30.3
186	11.70	36.30	2.88	5.00	2.83	0.66	0.38	0.07	0.21	0.09	31.6
187	12.80	33.19	6.02	5.00	3.59	0.91	0.12	0.05	0.23	0.08	29.3
188A	0.13	32.98	16.59	0.21	0.66	0.01	0.01	0.10	0.01	0.01	45.9
188B	0.01	29.82	20.31	0.15	0.93	0.01	0.01	0.06	0.01	0.01	46.6
188C	8.39	39.48	1.48	2.89	1.65	2.00	0.01	0.22	0.24	0.11	32.5
189	3.36	30.48	17.73	0.15	0.61	0.01	0.01	0.08	0.01	0.01	44.7
190A	3.74	54.83	1.27	0.10	0.44	0.01	0.01	0.04	0.01	0.01	39.5
190B	8.06	49.52	1.93	0.11	0.03	0.01	0.01	0.02	0.01	0.01	37.2
191	2.54	29.20	20.31	0.17	0.14	0.01	0.01	0.04	0.01	0.01	44.8
192	11.60	27.25	18.20	0.32	0.39	0.01	0.01	0.07	0.01	0.01	38.0
193	0.61	32.74	17.74	0.36	0.22	0.03	0.01	0.04	0.01	0.01	41.7
194A	0.21	29.73	20.21	0.08	1.33	0.01	0.01	0.07	0.01	0.01	46.0
194B	6.48	29.51	20.15	0.13	1.68	0.01	0.01	0.08	0.01	0.01	45.8
195	7.59	27.23	17.23	1.29	4.50	0.23	0.01	0.18	0.04	0.07	40.8
196	6.05	28.48	20.73	0.20	0.10	0.04	0.01	0.02	0.01	0.01	42.1
197	2.02	47.36	7.36	0.57	0.45	0.34	0.01	0.03	0.01	0.01	42.5
198	2.26	52.54	1.99	0.81	1.04	0.43	0.01	0.07	0.04	0.01	40.0
199	20.00	26.63	2.99	5.00	1.94	2.00	0.81	0.03	0.28	0.14	16.2
200	20.00	24.02	4.15	5.00	4.45	0.33	1.87	0.04	0.45	0.22	3.6
201	20.00	26.90	2.76	5.00	2.64	0.12	1.69	0.06	0.25	0.12	16.0
202	20.00	30.24	3.70	5.00	2.84	0.90	0.36	0.03	0.31	0.14	23.2
203	6.30	46.34	3.68	1.38	0.51	0.22	0.15	0.03	0.04	0.01	38.7
204	15.70	33.78	2.06	5.00	1.59	0.84	0.35	0.06	0.21	0.21	27.0
205	20.00	27.17	3.41	5.00	3.70	0.43	1.41	0.05	0.33	0.19	16.8
206	9.74	38.49	3.24	5.00	1.98	0.54	0.35	0.04	0.20	0.13	33.8
207	13.30	32.53	5.79	-1.00	3.35	0.12	0.72	0.05	0.19	0.11	26.5
208	20.00	20.37	4.40	5.00	7.42	0.32	3.00	0.11	0.76	0.25	5.8
209	7.37	44.29	2.10	2.02	1.41	0.01	0.33	0.05	0.08	0.01	35.1
210	13.80	35.42	3.56	3.54	2.64	0.47	0.52	0.05	0.20	0.07	29.1
211	20.00	27.92	3.80	5.00	2.89	0.58	1.00	0.04	0.38	0.15	21.2
212	20.00	24.10	2.85	5.00	0.54	0.30	3.00	0.04	0.45	0.11	17.2
213	20.00	29.11	3.18	5.00	2.64	1.22	0.55	0.03	0.28	0.12	23.4
214	20.00	26.97	3.38	5.00	3.79	1.30	0.70	0.07	0.37	0.19	21.1
215	16.10	34.25	1.84	5.00	2.28	0.73	0.28	0.07	0.25	0.12	30.1
216	5.55	53.59	0.57	0.35	0.30	0.01	0.01	0.03	0.01	0.01	39.5
217	7.64	46.37	1.33	1.27	1.03	0.01	0.12	0.07	0.04	0.03	37.0
218	7.47	44.76	2.31	2.01	0.56	0.03	0.59	0.04	0.06	0.10	36.7
219	1.72	53.35	2.74	0.69	0.66	0.12	0.01	0.03	0.01	0.01	41.8
220	15.70	32.57	2.39	5.00	2.65	0.41	0.97	0.07	0.24	0.11	28.3

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
170	5	40	560	270	16	3	10	8	3	273300	4971600	18
171	5	14	120	260	6	3	3	3	3	273050	4971800	18
172	5	36	170	320	12	3	6	6	3	272350	4971800	18
173	5	17	410	320	6	3	3	4	3	271600	4971800	18
174	5	28	640	230	7	6	7	6	9	269350	4972150	18
175	5	44	390	330	12	3	8	6	7	268900	4972500	18
176	5	30	780	360	6	3	18	10	3	268150	4972700	18
177	5	58	650	350	16	11	30	11	14	267600	4973100	18
178	5	20	320	320	17	3	7	11	3	267300	4974100	18
179	5	27	400	220	3	3	10	8	3	267000	4975000	18
180	5	46	450	470	24	8	13	12	8	266900	4975200	18
181	5	62	520	200	19	10	30	12	15	267800	4973900	18
182	5	24	390	230	10	3	6	10	3	267700	4974250	18
183	5	38	540	210	3	3	16	9	3	268750	4974950	18
184	5	22	480	270	20	3	6	7	3	269350	4975600	18
185A	5	24	150	190	24	3	3	3	3	277350	4971750	18
185B	5	16	60	70	167	20	3	10	18	277350	4971750	18
186	5	31	490	270	12	7	14	8	3	279300	4972400	18
187	5	28	390	270	10	10	16	11	7	280050	4972600	18
188A	5	33	110	140	7	3	6	4	3	309460	4932200	18
188B	5	45	150	140	6	11	6	3	3	309460	4932200	18
188C	5	24	140	210	1840	14	38	9	3	309460	4932200	18
189	5	32	110	110	12	3	6	3	3	309220	4932290	18
190A	5	24	190	140	8	3	3	3	3	307080	4932580	18
190B	5	26	450	770	9	3	3	3	3	307080	4932560	18
191	5	44	60	40	8	3	3	3	3	307040	4931520	18
192	5	34	60	60	6	3	3	3	3	307090	4931390	18
193	5	48	190	280	6	3	3	3	3	307050	4931690	18
194A	5	150	200	170	6	3	3	3	7	306700	4931940	18
194B	5	150	210	150	6	3	3	3	10	306700	4931940	18
195	5	115	810	80	8	3	9	3	10	305830	4931300	18
196	5	21	300	170	7	3	3	14	3	305090	4930900	18
197	5	36	340	60	10	3	3	6	3	303590	4930660	18
198	5	22	450	210	8	3	3	3	7	303640	4928770	18
199	5	54	460	670	8	3	12	16	3	270550	4976000	18
200	5	106	370	80	16	11	50	36	17	270350	4976200	18
201	5	44	350	60	8	6	14	10	3	270300	4976650	18
202	5	50	330	150	40	7	16	17	8	270500	4977200	18
203	5	36	600	180	16	3	6	8	3	270300	4977750	18
204	5	38	680	320	6	6	15	12	10	273600	4978800	18
205	5	92	420	130	8	11	30	14	15	274450	4980000	18
206	5	34	650	180	10	3	10	11	6	272900	4977950	18
207	5	40	400	200	30	7	18	10	13	273650	4977150	18
208	5	92	370	130	32	19	39	12	17	273800	4976600	18
209	5	31	420	70	7	3	11	3	3	274100	4975800	18
210	5	48	600	250	8	3	10	9	3	274300	4975200	18
211	5	71	520	420	52	9	42	13	8	274500	4974350	18
212	5	14	70	70	10	3	11	7	3	277300	4970800	18
213	5	42	340	170	44	7	10	14	7	277390	4970000	18
214	5	57	430	500	8	7	12	15	3	277150	4968600	18
215	5	30	420	200	22	3	10	10	3	276250	4967250	18
216	5	21	130	90	9	3	3	3	3	276850	4966250	18
217	5	37	510	70	10	3	7	4	3	278700	4971650	18
218	5	16	490	90	16	3	3	4	6	279200	4971200	18
219	5	20	680	120	8	3	3	4	3	279700	4970500	18
220	5	26	460	160	24	3	22	6	8	280800	4972850	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
221	20.00	27.80	3.46	5.00	3.99	0.80	0.90	0.08	0.34	0.13	24.0
222	20.00	26.15	6.72	5.00	4.31	2.00	0.68	0.04	0.40	0.12	23.3
223	12.20	33.45	4.77	5.00	2.22	0.47	1.16	0.03	0.16	0.11	29.4
224	9.25	41.17	1.60	3.01	2.00	0.15	0.59	0.07	0.14	0.07	30.4
225	7.33	42.01	4.80	2.31	1.41	0.60	0.01	0.03	0.13	0.01	36.8
226	3.12	52.38	2.94	0.34	0.31	0.01	0.01	0.03	0.01	0.01	41.6
227	8.24	40.46	3.77	2.32	1.73	0.24	0.42	0.03	0.12	0.01	35.7
228	7.07	40.46	4.44	2.65	2.57	0.84	0.01	0.04	0.18	0.01	35.7
229	13.70	33.90	3.72	5.00	3.07	0.89	0.34	0.06	0.22	0.08	29.6
230	5.81	42.35	4.62	1.65	1.32	0.03	0.57	0.03	0.05	0.01	38.5
231	11.80	38.98	3.10	2.62	0.55	0.29	0.60	0.03	0.07	0.01	34.2
232	1.62	51.36	4.72	0.34	0.11	0.02	0.01	0.03	0.01	0.01	42.8
233	12.00	45.96	0.33	0.38	0.34	0.01	0.01	0.03	0.01	0.01	36.5
234	6.08	45.58	2.49	1.76	1.45	0.23	0.28	0.06	0.07	0.01	38.1
235	7.33	42.14	4.22	1.70	1.31	0.19	0.17	0.03	0.07	0.01	37.6
236	12.20	36.04	3.16	5.00	1.99	0.48	0.60	0.04	0.21	0.08	31.8
237	20.00	30.76	3.06	5.00	2.60	0.48	0.65	0.04	0.21	0.10	27.1
238	11.70	34.92	4.73	5.00	2.32	0.68	0.49	0.04	0.19	0.10	32.9
239	11.70	36.49	3.61	5.00	2.24	0.71	0.40	0.05	0.19	0.07	32.2
240	2.67	52.19	2.67	0.77	1.04	0.09	0.01	0.05	0.02	0.01	41.5
241	4.83	44.84	5.13	1.56	0.83	0.30	0.01	0.02	0.06	0.01	40.0
242	6.64	41.82	5.38	1.74	0.83	0.24	0.27	0.02	0.06	0.01	38.7
243	20.00	26.24	4.04	5.00	4.89	0.88	0.95	0.05	0.54	0.10	21.8
244	0.61	56.78	3.07	0.25	0.05	0.01	0.01	0.01	0.01	0.01	43.6
245	6.17	46.02	3.10	1.00	0.97	0.01	0.28	0.06	0.04	0.01	39.1
246	20.00	24.78	3.19	5.00	4.07	1.00	1.58	0.04	0.50	0.11	18.8
247	4.69	47.33	3.10	1.59	0.96	0.17	0.18	0.02	0.06	0.01	39.8
248	12.30	39.39	1.21	2.91	0.47	0.01	1.12	0.03	0.05	0.01	34.3
249	6.67	51.99	1.03	0.19	0.04	0.01	0.01	0.02	0.01	0.01	37.8
250	4.03	49.95	3.85	0.88	0.53	0.30	0.01	0.02	0.03	0.02	40.9
251	4.68	49.20	3.25	1.02	0.61	0.12	0.01	0.03	0.04	0.01	40.1
252	20.00	25.03	5.11	5.00	4.20	0.73	1.26	0.06	0.35	0.10	20.9
253	2.26	53.51	2.99	0.56	0.29	0.07	0.01	0.03	0.01	0.01	42.3
254	5.82	49.30	2.18	0.59	0.45	0.04	0.01	0.02	0.01	0.01	40.5
255	1.23	49.12	5.95	0.37	0.76	0.06	0.01	0.05	0.01	0.01	42.6
256	2.07	52.56	4.41	0.49	0.36	0.04	0.01	0.03	0.01	0.01	42.0
257	0.22	53.72	4.50	0.19	0.34	0.01	0.01	0.01	0.01	0.01	43.3
258	4.53	49.70	1.12	1.43	0.95	0.03	0.43	0.04	0.06	0.01	39.5
259	2.08	54.60	1.81	0.21	0.55	0.01	0.01	0.03	0.01	0.01	42.4
260	14.80	33.75	2.68	5.00	1.91	0.33	1.02	0.04	0.17	0.07	31.6
261	0.14	60.27	0.32	0.14	0.29	0.01	0.01	0.02	0.01	0.01	43.4
262	8.36	38.21	3.89	3.18	1.73	0.36	0.67	0.03	0.17	0.09	36.9
263	3.64	50.33	1.65	1.02	1.11	0.01	0.20	0.07	0.03	0.01	40.3
264	4.50	47.04	4.36	1.09	0.52	0.15	0.03	0.01	0.06	0.01	40.4
265	0.58	60.49	0.47	0.38	0.07	0.02	0.01	0.02	0.01	0.01	43.1
266	5.30	47.57	2.63	1.09	1.02	0.07	0.19	0.04	0.03	0.03	40.0
267	20.00	27.05	4.66	5.00	2.51	0.74	1.45	0.04	0.26	0.10	26.2
268	3.92	48.46	2.96	1.08	0.78	0.08	0.18	0.05	0.03	0.01	40.3
269	14.20	32.50	2.29	4.53	1.22	0.12	2.15	0.03	0.18	0.05	30.7
270	7.56	40.87	5.26	2.21	0.71	0.18	0.32	0.01	0.11	0.03	37.2
271	2.45	53.46	2.07	1.07	0.56	0.07	0.01	0.01	0.03	0.03	32.3
272	20.00	34.35	3.60	1.95	1.61	0.37	0.04	0.04	0.12	0.04	26.4
273	9.21	41.18	3.64	2.47	0.82	0.31	0.20	0.01	0.14	0.06	29.9
274	6.71	43.29	4.68	2.08	0.75	0.43	0.01	0.01	0.12	0.04	35.3
275	2.24	53.37	2.58	0.78	0.23	0.02	0.04	0.01	0.04	0.01	34.9
276	9.42	37.95	4.61	5.00	1.26	0.58	0.51	0.01	0.20	0.09	31.3

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
221	5	62	390	140	17	7	22	10	8	281650	4973100	18
222	5	50	310	250	22	11	23	26	9	282400	4973200	18
223	5	16	330	100	10	7	23	10	10	282750	4972000	18
224	5	40	400	100	6	10	17	5	3	283000	4971650	18
225	5	38	530	130	6	3	8	11	3	281500	4976400	18
226	5	18	560	70	8	3	3	3	3	281750	4975650	18
227	5	30	460	140	8	3	8	4	3	282100	4974900	18
228	5	35	470	200	6	3	8	9	3	282550	4974200	18
229	5	24	460	150	10	3	8	10	3	283500	4973300	18
230	5	16	240	50	6	3	8	3	3	284100	4973500	18
231	5	14	220	130	7	3	3	7	3	285650	4975750	18
232	5	18	270	70	8	3	3	5	3	285100	4976250	18
233	5	14	160	110	8	3	3	3	3	284300	4976000	18
234	5	24	360	60	6	3	6	4	3	284300	4975500	18
235	5	18	450	100	6	3	6	4	3	290100	4971650	18
236	5	24	450	80	3	3	10	7	3	290850	4970850	18
237	5	40	430	190	6	3	8	9	3	291500	4970050	18
238	5	26	520	180	8	3	10	10	3	291800	4969100	18
239	5	38	450	190	6	3	20	10	3	291800	4967800	18
240	5	24	690	80	10	3	6	4	3	292750	4969300	18
241	5	30	440	160	8	3	10	10	3	293650	4969700	18
242	5	26	680	170	7	3	13	8	3	295000	4971300	18
243	5	44	370	220	13	11	38	21	11	294400	4971900	18
244	5	24	640	70	9	3	3	4	3	293800	4973000	18
245	5	14	280	100	12	3	8	3	3	295750	4971500	18
246	5	58	310	230	6	10	68	17	18	296450	4971750	18
247	5	19	630	140	7	3	9	6	3	296500	4972800	18
248	5	17	460	70	6	3	3	3	3	295900	4973500	18
249	5	18	90	120	8	3	3	4	3	295400	4974150	18
250	5	18	400	100	8	3	8	4	3	297200	4972000	18
251	5	18	450	80	8	3	11	4	3	297950	4972650	18
252	5	42	410	150	8	7	44	16	11	297450	4973500	18
253	5	16	460	100	8	3	3	3	8	298800	4972550	18
254	5	19	570	80	10	3	3	3	3	298100	4971400	18
255	5	18	280	100	8	3	3	4	3	300900	4975600	18
256	5	20	440	70	8	3	3	3	3	299400	4973750	18
257	5	14	440	70	7	3	3	3	7	301000	4976100	18
258	5	13	150	70	8	3	7	3	8	300950	4976800	18
259	5	14	200	80	9	3	3	3	3	300600	4977500	18
260	5	42	290	120	8	3	24	4	8	300650	4978300	18
261	5	14	180	80	11	3	3	3	3	300850	4979000	18
262	5	24	320	130	18	3	7	6	3	301300	4979450	18
263	5	18	420	80	8	3	6	3	3	302000	4979700	18
264	5	18	470	160	8	3	3	3	3	300800	4978450	18
265	5	28	140	80	10	3	3	3	3	299300	4974600	18
266	5	38	370	70	10	3	6	3	3	298950	4975000	18
267	5	20	240	190	14	3	27	10	8	298300	4975550	18
268	5	19	520	100	8	3	10	4	3	298300	4976300	18
269	5	20	360	100	22	3	17	4	6	298200	4977000	18
270	5	58	790	240	18	3	17	8	3	298000	4977600	18
271	5	61	700	120	8	3	10	3	3	297700	4978300	18
272	5	61	300	190	15	3	17	6	6	298100	4979100	18
273	5	36	660	260	6	3	20	8	3	298200	4979750	18
274	5	32	550	410	13	3	18	10	3	297150	4979450	18
275	5	20	460	120	10	3	9	3	3	298000	4980350	18
276	5	46	640	390	12	3	29	12	9	297550	4980950	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
277	5.01	48.39	3.01	1.28	0.73	0.06	0.01	0.02	0.04	0.02	31.4
278	20.00	24.02	3.11	5.00	3.44	0.81	3.00	0.03	0.47	0.07	9.8
279	20.00	27.43	4.75	5.00	5.56	1.40	0.36	0.04	0.56	0.06	23.8
280	3.66	42.70	6.74	0.70	1.79	0.01	0.12	0.04	0.02	0.01	39.4
281	5.30	47.14	3.56	0.87	0.55	0.07	0.07	0.03	0.03	0.01	40.2
282	8.79	45.22	11.41	1.64	1.28	0.17	0.14	0.04	0.08	0.04	30.6
283	20.00	30.42	2.28	5.00	1.45	1.10	1.03	0.03	0.50	0.26	26.5
284	2.97	55.67	0.95	0.73	0.23	0.08	0.01	0.02	0.02	0.01	32.7
285	12.20	36.11	4.38	5.00	1.57	0.67	0.44	0.03	0.18	0.09	29.8
286	2.12	53.74	2.58	0.71	0.29	0.02	0.01	0.03	0.02	0.01	34.2
287	5.88	45.85	4.17	1.09	0.72	0.09	0.02	0.01	0.05	0.06	35.4
288	5.26	46.14	6.00	0.91	0.42	0.35	0.01	0.02	0.02	0.01	35.4
289	2.18	52.38	3.67	0.64	0.24	0.07	0.01	0.02	0.01	0.01	38.4
290	3.35	32.07	15.08	6.34	1.98	0.01	0.04	0.04	0.02	0.01	43.7
291	8.34	49.14	0.61	0.65	0.13	0.10	0.01	0.03	0.02	0.01	34.9
292	5.54	53.63	0.35	0.24	0.10	0.01	0.01	0.04	0.01	0.01	34.3
293	7.41	52.51	0.43	0.27	0.01	0.06	0.01	0.02	0.01	0.01	36.3
294	3.79	50.79	3.03	0.81	0.40	0.09	0.01	0.01	0.02	0.01	35.9
295	3.60	50.34	3.30	1.12	0.51	0.10	0.01	0.04	0.03	0.01	34.1
296	11.10	37.87	6.22	2.87	1.26	0.59	0.12	0.02	0.13	0.01	29.0
297	8.46	48.59	0.44	0.78	0.23	0.01	0.12	0.04	0.02	0.01	31.3
298	3.53	49.63	3.88	1.08	0.49	0.16	0.05	0.02	0.04	0.01	37.1
299	9.84	42.87	1.93	1.09	0.32	0.01	0.34	0.06	0.05	0.01	28.5
300A	4.95	28.07	20.92	0.28	0.47	0.04	0.01	0.07	0.01	0.01	40.7
300B	1.53	29.62	19.95	0.42	0.49	0.09	0.01	0.07	0.01	0.01	43.7
301	20.00	24.04	23.68	1.09	1.79	0.16	0.01	0.10	0.09	0.01	14.0
302	8.97	27.73	20.61	0.30	0.42	0.01	0.01	0.03	0.01	0.01	36.9
303	12.30	26.09	18.62	3.15	1.50	0.97	0.01	0.05	0.17	0.01	34.4
304	3.06	49.71	4.58	0.57	0.12	0.36	0.01	0.02	0.03	0.01	38.0
305	5.62	27.59	14.27	1.31	0.70	0.32	0.01	0.03	0.07	0.01	36.8
306	0.01	29.69	20.65	0.12	0.34	0.01	0.01	0.05	0.01	0.01	42.6
307	3.63	28.10	19.61	1.17	0.52	0.12	0.09	0.03	0.05	0.01	40.2
308	0.63	29.80	20.33	0.09	0.43	0.01	0.01	0.04	0.01	0.01	46.4
309	20.00	25.21	18.31	0.46	0.88	0.06	0.01	0.08	0.02	0.01	23.2
310	20.00	26.00	19.78	0.45	0.61	0.11	0.01	0.04	0.03	0.01	24.6
311	1.05	46.68	7.36	0.46	0.31	0.04	0.01	0.05	0.02	0.01	41.9
312	1.69	52.11	5.03	0.49	0.23	0.31	0.01	0.02	0.02	0.01	39.0
313	0.63	55.01	3.87	0.29	0.07	0.14	0.01	0.02	0.01	0.01	38.4
314	2.14	40.32	16.49	0.44	0.41	0.01	0.01	0.11	0.05	0.01	37.7
315	3.37	28.31	19.37	1.39	1.41	0.74	0.01	0.07	0.14	0.01	40.3
316	3.68	47.79	6.66	0.57	0.39	0.17	0.01	0.05	0.03	0.01	37.2
317	2.42	28.71	20.24	0.48	0.87	0.10	0.01	0.06	0.01	0.01	44.6
318	5.17	28.90	20.23	0.35	0.47	0.05	0.01	0.04	0.02	0.01	37.5
319	20.00	25.16	19.81	0.21	0.52	0.01	0.01	0.03	0.01	0.01	17.2
320	12.40	35.75	7.50	3.66	10.00	1.06	0.34	0.04	0.11	0.01	29.1
321	20.00	16.81	3.21	5.00	10.00	1.35	3.00	0.06	0.52	0.12	9.1
322	3.79	51.80	2.81	0.84	0.33	0.22	0.01	0.04	0.04	0.01	41.3
323	7.46	50.77	0.58	0.39	0.38	0.03	0.01	0.03	0.01	0.01	37.5
324	5.68	46.01	3.65	1.83	0.42	0.44	0.19	0.02	0.08	0.01	39.5
325	12.70	34.92	3.73	5.00	1.43	0.65	0.63	0.03	0.19	0.06	32.7
326	20.00	25.04	3.74	5.00	3.50	1.14	1.58	0.06	0.45	0.11	19.2
327	3.51	54.14	1.23	0.79	0.28	0.12	0.01	0.02	0.02	0.01	41.1
328	3.33	49.54	4.26	0.71	0.28	0.33	0.01	0.03	0.02	0.01	41.3
329	7.22	42.13	6.22	1.38	1.22	0.13	0.05	0.05	0.05	0.01	37.4
330	4.72	45.86	4.17	1.20	0.43	0.28	0.06	0.03	0.04	0.01	40.2
331	8.31	42.62	4.64	1.46	0.86	0.29	0.01	0.01	0.06	0.01	37.4

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
277	5	26	730	120	7	3	10	5	3	296350	4982650	18
278	5	50	520	230	6	7	32	28	7	296200	4983400	18
279	5	76	280	240	20	11	35	46	10	295600	4984150	18
280	5	20	300	100	6	3	7	3	6	300190	4976820	18
281	11	42	580	200	6	3	3	4	3	299530	4976600	18
282	5	21	470	130	11	3	9	3	3	300050	4975660	18
283	5	16	320	320	18	6	16	6	10	299520	4975880	18
284	5	18	130	140	10	3	8	3	3	295100	4984600	18
285	5	43	550	330	6	3	19	14	8	294750	4985400	18
286	5	26	200	150	10	3	8	5	3	294500	4985200	18
287	5	32	650	170	14	3	11	7	6	291950	4983600	18
288	5	32	410	310	9	3	7	17	3	294500	4985750	18
289	5	23	480	160	12	3	7	5	3	293930	4986170	18
290	5	24	130	100	11	3	6	3	3	294900	4986390	18
291	5	16	70	170	8	3	7	3	3	295190	4987130	18
292	5	22	270	260	12	3	6	3	3	295600	4987800	18
293	5	14	100	110	8	3	7	3	3	295910	4988590	18
294	5	22	650	140	8	3	10	5	3	293050	4986050	18
295	5	25	680	130	10	3	9	5	3	292300	4986000	18
296	5	38	350	170	10	3	15	20	3	291600	4985750	18
297	5	15	220	100	9	3	7	5	3	290650	4985500	18
298	5	16	530	160	10	3	10	4	3	289950	4985500	18
299	5	16	210	150	9	3	7	3	3	289650	4986200	18
300A	5	16	60	60	7	3	8	5	3	297800	4989660	18
300B	5	14	50	50	6	3	9	3	3	297800	4989660	18
301	5	21	60	60	8	3	16	14	3	298080	4990400	18
302	5	18	70	50	12	3	8	8	3	298000	4991140	18
303	5	27	80	190	8	3	17	12	3	297750	4991790	18
304	5	24	1620	60	10	3	10	17	3	298190	4992460	18
305	5	19	110	170	9	3	13	8	3	298440	4993210	18
306	5	27	80	70	7	3	8	3	3	298910	4993890	18
307	5	18	110	80	3	3	9	3	3	298870	4994900	18
308	5	31	80	50	3	3	3	3	3	299950	4996450	18
309	5	28	120	60	10	3	6	4	3	300600	4996290	18
310	5	18	110	60	3	3	7	12	3	299510	4997380	18
311	5	18	280	120	8	3	6	8	3	296940	4995500	18
312	5	19	920	160	12	3	8	8	3	296210	4995240	18
313	5	12	580	90	6	3	8	4	3	295750	4994920	18
314	5	32	110	60	6	3	10	5	3	294340	4994550	18
315	5	58	210	340	6	3	17	28	3	292890	4997190	18
316	5	36	190	150	6	3	10	6	3	292390	4997090	18
317	5	295	190	130	13	3	3	4	3	293330	4997320	18
318	5	15	80	70	6	3	3	3	3	290960	4996390	18
319	5	22	60	60	3	3	3	8	3	291320	4995670	18
320	5	36	210	140	3	3	8	25	3	286700	4979600	18
321	5	50	230	240	38	9	30	29	10	286400	4970300	18
322	5	14	180	120	6	3	8	10	3	286300	4981200	18
323	5	15	100	540	3	3	3	3	3	286650	4982500	18
324	5	24	370	130	8	3	11	8	3	288100	4982850	18
325	5	32	470	210	9	3	17	17	3	288900	4982650	18
326	5	60	300	220	8	6	10	24	3	291200	4978300	18
327	5	16	190	90	3	3	6	3	3	291850	4978200	18
328	5	22	630	150	8	3	6	8	3	292150	4978600	18
329	5	32	280	90	8	3	8	10	3	292200	4979450	18
330	5	24	660	240	8	3	8	7	3	292600	4979650	18
331	5	62	630	170	21	3	11	8	9	293350	4980000	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
332	1.93	51.93	3.55	0.50	0.38	0.07	0.01	0.01	0.01	0.01	41.8
333	14.00	35.99	4.42	5.00	1.35	0.52	0.32	0.03	0.18	0.01	30.9
334	15.70	31.88	4.09	5.00	2.41	1.06	0.33	0.02	0.28	0.01	28.5
335	1.88	52.01	3.03	0.62	0.74	0.01	0.02	0.03	0.02	0.01	41.4
336	5.81	43.62	5.22	1.60	0.64	0.26	0.41	0.03	0.06	0.01	39.4
337	4.23	45.41	5.10	1.02	0.84	0.04	0.23	0.02	0.05	0.01	40.5
338	20.00	27.69	5.41	5.00	1.89	0.13	1.59	0.04	0.32	0.08	22.3
339	1.93	55.27	1.63	0.79	0.46	0.17	0.01	0.04	0.02	0.01	41.1
340	3.76	49.94	2.52	0.74	0.37	0.42	0.01	0.01	0.03	0.01	38.8
341	2.32	52.97	2.22	0.64	0.89	0.22	0.01	0.05	0.02	0.01	40.9
342	1.49	48.49	5.98	0.28	0.90	0.02	0.01	0.04	0.01	0.01	42.4
343	15.30	34.12	3.10	5.00	3.13	0.76	0.13	0.09	0.22	0.11	27.9
344	3.83	31.73	14.41	0.17	0.14	0.01	0.01	0.06	0.02	0.01	40.7
345	2.16	29.65	19.13	0.37	0.57	0.03	0.01	0.24	0.01	0.01	46.2
346	0.03	51.93	5.39	0.16	10.00	0.01	0.01	0.01	0.01	0.01	43.1
347	0.43	54.15	4.32	0.21	0.02	0.03	0.01	0.01	0.01	0.01	42.7
348	2.36	55.98	1.26	0.59	0.35	0.01	0.01	0.03	0.01	0.01	40.5
349	3.69	48.04	4.56	0.84	0.65	0.05	0.04	0.02	0.05	0.01	39.2
350	4.00	47.98	4.57	1.09	0.98	0.27	0.01	0.02	0.06	0.01	37.4
351	11.90	38.37	2.21	5.00	2.05	0.63	0.48	0.06	0.14	0.07	27.7
352	0.18	61.36	0.51	0.13	0.01	0.01	0.01	0.01	0.01	0.01	44.7
353	7.95	40.03	5.56	2.21	1.23	0.40	0.31	0.02	0.11	0.01	35.7
354	7.66	41.92	4.79	2.21	1.39	0.26	0.33	0.02	0.10	0.01	35.2
355	0.28	29.64	20.09	0.16	0.50	0.01	0.01	0.08	0.01	0.01	47.8
356	0.36	54.79	3.18	0.17	0.10	0.01	0.01	0.02	0.01	0.01	43.2
357	4.71	48.47	3.36	1.59	0.35	0.54	0.01	0.02	0.10	0.01	39.6
358	5.41	27.55	19.43	1.20	0.85	0.02	0.07	0.08	0.08	0.01	43.4
359	1.51	30.40	19.79	0.28	0.27	0.01	0.01	0.04	0.01	0.01	46.0
360	20.00	28.19	3.20	2.85	0.91	0.99	0.01	0.03	0.13	0.07	24.1
361	7.01	43.65	7.98	0.35	0.18	0.10	0.01	0.10	0.01	0.16	35.9
362	11.60	35.84	5.15	5.00	1.31	2.00	0.01	0.05	0.19	0.08	31.3
363	6.79	45.91	1.28	2.63	0.52	0.62	0.32	0.02	0.17	0.01	36.8
364	3.89	50.40	1.36	1.36	0.60	0.80	0.01	0.02	0.08	0.01	39.9
365	4.12	47.30	5.60	0.75	0.42	0.29	0.01	0.02	0.05	0.01	41.0
366	0.15	29.88	20.67	0.18	0.35	0.01	0.01	0.04	0.01	0.01	46.8
367	0.50	55.98	3.75	0.26	0.07	0.01	0.01	0.01	0.01	0.01	43.3
368	5.73	51.96	0.22	0.97	0.13	0.02	0.27	0.02	0.03	0.01	38.1
369	4.08	34.55	13.46	1.27	1.17	0.10	0.17	0.04	0.06	0.01	42.3
370	6.66	44.73	4.79	1.01	0.64	0.17	0.21	0.05	0.03	0.01	39.4
371	9.89	40.72	3.41	2.81	1.49	0.32	0.40	0.03	0.14	0.06	33.8
372	10.50	38.34	4.07	2.77	2.41	0.40	0.32	0.04	0.16	0.01	32.9
373	14.60	33.26	5.11	5.00	2.19	0.76	0.65	0.04	0.24	0.07	31.1
374	20.00	27.91	3.82	5.00	3.57	1.05	0.98	0.05	0.41	0.17	24.2
375	11.10	37.84	5.03	3.28	1.95	1.00	0.01	0.03	0.17	0.01	33.9
376	1.99	43.39	8.45	0.54	1.53	0.08	0.01	0.06	0.02	0.01	43.7
377	10.70	38.16	3.29	3.23	0.84	0.30	1.10	0.04	0.12	0.01	31.4
378	1.73	52.99	3.84	0.34	0.57	0.01	0.07	0.04	0.01	0.01	41.7
379	15.10	33.61	4.43	5.00	2.17	0.37	0.79	0.04	0.20	0.08	28.7
380	1.85	56.72	0.49	0.68	0.21	0.13	0.01	0.05	0.01	0.01	42.0
381	20.00	27.31	2.70	5.00	3.51	0.42	1.07	0.09	0.32	0.14	21.4
382	12.80	37.01	3.64	3.40	1.54	0.39	0.68	0.04	0.15	0.01	31.1
383	20.00	32.59	2.89	5.00	2.35	0.64	0.49	0.03	0.26	0.06	27.0
384	20.00	14.27	4.70	5.00	7.24	1.24	3.00	0.06	0.81	0.16	4.4
385	20.00	24.04	3.69	5.00	5.44	0.64	3.00	0.08	0.42	0.25	9.9
386	14.20	33.58	2.07	5.00	2.52	0.61	0.69	0.08	0.23	0.08	30.6
387	20.00	26.33	4.36	5.00	4.15	0.66	1.30	0.06	0.44	0.13	20.7

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
332	5	22	630	170	8	3	7	4	3	291670	4984750	18
333	5	42	650	300	16	3	15	14	3	293570	4986600	18
334	5	48	520	240	3	3	18	26	3	293310	4987820	18
335	5	20	830	110	7	3	6	4	3	292640	4988040	18
336	5	22	300	110	10	3	11	5	3	293180	4988810	18
337	5	28	680	120	6	3	9	3	3	294100	4988950	18
338	5	24	220	90	3	3	21	6	3	291410	4988200	18
339	5	14	140	120	3	3	7	4	3	290590	4987570	18
340	5	20	3150	530	3	3	9	10	3	289210	4987300	18
341	5	24	460	90	19	3	7	4	3	288390	4987760	18
342	20	78	250	90	8	3	6	3	3	287300	4987840	18
343	5	44	330	210	14	7	29	8	9	286630	4987550	18
344	5	50	440	3000	7	3	3	3	3	331550	4939850	18
345	5	25	70	120	51	6	3	3	3	331700	4939800	18
346	5	16	460	160	6	3	3	3	3	331850	4939800	18
347	5	64	340	140	11	3	3	2	3	350150	4936700	18
348	5	16	150	80	10	3	3	4	3	355300	4942100	18
349	5	40	740	140	8	3	3	14	3	734430	4941500	17
350	5	40	820	370	8	3	3	14	3	733110	4941760	17
351	5	48	450	250	7	6	16	16	3	732840	4941640	17
352	5	19	150	70	9	3	3	2	3	732510	4941170	17
353	5	42	710	390	15	3	7	14	3	731870	4940660	17
354	5	44	800	270	28	6	7	27	3	730300	4940220	17
355	5	38	60	60	8	3	3	4	3	345000	4952700	18
356	5	18	450	110	8	3	3	4	3	344300	4952250	18
357	5	13	140	110	10	3	6	8	3	343550	4952200	18
358	5	18	120	60	8	3	3	4	3	342800	4952100	18
359	5	24	110	60	7	3	3	2	3	341950	4951400	18
360	220	600	1250	150	21	3	7	41	8	341400	4951550	18
361	5	16	130	120	10	3	3	8	3	341500	4950800	18
362	5	16	290	150	11	3	3	17	3	340800	4950400	18
363	5	24	1350	100	16	3	3	4	3	339800	4949650	18
364	5	24	1300	170	13	3	3	10	3	339100	4949200	18
365	5	13	330	80	11	3	3	7	3	338550	4948700	18
366	5	13	50	50	8	3	3	2	3	338050	4948000	18
367	5	11	620	120	10	3	3	4	3	337650	4947300	18
368	5	9	1190	80	8	3	3	4	3	289690	4988820	18
369	5	46	160	70	8	3	9	4	3	289460	4990050	18
370	5	18	410	120	12	3	3	6	6	288560	4991370	18
371	5	40	610	360	14	3	15	10	3	288410	4992280	18
372	5	46	660	230	7	6	10	20	3	288100	4992750	18
373	5	36	630	190	25	3	15	14	3	287240	4988350	18
374	5	29	430	260	28	11	32	16	8	287000	4989440	18
375	5	38	820	500	24	3	10	16	3	286740	4990200	18
376	5	24	310	100	9	3	3	5	3	287830	4994000	18
377	5	21	840	240	9	3	17	12	3	287540	4993410	18
378	5	12	340	80	12	3	3	5	3	286900	4992950	18
379	5	38	520	150	7	6	18	10	6	285760	4991570	18
380	5	12	800	180	9	3	3	4	3	285230	4992030	18
381	5	42	420	180	20	7	30	12	7	285610	4990530	18
382	5	30	620	230	14	3	16	8	6	284800	4990380	18
383	5	45	580	150	7	3	26	13	6	284650	4989540	18
384	5	84	320	460	61	16	80	20	21	284910	4988540	18
385	5	78	240	230	34	15	40	10	20	285730	4988180	18
386	5	34	470	180	9	6	15	10	6	285990	4987560	18
387	5	56	470	260	10	10	33	16	8	285100	4987020	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
388	20.00	27.16	2.96	5.00	4.15	0.50	1.58	0.07	0.34	0.21	16.8
389	20.00	30.35	5.06	5.00	4.30	1.28	0.47	0.06	0.33	0.10	28.8
390	10.50	42.08	1.51	2.22	1.62	0.16	0.33	0.09	0.07	0.01	37.1
391	20.00	20.49	3.73	5.00	5.83	0.62	3.00	0.08	0.59	0.21	10.5
392	15.00	35.15	4.25	3.53	2.25	0.83	0.45	0.04	0.20	0.01	31.4
393	9.25	41.13	5.71	2.41	1.52	0.43	0.18	0.02	0.12	0.01	34.5
394	13.00	37.26	3.09	3.45	2.35	0.43	0.41	0.06	0.19	0.09	31.6
395	11.70	40.75	2.10	2.59	0.63	0.05	0.97	0.08	0.07	0.13	35.9
396	11.60	46.77	0.60	0.21	0.14	0.01	0.01	0.02	0.01	0.02	29.3
397	15.60	32.51	2.93	5.00	3.45	0.48	0.75	0.09	0.25	0.13	26.1
398	20.00	14.88	4.62	5.00	10.00	0.06	3.00	0.15	0.57	0.21	5.2
399	6.76	46.12	3.31	1.81	1.07	0.14	0.01	0.05	0.07	0.01	37.7
400	1.99	55.54	1.67	0.56	0.21	0.20	0.01	0.01	0.02	0.01	42.2
401	0.01	58.98	2.10	0.13	0.01	0.01	0.01	0.01	0.01	0.01	43.5
402	2.73	28.87	20.30	0.08	1.12	0.01	0.01	0.06	0.01	0.01	45.2
403	20.00	16.17	10.35	5.00	3.42	2.00	0.45	0.69	0.33	0.17	4.6
404	2.02	28.97	20.00	0.93	0.85	0.27	0.01	0.05	0.05	0.01	45.1
405	1.08	31.18	18.25	0.48	0.67	0.11	0.01	0.06	0.01	0.01	45.3
406	20.00	30.72	2.17	5.00	2.95	0.01	1.17	0.12	0.18	0.12	26.8
407	20.00	26.50	6.03	5.00	3.47	1.05	1.37	0.03	0.35	0.14	21.4
408	20.00	32.35	2.82	5.00	2.80	0.58	0.63	0.11	0.31	0.08	27.4
409	20.00	1.66	1.46	5.00	4.75	2.00	0.01	0.01	0.66	0.36	0.6
410	12.80	27.61	19.52	0.24	1.68	0.01	0.01	0.07	0.01	0.01	40.0
411	9.12	46.80	4.20	0.40	0.21	0.11	0.01	0.02	0.01	0.01	36.3
412	20.00	24.84	10.88	5.00	3.50	1.27	1.08	0.10	0.61	0.14	14.9
413	9.00	42.49	4.34	1.60	1.42	0.01	0.23	0.08	0.10	0.01	33.7
414	7.45	46.74	2.99	1.15	0.72	0.34	0.01	0.09	0.05	0.01	38.3
415	1.75	57.33	0.43	0.49	0.21	0.04	0.01	0.01	0.02	0.01	42.1
416	1.72	29.30	20.20	0.07	0.50	0.01	0.01	0.07	0.01	0.01	46.7
417	2.86	29.83	20.63	0.40	0.30	0.14	0.01	0.06	0.02	0.01	43.8
418	7.96	52.42	0.41	0.26	0.02	0.07	0.01	0.04	0.01	0.01	42.7
419	0.19	29.84	20.76	0.09	0.53	0.01	0.01	0.07	0.01	0.01	47.0
420	0.96	29.74	20.08	0.32	0.81	0.07	0.01	0.10	0.01	0.01	46.4
421	9.11	43.00	2.48	2.12	1.95	0.22	0.13	0.06	0.10	0.01	35.1
422	1.37	45.82	8.11	0.46	0.94	0.10	0.01	0.07	0.01	0.01	43.1
423	1.95	55.64	3.41	0.68	0.01	0.38	0.01	0.01	0.02	0.01	42.1
424	0.33	58.53	2.58	0.09	0.08	0.01	0.01	0.02	0.01	0.01	43.1
425	9.59	50.98	1.37	0.05	0.01	0.01	0.01	0.02	0.01	0.01	31.5
426	0.01	61.29	1.06	0.07	0.01	0.01	0.01	0.01	0.01	0.01	43.3
427	0.43	59.11	2.07	0.15	0.01	0.02	0.01	0.02	0.01	0.01	43.1
428	20.00	18.54	22.06	2.84	2.92	1.25	0.01	0.10	0.26	0.01	7.6
429	3.07	29.09	19.94	0.73	0.48	0.31	0.01	0.08	0.05	0.07	43.5
430	0.99	29.24	20.86	0.36	0.43	0.01	0.01	0.06	0.01	0.01	26.4
431	1.63	29.22	20.95	0.38	0.37	0.01	0.01	0.05	0.02	0.01	45.6
432	1.51	30.11	19.59	0.36	0.71	0.01	0.01	0.29	0.01	0.38	47.7
433	4.23	28.17	21.43	0.83	0.86	0.05	0.01	0.07	0.06	0.01	42.6
434	3.33	42.87	9.53	0.30	0.20	0.08	0.01	0.02	0.01	0.01	42.3
435	4.35	29.03	20.41	0.10	0.61	0.01	0.01	0.05	0.01	0.01	42.6
436	5.30	28.24	21.69	0.14	0.10	0.02	0.01	0.03	0.01	0.01	41.4
437	1.81	29.45	20.76	0.17	0.30	0.01	0.01	0.05	0.01	0.01	44.9
438	2.67	28.59	20.49	0.60	0.52	0.01	0.01	0.05	0.02	0.01	46.0
439	0.39	29.95	20.90	0.14	0.19	0.01	0.01	0.05	0.01	0.01	46.3
440	4.74	51.82	2.62	1.32	0.63	0.42	0.01	0.02	0.03	0.01	39.3
441	2.98	29.23	20.98	0.25	0.31	0.01	0.01	0.04	0.01	0.01	44.8
442	6.34	27.76	20.93	0.44	0.83	0.01	0.01	0.06	0.03	0.01	39.7
443	5.14	28.29	18.67	1.32	1.26	0.50	0.01	0.19	0.09	0.01	44.4

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
388	5	60	540	100	26	12	31	14	10	286540	4986730	18
389	5	52	510	250	8	3	16	14	3	286200	4985750	18
390	5	24	540	80	7	3	8	6	3	285650	4985050	18
391	5	57	390	270	51	15	24	14	7	284500	4984850	18
392	5	48	570	270	6	3	6	15	3	283200	4984150	18
393	5	42	650	180	6	3	6	13	3	284400	4983650	18
394	5	33	590	200	7	3	16	12	7	282900	4982300	18
395	5	17	410	140	18	3	7	6	11	282600	4983050	18
396	5	32	430	5280	9	3	3	4	3	281600	4984650	18
397	5	42	540	210	10	7	16	10	3	281100	4985500	18
398	5	136	240	80	8	19	68	10	17	281440	4986600	18
399	5	37	620	90	8	3	6	7	3	280250	4985750	18
400	5	15	2150	120	9	3	3	6	3	294420	4992930	18
401	5	40	940	80	9	3	3	4	3	294850	4991580	18
402	5	24	120	50	6	3	3	2	3	294470	4992220	18
403	230	335	140	1520	220	42	20	36	43	290120	4996500	18
404	5	20	70	320	6	3	13	6	3	288790	4994910	18
405	5	21	60	90	6	3	3	2	3	287800	4994730	18
406	5	36	500	80	25	6	16	5	9	283870	4986580	18
407	5	62	500	250	33	11	22	22	14	283210	4986400	18
408	5	38	610	150	10	3	18	10	3	280390	4987130	18
409	5	13	200	11100	3	3	3	23	3	279660	4987360	18
410	5	42	110	50	3	3	3	2	3	281000	4988000	18
411	5	20	180	330	6	3	3	6	3	280240	4988300	18
412	16	54	110	250	2040	8	37	40	13	278470	4989830	18
413	14	30	840	70	19	3	10	16	3	279300	4989590	18
414	5	29	280	120	18	3	3	6	3	281760	4991310	18
415	5	28	2290	780	9	3	3	5	3	281230	4991140	18
416	5	30	90	30	11	3	3	2	3	280500	4991400	18
417	5	18	150	140	6	3	3	4	3	280300	4991900	18
418	5	12	200	800	9	3	3	4	3	279230	4991300	18
419	64	16	60	40	6	3	3	2	3	278860	4991200	18
420	5	20	100	100	7	3	3	11	3	277700	4990250	18
421	5	38	660	100	10	3	12	8	3	279800	4984800	18
422	5	16	100	80	10	3	3	8	3	277600	4971100	18
423	5	16	140	100	9	3	3	4	3	285780	4929930	18
424	5	220	170	100	8	3	3	2	3	293400	4936600	18
425	5	35	160	270	8	3	3	2	3	293400	4936600	18
426	5	14	860	100	8	3	3	2	3	293400	4936600	18
427	33	148	180	80	8	3	3	2	3	293400	4936600	18
428	5	190	390	100	6	3	8	17	6	347200	4955500	18
429	5	460	200	230	10	3	3	8	3	347650	4955150	18
430	5	22	80	70	8	3	3	4	3	348100	4954300	18
431	5	62	140	350	8	3	3	5	3	347650	4953300	18
432	5	34	200	170	6	3	3	2	3	346550	4952450	18
433	5	34	80	620	6	3	3	4	3	348100	4952150	18
434	5	16	320	100	6	3	3	6	3	348700	4952300	18
435	5	14	170	40	7	3	3	2	3	347850	4951200	18
436	5	14	290	90	3	3	3	4	3	346900	4950000	18
437	5	18	180	40	3	3	3	4	3	346450	4949450	18
438	20	64	30	40	7	3	3	8	3	346000	4948650	18
439	113	75	90	30	6	3	3	4	3	345200	4948150	18
440	5	22	500	80	10	3	3	8	3	342800	4947750	18
441	5	32	130	20	6	3	3	2	3	341500	4947700	18
442	5	38	50	60	8	3	3	7	3	341500	4948600	18
443	5	35	60	100	7	3	6	2	3	341900	4948900	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
444	10.70	28.53	20.42	0.34	0.33	0.02	0.01	0.04	0.01	0.01	35.8
445	8.70	27.68	20.67	0.09	0.86	0.01	0.01	0.09	0.01	0.01	35.7
446	9.46	42.73	5.04	2.20	1.42	0.02	0.15	0.04	0.06	0.08	38.1
447	20.00	16.57	6.36	5.00	2.11	2.00	1.17	0.02	0.50	0.01	8.9
448	4.22	27.92	21.28	1.30	0.27	0.41	0.01	0.04	0.12	0.19	43.2
449	14.30	32.33	15.51	0.45	0.50	0.01	0.01	0.06	0.02	0.01	31.9
450	2.73	52.24	4.65	0.29	0.14	0.02	0.01	0.01	0.01	0.01	42.1
451	20.00	12.39	24.43	2.20	1.16	0.97	0.01	0.03	0.18	0.01	1.9
452	20.00	26.03	18.22	0.95	0.73	0.20	0.01	0.05	0.08	0.01	21.0
453	11.40	28.41	19.46	0.24	0.31	0.01	0.01	0.04	0.01	0.16	33.9
454	2.13	29.90	21.16	0.06	0.60	0.01	0.01	0.07	0.01	0.01	45.2
455	0.57	29.70	20.73	0.10	0.49	0.01	0.01	0.08	0.01	0.01	46.0
456	1.47	29.50	20.99	0.09	0.55	0.01	0.01	0.07	0.01	0.01	45.8
457	20.00	26.21	20.86	0.18	0.55	0.01	0.01	0.07	0.01	0.01	27.3
458	9.77	27.71	20.25	0.19	0.30	0.01	0.01	0.04	0.01	0.01	33.9
459	20.00	19.25	24.31	0.13	0.51	0.01	0.01	0.05	0.01	0.01	1.2
460	1.39	29.33	20.93	0.23	0.21	0.01	0.01	0.07	0.01	0.01	44.9
461	20.00	24.03	18.36	0.23	1.72	0.01	0.01	0.09	0.01	0.01	1.1
462	3.65	29.74	19.69	0.93	1.37	0.03	0.01	0.09	0.08	0.01	42.6
463	8.34	27.97	20.07	0.06	1.40	0.01	0.01	0.07	0.01	0.01	35.7
464	20.00	19.01	23.06	0.38	1.83	0.01	0.04	0.04	0.02	0.01	2.3
465	1.33	54.12	4.62	0.30	0.04	0.01	0.01	0.01	0.01	0.01	42.9
466	1.46	29.37	20.63	0.47	0.42	0.11	0.01	0.06	0.02	0.01	46.2
467	2.26	28.79	19.98	0.70	1.45	0.38	0.01	0.07	0.04	0.01	44.0
468	6.61	27.79	21.77	0.35	0.33	0.01	0.01	0.04	0.02	0.01	43.3
469	2.56	52.98	4.04	0.54	0.44	0.18	0.01	0.06	0.02	0.01	42.7
470											43.2
471	2.42	39.35	13.28	0.41	0.58	0.23	0.01	0.05	0.01	0.01	42.8
472	1.68	52.62	5.11	0.43	0.08	0.16	0.01	0.01	0.01	0.01	42.5
473	20.00	24.05	9.62	5.00	1.61	2.00	3.00	0.06	0.04	0.24	6.4
474	0.44	49.20	8.30	0.19	0.01	0.02	0.01	0.01	0.01	0.01	43.3
475	2.22	51.58	4.55	0.53	0.32	0.18	0.01	0.02	0.01	0.01	41.9
476	2.94	51.04	4.25	0.52	0.40	0.19	0.01	0.04	0.02	0.01	40.8
477	2.45	53.84	3.13	0.40	0.31	0.01	0.01	0.05	0.01	0.01	41.0
478	0.98	29.73	20.45	0.37	0.70	0.06	0.01	0.10	0.01	0.01	52.3
479	1.66	53.02	4.28	0.36	0.14	0.05	0.01	0.02	0.01	0.01	41.6
480	0.01	56.31	3.70	0.41	0.01	0.01	0.01	0.01	0.01	0.01	43.0
481	1.04	53.05	5.19	0.24	0.05	0.07	0.01	0.01	0.01	0.01	43.3
482	2.42	50.68	4.83	0.44	1.14	0.13	0.01	0.06	0.01	0.01	41.0
483	0.35	54.73	4.55	0.20	0.19	0.01	0.01	0.02	0.01	0.01	43.9
484	0.01	52.12	5.52	0.14	0.04	0.02	0.01	0.01	0.01	0.01	43.1
485	0.01	53.70	4.78	0.10	0.04	0.01	0.01	0.01	0.01	0.01	43.6
486	0.63	49.26	7.47	0.19	0.02	0.07	0.01	0.03	0.01	0.01	47.6
487	0.01	53.03	5.90	0.07	0.01	0.01	0.01	0.01	0.01	0.01	43.0
488	0.07	51.59	4.80	0.24	0.02	0.01	0.01	0.02	0.01	0.01	42.2
489	0.47	54.94	4.34	0.21	0.11	0.06	0.01	0.01	0.01	0.01	42.5
490	0.65	29.71	20.97	0.25	0.30	0.03	0.01	0.03	0.01	0.01	46.0
491	20.00	26.00	19.80	0.28	0.29	0.01	0.01	0.03	0.02	0.01	23.4
492	3.64	28.40	20.45	0.98	0.41	0.09	0.01	0.04	0.09	0.01	45.1
493	9.19	30.32	20.27	0.19	1.25	0.04	0.01	0.06	0.02	0.01	36.0
494	0.48	30.02	20.67	0.16	0.40	0.02	0.01	0.04	0.01	0.01	46.8
495	11.00	42.19	4.87	1.36	1.03	0.51	0.01	0.03	0.08	0.17	35.1
496	0.97	55.28	3.51	0.29	0.27	0.11	0.01	0.03	0.01	0.01	42.0
497	0.09	54.53	4.95	0.15	0.02	0.01	0.01	0.01	0.01	0.01	40.4
498	0.14	54.46	4.24	0.14	0.32	0.01	0.01	0.02	0.01	0.01	43.6
499	0.37	54.40	4.57	0.15	0.06	0.01	0.01	0.01	0.01	0.01	43.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
444	5	24	130	70	3	3	3	9	3	342700	4951300	18
445	5	26	50	40	3	3	3	6	3	342600	4950550	18
446	5	17	160	50	14	3	3	16	3	342450	4950200	18
447	5	30	110	230	16	8	24	46	17	342500	4949400	18
448	5	20	50	90	6	3	3	14	3	341400	4949600	18
449	5	18	180	40	6	3	3	6	3	344050	4953650	18
450	5	20	220	50	8	3	3	4	3	344500	4953400	18
451	5	40	330	80	3	3	6	17	3	347600	4955950	18
452	5	41	450	50	3	3	3	4	3	348400	4956250	18
453	15	50	820	40	6	3	3	4	3	348800	4956000	18
454	5	24	100	40	3	3	3	2	3	349800	4955600	18
455	5	18	70	30	3	3	3	2	3	350550	4956000	18
456	5	20	90	30	3	3	3	2	3	350600	4955600	18
457	5	24	90	40	6	3	3	4	3	351100	4956300	18
458	5	15	100	40	6	3	3	5	3	351800	4956600	18
459	5	49	40	20	3	3	3	22	3	352550	4956900	18
460	5	37	90	30	3	3	3	4	3	351800	4957100	18
461	5	50	20	20	3	3	3	16	3	353000	4957600	18
462	17	40	180	210	3	3	3	9	6	353100	4958250	18
463	5	26	220	30	3	3	3	2	3	352150	4958150	18
464	5	38	30	20	3	3	3	16	3	356700	4960100	18
465	5	15	440	70	8	3	3	4	3	359000	4961900	18
466	5	16	40	40	10	3	3	4	3	359500	4962450	18
467	5	12	60	60	6	3	3	2	3	359650	4963300	18
468	5	19	80	60	3	3	6	5	3	359700	4960550	18
469	5	32	270	120	10	3	3	5	3	360400	4961000	18
470	5	16	440	140	8	3	3	6	3	361000	4961500	18
471	5	18	120	90	6	3	3	4	3	365900	4961400	18
472	5	20	320	170	8	3	3	9	3	365650	4962200	18
473	5	52	40	610	6	3	3	16	3	364900	4962850	18
474	5	14	170	110	8	3	3	4	3	364550	4963450	18
475	5	20	440	150	6	3	3	8	3	364600	4964400	18
476	5	21	570	200	9	3	3	9	3	364050	4964450	18
477	5	16	510	110	11	3	6	4	3	364350	4965250	18
478	5	11	70	70	7	3	3	4	3	363700	4966000	18
479	5	16	420	180	8	3	3	4	3	364900	4965450	18
480	5	12	310	100	8	3	3	4	3	365350	4966400	18
481	5	12	230	200	7	3	3	6	3	365150	4967400	18
482	5	26	500	150	8	3	6	6	3	365750	4965750	18
483	5	17	270	110	8	3	3	4	3	357800	4957450	18
484	5	16	210	120	7	3	3	5	3	366750	4963900	18
485	5	59	210	100	8	3	3	2	3	367450	4964150	18
486	5	18	90	100	8	3	3	10	3	368200	4964350	18
487	5	14	140	200	6	3	3	2	3	368800	4964850	18
488	5	12	160	180	7	3	3	2	3	368950	4965550	18
489	5	14	210	240	6	3	3	4	3	368950	4966150	18
490	5	14	30	110	3	3	3	4	3	369600	4965050	18
491	5	14	20	110	3	3	3	4	3	370500	4965000	18
492	5	12	30	130	6	3	6	5	3	371450	4965500	18
493	5	37	70	140	3	3	3	2	3	372650	4965600	18
494	5	18	30	140	3	3	3	8	3	373550	4965850	18
495	5	14	150	260	18	3	9	9	7	371600	4966200	18
496	5	20	230	260	8	3	3	8	3	371300	4966850	18
497	5	14	210	210	7	3	3	4	3	371200	4967700	18
498	5	13	290	210	14	3	3	2	3	371000	4968300	18
499	5	14	320	220	7	3	3	4	3	371850	4968200	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
500	0.49	52.33	5.18	0.24	0.09	0.07	0.01	0.01	0.01	0.01	42.8
501	20.00	25.51	18.78	0.59	0.60	0.01	0.01	0.03	0.02	0.01	20.4
502	2.69	30.48	18.92	0.32	0.58	0.02	0.01	0.04	0.02	0.01	43.6
503	20.00	29.30	1.81	2.35	0.60	0.87	0.01	0.03	0.11	0.06	26.4
504	0.28	51.89	5.92	0.09	0.01	0.01	0.01	0.01	0.01	0.01	44.2
505	2.44	30.60	18.43	1.32	0.53	0.08	0.01	0.13	0.04	0.01	45.0
506	5.58	31.76	16.74	1.62	0.65	0.28	0.01	0.04	0.06	0.01	42.5
507	3.56	34.71	14.97	0.86	0.67	0.01	0.01	0.17	0.03	0.01	43.0
508	4.92	26.67	20.90	1.63	1.11	0.67	0.01	0.06	0.10	0.01	41.8
509	20.00	27.42	6.61	5.00	2.84	2.00	0.01	0.03	0.51	0.16	25.5
510	4.57	51.43	0.54	1.74	0.45	0.16	0.15	0.03	0.06	0.01	40.6
511	2.83	53.76	0.70	1.03	0.52	0.19	0.01	0.01	0.05	0.01	40.3
512	20.00	27.59	5.68	5.00	3.01	1.40	0.38	0.05	0.32	0.11	23.3
513	1.03	51.69	6.07	0.27	0.07	0.01	0.01	0.02	0.01	0.01	42.7
514	20.00	14.94	18.74	5.00	2.59	2.00	0.03	0.07	0.38	0.01	18.0
515	12.70	26.48	17.87	1.16	0.95	0.26	0.01	0.06	0.04	0.01	43.6
516	0.87	56.54	3.70	0.12	0.01	0.01	0.01	0.02	0.01	0.01	45.8
517	7.80	47.98	1.30	1.11	0.17	0.52	0.01	0.02	0.03	0.01	37.5
518	5.03	33.03	13.29	2.08	1.06	0.42	0.01	0.17	0.07	0.01	41.5
519	1.73	29.39	20.46	0.18	0.58	0.01	0.01	0.05	0.01	0.01	45.4
520	20.00	19.59	7.95	5.00	2.59	2.00	1.37	0.04	0.56	0.22	12.5
521	1.83	56.95	0.86	0.39	0.27	0.01	0.01	0.07	0.01	0.01	42.3
522	13.90	29.57	10.28	5.00	1.84	1.06	0.01	0.05	0.25	0.06	33.3
523	12.50	37.08	4.46	3.77	0.96	0.74	0.04	0.08	0.11	0.01	34.3
524	4.65	46.91	3.32	1.36	1.43	0.29	0.07	0.06	0.11	0.06	39.1
525	5.60	50.28	2.15	0.44	0.39	0.01	0.01	0.02	0.01	0.01	40.4
526	12.00	40.50	0.64	2.55	0.54	0.09	0.89	0.08	0.05	0.01	33.3
527	10.00	27.48	18.98	0.08	0.39	0.01	0.01	0.04	0.01	0.01	41.0
528A	1.27	58.39	1.41	0.09	0.02	0.01	0.01	0.02	0.01	0.01	20.4
528B	1.36	29.39	20.63	0.08	0.45	0.01	0.01	0.06	0.01	0.01	45.5
528C	20.00	24.40	20.96	0.29	5.09	0.01	0.01	0.08	0.02	0.01	40.8
529	3.13	55.94	0.92	0.56	0.20	0.07	0.01	0.05	0.02	0.01	41.4
530	5.27	51.61	0.63	1.24	0.45	0.22	0.01	0.01	0.04	0.01	40.5
531	6.91	44.95	3.26	1.92	0.49	0.22	0.28	0.21	0.04	0.01	38.5
532	4.80	49.77	1.52	1.01	1.29	0.05	0.01	0.04	0.04	0.01	39.2
533	4.04	48.72	4.41	0.84	0.57	0.09	0.01	0.03	0.01	0.01	41.0
534	20.00	30.28	1.64	5.00	1.64	0.07	1.83	0.07	0.15	0.06	25.8
535	4.93	44.92	5.49	1.23	0.57	0.10	0.14	0.02	0.03	0.01	41.1
536	9.58	41.73	2.86	1.97	1.50	0.10	0.01	0.04	0.10	0.01	35.0
537	4.83	50.41	0.82	1.29	0.35	0.28	0.01	0.02	0.05	0.01	40.9
538	2.22	54.64	0.35	1.17	0.34	0.20	0.01	0.02	0.07	0.01	42.6
539	1.54	29.43	20.60	0.64	0.50	0.04	0.01	0.03	0.03	0.01	45.7
540	0.64	29.96	20.31	0.31	0.46	0.02	0.01	0.05	0.01	0.01	46.4
541	11.60	40.49	1.20	5.00	0.63	0.62	0.13	0.07	0.13	0.01	34.8
542	2.85	29.02	20.33	0.29	0.49	0.03	0.01	0.05	0.01	0.01	44.8
543	2.96	28.35	19.82	1.63	0.69	0.33	0.01	0.39	0.09	0.01	44.3
544	1.37	29.65	20.31	0.35	0.43	0.10	0.01	0.05	0.01	0.01	46.3
545	11.60	39.51	9.15	0.20	0.49	0.01	0.01	0.03	0.01	0.01	33.9
546	20.00	24.13	1.87	5.00	1.79	1.79	0.63	0.07	0.27	0.09	13.4
547	1.69	36.44	13.93	0.27	0.75	0.01	0.01	0.16	0.01	0.01	45.0
548	1.53	58.62	1.73	0.45	0.06	0.10	0.01	0.01	0.01	0.01	42.7
549	7.43	39.95	11.69	2.94	0.46	0.01	0.01	0.04	0.07	0.01	38.5
550	4.53	29.13	19.45	0.35	0.94	0.01	0.01	0.12	0.01	0.01	44.1
551	1.25	29.45	20.81	0.04	0.26	0.01	0.01	0.05	0.01	0.01	45.6
552	1.93	29.20	20.11	0.13	0.75	0.01	0.01	0.07	0.01	0.01	43.4
553	2.53	48.14	4.73	0.39	0.85	0.18	0.01	0.06	0.02	0.01	40.8

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
500	5	14	350	250	6	3	3	4	3	372600	4968350	18
501	5	15	40	90	3	3	3	2	3	370700	4965000	18
502	5	18	90	140	3	3	3	5	3	370000	4964550	18
503	44	240	1150	200	24	3	3	8	3	331900	4940800	18
504	5	20	430	210	10	3	3	2	3	331600	4939300	18
505	5	26	70	110	10	3	3	5	3	331300	4945300	18
506	68	230	80	130	88	3	3	14	3	330650	4944400	18
507	5	99	90	40	16	3	3	10	3	330100	4943850	18
508	10	50	220	200	7	3	6	8	3	329550	4943100	18
509	5	37	20	5	3	3	9	6	8	328900	4941400	18
510	15	66	1440	230	10	3	11	7	3	324650	4933100	18
511	5	22	2200	760	12	3	7	6	3	324100	4932750	18
512	14	60	540	1120	25	7	36	50	14	323500	4932500	18
513	5	15	100	70	8	3	3	6	3	315600	4935100	18
514	5	141	190	330	14	3	22	61	11	313900	4933500	18
515	5	35	260	130	8	3	8	6	3	312900	4933200	18
516	5	11	120	70	8	3	3	5	3	314950	4934200	18
517	5	50	1630	640	12	3	6	12	3	315300	4934900	18
518	5	17	160	980	13	3	9	7	3	313050	4935950	18
519	5	27	30	50	7	3	3	4	3	332300	4965600	18
520	17	66	250	550	18	6	52	49	15	332500	4966950	18
521	5	20	350	90	8	3	3	4	3	332550	4967650	18
522	5	42	190	1580	14	3	26	24	6	333600	4968050	18
523	5	44	480	150	8	3	9	10	7	333700	4967450	18
524	5	41	210	230	6	6	8	19	3	334200	4966850	18
525	5	66	360	90	10	3	3	4	3	334700	4966700	18
526	5	14	420	90	7	3	3	4	3	333750	4966200	18
527	5	23	60	40	6	3	3	2	3	333800	4967150	18
528A	5	14	120	90	9	3	3	4	3	333700	4967150	18
528B	5	22	30	50	6	3	3	2	3	335700	4967150	18
528C	14	830	70	50	310	3	3	6	3	335700	4967150	18
529	5	11	390	110	8	3	3	4	3	335550	4969500	18
530	5	22	2180	480	10	3	8	6	3	337800	4970650	18
531	5	25	350	160	9	3	6	7	3	337850	4970300	18
532	5	16	390	110	8	3	7	5	3	338700	4970750	18
533	5	18	400	90	8	3	3	8	3	339450	4970500	18
534	5	26	350	90	17	7	17	6	7	340150	4970850	18
535	11	26	320	160	20	3	3	5	3	340550	4970550	18
536	5	44	370	160	6	3	7	8	6	340500	4970000	18
537	5	36	2390	260	8	3	7	6	3	338400	4971200	18
538	5	28	1750	340	10	3	6	6	3	339150	4971600	18
539	5	20	40	70	7	3	3	4	3	329450	4961300	18
540	5	22	40	70	3	3	3	4	3	330050	4961550	18
541	5	50	110	240	9	3	21	17	3	330650	4961800	18
542	5	22	40	90	6	3	3	5	3	331500	4962200	18
543	5	22	60	1040	8	3	3	5	3	329950	4965000	18
544	5	12	90	100	7	3	3	2	3	330450	4965400	18
545	5	34	120	160	6	3	3	4	3	330250	4967950	18
546	11	31	290	350	9	7	61	12	24	328650	4967500	18
547	5	17	70	150	6	3	3	4	3	329950	4968900	18
548	5	17	90	230	9	3	3	5	3	330350	4969150	18
549	5	43	100	210	6	3	11	5	3	330650	4969150	18
550	5	22	50	130	13	3	3	2	3	346330	4956940	18
551	19	24	100	130	6	3	3	2	3	351000	4956990	18
552	5	20	230	140	6	3	3	2	3	350270	4957170	18
553	5	21	250	270	10	3	3	4	3	369350	4963950	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
554	6.02	28.45	20.02	0.23	1.24	0.01	0.01	0.07	0.01	0.01	39.5
555	2.37	50.57	4.21	0.34	0.26	0.13	0.01	0.03	0.02	0.01	39.9
556	13.10	44.54	2.95	1.13	0.64	0.07	0.01	0.02	0.02	0.01	34.4
557	13.20	45.51	3.85	0.32	0.58	0.01	0.01	0.05	0.01	0.01	35.6
558	6.56	52.64	1.34	0.32	0.07	0.01	0.01	0.03	0.01	0.01	38.7
559	1.18	52.67	4.65	0.27	0.28	0.08	0.01	0.03	0.01	0.01	42.3
560	5.18	48.02	3.97	1.00	0.83	0.09	0.01	0.04	0.04	0.06	36.7
561	3.37	28.33	22.03	0.20	0.18	0.01	0.01	0.04	0.01	0.01	46.9
562	2.76	28.83	21.95	0.34	0.29	0.01	0.01	0.07	0.01	0.01	48.8
563	3.46	43.06	9.99	0.48	0.35	0.14	0.01	0.02	0.04	0.01	42.7
564	2.52	57.86	1.95	0.14	0.01	0.01	0.01	0.03	0.01	0.01	40.3
565	3.28	29.03	20.83	0.18	0.11	0.01	0.01	0.09	0.01	0.01	44.6
566	0.39	57.03	1.83	0.27	0.07	0.01	0.01	0.01	0.01	0.01	43.1
567	5.30	45.50	4.15	1.61	0.97	0.30	0.22	0.03	0.11	0.02	39.4
568	5.37	48.26	1.77	1.31	1.55	0.14	0.14	0.05	0.07	0.01	39.1
569	14.00	31.17	5.59	5.00	4.23	1.14	0.19	0.03	0.45	0.09	29.3
570	11.00	37.48	2.57	5.00	2.48	0.54	0.24	0.04	0.24	0.01	33.3
571	20.00	27.07	4.11	5.00	4.05	1.01	1.22	0.05	0.45	0.15	22.6
572	12.80	34.38	3.89	5.00	2.37	0.16	0.87	0.02	0.27	0.08	30.3
573	0.36	29.52	20.04	0.27	0.70	0.03	0.01	0.04	0.01	0.01	47.0
574	1.53	43.94	8.96	0.76	0.56	0.12	0.04	0.02	0.02	0.01	43.1
575	8.88	28.02	16.98	0.60	0.97	0.10	0.01	0.11	0.02	0.01	42.3
576	8.00	44.52	2.04	1.94	1.06	0.14	0.05	0.03	0.06	0.01	37.1
577	12.20	33.82	4.60	5.00	3.25	0.49	0.35	0.03	0.44	0.11	30.2
578	20.00	25.31	4.02	5.00	2.97	1.21	0.86	0.08	0.32	0.08	17.3
579	20.00	12.07	4.66	5.00	4.86	1.29	1.84	0.03	0.47	0.16	4.6
580	10.60	39.54	1.99	5.00	1.09	0.40	0.55	0.05	0.12	0.01	33.3
581	0.67	52.70	5.54	0.23	0.04	0.02	0.01	0.02	0.01	0.01	42.8
582	0.68	29.37	20.65	0.16	0.52	2.00	0.01	0.06	0.01	0.01	46.3
583	1.87	54.12	2.68	0.40	0.55	0.16	0.01	0.09	0.03	0.01	41.0
584	1.38	52.52	4.64	0.33	0.49	0.16	0.01	0.05	0.02	0.01	41.2
585	3.76	51.65	3.51	0.53	0.87	0.15	0.01	0.04	0.04	0.01	39.0
586	0.69	55.37	3.75	0.18	0.08	0.03	0.01	0.02	0.01	0.01	43.1
587	2.92	41.11	12.85	0.40	0.55	0.01	0.01	0.06	0.01	0.01	42.9
588	0.28	55.75	3.78	0.18	0.10	0.01	0.01	0.02	0.01	0.01	44.5
589	1.83	53.47	3.96	0.42	0.25	0.16	0.01	0.02	0.02	0.01	40.9
590	9.44	27.51	16.85	2.12	1.94	0.45	0.01	0.15	0.08	0.01	43.1
591	1.59	57.09	0.32	0.45	0.05	0.07	0.01	0.02	0.01	0.01	42.5
592	6.51	46.37	1.40	2.69	0.59	0.62	0.01	0.04	0.09	0.01	37.5
593	20.00	24.91	3.81	5.00	2.88	1.37	0.97	0.04	0.29	0.08	16.4
594	15.30	38.82	3.83	1.09	0.33	0.33	0.01	0.03	0.04	0.01	32.6
595	9.31	42.45	3.09	2.39	0.47	0.60	0.01	0.05	0.07	0.01	36.0
596	1.91	50.78	4.48	0.65	0.28	0.11	0.01	0.01	0.01	0.01	41.9
597	4.77	44.90	6.15	1.21	0.94	0.56	0.01	0.02	0.06	0.01	40.0
598	3.33	53.73	2.10	0.75	0.95	0.01	0.01	0.07	0.01	0.01	41.0
599	3.75	28.15	19.47	1.25	0.70	0.16	0.24	0.07	0.07	0.01	43.1
600	0.12	31.41	16.71	0.37	3.41	0.01	0.01	0.21	0.01	0.01	47.9
601	5.02	46.81	3.28	0.88	0.34	0.33	0.01	0.02	0.01	0.01	39.3
602	6.22	32.77	15.78	0.09	0.54	0.01	0.01	0.08	0.01	0.01	39.0
603	4.22	31.17	18.20	0.06	0.58	0.01	0.01	0.12	0.01	0.01	41.3
604	0.01	29.89	20.76	0.11	0.37	0.01	0.01	0.04	0.01	0.01	46.7
605	2.09	28.73	20.82	0.79	0.31	0.28	0.01	0.04	0.02	0.01	44.5
606	2.35	28.26	21.02	1.00	0.53	0.04	0.01	0.06	0.07	0.01	44.0
607	2.85	28.26	20.37	0.97	0.28	0.32	0.01	0.05	0.04	0.01	43.9
608	2.17	29.40	20.39	0.69	0.38	0.10	0.01	0.05	0.02	0.01	44.6
609	0.67	30.86	18.42	0.34	0.35	0.01	0.01	0.04	0.01	0.01	46.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
554	5	20	160	140	6	3	3	2	3	369000	4963400	18
555	5	23	310	290	7	3	3	6	3	368600	4962700	18
556	5	15	110	780	8	3	3	16	3	371400	4962450	18
557	5	22	440	570	7	3	3	5	3	370700	4962100	18
558	5	14	180	1140	8	3	3	4	3	370000	4961500	18
559	5	18	560	350	6	3	3	4	3	370900	4960150	18
560	5	24	310	270	10	3	10	6	3	371450	4959850	18
561	5	72	130	140	6	3	3	2	3	372650	4960250	18
562	5	11	180	130	8	3	3	6	3	373650	4960700	18
563	5	11	1340	390	8	3	7	5	3	374200	4961350	18
564	5	24	100	230	9	3	3	4	3	374750	4961700	18
565	5	10	50	70	6	3	3	4	3	363050	4969600	18
566	5	36	330	140	14	3	3	5	3	351400	4975350	18
567	5	16	360	200	8	3	9	10	3	350650	4975950	18
568	5	20	590	180	10	3	7	6	3	350050	4976550	18
569	5	56	430	620	24	11	25	16	15	349650	4975950	18
570	5	36	480	250	14	7	19	21	7	349000	4975550	18
571	5	49	340	490	14	8	21	34	12	348450	4975000	18
572	5	66	450	170	34	7	47	16	18	348350	4974150	18
573	5	14	40	70	6	3	3	4	3	348450	4973750	18
574	5	46	320	180	7	3	3	6	3	348650	4973350	18
575	5	50	40	90	6	3	3	4	3	348050	4973700	18
576	5	20	380	170	6	3	8	8	3	347300	4973250	18
577	5	44	460	180	6	11	43	24	17	346950	4972750	18
578	5	38	280	550	8	8	23	23	13	346350	4972250	18
579	5	78	220	430	22	6	13	23	9	345600	4971850	18
580	5	21	510	340	8	3	15	10	3	345050	4971600	18
581	5	11	120	160	7	3	3	4	3	370560	4959400	18
582	5	17	60	90	6	3	3	4	3	369310	4958990	18
583	5	32	320	160	7	3	8	10	3	367340	4960710	18
584	5	16	220	150	7	3	6	6	3	366940	4960040	18
585	12	21	200	120	13	3	6	8	3	366980	4959420	18
586	5	15	250	120	7	3	3	4	3	366300	4956300	18
587	5	15	190	140	8	3	3	4	3	366750	4954800	18
588	5	14	350	90	8	3	3	5	3	367000	4953900	18
589	5	16	350	160	8	3	3	4	3	367400	4951400	18
590	5	19	90	90	14	3	8	7	3	348300	4976400	18
591	5	12	1210	280	8	3	3	4	3	347650	4976750	18
592	19	10	300	100	12	3	7	4	3	346650	4977600	18
593	12	370	400	260	50	8	21	20	16	345850	4977950	18
594	5	122	390	500	9	3	3	14	3	343400	4980300	18
595	5	16	270	370	14	3	9	11	3	343700	4980900	18
596	5	12	540	180	6	3	3	7	3	343650	4981550	18
597	5	16	260	170	6	3	3	10	3	343350	4982350	18
598	5	26	380	110	6	3	3	8	3	342900	4982650	18
599	5	14	70	80	3	3	3	5	3	343650	4983700	18
600	5	17	130	80	3	3	3	2	3	344650	4981200	18
601	18	40	240	110	6	3	3	4	3	345350	4981150	18
602	5	20	220	50	6	3	3	4	3	346150	4980800	18
603	5	24	130	70	3	3	3	2	3	347050	4981150	18
604	5	10	60	60	6	3	3	2	3	348200	4981350	18
605	5	18	50	200	3	3	3	4	3	348800	4981650	18
606	5	20	80	70	3	3	8	6	3	349750	4982300	18
607	5	14	50	60	3	3	3	2	3	350400	4982950	18
608	5	24	130	70	3	3	3	9	3	351050	4983650	18
609	31	160	110	70	6	3	3	4	3	350550	4984300	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
610	1.78	29.72	19.57	0.32	1.15	0.09	0.01	0.11	0.01	0.01	44.5
611	20.00	13.31	10.27	1.99	0.66	0.64	0.17	0.03	0.11	0.01	2.6
612	0.24	51.96	6.15	0.23	0.15	0.03	0.01	0.03	0.01	0.01	44.4
613	20.00	24.05	4.67	5.00	3.79	1.39	1.42	0.04	0.54	0.33	8.1
614	20.00	31.18	3.13	5.00	2.63	0.49	0.37	0.05	0.16	0.11	22.2
615	20.00	17.79	4.16	5.00	5.85	1.30	1.84	0.10	0.42	0.25	2.8
616	20.00	28.23	4.12	5.00	3.56	0.77	0.55	0.05	0.26	0.20	18.5
617	20.00	27.89	3.68	5.00	3.64	0.61	1.03	0.06	0.26	0.14	17.1
618	20.00	24.10	5.48	5.00	4.71	1.29	1.71	0.04	0.43	0.09	10.8
619	13.80	36.95	1.28	3.53	1.34	1.43	0.27	0.08	0.11	0.01	28.6
620	2.38	47.49	6.34	0.71	0.58	0.01	0.01	0.02	0.05	0.01	39.6
621	2.96	29.08	19.63	0.35	0.86	0.01	0.01	0.06	0.01	0.01	44.6
622	12.80	38.81	2.17	3.31	0.86	0.93	0.01	0.08	0.14	0.07	32.8
623	11.10	41.96	2.43	2.30	0.80	0.75	0.01	0.07	0.11	0.06	33.9
624	20.00	24.20	3.23	5.00	4.07	1.21	1.38	0.04	0.41	0.13	10.2
625	4.69	47.06	5.93	1.09	0.55	0.39	0.01	0.03	0.06	0.01	38.1
626	3.34	48.95	5.14	1.01	0.25	0.17	0.01	0.01	0.03	0.01	40.0
627	5.06	47.40	4.59	1.52	0.89	0.27	0.01	0.03	0.05	0.01	37.3
628	1.17	58.49	0.73	0.35	0.66	0.05	0.01	0.04	0.01	0.01	42.6
629	20.00	32.99	7.32	2.53	2.26	0.38	0.12	0.25	0.08	0.01	29.5
630	2.76	51.18	3.62	0.85	0.18	0.34	0.01	0.02	0.03	0.01	42.6
631	9.60	40.85	7.09	1.79	0.54	0.96	0.01	0.02	0.10	0.01	35.7
632	5.78	44.91	4.02	1.82	1.28	0.15	0.11	0.04	0.04	0.01	37.3
633	2.07	51.56	4.61	0.60	0.53	0.11	0.01	0.04	0.02	0.01	41.5
634	3.06	55.97	0.63	0.51	0.22	0.22	0.01	0.01	0.01	0.01	40.5
635	2.86	47.76	5.97	0.86	0.26	0.18	0.01	0.02	0.02	0.01	43.1
636	2.40	49.20	5.69	0.91	0.15	0.25	0.01	0.01	0.02	0.01	42.6
637	2.79	50.99	4.16	1.13	0.11	0.26	0.01	0.01	0.02	0.01	41.5
638	2.66	50.02	4.56	1.17	0.23	0.18	0.01	0.01	0.02	0.01	42.5
639	3.91	50.98	2.87	1.22	0.21	0.65	0.01	0.04	0.06	0.01	39.2
640	14.10	26.88	20.91	1.28	1.06	0.03	0.01	0.08	0.05	0.01	37.5
641	2.78	29.07	20.61	0.15	0.27	0.01	0.01	0.04	0.01	0.01	45.3
642	20.00	35.87	1.22	2.77	0.42	1.27	0.01	0.03	0.06	0.01	31.7
643	3.96	48.80	4.06	1.13	0.49	0.21	0.01	0.03	0.03	0.01	41.2
644	20.00	24.59	6.19	5.00	1.78	2.00	0.30	0.02	0.21	0.01	15.1
645	7.63	42.57	5.99	2.50	0.88	0.82	0.01	0.03	0.08	0.01	37.2
646	20.00	25.50	3.72	5.00	2.26	0.36	3.00	0.05	0.29	0.08	10.5
647	20.00	18.78	3.71	5.00	3.26	0.35	3.00	0.06	0.30	0.18	3.8
648	2.84	38.93	12.55	0.83	0.98	0.01	0.01	0.05	0.02	0.01	43.3
649	2.68	55.80	2.33	0.49	0.40	0.01	0.01	0.05	0.01	0.01	40.6
650	4.73	49.90	3.90	1.02	0.60	0.10	0.01	0.03	0.04	0.01	38.9
651	2.90	49.47	5.77	0.88	0.28	0.31	0.01	0.02	0.02	0.01	42.2
652	8.24	36.83	6.93	2.79	0.87	2.00	0.01	0.02	0.11	0.01	38.6
653	20.00	28.96	5.84	5.00	4.21	1.24	0.28	0.07	0.44	0.09	24.0
654	2.12	28.19	19.36	0.43	0.52	0.04	0.01	0.04	0.01	0.01	45.2
655	8.15	42.31	4.93	2.61	1.57	0.59	0.13	0.02	0.10	0.01	32.8
656	20.00	7.54	2.76	5.00	2.31	0.51	3.00	0.03	0.45	0.15	1.8
657	20.00	14.99	2.02	5.00	1.38	0.57	3.00	0.07	0.36	0.15	2.9
658	20.00	25.89	4.24	5.00	4.01	2.00	0.77	0.11	0.30	0.27	14.0
659	4.50	49.12	4.14	1.30	1.30	0.21	0.01	0.04	0.08	0.01	37.6
660	15.70	34.80	10.35	3.01	1.05	0.96	0.01	0.03	0.11	0.06	30.7
661	20.00	24.03	6.08	5.00	5.53	0.40	3.00	0.06	0.36	0.09	10.5
662	11.30	37.50	8.89	1.89	1.25	0.40	0.08	0.06	0.10	0.01	34.2
663	3.65	52.47	2.28	1.07	0.63	0.01	0.01	0.02	0.04	0.01	40.7
664	5.37	44.96	6.93	1.21	0.57	0.37	0.01	0.03	0.05	0.01	39.6
665	9.45	44.05	1.01	1.90	0.74	0.29	0.13	0.02	0.08	0.01	36.8

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
610	5	62	150	140	6	3	3	7	3	349950	4984900	18
611	5	40	640	320	11	3	7	35	3	351900	4983700	18
612	5	12	150	100	7	3	3	4	3	352800	4984350	18
613	14	96	460	670	16	9	42	20	8	356470	4997630	18
614	5	45	420	230	8	6	13	18	3	356450	4996790	18
615	12	116	440	570	8	14	52	24	18	356710	4996080	18
616	11	78	480	300	8	9	37	24	14	355840	4995500	18
617	5	78	420	240	13	9	42	25	16	355400	4995400	18
618	5	76	580	490	23	10	46	24	16	355210	4994900	18
619	5	31	750	460	18	3	13	6	3	356390	4993130	18
620	5	44	310	110	12	3	3	4	3	357480	4992490	18
621	5	42	90	100	6	3	3	4	3	357890	4991450	18
622	5	20	180	180	13	3	10	18	6	357820	4990760	18
623	5	12	170	170	13	3	8	15	6	357300	4990210	18
624	10	64	310	320	30	10	56	36	19	356780	4989780	18
625	5	29	200	150	10	3	8	10	3	356400	4989240	18
626	5	19	530	320	8	3	6	11	3	356420	4988690	18
627	5	24	500	180	8	3	8	19	3	357040	4988530	18
628	5	50	460	110	12	3	7	4	3	357970	4988800	18
629	5	16	370	440	12	9	10	11	3	358900	4989300	18
630	12	17	510	120	14	3	6	5	3	359790	4990500	18
631	5	24	150	200	9	3	10	14	3	360440	4991450	18
632	5	26	440	220	7	3	7	24	3	361370	4992500	18
633	5	16	370	140	9	3	6	4	3	353440	4984500	18
634	13	32	300	320	12	3	6	4	3	353970	4984730	18
635	5	12	520	170	8	3	3	6	3	355400	4985420	18
636	5	22	540	230	8	3	3	6	3	355840	4985820	18
637	5	16	490	160	10	3	6	6	3	356440	4986510	18
638	5	16	520	140	12	3	3	4	3	356860	4987060	18
639	35	50	660	200	31	3	8	14	3	356590	4985630	18
640	5	88	140	50	11	3	9	12	3	358340	4985720	18
641	5	20	70	40	6	3	3	4	3	358840	4986300	18
642	14	14	150	470	20	3	6	4	3	360580	4986670	18
643	5	12	350	130	14	3	9	6	3	361830	4986920	18
644	10	83	230	360	24	6	15	41	7	362470	4987550	18
645	5	28	300	110	6	3	10	14	3	362700	4988200	18
646	5	50	390	230	6	13	35	23	15	363510	4987520	18
647	5	50	510	440	6	13	37	14	17	363600	4986970	18
648	5	20	240	60	7	3	8	8	3	364000	4988140	18
649	5	14	240	60	15	3	7	7	3	364580	4988520	18
650	5	29	310	120	12	3	10	12	3	365890	4988770	18
651	5	21	460	140	8	3	8	8	3	365680	4988080	18
652	5	12	140	90	11	3	21	6	3	365620	4987350	18
653	5	36	200	100	20	12	41	25	26	365680	4986590	18
654	5	17	60	40	6	3	3	4	3	365510	4985830	18
655	5	37	420	310	10	6	13	26	3	365250	4985370	18
656	5	44	330	100	8	14	37	29	16	361500	4984710	18
657	5	41	400	280	10	11	39	12	10	363150	4982900	18
658	5	150	400	580	70	16	10	12	12	362760	4982140	18
659	5	30	400	120	8	3	7	13	3	363470	4981000	18
660	5	18	420	150	12	7	14	24	3	364090	4980560	18
661	5	50	340	210	14	18	57	20	34	341900	4970900	18
662	5	39	210	550	8	3	15	12	3	342300	4971500	18
663	5	26	500	90	8	3	10	4	3	342550	4972150	18
664	5	28	360	330	11	6	9	19	3	342950	4972850	18
665	19	26	2250	560	9	3	11	10	6	342650	4974150	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
666	10.20	43.94	1.01	3.08	0.47	0.72	0.01	0.03	0.07	0.01	38.5
667	1.90	53.31	2.70	0.60	1.13	0.05	0.01	0.04	0.04	0.01	41.6
668	5.91	43.50	4.44	2.26	1.01	0.55	0.01	0.02	0.08	0.01	40.1
669	2.28	56.15	0.45	0.58	0.17	0.05	0.01	0.01	0.02	0.01	42.5
670	4.81	28.90	17.04	0.92	4.23	0.03	0.01	0.30	0.01	0.01	43.7
671	8.70	37.68	4.89	2.98	2.44	0.45	0.24	0.02	0.23	0.06	34.9
672	15.40	33.88	8.08	3.26	1.36	0.20	0.39	0.03	0.13	0.10	28.3
673	8.42	26.67	19.87	2.64	1.69	0.43	0.01	0.07	0.13	0.01	42.8
674	20.00	26.24	4.01	5.00	7.04	0.76	1.12	0.06	0.62	0.14	17.6
675	4.68	28.34	18.42	1.67	2.57	0.34	0.01	0.05	0.09	0.01	43.3
676	4.27	50.70	2.44	1.41	0.44	0.35	0.01	0.01	0.05	0.01	40.4
677	0.33	29.07	19.65	0.42	2.12	0.06	0.01	0.06	0.01	0.01	46.3
678	5.08	52.90	0.90	0.93	0.21	0.20	0.01	0.02	0.02	0.01	39.1
679	20.00	2.64	3.98	5.00	3.62	2.00	1.61	0.07	0.43	0.08	2.2
680	4.13	49.41	4.25	1.31	0.50	0.47	0.01	0.03	0.04	0.01	40.0
681	0.97	49.05	5.04	0.55	0.27	0.15	0.01	0.03	0.02	0.01	41.7
682	0.87	29.24	20.25	0.11	0.29	0.01	0.01	0.07	0.01	0.01	45.2
683	0.25	29.98	20.69	0.08	0.34	0.01	0.01	0.09	0.01	0.01	46.3
684	1.10	29.18	20.77	0.14	0.17	0.01	0.01	0.05	0.01	0.01	46.4
685	2.61	49.53	5.49	0.74	0.65	0.30	0.01	0.02	0.03	0.01	41.1
686	0.54	29.77	20.45	0.22	0.72	0.01	0.01	0.05	0.01	0.01	46.3
687	5.97	29.02	17.97	1.25	1.63	0.10	0.01	0.16	0.09	0.01	42.0
688	20.00	31.27	8.82	2.19	0.92	0.52	0.24	0.06	0.07	0.01	22.8
689	0.68	54.01	3.82	0.23	0.06	0.07	0.01	0.02	0.01	0.01	42.9
690	0.01	52.12	6.48	0.11	0.01	0.01	0.01	0.02	0.01	0.01	44.0
691	0.10	53.89	5.44	0.12	0.01	0.01	0.01	0.01	0.01	0.01	43.0
692	0.01	54.72	2.79	0.09	0.01	0.01	0.01	0.01	0.01	0.01	43.0
693	6.76	33.25	17.72	0.05	0.44	0.01	0.01	0.08	0.01	0.01	39.7
694	2.53	57.39	1.81	0.18	0.04	0.01	0.01	0.02	0.01	0.01	40.1
695	20.00	39.80	0.42	0.32	0.07	0.05	0.01	0.15	0.01	0.01	21.0
696	3.50	53.49	4.24	0.62	0.15	0.01	0.01	0.02	0.01	0.01	41.9
697	0.68	60.22	0.58	0.16	0.05	0.01	0.01	0.04	0.01	0.01	42.1
698	0.23	59.60	1.50	0.23	0.01	0.01	0.01	0.05	0.01	0.01	46.1
699	0.50	54.09	4.94	0.17	0.03	0.02	0.01	0.08	0.01	0.01	42.2
700	1.56	29.80	20.03	0.06	0.03	0.01	0.01	0.05	0.01	0.01	43.5
701	4.24	45.70	6.87	0.68	0.75	0.02	0.01	0.02	0.05	0.01	37.6
702	3.96	46.30	8.11	0.59	0.40	0.11	0.01	0.09	0.02	0.01	43.3
703	10.40	26.20	20.90	0.56	2.16	0.01	0.01	0.14	0.02	0.01	36.8
704	13.00	29.00	19.00	1.24	1.43	0.70	0.01	0.15	0.09	0.01	36.9
705	20.00	25.20	23.20	0.45	2.06	0.01	0.01	0.13	0.01	0.01	35.7
706	0.82	53.50	4.19	0.26	0.50	0.05	0.01	0.03	0.01	0.01	42.3
707	7.67	33.80	17.30	0.25	2.05	0.01	0.01	0.06	0.02	0.01	42.0
708	0.05	29.40	20.50	0.05	0.22	0.01	0.01	0.05	0.01	0.01	46.3
709	0.80	29.60	20.60	0.09	0.26	0.01	0.01	0.06	0.01	0.01	45.8
710	1.78	55.00	3.09	0.64	0.24	0.07	0.01	0.07	0.02	0.01	40.8
711	0.30	58.30	2.16	0.09	0.03	0.01	0.01	0.02	0.01	0.01	42.3
712	1.17	56.40	2.42	0.23	0.01	0.06	0.01	0.01	0.01	0.01	41.8
713	2.34	55.50	2.94	0.39	0.04	0.01	0.01	0.01	0.01	0.01	41.1
714	4.55	51.80	2.45	0.66	0.58	0.01	0.01	0.04	0.01	0.01	40.6
715	1.20	58.70	1.29	0.32	0.13	0.01	0.01	0.01	0.01	0.01	42.2
716	1.28	29.90	20.50	0.05	0.36	0.01	0.01	0.08	0.01	0.01	47.6
717	3.60	29.30	19.40	0.10	0.45	0.01	0.01	0.11	0.01	0.01	41.1
718	0.93	29.30	20.10	0.12	0.76	0.01	0.01	0.12	0.01	0.01	45.8
719	2.98	28.90	19.60	0.34	1.32	0.01	0.01	0.17	0.01	0.01	44.4
720	5.34	45.10	8.84	0.66	0.31	0.36	0.01	0.03	0.02	0.01	39.5
721	4.09	30.00	19.70	1.29	1.19	0.22	0.01	0.04	0.08	0.08	41.3

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
666	27	81	710	200	12	3	7	4	3	342300	4976150	18
667	12	38	170	160	6	3	6	5	3	342050	4976800	18
668	5	22	340	190	10	3	6	5	3	342200	4977300	18
669	22	18	2420	390	6	3	3	4	3	344100	4974650	18
670	12	51	170	70	62	8	3	6	6	350900	4977650	18
671	5	48	470	400	6	7	17	22	9	351650	4977400	18
672	13	37	140	120	9	6	14	4	10	351550	4978250	18
673	5	36	90	260	3	3	8	10	3	352150	4978650	18
674	5	32	220	150	44	21	45	8	18	353200	4979650	18
675	5	88	100	140	32	3	7	8	3	353750	4980250	18
676	5	14	190	180	6	3	7	6	3	354100	4980750	18
677	5	35	690	190	8	3	3	2	3	353750	4981950	18
678	5	32	90	90	6	3	3	2	3	354150	4983150	18
679	5	19	120	380	3	7	9	30	3	354550	4983750	18
680	5	19	530	180	6	3	8	14	3	363150	4979150	18
681	5	22	150	140	6	3	6	6	3	363550	4978850	18
682	5	18	50	150	3	3	3	2	3	368150	4978350	18
683	5	14	50	100	3	3	3	2	3	368300	4979050	18
684	5	10	40	110	3	3	3	4	3	368950	4979750	18
685	5	15	350	120	3	3	8	6	3	370050	4981700	18
686	5	16	160	70	3	3	3	4	3	368850	4977850	18
687	5	23	80	100	8	3	6	13	3	367700	4975750	18
688	5	14	100	350	24	3	17	8	7	366450	4974000	18
689	5	12	150	120	8	3	3	4	3	356200	4952550	18
690	5	42	90	90	10	3	3	2	3	356000	4952000	18
691	5	12	110	130	6	3	3	2	3	355800	4951200	18
692	5	10	90	100	6	3	3	2	3	355600	4950800	18
693	5	65	230	80	3	3	3	12	3	354850	4950550	18
694	5	20	110	160	6	3	3	2	3	355450	4948800	18
695	11	118	160	1340	6	3	3	2	3	356200	4949450	18
696	5	13	1160	80	7	3	3	10	3	357200	4948900	18
697	300	170	110	110	6	3	3	2	3	359700	4949750	18
698	5	12	130	110	7	3	3	2	3	362000	4949300	18
699	22	14	180	160	6	3	3	2	3	361600	4949800	18
700	5	19	50	70	3	3	3	2	3	360900	4949600	18
701	5	14	240	120	22	3	9	4	13	368490	4953700	18
702	5	16	190	180	10	3	3	9	3	368280	4954150	18
703	5	24	130	70	3	3	13	2	3	372600	4954250	18
704	80	160	120	1490	12	3	11	8	7	373400	4954000	18
705	5	16	100	130	6	3	7	6	3	374100	4954400	18
706	5	22	580	180	7	3	9	4	3	374700	4954300	18
707	5	48	210	90	3	3	8	2	3	373100	4953450	18
708	5	12	50	70	3	3	6	2	3	366400	4973600	18
709	5	37	40	60	3	3	6	2	3	366300	4973250	18
710	113	810	100	80	10	3	11	6	3	317400	4936350	18
711	5	18	110	210	3	3	7	2	3	317950	4936200	18
712	5	12	410	130	6	3	6	5	3	321000	4936200	18
713	5	12	190	130	6	3	7	4	3	321800	4936450	18
714	5	17	250	230	9	3	9	11	3	322700	4936600	18
715	17	240	430	180	7	3	7	6	3	323550	4936800	18
716	5	30	50	60	3	3	6	2	3	324500	4937650	18
717	5	25	120	1740	8	3	3	2	3	325000	4938250	18
718	5	76	70	100	8	3	3	4	3	325500	4938800	18
719	5	48	110	250	3	3	3	6	3	325950	4939500	18
720	5	20	190	220	7	3	12	8	3	368200	4955300	18
721	5	73	260	100	6	3	3	4	3	316260	4998920	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
722	3.32	51.70	6.88	0.55	0.22	0.10	0.01	0.01	0.01	0.09	42.2
723	7.34	34.00	17.20	1.53	0.71	0.01	0.01	0.10	0.04	0.08	39.4
724	20.00	25.00	18.80	5.00	0.37	0.05	0.01	0.05	0.01	0.07	11.1
725	0.18	29.30	20.40	0.31	0.87	0.02	0.01	0.11	0.01	0.01	51.8
726	0.01	31.80	18.90	0.09	0.30	0.01	0.01	0.05	0.01	0.01	47.0
727	0.44	52.10	4.49	0.24	0.06	0.12	0.01	0.01	0.01	0.01	43.8
728	0.18	53.90	4.65	0.16	0.08	0.04	0.01	0.01	0.01	0.01	43.4
729	0.19	48.90	7.70	0.11	0.08	0.01	0.01	0.03	0.01	0.01	43.6
730	0.09	52.40	5.63	0.11	0.01	0.01	0.01	0.01	0.01	0.01	44.2
731	1.81	29.00	21.00	0.05	0.16	0.01	0.01	0.03	0.01	0.01	44.2
732	15.80	31.20	16.10	0.06	0.31	0.01	0.01	0.06	0.01	0.01	32.2
733	0.10	59.20	0.89	0.11	0.01	0.01	0.01	0.01	0.01	0.01	43.3
734	0.18	53.90	4.42	0.14	0.04	0.01	0.01	0.01	0.01	0.01	43.4
735	1.70	29.40	2.09	0.27	0.32	0.01	0.01	0.03	0.01	0.01	45.1
736	10.10	47.90	0.81	0.94	0.10	0.08	0.01	0.03	0.01	0.01	32.9
737	2.00	54.50	0.64	0.67	0.36	0.10	0.01	0.01	0.02	0.01	42.2
738	2.49	29.80	19.20	0.05	0.51	0.01	0.01	0.18	0.01	0.01	44.7
739	1.51	55.70	0.30	0.57	0.16	0.11	0.01	0.03	0.02	0.01	42.5
740	0.57	52.80	4.60	0.18	0.01	0.02	0.01	0.01	0.01	0.01	43.6
741	0.29	44.50	9.67	0.15	0.04	0.01	0.01	0.01	0.01	0.01	44.5
742	0.01	51.90	4.37	0.12	0.01	0.01	0.01	0.01	0.01	0.01	43.7
743	0.82	53.20	4.62	0.13	0.02	0.01	0.01	0.01	0.01	0.01	42.1
744	20.00	28.00	4.06	5.00	1.43	0.01	0.01	0.06	0.11	0.01	28.3
745	20.00	39.50	1.34	0.99	0.40	0.22	0.01	0.03	0.04	0.02	34.2
746	0.01	54.30	5.12	0.11	0.01	0.01	0.01	0.01	0.01	0.01	43.6
747	9.00	26.40	21.10	0.08	0.27	0.01	0.01	0.04	0.01	0.01	36.9
748	9.85	26.90	20.50	0.06	0.01	0.01	0.01	0.03	0.01	0.01	37.4
749	20.00	35.30	11.20	0.19	0.45	0.01	0.01	0.04	0.01	0.01	24.5
750	0.34	53.60	3.77	0.15	0.14	0.01	0.01	0.01	0.01	0.01	42.9
751	2.73	46.70	4.86	0.74	0.80	0.18	0.01	0.04	0.04	0.01	40.3
752	0.45	51.70	4.72	0.22	0.04	0.02	0.01	0.01	0.01	0.01	43.1
753	7.86	41.40	4.30	2.06	0.76	0.01	0.37	0.03	0.10	0.08	34.9
754	0.83	53.00	3.12	0.33	0.11	0.01	0.01	0.01	0.01	0.03	42.8
755	0.81	53.20	4.87	0.38	0.10	0.10	0.01	0.01	0.01	0.01	43.1
756	0.43	53.60	4.76	0.16	0.01	0.02	0.01	0.01	0.01	0.01	42.9
757	1.38	45.00	8.71	0.38	0.23	0.18	0.01	0.03	0.01	0.02	44.1
758	4.14	48.10	4.81	1.08	0.30	0.20	0.11	0.02	0.01	0.01	39.9
759	14.30	35.50	8.97	0.09	4.36	0.01	0.01	0.03	0.01	0.01	30.1
760	0.95	45.10	9.03	0.15	0.01	0.01	0.01	0.01	0.01	0.01	43.7
761	1.03	54.20	2.83	0.29	0.07	0.04	0.01	0.01	0.01	0.01	42.4
762	1.23	50.50	4.62	0.31	0.17	0.07	0.01	0.01	0.01	0.01	42.4
763	6.03	44.80	5.27	1.80	0.62	0.33	0.04	0.01	0.10	0.04	37.1
764	1.84	50.10	5.14	0.45	0.20	0.21	0.01	0.01	0.01	0.01	43.0
765	11.10	41.80	6.27	0.95	0.61	0.29	0.01	0.03	0.03	0.01	36.9
766	0.06	28.90	19.80	0.15	0.19	0.01	0.01	0.04	0.01	0.01	46.5
767	1.20	30.60	19.20	0.23	0.76	0.08	0.01	0.10	0.01	0.01	45.9
768	1.10	51.40	4.10	0.43	0.24	0.26	0.01	0.03	0.01	0.01	42.3
769	0.39	49.70	5.57	0.17	0.35	0.06	0.01	0.03	0.01	0.01	42.7
770	0.34	53.80	4.34	0.15	0.27	0.04	0.01	0.01	0.01	0.01	43.1
771	0.09	53.40	3.09	0.12	0.04	0.01	0.01	0.01	0.01	0.01	43.4
772	0.01	53.50	3.27	0.11	0.01	0.01	0.01	0.01	0.01	0.01	43.8
773	0.32	51.20	5.19	0.21	0.01	0.04	0.01	0.01	0.01	0.01	42.7
774	0.07	53.60	4.77	0.13	0.03	0.01	0.01	0.01	0.01	0.01	43.2
775	1.01	49.20	5.21	0.39	0.15	0.14	0.01	0.01	0.01	0.01	42.7
776	0.40	51.20	4.75	0.18	0.06	0.03	0.01	0.01	0.01	0.01	43.5
777	0.28	50.60	4.45	0.14	0.01	0.02	0.01	0.03	0.01	0.01	43.2

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
722	5	23	580	300	6	3	3	10	3	316600	4998520	18
723	5	550	70	90	14	3	3	6	3	317190	4998280	18
724	5	66	180	280	6	3	3	10	3	307510	5001780	18
725	5	8	100	190	3	3	3	4	3	391440	4983660	18
726	17	550	60	110	9	3	3	6	3	390590	4983110	18
727	5	10	380	180	3	3	6	8	3	390050	4983200	18
728	5	8	340	160	3	3	6	5	3	389560	4981690	18
729	5	14	110	110	6	3	3	4	3	389000	4980590	18
730	5	9	250	130	3	3	3	6	3	388730	4980040	18
731	5	13	80	80	3	3	3	2	3	317800	4936050	18
732	5	25	180	620	3	3	3	6	3	320800	4936100	18
733	5	8	110	130	3	3	3	2	3	318050	4935200	18
734	5	12	90	100	3	3	6	2	3	314600	4932550	18
735	5	18	50	50	3	3	7	2	3	314300	4932500	18
736	32	36	100	90	3	3	9	32	3	314400	4932900	18
737	5	30	2340	410	7	3	8	4	3	345620	4975540	18
738	5	22	100	60	3	3	6	2	3	329350	4941250	18
739	5	21	1550	630	9	3	7	4	3	322400	4931800	18
740	5	11	330	150	6	3	6	6	3	387920	4979520	18
741	5	10	170	100	3	3	3	4	3	387030	4979500	18
742	5	10	210	110	3	3	6	4	3	386120	4979100	18
743	5	12	270	110	3	3	6	5	3	385500	4978600	18
744	5	10	150	50	8	3	3	6	3	384900	4978100	18
745	5	75	310	170	6	3	3	6	3	384280	4977570	18
746	5	12	160	90	6	3	3	4	3	385470	4979190	18
747	5	18	170	40	3	3	3	5	3	384500	4979400	18
748	5	20	140	60	3	3	3	8	3	382970	4978980	18
749	5	25	90	60	6	3	3	6	3	381750	4979080	18
750	5	16	260	90	6	3	3	4	3	380950	4979900	18
751	5	18	430	200	25	8	8	7	3	379450	4979650	18
752	5	15	430	150	8	3	3	4	3	378350	4979200	18
753	5	16	460	70	9	3	12	4	6	377500	4979550	18
754	5	14	600	90	8	3	3	6	3	376650	4978350	18
755	5	16	470	120	7	3	3	4	3	375600	4977450	18
756	5	15	240	100	6	3	3	4	3	376200	4977100	18
757	5	19	80	90	7	3	3	6	3	374650	4974900	18
758	5	13	180	80	8	3	3	8	3	375350	4974100	18
759	5	14	170	70	6	3	3	10	3	375900	4974450	18
760	5	12	790	80	6	3	3	4	3	374900	4973550	18
761	5	18	150	60	7	3	3	4	3	374450	4973150	18
762	5	18	440	150	6	3	3	8	3	374350	4970850	18
763	5	17	440	130	10	3	33	12	7	374300	4971550	18
764	5	14	260	130	6	3	3	8	3	374950	4974500	18
765	5	14	190	620	10	3	7	10	3	382600	4976150	18
766	5	14	60	60	3	3	3	2	3	382050	4976250	18
767	5	40	80	110	6	3	3	2	3	377700	4981750	18
768	5	16	340	180	8	3	3	4	3	379500	4981550	18
769	5	19	320	80	7	3	3	2	3	378350	4982850	18
770	5	19	370	110	6	3	3	2	3	379200	4981900	18
771	5	16	270	80	6	3	3	2	3	380350	4982300	18
772	5	18	320	80	6	3	3	4	3	381500	4981450	18
773	5	12	240	110	7	3	3	2	3	381150	4982950	18
774	5	10	170	70	6	3	3	2	3	381350	4983850	18
775	5	15	300	90	6	3	3	6	3	382460	4982290	18
776	5	13	380	110	6	3	3	4	3	382540	4984400	18
777	5	19	140	90	6	3	3	6	3	381920	4984920	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
778	0.36	30.00	19.30	0.11	0.14	0.01	0.01	0.02	0.01	0.01	45.6
779	0.94	53.50	3.25	0.18	0.16	0.01	0.01	0.07	0.01	0.01	43.3
780	0.01	52.70	4.09	0.12	0.04	0.02	0.01	0.01	0.01	0.01	43.4
781	0.30	52.60	4.82	0.13	0.03	0.03	0.01	0.02	0.01	0.01	42.9
782	0.13	52.50	4.53	0.10	0.01	0.01	0.01	0.01	0.01	0.01	43.3
783	11.80	27.70	21.10	0.04	0.01	0.01	0.01	0.03	0.01	0.01	43.2
784	1.33	50.40	4.71	0.26	0.14	0.11	0.01	0.03	0.02	0.01	48.4
785	0.02	50.10	5.76	0.13	0.02	0.01	0.01	0.01	0.01	0.01	43.5
786	0.12	53.70	3.99	0.11	0.01	0.01	0.01	0.01	0.01	0.01	43.7
787	0.32	51.40	4.03	0.20	0.13	0.05	0.01	0.01	0.01	0.01	43.5
788	0.56	53.80	4.30	0.16	0.05	0.02	0.01	0.01	0.01	0.01	41.9
789	0.94	50.50	4.29	0.10	0.02	0.01	0.01	0.01	0.01	0.01	43.5
790	0.48	53.80	3.79	0.19	0.13	0.03	0.01	0.02	0.01	0.01	42.3
791	0.18	45.30	8.01	0.16	0.02	0.03	0.01	0.01	0.01	0.01	44.2
792	5.52	27.50	20.70	0.03	0.01	0.01	0.01	0.03	0.01	0.01	42.8
793	0.65	52.10	4.79	0.19	0.06	0.08	0.01	0.01	0.01	0.01	42.9
794	11.30	26.90	21.40	0.12	0.89	0.01	0.01	0.06	0.01	0.01	40.4
795	1.28	28.60	19.90	0.19	0.58	0.05	0.01	0.07	0.01	0.01	45.3
796	20.00	24.40	19.60	0.18	0.95	0.01	0.01	0.06	0.01	0.01	25.8
797	0.20	51.90	3.69	0.14	0.01	0.02	0.01	0.01	0.01	0.01	39.4
798	10.50	26.90	19.90	0.04	0.01	0.01	0.01	0.03	0.01	0.01	34.5
799	0.63	50.10	5.19	0.19	0.18	0.07	0.01	0.02	0.01	0.01	43.1
800	0.36	46.40	8.57	0.14	0.10	0.04	0.01	0.01	0.01	0.01	43.4
801	5.27	27.70	20.30	0.04	0.19	0.01	0.01	0.03	0.01	0.01	42.0
802	20.00	25.60	21.80	0.06	0.06	0.01	0.01	0.02	0.01	0.01	29.7
803	20.00	24.40	23.70	0.05	0.24	0.01	0.01	0.03	0.01	0.01	30.6
804	1.34	53.10	2.31	0.24	0.23	0.06	0.01	0.03	0.01	0.02	43.3
805	20.00	25.10	22.00	0.09	0.21	0.01	0.01	0.03	0.01	0.01	26.4
806	10.70	26.80	20.60	0.04	0.01	0.01	0.01	0.02	0.01	0.01	35.0
807	20.00	25.30	23.50	0.09	0.14	0.01	0.01	0.03	0.01	0.01	36.2
808	6.55	50.40	5.79	0.44	0.28	0.00	0.00	0.02	0.00	0.08	39.4
809	0.76	50.80	7.03	0.23	0.11	0.00	0.00	0.02	0.00	0.08	43.0
810	3.90	54.10	1.91	0.74	0.33	0.33	0.00	0.01	0.01	0.09	38.7
811	2.26	55.20	4.28	0.19	0.03	0.04	0.00	0.01	0.00	0.08	39.8
812	1.94	48.40	8.52	0.23	0.11	0.08	0.00	0.01	0.00	0.08	41.9
813	2.48	47.70	8.91	3.89	0.16	0.21	0.00	0.02	0.02	0.09	41.2
814	0.92	34.90	17.50	0.25	0.45	0.00	0.00	0.03	0.01	0.08	45.2
815	1.24	55.10	4.29	0.33	0.12	0.04	0.00	0.02	0.00	0.09	42.9
816	1.25	29.90	20.60	0.35	0.31	0.00	0.00	0.05	0.02	0.09	45.2
817	1.29	30.70	20.90	0.06	0.09	0.00	0.00	0.05	0.00	0.09	44.8
818A	0.55	55.60	4.46	0.22	0.06	0.04	0.00	0.01	0.00	0.08	43.2
818B	2.46	54.70	2.44	0.44	0.61	0.08	0.00	0.02	0.01	0.09	41.3
819	0.25	58.30	2.08	0.21	0.13	0.00	0.00	0.01	0.00	0.09	43.0
820	1.43	54.40	5.31	0.33	0.24	0.04	0.00	0.02	0.00	0.09	43.2
821	3.19	50.60	3.70	0.89	1.28	0.13	0.00	0.05	0.06	0.11	39.0
822	0.82	54.80	4.30	0.27	0.25	0.02	0.00	0.01	0.00	0.09	43.2
823	3.39	56.30	4.65	3.60	0.13	0.05	0.00	0.05	0.00	0.09	41.1
824	0.89	54.70	4.18	0.27	0.10	0.01	0.00	0.01	0.00	0.09	43.4
825	20.00	34.40	6.24	0.49	0.32	0.00	0.00	0.05	0.00	0.08	29.4
826	1.54	55.60	6.21	0.15	0.52	0.00	0.00	0.05	0.00	0.09	43.0
827	4.20	29.30	20.60	0.17	0.12	0.00	0.00	0.04	0.00	0.08	42.9
828	9.98	28.00	21.30	2.83	0.16	0.00	0.00	0.03	0.00	0.09	37.1
829	0.12	30.10	21.10	0.20	0.33	0.00	0.00	0.04	0.02	0.08	46.4
830	1.59	55.40	2.56	0.47	0.26	0.25	0.00	0.01	0.02	0.09	42.3
831	7.20	49.80	2.69	0.71	0.13	0.00	0.01	0.03	0.00	0.09	38.0
832	20.00	26.20	6.57	5.90	4.99	0.81	1.03	0.08	0.34	0.16	23.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
778	5	13	80	60	6	3	3	2	3	380930	4984940	18
779	5	15	580	90	6	3	3	2	3	383200	4984800	18
780	5	12	320	100	6	3	3	2	3	383610	4985110	18
781	5	13	120	80	6	3	3	5	3	384210	4985650	18
782	5	10	200	100	6	3	3	4	3	384290	4986550	18
783	5	10	270	130	6	3	3	6	3	385040	4986290	18
784	5	15	340	100	6	3	3	13	3	386090	4986580	18
785	5	13	330	100	8	3	3	4	3	385230	4987570	18
786	5	53	330	60	8	3	3	4	3	385680	4987070	18
787	5	11	350	110	8	3	3	6	3	385910	4988960	18
788	5	10	370	100	8	3	3	4	3	386390	4988450	18
789	5	10	280	80	8	3	3	8	3	386950	4987720	18
790	5	10	470	160	8	3	3	7	3	386290	4987330	18
791	5	10	150	70	6	3	3	4	3	386780	4985800	18
792	5	16	120	30	8	3	3	6	3	387590	4984880	18
793	5	12	170	110	8	3	3	6	3	389820	4984760	18
794	5	16	100	40	10	3	3	12	3	389010	4985380	18
795	5	10	50	50	8	3	3	8	3	389460	4986070	18
796	5	24	70	30	8	3	3	9	3	388750	4985400	18
797	5	14	130	40	7	3	3	8	3	387850	4984640	18
798	5	38	120	100	8	3	3	7	3	387110	4984250	18
799	5	11	180	90	8	3	3	5	3	385940	4984650	18
800	5	13	200	90	14	3	3	4	3	385390	4985230	18
801	5	10	150	40	7	3	3	4	3	387200	4983170	18
802	5	25	170	100	6	3	3	16	3	387790	4982500	18
803	5	22	360	30	6	3	3	28	3	388500	4981400	18
804	5	10	700	70	10	3	3	9	3	387900	4980660	18
805	5	30	190	50	6	3	3	10	3	387120	4980850	18
806	5	13	100	40	6	3	3	12	3	384890	4981620	18
807	5	17	340	40	6	3	3	14	3	386160	4980810	18
808	5	12	310	130	7	3	3	12	3	309650	5002700	18
809	5	12	200	140	6	3	3	2	3	308890	5003600	18
810	5	26	750	210	10	3	7	4	3	315400	5004940	18
811	5	13	350	160	7	3	3	4	3	315650	5004240	18
812	5	14	290	220	8	3	3	3	3	316100	5003600	18
813	5	18	350	160	6	3	3	7	3	316610	5003090	18
814	5	18	220	100	8	3	3	4	3	317130	5002710	18
815	5	20	470	200	9	3	3	6	3	319360	5000500	18
816	5	12	60	70	6	3	3	2	3	325790	5010910	18
817	5	21	140	300	7	3	3	2	3	325200	5010140	18
818A	5	18	160	210	7	3	3	4	3	325080	5009350	18
818B	5	49	210	180	14	3	5	5	3	325080	5009350	18
819	5	12	1650	160	8	3	3	3	3	324990	5008500	18
820	5	20	480	180	9	3	3	4	3	325390	5006880	18
821	5	26	600	230	14	6	9	6	8	323960	5002820	18
822	5	20	620	330	7	3	3	5	3	321850	5001960	18
823	5	14	120	170	16	3	3	2	3	323250	4995930	18
824	5	16	380	170	8	3	3	4	3	319480	5000080	18
825	5	12	200	130	5	3	3	6	3	308240	5004040	18
826	5	12	570	170	7	3	3	2	3	307650	5004450	18
827	5	14	100	90	7	3	3	4	3	312690	5003210	18
828	5	18	70	60	6	3	3	5	3	313030	5003100	18
829	5	15	60	70	6	3	3	4	3	314040	5002590	18
830	5	17	780	90	8	3	5	6	3	314540	5002360	18
831	5	12	140	90	7	3	6	4	3	309910	5002590	18
832	5	96	240	510	60	10	22	32	13	289000	4950600	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1001	3.34	29.60	19.90	0.43	0.44	0.22	0.01	0.05	0.04	0.01	44.3
1002	1.25	32.90	10.60	0.07	1.50	0.01	0.01	0.18	0.02	-1.00	40.9
1003	0.76	58.20	0.42	0.34	0.10	0.03	0.01	0.01	0.01	0.01	42.2
1004	1.39	54.50	0.94	0.31	0.08	0.01	0.01	0.01	0.01	0.01	41.9
1005	0.46	56.30	1.74	0.13	0.01	0.01	0.01	0.01	0.01	0.01	42.3
1006	6.45	47.30	4.04	0.45	0.42	0.01	0.01	0.17	0.01	0.02	38.8
1007	4.01	52.50	0.89	0.25	0.20	0.01	0.01	0.01	0.01	0.01	41.3
1008	1.08	55.70	0.41	0.34	0.12	0.06	0.01	0.02	0.01	0.02	43.2
1009	7.74	45.40	0.65	0.87	0.35	0.23	0.01	0.01	0.02	0.01	32.7
1010	8.63	46.30	0.46	1.30	0.60	0.05	0.33	0.02	0.09	0.03	32.5
1011	3.66	35.70	13.70	0.43	0.85	0.01	0.01	0.17	0.01	0.01	43.5
1012	11.00	39.80	1.00	2.84	0.36	0.69	0.16	0.01	0.01	0.01	31.8
1013	12.10	40.40	2.30	2.28	0.60	0.14	0.05	0.01	0.02	0.02	32.3
1014	6.77	46.70	1.73	1.66	0.65	0.38	0.01	0.01	0.03	0.05	37.6
1015	6.31	47.10	5.27	1.24	0.71	0.31	0.01	0.02	0.03	0.01	38.6
1016	1.87	52.70	3.57	0.37	0.04	0.08	0.01	0.01	0.01	0.01	41.3
1017	6.80	45.40	4.82	1.85	0.97	0.13	0.01	0.02	0.09	0.01	38.2
1018	9.29	42.40	5.68	2.29	1.35	0.13	0.01	0.02	0.07	0.11	37.4
1019	5.18	27.90	18.00	0.64	0.92	0.19	0.01	0.15	0.04	0.02	45.2
1020	6.09	45.00	2.86	1.56	1.17	0.27	0.01	0.03	0.05	0.02	38.4
1021	9.10	46.30	1.44	1.77	0.20	0.13	0.01	0.01	0.01	0.02	36.5
1022	14.60	34.70	9.05	2.33	1.43	0.62	0.08	0.04	0.12	0.01	27.6
1023	13.70	42.80	6.45	1.57	0.67	0.01	0.01	0.02	0.01	0.01	34.7
1024	1.75	54.00	3.78	0.36	0.15	0.12	0.01	0.01	0.01	0.02	40.5
1025	1.99	38.50	11.40	0.68	0.87	0.01	0.01	0.16	0.04	0.01	51.3
1026	2.78	54.60	2.30	0.76	0.53	0.03	0.01	0.02	0.02	0.02	45.4
1027	2.93	54.70	2.91	0.50	0.31	0.01	0.01	0.01	0.01	0.01	40.4
1028	0.16	50.20	7.25	0.13	0.04	0.01	0.01	0.06	0.01	0.01	46.6
1029	5.04	52.20	2.16	0.58	0.59	0.05	0.01	0.01	0.01	0.01	39.8
1030	3.02	50.00	4.18	0.77	0.51	0.16	0.01	0.03	0.04	0.01	41.9
1031	6.82	37.60	10.50	1.79	3.09	0.01	0.01	0.18	0.07	0.01	38.9
1032	8.43	27.40	22.40	0.72	0.94	0.28	0.01	0.09	0.06	0.02	46.3
1033	1.17	50.80	4.35	0.41	0.24	0.16	0.01	0.22	0.01	0.01	42.4
1034	20.00	17.60	25.30	0.34	0.47	0.01	0.01	0.05	0.04	0.01	5.1
1035	7.84	45.70	0.31	1.83	0.42	0.42	0.09	0.02	0.03	0.01	34.2
1036	20.00	26.40	1.60	5.00	2.63	1.67	0.37	0.02	0.34	0.24	11.6
1037	1.45	57.50	0.15	0.22	0.21	0.01	0.03	0.01	0.01	0.01	39.4
1038	0.27	58.30	0.52	0.14	0.01	0.01	0.01	0.02	0.01	0.01	43.0
1039	20.00	29.70	2.93	5.00	1.94	0.80	0.38	0.03	0.16	0.02	23.0
1040	20.00	32.90	4.58	5.00	1.28	1.79	0.01	0.22	0.12	0.02	34.0
1041	11.70	40.80	2.31	2.44	0.63	0.42	0.03	0.02	0.03	0.08	33.9
1042	14.50	43.10	1.25	1.06	0.62	0.09	0.01	0.02	0.02	0.06	33.1
1043	1.79	54.50	3.10	0.33	0.39	0.01	0.01	0.10	0.01	0.01	48.9
1044	2.96	55.70	1.57	0.64	0.27	0.04	0.01	0.01	0.03	0.01	40.6
1045	0.13	39.80	13.70	0.11	0.54	0.01	0.01	0.12	0.01	0.01	45.2
1046	20.00	15.20	1.44	5.00	0.93	1.79	1.45	0.03	0.05	0.01	6.0
1047	20.00	27.40	2.15	5.00	0.87	1.36	0.01	0.19	0.11	0.26	21.7
1048	3.81	53.10	1.21	0.92	0.49	0.15	0.01	0.02	0.04	0.02	40.0
1049	20.00	1.70	1.68	5.00	0.55	1.79	2.00	0.02	0.04	0.01	0.6
1050	20.00	14.70	8.75	5.00	2.72	0.91	0.08	0.09	0.23	0.08	9.2
1051	4.11	54.70	4.69	0.42	0.02	0.01	0.01	0.01	0.01	0.01	43.0
1052	20.00	1.73	0.25	5.00	0.39	1.79	3.00	0.02	0.04	0.01	0.8
1053	4.23	54.80	3.30	0.43	0.14	0.01	0.01	0.02	0.01	0.02	42.4
1054	2.67	55.20	1.07	0.77	0.48	0.10	0.01	0.01	0.03	0.02	41.8
1055	0.70	61.30	0.01	0.24	0.01	0.01	0.01	0.13	0.01	0.01	43.9
1056	4.84	52.10	2.17	0.96	0.62	0.03	0.01	0.02	0.02	0.07	42.3

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1001	5	24	200	120	16	3	6	4	3	370100	4935200	18
1002	5	46	1700	4200	16	3	3	6	3	370500	4936250	18
1003	5	12	1820	220	10	3	3	6	3	372600	4938700	18
1004	5	12	1450	70	10	3	3	7	3	383800	4915350	18
1005	5	10	1320	290	8	3	3	6	3	388750	4914300	18
1006	5	11	340	130	8	3	3	12	3	392500	4919800	18
1007	5	14	1840	120	9	3	3	5	3	393700	4922700	18
1008	5	12	1450	110	9	3	3	4	3	393250	4921750	18
1009	5	24	1930	250	16	7	19	12	6	395800	4917950	18
1010	5	14	1380	110	12	3	12	6	3	396500	4919500	18
1011	5	122	150	60	7	3	3	8	3	394350	4920100	18
1012	5	18	1250	320	8	3	3	14	3	394450	4921400	18
1013	5	22	1540	130	9	3	6	22	3	395250	4922200	18
1014	5	12	1300	220	14	3	3	16	3	396950	4923700	18
1015	5	45	240	70	13	3	8	26	3	395050	4923750	18
1016	5	33	140	100	8	3	3	10	3	395800	4924100	18
1017	5	32	270	120	10	3	11	24	10	398600	4924550	18
1018	5	12	720	110	12	3	9	20	3	399200	4924050	18
1019	5	6	80	90	12	3	3	2	3	401050	4925900	18
1020	5	22	170	110	12	3	6	20	7	401800	4924400	18
1021	5	12	2190	1930	8	3	3	15	3	401050	4926500	18
1022	5	42	1500	460	15	3	15	21	3	386650	4923450	18
1023	5	31	1240	210	9	3	6	18	3	381650	4925700	18
1024	5	22	510	180	9	3	3	6	3	382250	4926200	18
1025	5	10	160	80	8	3	3	6	3	381300	4926700	18
1026	5	15	1210	110	14	3	7	7	3	378800	4923250	18
1027	5	12	1000	280	9	3	3	8	3	379000	4924150	18
1028	5	12	420	90	6	3	3	4	3	378350	4925800	18
1029	5	5	600	120	9	3	9	6	3	378200	4924200	18
1030	5	24	320	150	10	3	6	6	3	376550	4922800	18
1031	5	13	180	70	9	6	9	10	10	374400	4922700	18
1032	5	47	60	90	24	3	3	6	3	374900	4923400	18
1033	5	34	140	140	9	3	6	4	3	405700	4912050	18
1034	5	24	60	60	3	3	3	17	3	408500	4916300	18
1035	5	12	1200	180	10	3	6	6	3	404650	4920850	18
1036	5	16	1530	1080	22	7	41	22	12	405750	4921550	18
1037	5	12	3500	240	8	3	3	8	3	407700	4923000	18
1038	5	8	980	90	8	3	3	4	3	404800	4922100	18
1039	5	26	1300	510	17	3	26	24	8	402750	4927250	18
1040	5	14	190	190	8	3	20	10	3	403500	4926750	18
1041	5	24	1570	360	8	3	3	27	3	404750	4925900	18
1042	5	13	1050	110	9	3	3	30	3	405200	4924700	18
1043	5	26	210	120	10	3	3	6	3	404750	4923100	18
1044	5	12	1320	90	10	3	3	10	3	404200	4923600	18
1045	5	10	90	60	8	3	3	5	3	405850	4925400	18
1046	5	12	420	340	6	3	3	18	3	407250	4926200	18
1047	5	10	150	140	35	12	16	6	7	408400	4927150	18
1048	71	150	1250	70	12	3	6	18	3	410850	4927200	18
1049	5	28	760	980	3	3	3	69	3	411450	4927750	18
1050	5	13	870	130	10	3	3	10	3	413050	4926250	18
1051	5	20	110	230	10	7	24	58	10	411950	4923200	18
1052	5	17	120	40	3	3	3	5	3	409700	4922250	18
1053	5	14	920	100	9	3	3	6	3	411150	4923700	18
1054	46	260	1400	670	12	3	6	12	3	415050	4925700	18
1055	5	10	90	120	11	3	3	3	3	416100	4926700	18
1056	27	46	870	90	10	3	8	12	6	415250	4927200	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1057	3.44	53.60	2.37	0.71	0.09	0.31	0.01	0.02	0.04	0.02	44.8
1058	10.40	35.50	4.59	3.39	2.03	0.65	0.31	0.20	0.37	0.09	32.5
1059	8.71	46.80	1.44	1.11	1.00	0.28	0.01	0.02	0.02	0.04	34.9
1060	13.30	40.90	3.00	2.25	1.04	0.21	0.25	0.03	0.08	0.03	33.1
1061	5.33	48.80	4.61	1.18	0.20	0.46	0.01	0.01	0.01	0.03	35.2
1062	20.00	38.00	1.15	5.00	0.82	0.64	0.33	0.02	0.11	0.01	25.5
1063	15.20	37.20	3.08	2.96	1.48	0.57	0.34	0.03	0.07	0.18	28.6
1064	7.76	46.30	1.82	1.95	1.59	0.26	0.01	0.02	0.05	0.01	37.4
1065	20.00	30.80	0.33	5.00	0.10	1.79	1.30	0.01	0.01	0.08	18.6
1066	10.80	48.50	0.30	0.44	0.28	0.02	0.01	0.02	0.01	0.01	34.2
1067	20.00	16.00	1.02	5.00	1.07	0.24	1.40	0.02	0.17	0.16	1.5
1068	20.00	31.50	7.98	5.00	4.07	0.44	0.01	0.04	0.30	0.05	29.5
1069	0.18	58.40	2.14	0.16	0.01	0.01	0.01	0.01	0.01	0.01	44.2
1070	20.00	7.05	0.97	5.00	1.05	1.79	1.74	0.02	0.13	0.11	2.5
1071	4.47	54.00	0.94	0.60	0.38	0.01	0.01	0.02	0.02	0.04	38.9
1072	20.00	28.00	5.99	5.00	3.56	1.00	0.20	0.03	0.23	0.02	20.4
1073	1.75	53.10	4.15	0.13	0.42	0.01	0.01	0.11	0.01	0.01	43.7
1074	3.95	45.50	5.79	1.07	0.78	0.37	0.01	0.25	0.04	0.03	41.5
1075	14.60	27.10	14.00	5.00	2.87	0.59	0.14	0.13	0.20	0.09	32.5
1076	0.33	60.20	0.58	0.13	0.10	0.01	0.01	0.02	0.01	0.01	43.6
1077	20.00	30.20	12.20	5.00	4.02	0.53	0.01	0.04	0.13	0.04	28.4
1078	14.10	35.70	2.62	5.00	1.54	0.16	1.03	0.03	0.25	0.10	24.6
1079	0.61	57.30	2.45	0.21	0.10	0.01	0.01	0.02	0.01	0.01	43.5
1080	11.80	42.20	3.49	2.17	0.91	0.46	0.04	0.03	0.08	0.05	33.7
1081	3.55	55.50	1.77	0.50	0.14	0.01	0.01	0.02	0.01	0.01	40.7
1082	0.97	60.40	0.46	0.13	0.04	0.01	0.01	0.01	0.01	0.01	42.0
1083	3.08	55.50	2.07	0.69	0.71	0.01	0.01	0.03	0.01	0.01	44.3
1084	4.55	52.30	1.60	1.14	0.49	0.30	0.01	0.02	0.03	0.01	40.7
1085	5.30	53.90	0.99	0.41	0.14	0.10	0.01	0.02	0.05	0.01	42.9
1086	0.35	53.30	5.46	0.16	0.02	0.01	0.01	0.01	0.01	0.01	42.5
1087	20.00	35.90	6.63	2.38	1.85	0.55	0.01	0.05	0.07	0.29	31.9
1088	0.73	34.00	17.00	0.39	0.34	0.06	0.01	0.13	0.01	0.01	44.8
1089	5.29	49.60	4.52	0.82	0.43	0.32	0.01	0.08	0.05	0.02	40.1
1090	1.07	53.10	5.00	0.19	0.14	0.02	0.01	0.02	0.01	0.01	42.9
1091	2.44	45.30	8.53	0.55	0.14	0.26	0.01	0.02	0.02	0.02	41.8
1092	0.49	50.50	5.17	0.13	0.16	0.01	0.01	0.03	0.01	0.01	47.8
1093	1.43	56.60	1.19	0.42	0.08	0.10	0.01	0.01	0.01	0.01	41.5
1094	1.01	56.90	2.01	0.39	0.24	0.05	0.01	0.18	0.01	0.01	43.0
1095	15.30	29.40	7.11	5.00	2.13	1.67	0.01	0.18	0.22	0.05	28.9
1096	3.19	53.60	1.14	0.46	0.55	0.00	0.00	0.02	0.00	0.00	42.3
1097	20.00	32.00	4.19	5.00	2.41	0.38	0.10	0.03	0.09	0.01	26.5
1098	1.14	29.60	19.50	0.17	1.17	0.01	0.01	0.18	0.01	0.01	48.7
1099	8.59	46.20	2.69	0.57	0.26	0.15	0.01	0.04	0.01	0.06	38.6
1100	9.29	44.20	1.80	1.13	0.95	0.06	0.01	0.02	0.05	0.09	36.5
1101	6.06	44.50	3.53	1.99	2.23	0.36	0.01	0.09	0.14	0.02	38.1
1102	20.00	25.70	8.92	5.00	5.98	1.12	0.08	0.04	0.26	0.13	21.2
1103	3.68	50.00	2.45	1.00	0.56	0.30	0.01	0.04	0.05	0.02	40.8
1104	20.00	25.70	1.36	5.00	2.44	0.80	0.69	0.02	0.22	0.13	12.4
1105	20.00	34.20	2.85	5.00	1.84	0.75	0.45	0.02	0.07	0.01	28.5
1106	20.00	29.70	5.95	5.00	3.55	0.77	0.18	0.04	0.17	0.05	28.6
1107	8.12	37.50	5.85	1.80	1.93	0.54	0.05	0.22	0.09	0.09	38.0
1108	20.00	36.50	1.42	3.10	1.52	0.63	0.04	0.02	0.10	0.01	28.2
1109	4.64	46.10	4.37	1.60	0.63	0.09	0.14	0.02	0.02	0.02	37.7
1110	2.70	56.20	1.11	0.50	0.19	0.03	0.01	0.01	0.01	0.01	40.3
1111	7.78	30.80	19.40	0.11	0.39	0.01	0.01	0.03	0.01	0.01	29.4
1112	1.83	43.10	11.20	0.39	0.24	0.06	0.01	0.01	0.02	0.01	40.9

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1057	49	180	270	130	13	3	3	21	3	416950	4927300	18
1058	5	41	790	210	18	17	19	13	15	418450	4926700	18
1059	5	20	1000	210	11	12	13	8	15	402200	4933050	18
1060	42	420	1310	190	12	7	14	16	5	402200	4932150	18
1061	5	14	1210	270	8	3	3	22	3	403600	4933150	18
1062	5	29	1560	330	12	8	15	8	9	404800	4932450	18
1063	5	36	460	180	12	9	13	10	7	403300	4932000	18
1064	5	24	1750	420	13	8	9	17	6	404100	4934200	18
1065	5	14	1440	420	9	8	3	12	3	401350	4929400	18
1066	5	20	2080	160	10	3	3	8	3	402650	4928400	18
1067	5	38	780	70	6	6	26	102	6	401300	4928300	18
1068	5	510	450	160	17	7	22	46	6	406300	4928300	18
1069	5	12	1250	160	10	3	3	6	3	407100	4929050	18
1070	5	26	290	350	6	3	3	8	3	409600	4930600	18
1071	5	30	1420	80	15	3	7	8	3	410550	4932150	18
1072	5	30	440	260	15	11	41	56	9	410500	4931200	18
1073	5	11	220	200	9	3	3	6	3	410750	4930100	18
1074	5	15	150	230	13	7	7	10	3	409500	4929200	18
1075	20	480	260	200	17	20	15	36	12	408750	4927850	18
1076	5	12	1550	130	10	3	3	6	3	411350	4928350	18
1077	5	24	390	160	16	11	22	62	11	410750	4928850	18
1078	5	14	1300	180	10	3	3	6	3	412300	4928100	18
1079	5	24	1330	100	13	12	30	16	13	416700	4928850	18
1080	5	34	1220	240	10	7	12	15	3	413250	4928800	18
1081	5	72	1400	230	11	6	3	11	3	412250	4932100	18
1082	5	9	1500	130	10	3	3	12	3	412650	4931150	18
1083	5	10	530	70	10	3	8	9	3	411550	4932000	18
1084	13	15	1330	140	10	3	7	24	3	411050	4932900	18
1085	5	13	1340	80	10	6	3	17	3	411650	4933350	18
1086	5	12	310	80	9	3	3	4	3	364900	4925300	18
1087	14	18	310	300	28	11	17	14	14	365550	4927300	18
1088	5	15	380	80	6	6	3	4	3	365780	4928300	18
1089	5	128	140	150	34	10	8	9	3	365900	4927700	18
1090	5	12	1700	110	7	6	3	5	3	366700	4928250	18
1091	5	13	560	180	10	7	3	4	3	366300	4927300	18
1092	5	40	1900	120	12	7	3	6	3	366550	4924500	18
1093	5	16	1590	270	10	3	3	14	3	412400	4934400	18
1094	5	10	120	100	10	3	3	5	3	411700	4934800	18
1095	16	26	420	600	43	15	23	24	12	415200	4936100	18
1096	5	32	2900	120	11	5	3	10	3	416100	4935300	18
1097	5	46	520	150	17	8	20	35	8	411100	4938350	18
1098	5	10	60	60	8	3	3	2	3	410450	4939900	18
1099	5	38	580	230	10	3	3	14	3	406100	4937400	18
1100	5	32	3400	210	10	3	8	20	3	406250	4934400	18
1101	5	665	830	440	10	13	11	23	14	406800	4933650	18
1102	5	36	430	270	26	11	36	91	16	408100	4936300	18
1103	5	19	1650	150	11	3	7	16	3	408850	4936300	18
1104	5	24	440	140	26	14	27	22	20	408950	4937300	18
1105	13	84	1900	510	14	7	25	32	10	409550	4937700	18
1106	29	33	410	200	18	13	27	39	15	408800	4938200	18
1107	5	3320	210	440	15	3	11	9	3	407850	4937090	18
1108	5	50	1950	350	14	8	20	18	9	410600	4935150	18
1109	5	28	170	100	6	3	3	9	3	402000	4936550	18
1110	5	12	1620	130	12	3	6	6	3	401800	4937100	18
1111	5	32	470	130	8	3	3	7	3	400650	4936750	18
1112	5	9	910	190	8	3	3	4	3	397650	4935600	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1113	0.77	49.10	7.97	0.30	0.02	0.11	0.01	0.01	0.01	0.01	41.4
1114	5.89	50.80	1.93	0.74	0.42	0.14	0.01	0.01	0.03	0.07	39.2
1115	4.77	53.40	2.00	0.73	0.40	0.05	0.01	0.01	0.01	0.01	39.8
1116	0.99	57.70	2.08	0.22	0.01	0.02	0.01	0.01	0.01	0.01	44.7
1117	12.20	29.60	8.80	5.00	2.42	1.80	0.01	0.27	0.30	0.15	32.7
1118	1.18	59.50	1.04	0.26	0.01	0.01	0.01	0.01	0.01	0.01	42.1
1119	0.67	59.30	1.14	0.27	0.09	0.01	0.01	0.01	0.01	0.01	44.4
1120	10.10	46.00	2.32	1.12	0.61	0.12	0.01	0.02	0.01	0.09	37.7
1121	2.22	55.00	3.27	0.28	0.01	0.03	0.01	0.01	0.01	0.10	42.0
1122	5.75	53.40	1.95	0.44	0.30	0.01	0.01	0.03	0.01	0.01	39.9
1123	5.92	53.00	1.08	0.54	0.12	0.09	0.01	0.01	0.01	0.01	39.4
1124	2.09	30.20	20.10	0.64	0.93	0.01	0.01	0.10	0.03	0.01	46.5
1125	5.59	48.60	5.10	1.08	0.26	0.17	0.01	0.01	0.02	0.01	38.6
1126	20.00	30.90	3.21	5.00	0.95	0.99	0.39	0.04	0.01	0.01	23.7
1127	2.67	55.90	0.76	0.66	0.31	0.18	0.01	0.01	0.02	0.01	41.0
1128	1.05	36.20	15.60	0.51	0.94	0.06	0.01	0.19	0.03	0.01	45.3
1129	0.30	58.20	2.14	0.12	0.01	0.01	0.01	0.01	0.01	0.01	43.3
1130	0.81	59.80	0.91	0.22	0.02	0.01	0.01	0.01	0.01	0.01	42.3
1131	3.12	56.50	0.26	0.76	0.28	0.22	0.01	0.02	0.04	0.03	40.4
1132	6.25	50.50	5.34	1.23	0.33	0.13	0.01	0.02	0.02	0.01	39.7
1133	4.18	44.50	9.01	0.95	0.44	0.27	0.01	0.03	0.05	0.02	39.8
1134	0.77	51.70	6.16	0.22	0.19	0.03	0.01	0.06	0.01	0.01	44.6
1135	7.43	51.10	4.07	0.62	0.45	0.01	0.01	0.04	0.01	0.03	44.0
1136	1.15	48.00	8.44	0.57	0.56	0.01	0.01	0.27	0.01	0.01	43.1
1137	10.60	40.00	9.12	1.39	1.10	0.68	0.01	0.04	0.13	0.12	29.5
1138	7.77	46.20	7.34	1.18	1.05	0.14	0.01	0.05	0.08	0.04	41.1
1139	0.55	53.50	5.38	0.20	0.05	0.03	0.01	0.01	0.01	0.01	44.2
1140	4.05	50.50	3.14	1.10	1.01	0.27	0.01	0.02	0.09	0.03	38.5
1141	3.38	54.40	2.99	0.23	0.40	0.03	0.01	0.03	0.01	0.04	40.6
1142	4.74	44.60	11.40	0.22	0.23	0.06	0.01	0.06	0.01	0.01	42.7
1143	20.00	25.60	5.49	5.00	3.39	0.79	0.33	0.03	0.27	0.03	16.7
1144	9.13	45.50	2.35	2.48	0.46	0.38	0.16	0.02	0.15	0.08	36.2
1145	4.92	40.90	9.40	0.40	0.63	0.08	0.01	0.19	0.02	0.02	41.3
1146	1.42	59.50	0.49	0.31	0.08	0.02	0.01	0.01	0.01	0.01	42.5
1147	2.27	58.70	1.11	0.34	0.05	0.01	0.01	0.01	0.01	0.01	42.2
1148	20.00	32.20	16.20	0.38	0.73	0.01	0.01	0.02	0.01	0.01	31.0
1149	0.63	30.20	20.00	0.29	0.53	0.02	0.01	0.08	0.01	0.01	47.0
1150	1.47	29.40	21.30	0.37	0.48	0.01	0.01	0.05	0.01	0.01	47.7
1151	8.64	49.30	1.88	0.59	0.40	0.04	0.01	0.02	0.01	0.01	36.6
1152	2.18	55.70	3.12	0.57	0.30	0.01	0.01	0.01	0.01	0.05	45.3
1153	4.80	52.90	3.78	0.51	0.41	0.01	0.01	0.02	0.01	0.02	41.4
1154	12.80	37.10	9.94	1.81	1.42	0.70	0.07	0.11	0.02	0.01	30.8
1155	5.41	37.30	15.70	0.54	0.73	0.03	0.01	0.06	0.01	0.01	47.4
1156	2.28	29.40	21.50	0.37	0.48	0.01	0.01	0.06	0.01	0.01	47.1
1157	0.26	44.20	10.70	0.11	0.15	0.01	0.01	0.03	0.02	0.01	44.1
1158	16.20	32.70	16.10	0.90	0.50	0.45	0.01	0.02	0.09	0.01	29.3
1159	6.50	37.30	14.20	0.90	1.07	0.01	0.01	0.06	0.14	0.01	40.9
1160	1.17	58.10	1.93	0.31	0.18	0.05	0.01	0.02	0.01	0.01	42.5
1161	2.21	55.80	2.03	0.51	0.39	0.06	0.01	0.02	0.02	0.01	40.0
1162	0.65	54.00	4.21	0.29	0.29	0.10	0.01	0.03	0.02	0.01	42.8
1163	2.67	56.10	1.45	0.70	0.51	0.06	0.04	0.03	0.01	0.02	41.4
1164	2.53	52.30	4.69	0.51	0.45	0.27	0.01	0.04	0.03	0.01	40.3
1165	2.27	56.50	1.97	0.42	0.46	0.14	0.01	0.02	0.01	0.01	41.5
1166	1.50	50.70	5.45	0.32	0.10	0.14	0.01	0.01	0.01	0.04	42.5
1167	1.49	43.00	11.90	0.18	0.19	0.01	0.01	0.02	0.01	0.01	43.0
1168	4.29	56.70	2.65	0.35	0.09	0.05	0.01	0.02	0.01	0.01	39.7

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1113	5	9	900	460	8	3	3	6	3	398500	4935900	18
1114	11	23	1220	710	10	3	8	9	3	397000	4936250	18
1115	5	12	2250	160	10	3	6	10	3	395200	4936700	18
1116	5	24	1100	130	10	3	3	6	3	394400	4936600	18
1117	5	85	210	300	16	19	26	12	20	394050	4937200	18
1118	5	10	2220	140	11	3	3	6	3	393500	4937750	18
1119	5	16	1260	160	11	3	3	6	3	393100	4938250	18
1120	5	20	1600	150	9	3	6	12	3	394700	4935550	18
1121	5	15	2050	370	9	3	3	9	3	393600	4935850	18
1122	5	113	1300	100	10	3	3	12	3	393250	4934850	18
1123	5	13	1720	300	12	3	3	8	3	392700	4934100	18
1124	18	58	70	50	7	3	3	10	3	392100	4933500	18
1125	5	16	1290	180	9	3	3	20	3	391100	4932950	18
1126	5	17	1020	150	8	3	3	27	3	391100	4931700	18
1127	5	144	2600	250	12	3	6	9	3	390300	4930900	18
1128	5	40	110	80	16	3	3	6	3	389700	4930300	18
1129	5	22	1500	120	10	3	3	5	3	389000	4929500	18
1130	5	12	820	260	10	3	3	5	3	388200	4928900	18
1131	5	39	1700	610	15	3	3	8	3	386700	4928950	18
1132	5	16	1080	130	10	3	3	19	3	385800	4928500	18
1133	5	31	160	120	10	3	3	6	3	384700	4932350	18
1134	5	21	630	180	8	3	3	4	3	391200	4939900	18
1135	5	14	400	80	10	3	3	14	3	391700	4937900	18
1136	5	16	130	90	10	3	8	6	3	384600	4939300	18
1137	5	18	270	150	10	14	10	16	6	384450	4938400	18
1138	5	12	370	70	9	3	7	12	3	387700	4937750	18
1139	5	14	160	90	10	3	3	4	3	383700	4937900	18
1140	5	16	380	110	12	7	9	9	3	381600	4937550	18
1141	5	24	180	90	10	3	3	5	3	383200	4937600	18
1142	5	32	120	120	8	3	3	6	3	382400	4937700	18
1143	10	54	1280	450	21	10	40	36	17	406250	4951950	18
1144	5	25	1650	180	12	3	10	13	6	407000	4951700	18
1145	5	11	120	90	9	3	3	4	3	407100	4952600	18
1146	5	12	2850	260	10	3	3	6	3	407100	4955450	18
1147	5	11	2520	220	10	3	3	8	3	406150	4955500	18
1148	5	23	490	60	10	3	6	14	3	407750	4952450	18
1149	5	12	50	50	7	3	3	2	3	409300	4952100	18
1150	5	30	50	80	6	6	3	6	3	396950	4952750	18
1151	68	460	1630	160	10	6	3	24	3	395700	4951900	18
1152	16	36	180	100	11	6	3	9	3	395700	4950350	18
1153	34	41	1150	90	12	3	14	7	7	395200	4950600	18
1154	5	85	740	90	7	3	6	48	3	396200	4953700	18
1155	29	115	110	70	8	3	7	7	3	397050	4954350	18
1156	5	10	60	40	6	3	3	2	3	397450	4955100	18
1157	5	12	100	80	8	3	3	2	3	398650	4955700	18
1158	5	14	310	180	8	3	15	29	3	399600	4955200	18
1159	160	330	300	80	12	7	11	16	8	401000	4955300	18
1160	5	39	140	100	10	6	6	5	3	396700	4955400	18
1161	5	22	920	160	12	3	7	8	3	395500	4954900	18
1162	5	17	130	90	8	6	3	5	3	394650	4954550	18
1163	36	800	1550	110	12	3	8	9	3	395000	4953700	18
1164	5	13	170	100	10	10	3	4	3	394600	4949600	18
1165	16	22	180	110	9	6	6	16	3	393900	4949000	18
1166	10	11	1370	170	8	3	3	6	3	392950	4948950	18
1167	11	54	820	80	10	6	7	2	3	388600	4952200	18
1168	5	12	580	150	10	3	3	6	3	389200	4953200	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1169	11.60	30.50	17.30	2.66	1.15	0.33	0.24	0.05	0.19	0.01	28.0
1170	4.54	45.60	8.27	0.73	0.81	0.29	0.01	0.04	0.03	0.01	40.4
1171	2.48	55.60	1.14	0.64	0.60	0.10	0.01	0.02	0.02	0.05	41.2
1172	11.00	31.50	15.50	0.95	0.64	0.38	0.01	0.17	0.01	0.01	37.9
1173	4.60	51.50	3.41	1.15	0.80	0.06	0.01	0.02	0.01	0.05	41.5
1174	7.67	29.80	17.40	3.04	1.96	0.94	0.01	0.16	0.22	0.01	36.7
1175	16.20	25.80	12.30	5.00	2.83	1.74	0.01	0.17	0.36	0.06	32.5
1176	0.60	54.50	4.50	0.25	0.09	0.01	0.01	0.01	0.01	0.01	43.9
1177	9.76	42.10	2.46	2.96	0.95	0.89	0.13	0.02	0.02	0.01	34.8
1178	12.20	29.70	16.70	1.25	1.37	0.54	0.01	0.12	0.10	0.18	38.7
1179	5.13	28.30	18.30	1.67	2.65	0.49	0.01	0.15	0.21	0.01	42.3
1180	3.87	42.10	11.20	0.45	0.24	0.18	0.01	0.03	0.01	0.01	42.0
1181	12.80	27.60	22.10	0.48	1.45	0.01	0.01	0.11	0.01	0.01	40.6
1182	0.86	29.90	20.30	0.51	0.56	0.03	0.01	0.06	0.01	0.01	46.3
1183	0.22	30.30	20.30	0.24	0.77	0.01	0.01	0.09	0.01	0.01	47.9
1184	0.69	59.90	1.07	0.21	0.02	0.01	0.01	0.02	0.01	0.01	43.3
1185	2.22	55.90	1.57	0.43	0.22	0.08	0.01	0.19	0.01	0.01	42.1
1186	20.00	30.50	3.83	1.38	0.83	0.31	0.01	0.16	0.08	0.01	24.9
1187	20.00	26.00	22.90	0.58	1.14	0.29	0.01	0.10	0.08	0.01	37.2
1188	2.69	29.30	20.70	1.00	0.83	0.01	0.01	0.08	0.02	0.01	45.7
1189	11.10	29.10	14.30	2.43	1.55	1.13	0.01	0.20	0.15	0.13	38.3
1190	20.00	24.50	0.50	1.07	0.17	0.17	0.01	0.16	0.02	0.01	11.8
1191	16.00	37.70	6.51	2.37	1.77	0.04	0.01	0.05	0.12	0.09	33.2
1192	20.00	31.70	0.20	0.51	0.10	0.05	0.01	0.16	0.01	0.01	20.3
1193	20.00	25.50	1.33	5.00	2.65	0.78	0.28	0.02	0.16	0.03	3.4
1194	5.70	31.50	16.10	1.38	2.45	0.40	0.01	0.22	0.11	0.05	40.1
1195	7.38	40.50	11.70	1.11	1.57	0.01	0.01	0.09	0.02	0.01	43.7
1196	1.81	32.70	16.20	1.35	2.20	0.01	0.01	0.22	0.03	0.01	45.6
1197	20.00	25.60	11.20	2.43	0.43	1.17	0.01	0.14	0.13	0.01	27.0
1198	4.48	44.20	9.72	0.70	0.90	0.28	0.01	0.03	0.04	0.01	38.9
1199	3.41	31.30	18.40	1.13	1.57	0.02	0.01	0.14	0.01	0.01	47.3
1200	4.38	31.10	18.40	1.46	2.04	0.01	0.01	0.17	0.01	0.01	43.9
1201	3.90	45.00	7.14	1.50	0.45	0.84	0.01	0.21	0.08	0.01	34.3
1202	4.55	49.10	4.98	0.73	0.60	0.05	0.01	0.02	0.03	0.01	38.1
1203	3.08	28.80	20.80	1.40	1.95	0.01	0.01	0.14	0.01	0.01	47.9
1204	6.76	40.30	8.45	0.85	1.15	0.32	0.01	0.25	0.09	0.02	35.7
1205	8.62	32.50	15.30	0.13	1.21	0.01	0.01	0.29	0.01	0.01	40.8
1206	0.14	56.30	3.67	0.18	0.01	0.02	0.01	0.01	0.01	0.01	31.4
1207	3.90	50.90	5.52	0.27	0.07	0.01	0.01	0.01	0.01	0.04	34.5
1208	1.77	57.60	1.39	0.40	0.07	0.07	0.01	0.01	0.01	0.01	36.1
1209	3.21	54.40	3.27	0.73	0.46	0.10	0.01	0.02	0.02	0.01	38.0
1210	0.91	52.60	5.52	0.17	0.01	0.01	0.01	0.01	0.01	0.01	34.9
1211	0.01	57.10	2.91	0.10	0.02	0.01	0.01	0.01	0.01	0.01	38.0
1212	0.61	51.20	6.70	0.13	0.01	0.01	0.01	0.01	0.01	0.01	33.9
1213	4.07	47.40	6.80	0.39	0.29	0.19	0.01	0.02	0.01	0.01	35.1
1214	12.70	30.90	14.20	1.95	2.10	0.05	0.01	0.18	0.04	0.01	36.8
1215	20.00	24.50	15.70	5.00	4.48	0.03	0.01	0.15	0.25	0.14	24.8
1216	13.80	36.10	11.90	0.57	0.91	0.01	0.01	0.21	0.02	0.28	35.7
1217	2.28	43.40	10.40	0.69	0.83	0.01	0.01	0.24	0.05	0.01	41.1
1218	6.79	31.20	16.80	1.53	1.65	0.30	0.01	0.20	0.10	0.01	40.1
1219	0.37	52.40	5.73	0.11	0.01	0.01	0.01	0.01	0.01	0.01	43.3
1220	2.17	51.50	5.60	0.35	0.18	0.16	0.01	0.01	0.01	0.01	38.4
1221	7.98	45.80	3.94	1.58	1.39	0.24	0.01	0.04	0.03	0.07	36.5
1222	8.20	48.40	6.98	0.89	0.17	0.07	0.01	0.01	0.01	0.03	33.8
1223	6.45	32.50	15.80	1.36	1.79	0.05	0.01	0.13	0.03	0.01	41.1
1224	7.53	28.60	19.00	1.42	0.96	0.70	0.01	0.11	0.10	0.13	37.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1169	5	20	140	110	10	7	36	2	12	389900	4954900	18
1170	5	19	210	150	10	8	37	4	12	388200	4955500	18
1171	5	13	1120	150	12	7	8	6	3	387150	4955600	18
1172	5	24	130	90	14	8	6	6	3	404350	4954500	18
1173	5	22	2170	130	12	7	8	17	3	405680	4956300	18
1174	5	10	90	230	10	8	7	12	7	405250	4957900	18
1175	5	10	200	320	8	9	26	14	3	406440	4957840	18
1176	5	8	250	120	8	6	3	7	3	407190	4957080	18
1177	5	10	1960	410	8	8	3	16	3	406360	4958850	18
1178	5	14	150	130	22	12	10	18	8	404830	4958680	18
1179	5	23	80	150	68	12	12	16	6	405070	4959450	18
1180	28	78	140	100	13	8	6	13	3	406520	4960970	18
1181	5	12	70	70	8	9	3	13	3	407880	4960700	18
1182	5	10	40	50	6	7	3	5	3	407600	4958940	18
1183	5	14	90	60	10	8	3	2	3	409000	4959730	18
1184	5	10	750	130	10	6	3	2	3	409900	4960100	18
1185	5	12	100	130	16	9	12	4	3	409800	4959420	18
1186	5	10	120	180	8	9	13	8	3	411800	4958080	18
1187	5	11	60	60	3	7	6	15	3	411410	4956960	18
1188	5	8	40	50	6	3	3	6	3	410250	4956440	18
1189	5	8	160	190	16	6	14	10	3	409400	4956710	18
1190	5	6	50	120	3	3	3	2	3	408680	4957530	18
1191	78	720	340	130	14	6	12	30	9	409890	4957780	18
1192	5	7	60	50	3	3	3	2	3	410400	4958400	18
1193	5	66	820	820	24	11	32	14	19	396100	4971100	18
1194	5	1680	130	150	22	12	14	15	10	395290	4963060	18
1195	5	44	140	130	21	11	45	10	13	394820	4962280	18
1196	5	11	100	70	10	6	17	10	9	401540	4968490	18
1197	5	10	90	220	6	3	19	4	3	405000	4969690	18
1198	5	22	180	150	6	3	16	4	3	404700	4969530	18
1199	5	11	90	70	20	6	13	15	8	405550	4968200	18
1200	5	12	90	60	8	3	8	20	7	406000	4957560	18
1201	5	21	110	200	9	3	7	4	3	407050	4967500	18
1202	5	19	1100	100	10	3	9	6	3	408320	4967450	18
1203	5	10	80	50	7	6	22	12	11	404990	4965230	18
1204	5	12	120	260	22	10	7	8	3	405500	4962950	18
1205	5	10	110	140	24	3	3	8	3	405100	4963900	18
1206	5	10	140	80	8	3	3	4	3	403100	4965290	18
1207	5	15	730	100	8	3	3	6	3	403810	4964710	18
1208	5	10	1490	220	10	3	6	8	3	403010	4964020	18
1209	5	22	290	130	10	3	7	8	3	402410	4962850	18
1210	5	12	210	120	8	3	6	5	3	401930	4967120	18
1211	5	10	1450	80	9	3	3	4	3	403000	4967920	18
1212	5	12	1020	80	8	3	3	4	3	403090	4967070	18
1213	5	24	780	130	7	3	7	5	3	402630	4966280	18
1214	5	14	120	140	12	8	10	28	3	400300	4964040	18
1215	5	36	90	70	13	15	27	91	13	399500	4964480	18
1216	17	18	140	70	18	3	3	18	3	398200	4959200	18
1217	5	10	90	140	10	3	6	7	3	397870	4958220	18
1218	5	37	150	290	12	6	44	18	8	397980	4956040	18
1219	5	13	900	110	8	3	3	2	3	398050	4956960	18
1220	5	24	800	150	7	3	6	2	3	398420	4957690	18
1221	11	260	980	200	9	3	10	18	3	399190	4957600	18
1222	5	16	880	230	8	3	6	8	3	400690	4957650	18
1223	5	32	190	220	8	3	7	27	3	401530	4958000	18
1224	5	58	100	280	8	3	6	14	3	401990	4959240	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1225	3.15	29.70	20.60	0.52	0.86	0.18	0.01	0.13	0.04	0.01	45.7
1226	3.24	30.90	19.40	0.85	0.99	0.01	0.01	0.13	0.07	0.01	45.3
1227	5.17	46.40	7.86	0.28	0.25	0.01	0.01	0.03	0.01	0.05	36.3
1228	20.00	17.40	3.30	5.00	3.69	1.75	0.01	0.10	0.90	0.12	12.1
1229	10.60	29.20	21.20	0.91	1.32	0.08	0.01	0.05	0.06	0.01	36.8
1230	0.19	53.10	5.37	0.12	0.40	0.01	0.01	0.02	0.01	0.01	38.7
1231	20.00	27.20	0.69	2.25	0.14	1.06	0.01	0.10	0.07	0.03	15.3
1232	0.73	32.50	18.70	0.19	0.97	0.01	0.01	0.12	0.01	0.01	47.5
1233	1.31	33.50	17.70	0.51	1.10	0.01	0.01	0.17	0.02	0.01	44.6
1234	1.98	56.70	1.36	0.43	0.44	0.01	0.01	0.01	0.02	0.02	40.0
1235	20.00	26.20	15.40	3.06	3.68	0.01	0.01	0.08	0.21	0.07	14.6
1236	4.78	40.00	10.50	0.49	1.36	0.01	0.01	0.22	0.01	0.01	38.4
1237	2.89	28.70	22.00	0.63	1.21	0.01	0.01	0.10	0.01	0.01	46.8
1238	1.51	58.90	0.90	0.24	0.11	0.01	0.01	0.01	0.01	0.01	37.1
1239	2.53	51.40	5.10	0.55	0.26	0.27	0.01	0.02	0.03	0.01	36.5
1240	7.39	46.00	5.64	1.13	1.21	0.13	0.01	0.02	0.08	0.01	37.9
1241	0.53	54.20	5.05	0.17	0.11	0.03	0.01	0.03	0.01	0.01	39.0
1242	9.27	40.80	7.59	1.98	1.22	0.85	0.01	0.03	0.09	0.01	31.0
1243	6.99	31.10	20.30	0.69	1.02	0.02	0.01	0.05	0.06	0.01	40.2
1244	11.60	40.20	6.18	2.52	2.56	0.25	0.01	0.05	0.14	0.01	35.0
1245	4.67	52.00	2.58	1.04	0.84	0.09	0.01	0.03	0.01	0.04	38.9
1246	1.37	52.30	5.47	0.35	0.10	0.13	0.01	0.02	0.01	0.07	36.8
1247	1.97	46.20	10.00	0.27	0.18	0.01	0.01	0.02	0.01	0.01	38.7
1248	1.10	55.00	4.24	0.38	0.14	0.02	0.01	0.04	0.02	0.01	39.5
1249	0.29	56.70	3.74	0.14	0.01	0.01	0.01	0.02	0.01	0.01	31.8
1250	0.52	56.00	4.06	0.15	0.12	0.01	0.01	0.02	0.01	0.01	38.0
1251	5.59	48.10	4.71	1.24	1.12	0.07	0.01	0.03	0.09	0.01	35.5
1252	0.68	55.20	4.37	0.16	0.09	0.01	0.01	0.02	0.01	0.01	35.3
1253	10.80	28.70	21.80	1.44	0.79	0.01	0.01	0.03	0.10	0.01	33.9
1254	7.79	42.20	8.17	2.54	1.65	0.50	0.01	0.04	0.14	0.01	33.5
1255	5.69	43.60	8.19	1.03	0.82	0.52	0.01	0.02	0.08	0.02	34.8
1256	10.50	33.60	18.60	1.41	1.15	0.01	0.01	0.09	0.07	0.01	37.3
1257	3.12	31.00	18.00	0.67	0.61	0.28	0.00	0.13	0.05	0.12	50.7
1258	3.14	48.00	5.70	0.60	0.79	0.04	0.00	0.02	0.05	0.08	39.5
1259	0.83	56.00	3.56	0.18	0.13	0.01	0.00	0.03	0.00	0.09	42.7
1260	5.14	48.50	5.52	0.12	0.02	0.00	0.00	0.02	0.00	0.09	38.9
1261	1.73	44.70	9.35	0.37	0.13	0.10	0.00	0.04	0.01	0.09	43.5
1262	3.65	31.70	18.50	0.10	0.30	0.00	0.00	0.03	0.00	0.08	44.0
1263	1.42	52.80	4.91	0.22	0.16	0.05	0.00	0.03	0.00	0.09	42.3
1264	1.95	29.30	19.50	0.71	1.37	0.00	0.00	0.10	0.09	0.09	51.0
1265	0.07	51.50	6.57	0.12	0.00	0.00	0.00	0.01	0.00	0.08	45.8
1266	1.06	53.80	4.41	0.30	0.11	0.07	0.00	0.03	0.00	0.09	44.8
1267	3.23	36.80	14.20	0.46	0.48	0.22	0.00	0.04	0.02	0.10	44.3
1268	0.26	29.90	20.30	0.15	0.65	0.00	0.00	0.07	0.00	0.08	48.4
1269	1.64	52.30	4.49	0.55	0.30	0.15	0.00	0.03	0.01	0.09	42.9
1270	4.42	31.90	17.80	0.52	0.48	0.13	0.00	0.04	0.03	0.10	42.8
1271	1.54	51.90	6.99	0.24	0.12	0.06	0.00	0.03	0.00	0.09	42.6
1272	2.01	48.10	7.96	0.21	0.12	0.03	0.00	0.02	0.00	0.10	43.6
1273	1.36	52.70	5.29	0.24	0.16	0.02	0.00	0.03	0.00	0.09	42.5
1274	20.00	24.30	19.00	0.50	0.96	0.04	0.00	0.04	0.03	0.10	10.7
1275	3.22	44.70	8.54	0.21	0.27	0.05	0.00	0.02	0.00	0.09	43.7
1276	2.70	51.10	6.00	0.19	0.13	0.02	0.00	0.02	0.00	0.09	43.1
1277	0.80	42.50	11.60	0.14	0.04	0.00	0.00	0.04	0.00	0.08	44.5
1278	0.60	52.70	5.77	0.14	0.07	0.00	0.00	0.01	0.00	0.08	43.4
1279	0.70	52.60	5.99	0.34	0.06	0.06	0.00	0.02	0.00	0.09	43.8
1280	2.94	36.90	14.90	0.29	0.40	0.00	0.00	0.09	0.00	0.08	48.2

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1225	5	85	80	80	8	6	9	8	3	403280	4959070	18
1226	5	12	110	120	8	3	3	11	3	403400	4959800	18
1227	5	17	910	170	6	3	6	6	3	395210	4956050	18
1228	5	12	230	2000	9	8	50	18	12	395600	4961900	18
1229	20	400	130	140	11	3	55	9	15	388570	4956000	18
1230	5	15	110	100	7	3	3	2	3	387040	4956060	18
1231	5	8	100	190	6	3	15	2	3	387880	4956340	18
1232	5	18	70	80	6	3	3	4	3	390340	4956890	18
1233	5	11	90	90	9	3	3	8	3	391150	4957350	18
1234	60	170	2020	130	12	3	8	10	3	391800	4958060	18
1235	5	29	400	80	8	8	30	26	10	392580	4959000	18
1236	14	310	80	160	10	3	6	10	3	393550	4960040	18
1237	5	10	80	50	6	3	3	8	3	394120	4961300	18
1238	5	14	1470	120	8	3	6	4	3	387090	4963550	18
1239	5	22	340	170	10	3	3	4	3	386200	4963520	18
1240	5	30	600	250	14	3	9	12	3	385530	4967440	18
1241	5	17	290	190	7	3	3	2	3	384380	4967180	18
1242	12	47	760	250	18	6	14	18	7	383490	4967040	18
1243	5	37	110	80	14	3	9	4	3	383460	4965780	18
1244	5	30	540	180	9	6	10	28	3	384200	4966290	18
1245	14	150	1090	140	11	3	11	11	3	381400	4954700	18
1246	5	15	800	210	7	3	3	2	3	385750	4959890	18
1247	5	18	650	130	6	3	7	2	3	386430	4960690	18
1248	5	36	100	90	12	3	6	4	3	387890	4965860	18
1249	5	16	460	160	8	3	3	6	3	386850	4966100	18
1250	5	18	320	150	6	3	3	2	3	385860	4965250	18
1251	5	25	580	220	14	9	16	12	8	385100	4966610	18
1252	10	18	390	130	8	3	6	4	3	385930	4967000	18
1253	5	26	160	70	14	3	8	13	3	377150	4963150	18
1254	5	18	150	200	13	3	13	20	6	376250	4962800	18
1255	5	42	1000	560	12	3	32	5	6	375550	4962600	18
1256	5	425	140	100	10	3	10	2	3	375300	4963250	18
1257	5	10	70	130	10	3	6	7	3	381490	4959090	18
1258	5	24	380	140	5	3	5	4	3	382360	4959380	18
1259	5	10	320	120	8	3	3	2	3	383100	4958900	18
1260	5	12	100	530	3	3	3	3	3	342700	4925500	18
1261	5	16	400	250	3	3	3	11	3	342100	4925750	18
1262	5	10	90	90	34	3	3	4	3	342450	4924800	18
1263	5	10	290	130	6	3	3	4	3	352100	4925100	18
1264	5	12	80	80	15	6	14	8	10	352950	4923700	18
1265	5	23	160	110	6	3	3	2	3	351400	4927700	18
1266	5	13	200	130	5	3	3	2	3	350500	4932250	18
1267	5	40	190	130	8	3	3	4	3	350600	4933200	18
1268	5	42	60	80	5	3	3	2	3	344100	4935100	18
1269	5	16	220	170	6	3	3	4	3	344400	4935850	18
1270	5	10	60	90	6	3	3	5	3	346900	4931700	18
1271	5	8	410	150	7	3	3	4	3	346900	4932500	18
1272	5	8	220	140	6	3	3	5	3	346800	4933300	18
1273	5	14	600	250	5	3	3	4	3	346600	4934500	18
1274	5	38	90	60	5	3	3	6	3	347150	4930900	18
1275	5	23	250	150	10	3	3	3	5	347450	4930200	18
1276	5	20	420	220	5	3	3	4	3	381700	4957800	18
1277	5	46	110	110	6	3	3	2	3	381400	4958290	18
1278	5	7	180	110	5	3	3	2	3	382200	4958500	18
1279	5	6	200	140	6	3	3	2	3	380700	4958500	18
1280	5	44	390	70	13	3	3	2	3	380300	4957400	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1281	0.71	29.70	19.60	0.14	0.69	0.00	0.00	0.07	0.00	0.07	46.7
1282	20.00	24.30	24.30	0.33	2.89	0.00	0.00	0.19	0.04	0.08	32.6
1283	3.43	44.00	11.50	0.14	0.18	0.00	0.00	0.03	0.00	0.09	40.1
1284	1.73	52.10	5.96	0.26	0.13	0.02	0.00	0.02	0.01	0.09	42.6
1285	2.23	51.30	5.41	0.28	0.16	0.04	0.00	0.02	0.00	0.09	42.1
1286	5.13	48.20	5.60	0.87	0.81	0.00	0.00	0.10	0.01	0.10	40.8
1287	3.90	52.40	3.47	0.84	0.63	0.13	0.00	0.03	0.06	0.12	41.1
1288	6.63	28.40	21.40	0.24	0.18	0.00	0.00	0.05	0.01	0.08	42.2
1289	20.00	8.42	18.20	5.40	10.00	2.00	0.00	0.10	1.02	0.12	2.8
1290	6.12	47.30	3.66	2.42	0.55	0.09	0.05	0.02	0.03	0.09	37.9
1291	1.56	58.20	1.00	0.39	0.05	0.05	0.00	0.01	0.01	0.09	43.1
1292	2.26	56.60	1.28	0.41	0.34	0.00	0.00	0.02	0.02	0.09	41.6
1293	2.41	55.80	0.90	0.55	0.10	0.14	0.00	0.01	0.02	0.10	41.7
1294	1.84	43.00	9.97	0.39	0.46	0.09	0.00	0.04	0.02	0.10	42.9
1295	0.44	52.00	5.83	0.17	0.00	0.00	0.00	0.01	0.00	0.09	43.6
1296	1.38	52.10	4.62	0.22	0.03	0.00	0.00	0.01	0.00	0.11	39.2
1297	0.68	31.20	19.40	0.11	0.55	0.00	0.00	0.03	0.02	0.07	46.4
1298	2.23	47.70	8.52	0.25	0.18	0.07	0.00	0.02	0.01	0.10	43.3
1299	20.00	26.20	21.10	0.38	1.11	0.11	0.00	0.10	0.00	0.08	45.0
1300	2.10	35.00	16.60	0.20	0.33	0.03	0.00	0.03	0.01	0.09	43.8
1301	1.21	46.40	9.84	0.27	0.24	0.05	0.00	0.02	0.03	0.11	42.9
1302	0.18	53.40	4.93	0.15	0.69	0.00	0.00	0.02	0.00	0.08	42.0
1303	2.42	53.10	5.70	0.12	0.13	0.00	0.00	0.02	0.00	0.11	41.6
1304	0.34	49.10	7.01	0.18	0.30	0.03	0.00	0.20	0.00	0.09	42.1
1305	2.65	50.90	4.66	0.37	0.30	0.16	0.00	0.02	0.02	0.11	38.7
1306	6.71	52.50	2.54	0.48	0.15	0.00	0.00	0.03	0.00	0.10	38.1
1307	3.01	50.50	5.31	0.56	0.25	0.00	0.00	0.03	0.01	0.10	35.7
1308	0.62	56.80	2.62	0.20	0.04	0.00	0.00	0.03	0.00	0.09	42.8
1309	0.68	29.50	19.50	0.42	1.03	0.00	0.00	0.07	0.00	0.08	45.9
1310	0.79	46.20	10.30	0.27	0.27	0.00	0.00	0.03	0.01	0.09	42.9
1311	1.39	30.00	20.20	0.28	0.16	0.00	0.00	0.05	0.00	0.07	40.2
1312	20.00	24.00	24.70	0.30	0.98	0.00	0.00	0.13	0.02	0.10	12.9
1313	1.60	34.10	16.90	0.24	0.65	0.00	0.00	0.19	0.01	0.08	45.5
1314	7.58	43.40	8.16	0.28	1.73	0.00	0.00	0.15	0.01	0.11	32.2
1315	6.16	46.80	7.14	0.43	0.51	0.00	0.00	0.05	0.02	0.14	41.0
1316	10.50	29.50	20.70	0.34	0.37	0.13	0.00	0.03	0.03	0.12	38.2
1317	4.10	31.10	19.30	0.36	0.39	0.04	0.00	0.03	0.00	0.09	47.6
1318	1.94	50.60	7.47	0.22	0.21	0.03	0.00	0.03	0.00	0.09	41.7
1319	3.01	30.50	18.40	0.49	0.96	0.11	0.00	0.19	0.02	0.10	49.3
1320	9.36	27.00	22.10	1.53	1.54	0.12	0.00	0.14	0.08	0.14	53.0
1321	1.13	49.70	7.48	0.20	0.08	0.02	0.00	0.02	0.00	0.08	41.4
1322	2.63	49.30	7.35	0.53	0.70	0.03	0.00	0.02	0.03	0.10	40.0
1323	4.77	51.00	4.16	0.81	0.75	0.13	0.00	0.02	0.02	0.10	39.3
1324	6.50	42.00	8.37	1.23	0.96	0.45	0.00	0.04	0.03	0.09	40.0
1325	1.96	52.00	4.01	0.49	0.20	0.12	0.00	0.01	0.01	0.10	41.7
1326	2.61	50.80	5.29	0.63	0.24	0.29	0.00	0.01	0.02	0.09	42.4
1327	0.70	50.00	6.12	0.15	0.20	0.01	0.00	0.01	0.00	0.09	42.3
1328	1.60	48.70	6.64	0.24	0.02	0.06	0.00	0.01	0.01	0.09	42.0
1329	3.92	46.30	8.17	0.64	0.57	0.25	0.00	0.05	0.03	0.08	41.0
1330	3.37	45.70	7.29	0.72	0.37	0.43	0.00	0.03	0.07	0.09	39.3
1331	6.24	49.70	4.21	0.95	0.48	0.08	0.00	0.03	0.03	0.15	40.0
1332	1.81	29.70	20.60	0.26	0.33	0.00	0.00	0.06	0.00	0.08	46.8
1333	0.65	36.40	15.80	0.16	0.52	0.00	0.00	0.20	0.00	0.10	44.9
1334	2.40	33.00	18.10	0.25	0.46	0.00	0.00	0.08	0.00	0.08	45.5
1335	0.86	54.40	7.77	0.22	0.16	0.01	0.00	0.03	0.00	0.09	43.2
1336	20.00	30.70	4.75	5.00	1.44	0.72	0.44	0.03	0.16	0.14	21.2

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1281	5	100	70	230	47	5	3	2	3	378550	4957900	18
1282	5	32	60	60	3	3	3	12	3	377750	4956250	18
1283	5	16	80	90	6	3	3	2	3	378800	4957250	18
1284	5	13	600	160	5	3	3	2	3	380150	4956750	18
1285	5	18	260	150	5	3	3	3	3	381100	4957150	18
1286	5	10	150	90	15	3	8	12	3	379500	4953750	18
1287	5	44	780	190	8	3	9	8	5	378700	4954000	18
1288	5	26	70	70	3	3	3	2	3	378900	4955000	18
1289	5	62	60	390	23	49	1040	78	138	380000	4953000	18
1290	5	18	1550	110	6	3	9	12	3	379500	4952300	18
1291	5	8	1750	110	5	3	3	3	3	379300	4951400	18
1292	5	8	590	80	5	3	5	2	3	378300	4951400	18
1293	5	9	1220	450	6	3	5	3	3	375600	4949500	18
1294	5	13	90	110	3	3	3	4	3	378800	4947600	18
1295	5	10	1150	120	6	3	3	2	3	378200	4946800	18
1296	5	6	1070	100	5	3	3	2	3	377800	4947200	18
1297	5	11	270	90	6	3	3	2	3	377750	4945950	18
1298	5	36	840	80	5	3	5	2	3	382050	4947500	18
1299	5	11	110	90	5	3	3	12	3	381100	4947300	18
1300	5	26	90	70	5	3	3	2	3	350700	4934200	18
1301	5	18	250	80	5	3	35	2	3	350550	4935500	18
1302	5	37	250	140	6	3	3	2	3	350250	4936250	18
1303	5	8	220	80	6	3	3	2	3	348900	4937900	18
1304	5	12	160	90	6	3	3	4	3	350000	4939150	18
1305	5	10	270	100	8	3	5	2	3	352900	4941250	18
1306	5	9	110	90	6	3	3	2	3	354600	4942000	18
1307	5	8	240	70	6	3	7	3	3	355000	4942150	18
1308	5	10	120	100	7	3	3	2	3	356600	4942350	18
1309	5	15	30	40	5	3	3	4	3	356000	4932300	18
1310	5	16	200	70	6	3	3	2	3	356100	4931400	18
1311	5	20	140	90	5	3	3	4	3	357200	4933200	18
1312	5	30	80	70	3	3	3	11	3	359300	4933450	18
1313	5	14	70	60	6	3	3	2	3	363900	4945700	18
1314	5	20	200	60	6	3	3	2	3	362100	4945600	18
1315	5	30	110	110	6	3	3	4	3	365250	4946250	18
1316	5	31	210	370	6	3	3	2	3	370250	4937450	18
1317	5	19	190	70	10	3	3	7	3	370600	4938900	18
1318	5	12	560	140	6	3	3	3	3	371700	4941000	18
1319	5	10	60	100	10	3	3	10	3	372300	4941700	18
1320	5	26	80	90	8	3	5	22	3	373150	4941900	18
1321	5	12	210	100	6	3	3	2	3	373950	4943450	18
1322	5	28	430	130	6	3	5	5	3	374350	4944350	18
1323	5	12	360	310	8	3	3	8	3	374800	4946400	18
1324	5	40	190	230	7	3	3	5	3	374750	4947250	18
1325	5	10	1770	110	6	3	3	6	3	374400	4948200	18
1326	5	14	1310	210	6	3	3	6	3	375600	4945900	18
1327	5	8	560	120	6	3	3	4	3	376900	4945900	18
1328	5	9	750	90	5	3	3	4	3	378750	4946000	18
1329	5	13	160	80	6	3	5	4	3	379700	4946600	18
1330	5	17	190	100	5	3	5	10	3	380300	4947200	18
1331	46	40	310	120	10	3	3	8	3	380100	4945800	18
1332	18	146	110	50	5	3	3	4	3	380100	4944500	18
1333	5	6	100	70	9	3	3	2	3	379250	4943700	18
1334	5	13	280	60	6	3	3	2	3	377000	4944600	18
1335	5	10	170	90	6	3	3	2	3	376400	4944950	18
1336	5	24	580	420	16	8	22	16	10	376600	4943800	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1337	20.00	33.00	2.34	4.31	1.79	0.44	0.59	0.04	0.16	0.10	19.1
1338	20.00	19.90	1.35	5.00	0.29	1.82	0.67	0.01	0.01	0.09	8.5
1339	20.00	39.70	0.90	3.78	0.31	1.21	0.33	0.01	0.01	0.09	32.4
1340	2.68	48.00	7.97	0.47	0.26	0.12	0.00	0.02	0.03	0.07	40.1
1341	1.68	53.40	4.54	0.34	0.15	0.09	0.00	0.02	0.00	0.09	43.0
1342	3.41	50.40	4.74	0.55	0.31	0.23	0.00	0.03	0.03	0.08	42.1
1343	0.98	48.50	7.33	0.27	0.13	0.02	0.00	0.03	0.00	0.08	45.3
1344	1.96	28.90	20.60	0.51	1.20	0.09	0.00	0.18	0.03	0.10	47.9
1345	8.54	28.90	20.50	1.45	0.64	0.42	0.00	0.09	0.07	0.08	42.7
1346	2.23	50.20	9.20	0.45	0.19	0.06	0.00	0.03	0.01	0.09	43.1
1347	11.70	25.70	21.70	3.15	0.97	1.34	0.02	0.08	0.26	0.08	30.0
1348	4.54	38.70	13.10	0.85	0.46	0.31	0.00	0.15	0.05	0.08	41.6
1349	3.55	50.10	7.05	0.60	0.34	0.22	0.00	0.06	0.03	0.12	40.7
1350	1.34	35.10	15.90	0.32	0.83	0.08	0.00	0.17	0.01	0.10	44.5
1351	0.85	59.60	4.18	0.16	0.00	0.00	0.00	0.02	0.00	0.09	41.4
1352	9.96	40.20	10.60	0.48	0.32	0.20	0.00	0.02	0.03	0.09	32.0
1353	3.12	44.10	10.90	0.24	0.21	0.00	0.00	0.02	0.00	0.08	45.4
1354	20.00	3.66	1.16	5.00	0.72	1.82	1.77	0.03	0.15	0.10	0.4
1355	20.00	32.30	9.95	3.62	1.37	0.89	0.22	0.04	0.18	0.08	29.9
1356	2.90	52.90	4.61	0.62	0.24	0.17	0.00	0.03	0.15	0.02	43.4
1357	4.13	47.10	4.60	1.04	0.83	0.08	0.00	0.02	0.07	0.10	39.0
1358	2.09	33.50	16.10	0.34	0.24	0.00	0.00	0.02	0.00	0.08	45.4
1359	1.86	56.10	2.72	0.23	0.02	0.00	0.00	0.01	0.00	0.09	46.6
1360	6.62	46.40	8.56	0.33	0.12	0.09	0.00	0.01	0.02	0.12	41.2
1361	1.78	29.30	20.20	0.57	0.94	0.11	0.00	0.16	0.02	0.10	59.1
1362	3.94	54.10	3.62	0.79	0.29	0.00	0.00	0.03	0.01	0.09	43.5
1363	1.40	52.80	4.43	0.40	0.00	0.15	0.00	0.01	0.01	0.10	41.1
1364	7.16	36.40	10.00	0.88	2.43	0.39	0.39	0.08	0.07	0.08	36.7
1365	4.88	42.30	11.70	0.58	0.31	0.12	0.00	0.02	0.03	0.12	44.3
1366	1.47	53.70	4.47	0.29	0.24	0.09	0.00	0.03	0.00	0.09	42.1
1367	2.66	49.20	5.67	0.74	0.48	0.21	0.00	0.02	0.05	0.09	40.5
1368	20.00	19.90	5.31	5.00	4.40	1.82	0.57	0.07	0.58	0.64	7.0
1369	1.93	29.60	20.90	0.27	0.20	0.00	0.00	0.04	0.01	0.07	43.5
1370	0.41	29.70	20.70	0.18	0.14	0.04	0.00	0.03	0.00	0.07	43.6
1371	3.32	35.70	16.80	0.68	0.35	0.23	0.00	0.02	0.05	0.10	40.0
1372	0.26	51.40	8.64	0.12	0.00	0.00	0.00	0.01	0.00	0.08	38.3
1373	2.15	39.10	13.90	0.47	0.38	0.14	0.00	0.04	0.03	0.08	45.0
1374	7.06	38.10	12.90	0.82	0.59	0.30	0.00	0.03	0.06	0.13	42.3
1375	2.51	50.00	6.49	0.50	0.41	0.13	0.00	0.02	0.03	0.09	42.6
1376	1.15	52.00	5.74	0.30	0.13	0.08	0.00	0.02	0.01	0.09	42.5
1377	0.30	37.50	14.60	0.19	0.31	0.00	0.00	0.18	0.00	0.08	44.3
1378	1.86	49.90	6.85	0.51	0.16	0.24	0.00	0.03	0.02	0.09	41.4
1379	3.15	33.80	16.00	0.51	0.50	0.13	0.00	0.10	0.00	0.08	45.0
1380	6.27	42.30	8.55	1.18	1.15	0.62	0.00	0.02	0.11	0.10	35.5
1381	9.49	39.30	8.22	2.45	0.30	0.55	0.17	0.01	0.06	0.08	35.2
1382	3.16	44.10	11.10	0.48	0.17	0.00	0.00	0.03	0.00	0.08	42.9
1383	0.79	30.30	18.90	0.20	0.12	0.00	0.00	0.07	0.00	0.08	41.5
1384	1.54	30.60	18.90	0.58	0.93	0.11	0.00	0.16	0.01	0.15	47.1
1385	14.70	26.00	22.60	0.89	1.50	0.00	0.00	0.11	0.05	0.08	37.9
1386	3.43	49.90	8.47	0.55	0.33	0.11	0.00	0.02	0.01	0.10	41.5
1387	2.17	52.20	5.49	0.44	0.20	0.10	0.00	0.02	0.01	0.09	41.5
1388	6.32	37.30	11.20	0.95	0.71	0.13	0.00	0.23	0.01	0.09	41.3
1389	4.68	52.70	2.65	0.54	0.05	0.19	0.00	0.03	0.01	0.10	38.2
1390	20.00	41.70	1.18	0.36	0.04	0.09	0.00	0.01	0.00	0.09	31.7
1391	2.45	29.60	19.70	0.10	0.32	0.00	0.00	0.05	0.00	0.08	44.6
1392	0.05	30.20	20.20	0.10	0.31	0.00	0.00	0.06	0.00	0.07	45.6

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1337	5	36	670	300	9	11	30	26	14	375950	4942500	18
1338	5	17	560	960	3	3	3	12	3	374950	4942000	18
1339	5	22	1350	320	5	3	3	7	3	375400	4941300	18
1340	5	14	540	140	9	3	3	4	5	374600	4940600	18
1341	5	12	960	100	6	3	3	4	3	373600	4939800	18
1342	5	20	190	110	6	3	3	8	3	378700	4939200	18
1343	5	42	130	110	6	3	3	3	3	378450	4938300	18
1344	5	10	60	70	22	3	3	6	5	378100	4937600	18
1345	5	12	150	180	6	3	3	6	3	378900	4937450	18
1346	5	20	120	120	6	3	3	4	3	378900	4936800	18
1347	5	510	100	380	5	3	5	11	5	380750	4937750	18
1348	5	18	110	120	6	3	5	10	3	377500	4936900	18
1349	5	15	210	80	8	5	3	6	7	377100	4936300	18
1350	5	14	70	70	6	3	3	3	3	377050	4935150	18
1351	5	6	1210	260	7	3	3	2	3	376400	4933600	18
1352	5	10	310	100	6	3	8	6	3	375500	4933300	18
1353	5	20	620	90	6	3	3	4	3	374750	4932700	18
1354	19	16	460	2250	3	3	3	2	3	374000	4932200	18
1355	5	28	580	490	12	3	15	12	3	372400	4930000	18
1356	5	20	220	120	8	3	3	6	3	371400	4931500	18
1357	5	34	500	130	10	3	5	4	3	372150	4933300	18
1358	5	18	190	60	6	3	3	4	3	372200	4934400	18
1359	5	5	1620	120	6	3	3	6	3	376100	4936000	18
1360	5	12	640	100	6	3	3	12	3	375500	4935500	18
1361	5	14	60	80	6	3	3	4	3	373750	4934450	18
1362	5	9	790	110	6	3	3	6	3	373900	4935600	18
1363	5	48	520	210	6	3	3	2	3	373550	4936800	18
1364	5	29700	310	360	38	6	3	6	9	373100	4935700	18
1365	5	24	560	140	8	3	3	2	3	371300	4935100	18
1366	5	16	520	120	6	3	3	2	3	371000	4934400	18
1367	5	40	400	160	8	3	5	5	3	369900	4933150	18
1368	19	98	3080	2880	3	3	3	26	3	369150	4933750	18
1369	5	10	100	50	5	3	3	2	3	368450	4932700	18
1370	5	24	60	90	5	3	3	3	3	368200	4934100	18
1371	5	825	250	100	10	3	5	2	3	367200	4933450	18
1372	5	10	150	80	7	3	3	2	3	367500	4935650	18
1373	5	10	250	140	19	3	15	2	8	366700	4933900	18
1374	5	140	660	220	11	3	3	7	3	367800	4932300	18
1375	5	20	500	140	8	3	3	3	3	367200	4931300	18
1376	5	18	340	120	15	3	3	2	3	366150	4930450	18
1377	5	12	190	130	8	3	3	3	3	365800	4929500	18
1378	5	12	190	210	8	3	3	2	3	366700	4929400	18
1379	5	136	100	160	9	5	3	6	3	367700	4929500	18
1380	5	22	260	150	6	3	5	5	3	369700	4930050	18
1381	5	14	1150	260	10	3	3	9	3	367800	4928500	18
1382	5	22	90	130	8	3	3	2	3	367800	4927400	18
1383	5	12	90	70	6	3	3	2	3	366200	4926250	18
1384	5	13	50	130	24	3	3	3	3	366950	4926500	18
1385	5	290	70	80	8	3	6	11	3	367500	4925700	18
1386	5	54	390	240	26	3	3	4	3	366600	4925100	18
1387	5	18	410	190	7	3	6	2	3	365800	4925700	18
1388	5	10	60	120	8	3	5	6	3	370650	4925650	18
1389	5	10	60	150	8	3	3	2	3	272750	4931700	18
1390	5	10	100	280	7	3	3	2	3	275400	4931700	18
1391	5	12	130	80	6	3	3	2	3	275700	4932400	18
1392	5	11	60	70	6	3	3	2	3	275600	4933350	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1393	20.00	24.50	1.92	0.22	4.44	0.00	0.00	0.05	0.00	0.08	12.2
1394	12.20	43.00	4.26	1.40	2.01	0.39	0.04	0.03	0.06	0.09	35.1
1395	0.67	29.80	19.40	0.22	1.09	0.00	0.00	0.08	0.00	0.08	45.8
1396	2.57	55.50	3.09	0.38	0.18	0.00	0.00	0.03	0.00	0.11	41.5
1397	9.62	38.30	6.20	2.85	1.23	0.69	0.55	0.03	0.13	0.14	36.0
1398	10.20	49.20	0.56	0.74	0.07	0.14	0.00	0.02	0.01	0.11	36.7
1399	20.00	30.70	3.13	5.00	3.80	0.94	0.62	0.09	0.30	0.17	27.5
1400	20.00	21.00	4.72	5.00	5.55	1.44	1.70	0.05	0.64	0.17	11.5
1401	20.00	25.90	3.36	5.00	3.14	1.31	1.18	0.04	0.43	0.19	32.4
1402	12.50	35.80	10.20	5.00	1.81	1.57	0.14	0.03	0.14	0.12	36.2
1403	11.40	28.60	19.10	0.52	0.19	0.01	0.00	0.06	0.00	0.09	38.9
1404	20.00	25.20	6.09	5.00	3.83	1.35	0.92	0.04	0.36	0.15	23.5
1405	8.32	42.70	4.88	2.99	0.94	0.41	0.33	0.03	0.08	0.11	39.7
1406	14.00	34.20	4.75	4.38	1.96	0.82	0.52	0.04	0.16	0.13	34.2
1407	20.00	26.20	2.89	5.00	3.80	0.39	1.81	0.09	0.31	0.19	22.4
1408	20.00	27.60	3.05	5.00	2.93	0.47	1.40	0.06	0.29	0.16	24.5
1409	20.00	13.50	3.54	5.00	6.85	0.76	2.44	0.07	0.62	0.21	7.0
1410	20.00	24.10	1.99	5.00	4.32	0.94	1.12	0.13	0.37	0.15	13.4
1411	20.00	30.30	1.90	5.00	1.88	0.89	0.49	0.09	0.20	0.14	38.1
1412	20.00	26.40	4.49	5.00	4.25	1.60	0.41	0.05	0.39	0.17	23.7
1413	20.00	29.80	3.22	5.00	3.35	0.70	0.97	0.07	0.28	0.15	27.2
1414	20.00	28.90	4.46	5.00	3.33	0.60	0.77	0.04	0.32	0.16	25.9
1415	20.00	32.60	1.32	1.99	1.25	0.12	0.17	0.05	0.09	0.11	25.9
1416	20.00	17.70	3.36	5.00	7.73	0.15	3.00	0.10	0.68	0.27	4.9
1417	20.00	9.90	8.83	5.00	10.00	2.00	1.67	0.08	1.30	0.39	5.8
1418	1.15	52.90	4.24	0.45	0.38	0.14	0.00	0.04	0.00	0.12	42.1
1419	20.00	13.20	16.70	5.00	10.00	0.02	0.00	0.19	0.64	0.11	17.2
1420	2.50	54.10	4.03	0.87	0.29	0.19	0.00	0.02	0.01	0.11	42.6
1421	20.00	30.30	3.37	5.00	3.47	0.66	1.14	0.04	0.33	0.15	24.6
1422	20.00	28.80	3.06	5.00	3.91	0.86	0.93	0.05	0.40	0.15	24.9
1423	20.00	37.70	0.86	0.88	0.18	0.07	0.00	0.02	0.02	0.10	31.3
1424	5.83	53.00	1.96	0.77	0.27	0.05	0.00	0.04	0.01	0.14	41.1
1425	2.86	57.40	0.66	0.52	0.06	0.09	0.00	0.03	0.00	0.11	41.5
1426	2.09	32.70	16.40	0.71	0.52	0.15	0.00	0.07	0.02	0.10	44.3
1427	8.97	27.40	18.80	0.77	0.70	0.10	0.00	0.08	0.02	0.10	41.3
1428	20.00	28.20	6.81	5.00	4.62	0.92	0.33	0.06	0.38	0.16	22.8
1429	11.90	38.80	4.92	3.78	1.69	0.47	0.10	0.05	0.13	0.13	28.2
1430	20.00	24.40	3.66	5.00	5.62	0.47	1.86	0.07	0.36	0.16	10.8
1431	3.57	54.30	3.05	0.34	0.09	0.00	0.00	0.01	0.00	0.10	41.0
1432	9.17	35.70	7.76	2.60	2.50	0.73	0.12	0.02	0.17	0.12	33.5
1433	20.00	25.90	6.53	5.00	3.60	1.06	0.87	0.03	0.35	0.16	16.3
1434	5.43	29.50	19.20	0.44	1.30	0.00	0.00	0.13	0.00	0.10	43.5
1435	8.75	40.90	9.87	1.70	1.49	0.33	0.00	0.06	0.08	0.12	36.6
1436	2.72	29.70	18.70	0.47	0.91	0.02	0.00	0.12	0.01	0.09	45.2
1437	4.54	49.80	5.09	0.83	0.53	0.21	0.00	0.03	0.06	0.12	37.6
1438	11.20	37.50	5.51	3.14	2.54	0.23	0.47	0.08	0.16	0.13	30.1
1439	3.46	52.10	4.24	0.62	0.70	0.04	0.00	0.03	0.02	0.09	40.8
1440	6.48	38.60	9.67	2.01	1.71	0.12	0.10	0.14	0.05	0.11	34.3
1441	20.00	26.50	5.22	5.00	2.24	1.08	1.37	0.05	0.16	0.13	16.5
1442	20.00	33.30	3.49	5.00	1.23	0.00	1.55	0.03	0.13	0.12	27.0
1443	4.81	49.60	4.80	1.06	0.47	0.02	0.14	0.03	0.03	0.12	40.8
1444	5.93	50.80	3.27	1.15	0.69	0.26	0.00	0.04	0.03	0.11	38.8
1445	14.60	33.00	7.09	4.43	3.62	0.80	0.09	0.04	0.29	0.14	29.6
1446	8.47	40.30	7.47	2.25	1.55	0.60	0.00	0.02	0.13	0.41	36.7
1447	20.00	27.10	2.22	5.00	3.75	1.06	1.20	0.06	0.38	0.18	17.2
1448	9.70	40.60	4.56	2.50	2.01	0.49	0.15	0.04	0.17	0.13	32.9

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1393	5	10	40	60	3	3	3	2	3	275900	4934900	18
1394	5	42	970	150	22	9	22	22	25	276600	4934600	18
1395	5	16	100	110	7	3	3	3	3	277350	4935600	18
1396	5	12	390	140	8	3	3	3	3	278800	4936150	18
1397	10	60	460	330	18	5	7	18	3	277000	4940150	18
1398	5	10	90	150	8	3	3	6	3	276050	4939550	18
1399	5	39	470	460	14	10	11	14	3	276500	4940500	18
1400	5	82	500	780	36	12	41	24	10	276700	4941150	18
1401	5	70	420	490	65	8	31	12	10	290000	4950600	18
1402	5	54	240	180	6	5	9	22	3	287600	4957600	18
1403	5	17	180	390	6	3	3	6	3	286750	4957400	18
1404	5	91	350	350	10	11	26	17	15	286000	4957000	18
1405	5	22	470	230	23	3	6	7	3	287350	4959300	18
1406	22	58	310	240	26	7	12	14	7	287050	4959900	18
1407	5	48	510	240	8	11	21	10	9	284600	4964150	18
1408	5	44	430	200	65	10	26	10	10	282700	4964300	18
1409	5	99	330	310	69	18	54	16	24	281500	4963950	18
1410	5	41	230	260	32	9	5	8	7	282450	4963400	18
1411	16	72	390	360	35	7	5	8	3	282950	4962100	18
1412	5	36	400	440	42	10	20	16	10	282550	4962900	18
1413	5	48	590	250	16	9	21	14	9	283150	4963850	18
1414	5	52	580	230	36	9	31	15	14	283400	4963150	18
1415	5	16	470	120	7	3	6	4	3	283900	4962600	18
1416	5	64	320	130	22	14	63	6	11	280150	4963200	18
1417	25	7200	70	260	40	21	220	40	86	275550	4939550	18
1418	5	50	230	310	18	3	3	4	3	275500	4940150	18
1419	5	92	110	110	17	54	1220	20	260	276050	4941050	18
1420	5	9	330	150	6	3	5	7	3	276400	4941800	18
1421	5	34	540	140	26	11	34	24	22	276450	4942800	18
1422	5	132	620	140	37	11	44	38	24	276100	4943650	18
1423	5	6	80	100	5	3	3	2	3	275500	4943600	18
1424	5	6	80	80	6	3	3	2	3	270400	4943250	18
1425	5	6	90	100	6	3	3	2	3	273900	4942350	18
1426	5	14	70	80	6	3	3	4	3	271200	4940350	18
1427	5	10	40	50	5	3	3	2	3	270800	4938650	18
1428	5	54	380	300	29	6	15	24	9	274200	4954100	18
1429	5	56	430	250	20	3	12	13	3	266350	4952450	18
1430	5	94	310	190	20	10	18	8	7	267050	4957950	18
1431	5	6	140	100	5	3	3	2	3	265850	4959300	18
1432	5	46	540	300	5	3	15	18	9	266800	4958500	18
1433	5	95	570	790	71	11	20	33	13	266800	4948800	18
1434	5	18	340	80	6	3	3	2	3	722870	4939280	17
1435	5	21	390	260	6	3	6	11	3	723510	4939550	17
1436	5	18	70	70	6	3	3	3	3	724430	4938460	17
1437	5	14	110	170	6	3	3	6	3	725550	4938220	17
1438	5	31	490	310	12	5	8	10	6	724130	4939100	17
1439	5	11	450	100	5	3	3	4	3	723670	4940260	17
1440	5	22	130	190	11	3	6	8	3	723400	4941590	17
1441	5	42	810	3700	34	3	16	16	5	724190	4942150	17
1442	5	62	650	120	8	3	10	6	3	725920	4941900	17
1443	5	12	440	140	5	3	3	4	3	724930	4942410	17
1444	5	14	200	650	6	3	3	7	3	725480	4942850	17
1445	13	102	500	180	14	3	13	40	3	726370	4942470	17
1446	5	52	640	230	5	3	6	20	3	727080	4941790	17
1447	5	64	290	470	10	6	39	21	10	735380	4943500	17
1448	10	58	730	290	5	3	11	25	5	734790	4944090	17

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1449	0.93	59.00	0.77	0.37	0.26	0.00	0.00	0.02	0.00	0.10	43.1
1450	3.00	55.70	0.84	0.74	0.42	0.09	0.00	0.02	0.02	0.10	40.7
1451	20.00	24.10	5.31	5.00	3.75	1.27	1.20	0.04	0.38	0.18	10.4
1452	8.68	40.10	5.57	2.59	2.04	0.67	0.17	0.03	0.20	0.11	33.8
1453	6.36	45.50	5.11	1.86	0.88	0.26	0.07	0.02	0.07	0.11	39.2
1454	13.40	36.20	6.16	3.37	2.08	0.37	0.35	0.03	0.19	0.14	31.1
1455	2.81	44.10	8.21	0.71	0.60	0.17	0.00	0.03	0.02	0.09	41.8
1456	12.10	38.60	5.88	3.23	1.43	0.12	0.00	0.03	0.12	0.11	30.4
1457	4.08	47.80	5.19	1.04	0.42	0.14	0.00	0.02	0.03	0.12	41.0
1458	5.96	47.40	4.39	1.72	0.99	0.44	0.00	0.05	0.04	0.11	38.5
1459	14.20	33.00	2.80	5.00	3.12	0.48	0.52	0.05	0.23	0.17	21.0
1460	3.12	50.70	4.61	0.87	0.71	0.26	0.00	0.03	0.03	0.11	40.9
1461	5.28	28.80	17.80	1.46	1.71	0.02	0.00	0.18	0.05	0.11	43.7
1462	8.24	43.30	3.96	2.19	1.71	0.25	0.11	0.03	0.11	0.12	36.7
1463	6.83	43.70	5.26	1.86	1.36	0.29	0.03	0.02	0.10	0.12	35.8
1464	20.00	31.30	4.49	5.00	4.02	0.60	0.28	0.05	0.29	0.16	23.1
1465	20.00	36.60	3.10	1.10	0.63	0.17	0.00	0.03	0.04	0.13	28.4
1466	10.20	50.20	1.71	0.59	0.20	0.02	0.00	0.03	0.00	0.12	37.4
1467	20.00	24.00	2.67	5.00	2.57	2.00	0.68	0.11	0.60	0.27	5.4
1468	20.00	24.10	4.32	5.00	5.83	0.50	1.90	0.09	0.51	0.20	8.5
1469	20.00	27.50	7.09	5.00	4.12	0.49	0.94	0.06	0.35	0.19	18.6
1470	16.20	32.60	5.57	5.00	2.80	0.28	0.83	0.06	0.27	0.18	23.0
1471	4.47	46.30	5.20	1.07	0.61	0.00	0.17	0.02	0.07	0.11	40.7
1472	13.50	31.90	7.89	4.37	3.36	1.17	0.35	0.03	0.34	0.14	30.2
1473	13.60	43.30	2.73	1.12	0.46	0.02	0.02	0.02	0.04	0.11	32.8
1474	7.37	40.90	7.80	1.77	1.03	0.76	0.00	0.02	0.08	0.11	38.2
1475	7.98	50.60	2.00	0.47	0.16	0.01	0.00	0.03	0.00	0.10	39.1
1476	20.00	26.40	3.16	5.00	3.85	0.89	0.61	0.09	0.25	0.18	16.7
1477	10.40	46.10	1.86	0.92	0.52	0.15	0.00	0.04	0.01	0.10	33.6
1478	20.00	24.10	3.97	5.00	3.91	0.42	2.36	0.09	0.48	0.22	8.3
1479	20.00	24.00	4.69	5.00	5.39	0.60	1.57	0.07	0.42	0.24	7.4
1480	20.00	29.40	3.48	5.00	2.14	0.14	1.78	0.05	0.21	0.17	23.4
1481	20.00	19.00	4.12	5.00	4.09	1.06	3.00	0.04	0.33	0.18	4.9
1482	9.02	45.50	4.14	2.50	0.92	0.21	0.28	0.03	0.08	0.15	41.3
1483	20.00	27.20	3.14	5.00	1.15	1.82	0.84	0.04	0.06	0.11	21.3
1484	12.20	40.20	4.40	3.04	1.71	0.60	0.25	0.03	0.11	0.11	32.7
1485	20.00	30.60	4.44	5.00	2.29	0.35	0.84	0.05	0.17	0.14	23.1
1486	20.00	30.40	2.74	5.00	2.14	0.70	0.67	0.06	0.21	0.15	21.8
1487	6.40	47.20	4.59	1.59	1.08	0.35	0.00	0.03	0.05	0.11	40.0
1488	11.00	39.90	4.62	2.79	1.91	0.53	0.18	0.03	0.12	0.12	32.6
1489	20.00	24.10	3.67	5.00	5.93	0.14	2.42	0.12	0.45	0.24	9.4
1490	20.00	24.50	2.70	5.00	2.58	1.10	0.44	0.04	0.20	0.13	12.8
1491	8.23	45.40	5.74	1.73	0.62	0.43	0.00	0.02	0.04	0.11	41.4
1492	4.07	51.60	4.22	0.84	0.33	0.13	0.00	0.01	0.02	0.12	41.8
1493	8.80	42.40	6.43	2.18	1.38	0.62	0.00	0.03	0.09	0.12	35.5
1494	3.78	51.70	3.98	0.99	0.37	0.09	0.00	0.01	0.04	0.11	41.0
1495	3.81	49.50	4.69	1.01	0.40	0.10	0.00	0.01	0.03	0.12	41.7
1496	3.57	48.50	5.80	0.92	0.47	0.30	0.00	0.01	0.03	0.10	41.4
1497	5.03	46.60	4.63	0.98	0.95	0.37	0.00	0.03	0.02	0.10	39.0
1498	16.50	35.50	2.94	3.28	1.51	0.43	0.36	0.05	0.15	0.13	26.0
1499	2.61	51.80	4.49	0.63	0.25	0.09	0.00	0.02	0.01	0.11	43.8
1500	0.18	43.40	10.00	0.11	0.04	0.00	0.00	0.01	0.00	0.08	45.3
1501	0.50	53.20	6.11	0.17	0.05	0.02	0.00	0.01	0.00	0.09	43.7
1502	1.68	29.10	19.70	0.79	1.57	0.06	0.00	0.10	0.03	0.10	45.2
1503	2.76	28.90	20.20	0.43	0.90	0.01	0.00	0.07	0.02	0.09	44.5
1504	0.19	29.40	20.50	0.12	0.41	0.00	0.00	0.03	0.00	0.08	46.7

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1449	5	13	140	100	6	3	3	2	3	734600	4944990	17
1450	5	18	90	170	6	3	5	6	3	734830	4941840	17
1451	5	51	320	310	16	3	6	20	5	732880	4944660	17
1452	5	45	670	460	5	3	14	22	3	732460	4941000	17
1453	5	34	790	350	10	3	6	8	3	731590	4940570	17
1454	5	48	650	310	50	3	12	18	6	730690	4940310	17
1455	5	14	290	110	5	3	3	2	3	268500	4969000	18
1456	5	40	590	550	11	3	7	6	3	267900	4968950	18
1457	5	96	660	350	20	3	6	6	5	267550	4968150	18
1458	5	16	590	140	12	3	3	29	3	267850	4967400	18
1459	5	28	180	240	38	24	28	36	25	268100	4965550	18
1460	5	12	420	430	10	3	3	8	3	267400	4965200	18
1461	5	12	50	100	8	3	3	4	3	271100	4961550	18
1462	5	42	730	280	8	3	5	14	3	727810	4942180	17
1463	5	41	780	380	18	3	7	12	3	727820	4943220	17
1464	5	72	520	280	18	7	16	25	10	727520	4944030	17
1465	5	16	420	3660	7	3	3	7	3	726130	4943830	17
1466	5	18	100	190	10	3	3	4	3	725590	4943800	17
1467	5	38	210	700	32	5	39	26	8	724750	4943630	17
1468	5	128	270	270	7	15	34	19	15	727330	4944860	17
1469	5	70	530	140	8	8	15	30	6	727320	4945810	17
1470	5	24	570	110	30	7	13	11	7	727110	4947140	17
1471	5	8	590	100	8	3	3	5	3	727150	4948400	17
1472	5	53	610	370	8	8	9	48	9	727450	4949300	17
1473	5	11	160	90	12	3	3	4	3	727630	4950230	17
1474	5	32	310	380	10	3	3	22	3	727910	4951370	17
1475	5	14	200	1920	10	3	3	4	3	728120	4952660	17
1476	11	72	570	320	9	3	3	13	3	727830	4953500	17
1477	5	44	110	130	12	3	3	12	3	728100	4954760	17
1478	5	84	300	330	14	3	6	21	5	728180	4958700	17
1479	5	88	380	260	34	13	35	21	17	728990	4963340	17
1480	5	15	190	100	10	3	14	4	5	728770	4964310	17
1481	5	74	380	900	12	9	17	16	15	735040	4953250	17
1482	5	26	500	170	10	3	3	8	3	736120	4953650	17
1483	5	30	570	1240	8	3	3	10	3	735150	4954250	17
1484	5	42	550	310	12	3	6	15	3	734560	4953770	17
1485	11	127	520	270	8	3	8	10	3	734060	4953190	17
1486	5	40	540	510	10	3	9	10	3	732650	4953650	17
1487	5	27	690	290	9	3	3	11	3	732040	4953220	17
1488	5	34	480	210	7	3	3	20	3	731880	4954470	17
1489	5	70	510	80	13	16	22	9	22	731400	4954940	17
1490	5	51	260	300	14	3	8	33	3	730790	4954370	17
1491	5	25	540	270	9	3	3	12	3	730830	4953200	17
1492	5	30	750	280	8	3	3	13	3	732040	4945800	17
1493	5	44	580	690	13	3	3	23	3	731310	4946000	17
1494	5	32	690	330	9	3	3	6	3	731420	4947030	17
1495	5	22	650	340	8	3	3	7	3	730650	4950070	17
1496	5	26	560	420	8	3	3	14	3	730500	4951570	17
1497	5	92	760	260	7	3	3	34	3	730930	4952500	17
1498	5	45	420	190	6	3	6	8	3	733870	4950980	17
1499	5	36	530	150	8	3	3	4	3	733100	4950980	17
1500	5	11	140	90	6	3	3	3	3	391910	4986200	18
1501	5	13	300	100	8	3	3	2	3	391400	4986070	18
1502	5	16	70	80	10	3	3	6	3	389670	4986670	18
1503	5	32	60	70	7	3	3	8	3	389210	4987160	18
1504	5	12	390	50	5	3	3	2	3	388800	4987930	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1505	1.25	50.80	9.22	0.42	0.18	0.18	0.00	0.02	0.01	0.10	42.6
1506	0.59	35.20	15.80	0.25	0.43	0.07	0.00	0.03	0.01	0.09	46.9
1507	5.66	26.70	18.80	1.49	3.71	0.25	0.00	0.13	0.09	0.10	40.8
1508	14.10	27.20	19.40	0.58	0.73	0.05	0.00	0.05	0.03	0.11	34.1
1509	20.00	24.20	18.10	5.00	0.95	1.27	0.14	0.03	0.17	0.11	22.8
1510	20.00	24.10	14.20	0.49	0.17	0.00	0.00	0.03	0.00	0.11	11.4
1511	12.40	46.50	4.85	0.84	0.10	0.05	0.00	0.02	0.03	0.09	40.4
1512	4.88	48.40	7.15	0.46	0.08	0.10	0.00	0.03	0.00	0.10	44.7
1513	4.55	51.90	6.09	0.47	0.07	0.06	0.00	0.02	0.00	0.11	43.8
1514	1.18	30.50	18.70	0.21	0.18	0.01	0.00	0.05	0.00	0.09	47.5
1515	1.69	47.80	8.92	0.28	0.34	0.08	0.00	0.04	0.00	0.10	44.3
1516	20.00	32.60	13.40	0.68	0.27	0.05	0.00	0.03	0.03	0.11	29.2
1517	12.90	27.90	20.50	0.12	0.00	0.00	0.00	0.02	0.00	0.09	38.6
1518	2.96	28.80	20.40	0.56	0.22	0.00	0.00	0.04	0.02	0.11	45.0
1519	4.89	48.80	6.21	0.67	0.23	0.24	0.00	0.02	0.01	0.10	37.1
1520	1.07	55.40	6.15	0.17	0.00	0.00	0.00	0.01	0.00	0.10	43.6
1521	1.07	48.20	7.82	0.25	0.09	0.08	0.00	0.01	0.00	0.09	43.9
1522	0.31	48.80	8.16	0.13	0.00	0.00	0.00	0.01	0.00	0.10	44.8
1523	0.60	40.00	13.10	0.18	0.28	0.04	0.00	0.03	0.00	0.11	43.8
1524	0.74	52.30	6.34	0.29	0.10	0.04	0.00	0.01	0.01	0.09	43.6
1525A	0.58	43.70	11.00	0.14	0.04	0.03	0.00	0.02	0.00	0.07	45.0
1525B	0.22	25.30	15.90	0.20	1.85	0.00	3.00	0.08	0.00	0.20	23.5
1526	1.14	53.50	4.27	0.40	0.20	0.20	0.00	0.01	0.00	0.09	42.4
1527	1.59	49.60	5.85	0.35	0.22	0.05	0.00	0.01	0.02	0.10	43.7
1528	1.99	47.30	7.99	0.36	0.09	0.10	0.00	0.01	0.00	0.09	43.1
1529	4.46	46.80	5.79	0.65	0.51	0.00	0.00	0.11	0.01	0.11	42.2
1530	0.53	54.40	4.30	0.23	0.07	0.01	0.00	0.01	0.00	0.09	43.7
1531	0.65	30.20	19.60	0.19	0.22	0.00	0.00	0.04	0.00	0.08	47.2
1532	0.40	29.60	19.80	0.19	0.39	0.00	0.00	0.04	0.00	0.08	46.8
1533	2.73	34.70	16.40	0.34	0.16	0.00	0.00	0.03	0.01	0.10	42.7
1534	0.19	42.00	13.10	0.13	0.05	0.00	0.00	0.02	0.00	0.08	47.3
1535	15.70	28.50	16.90	0.31	0.86	0.06	0.00	0.10	0.02	0.10	28.5
1536	2.12	32.50	17.80	0.12	0.60	0.00	0.00	0.09	0.00	0.10	45.8
1537	1.48	47.50	10.30	0.21	0.32	0.05	0.00	0.04	0.00	0.10	43.6
1538	0.12	31.30	18.80	0.21	0.15	0.04	0.00	0.06	0.00	0.10	46.4
1539	0.21	52.60	7.90	0.13	0.03	0.00	0.00	0.02	0.00	0.10	43.0
1540	4.21	30.70	18.30	0.20	0.27	0.04	0.00	0.16	0.00	0.11	43.5
1541	4.72	49.10	7.38	0.18	0.09	0.00	0.00	0.10	0.00	0.12	40.4
1542	5.74	49.40	5.31	0.21	0.08	0.06	0.00	0.02	0.00	0.11	38.5
1543	1.48	53.10	4.89	0.35	0.17	0.01	0.00	0.01	0.00	0.11	44.0
1544	1.14	29.80	18.70	0.39	0.33	0.05	0.00	0.05	0.02	0.09	52.2
1545	0.00	49.40	3.42	0.51	0.15	0.18	0.00	0.01	0.01	0.07	44.3
1546	1.29	50.40	6.86	0.35	0.04	0.10	0.00	0.01	0.00	0.09	42.8
1547	2.01	28.50	19.70	1.67	0.35	0.04	0.00	0.03	0.07	0.10	45.3
1548	1.63	51.00	7.53	0.80	0.10	0.08	0.00	0.01	0.02	0.10	43.4
1549	0.18	53.70	6.42	0.28	0.00	0.00	0.00	0.02	0.00	0.09	42.9
1550	0.56	53.80	4.77	0.29	0.01	0.03	0.00	0.01	0.00	0.10	44.7
1551	20.00	24.10	9.86	0.86	0.28	0.00	0.00	0.07	0.02	0.07	16.7
1552	1.25	56.50	3.92	0.14	0.02	0.00	0.00	0.02	0.00	0.10	43.4
1553	0.35	30.40	19.50	0.20	0.25	0.01	0.00	0.05	0.01	0.09	48.6
1554	0.79	49.60	8.62	0.21	0.11	0.02	0.00	0.01	0.01	0.10	43.8
1555	1.78	45.40	9.96	0.37	0.39	0.14	0.00	0.04	0.02	0.09	42.9
1556	0.93	53.60	5.33	0.22	0.06	0.00	0.00	0.01	0.00	0.10	43.6
1557	20.00	24.10	19.40	0.45	2.33	0.02	0.00	0.07	0.02	0.12	5.4
1558	5.88	36.50	14.40	0.31	0.47	0.05	0.00	0.13	0.00	0.11	44.5
1559	18.40	25.60	22.30	0.11	0.29	0.00	0.00	0.09	0.00	0.11	38.0

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1505	5	14	110	100	7	3	3	10	3	390220	4986330	18
1506	5	20	170	100	6	3	3	2	3	391470	4986700	18
1507	5	44	50	120	18	3	3	12	3	390470	4987750	18
1508	14	51	60	120	8	3	3	8	3	389760	4988410	18
1509	5	15	90	920	5	3	5	32	5	389420	4989100	18
1510	5	8	20	40	3	3	3	4	3	388940	4989680	18
1511	5	9	460	110	8	3	3	6	3	388330	4990510	18
1512	5	13	150	110	7	3	3	5	3	388040	4991180	18
1513	5	10	190	140	7	3	3	4	3	387120	4991760	18
1514	5	16	60	80	6	3	3	4	3	387400	4989230	18
1515	5	40	150	140	7	3	3	6	3	387490	4988240	18
1516	5	17	760	240	12	3	3	16	3	388300	4988920	18
1517	5	48	130	60	6	3	3	7	3	388670	4989350	18
1518	5	14	40	80	5	3	3	5	3	385970	4993140	18
1519	5	14	700	250	10	3	6	4	3	385500	4992650	18
1520	5	18	80	120	8	3	3	2	3	384380	4992120	18
1521	5	13	280	180	6	3	3	5	3	385500	4993670	18
1522	5	12	180	140	6	3	3	2	3	385060	4994150	18
1523	5	13	70	120	9	3	3	3	3	384370	4993730	18
1524	5	25	330	180	10	3	3	4	3	384200	4995250	18
1525A	5	92	130	130	9	3	3	2	3	383660	4995910	18
1525B	5	190000	30	50	6	5	3	2	3	384170	4997270	18
1526	5	96	350	150	6	3	3	4	3	383500	4995090	18
1527	5	28	310	110	7	3	3	4	3	385210	4997020	18
1528	5	16	280	130	6	3	3	4	3	385330	4998050	18
1529	5	12	100	120	12	3	6	6	3	384790	4996610	18
1530	5	14	340	100	6	3	3	3	3	384110	4995970	18
1531	5	19	50	80	6	3	3	4	3	387210	4993160	18
1532	5	13	30	70	6	3	3	4	3	386990	4993820	18
1533	5	10	60	80	8	3	3	6	3	387270	4994320	18
1534	5	24	100	100	11	3	3	3	3	388030	4993320	18
1535	5	15	60	60	9	3	3	8	3	388750	4993390	18
1536	5	15	120	80	7	3	3	3	3	389460	4993850	18
1537	5	38	230	110	16	3	3	2	3	389960	4994600	18
1538	5	26	60	60	6	3	3	6	3	389480	4995170	18
1539	5	9	1170	100	8	3	3	11	3	388210	4992900	18
1540	5	46	60	80	6	3	3	16	3	389060	4995870	18
1541	5	12	90	100	6	3	3	8	3	390030	4996440	18
1542	5	10	150	110	8	3	3	8	3	389850	4996810	18
1543	5	10	230	150	10	3	3	4	3	389560	4997300	18
1544	5	8	70	200	6	3	3	4	3	389410	4998010	18
1545	5	15	410	180	6	3	3	6	3	388820	4998480	18
1546	5	12	260	120	6	3	3	4	3	388310	4999890	18
1547	5	13	60	60	5	3	3	4	3	388220	5000770	18
1548	5	13	250	200	7	3	3	6	3	387770	5001460	18
1549	5	9	140	90	8	3	3	3	3	390560	4997360	18
1550	5	9	160	140	8	3	3	4	3	390670	4997830	18
1551	5	34	50	40	5	3	3	11	3	390400	4998530	18
1552	5	7	120	90	7	3	3	2	3	390910	4998750	18
1553	5	8	60	80	6	3	3	3	3	391150	4999300	18
1554	5	12	280	120	7	3	3	4	3	390580	4999900	18
1555	5	18	430	260	18	3	3	6	5	390310	5000410	18
1556	5	10	510	120	8	3	3	3	3	390180	5000840	18
1557	5	48	30	50	6	6	3	18	13	389720	5001090	18
1558	5	9	70	90	7	3	3	8	3	391720	4998850	18
1559	5	34	100	70	6	3	3	9	3	391700	4999920	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1560	9.98	27.70	19.80	0.11	0.31	0.00	0.00	0.07	0.00	0.09	39.6
1561	13.00	27.60	20.20	0.15	1.09	0.00	0.00	0.15	0.00	0.20	40.1
1562	1.50	29.70	20.10	0.10	0.88	0.00	0.00	0.16	0.00	0.15	46.9
1563	0.73	54.10	6.00	0.22	0.04	0.00	0.00	0.01	0.00	0.09	43.6
1564	0.47	49.80	7.10	0.14	0.03	0.00	0.00	0.01	0.00	0.09	44.3
1565	2.18	48.90	5.78	0.65	0.27	0.28	0.00	0.01	0.04	0.09	42.0
1566	3.34	48.80	5.70	0.78	0.44	0.19	0.00	0.12	0.03	0.10	39.2
1567	5.34	29.10	18.10	0.20	0.36	0.00	0.00	0.06	0.01	0.09	42.9
1568A	8.00	28.50	20.10	0.08	0.15	0.00	0.00	0.08	0.00	0.10	40.1
1568B	20.00	17.50	13.70	0.16	0.89	0.00	0.00	0.05	0.00	0.09	3.4
1569	0.53	44.60	9.82	0.22	0.20	0.08	0.00	0.04	0.00	0.09	44.6
1570	1.45	49.40	6.92	0.37	0.02	0.20	0.00	0.03	0.00	0.10	43.4
1571	1.26	53.70	4.68	0.32	0.09	0.17	0.00	0.01	0.00	0.11	42.9
1572	20.00	19.00	24.50	0.21	0.65	0.00	0.00	0.07	0.01	0.12	7.8
1573	20.00	28.20	20.10	0.71	0.53	0.05	0.00	0.04	0.04	0.10	37.5
1574	20.00	32.50	14.80	0.31	0.13	0.00	0.00	0.01	0.00	0.09	30.1
1575	0.91	54.90	4.60	0.09	0.00	0.00	0.00	0.01	0.00	0.07	44.6
1576	0.82	43.90	9.81	0.27	0.09	0.06	0.00	0.01	0.01	0.09	44.8
1577	1.37	30.20	19.80	0.19	0.22	0.01	0.00	0.04	0.00	0.09	46.9
1578	0.77	52.30	7.74	0.16	0.00	0.00	0.00	0.01	0.00	0.08	43.7
1579	1.28	29.70	19.80	0.21	0.27	0.01	0.00	0.04	0.02	0.09	50.1
1580	0.35	29.80	20.00	0.16	0.19	0.00	0.00	0.03	0.00	0.09	47.7
1581	3.87	49.50	7.50	0.59	0.34	0.22	0.00	0.04	0.04	0.08	41.1
1582	0.57	51.30	7.07	0.21	0.06	0.04	0.00	0.01	0.00	0.10	44.1
1583	0.33	57.10	3.16	0.16	0.03	0.00	0.00	0.03	0.00	0.10	43.3
1584	3.38	53.70	2.70	0.52	0.24	0.00	0.00	0.02	0.00	0.11	42.6
1585	2.38	29.30	19.10	0.60	0.72	0.32	0.00	0.09	0.05	0.10	44.2
1586	0.93	57.70	4.07	0.31	0.22	0.00	0.00	0.03	0.01	0.10	44.3
1587	0.56	52.70	4.79	0.24	0.04	0.02	0.00	0.01	0.00	0.10	43.1
1588	0.04	51.50	6.48	0.14	0.00	0.00	0.00	0.01	0.00	0.09	44.4
1589	0.68	53.40	4.58	0.23	0.13	0.03	0.00	0.01	0.00	0.10	43.4
1590	1.85	51.80	5.50	0.31	0.13	0.08	0.00	0.02	0.01	0.10	41.9
1591	0.58	50.40	6.25	0.20	0.15	0.04	0.00	0.01	0.00	0.10	44.2
1592	0.52	50.50	6.49	0.22	0.10	0.07	0.00	0.01	0.00	0.10	43.8
1593	1.24	56.20	2.92	0.28	0.08	0.00	0.00	0.02	0.00	0.10	43.3
1594	0.28	53.80	4.26	0.15	0.09	0.00	0.00	0.02	0.00	0.11	44.1
1595	0.95	41.40	10.90	0.36	0.26	0.04	0.00	0.11	0.01	0.11	45.3
1596	0.53	40.70	12.10	0.22	0.10	0.04	0.00	0.02	0.00	0.10	45.4
1597	11.80	29.80	17.00	0.35	0.29	0.00	0.00	0.04	0.02	0.10	33.4
1598	1.22	42.70	11.20	0.21	0.19	0.02	0.00	0.03	0.00	0.10	46.8
1599	6.06	43.10	7.48	0.43	1.04	0.20	0.00	0.07	0.01	0.10	39.2
1600	1.63	54.20	5.14	0.32	0.29	0.00	0.00	0.03	0.00	0.10	42.5
1601	3.34	48.30	6.74	0.16	0.23	0.03	0.00	0.09	0.00	0.10	41.4
1602	20.00	24.00	13.60	5.00	6.09	2.00	1.26	0.07	0.60	0.13	19.8
1603	20.00	24.00	19.60	1.02	1.81	0.05	0.00	0.09	0.02	0.15	2.8
1604	3.95	50.30	6.29	0.42	0.28	0.05	0.00	0.03	0.00	0.10	43.8
1605	20.00	25.30	19.20	0.68	0.77	0.00	0.00	0.10	0.06	0.14	20.2
1606	6.98	49.90	5.44	0.73	0.66	0.06	0.00	0.04	0.04	0.12	40.6
1607	1.87	56.30	3.91	0.23	0.16	0.00	0.00	0.02	0.00	0.10	43.7
1608	1.20	56.60	2.09	0.41	0.23	0.09	0.00	0.02	0.01	0.10	42.5
1609	2.72	29.40	19.50	0.12	0.12	0.00	0.00	0.05	0.00	0.07	45.4
1610	1.12	51.30	6.72	0.29	0.46	0.13	0.00	0.03	0.00	0.10	43.2
1611	7.20	31.10	15.00	1.53	1.66	0.85	0.00	0.12	0.15	0.21	33.5
1612	1.85	53.50	3.17	0.38	0.19	0.10	0.00	0.04	0.01	0.11	43.8
1613	8.64	41.90	6.64	0.37	1.13	0.06	0.00	0.06	0.02	0.11	33.6
1614	1.12	53.50	4.32	0.19	0.06	0.00	0.00	0.02	0.00	0.10	46.7

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1560	5	12	60	160	6	3	3	12	3	392230	5000390	18
1561	5	23	120	140	6	3	3	8	3	392780	4999710	18
1562	5	13	50	70	6	3	3	3	3	391670	5001020	18
1563	5	10	410	170	7	3	3	3	3	390900	5001630	18
1564	5	22	400	160	6	3	8	4	3	390580	5002230	18
1565	10	1000	310	200	10	3	36	10	7	389910	5002820	18
1566	5	37	600	250	8	3	6	19	5	389600	5003330	18
1567	5	180	140	40	8	3	3	5	3	392830	5000760	18
1568A	5	12	80	60	6	3	3	4	5	393180	5001060	18
1568B	5	13	50	430	3	3	3	9	3	393180	5001060	18
1569	5	11	150	90	6	3	3	6	5	393600	5000570	18
1570	5	12	160	130	7	3	3	15	3	393640	5001480	18
1571	5	13	250	150	8	3	8	14	3	394180	5001260	18
1572	5	38	30	60	3	3	3	16	3	394920	5001310	18
1573	5	70	200	60	7	3	3	18	3	392660	5001660	18
1574	5	15	130	90	6	3	3	6	3	392340	5002030	18
1575	5	12	210	80	6	3	3	2	3	391970	5002500	18
1576	5	11	150	90	6	3	3	4	3	391490	5003100	18
1577	5	6	30	50	6	3	3	5	3	391120	5003600	18
1578	5	3	220	80	7	3	3	4	3	392190	5002570	18
1579	5	6	50	40	6	3	3	3	5	392000	5003250	18
1580	5	6	50	50	6	3	3	3	3	392130	5003950	18
1581	5	30	172	90	8	3	6	12	3	391650	5004040	18
1582	5	8	280	90	6	3	3	4	3	392120	5004060	18
1583	5	3	530	110	7	5	3	2	3	396940	5000350	18
1584	5	6	130	100	8	3	3	6	3	396290	4999790	18
1585	5	3	50	120	6	3	5	6	3	395430	5000680	18
1586	5	3	140	80	9	3	3	2	3	395770	5000340	18
1587	5	6	380	130	8	3	3	4	3	395480	4998870	18
1588	5	3	130	90	8	5	3	3	3	395720	4998220	18
1589	5	8	570	180	7	3	5	4	3	395300	4998370	18
1590	5	5	130	130	16	3	3	6	3	395100	4997900	18
1591	5	3	200	70	7	3	3	2	3	394630	4997610	18
1592	5	3	210	90	7	3	3	4	3	394260	4997100	18
1593	5	3	210	70	9	3	5	2	3	393990	4997870	18
1594	5	3	220	122	7	3	3	4	3	393760	4998100	18
1595	5	3	70	90	8	3	3	4	3	393400	4997400	18
1596	5	10	90	110	9	3	3	4	3	392990	4997310	18
1597	5	16	50	60	8	3	3	6	3	393450	4996500	18
1598	5	5	90	80	6	3	3	4	3	392710	4996000	18
1599	5	36	130	120	14	3	3	5	3	392190	4995830	18
1600	5	7	200	70	10	3	3	2	3	391700	4995810	18
1601	5	6	110	140	8	3	3	8	3	391650	4992850	18
1602	5	16	340	220	5	12	555	24	94	391080	4993520	18
1603	5	22	40	40	16	3	3	18	3	391820	4992430	18
1604	5	5	1530	100	7	3	3	5	3	391500	4991800	18
1605	5	8	80	40	6	3	8	6	3	390190	4992460	18
1606	5	22	420	120	10	3	3	6	3	391600	4990850	18
1607	5	3	410	80	7	3	3	3	3	391000	4991130	18
1608	5	4	160	110	8	3	3	2	3	390280	4990600	18
1609	5	8	60	60	6	3	3	6	3	390310	4990140	18
1610	5	5	1220	120	12	3	3	7	3	392190	4992810	18
1611	5	102	80	120	11	12	10	11	10	392390	4993950	18
1612	17	160	1080	120	12	3	3	4	3	392800	4993460	18
1613	5	30	140	80	12	3	6	6	3	393320	4993070	18
1614	5	5	220	100	7	3	3	3	3	393790	4994540	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1615	1.61	52.00	4.90	0.32	0.23	0.10	0.00	0.05	0.01	0.10	42.9
1616	4.57	49.10	5.92	0.20	0.09	0.01	0.00	0.03	0.00	0.10	39.7
1617	3.52	48.10	5.35	0.81	0.17	0.39	0.00	0.01	0.05	0.11	42.8
1618	0.82	29.80	19.60	0.23	0.21	0.08	0.00	0.03	0.02	0.10	46.0
1619	4.88	31.10	17.90	0.41	0.89	0.19	0.00	0.07	0.02	0.10	35.9
1620	1.70	48.70	8.85	0.24	0.14	0.07	0.00	0.01	0.01	0.10	43.0
1621	1.89	49.00	6.67	0.35	0.14	0.11	0.02	0.01	0.01	0.09	42.7
1622	0.75	49.00	6.39	0.25	0.08	0.04	0.00	0.01	0.00	0.09	44.2
1623	0.39	37.20	14.40	0.14	0.09	0.00	0.00	0.03	0.00	0.09	46.3
1624	2.51	44.40	9.68	0.32	0.15	0.15	0.00	0.04	0.00	0.12	40.7
1625	0.60	52.80	6.04	0.19	0.11	0.03	0.00	0.01	0.00	0.09	43.8
1626	0.39	51.80	5.96	0.19	0.01	0.02	0.00	0.02	0.00	0.09	44.7
1627	0.20	29.90	19.90	0.19	0.18	0.02	0.00	0.04	0.01	0.09	46.7
1628	0.78	29.90	19.10	0.22	0.15	0.00	0.00	0.04	0.00	0.09	46.3
1629	3.31	47.30	8.37	0.70	0.44	0.33	0.00	0.03	0.03	0.10	40.9
1630	0.87	29.70	19.80	0.23	0.19	0.00	0.00	0.05	0.01	0.08	45.6
1631	2.26	35.30	16.40	0.50	0.46	0.06	0.00	0.05	0.05	0.09	43.3
1632	3.02	48.90	8.65	0.37	0.08	0.09	0.00	0.01	0.01	0.12	39.3
1633	2.68	52.60	4.40	0.31	0.05	0.04	0.00	0.01	0.00	0.10	42.8
1634	5.80	28.10	19.30	0.96	0.89	0.61	0.00	0.07	0.06	0.09	41.7
1635	1.98	51.80	3.80	0.49	0.55	0.25	0.00	0.02	0.01	0.11	42.2
1636	4.01	53.00	0.83	1.05	0.87	0.19	0.04	0.01	0.03	0.11	37.4
1637	2.00	56.00	3.31	0.45	0.05	0.05	0.00	0.01	0.01	0.10	42.5
1638	20.00	24.00	21.30	0.44	0.39	0.00	0.00	0.05	0.02	0.08	3.0
1639	20.00	5.38	10.50	5.00	5.99	2.00	0.47	0.14	0.64	0.12	2.3
1640	6.69	28.10	19.70	0.80	0.48	0.24	0.00	0.04	0.05	0.09	48.2
1641	5.08	46.40	10.20	0.65	0.23	0.15	0.00	0.02	0.02	0.10	43.3
1642	2.95	53.30	5.92	0.44	0.18	0.10	0.00	0.02	0.01	0.09	43.2
1643	2.21	28.90	20.00	0.58	0.43	0.28	0.00	0.06	0.03	0.09	45.1
1644	0.57	48.20	10.10	0.23	0.02	0.04	0.00	0.01	0.00	0.09	44.0
1645	16.90	33.60	11.00	1.32	0.63	0.70	0.00	0.07	0.01	0.09	35.3
1646	0.73	52.70	6.60	0.25	0.04	0.07	0.00	0.01	0.00	0.10	41.3
1647	0.53	44.40	10.40	0.20	0.06	0.03	0.00	0.02	0.00	0.09	43.6
1648	1.88	42.60	10.80	0.56	0.70	0.24	0.00	0.18	0.06	0.09	42.9
1649	1.32	49.60	7.58	0.30	0.07	0.12	0.00	0.03	0.00	0.10	42.8
1650	1.41	29.40	19.70	0.30	0.27	0.01	0.00	0.04	0.01	0.09	45.3
1651	3.42	41.60	13.10	0.27	0.08	0.10	0.00	0.10	0.00	0.11	39.8
1652	0.54	53.60	6.36	0.16	0.02	0.00	0.00	0.01	0.00	0.10	41.2
1653	11.50	44.40	5.59	0.79	0.36	0.00	0.00	0.17	0.01	0.12	36.4
1654	3.14	50.90	6.05	0.46	0.11	0.14	0.00	0.02	0.01	0.11	42.7
1655	1.56	29.60	20.00	0.38	0.48	0.03	0.00	0.05	0.03	0.07	45.6
1656	0.29	29.80	20.50	0.12	0.27	0.00	0.00	0.04	0.00	0.08	45.5
1657	1.31	48.70	10.80	0.32	0.08	0.09	0.00	0.01	0.01	0.10	41.9
1658	0.06	29.80	20.10	0.13	0.17	0.00	0.00	0.04	0.00	0.08	45.2
1659	6.87	33.40	19.70	0.45	0.42	0.26	0.00	0.04	0.02	0.09	30.7
1660	1.83	50.70	8.07	0.24	0.20	0.01	0.00	0.02	0.00	0.09	41.9
1661	1.64	54.40	5.70	0.18	0.12	0.03	0.00	0.03	0.00	0.09	42.9
1662	0.82	55.10	5.34	0.16	0.08	0.00	0.00	0.02	0.00	0.09	41.8
1663	1.14	30.00	20.20	0.26	0.40	0.00	0.00	0.03	0.03	0.08	44.3
1664	2.72	46.60	11.60	0.36	0.18	0.00	0.00	0.04	0.02	0.11	41.9
1665	20.00	25.00	18.90	0.13	0.00	0.00	0.00	0.04	0.00	0.11	10.6
1666	5.26	28.30	20.60	0.49	0.25	0.00	0.00	0.05	0.02	0.09	45.3
1667	1.19	29.30	20.10	0.28	0.50	0.02	0.00	0.06	0.01	0.10	51.5
1668	1.18	49.50	10.60	0.23	0.06	0.02	0.00	0.01	0.00	0.09	42.1
1669	1.12	52.10	7.73	0.24	0.03	0.00	0.00	0.01	0.00	0.09	43.6
1670	0.09	43.80	7.54	0.35	0.18	0.08	0.00	0.02	0.01	0.10	37.7

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1615	5	32	140	90	8	3	3	6	3	393400	4994890	18
1616	5	12	120	170	8	3	3	6	3	392900	4995550	18
1617	5	20	230	110	8	3	6	6	3	394380	4993940	18
1618	5	9	30	60	7	3	3	4	3	394670	4994600	18
1619	5	32	90	120	8	3	3	4	3	394640	4995160	18
1620	5	9	200	110	8	3	3	5	3	394800	4995800	18
1621	5	10	390	180	8	3	3	6	3	395000	4996400	18
1622	5	10	180	110	8	3	3	4	3	395080	4997270	18
1623	5	11	80	70	8	3	3	3	3	396940	4998950	18
1624	5	16	110	100	8	3	3	8	3	397250	4998450	18
1625	5	10	220	100	7	3	3	2	3	397530	5000050	18
1626	5	8	130	90	8	3	3	3	3	397900	4999990	18
1627	5	8	40	80	9	3	3	7	3	398380	4999440	18
1628	5	12	30	60	7	3	3	3	3	396420	4995750	18
1629	5	16	400	150	10	3	3	3	3	398600	4991500	18
1630	5	35	50	60	10	3	3	4	3	402550	4994700	18
1631	5	15	170	120	12	3	3	4	5	402140	4994930	18
1632	5	12	1310	220	8	3	3	4	3	401600	4994250	18
1633	5	11	2550	190	9	3	3	9	3	401530	4993620	18
1634	12	92	70	130	16	3	5	9	3	401960	4992950	18
1635	5	10	1540	90	9	3	3	6	3	401000	4996250	18
1636	5	26	1690	190	15	3	9	5	7	400520	4992500	18
1637	5	8	2000	140	9	3	3	3	3	400310	4991810	18
1638	5	74	110	240	5	3	3	22	4	399710	4991270	18
1639	5	42	50	430	36	6	26	80	23	398330	4991020	18
1640	5	22	40	130	8	3	3	9	2	395500	4992520	18
1641	5	17	120	120	8	3	3	2	2	395140	4988730	18
1642	5	16	310	170	9	3	3	4	2	395360	4988300	18
1643	5	26	40	80	8	3	3	2	2	393160	4988800	18
1644	5	12	190	160	8	3	3	5	2	392840	4985690	18
1645	5	46	100	150	12	3	3	36	3	392410	4986650	18
1646	5	8	200	130	8	3	3	4	3	392300	4987610	18
1647	5	8	110	90	8	3	3	4	3	392100	4988000	18
1648	5	10	90	130	11	3	3	9	3	391760	4988400	18
1649	5	25	110	100	8	3	3	4	3	392500	4988400	18
1650	5	10	30	80	8	3	3	8	3	392510	4989550	18
1651	5	42	130	130	8	3	3	6	3	392960	4989150	18
1652	5	7	240	120	9	3	3	3	3	393500	4989720	18
1653	5	14	90	120	5	3	3	6	3	393630	4990410	18
1654	5	12	200	100	8	3	3	5	3	393820	4991500	18
1655	5	8	50	60	6	3	3	4	3	393960	4992010	18
1656	5	6	50	50	6	3	3	2	3	393910	4992850	18
1657	5	8	200	100	6	3	3	4	3	394070	4993570	18
1658	5	16	30	60	6	3	3	3	3	394460	4991670	18
1659	5	14	80	70	12	3	3	7	3	380320	4995960	18
1660	5	10	320	130	14	3	3	2	3	380900	4997020	18
1661	5	9	420	110	7	3	3	4	3	380510	4997360	18
1662	5	8	240	90	8	3	5	2	3	397870	4997970	18
1663	5	6	30	50	6	3	3	2	3	379420	5001100	18
1664	5	12	120	80	6	3	3	2	3	377430	5000590	18
1665	5	54	70	400	6	3	3	10	3	373200	5010180	18
1666	5	46	140	1100	6	3	6	8	3	372710	5010220	18
1667	5	13	80	80	6	3	3	4	3	374700	5011910	18
1668	5	10	390	110	6	3	3	4	3	374460	5011500	18
1669	5	10	390	110	6	3	3	2	3	374340	5010950	18
1670	5	21	140	90	6	3	3	3	3	381590	5007400	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1671A	5.74	54.40	1.77	0.25	0.05	0.00	0.00	0.02	0.00	0.10	40.2
1671B	20.00	5.87	2.11	0.16	0.12	0.01	0.00	0.03	0.00	0.09	1.7
1672	20.00	42.90	4.08	0.26	0.07	0.01	0.00	0.02	0.00	0.09	39.3
1673	3.64	30.10	18.40	0.22	0.47	0.02	0.00	0.08	0.00	0.09	47.2
1674	2.51	29.80	19.40	0.35	0.24	0.00	0.00	0.04	0.00	0.09	44.9
1675	0.00	29.80	20.60	0.13	0.17	0.00	0.00	0.03	0.01	0.09	45.4
1676	0.67	29.70	20.30	0.31	0.39	0.00	0.00	0.09	0.00	0.09	47.4
1677	0.76	50.80	10.40	0.29	0.09	0.00	0.00	0.03	0.00	0.09	43.8
1678	0.45	51.20	6.53	0.23	0.08	0.02	0.00	0.02	0.00	0.10	44.3
1679	6.58	50.00	4.18	0.82	0.18	0.26	0.00	0.03	0.03	0.11	38.4
1680	0.27	55.10	5.05	0.17	0.02	0.00	0.00	0.01	0.00	0.09	42.5
1681	9.30	42.20	6.47	1.82	0.55	0.88	0.00	0.03	0.05	0.10	36.6
1682	3.32	49.00	6.21	1.02	0.18	0.51	0.00	0.01	0.03	0.10	40.7
1683	20.00	26.00	19.30	0.28	0.46	0.01	0.00	0.04	0.01	0.11	26.1
1684	2.81	52.10	7.12	0.30	0.09	0.03	0.00	0.02	0.02	0.10	43.7
1685	0.56	29.90	19.80	0.26	0.48	0.01	0.00	0.10	0.00	0.11	47.4
1686	0.85	29.50	20.80	0.28	0.71	0.00	0.00	0.10	0.00	0.11	45.2
1687	0.00	30.10	20.30	0.16	0.08	0.00	0.00	0.05	0.00	0.42	45.1
1688	0.00	30.10	20.20	0.09	0.21	0.00	0.00	0.08	0.00	0.13	46.1
1689	0.46	41.80	13.60	0.23	0.19	0.07	0.00	0.05	0.00	0.12	44.3
1690	3.07	51.80	7.70	0.25	0.09	0.00	0.00	0.03	0.00	0.11	43.7
1691	1.21	47.90	8.74	0.16	0.09	0.00	0.00	0.02	0.00	0.10	43.2
1692	9.64	42.80	8.70	0.34	0.19	0.00	0.00	0.02	0.01	0.11	32.5
1693	4.55	52.70	4.85	0.33	0.14	0.00	0.00	0.03	0.00	0.11	40.5
1694	1.68	55.10	5.36	0.19	0.01	0.00	0.00	0.05	0.00	0.09	43.0
1695	7.53	46.10	6.18	0.09	0.12	0.00	0.00	0.05	0.00	0.10	35.7
1696	4.47	54.20	1.05	0.24	0.20	0.00	0.00	0.02	0.00	0.10	39.3
1697	1.44	57.90	1.24	0.22	0.01	0.00	0.00	0.02	0.00	0.11	41.5
1698	2.39	57.80	0.68	0.22	0.11	0.00	0.00	0.02	0.00	0.09	41.5
1699	4.63	49.50	3.40	0.71	1.04	0.21	0.01	0.07	0.03	0.13	37.3
1700	20.00	24.10	19.80	0.55	0.48	0.00	0.00	0.03	0.03	0.11	5.5
1701	20.00	38.00	11.60	0.86	0.66	0.00	0.00	0.03	0.02	0.13	31.8
1702	3.74	56.60	3.05	0.32	0.04	0.01	0.00	0.01	0.00	0.10	41.0
1703	6.91	50.40	1.95	0.16	0.00	0.00	0.00	0.01	0.00	0.09	35.8
1704	0.59	55.00	3.96	0.14	0.01	0.00	0.00	0.01	0.00	0.10	41.9
1705	0.45	50.80	4.51	0.25	0.04	0.04	0.00	0.01	0.00	0.10	43.1
1706	3.18	49.50	5.57	0.63	0.22	0.23	0.00	0.02	0.04	0.10	42.0
1707	15.50	26.40	18.70	1.00	0.49	0.23	0.00	0.05	0.08	0.15	31.2
1708	3.02	35.20	13.60	0.44	0.75	0.01	0.00	0.19	0.01	0.09	43.9
1709	6.33	28.30	20.30	0.57	0.39	0.00	0.00	0.04	0.03	0.11	40.2
1710	9.02	27.70	20.30	0.40	0.30	0.07	0.00	0.03	0.03	0.10	37.3
1711	5.37	51.60	7.41	0.23	0.07	0.00	0.00	0.02	0.00	0.10	38.1
1712	1.65	46.20	8.12	0.36	0.29	0.08	0.00	0.04	0.00	0.10	43.8
1713	1.25	53.70	4.27	0.28	0.25	0.00	0.00	0.01	0.00	0.09	42.8
1714	1.34	29.20	20.10	0.23	0.18	0.00	0.00	0.03	0.01	0.08	44.7
1715	0.61	53.50	6.86	0.23	0.08	0.04	0.00	0.02	0.00	0.09	42.5
1716	0.40	54.10	4.87	0.19	0.04	0.00	0.00	0.01	0.00	0.09	43.8
1717	4.36	51.90	3.05	0.36	0.60	0.00	0.00	0.02	0.00	0.10	38.8
1718	1.32	29.20	20.80	0.35	0.22	0.00	0.00	0.03	0.00	0.08	45.0
1719	2.53	38.50	14.60	0.21	0.16	0.03	0.00	0.05	0.00	0.10	41.4
1720	4.45	46.30	7.50	1.11	0.15	0.37	0.00	0.01	0.04	0.13	39.2
1721	0.75	47.70	8.61	0.34	0.02	0.00	0.00	0.01	0.00	0.10	43.7
1722	0.94	53.30	5.00	0.45	0.07	0.03	0.00	0.01	0.02	0.10	43.9
1723	0.97	52.10	5.19	0.26	0.11	0.02	0.00	0.01	0.00	0.10	42.0
1724	2.49	50.00	5.34	0.70	0.42	0.31	0.00	0.03	0.03	0.10	40.7
1725	0.48	52.70	4.92	0.29	0.07	0.07	0.00	0.01	0.00	0.10	41.2

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1671A	5	7	90	160	6	3	3	2	3	382000	5007950	18
1671B	5	8	10	20	3	3	3	2	3	382000	5007950	18
1672	5	10	100	120	6	3	3	3	3	381580	5005330	18
1673	5	9	110	70	6	3	3	2	3	379690	5013300	18
1674	5	10	50	70	6	3	3	5	3	380110	5013200	18
1675	5	8	50	80	6	3	3	4	3	380720	5013420	18
1676	5	10	70	80	6	3	3	2	3	381450	5013300	18
1677	5	8	250	110	6	3	3	2	3	382150	5013600	18
1678	5	12	260	110	6	3	3	4	3	382830	5014000	18
1679	5	16	90	90	6	3	5	11	3	383190	5013920	18
1680	5	12	250	110	6	3	3	2	3	383510	5013190	18
1681	5	33	500	250	5	3	3	24	3	383300	5014520	18
1682	5	14	380	240	6	3	6	8	3	383820	5014710	18
1683	5	19	40	60	8	3	3	3	3	384490	5015040	18
1684	5	10	390	100	6	3	6	3	3	383200	5015270	18
1685	5	12	60	50	8	3	5	4	3	381910	5014590	18
1686	5	240	60	40	8	3	3	6	7	382220	5015430	18
1687	5	132	100	50	6	3	3	2	6	381290	5015800	18
1688	5	86	60	40	7	3	3	2	3	380940	5016450	18
1689	5	9	150	70	6	3	3	5	3	382600	5015650	18
1690	5	9	110	110	8	3	3	2	3	384500	5012280	18
1691	5	10	230	80	6	3	3	4	3	381600	4999580	18
1692	5	30	130	60	6	3	3	11	3	381530	5000190	18
1693	5	10	110	70	6	3	3	3	3	381100	5000580	18
1694	5	127	120	170	8	3	5	2	3	380340	5001630	18
1695	5	16	80	170	18	3	3	3	3	380750	5003610	18
1696	5	15	120	190	8	3	3	3	3	381470	5003790	18
1697	5	10	110	130	6	3	3	3	3	380480	5004390	18
1698	5	10	120	150	7	3	3	4	3	381520	5004330	18
1699	5	24	230	180	14	6	6	12	6	382670	5003090	18
1700	5	38	20	70	5	3	5	6	3	383230	5002510	18
1701	5	19	110	210	5	3	3	6	3	383350	5002060	18
1702	5	10	90	140	6	3	3	2	3	382220	5001410	18
1703	5	12	80	160	5	3	3	4	3	382600	5000550	18
1704	5	10	210	160	6	3	3	2	3	384250	5002940	18
1705	5	12	290	160	5	3	3	2	3	384430	5003760	18
1706	5	26	590	220	6	3	5	6	3	383850	5004170	18
1707	5	19	40	120	5	3	9	11	3	383480	5004600	18
1708	5	10	70	120	5	3	3	3	3	382490	5005410	18
1709	5	11	30	90	5	3	5	4	3	383770	5004950	18
1710	5	10	30	100	6	3	3	4	3	383970	5005350	18
1711	5	18	90	120	6	3	3	4	3	383370	5006950	18
1712	5	15	140	160	6	3	3	5	3	384650	5004860	18
1713	5	14	460	220	6	3	3	4	3	385210	5004340	18
1714	5	20	60	100	6	3	3	4	3	385190	5003990	18
1715	5	14	360	250	6	3	3	3	3	387340	5001900	18
1716	5	12	220	170	6	3	3	2	3	385600	5002600	18
1717	5	25	100	220	10	3	5	3	3	385700	5002180	18
1718	5	10	20	100	6	3	3	3	3	386320	5001880	18
1719	5	15	40	160	8	3	3	4	3	386790	5001580	18
1720	5	16	360	320	7	3	7	6	3	387400	5001570	18
1721	5	14	280	170	5	3	3	3	3	387000	5001260	18
1722	5	12	330	280	7	3	3	4	3	386480	5000790	18
1723	5	15	430	210	6	3	3	4	3	385950	5000350	18
1724	5	76	590	220	6	5	7	11	3	388120	5002060	18
1725	5	14	290	100	6	3	3	4	3	388590	5002410	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1726	0.74	55.20	3.56	0.28	0.06	0.07	0.00	0.02	0.00	0.10	42.7
1727	0.72	52.90	4.55	0.44	0.06	0.08	0.00	0.01	0.00	0.09	41.7
1728	1.51	50.70	5.35	0.43	0.14	0.14	0.00	0.01	0.02	0.10	42.5
1729	1.05	54.60	3.56	0.35	0.10	0.12	0.00	0.02	0.01	0.10	42.0
1730	7.59	51.40	0.98	0.27	0.08	0.04	0.00	0.02	0.00	0.10	38.1
1731	1.50	50.60	4.97	0.39	0.11	0.15	0.00	0.01	0.01	0.10	41.5
1732	0.47	46.50	8.25	0.15	0.18	0.00	0.00	0.03	0.00	0.10	43.1
1733	1.50	47.60	8.10	0.26	0.13	0.01	0.00	0.04	0.00	0.10	43.3
1734	3.11	47.70	7.05	0.20	0.14	0.03	0.00	0.03	0.00	0.09	39.4
1735	1.89	51.80	4.77	0.38	0.21	0.15	0.00	0.03	0.02	0.10	41.6
1736	6.77	50.00	2.46	0.63	0.21	0.00	0.00	0.06	0.05	0.11	39.0
1737	0.35	32.70	16.80	0.14	0.66	0.00	0.00	0.09	0.00	0.09	46.2
1738	0.65	31.80	17.80	0.22	0.53	0.00	0.00	0.11	0.00	0.11	47.6
1739	0.57	42.40	12.40	0.18	0.27	0.00	0.00	0.14	0.00	0.09	44.3
1740	20.00	0.60	0.37	0.95	0.04	0.00	0.00	0.03	0.18	0.09	0.0
1741	20.00	42.30	4.92	0.39	0.13	0.04	0.00	0.01	0.05	0.10	43.3
1742	4.44	29.20	18.30	0.35	0.48	0.02	0.00	0.05	0.03	0.09	46.6
1743	1.82	48.60	7.92	0.21	0.05	0.00	0.00	0.01	0.00	0.09	44.0
1744	1.02	50.90	6.73	0.19	0.03	0.01	0.00	0.01	0.00	0.09	44.3
1745	0.85	29.40	19.10	0.29	0.21	0.01	0.00	0.04	0.02	0.09	46.3
1746	3.29	49.70	7.80	0.20	0.07	0.00	0.00	0.02	0.00	0.10	40.5
1747	1.28	40.70	12.40	0.26	0.12	0.05	0.00	0.03	0.00	0.10	44.4
1748	20.00	24.70	18.80	0.12	1.27	0.00	0.00	0.10	0.00	0.09	8.9
1749	2.21	47.10	8.14	0.17	0.10	0.04	0.00	0.02	0.00	0.09	44.7
1750	1.32	52.10	5.99	0.18	0.11	0.01	0.00	0.02	0.00	0.10	43.4
1751	1.75	49.60	6.71	0.34	0.14	0.10	0.00	0.02	0.01	0.10	45.3
1752	1.99	50.90	5.39	0.52	0.08	0.08	0.00	0.01	0.01	0.10	42.1
1751	1.11	53.70	4.71	0.28	0.07	0.04	0.00	0.01	0.00	0.10	43.2
1754	1.42	51.60	5.01	0.38	0.05	0.14	0.00	0.01	0.02	0.09	42.2
1755	0.45	51.60	6.11	0.16	0.03	0.00	0.00	0.01	0.00	0.09	43.3
1756	1.10	29.60	19.80	0.42	0.45	0.13	0.00	0.04	0.03	0.09	45.3
1757	1.02	29.60	19.90	0.32	0.29	0.06	0.00	0.02	0.04	0.09	45.5
1758	0.43	29.50	20.50	0.23	0.19	0.03	0.00	0.03	0.01	0.10	48.0
1759	2.59	28.90	19.90	0.27	0.93	0.00	0.00	0.11	0.01	0.11	45.4
1760	6.88	27.90	20.40	0.08	0.21	0.00	0.00	0.08	0.00	0.09	35.9
1761	3.56	31.60	16.90	1.03	1.07	0.27	0.00	0.17	0.03	0.11	46.4
1762	20.00	24.00	23.50	0.46	2.67	0.00	0.00	0.09	0.03	0.12	16.1
1763	1.68	52.90	5.27	0.29	0.10	0.07	0.00	0.01	0.00	0.09	43.8
1764	0.17	55.70	3.25	0.20	0.07	0.04	0.00	0.02	0.00	0.09	43.3
1765	1.43	29.60	21.10	0.34	0.25	0.04	0.00	0.04	0.01	0.09	45.8
1766	0.76	52.20	5.25	0.26	0.06	0.09	0.00	0.01	0.00	0.12	43.3
1767	0.71	53.80	5.14	0.21	0.06	0.02	0.00	0.01	0.01	0.09	43.7
1768	2.18	52.20	4.71	0.22	0.18	0.08	0.00	0.03	0.00	0.09	40.6
1769	0.30	52.80	5.02	0.21	0.10	0.04	0.00	0.01	0.00	0.09	43.7
1770	8.41	26.30	23.80	0.12	0.99	0.00	0.00	0.13	0.01	0.11	39.8
1771	1.21	29.40	20.90	0.34	0.18	0.06	0.00	0.04	0.02	0.10	45.4
1772	1.11	54.10	3.94	0.34	0.21	0.09	0.00	0.01	0.02	0.10	43.6
1773	0.18	53.80	4.59	0.18	0.02	0.01	0.00	0.01	0.00	0.10	43.8
1774	0.61	50.40	6.37	0.24	0.10	0.09	0.00	0.01	0.00	0.08	43.4
1775	3.63	46.10	8.01	0.25	0.26	0.10	0.00	0.04	0.00	0.09	40.0
1776	0.51	52.40	5.47	0.17	0.03	0.01	0.00	0.01	0.00	0.09	43.8
1777	3.11	29.20	20.10	0.28	0.36	0.09	0.00	0.05	0.01	0.09	45.4
1778	1.08	33.40	17.20	0.38	0.63	0.09	0.00	0.13	0.01	0.08	49.3
1779	4.67	35.70	13.80	0.95	1.06	0.14	0.00	0.13	0.03	0.10	42.9
1780	20.00	0.94	0.81	0.74	0.06	0.00	0.00	0.02	0.03	0.11	0.0
1781	1.13	52.90	4.55	0.20	0.07	0.00	0.00	0.02	0.00	0.08	43.5

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1726	5	16	320	100	6	3	3	4	3	389050	5003000	18
1727	5	18	600	100	6	3	3	4	3	388050	5003100	18
1728	5	18	440	100	5	3	3	4	3	387660	5003430	18
1729	5	12	240	70	7	3	3	3	3	393890	5006960	18
1730	5	20	100	160	6	3	3	2	3	393310	5006510	18
1731	5	13	230	100	6	3	3	4	3	394200	5006540	18
1732	5	16	90	70	6	3	3	3	3	395100	5007390	18
1733	5	14	80	120	5	3	3	3	3	396690	5006730	18
1734	5	14	130	190	6	3	3	3	3	397300	5007200	18
1735	5	13	230	110	6	3	5	4	3	397910	5007740	18
1736	5	12	110	100	8	3	6	3	3	398290	5008700	18
1737	5	10	60	80	5	3	3	2	3	399080	5010870	18
1738	5	12	80	80	6	3	5	2	3	398590	5011190	18
1739	5	32	80	120	6	3	5	3	3	398130	5010970	18
1740	5	3	30	2560	3	3	3	4	3	401440	5008320	18
1741	5	12	260	140	6	3	3	4	3	401350	5006800	18
1742	5	17	40	90	6	3	3	4	3	401510	5006100	18
1743	5	12	210	120	6	3	3	3	3	401080	5006730	18
1744	5	16	160	100	6	3	3	3	3	400630	5007180	18
1745	5	24	30	160	5	3	3	4	3	400760	5007950	18
1746	5	12	140	110	5	3	5	4	3	400280	5007700	18
1747	5	64	80	90	6	3	3	4	3	399770	5008230	18
1748	5	38	110	30	3	3	3	4	3	399150	5006510	18
1749	5	16	150	80	5	3	3	5	3	398500	5005800	18
1750	5	12	270	80	6	3	3	4	3	398200	5005400	18
1751	5	14	210	60	6	3	3	3	3	397690	5004950	18
1752	5	11	250	90	6	3	6	5	3	397930	5004250	18
1751	5	12	330	70	6	3	3	4	3	397220	5004640	18
1754	5	10	290	120	6	3	5	4	3	396600	5004060	18
1755	5	12	210	70	6	3	3	3	3	396240	5003960	18
1756	5	8	20	40	7	3	3	3	3	396090	5004500	18
1757	5	12	70	60	3	3	3	4	3	396130	5003560	18
1758	5	10	30	40	5	3	3	2	3	396650	5003290	18
1759	5	17	110	100	5	3	3	5	3	396360	5002860	18
1760	5	14	90	60	3	3	3	4	3	395770	5002430	18
1761	5	12	90	180	10	6	9	4	3	397260	5002700	18
1762	5	36	80	60	5	3	3	20	3	397630	5002280	18
1763	5	13	220	80	6	3	5	4	3	397180	5001750	18
1764	5	22	1170	120	6	3	3	4	3	398610	5001230	18
1765	5	46	30	50	6	3	3	2	3	399100	5000530	18
1766	5	11	160	70	7	3	3	4	3	397440	5001410	18
1767	5	12	230	100	7	3	3	4	3	398100	5001290	18
1768	5	18	160	100	8	3	3	5	3	398680	5001820	18
1769	5	14	240	70	6	3	3	4	3	399200	5002300	18
1770	5	109	120	130	8	3	3	2	3	399000	5002800	18
1771	5	12	30	30	6	3	3	4	3	399800	5001900	18
1772	5	12	370	120	6	3	3	4	3	400020	5003040	18
1773	5	10	280	140	6	3	3	3	3	400040	5003740	18
1774	5	17	290	90	6	3	3	4	3	400400	5004220	18
1775	5	24	140	90	7	3	3	10	3	400450	5004930	18
1776	5	12	270	120	6	3	3	4	3	400750	5005560	18
1777	5	94	50	70	6	3	3	4	3	400960	5006180	18
1778	5	10	110	130	6	3	3	4	3	403900	5007200	18
1779	5	12	120	190	24	3	5	5	3	404710	5006190	18
1780	5	3	20	20	3	3	3	8	3	404250	5004760	18
1781	5	14	500	160	6	3	3	2	3	403850	5004030	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1782	0.25	29.90	18.90	0.12	0.32	0.00	0.00	0.06	0.00	0.10	47.7
1783	1.25	50.00	7.54	0.40	0.17	0.08	0.00	0.02	0.01	0.10	42.9
1784	0.21	31.10	18.80	0.11	0.25	0.00	0.00	0.07	0.00	0.08	46.4
1785	3.28	29.00	20.20	0.22	0.85	0.00	0.00	0.11	0.00	0.09	46.3
1786	1.48	29.40	21.00	0.21	0.15	0.00	0.00	0.05	0.00	0.08	46.9
1787	10.70	45.00	5.95	0.55	0.29	0.17	0.00	0.18	0.01	0.09	35.6
1788	20.00	35.10	14.10	0.26	0.30	0.00	0.00	0.05	0.01	0.09	34.8
1789	20.00	18.30	23.80	0.33	1.22	0.00	0.00	0.06	0.05	0.08	3.2
1790	1.66	29.90	20.60	0.13	0.21	0.00	0.00	0.06	0.00	0.08	46.8
1791	1.30	53.00	8.70	0.09	0.03	0.00	0.00	0.02	0.00	0.10	43.1
1792	1.76	34.30	16.30	0.52	0.61	0.03	0.00	0.15	0.01	0.08	45.6
1793	1.21	52.30	7.03	0.27	0.04	0.00	0.00	0.02	0.01	0.09	42.6
1794	1.64	51.50	6.10	0.42	0.16	0.16	0.00	0.02	0.02	0.10	42.4
1795	3.18	48.20	6.40	0.38	0.30	0.00	0.00	0.21	0.01	0.09	42.0
1796	1.62	52.10	5.68	0.38	0.09	0.04	0.00	0.02	0.00	0.09	43.4
1797	0.45	54.10	4.45	0.18	0.05	0.00	0.00	0.01	0.00	0.09	43.0
1798	1.19	52.90	4.32	0.36	0.09	0.06	0.00	0.01	0.00	0.10	44.5
1799	20.00	32.60	14.60	0.56	0.43	0.00	0.00	0.06	0.02	0.11	33.9
1800	20.00	26.00	15.70	1.08	2.04	0.01	0.00	0.22	0.04	0.08	36.5
1801	2.08	51.00	5.62	0.23	0.09	0.00	0.00	0.02	0.00	0.07	43.5
1802	0.41	30.20	19.00	0.25	0.62	0.00	0.00	0.07	0.00	0.08	48.7
1803	0.22	52.60	7.67	0.14	0.29	0.00	0.00	0.02	0.00	0.09	43.8
1804	0.32	30.00	20.20	0.16	0.08	0.02	0.00	0.04	0.02	0.08	45.7
1805	1.36	53.10	6.26	0.24	0.00	0.10	0.00	0.01	0.00	0.10	42.6
1806	16.30	28.20	15.60	2.82	1.60	0.03	0.00	0.10	0.14	0.09	31.5
1807	20.00	13.10	8.44	2.94	1.58	0.27	0.00	0.15	0.19	0.11	10.4
1808	20.00	35.20	4.36	1.39	0.33	0.00	0.00	0.11	0.04	0.10	32.7
1809	12.10	33.90	12.90	1.20	1.53	0.32	0.00	0.09	0.10	0.10	39.1
1810	2.07	56.30	3.77	0.27	0.09	0.00	0.00	0.02	0.00	0.09	44.9
1811	3.52	43.40	9.85	0.35	0.17	0.07	0.00	0.03	0.01	0.10	42.7
1812	10.70	41.50	8.52	0.62	0.40	0.05	0.00	0.03	0.02	0.11	33.2
1813	20.00	24.20	19.80	0.31	1.28	0.00	0.00	0.16	0.01	0.13	23.5
1814	3.15	30.60	19.70	0.21	0.17	0.00	0.00	0.04	0.00	0.12	48.9
1815	1.52	53.20	6.73	0.20	0.00	0.00	0.00	0.02	0.00	0.09	45.2
1816	0.90	50.70	7.50	0.12	0.07	0.00	0.00	0.03	0.00	0.09	44.5
1817	1.03	30.00	20.20	0.08	0.12	0.00	0.00	0.05	0.00	0.10	46.1
1818	1.22	30.60	19.30	0.11	0.24	0.00	0.00	0.07	0.00	0.09	46.3
1819	0.00	30.20	20.10	0.08	0.26	0.00	0.00	0.07	0.00	0.09	46.3
1820	4.05	48.80	9.10	0.57	0.23	0.04	0.00	0.03	0.01	0.10	42.4
1821	10.20	46.50	5.82	0.49	0.41	0.00	0.00	0.04	0.00	0.09	38.8
1822	1.40	48.70	7.94	0.26	0.10	0.00	0.00	0.02	0.00	0.09	39.3
1823	2.91	55.80	3.42	0.19	0.10	0.00	0.00	0.02	0.00	0.09	38.3
1824	1.54	29.50	19.90	0.46	0.29	0.02	0.00	0.04	0.02	0.10	43.5
1825	1.66	50.20	7.45	0.53	0.15	0.16	0.00	0.02	0.02	0.09	44.2
1826	1.38	52.20	6.99	0.44	0.19	0.15	0.00	0.03	0.01	0.10	42.2
1827	0.82	53.50	5.50	0.32	0.09	0.00	0.00	0.02	0.00	0.09	43.5
1828	1.08	54.10	4.79	0.28	0.11	0.09	0.00	0.02	0.00	0.10	42.3
1829	1.52	52.50	5.41	0.25	0.10	0.03	0.00	0.02	0.01	0.10	43.1
1830	1.55	53.40	5.10	0.29	0.09	0.06	0.00	0.02	0.00	0.09	43.1
1831	0.79	52.30	5.29	0.24	0.12	0.00	0.00	0.03	0.00	0.09	43.4
1832	1.82	29.50	19.90	0.16	0.20	0.00	0.00	0.05	0.00	0.09	42.7
1833	3.03	49.60	6.85	0.66	0.47	0.29	0.00	0.03	0.03	0.10	40.5
1834	4.12	29.10	20.00	0.17	0.22	0.00	0.00	0.07	0.00	0.11	41.1
1835	1.81	46.90	10.70	0.21	0.12	0.02	0.00	0.02	0.00	0.09	43.1
1836	1.47	47.30	8.75	0.26	0.87	0.05	0.00	0.05	0.00	0.09	43.7
1837	1.35	52.50	5.84	0.24	0.12	0.03	0.00	0.02	0.00	0.09	43.1

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1782	5	13	90	60	6	3	3	2	3	404740	5004470	18
1783	5	14	600	180	6	3	3	6	3	405600	5003500	18
1784	5	10	60	60	6	3	3	2	3	406330	5002690	18
1785	5	10	70	80	6	3	3	10	3	404590	5003100	18
1786	5	8	40	60	5	3	3	2	3	404720	5002500	18
1787	5	8	120	610	7	3	5	6	3	404280	5002950	18
1788	5	14	400	2880	5	5	3	10	3	403930	5003400	18
1789	5	66	50	90	5	3	3	32	3	402500	5001060	18
1790	5	30	100	50	6	3	3	2	3	402700	5000630	18
1791	5	11	660	110	6	3	3	2	3	403100	5000110	18
1792	5	8	70	70	7	3	3	2	3	403520	4999700	18
1793	5	11	360	120	5	3	3	3	3	403860	4999300	18
1794	5	14	260	140	6	3	5	7	3	404470	4997600	18
1795	5	8	120	180	6	3	6	5	3	405050	4997960	18
1796	5	12	570	190	6	3	3	4	3	404700	5000390	18
1797	5	10	440	110	6	3	3	4	3	404270	5000760	18
1798	5	14	560	180	6	3	3	4	3	403770	5001500	18
1799	5	24	170	90	16	3	5	15	3	403480	5001800	18
1800	5	8	60	100	9	5	3	14	5	404200	5002600	18
1801	5	9	290	80	5	3	3	3	3	401590	5000350	18
1802	5	10	90	60	8	3	3	2	3	401600	4999420	18
1803	5	9	200	90	5	3	3	2	3	402510	4997120	18
1804	5	19	40	70	5	3	3	6	3	403400	4996900	18
1805	5	11	1250	310	6	3	3	8	3	403060	4994860	18
1806	5	28	160	170	8	3	15	38	5	405260	4995460	18
1807	5	6	50	130	6	3	10	12	3	406640	5000900	18
1808	5	6	130	510	6	3	8	13	3	400300	5011570	18
1809	10	108	170	1910	6	3	13	6	6	401960	5011720	18
1810	5	8	150	230	5	3	3	2	3	397520	5012950	18
1811	5	14	140	200	5	3	5	4	3	397960	5012460	18
1812	5	22	120	140	14	3	3	6	3	398310	5012060	18
1813	5	37	110	170	8	3	3	16	3	397470	5010990	18
1814	5	20	70	130	6	3	3	3	3	396780	5010900	18
1815	5	14	70	90	6	3	3	2	3	397600	5011500	18
1816	5	12	160	120	6	3	3	2	3	395690	5012700	18
1817	5	24	80	60	6	3	3	2	3	395140	5012190	18
1818	5	12	90	60	7	3	3	2	3	394910	5011700	18
1819	5	17	80	80	7	3	3	2	3	395370	5011270	18
1820	5	16	140	400	7	3	3	2	3	390850	5013810	18
1821	5	14	180	90	7	3	5	4	3	390590	5014100	18
1822	5	23	110	120	6	3	3	2	3	388700	5014420	18
1823	5	18	120	120	8	3	3	2	3	388210	5014490	18
1824	5	14	30	50	6	3	3	6	3	386100	5017860	18
1825	5	26	360	100	7	3	3	5	3	386130	5018450	18
1826	5	32	320	120	8	3	3	6	3	386440	5019130	18
1827	5	14	350	120	6	3	3	4	3	385210	5020850	18
1828	5	16	460	240	6	3	5	6	3	384480	5020220	18
1820	5	18	520	180	7	3	3	4	3	383810	5019780	18
1830	5	24	390	190	6	3	5	4	3	386560	5021210	18
1831	5	34	350	100	6	3	3	4	3	386270	5021560	18
1832	5	40	40	40	6	3	3	2	3	387330	5020300	18
1833	5	18	460	200	6	3	7	7	3	387300	5021540	18
1834	5	24	50	60	10	3	5	4	3	387770	5020940	18
1835	5	18	350	90	6	3	3	4	3	387550	5022100	18
1836	5	18	460	120	6	3	3	4	3	387510	5023060	18
1837	5	30	430	150	7	3	5	5	3	388110	5023450	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1838	1.43	50.00	7.11	0.23	0.25	0.03	0.00	0.02	0.00	0.09	42.9
1839	3.76	52.20	4.06	0.52	0.22	0.11	0.00	0.02	0.00	0.09	42.4
1840	1.75	51.00	5.34	0.50	0.31	0.16	0.00	0.02	0.03	0.09	42.1
1841	3.63	47.70	6.03	0.85	0.55	0.36	0.00	0.03	0.06	0.08	40.6
1842	1.82	54.80	3.21	0.44	0.20	0.16	0.00	0.02	0.01	0.09	43.0
1843	1.06	49.10	6.60	0.17	0.07	0.01	0.00	0.03	0.00	0.09	44.7
1844	1.35	52.30	4.94	0.41	0.09	0.12	0.00	0.01	0.01	0.09	42.9
1845	5.56	48.90	4.74	0.96	0.66	0.28	0.00	0.07	0.04	0.10	39.7
1846	2.57	46.20	8.23	0.70	0.33	0.20	0.00	0.03	0.03	0.09	42.6
1847	7.07	28.30	1.89	0.11	0.41	0.00	0.00	0.10	0.00	0.09	38.1
1848	10.60	45.80	5.09	0.64	0.22	0.02	0.00	0.04	0.01	0.10	36.0
1849	2.77	31.80	18.70	0.39	0.41	0.00	0.00	0.04	0.03	0.08	43.1
1850	1.92	41.90	11.40	0.27	0.12	0.09	0.00	0.03	0.01	0.10	43.8
1851	1.01	49.00	7.56	0.26	0.24	0.06	0.00	0.02	0.00	0.09	44.3
1852	1.55	52.40	4.78	0.31	0.23	0.04	0.00	0.02	0.00	0.09	42.2
1853	0.83	42.00	11.20	0.19	0.02	0.01	0.00	0.01	0.00	0.09	41.3
1854	0.46	52.30	6.12	0.19	0.06	0.02	0.00	0.01	0.00	0.09	43.5
1855	1.62	50.30	6.50	0.45	0.32	0.16	0.00	0.01	0.01	0.09	42.8
1856	1.82	51.50	5.25	0.55	0.33	0.24	0.00	0.02	0.02	0.07	42.9
1857	0.30	49.90	6.31	0.20	0.03	0.02	0.00	0.01	0.00	0.09	39.8
1858	1.89	49.90	5.42	0.55	0.44	0.21	0.00	0.01	0.02	0.10	42.1
1859	0.92	51.00	5.28	0.30	0.12	0.10	0.00	0.01	0.01	0.10	43.3
1860	0.41	50.50	5.97	0.22	0.06	0.03	0.00	0.02	0.00	0.13	44.2
1861	0.39	31.50	17.30	0.20	0.23	0.04	0.00	0.04	0.00	0.09	45.3
1862	0.61	50.10	8.07	0.11	0.12	0.00	0.00	0.02	0.00	0.09	42.0
1863	0.77	51.90	6.02	0.28	0.43	0.12	0.00	0.02	0.00	0.09	42.1
1864	1.62	51.40	5.54	0.19	0.07	0.04	0.00	0.03	0.00	0.09	39.9
1865	3.76	28.80	17.60	0.31	1.53	0.00	0.00	0.11	0.01	0.09	44.1
1866	3.95	50.70	4.09	0.58	0.33	0.28	0.00	0.04	0.02	0.11	40.5
1867	1.01	29.40	19.40	0.10	1.03	0.00	0.00	0.10	0.00	0.08	45.8
1868	5.90	27.20	19.70	1.16	2.09	0.00	0.00	0.12	0.04	0.08	39.7
1869	4.91	47.10	6.78	1.13	0.85	0.29	0.00	0.03	0.03	0.07	39.5
1870	3.77	28.90	18.90	0.46	0.40	0.00	0.00	0.07	0.02	0.09	41.6
1871	20.00	24.20	4.24	5.00	1.40	2.00	0.00	0.03	0.40	0.14	15.8
1872	4.85	51.60	3.83	1.55	0.28	0.48	0.00	0.02	0.05	0.10	42.2
1873	1.83	29.80	18.90	0.40	0.93	0.00	0.00	0.09	0.01	0.08	45.7
1874	20.00	24.10	21.00	1.31	1.53	0.02	0.00	0.07	0.06	0.11	2.8
1875	10.30	38.90	9.55	2.25	1.06	0.88	0.00	0.03	0.11	0.11	36.0
1876	2.95	29.30	18.60	0.72	0.63	0.07	0.00	0.19	0.03	0.09	46.8
1877	20.00	26.90	7.08	0.29	0.50	0.00	0.00	0.05	0.02	0.09	1.0
1878	4.61	49.30	6.71	0.24	0.13	0.00	0.00	0.02	0.01	0.08	42.1
1879	2.33	29.50	20.20	0.25	0.53	0.00	0.00	0.05	0.02	0.08	44.6
1880	3.75	45.50	10.50	0.36	0.16	0.10	0.00	0.02	0.01	0.10	42.2
1881	1.75	49.20	7.66	0.34	0.14	0.15	0.00	0.01	0.01	0.10	42.1
1882	1.55	49.90	6.86	0.31	0.08	0.05	0.00	0.01	0.02	0.09	41.4
1883	0.83	29.80	19.40	0.18	0.47	0.03	0.00	0.03	0.00	0.09	46.2
1884	1.05	29.40	19.20	0.39	0.95	0.07	0.00	0.13	0.03	0.08	50.1
1885	0.67	47.90	9.53	0.23	0.11	0.04	0.00	0.02	0.00	0.09	41.0
1886	1.67	48.50	8.53	0.47	0.18	0.19	0.00	0.02	0.04	0.09	42.5
1887	1.12	49.50	7.62	0.24	0.08	0.13	0.10	0.02	0.00	0.09	44.4
1888	0.57	50.70	6.93	0.19	0.11	0.03	0.00	0.02	0.00	0.09	43.3
1889	1.15	48.20	7.69	0.32	0.21	0.11	0.00	0.03	0.01	0.10	43.9
1890	1.39	49.10	6.96	0.32	0.19	0.08	0.00	0.03	0.01	0.10	43.6
1891	0.53	55.10	4.76	0.16	0.10	0.03	0.00	0.02	0.00	0.09	42.2
1892	0.63	54.90	4.36	0.25	0.09	0.05	0.00	0.01	0.00	0.10	42.2
1893	0.72	39.10	1.53	0.00	0.06	0.06	0.00	0.01	0.01	0.10	40.3

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1838	5	24	390	110	6	3	3	4	3	388500	5023150	18
1839	5	14	300	90	6	3	3	7	3	388150	5022100	18
1840	5	22	380	100	7	3	7	6	3	388890	5022290	18
1841	5	20	290	120	8	3	6	10	3	389660	5022700	18
1842	5	20	160	90	6	3	3	8	3	390440	5022900	18
1843	5	16	210	80	6	3	3	4	3	390200	5023300	18
1844	5	24	630	220	8	3	5	6	3	391100	5022950	18
1845	5	22	250	120	7	3	6	10	3	392490	5022620	18
1846	5	18	200	110	6	3	8	4	3	370050	4981700	18
1847	5	26	70	80	6	3	3	2	3	368950	4979750	18
1848	5	16	210	80	11	3	3	4	3	369400	4978900	18
1849	5	12	90	50	5	3	5	2	3	369800	4978500	18
1850	5	40	80	100	6	3	5	6	3	374650	4974900	18
1851	5	15	320	120	6	3	3	4	3	374900	4974600	18
1852	5	14	310	140	7	3	7	3	3	375400	4973900	18
1853	5	14	350	110	6	3	3	4	3	374850	4973450	18
1854	5	14	300	100	9	3	3	4	3	373850	4971650	18
1855	5	22	500	140	8	3	3	7	3	373300	4971000	18
1856	5	16	160	110	8	3	3	6	3	375900	4974450	18
1857	5	14	200	100	8	3	3	3	3	373350	4969550	18
1858	5	68	600	160	8	3	7	6	3	372950	4968750	18
1859	5	37	400	140	12	3	5	5	3	373400	4990280	18
1860	5	20	280	100	8	3	3	4	3	371410	4991190	18
1861	5	18	30	100	16	3	3	8	3	370510	4991450	18
1862	5	17	190	80	8	3	3	3	3	378750	4994590	18
1863	5	15	520	190	13	3	3	4	3	378630	4994930	18
1864	5	14	140	90	8	3	3	4	3	379830	4995890	18
1865	5	20	50	50	28	3	3	2	3	371800	4997970	18
1866	5	16	150	120	8	6	5	12	6	372140	4997550	18
1867	5	28	430	60	8	3	3	2	3	367270	5000320	18
1868	5	56	80	60	15	3	3	2	8	375740	4990330	18
1869	5	28	210	110	8	3	5	6	5	365910	4989100	18
1870	5	30	170	700	10	3	3	4	3	365800	4988190	18
1871	5	14	110	190	36	9	53	4	17	365630	4987360	18
1872	5	16	2380	420	10	3	5	4	5	367490	4989560	18
1873	5	14	60	50	7	3	3	2	3	370450	4988940	18
1874	5	26	50	1500	5	3	6	8	5	405250	4957850	18
1875	5	48	520	120	8	3	12	6	3	406450	4957850	18
1876	5	29	90	100	8	3	3	4	3	407200	4957100	18
1877	5	34	220	80	6	3	8	4	3	405260	4988450	18
1878	5	20	140	120	10	3	5	4	3	377400	4966550	18
1879	5	11	40	70	8	3	3	2	3	375750	4965950	18
1880	5	14	200	120	10	3	5	12	3	373100	4965900	18
1881	5	13	230	110	8	3	3	9	3	373150	4966150	18
1882	5	14	190	120	9	3	3	7	3	373700	4966600	18
1883	5	20	50	70	7	3	3	4	3	375300	4967100	18
1884	5	12	60	90	6	3	5	4	3	376950	4966800	18
1885	5	19	140	170	8	3	5	8	3	376800	4967500	18
1886	5	14	80	130	10	3	5	12	3	376300	4968000	18
1887	5	14	190	140	8	3	3	4	3	377050	4968450	18
1888	5	20	430	190	9	3	7	6	3	377150	4967900	18
1889	5	22	120	150	8	3	3	13	3	378700	4967650	18
1890	5	16	160	130	8	3	5	4	3	379700	4967600	18
1891	5	15	200	150	8	3	5	4	3	380150	4968300	18
1892	5	18	200	140	9	3	3	5	3	380050	4969050	18
1893	5	14	100	120	10	3	6	3	3	380100	4969400	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI
1894	0.69	52.90	5.35	0.28	0.04	0.10	0.00	0.01	0.00	0.09	39.6
1895	0.62	51.40	5.77	0.26	0.08	0.07	0.00	0.01	0.00	0.09	41.7
1896	0.09	48.70	7.71	0.13	0.02	0.00	0.00	0.01	0.00	0.09	41.0
1897	0.06	30.00	20.10	0.23	0.27	0.01	0.00	0.03	0.01	0.08	45.1
1898	2.82	55.10	4.05	0.19	0.00	0.03	0.00	0.02	0.00	0.09	38.5
1899	2.05	49.90	6.19	0.35	0.22	0.15	0.00	0.04	0.00	0.12	40.9
1900	0.61	53.60	4.78	0.20	0.06	0.01	0.00	0.01	0.00	0.09	42.7
1901	1.22	58.30	1.40	0.22	0.02	0.05	0.00	0.02	0.00	0.10	40.9
1902	0.80	53.10	4.38	0.21	0.06	0.06	0.00	0.03	0.00	0.10	38.8
1903	0.43	54.70	4.07	0.20	0.31	0.06	0.00	0.03	0.00	0.09	43.1
1904	1.69	52.10	4.39	0.23	0.22	0.09	0.00	0.04	0.00	0.09	41.4
1905	0.21	30.20	18.90	0.10	0.36	0.00	0.00	0.04	0.00	0.09	45.7
1906	0.17	29.60	19.80	0.20	0.42	0.04	0.00	0.05	0.01	0.08	47.4
1907	1.01	34.60	15.60	0.28	0.61	0.03	0.00	0.14	0.00	0.08	45.1
1908	0.89	47.70	9.70	0.30	0.17	0.09	0.00	0.03	0.02	0.09	43.6
1909	0.63	49.40	8.11	0.23	0.16	0.07	0.00	0.02	0.01	0.08	43.8
1910	4.41	48.70	5.70	1.06	0.17	0.29	0.00	0.01	0.03	0.11	40.5
1911	0.74	43.60	10.80	0.22	0.12	0.06	0.00	0.03	0.00	0.09	44.7
1912	0.67	58.10	2.83	0.24	0.06	0.00	0.00	0.02	0.00	0.09	43.2
1913	1.12	50.10	5.38	0.20	0.03	0.05	0.00	0.01	0.00	0.08	43.2
1914	0.41	50.20	6.97	0.20	0.05	0.04	0.00	0.02	0.00	0.09	44.5
1915	0.92	29.30	19.05	0.31	0.46	0.12	0.00	0.04	0.02	0.08	45.6
1916	1.14	51.10	5.98	0.30	0.21	0.09	0.00	0.01	0.01	0.08	42.6
1917	4.04	50.50	5.18	0.73	0.43	0.22	0.00	0.04	0.03	0.10	41.0
1918	4.35	44.90	8.44	0.42	0.38	0.13	0.00	0.04	0.02	0.11	44.5
1919	7.96	45.40	8.22	0.64	0.57	0.10	0.00	0.04	0.02	0.13	40.2
1920	8.68	39.20	9.05	1.20	1.53	0.69	0.00	0.06	0.07	0.14	34.7
1921	1.44	51.30	5.93	0.24	0.09	0.03	0.00	0.02	0.00	0.09	43.8
1922	6.30	43.40	8.63	1.18	0.46	0.65	0.00	0.05	0.04	0.10	37.8
1923	1.85	51.40	5.34	0.47	0.11	0.23	0.00	0.01	0.02	0.10	42.3
1924	2.36	49.00	6.97	0.48	0.22	0.18	0.00	0.01	0.01	0.09	43.3
1925	1.78	46.00	8.15	0.52	0.35	0.16	0.00	0.06	0.03	0.09	44.5
1926	1.78	49.40	6.23	0.40	0.43	0.11	0.00	0.03	0.01	0.09	44.8
1927	0.41	45.00	9.58	0.20	0.16	0.01	0.00	0.02	0.00	0.09	44.1
1928	0.50	53.30	5.37	0.20	0.04	0.03	0.00	0.01	0.01	0.09	42.7
1929	1.38	52.50	5.19	0.41	0.11	0.16	0.00	0.01	0.03	0.09	42.2
1930	9.11	37.80	7.80	2.21	0.26	0.55	0.24	0.02	0.03	0.12	36.3
1931	1.88	29.30	19.50	0.33	0.57	0.07	0.00	0.06	0.01	0.08	45.4
1932	4.73	45.20	8.32	1.02	0.65	0.02	0.03	0.03	0.05	0.11	40.9
1933	13.60	27.50	19.20	1.59	0.57	0.85	0.00	0.03	0.10	0.10	31.8
1934	20.00	24.20	3.09	5.00	3.54	0.86	1.58	0.04	0.35	0.16	10.9
1935	9.67	43.40	6.11	1.86	1.00	0.25	0.12	0.03	0.08	0.11	38.8
1936	20.00	28.80	3.84	5.00	2.20	0.86	0.53	0.04	0.20	0.15	19.1
1937	10.10	27.30	20.90	1.75	0.86	0.51	0.00	0.04	0.07	0.09	36.7
1938	8.79	41.60	8.74	2.14	0.88	0.40	0.05	0.02	0.09	0.11	35.2

SAMPLE NUMBER	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm	Cr ppm	Li ppm	Ni ppm	Easting	Northing	Zone
1894	5	26	180	120	8	3	3	7	3	380750	4969950	18
1895	5	24	180	90	8	3	3	6	3	381150	4970250	18
1896	5	17	120	90	8	3	3	4	3	378300	4968800	18
1897	5	14	30	70	6	3	3	4	3	378800	4969150	18
1898	5	11	90	140	10	3	3	4	5	376350	4969150	18
1899	5	15	200	130	10	3	5	5	3	375700	4969300	18
1900	5	15	460	150	10	3	3	5	3	375200	4969600	18
1901	5	12	110	140	9	3	3	4	3	376250	4969650	18
1902	5	23	150	140	10	3	3	10	3	377550	4968950	18
1903	5	16	270	120	8	3	5	5	3	377850	4969350	18
1904	5	22	100	260	12	3	3	16	3	378250	4969700	18
1905	5	28	40	50	8	3	3	5	3	378950	4970250	18
1906	5	18	40	80	7	3	3	4	3	379650	4970800	18
1907	5	12	80	130	8	3	3	5	3	379450	4971600	18
1908	5	16	320	160	8	3	3	10	3	380200	4971350	18
1909	5	15	200	110	9	3	3	8	3	380850	4971800	18
1910	5	20	150	300	8	3	3	15	3	381200	4971500	18
1911	5	24	100	100	7	3	3	8	3	381450	4972200	18
1912	5	16	100	110	10	3	3	4	3	381870	4972570	18
1913	5	16	200	120	8	3	3	9	3	382090	4973180	18
1914	5	18	160	150	8	3	3	6	3	382430	4973730	18
1915	5	17	60	70	6	3	3	5	3	382890	4974580	18
1916	5	22	460	140	8	3	3	8	3	383410	4974890	18
1917	5	16	230	130	8	3	3	11	3	383970	4975140	18
1918	5	12	120	110	7	3	3	6	3	384700	4975250	18
1919	5	16	180	110	9	3	3	10	3	386110	4976650	18
1920	5	30	200	150	20	5	7	7	3	386690	4977100	18
1921	5	18	160	120	8	3	3	4	3	390610	4978760	18
1922	5	19	150	150	12	3	6	5	3	389540	4979720	18
1923	5	14	350	180	9	3	5	8	3	389000	4980000	18
1924	5	22	440	170	12	3	6	6	3	388390	4979360	18
1925	5	13	90	160	16	3	5	5	3	388800	4978520	18
1926	5	18	200	160	8	3	3	4	3	386500	4975710	18
1927	5	30	90	120	6	3	3	4	3	386190	4975490	18
1928	5	14	230	120	8	3	3	4	3	385550	4974930	18
1929	5	20	280	180	10	3	5	6	3	384890	4974410	18
1930	5	41	200	420	7	3	3	8	3	385120	4974000	18
1931	5	24	100	110	8	3	3	4	5	385900	4968760	18
1932	5	30	740	130	8	3	3	12	6	731820	4951380	17
1933	5	154	70	160	6	3	3	13	3	731220	4961170	17
1934	5	70	260	220	26	5	10	20	3	731860	4961530	17
1935	5	32	350	130	6	3	6	8	3	731600	4962300	17
1936	5	60	340	350	12	3	7	14	3	732160	4959580	17
1937	5	24	50	180	8	3	3	8	3	735110	4960350	17
1938	5	44	710	430	6	3	7	14	3	736120	4960560	17

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm
31-X	3.87	52.1	2.74	0.46	0.297	0.297	0.007	0.030	0.014	0.07	41.3	5	28	372.0	300	40.7	23
31-Y	5.10	36.4	15.30	0.88	0.590	0.712	0.035	0.033	0.016	0.06	42.4	5	31	117.0	50	26.3	15
31-Z	7.47	46.3	4.45	1.98	0.573	1.140	0.053	0.012	0.046	0.08	38.5	5	31	363.0	170	19.8	23
104-Y	0.89	56.1	1.25	0.19	0.188	0.101	0.006	0.015	0.010	0.06	43.0	5	25	595.0	30	8.8	14
104-Z	3.44	55.1	1.06	0.63	0.519	0.373	0.006	0.023	0.020	0.07	41.2	5	40	158.0	50	35.2	24
134-Z	3.24	52.1	4.54	0.34	0.209	0.080	0.037	0.017	0.011	0.06	41.2	5	31	273.0	50	14.0	23
244-Y	7.58	46.9	3.39	2.20	1.050	0.480	0.470	0.022	0.037	0.08	38.3	5	29	396.0	100	9.4	16
244-Z	3.73	52.5	2.23	0.43	0.605	0.138	0.082	0.037	0.018	0.07	41.2	5	28	201.0	40	105.0	22
265-Z	6.02	50.1	3.24	1.23	0.635	0.596	0.126	0.029	0.025	0.08	40.0	5	38	412.0	80	9.9	24
313-Y	1.73	50.6	5.33	0.37	0.390	0.161	0.043	0.024	0.010	0.07	43.1	5	48	437.0	30	20.9	15
313-Z	15.30	41.6	5.06	3.16	1.110	2.340	0.156	0.024	0.115	0.09	32.1	5	29	509.0	120	18.9	23
347-Y	0.95	53.1	3.70	0.17	0.190	0.055	0.007	0.011	0.015	0.06	42.4	5	52	429.0	160	17.3	22
347-Z	0.83	51.8	4.72	0.14	0.121	0.007	0.006	0.008	0.010	0.06	42.7	5	36	289.0	30	69.8	16
356-Z	0.80	52.6	3.96	0.12	0.098	0.009	0.019	0.008	0.004	0.05	42.6	5	29	333.0	30	51.2	18
367-X	0.39	53.8	4.12	0.08	0.149	0.007	0.006	0.032	0.003	0.06	43.1	5	37	255.0	30	31.2	16
367-Y	1.21	53.4	3.31	0.28	0.178	0.067	0.008	0.010	0.019	0.08	42.8	5	32	507.0	30	5.9	15
367-Z	1.36	53.3	3.27	0.31	0.156	0.099	0.006	0.010	0.025	0.07	42.4	5	32	582.0	80	25.1	16
483-Z	0.93	53.0	3.74	0.24	0.158	0.197	0.006	0.012	0.005	0.06	42.7	5	26	230.0	30	3.9	22
498-Z	0.62	54.3	3.78	0.14	0.205	0.077	0.006	0.007	0.016	0.06	43.0	5	26	388.0	30	3.9	26
499-Z	0.42	55.2	3.54	0.09	0.097	0.030	0.006	0.006	0.008	0.06	42.8	5	26	320.0	30	9.6	26
588-Z	4.90	51.6	3.37	1.13	0.402	0.123	0.378	0.074	0.059	0.05	40.2	5	36	366.0	310	40.2	27
689-V	6.00	56.4	0.45	0.23	0.073	0.201	0.007	0.012	0.023	0.06	38.1	5	27	94.3	30	58.1	26
689-W	1.34	54.1	3.98	0.21	0.179	0.157	0.006	0.021	0.013	0.06	42.2	5	25	199.0	30	8.1	22
689-X	2.07	55.0	1.93	0.13	0.090	0.065	0.006	0.012	0.010	0.06	40.8	5	26	148.0	30	32.7	26
689-Y	1.55	53.9	3.79	0.25	0.129	0.175	0.006	0.016	0.011	0.06	41.4	5	43	85.1	30	18.5	26
689-Z	3.73	55.1	2.17	0.18	0.137	0.090	0.007	0.019	0.015	0.07	39.8	5	32	109.0	30	6.9	28
692-Z	0.28	54.2	3.32	0.07	0.086	0.037	0.006	0.011	0.005	0.07	42.9	5	55	122.0	30	62.9	26
697-Z	0.92	53.2	4.24	0.18	0.324	0.118	0.006	0.014	0.016	0.06	42.8	5	26	329.0	30	25.1	26
746-Z	0.40	51.0	6.73	0.11	0.114	0.076	0.006	0.010	0.009	0.06	43.1	5	35	171.0	30	33.9	28
808-B	12.10	48.4	0.58	1.63	0.678	0.505	0.006	0.024	0.052	0.06	36.6	5	37	1750	1520	0.8	3
808-C	25.50	34.1	3.22	5.77	2.110	1.590	1.750	0.018	0.280	0.20	25.9	5	56	1150	2900	23.9	29
818-Z	8.97	31.8	20.70	0.33	0.994	0.033	0.134	0.084	0.012	0.07	39.1	5	35	162.0	30	3.7	26
819-Z	2.33	53.0	3.08	0.33	0.245	0.103	0.054	0.018	0.013	0.05	42.0	45	33	371.0	30	336.0	32
834	5.30	51.8	3.24	0.85	0.418	0.319	0.079	0.012	0.026	0.07	39.6	5	29	913.0	400	2.6	22
835	0.79	31.7	22.30	0.14	0.275	0.088	0.099	0.047	0.006	0.06	46.4	5	36	237.0	70	0.8	20
836	1.96	32.2	18.60	0.32	0.212	0.102	0.438	0.054	0.009	0.06	45.5	5	31	83.0	30	0.8	15
837	1.73	38.8	13.10	0.25	0.936	0.193	0.014	0.082	0.012	0.05	44.2	5	33	293.0	80	0.8	22
838	0.16	55.6	1.96	0.02	0.153	0.019	0.006	0.036	0.001	0.04	43.9	5	28	177.0	30	2.3	22
839	1.62	31.5	21.80	0.01	0.198	0.007	0.031	0.073	0.000	0.05	45.7	5	36	129.0	30	0.8	16
840	3.02	31.1	20.40	0.84	0.615	0.117	0.018	0.049	0.013	0.06	44.2	5	29	51.3	30	8.0	15
841	32.70	28.2	19.70	0.13	0.557	0.052	0.094	0.051	0.007	0.04	18.4	5	30	86.0	30	0.8	14
842	7.07	48.9	3.05	1.42	0.424	0.450	0.186	0.020	0.042	0.05	38.4	5	27	141.0	40	1.4	17
843	21.80	36.7	4.57	4.62	1.260	1.730	0.637	0.075	0.277	0.13	24.9	5	37	169.0	160	17.3	22
844	1.55	30.1	21.60	0.50	0.539	0.049	0.307	0.078	0.010	0.05	45.9	5	31	97.9	30	0.8	14
845	5.48	51.7	1.14	1.45	0.291	1.270	0.059	0.254	0.038	0.08	39.8	5	29	345.0	70	2.7	16
846	25.10	38.6	4.69	1.29	0.902	0.274	0.305	0.040	0.091	0.06	28.4	5	30	382.0	200	2.6	14
847	32.80	36.7	3.21	1.59	0.686	0.424	0.633	0.025	0.097	0.06	27.6	5	28	158.0	30	3.4	16
848	15.00	43.1	2.43	3.82	1.760	0.356	0.885	0.046	0.149	0.11	32.9	5	44	606.0	70	1.1	22
849	29.50	30.1	3.54	7.29	4.340	0.063	2.520	0.113	0.330	0.11	21.0	5	87	457.0	30	1190	29
850	4.09	51.1	2.16	0.64	0.642	0.192	0.045	0.031	0.023	0.06	41.6	5	36	825.0	90	23.1	17
851	1.14	54.6	1.40	0.20	0.436	0.169	0.006	0.019	0.015	0.06	42.6	5	26	393.0	30	2.1	19
852	45.30	12.6	4.35	13.00	2.420	0.404	7.280	0.111	0.909	0.09	12.9	5	83	238.0	90	16.2	12
853	20.80	37.9	2.99	5.33	2.550	0.607	1.350	0.070	0.202	0.12	27.7	5	40	288.0	40	1.3	22
854	13.70	44.2	2.61	3.99	1.870	0.516	0.743	0.042	0.216	0.13	31.5	5	54	582.0	120	1.2	22
855	13.20	28.5	19.30	0.36	0.492	0.094	0.027	0.041	0.017	0.05	37.0	10	87	56.0	30	0.9	14
856	12.50	46.9	2.39	0.27	0.304	0.123	0.006	0.069	0.011	0.04	37.9	5	28	147.0	50	17.1	17

SAMPLE NUMBER	Cr ppm	Li ppm	Ni ppm	F ppm	Be ppm	Cd ppm	Th ppm	Zr ppm	V ppm	Mo ppm	Ag ppm	S wt %	Reflect	Easting	Northing	Zone
31-X	8.1	5	13	460	0.3	10	22	5	2.1	50	5	0.02	36	301200	4943500	18
31-Y	6.2	5	17	130	0.2	9	20	10	3.3	70	5	0.02	27	301200	4943500	18
31-Z	10.9	9	17	490	0.4	9	22	10	11.9	50	5	0.07	27	301200	4943500	18
104-Y	5.2	4	11	760	0.2	10	24	3	3.0	30	5	0.05	35	291600	4965600	18
104-Z	8.4	7	13	130	0.3	9	25	5	8.5	40	5	0.07	31	291600	4965600	18
134-Z	8.0	4	12	35	0.3	10	22	3	1.9	40	5	0.02	70	356600	4942500	18
244-Y	10.9	13	12	75	0.3	14	25	5	9.7	40	5	0.01	48	293800	4973000	18
244-Z	7.4	4	14	115	0.3	9	24	4	3.3	50	5	0.05	43	293800	4973000	18
265-Z	12.9	6	14	480	0.4	14	23	3	8.1	40	5	0.01	29	299200	4974500	18
313-Y	8.8	3	12	115	0.2	9	23	3	3.4	30	5	0.01	55	295800	4995000	18
313-Z	17.2	17	17	2380	0.3	9	23	16	20.7	60	5	0.17	49	295800	4995000	18
347-Y	7.9	2	12	255	0.3	9	24	3	2.4	40	5	0.01	53	349100	4936700	18
347-Z	8.5	2	12	115	0.2	14	24	3	1.9	50	5	0.01	68	349100	4936700	18
356-Z	8.6	2	12	115	0.2	14	25	3	1.8	30	5	0.01	60	344400	4952300	18
367-X	7.9	2	13	60	0.2	9	24	3	1.4	30	5	0.01	61	337600	4947400	18
367-Y	8.4	3	12	145	0.3	9	24	4	2.9	30	5	0.01	60	337600	4947400	18
367-Z	8.7	4	12	380	0.2	9	24	3	2.9	30	5	0.01	64	337600	4947400	18
483-Z	8.0	5	13	360	0.3	13	22	3	2.3	40	5	0.01	52	357600	4957400	18
498-Z	8.?	2	13	205	0.2	9	32	3	2.2	30	5	0.01	65	371000	4968400	18
499-Z	7.0	2	12	185	0.3	9	24	3	1.6	30	5	0.01	60	371800	4903200	18
588-Z	13.8	3	14	30	0.3	9	27	10	7.6	40	5	0.01	59	367000	4953900	18
689-V	3.4	2	10	10	0.3	13	34	4	1.9	30	5	0.01	56	356200	4952500	18
689-W	8.4	2	13	180	0.3	9	25	3	1.8	30	5	0.01	44	356200	4952500	18
689-X	7.8	2	12	125	0.3	9	32	3	1.8	40	5	0.01	65	356200	4952500	18
689-Y	9.1	2	13	245	0.2	9	33	3	2.7	40	5	0.01	71	356200	4952500	18
689-Z	7.8	3	12	30	0.3	14	32	3	2.8	30	5	0.01	77	356200	4952500	18
692-Z	7.2	3	13	170	0.3	9	29	3	1.9	30	5	0.01	71	355500	4950800	18
697-Z	7.6	2	12	275	0.2	9	22	3	2.6	30	5	0.01		359700	4949750	18
746-Z	8.8	3	14	135	0.3	9	25	3	2.1	40	5	0.01	68	355500	4979200	18
808-B	1.8	7	4	445	0.2	15	6	44	6.9	30	5	0.14		306000	5003000	18
808-C	32.8	38	26	3200	0.7	7	20	96	47.2	30	5	0.49		306000	5003000	18
818-Z	5.9	4	18	90	0.2	9	24	4	24.5	80	5	0.01	74	325100	5009300	18
819-Z	8.4	5	16	75	0.3	9	34	4	3.1	70	5	0.01	76	325000	5008500	18
834	6.3	9	13	35	0.2	13	21	8	6.2	30	5	0.14		265000	4989000	18
835	0.8	5	14	25	0.2	7	16	3	4.4	40	5	0.03		264400	4989000	18
836	2.5	3	12	110	0.1	7	15	14	1.8	40	5	0.03		263600	4988000	18
837	3.1	16	14	225	0.1	7	20	3	2.6	30	5	0.18		263000	4987500	18
838	1.5	2	11	40	0.1	7	22	3	0.3	30	5	0.01		263500	4986500	18
839	0.8	2	11	10	0.1	7	20	3	0.9	40	5	0.01		264200	4986400	18
840	0.8	8	13	135	0.5	7	13	12	8.2	40	5	0.04		265300	4986200	18
841	1.2	5	10	30	0.1	7	14	3	4.2	30	5	0.01		265000	4985800	18
842	4.7	8	11	20	0.1	7	23	6	4.2	30	5	0.07		264500	4985500	18
843	11.0	26	17	40	0.4	7	18	18	17.3	30	5	0.01		266900	4987000	18
844	0.8	8	12	95	0.1	7	14	12	2.6	40	5	0.01		268200	4985700	18
845	2.1	2	12	5	0.1	7	20	19	8.7	30	5	0.04		267100	4984100	18
846	6.9	8	11	275	0.1	7	15	12	10.7	30	5	0.01		266500	4981600	18
847	9.6	4	11	275	0.1	7	17	12	10.6	30	5	0.17		267400	4980000	18
848	8.4	6	13	255	0.3	7	18	18	20.3	30	5	0.01		266000	4978200	18
849	19.9	6	21	235	0.2	7	19	38	57.6	40	5	0.04		268500	4979000	18
850	3.6	3	9	25	0.1	7	21	5	3.7	30	5	0.01		270100	4978000	18
851	0.8	8	11	225	0.1	7	20	5	2.8	30	5	0.02		270100	4979000	18
852	145	11	22	215	0.1	7	6	55	79.9	30	5	0.17		270200	4979600	18
853	12.0	6	15	205	0.2	7	17	16	33.7	30	5	0.01		270300	4980200	18
854	10.9	8	14	245	0.2	7	27	24	28.3	30	5	0.01		274400	4979300	18
855	0.8	4	12	75	0.1	7	12	3	5.8	30	5	0.01		278500	4987000	18
856	1.0	1	9	5	0.1	7	25	3	1.7	30	5	0.01		275700	4987500	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm
857	12.10	44.7	3.01	2.17	1.370	0.489	0.349	0.051	0.085	0.07	35.5	5	43	435.0	70	4.6	20
858	10.70	44.0	4.18	2.65	1.650	0.333	1.100	0.034	0.128	0.08	35.8	5	39	463.0	60	30.4	22
859	12.70	44.8	3.06	2.77	1.620	0.355	0.768	0.037	0.075	0.08	35.7	5	42	496.0	60	1.0	22
860	17.30	39.9	3.68	5.53	1.880	1.410	0.713	0.039	0.176	0.12	29.9	5	39	569.0	300	24.9	22
861	47.80	18.8	3.77	10.50	6.200	1.460	2.770	0.062	0.662	0.22	9.1	5	102	242.0	230	155.0	31
862	22.30	41.0	1.14	4.83	0.801	1.190	0.390	0.072	0.100	0.27	29.8	5	30	135.0	1930	4.1	22
863	12.90	43.0	2.63	3.07	1.170	0.170	1.460	0.051	0.030	0.10	35.8	5	30	296.0	30	7.4	20
864	36.40	30.9	1.78	5.20	1.800	2.140	0.234	0.169	0.254	0.15	21.6	35	702	524.0	2580	37.3	27
865	11.60	44.5	3.43	2.39	1.600	0.831	0.198	0.024	0.140	0.08	34.4	5	41	287.0	50	12.2	24
866	64.50	8.9	3.59	12.10	2.070	5.880	0.907	0.056	0.723	0.19	1.8	30	68	147.0	350	13.9	22
867	34.90	28.4	16.20	0.99	0.623	0.215	0.828	0.037	0.049	0.06	18.8	5	56	179.0	30	2.8	15
868	2.25	32.0	22.00	0.38	0.827	0.007	0.492	0.072	0.004	0.05	44.6	5	49	85.3	30	1.2	20
869	38.70	25.8	16.10	1.52	1.940	0.485	0.464	0.127	0.062	0.12	12.0	15	99	147.0	1050	5.3	20
870	8.84	46.7	2.61	0.30	0.256	0.195	0.017	0.074	0.020	0.07	37.0	5	45	836.0	1410	3.9	23
871	1.74	30.1	22.40	0.20	0.574	0.024	0.006	0.082	0.008	0.04	45.1	5	46	67.9	30	1.3	19
872	12.90	44.4	2.30	3.25	2.230	0.532	0.613	0.049	0.148	0.11	34.5	5	41	388.0	80	3.3	28
873	26.70	32.7	0.97	7.53	1.990	1.480	2.380	0.033	0.281	0.21	25.3	5	33	296.0	220	3.5	27
874	15.20	41.5	3.18	4.18	1.930	0.502	1.280	0.041	0.166	0.12	32.7	5	57	388.0	130	9.5	24
875	1.42	53.7	2.09	0.21	0.323	0.070	0.013	0.035	0.014	0.07	42.2	5	36	485.0	30	4.7	26
876	40.00	26.8	3.48	9.39	4.670	1.680	1.950	0.075	0.609	0.25	14.6	5	85	331.0	260	25.8	28
877	40.00	26.5	3.52	9.43	4.840	1.510	2.070	0.073	0.583	0.25	14.9	5	82	336.0	320	65.8	31
878	20.90	41.4	2.69	4.93	2.410	0.829	0.915	0.051	0.273	0.16	27.9	5	53	475.0	220	7.8	28
879	1.52	54.3	2.18	0.34	0.655	0.079	0.054	0.030	0.014	0.06	42.1	5	34	593.0	30	3.2	27
880	51.80	15.8	2.52	12.90	4.540	1.190	2.000	0.108	0.856	0.29	6.3	5	81	264.0	110	40.7	26
881	9.01	50.5	2.10	0.25	0.213	0.065	0.037	0.018	0.017	0.07	37.7	5	35	157.0	110	3.9	22
882	10.20	47.5	0.97	0.68	0.572	0.203	0.179	0.016	0.054	0.08	37.9	5	31	136.0	390	3.7	23
883	2.66	50.9	1.01	0.11	0.227	0.048	0.006	0.013	0.010	0.05	41.6	5	32	112.0	30	3.5	25
884	4.76	49.6	1.73	0.84	0.775	0.109	0.075	0.038	0.032	0.06	39.4	5	31	380.0	30	3.8	25
885	17.10	46.4	3.52	0.15	0.229	0.038	0.006	0.025	0.008	0.07	31.9	5	33	129.0	1430	4.9	22
886	28.30	33.9	2.17	6.08	2.600	1.520	1.240	0.120	0.363	0.17	24.3	5	45	437.0	240	5.1	22
887	8.60	47.2	2.04	3.03	1.810	0.377	0.376	0.075	0.073	0.11	35.8	5	45	736.0	50	4.4	26
888	3.96	48.5	1.96	0.86	1.030	0.172	0.186	0.063	0.030	0.08	40.4	5	41	524.0	30	3.6	27
889	46.30	21.7	4.47	10.00	5.820	1.210	2.310	0.069	0.691	0.28	10.6	5	95	281.0	280	210.0	35
890	6.93	49.8	2.71	1.70	0.923	0.268	0.480	0.025	0.067	0.12	38.6	5	50	966.0	30	6.5	25
891	21.20	40.3	1.95	4.62	2.760	0.815	1.020	0.183	0.327	0.15	28.6	5	49	415.0	90	3.7	26
892	42.90	15.2	8.41	15.60	3.560	6.830	0.830	0.026	0.257	0.08	9.9	5	131	491.0	1320	3.0	26
893	24.30	39.7	2.47	5.02	1.470	1.260	1.510	0.043	0.094	0.08	27.4	5	47	364.0	80	29.7	25
894	17.00	44.7	2.18	3.29	1.020	1.070	0.912	0.030	0.041	0.08	32.5	5	37	489.0	60	3.9	23
895	16.20	46.1	2.25	4.04	2.600	0.366	0.715	0.077	0.223	0.12	30.6	5	49	537.0	50	6.2	26
896	2.57	55.8	1.89	0.31	1.350	0.093	0.009	0.082	0.012	0.07	41.3	5	33	678.0	30	9.1	25
897	48.90	13.1	4.70	13.60	6.290	2.110	2.880	0.051	0.664	0.25	5.0	5	94	345.0	370	160.0	34
898	7.95	49.7	2.97	1.05	0.957	0.081	0.225	0.025	0.071	0.06	38.0	5	36	816.0	30	3.8	14
899	37.10	26.6	3.56	8.02	5.240	0.818	2.240	0.106	0.635	0.28	15.2	5	83	259.0	260	33.6	25
900	44.80	19.2	4.18	11.40	6.210	1.430	2.570	0.074	0.767	0.23	8.8	5	105	384.0	340	104.0	30
901	6.65	50.1	2.85	1.39	1.020	0.087	0.404	0.033	0.054	0.07	38.3	5	36	708.0	30	3.6	16
902	19.50	43.0	2.63	4.23	1.570	1.170	0.690	0.089	0.568	0.37	28.9	5	54	233.0	210	4.3	25
903	13.20	48.4	2.74	2.34	1.950	0.510	0.503	0.047	0.234	0.13	32.9	5	52	558.0	110	17.0	25
904	22.40	36.3	4.62	6.22	3.480	0.231	1.240	0.085	0.380	0.15	25.1	5	68	788.0	50	10.9	27
905	3.87	54.8	2.55	0.26	0.237	0.043	0.027	0.028	0.017	0.06	40.8	5	47	171.0	30	8.3	17
906	8.74	49.7	3.56	2.69	1.150	0.362	0.604	0.045	0.137	0.10	35.3	5	43	370.0	30	3.5	17
907	10.80	38.4	2.08	2.03	1.650	0.361	0.378	0.046	0.099	0.10	34.7	5	39	433.0	130	2.4	16
908	20.00	41.3	3.13	4.23	2.720	0.438	1.050	0.066	0.280	0.14	28.1	5	63	410.0	70	49.1	25
909	13.50	45.7	2.94	2.78	1.670	0.384	0.560	0.043	0.156	0.12	31.3	5	52	693.0	170	12.8	20
910	41.70	20.6	4.48	10.60	5.690	1.700	2.210	0.071	0.690	0.22	10.5	5	105	287.0	380	71.4	28
911	11.80	49.0	3.21	2.23	1.780	0.285	0.476	0.052	0.160	0.11	33.1	5	46	599.0	110	7.2	17
912	8.35	51.0	2.63	1.61	1.110	0.146	0.408	0.026	0.135	0.08	36.2	5	45	581.0	60	8.1	19

SAMPLE NUMBER	Cr ppm	Li ppm	Ni ppm	F ppm	Be ppm	Cd ppm	Th ppm	Zr ppm	V ppm	Mo ppm	Ag ppm	S wt %	Reflect	Easting	Northing	Zone
857	3.7	6	13	145	0.1	7	27	13	13.6	30	5	0.01		274800	4987800	18
858	4.2	6	13	255	0.1	7	17	16	13.3	30	5	0.02		274200	4987800	18
859	9.0	6	13	215	0.1	7	16	15	14.0	30	5	0.01		273600	4987500	18
860	9.8	10	17	595	0.2	7	16	27	29.8	30	5	0.14		273000	4987100	18
861	62.8	18	30	625	0.2	7	16	47	115	40	5	0.11		272200	4986900	18
862	10.8	17	15	25	0.7	7	42	29	22.8	30	5	0.01		271500	4986500	18
863	11.7	3	17	5	0.3	7	40	18	12.5	30	5	0.01		275200	4988400	18
864	18.7	33	27	185	0.6	7	34	45	71.1	30	5	0.01		275500	4989300	18
865	16.6	24	20	95	0.5	7	39	23	18.1	30	5	0.16		275700	4989800	18
866	25.8	54	15	620	1.3	7	27	186	58.6	30	5	0.04		276100	4990400	18
867	8.6	5	16	355	0.4	7	31	28	14.2	30	5	0.01		274600	4991500	18
868	4.0	2	15	5	0.2	7	26	21	12.6	30	5	0.01		274100	4990200	18
869	9.9	20	22	130	0.3	7	34	31	16.6	30	5	0.03		273600	4989800	18
870	4.7	2	16	5	0.3	7	42	10	5.3	30	5	0.02		273300	4989300	18
871	3.5	3	16	5	0.2	7	33	5	4.7	30	5	0.01		272900	4988700	18
872	11.5	9	21	45	0.3	7	39	16	26.4	30	5	0.01		272600	4988300	18
873	3.5	8	13	60	0.5	7	38	114	12.9	30	5	0.05		274000	4989100	18
874	15.6	13	21	395	0.5	7	33	30	29.9	30	5	0.03		274500	4988800	18
875	4.3	2	16	50	0.3	7	39	7	5.5	30	5	0.04		264400	4969500	18
876	42.5	27	27	375	0.5	7	36	38	99.5	30	5	0.03		263500	4969200	18
877	46.8	17	31	285	0.5	7	36	44	103	30	5	0.01		262900	4968500	18
878	15.3	8	21	100	0.5	7	42	23	35.5	30	5	0.01		258200	4966800	18
879	6.9	2	16	5	0.3	7	37	6	6.1	30	5	0.01		257400	4966500	18
880	11.3	25	18	320	0.8	7	36	55	74.9	30	5	0.03		256400	4965900	18
881	5.5	3	18	70	0.3	7	39	7	4.7	30	5	0.01		256700	4965400	18
882	7.2	2	15	5	0.4	7	41	9	9.6	30	5	0.01		256600	4964400	18
883	4.5	2	16	30	0.4	7	42	6	5.0	30	5	0.01		256500	4963900	18
884	8.3	4	16	35	0.4	7	41	9	8.7	30	5	0.01		257300	4964700	18
885	8.0	4	15	5	0.3	7	39	5	7.4	30	5	0.01		256400	4966600	18
886	10.2	6	16	85	0.6	7	36	49	24.6	30	5	0.01		255600	4967200	18
887	7.8	11	18	95	0.5	7	38	21	19.3	30	5	0.01		256400	4967300	18
888	7.6	5	19	35	0.4	7	47	15	6.8	30	5	0.01		256900	4967800	18
889	47.5	17	32	245	0.6	7	34	40	114	30	5	0.01		257400	4968500	18
890	6.7	7	18	100	0.4	7	39	15	12.6	30	5	0.01		258100	4969300	18
891	12.4	5	20	25	0.4	7	42	30	33.4	30	5	0.01		258300	4969900	18
892	3.4	56	18	820	1.0	7	50	160	19.9	30	5	0.01		258000	4970400	18
893	7.5	7	18	295	9.2	7	45	49	20.5	30	5	0.01		257600	4971000	18
894	6.4	5	15	135	5.8	7	44	39	8.8	30	5	0.01		257300	4960000	18
895	12.5	7	20	30	0.4	7	37	15	32.3	30	5	0.01		259500	4970600	18
896	3.1	3	18	55	0.2	7	37	7	6.0	30	5	0.01		263100	4970300	18
897	56.2	25	34	500	0.8	7	25	69	142	30	5	0.01		263000	4972000	18
898	7.9	3	13	65	0.3	7	32	13	8.9	30	5	0.01		262000	4972000	18
899	47.6	9	30	350	0.4	7	29	41	108	30	5	0.02		264400	4972500	18
900	74.3	15	33	440	0.4	7	28	46	163	30	5	0.02		264500	4972900	18
901	7.4	4	14	40	0.3	7	32	13	7.9	30	5	0.01		264100	4973500	18
902	7.9	34	18	720	0.6	7	35	20	42.5	30	5	0.01		264300	4974100	18
903	19.9	7	19	50	0.3	7	34	21	39.5	30	5	0.01		263200	4974800	18
904	71.9	8	22	225	0.4	7	29	21	66.5	30	5	0.01		264400	4975100	18
905	8.6	3	15	20	0.4	7	35	6	4.4	30	5	0.01		265200	4975500	18
906	9.1	12	15	90	3.2	7	33	29	15.5	30	5	0.01		266400	4976400	18
907	7.1	5	13	160	0.3	7	38	14	14.9	30	5	0.01		266800	4975300	18
908	20.7	10	21	295	0.5	7	35	19	46.4	30	5	0.02		267000	4974700	18
909	8.4	6	17	60	0.3	7	33	16	22.7	30	5	0.01		267300	4973700	18
910	52.7	18	29	500	0.6	7	28	57	121	30	5	0.09		267500	4972800	18
911	18.3	5	19	245	0.3	7	30	16	28.2	30	5	0.01		267000	4972600	18
912	12.3	3	16	85	0.3	7	31	10	20.7	30	5	0.01		266300	4972600	18

SAMPLE NUMBER	SiO2 wt %	CaO wt %	MgO wt %	Al2O3 wt %	Fe2O3 wt %	K2O wt %	Na2O wt %	MnO wt %	TiO2 wt %	P2O5 wt %	LOI	Pb ppm	Zn ppm	Sr ppm	Ba ppm	Cu ppm	Co ppm
913	11.80	46.7	2.61	2.52	3.120	0.247	0.675	0.099	0.260	0.19	32.4	5	57	565.0	90	9.6	27
1038-Z	5.57	52.0	2.04	1.52	0.538	0.458	0.120	0.008	0.117	0.08	39.3	5	24	1530	380	22.9	39
1055-Y	1.90	57.4	1.06	0.21	0.171	0.090	0.027	0.011	0.017	0.07	42.2	5	38	1360	30	8.6	42
1055-Z	1.25	41.0	13.80	0.16	0.476	0.048	0.015	0.241	0.008	0.07	44.8	5	48	80.4	30	34.1	27
1129-Y	9.47	49.3	5.32	0.76	0.330	0.420	0.027	0.012	0.042	0.11	35.6	5	78	638.0	240	13.1	37
1129-Z	1.61	42.9	9.97	0.28	0.226	0.126	0.006	0.010	0.018	0.10	42.4	5	32	693.0	30	5.5	31
1206-Z	6.12	50.4	4.22	1.05	0.488	0.332	0.090	0.015	0.045	0.09	39.1	5	32	1620	120	7.1	30
1211-Y	1.06	50.3	7.08	0.15	0.125	0.009	0.006	0.012	0.013	0.06	42.7	5	33	1170	30	37.3	28
1211-Z	5.02	50.7	4.71	0.76	0.497	0.026	0.006	0.044	0.039	0.09	40.4	80	451	934.0	30	17.0	32
1219-Z	0.60	55.6	3.50	0.09	0.108	0.052	0.006	0.010	0.004	0.06	42.9	15	29	160.0	30	93.5	25
1308-Z	3.94	48.5	5.14	0.57	0.478	0.200	0.058	0.030	0.029	0.08	40.6	5	35	421.0	40	12.2	24
1563-Z	0.61	54.4	3.48	0.17	0.086	0.091	0.006	0.007	0.010	0.07	42.3	5	31	245.0	30	25.6	33
1575-X	0.45	55.2	3.74	0.12	0.068	0.070	0.006	0.006	0.003	0.07	43.4	5	29	254.0	30	36.6	31
1575-Y	0.40	53.2	4.82	0.10	0.088	0.055	0.006	0.008	0.004	0.06	42.8	5	29	218.0	30	14.6	32
1575-Z	0.76	54.5	3.51	0.14	0.116	0.078	0.006	0.007	0.011	0.06	42.3	5	27	241.0	30	13.4	22
1680-Y	0.53	53.7	4.01	0.17	0.118	0.081	0.006	0.009	0.015	0.07	42.3	5	27	271.0	30	5.4	32
1680-Z	0.90	50.3	3.59	0.19	0.192	0.101	0.006	0.013	0.020	0.07	42.7	5	20	300.0	30	11.7	18
1704-Y	0.89	32.9	23.70	0.16	0.211	0.010	0.132	0.023	0.014	0.05	45.3	5	22	31.4	30	16.9	16
1704-Z	0.85	54.5	3.87	0.10	0.141	0.047	0.006	0.010	0.009	0.04	45.3	5	30	276.0	30	21.5	17
1912-Z	0.59	54.3	4.28	0.09	0.092	0.065	0.006	0.006	0.002	0.06	42.6	5	21	167.0	30	59.0	20

SAMPLE NUMBER	Cr ppm	Li ppm	Ni ppm	F ppm	Be ppm	Cd ppm	Th ppm	Zr ppm	V ppm	Mo ppm	Ag ppm	S wt %	Reflect	Easting	Northing	Zone
913	9.6	6	17	245	0.4	7	30	20	26.2	30	5	0.01		265900	4972500	18
1038-Z	11.8	20	17	250	0.7	9	34	11	14.0	50	5	0.11	56	404700	4922200	18
1055-Y	7.6	7	14	135	0.3	9	37	5	4.5	60	5	0.02	62	416100	4926800	18
1055-Z	5.6	2	14	45	0.3	9	23	3	3.2	70	5	0.01	60	416100	4926800	18
1129-Y	21.8	16	21	940	0.5	9	37	9	10.0	690	5	0.04	56	389000	4929600	18
1129-Z	9.4	3	15	790	0.2	12	28	3	4.4	690	5	0.02	60	389000	4929600	18
1206-Z	10.4	5	16	480	0.4	12	27	3	8.5	30	5	0.02	66	403100	4965300	18
1211-Y	8.4	3	15	45	0.2	12	25	3	2.1	50	5	0.01	63	403000	4967900	18
1211-Z	9.8	16	16	155	0.4	11	26	7	11.1	50	5	0.01	60	403000	4967900	18
1219-Z	7.6	3	14	195	0.2	13	16	3	0.9	30	5	0.01	60	403100	4965300	18
1308-Z	9.4	2	15	360	0.3	9	26	5	4.6	50	5	0.03	77	356400	4942300	18
1563-Z	7.8	3	14	255	0.3	12	25	3	2.0	50	5	0.01	64	390900	5001700	18
1575-X	7.7	3	15	1340	0.2	12	24	3	1.0	50	5	0.01	60	392000	5002500	18
1575-Y	8.3	3	15	345	0.2	12	26	3	1.0	40	5	0.01	63	392000	5002500	18
1575-Z	7.5	3	13	415	0.2	17	18	3	0.9	30	5	0.01	71	392000	5002500	18
1680-Y	7.9	3	15	235	0.2	12	22	3	1.5	40	5	0.01	73	383500	5013200	18
1680-Z	8.7	3	12	345	0.2	13	17	3	1.4	30	5	0.01	60	383500	5013200	18
1704-Y	4.7	3	13	120	0.1	13	7	3	0.4	30	5	0.01	72	384300	5003000	18
1704-Z	8.2	2	13	135	0.2	7	28	4	2.8	30	5	0.01	61	384300	5003000	18
1912-Z	7.9	4	13	205	0.2	13	13	3	0.7	30	5	0.01	61	382800	4972600	18

Appendix B

Elemental Statistics

Statistical values for 19 elements and also Loss on Ignition (LOI) are presented for Part 1 data set (1778 samples). These statistics are categorized according to the CaO/MgO ratio and SiO_2 content as discussed under the section on "Ternary Diagrams".

Statistical values for Part 2 data set may be examined at the Office of the Resident Geologist, Southern Region, Tweed.

Element CaO Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	57.22	2.74	61.36	39.10	60.91	61.56
2. pure dolo-calcite	450	51.77	2.97	59.60	43.00	56.05	57.47
3. pure calc-dolomite	52	36.58	4.00	43.10	30.86	43.35	43.74
4. pure dolomite	151	29.67	0.60	31.30	25.30	30.66	30.83
5. siliceous calcite	95	48.37	5.21	56.50	36.50	55.32	55.84
6. sil. dolo-calcite	464	43.60	5.93	56.70	28.30	52.11	54.00
7. sil. calc-dolomite	102	33.21	4.36	44.60	24.00	41.56	44.00
8. sil. dolomite	90	28.58	1.26	31.10	24.50	31.10	31.63
9. calc-sili calcite	few	-	-	-	-	-	-
10. calc-sili dolo-calcite	142	26.60	3.79	34.20	14.99	32.64	33.59
11. calc-sili calc-dolomite	21	20.24	6.12	27.50	9.85	27.48	27.79
12. calc-sili dolomite	few	-	-	-	-	-	-
13. calcite	189	51.76	7.41	61.36	24.50	59.90	61.05
14. dolo-calcite	1058	44.72	9.49	59.60	1.73	55.34	56.44
15. calc-dolomite	178	32.20	7.40	44.60	3.66	42.62	43.69
16. dolomite	244	29.03	2.49	31.30	0.60	30.93	31.77
Total Data	1779	40.80	11.54	61.36	0.60	56.04	58.28

Element MgO Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	1.21	0.59	2.16	0.00	2.10	2.13
2. pure dolo-calcite	450	5.60	1.96	11.60	2.22	9.46	10.46
3. pure calc-dolomite	52	15.00	2.52	18.90	10.60	18.48	11.66
4. pure dolomite	151	20.03	0.70	21.16	15.90	20.92	21.10
5. siliceous calcite	95	1.18	0.51	2.10	0.22	2.00	2.05
6. sil. dolo-calcite	464	4.93	1.97	11.41	1.84	8.81	9.67
7. sil. calc-dolomite	102	14.20	2.80	19.70	7.98	18.49	18.87
8. sil. dolomite	90	19.22	1.06	20.70	15.70	20.83	20.93
9. calc-sili calcite	few	-	-	-	-	-	-
10. calc-sili dolo-calcite	142	3.76	1.23	6.81	1.02	6.11	6.64
11. calc-sili calc-dolomite	21	7.28	2.46	12.25	3.54	11.95	12.58
12. calc-sili dolomite	few	-	-	-	-	-	-
13. calcite	189	1.17	0.55	2.16	0.01	2.06	2.74
14. dolo-calcite	1058	5.05	1.98	11.60	0.25	8.90	9.96
15. calc-dolomite	178	13.41	3.84	19.70	1.16	18.39	18.80
16. dolomite	244	19.57	1.81	21.16	0.37	20.94	21.02
Total Data	1779	8.39	6.75	25.3	0.00	20.73	21.55

Element SiO_2 Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	1.48	0.84	2.97	0.00	2.77	2.91
2. pure dolo-calcite	450	1.21	0.78	3.07	0.00	2.75	2.83
3. pure calc-dolomite	52	1.18	0.73	2.53	0.00	2.42	2.46
4. pure dolomite	151	1.04	0.72	2.54	0.00	2.36	2.47
5. siliceous calcite	95	8.16	4.36	20.00	3.00	20.00	20.00
6. sil. dolo-calcite	464	7.97	4.09	20.00	1.70	15.49	20.00
7. sil. calc-dolomite	102	9.93	6.16	20.30	2.73	20.00	20.00
8. sil. dolomite	90	6.72	4.67	20.00	2.59	20.00	20.00
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	–	–	–	–	–	20.00	20.00
11. calc-sili calc-dolomite	–	–	–	–	–	20.00	20.00
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	5.53	5.36	20.01	0.02	15.88	20.00
14. dolo-calcite	1058	6.74	6.72	20.01	0.01	20.00	20.00
15. calc-dolomite	178	8.74	7.52	20.31	0.02	20.00	20.00
16. dolomite	244	3.38	4.39	20.01	0.01	13.00	20.00
Total Data	1779	6.75	6.77	20.3	0.00	20.00	20.00

Element TiO_2 Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.02	0.01	0.10	0.00	0.05	0.09
2. pure dolo-calcite	450	0.02	0.01	0.16	0.00	0.04	0.05
3. pure calc-dolomite	52	0.02	0.01	0.07	0.00	0.05	0.08
4. pure dolomite	151	0.02	0.02	0.23	0.00	0.05	0.08
5. siliceous calcite	95	0.05	0.05	0.27	0.01	0.16	0.25
6. sil. dolo-calcite	464	0.09	0.08	0.63	0.01	0.24	0.29
7. sil. calc-dolomite	102	0.08	0.09	0.61	0.01	0.27	0.35
8. sil. dolomite	90	0.05	0.04	0.26	0.01	0.17	0.21
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	0.34	0.15	0.91	0.01	0.59	0.66
11. calc-sili calc-dolomite	21	0.43	0.28	0.98	0.02	0.85	0.98
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	0.04	0.04	0.27	0.01	0.12	0.16
14. dolo-calcite	1058	0.09	0.13	0.91	0.01	0.38	0.50
15. calc-dolomite	178	0.11	0.17	0.98	0.01	0.55	0.64
16. dolomite	244	0.04	0.04	0.34	0.01	0.14	0.20
Total Data	1779	0.08	0.13	1.31	0.00	0.31	0.51

Element MnO Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.03	0.05	0.36	0.00	0.07	0.19
2. pure dolo-calcite	450	0.02	0.02	0.27	0.00	0.05	0.08
3. pure calc-dolomite	52	0.09	0.06	0.22	0.00	0.02	0.22
4. pure dolomite	151	0.06	0.04	0.29	0.00	0.15	0.19
5. siliceous calcite	95	0.03	0.03	0.22	0.01	0.08	0.15
6. sil. dolo-calcite	464	0.04	0.04	0.25	0.01	0.10	0.19
7. sil. calc-dolomite	102	0.09	0.07	0.30	0.01	0.22	0.28
8. sil. dolomite	90	0.08	0.06	0.39	0.01	0.19	0.21
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	0.06	0.03	0.19	0.01	0.11	0.13
11. calc-sili calc-dolomite	21	0.06	0.03	0.15	0.02	0.14	0.16
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	0.03	0.04	0.36	0.01	0.10	0.18
14. dolo-calcite	1058	0.04	0.03	0.27	0.01	0.10	0.16
15. calc-dolomite	178	0.09	0.06	0.30	0.01	0.21	0.23
16. dolomite	244	0.08	0.06	0.69	0.01	0.18	0.21
Total Data	1779	0.05	0.05	0.69	0.00	0.15	0.19

Element P_2O_5 Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.09	0.64	6.00	0.00	0.10	0.11
2. pure dolo-calcite	450	0.06	0.04	0.13	0.00	0.10	0.12
3. pure calc-dolomite	51	0.06	0.04	0.12	0.00	0.17	0.12
4. pure dolomite	151	0.06	0.06	0.42	0.00	0.11	0.17
5. siliceous calcite	95	0.03	0.04	0.15	0.01	0.11	0.14
6. sil. dolo-calcite	464	0.06	0.05	0.41	0.01	0.13	0.17
7. sil. calc-dolomite	102	0.06	0.05	0.28	0.01	0.13	0.21
8. sil. dolomite	90	0.05	0.05	0.27	0.01	0.13	0.16
9. calc-sili calcite	few	-	-	-	-	-	-
10. calc-sili dolo-calcite	142	0.14	0.06	0.33	0.01	0.24	0.27
11. calc-sili calc-dolomite	21	0.16	0.13	0.64	0.01	0.24	0.64
12. calc-sili dolomite	few	-	-	-	-	-	-
13. calcite	189	0.06	0.44	6.00	0.01	0.11	0.12
14. dolo-calcite	1058	0.07	0.06	0.41	0.01	1.45	0.22
15. calc-dolomite	177	0.07	0.07	0.64	0.01	0.19	0.22
16. dolomite	244	0.06	0.06	0.42	0.01	0.13	0.17
Total Data	1778	0.07	0.15	6.00	0.00	0.16	0.21

Element LOI Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	41.49	3.13	46.10	20.40	44.00	47.60
2. pure dolo-calcite	450	42.57	1.92	48.90	31.40	45.00	45.90
3. pure calc-dolomite	52	44.88	2.22	51.30	37.70	47.88	49.90
4. pure dolomite	151	45.82	3.24	59.10	23.50	50.18	52.00
5. siliceous calcite	95	36.79	3.96	44.30	21.00	41.79	43.10
6. sil. dolo-calcite	464	36.67	4.55	45.40	2.50	42.89	43.79
7. sil. calc-dolomite	102	36.71	7.44	50.70	11.40	45.97	48.00
8. sil. dolomite	90	41.06	6.31	49.30	12.00	47.40	48.80
9. calc-sili calcite	few	-	-	-	-	-	-
10. calc-sili dolo-calcite	142	18.93	7.72	38.10	1.50	30.45	33.16
11. calc-sili calc-dolomite	21	12.58	7.49	27.00	1.00	23.95	27.16
12. calc-sili dolomite	few	-	-	-	-	-	-
13. calcite	189	38.31	5.79	46.10	11.00	43.86	44.88
14. dolo-calcite	1058	36.74	8.83	48.90	0.80	44.50	45.54
15. calc-dolomite	178	35.65	12.17	51.30	0.40	47.25	48.44
16. dolomite	244	43.56	6.72	59.10	0.00	48.95	51.25
Total Data	1780	37.25	9.84	59.10	0.00	46.63	47.70

Element Fe_2O_3 Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.22	0.31	2.40	0.01	0.62	1.06
2. pure dolo-calcite	450	0.20	0.50	10.01	0.01	0.63	0.89
3. pure calc-dolomite	52	0.55	0.56	3.42	0.03	1.63	2.25
4. pure dolomite	151	0.48	0.36	2.13	0.02	1.19	1.50
5. siliceous calcite	95	0.51	0.44	2.01	0.01	1.56	1.95
6. sil. dolo-calcite	464	1.05	0.91	10.01	0.03	2.64	3.35
7. sil. calc-dolomite	102	1.29	1.20	6.10	0.02	4.07	4.50
8. sil. dolomite	90	0.96	0.82	4.51	0.02	2.56	4.30
9. calc-sili calcite	few	-	-	-	-	-	-
10. calc-sili dolo-calcite	142	3.41	1.58	10.01	0.30	5.91	7.29
11. calc-sili calc-dolomite	21	4.16	2.89	10.01	0.22	10.00	10.00
12. calc-sili dolomite	few	-	-	-	-	-	-
13. calcite	189	0.38	0.41	2.40	0.01	1.30	1.66
14. dolo-calcite	1058	1.00	1.36	10.01	0.01	3.96	5.32
15. calc-dolomite	178	1.41	1.73	10.01	0.02	4.77	6.86
16. dolomite	244	0.67	0.64	4.51	0.02	1.72	2.64
Total Data	1779	0.95	1.32	10.01	0.00	3.77	5.00

Element Al_2O_3 Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.40	0.24	1.18	0.00	0.92	1.10
2. pure dolo-calcite	450	0.33	0.24	3.90	0.08	0.72	0.80
3. pure calc-dolomite	52	0.32	0.21	1.36	0.08	0.73	0.80
4. pure dolomite	151	0.28	0.22	1.68	0.05	0.68	0.87
5. siliceous calcite	95	1.22	1.03	5.01	0.06	3.19	5.01
6. sil. dolo-calcite	463	1.89	1.48	5.01	0.10	5.00	5.21
7. sil. calc-dolomite	102	1.48	1.56	6.35	0.06	5.16	5.00
8. sil. dolomite	90	0.76	0.73	5.01	0.09	2.26	3.04
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	4.90	0.60	5.02	0.23	5.00	5.00
11. calc-sili calc-dolomite	21	4.25	1.66	5.01	0.30	5.00	5.00
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	0.90	0.97	5.01	0.01	2.98	5.00
14. dolo-calcite	1057	1.64	1.80	5.02	0.08	5.00	5.00
15. calc-dolomite	178	1.50	1.78	6.35	0.06	5.00	5.00
16. dolomite	244	0.49	0.62	5.01	0.05	1.50	2.03
Total Data	1778	1.38	1.64	6.35	0.00	5.00	5.00

Element K_2O Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.07	0.08	0.44	0.00	0.23	0.42
2. pure dolo-calcite	450	0.08	0.08	0.49	0.00	0.26	0.35
3. pure calc-dolomite	52	0.05	0.05	0.25	0.00	0.18	0.28
4. pure dolomite	151	0.05	0.17	2.01	0.00	0.17	0.28
5. siliceous calcite	95	0.22	0.32	2.01	0.01	0.76	1.28
6. sil. dolo-calcite	464	0.34	0.32	2.01	0.01	1.10	1.48
7. sil. calc-dolomite	102	0.28	0.41	2.01	0.01	1.33	1.86
8. sil. dolomite	90	0.16	0.22	0.98	0.01	0.67	0.85
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	0.89	0.50	2.01	0.01	1.57	2.11
11. calc-sili calc-dolomite	21	1.12	0.75	2.01	0.01	1.94	3.09
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	0.18	0.32	2.01	0.01	0.74	1.41
14. dolo-calcite	1058	0.31	0.39	2.01	0.01	1.28	1.56
15. calc-dolomite	178	0.32	0.52	2.01	0.01	1.72	2.57
16. dolomite	244	0.10	0.23	2.01	0.01	0.45	0.96
Total Data	1779	0.26	0.40	2.01	0.00	1.25	1.86

Element Na_2O Classification	Number of Observations	Mean (%)	Std. Dev. (%)	max. (%)	min. (%)	95%ile	98%ile
1. pure calcite	87	0.02	0.01	0.05	0.00	0.02	0.03
2. pure dolo-calcite	450	0.01	0.01	0.14	0.00	0.02	0.02
3. pure calc-dolomite	52	0.01	0.01	0.02	0.00	0.02	0.02
4. pure dolomite	151	0.04	0.24	3.01	0.00	0.02	0.01
5. siliceous calcite	95	0.11	0.19	1.13	0.01	0.46	0.91
6. sil. dolo-calcite	464	0.15	0.27	3.01	0.01	0.62	0.92
7. sil. calc-dolomite	102	0.08	0.21	1.27	0.01	0.49	0.90
8. sil. dolomite	90	0.02	0.03	0.25	0.01	0.02	0.12
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	1.14	0.82	3.01	0.01	3.00	3.07
11. calc-sili calc-dolomite	21	1.21	1.12	3.01	0.01	3.00	3.09
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	0.07	0.17	1.31	0.01	0.35	0.66
14. dolo-calcite	1058	0.23	0.51	3.01	0.01	1.31	1.90
15. calc-dolomite	178	0.21	0.60	3.01	0.01	1.49	3.03
16. dolomite	244	0.03	0.19	3.01	0.01	0.02	0.08
Total Data	1779	0.18	0.46	3.01	0.00	1.11	1.79

Element Pb Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	11	33	300	5	33	73
2. pure dolo-calcite	450	5	5	113	5	5	12
3. pure calc-dolomite	52	6	4	31	5	11	20
4. pure dolomite	151	6	10	113	5	5	17
5. siliceous calcite	95	8	10	71	5	21	61
6. sil. dolo-calcite	463	6	6	78	5	10	20
7. sil. calc-dolomite	101	8	17	160	5	10	30
8. sil. dolomite	89	6	8	80	5	11	18
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	8	18	220	5	17	22
11. calc-sili calc-dolomite	21	7	4	19	5	16	18
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	9	23	300	5	19	61
14. dolo-calcite	1057	6	9	220	5	5	18
15. calc-dolomite	177	7	13	160	5	17	28
16. dolomite	243	7	17	230	5	10	19
Total Data	1776	7	12	300	5	13	23

Element Zn Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	38	94	800	4	173	262
2. pure dolo-calcite	450	22	62	1000	3	42	70
3. pure calc-dolomite	52	32	77	550	3	64	170
4. pure dolomite	151	1284	15460	19%	3	85	160
5. siliceous calcite	95	32	51	460	6	82	150
6. sil. dolo-calcite	463	44	169	3320	5	61	160
7. sil. calc-dolomite	101	374	2954	29700	8	430	1320
8. sil. dolomite	89	40	57	460	6	153	180
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	64	64	600	10	125	281
11. calc-sili calc-dolomite	21	57	34	136	10	100	136
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	34	76	800	4	107	242
14. dolo-calcite	1057	37	122	3320	3	80	130
15. calc-dolomite	177	230	2233	29700	3	311	589
16. dolomite	243	814	12187	19%	3	118	241
Total Data	1776	167	4566	19%	3	98	241

Element Sr Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	897	827	3500	80	2466	2830
2. pure dolo-calcite	450	369	315	2550	70	1039	1400
3. pure calc-dolomite	52	178	269	1700	30	916	1000
4. pure dolomite	151	91	122	1230	20	255	400
5. siliceous calcite	95	783	732	3400	70	2163	2410
6. sil. dolo-calcite	463	469	363	3230	50	1122	1590
7. sil. calc-dolomite	101	231	273	2070	20	600	800
8. sil. dolomite	89	126	133	820	40	386	810
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	447	255	1900	20	895	1310
11. calc-sili calc-dolomite	21	387	645	3080	40	895	3060
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	819	775	3500	50	2269	2620
14. dolo-calcite	1057	423	333	3230	20	1069	1530
15. calc-dolomite	177	234	339	3080	10	706	1540
16. dolomite	243	103	126	1230	20	320	470
Total Data	1776	222	407	3500	10	1330	1780

Element Ba Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	165	150	780	5	450	760
2. pure dolo-calcite	450	133	53	460	40	240	290
3. pure calc-dolomite	52	178	570	4200	60	185	290
4. pure dolomite	151	80	47	320	30	203	230
5. siliceous calcite	95	320	609	5280	70	1138	2080
6. sil. dolo-calcite	463	240	566	11500	50	435	590
7. sil. calc-dolomite	101	237	465	3000	40	624	2570
8. sil. dolomite	89	160	260	1740	40	425	1510
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	380	441	3700	5	1040	2140
11. calc-sili calc-dolomite	21	420	594	2880	40	750	3090
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	260	453	5280	50	750	1380
14. dolo-calcite	1057	213	418	11500	5	465	660
15. calc-dolomite	177	251	534	4200	20	728	2630
16. dolomite	243	126	245	2560	30	271	1030
Total Data	1776	212	483	11500	5	490	660

Element Cu Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	9	2	16	3	14	11
2. pure dolo-calcite	450	8	2	19	3	14	15
3. pure calc-dolomite	52	8	3	19	3	16	17
4. pure dolomite	151	7	6	51	3	13	22
5. siliceous calcite	95	29	188	1840	3	18	23
6. sil. dolo-calcite	463	13	45	920	3	25	35
7. sil. calc-dolomite	101	14	19	167	3	25	65
8. sil. dolomite	89	8	8	68	3	17	31
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	21	15	71	3	54	70
11. calc-sili calc-dolomite	21	113	442	2040	3	69	2558
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	19	133	1840	3	16	20
14. dolo-calcite	1057	12	31	920	3	20	40
15. calc-dolomite	177	24	153	2040	3	26	67
16. dolomite	243	8	15	220	3	15	31
Total Data	1776	13	69	2040	3	25	39

Element Co Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	3	0.93	9	3	6	7
2. pure dolo-calcite	450	3	0.67	12	3	5	4
3. pure calc-dolomite	52	3	0.71	6	3	5	7
4. pure dolomite	151	3	0.91	11	3	5	7
5. siliceous calcite	95	4	1.91	14	3	9	12
6. sil. dolo-calcite	463	4	2.59	29	3	9	11
7. sil. calc-dolomite	101	5	3.62	20	3	13	20
8. sil. dolomite	89	3	1.62	15	3	5	12
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	8	4.07	21	3	15	18
11. calc-sili calc-dolomite	21	8	5.23	19	3	18	19
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	3	1.54	14	3	7	10
14. dolo-calcite	1057	4	2.86	29	3	11	14
15. calc-dolomite	177	5	3.64	20	3	13	19
16. dolomite	243	3	2.77	42	3	5	8
Total Data	1776	4	3.	54	3	11	14

Element Ni Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	3	1	7	2	3	5
2. pure dolo-calcite	450	3	1	13	2	3	5
3. pure calc-dolomite	52	3	1	9	2	5	8
4. pure dolomite	151	3	1	10	2	5	8
5. siliceous calcite	95	3	2	15	2	5	9
6. sil. dolo-calcite	463	4	3	25	2	10	13
7. sil. calc-dolomite	101	5	9	94	2	14	20
8. sil. dolomite	89	3	2	13	2	9	13
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	10	6	34	2	22	26
11. calc-sili calc-dolomite	21	11	8	28	3	23	28
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	3	2	15	2	24	8
14. dolo-calcite	1057	4	4	34	2	5	18
15. calc-dolomite	177	5	9	94	2	14	22
16. dolomite	243	3	3	43	2	17	10
Total Data	1776	4	8	260	2	12	18

Element Cr Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	4	2.	12	3	11	14
2. pure dolo-calcite	450	4	3.	36	3	7	12
3. pure calc-dolomite	52	4	3.	17	3	9	16
4. pure dolomite	151	3	2.	14	3	6	10
5. siliceous calcite	95	6	5.	38	3	19	25
6. sil. dolo-calcite	463	9	6.	47	3	23	29
7. sil. calc-dolomite	101	14	55.	555	3	30	45
8. sil. dolomite	89	5	4.	27	3	14	12
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	25	15.	73	3	56	64
11. calc-sili calc-dolomite	21	31	29.	98	3	89	96
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	5	4.	38	3	15	19
14. dolo-calcite	1057	9	10.	75	3	33	44
15. calc-dolomite	177	13	43.	555	3	46	82
16. dolomite	243	4	3.	27	3	11	17
Total Data	1776	9	41.	1220	3	29	42

Element Li Classification	Number of Observations	Mean (ppm)	Std. Dev. (ppm)	max. (ppm)	min. (ppm)	95%ile	98%ile
1. pure calcite	87	5	3	16	2	12	19
2. pure dolo-calcite	450	5	2	16	2	9	13
3. pure calc-dolomite	52	4	2	10	2	9	10
4. pure dolomite	151	4	2	13	2	9	10
5. siliceous calcite	95	7	6	32	2	21	30
6. sil. dolo-calcite	463	10	7	58	2	24	29
7. sil. calc-dolomite	101	12	11	62	2	37	47
8. sil. dolomite	89	7	10	91	2	16	26
9. calc-sili calcite	few	–	–	–	–	–	–
10. calc-sili dolo-calcite	142	18	12	102	2	39	51
11. calc-sili calc-dolomite	21	25	20	91	4	49	93
12. calc-sili dolomite	few	–	–	–	–	–	–
13. calcite	189	6	5	32	2	17	22
14. dolo-calcite	1057	9	8	102	2	24	33
15. calc-dolomite	177	11	12	91	2	38	48
16. dolomite	243	5	7	91	2	13	18
Total Data	1776	8	9	102	2	24	35

Appendix C

Sample Descriptions

Descriptions of outcrop geology were taken for each of the samples in order that correlations might be made with analytical results. These descriptions are on file at the Office of the Resident Geologist, Southern Region, Tweed. Brief summaries of the sample descriptions are given using appropriate symbols for the different sample characteristics and impurities.

TABLE C.1. CARBONATE SAMPLING PROGRAM SAMPLE DESCRIPTIONS LEGEND.

Colour						Grain Size		
w	-	white	or	-	orange	f	-	fine (<1 mm)
g	-	grey	bf	-	buff	m	-	medium (2 to 4 mm)
lg	-	light grey	lbf	-	light buff	c	-	coarse (>5 mm)
dg	-	dark grey	y	-	yellow			
mg	-	medium grey	br	-	brown			
pk	-	pink	bk	-	black			
bl	-	blue						
Impurities						**Structure**		
bio	-	biotite	mag	-	magnetite	mas	-	massive
phlog	-	phlogopite	serp	-	serpentine	lam	-	laminated
mus	-	muscovite	fel	-	feldspar	fol	-	foliated
q	-	quartz	act	-	actinolite			
gf	-	graphite	aug	-	augite			
sp	-	sphalerite	talc	-	talc			
hem	-	hematite	chl	-	chlorite			
clots	-	clots	tour	-	tourmaline			
hb	-	hornblende	lim	-	limonite			
py	-	pyrite	diop	-	diopside			
c-s	-	calc-silicates	gt	-	garnet			
trem	-	tremolite	cp	-	chalcopyrite			

Sample No.	Colour	Grain Size	Impurities	Structure
1	br	-	q,hem,hb,phlog	lam
2	bf-lg	f	phlog,py?,clot(c-s q)	-
3	bf	m-f	clot(q c-s)	lam
4	lg	f	phlog,hem	mas
5	br	f	clot(q),phlog,trem	mas
6	mg	f	bio,py	-
7	lg	m	py,phlog	-
8	bf-pk	m-f	-	lam
9	g	c	bio	lam
10	lg-w	m-c	phlog	lam,mas
11	bf	f	py,hem	mas
12	mg	f	hem,phlog	-
13	dg	f	serp(along fractures)	mas
14	bf	f	phlog,q	lam
15	g-bf	f	q,py	lam
16	dg	f	bio,q	lam
17	g	f	-	lam
18	g	f	bio	lam
19	g	f	py,hb	lam
20	mg	f	phlog,py	lam
21	mg	f	q	lam
22	mg	f	phlog,py	lam
23	lg	f	hb	lam
24	lg	f	phlog,bio	lam

Sample No.	Colour	Grain Size	Impurities	Structure
25	lg	f	bio	lam
26	lg	f	phlog,bio,hb	lam
27	lbf	f	phlog,q,fel	lam
28	lg	f	py	lam
29	lg-bf	f	q	lam
30	lg-w	f	-	lam
31	lg	f	hb	lam
32	dg	f	-	lam
33	lg	f	-	mas
34	lg	f	-	mas
35	lg	f	py	mas,lam
36	lg	f	hem,phlog,q	mas
37	lg	m	py	mas
38	lg	m	phlog,q	mas,lam
39	lg	f	c-s	lam
40	lg	f	-	lam
41	lg	f	-	lam
42	lbf-w	f	py,q	mas
43	lg	f	phlog,bio,q	lam
44	w	f	py	mas
45	lg-w	m	py	lam
46	bf-w	f	q	mas
47(a)	w	f	-	mas
47(b)	g-w	f	act	mas
48	lg-bf	f-m	phlog	lam
49	lg-bf	f-m	phlog	lam
50	g	f	phlog	lam
51	lg	f	phlog,q	lam
52	lg	f	phlog,q	lam
53	mg	m	phlog	lam
54	lg	f	phlog	lam
55	lg	f	phlog	lam
56	mg	f	phlog	lam
57	mg	m	phlog,c-s	lam
58	mg	f	phlog	lam
59	mg	f	phlog	lam
60	mg	f	phlog	lam
61	mg	f-m	phlog	lam
62	mg	f	c-s	mas
63	mg	f	bio	lam
64	lg	m	bio	mas
65	mg	f	bio	mas
66	lg	f	bio	lam
67	lg	f	phlog,q	lam
68	mg	f	phlog	mas
69	lg	f	phlog,bio	lam
70	mg	m	bio,py	mas
71	lg	f	py	mas
72	lg	f-m	py,bio,trem	lam
73	mg	f	bio	mas
74	lg	f	py	lam
75	mg	f	bio	lam
76	mg	m	py,phlog	lam
77	mg	f	phlog	lam
78	mg	f	bio,phlog	mas
79	dg	f	bio	lam
80	mg	f	phlog	lam
81	mg	f-m	phlog	lam
82	mg	f	bio	lam
83	mg	f	phlog	lam
84	mg	f	phlog	lam
85	mg	f	phlog	lam
86	mg	f-m	phlog	lam
87	mg	f	-	mas

Sample No.	Colour	Grain Size	Impurities	Structure
88	mg	f	phlog	lam
89	dg-lg	f-m	phlog	lam
90	mg	f	bio	lam
91	mg	m-f	-	lam
92	mg	f	phlog	lam
93	lg	f	phlog	lam
94	lg-dg	m-f	phlog	lam
95	mg	f	phlog,bio	lam
96	lg	f	phlog	lam
97	mg	f	phlog	lam
98	dg-bk	f	py	lam
99	lg	f	phlog	lam
100	dg	f	-	mas
101	lg	f	phlog	lam
102	lg	f	q	lam
103	lg	f	-	lam
104(a)	lg	f	aug,bio,q	lam
104(b)	w	f	py,sp	lam
104(c)	g	-	-	lam
105	lg	f-m	py	lam
106	lg-dg	f	py	lam
107	bk-lg	f-m	phlog,bio	lam
108	lg	f-m	bio	lam
109	lg-bk	m-c	bio	lam
110	g	f	py	-
111	lg	f	-	lam
112	lg	m	py,clot(phlog),q,fel	lam
113	lg	f-m	phlog,bio	lam
114	lg	m	py,bio,c-s	lam
115	lg-w	f-m	phlog,bio	lam
116	lg	f	py	lam
117	lg	f	py	lam
118	lg-w	m	phlog	lam
119	mg	f	phlog	lam
120	w	f-m	-	lam
121	lg	m-f	py	mas
122	lg-w	f	c-s	lam
123	w-g	f	py	lam
124	mg	f	bio	lam
125	lg	f	bio	lam
126	lg	f	phlog,c-s	lam
127	lg	m-f	bio,c-s	lam
128	lg	f	phlog	mas
129	bf-y	f	py	mas
130	lg	f	c-s,phlog	lam
131	mg	f	-	lam
132	mg	f	-	lam
133	w	f	trem	mas
134	w	m-c	phlog	mas
135	w	c	py,phlog,hem,mus	mas
136	w	m	trem	lam
137	y-w	f	py,phlog,q	mas
138	lg	f	bio	lam
139	dg	f	q,c-s	lam
140	lg-w	f	phlog	lam
141	mg	f	hb,phlog	lam
142	mg	f	-	lam
143	mg	f	bio	lam
144	mg	f	-	lam
145	mg	f	-	lam
146	lg	f	c-s	mas
147	lg	f-m	c-s	lam
148	lg	f-m	phlog,c-s,clot	lam
149	mg	f-m	trem,phlog	lam

Sample No.	Colour	Grain Size	Impurities	Structure
150	mg	f	hem,bio,phlog	lam
151	lg	f	-	-
152	mg	f	-	lam
153	lg	f	-	lam
154	lg	f-m	q,py,phlog	lam
155	lg	f	-	lam
156	lg	f	-	mas
157	lg	f	-	lam
158	lg	f	-	lam
159	lg	f	-	lam
160	lg	f-m	phlog	lam
161	lg	m-c	phlog,q	lam
162	lg	f	bio	lam
163	lg	f	py	lam
164	w	m-c	py,hb	lam
165	w	f-m	bio	lam
166	lg	f-m	bio	lam
167	lg-w	m-c	phlog,bio,c-s,py	mas
168	lg-w	f-c	hb,q	lam
169	lg	f	bio	lam
170	lg	f-m	bio,q	lam
171	bf-g	m	bio	lam
172	lg	m-c	sp,c-s,py	lam
173	w	m	phlog,bio	xenolith
174	w	m	phlog	lam
175	lg-w	m	py,phlog	lam
176	lg	f	phlog,bio	lam
177	lg	f	bio	lam
178	lg-w	m	phlog,py	lam
179	lg	m	bio	lam
180	dg	f-m	bio	lam
181	lg	f	bio	lam
182	mg	m	phlog	lam
183	w-lg	m-c	phlog,bio	lam
184	lg-w	m	py,phlog	lam
185	lg	m	py,trem,py	lam
186	lg	m	bio	lam
187	lg	m	bio,py,q	lam
188	lg	f	-	lam
189	y-w	-	hem,phlog	-
190	pk-w	m	phlog	lam
191	lg-w	f	phlog	mas
192	lg	f	c-s,phlog	lam
193	bf-w	f	phlog,q	lam
194	bfw-bfpk	f	py	mas
195	br-w	f	q	lam
196	lg	f	phlog,talc	lam
197	lg	f	py	lam
198	w-lg	f	py	lam
199	lg	f	q	lam
200	lg-dg	f	bio	lam
201	lg	f	bio	lam
202	lg	f	bio,q	lam
203	lg	f-m	phlog	lam
204	bf	f	bio	lam
205	lg	f	bio	lam
206	bf	f	bio,q	lam
207	lg	f	bio	lam
208	lg	f-m	bio,q	lam
209	w	m	bio	lam
210	lg	f-m	bio	lam
211	lg	f	bio	lam
212	lg	f	py,q	lam
213	lg	f	bio,phlog	lam

Sample No.	Colour	Grain Size	Impurities	Structure
214	mg	f	bio	lam
215	bf	f	bio	lam
216	w-bf	c	py,q	lam
217	lg	m-f	clot(q)	lam
218	lg	f-m	bio,py	lam
219	lg	f-m	py,q	lam
220	lg	f-m	bio	lam
221	bf-w	f-m	bio	lam
222	lg	f-m	bio,q	lam
223	lg	f-m	bio	lam
224	lg	m	bio	lam
225	lg	m	bio	lam
226	lg	f	-	lam
227	lg	f	bio,q	lam
228	mg	f	bio	lam
229	mg	c	bio	-
230	lg	m	trem	lam
231	lg	f	q,phlog,bio,py	mas
232	lg	m-f	py	lam
233	lg-w	c	py,sp,c-s	lam
234	lg	f-m	bio,c-s	lam
235	lg	f	q	mas
236	lg	f	-	mas
237	lg	f	bio	lam
238	lg	f	bio,q	lam
239	lg	f	bio	lam
240	lg	f	-	lam
241	lg	f	bio,c-s	lam
242	lg	f	-	lam
243	lg-bk	f	bio	lam
244	lg	f-m	-	lam
245	mg	f	py	lam
246	lg-dg	f	-	mas
247	lg-dg	f-m	-	lam
248	lg	f	-	mas
249	lg-w	f-m	phlog	lam
250	dg	f	py	mas
251	lg	f	py	lam
252	lg-mg	f	bio	lam
253	dg	f	py	lam
254	lg	f	phlog,py,clot(q)	lam
255	lg	f-m	phlog,bio,py	lam
256	mg	f	-	lam
257	lg	f	py	lam
258	w-bf	f-m	py,phlog,q	lam
259	w-lg	f-c	py	lam
260	lg	f	py	lam
261	w-g	m	phlog	lam
262	lg	f	py,phlog	lam
263	w	f-c	bio	lam
264	lg	f	bio	lam
265	lg	c	py,bio	lam
266	lg	f	py,hem	lam
267	lg	f	bio	lam
268	lg-w	f	py,phlog	lam
269	lg-dg	f	phlog,c-s	lam
270	lg-w	f	py,phlog	lam
271	mg	f-m	phlog,py	lam
272	lg-w	f-m	bio,py	lam
273	lg-w	m-f	-	lam
274	lg	f-m	bio,phlog	lam
275	lg-w	f-c	phlog	lam
276	lg	f	bio,py	lam
277	lg-w	f	bio,phlog,hb	lam

Sample No.	Colour	Grain Size	Impurities	Structure
278	lg	f	bio	lam
279	lg-bk	f	bio,hb	lam
280	lg	f-m	-	lam
281	lg-w	f	py	lam
282	lg	f	py	lam
283	w	m	trem	lam
284	w	m	trem	lam
285	lg	f	bio,c-s	lam
286	lg	m	q	lam
287	lg	m	phlog	lam
288	g-w	m-f	phlog,c-s	lam
289	lg	f	phlog,q,c-s	lam
290	lg	f	phlog,bio	lam
291	w-bf	m	py,c-s,q,hem	lam
292	w	m	py,c-s,q	lam
293	w-g	m-c	hem	lam
294	lg	f-m	q,phlog,bio	lam
295	lg	f	phlog,q	lam
296	lg-bf	m-c	bio,q	lam
297	w-g	m	py,c-s	lam
298	lg	f-m	-	lam
299	lg-w	m	py,bio	-
300	w	m-c	phlog,c-s,m	lam
301	w-lg	f	phlog,c-s	mas
302	lg	f	q	lam
303	w-bf	f	bio,phlog	lam
304	lg	f-m	py,phlog,bio	mas
305	lg-w	f	q,phlog	lam
306	w	f	q,phlog	mas
307	bf	f	-	mas
308	w	f	hem,c-s	lam
309	lg	f	q	lam
310	lg-dg	f	-	lam
311	lg	f-c	c-s	mas
312	lg-w	f-c	py,trem,phlog	lam
313	lg-dg	f-m	-	lam
314	w-lg	m	-	mas
315	w	f-m	bio,c-s	mas
316	lg	f-m	bio,mus	lam
317	w-lg	f	py,c-s,trem	lam
318	w	f-m	trem,py	mas
319	w	f	trem,py	mas
320	lg-w	f	bio	lam
321	lg	f	bio	lam
322	lg	m	bio,hb	lam
323	lg-dg	m-c	py	lam
324	mg	f	-	lam
325	mg	f	hb	lam
326	lg	f	phlog	lam
327	w-lg	f-m	-	lam
328	mg	f-m	c-s	lam
329	lg	f-m	phlog,q	lam
330	lg	f	phlog	lam
331	lg	f-m	phlog	lam
332	lg-w	f-m	phlog	lam
333	lg-w	f	bio,phlog	lam
334	lg	f-m	-	lam
335	lg-w	f-m	-	lam
336	lg	f-m	phlog	lam
337	lg	f-m	phlog	lam
338	lg	f	phlog	lam
339	lg-bf	m-c	-	lam
340	bf	f-m	diop	mas
341	lg	m	phlog	lam

Sample No.	Colour	Grain Size	Impurities	Structure
342	lg-w	f-m	phlog,trem,hb,py	lam
343	lg-w	f-m	phlog,hb	lam
344	w	f	py,q,trem	lam
345	lg	f	trem	lam
346	w-lg	f-m	-	mas
347	w-lg	m	gf	mas
348	or-pk	c	chl	mas
349	w-lg	m	hb,trem,bio,fel	lam
350	lg	m	bio,phlog,hb	lam
351	w-lg	m	c-s,bio	lam
352	w	c	trem,q	mas
353	w	f	phlog	mas
354	lg	m	diop,bio,q,fel	mas
355	lg	m	-	lam
356	w	c	act,gf,phlog	mas
357	w	f-m	phlog,trem	lam
358	lg-dg	f	py,trem	lam
359	w-lg	f	trem,py	lam
360	lg	f	py,phlog	lam
361	w	m-c	py,trem	lam
362	w-lg	f	py,bio	lam
363	mg	f	bio,q,phlog	lam
364	w-lg	f-m	py	lam
365	w-lg	f	-	lam
366	w-lg	f	trem	lam
367	lg	m	-	mas
368	w	m	py	lam
369	lg-dg	f-m	py	lam
370	lg-dg	m	phlog,hb	lam
371	lg	m	bio,fel,trem	lam
372	lg	f	c-s,bio	lam
373	lg	f	bio,hb,q	lam
374	lg	f-c	hb,bio	lam
375	lg	m	bio,hb,q	mas
376	w	f-m	act	lam
377	lg	f-m	hb,bio	lam
378	w	m	bio,phlog	lam
379	lg-dg	f-m	bio	lam
380	lg-dg	m-c	-	lam
381	lg-dg	f	bio,trem	lam
382	lg	f	bio,q,act	lam
383	lg	f	bio,phlog,hb	lam
384	dg	f	bio(20%),hb	lam
385	w-lg	f	hb	lam
386	lg	f	bio,hb	lam
387	lg	f	bio,hb	lam
388	lg	f	bio,hb	lam
389	lg	f	bio,c-s	lam
390	lg	f-c	hb	lam
391	lg	f	bio	lam
392	lg	f-m	phlog,bio	lam
393	lg	f	trem(10%)	lam
394	w-dg	f-c	bio,chl	lam
395	lg	f	-	lam
396	lg-w	f-m	py,bio	lam
397	lg	f	bio,hb	lam
398	lg	f	hb(30%)	mas
399	lg	m	bio,hb	mas
400	w-dg	f-m	q	lam
401	lg-dg	m	-	lam
402	w	f	diop,q	lam
403	lg	f	py	mas
404	w	f	phlog,q	lam
405	lg	f	c-s	lam

Sample No.	Colour	Grain Size	Impurities	Structure
406	lg	f	act	lam
407	lg	f	bio,hb,phlog	lam
408	lg	f	hb,bio,q	lam
409	lg	f	py	mas
410	w	f	q,phlog,bio	mas
411	w-lg	f	phlog,py,bio	mas
412	lg	f	q,py,bio,phlog	lam
413	lg	f-c	py,hem,q	lam
414	lg	c	py,phlog,bio,trem	lam
415	lg	m	py,bio,phlog	lam
416	w	c	trem	lam
417	w-lg	c	phlog	mas
418	lg-w	m	py	lam
419	w	f	trem	mas
420	w-lg	f	trem	mas
421	w-lg	f-c	bio	lam
422	w	m	trem,py,phlog	lam
423	w	m	py,trem	mas
424	w	f	trem	mas
425	w	f	trem	mas
426	w	f	py	lam
427	w-bl	f	py	mas
428	lg-w	f	bio,trem	lam
429	lg-dg	f-m	phlog,py,trem	lam
430	w	f-m	py	mas
431	w	m	py,trem	lam
432	or	m	c-s,trem	mas
433	lg-w	f-m	py,phlog,c-s	mas
434	lg	f-m	gf	lam
435	w	m-c	gf,trem	mas
436	w	m-c	phlog,trem,c-s	mas
437	w-lg	m-c	trem,c-s	mas
438	lg	m	phlog,py,trem	mas
439	lg	m-c	trem	mas
440	pk	m-c	bio,q	mas
441	w	f	trem,q	mas
442	w-lg	m	trem,bio	mas
443	lg	f-m	bio,phlog	lam
444	w	m	phlog,trem	lam
445	w-lg	m	trem,phlog,c-s	mas
446	lg	f-m	bio,q,phlog	lam
447	lg	f	bio,q	lam
448	lg	m	trem,c-s	lam
449	w	m	trem(10%)	mas
450	lg-w	f-m	py	lam
451	lg-dg	f	trem(50%)	lam
452	w-lg	f-m	trem,phlog	mas
453	lg	f-m	trem,py,c-s	lam
454	w	m	py	mas
455	w	m	c-s	mas
456	w	m	py,c-s	mas
457	w	m	trem,py	mas
458	w	m-c	trem(15%)	mas
459	w	f	trem(15%)	mas
460	w	m	trem	mas
461	lg	f	gf,trem(10%),q	mas
462	lg	m	py,phlog	mas
463	w-lg	f-m	trem	mas
464	lg	f	trem	mas
465	lg	m	gf	lam
466	lg	f-m	c-s,py	lam
467	lg	f-m	py,bio	lam
468	w	f	c-s,trem	mas
469	lg	f	-	lam

Sample No.	Colour	Grain Size	Impurities	Structure
470	lg	f-m	-	lam
471	lg	f-m	phlog,chl	lam
472	dg	m-c	phlog	lam
473	w	c	bio	mas
474	w-lg	m-c	py,phlog,bio	lam
475	lg-dg	f-m	bio,phlog	lam
476	mg	m	bio	lam
477	lg-dg	m	q	lam
478	lg	f-m	c-s	mas
479	lg-dg	f-m	phlog,bio	lam
480	lg-dg	f-m	-	lam
481	lg	f-m	trem	lam
482	w-lg	m	bio	lam
483	lg	m	c-s,trem	mas
484	w-lg	m-c	gf	mas
485	w	m	-	mas
486	lg	f-m	phlog,bio	lam
487	w-lg	f-m	phlog	mas
488	w-lg	f-m	c-s	lam
489	mg	m	q,c-s	lam
490	lg	f-m	phlog,bio	lam
491	lg-w	f-m	py,trem	lam
492	w	f	diop,trem	mas
493	lg	m	diop,phlog	mas
494	m	m	py	mas
495	lg	f-m	gf,py,q	mas
496	w-lg	m-c	bio,q	lam
497	lg	f-m	phlog	lam
498	lg	m-c	-	mas
499	w-lg	m-c	phlog,py	lam
500	w-lg	f-m	py	lam
501	w	f-m	trem(15%)	mas
502	lg	f	-	lam
503	lg	f	py,bio,phlog	lam
504	lg	m	q	lam
505	lg	f	-	lam
506	w-lg	f-m	-	lam
507	lg	m	-	lam
508	lg	f-m	phlog	lam
509	lg	f-m	bio	lam
510	lg	f-m	bio,phlog	lam
511	lg	m	phlog	lam
512	lg	f-m	bio,q	mas
513	w	m	sp,q	lam
514	lg	f	py	mas
515	w	f	phlog,q	mas
516	w	c	-	mas
517	w-lg	f-m	trem,phlog,c-s	lam
518	lg	f	phlog,q,bio	lam
519	lg	f	c-s	mas
520	lg	f	q	lam
521	lg	f-m	q	lam
522	w-lg	f	phlog	lam
523	lg-dg	f	q	lam
524	lg	f	bio	lam
525	lg	f	-	lam
526	w	f	phlog,q	lam
527	w	f	q	mas
528	w	f-c	py,trem	mas
529	w-lg	f	q,bio	lam
530	w-lg	f	-	lam
531	lg	f	-	lam
532	lg	f-c	q	lam
533	lg	f	trem	lam

Sample No.	Colour	Grain Size	Impurities	Structure
534	lg	f	trem	mas
535	lg	f-c	-	lam
536	w-mg	f	-	lam
537	lg	f	phlog	lam
538	lg	f-c	-	lam
539	lg	f	trem,phlog	lam
540	lg	f	trem	lam
541	lg	f	py	lam
542	lg-w	f	c-s,trem,q,phlog	lam
543	lg	f	py,phlog	lam
544	lg	f	q	mas
545	w	m-c	trem,q,c-s	mas
546	lg-dg	m	py	lam
547	w	m-c	hem,bio,q	lam
548	w	m	-	lam
549	w	m-c	trem,q	lam
550	lg-w	m	trem,q	lam
551	w	m	py,phlog,trem	lam
552	w	m	phlog,trem	lam
553	w	m	trem,bio	mas
554	w-lg	m	trem	mas
555	w-lg	m-c	bio,act,q	mas
556	lg	m	chl,bio,phlog	mas
557	mg	c	q,c-s	lam
558	w	m	diop,c-s,q	mas
559	w	c	phlog,bio	mas
560	w-lg	m	diop	mas
561	lg-w	m	diop	mas
562	lg	m	c-s	mas
563	w	f-m	gf,phlog	lam
564	w	c	c-s,diop,trem	mas
565	w-lg	m	phlog,trem(10%)	mas
566	lg-dg	f-m	bio,phlog	lam
567	lg	f-m	talc,trem	lam
568	lg	f-c	bio(15%)	lam
569	w-lg	f-c	bio	lam
570	lg-dg	f	bio(10%)	lam
571	lg-dg	f-m	bio(10%)	lam
572	w-lg	f	bio	lam
573	lg	f	trem(10%)	lam
574	lg-dg	f-c	-	lam
575	lg	f	-	lam
576	lg	f	bio,q	lam
577	lg	f	bio(10%),q	lam
578	lg	f-m	bio	lam
579	lg	f	bio	lam
580	lg	f	-	lam
581	w	m	phlog,py,gf	lam
582	lg	m	py,phlog	lam
583	lg	m	c-s,trem(10%),phlog,bio	lam
584	lg	m-c	bio,phlog	lam
585	w-lg	m-c	phlog,trem,c-s	lam
586	w-lg	m-c	c-s,bio,phlog	mas
587	w	f-m	c-s	lam
588	w	m	gf,phlog,bio,c-s	mas
589	w-lg	m	bio,phlog,trem	lam
590	w	f-m	c-s,bio,phlog	mas
591	lg	f-m	phlog	lam
592	mg-w	f-m	phlog,bio	lam
593	w-mg	m	phlog	lam
594	lg-w	f-m	phlog,q	lam
595	lg	f-m	-	lam
596	lg	f	-	lam
597	lg	f-m	bio,c-s	lam

Sample No.	Colour	Grain Size	Impurities	Structure
598	pk	m-c	hb,bio	lam
599	w-lg	f-m	phlog	mas
600	pk	f-m	hem	mas
601	w	f	phlog,q,hb	mas
602	w	f-m	trem,c-s	mas
603	w	f-m	trem,py	mas
604	lg	f	trem	mas
605	g	m	py,trem	mas
606	lg	f	-	mas
607	lg	f	phlog	lam
608	lg	f	trem(10%)	lam
609	lg	f-m	trem,bio	lam
610	w	f-m	bio,trem	lam
611	lg-dg	f	py,phlog	lam
612	w-lg	f-m	phlog	lam
613	lg	f-m	bio	lam
614	lg-dg	f	bio	lam
615	dg	f-m	bio,hb,q	lam
616	or	f-m	hb,q	mas
617	lg	f-m	c-s,diop,bio	lam
618	lg	f	q,bio,c-s	lam
619	lg	m	bio	lam
620	lg	f	bio,trem	lam
621	w	f	q	mas
622	w-lg	f-m	bio	lam
623	w	f-m	bio	lam
624	lg	f	-	lam
625	lg	m	bio	mas
626	lg-w	f	bio,gf	lam
627	w-lg	m	bio,q	mas
628	mg	m	bio,hb	lam
629	lg	f	diop,hb	lam
630	w	f	py,phlog,gf	mas
631	w	m	bio,hb	lam
632	w	f-m	phlog,bio	mas
633	lg-dg	f-m	bio	lam
634	lg	f-m	gf,bio	lam
635	lg	f-m	-	lam
636	lg-dg	f	phlog,py	lam
637	lg-w	f	phlog,gf	lam
638	w-lg	f	gf,py	lam
639	lg	m	phlog	lam
640	lg	f-m	phlog,c-s	lam
641	w	f-m	trem,c-s	lam
642	lg	f-m	phlog,py,bio,c-s	lam
643	w-lg	f-m	py	lam
644	lg	f-m	bio,q	mas
645	lg	f-m	bio,phlog	lam
646	lg-w	f-m	bio,hb	lam
647	dg	f	q,hb,bio	lam
648	dg	f-m	phlog	mas
649	lg	f-m	phlog	lam
650	w-lg	f	phlog,bio,fel	lam
651	lg	m	trem,phlog	lam
652	lg	f-m	py,bio	lam
653	lg-w	f	q	lam
654	w	f-m	trem	lam
655	lg	m	bio,q	lam
656	lg	f-m	bio,py,q	lam
657	lg	f-m	py,phlog	lam
658	lg-dg	f-m	phlog,bio	lam
659	lg	m	trem,c-s,q	fol
660	w	f-m	bio(15%)	mas
661	lg-w	f	bio	mas

Sample No.	Colour	Grain Size	Impurities	Structure
662	lg-w	m-c	bio,phlog	lam
663	lg-dg	f-m	bio,py	lam
664	lg	f-m	gf,phlog,bio	lam
665	lg	f-m	phlog	lam
666	lg-mg	f	py	lam
667	w	m	bio(10%),phlog	lam
668	lg	f-m	-	lam
669	lg	f	phlog	lam
670	lg	f	-	lam
671	lg-dg	f-m	bio	lam
672	w-lg	f-m	-	lam
673	w	f	bio	lam
674	dg	f	bio,hb,q	lam
675	lg	f	bio,c-s	lam
676	w-lg	f-m	trem	lam
677	w	f	bio,gf,diop	lam
678	w	f-m	phlog	mas
679	lg	f	hb,bio,q	lam
680	lg	f-m	phlog,bio	lam
681	pk	m	bio,c-s	lam
682	w	m	gf,py,c-s	mas
683	w	m	trem,c-s	mas
684	w	m	trem	mas
685	lg	f-m	bio,c-s	mas
686	w-lg	f-m	-	lam
687	w	f	py	mas
688	w-lg	f-m	py,trem	lam
689	w-lg	m	phlog,gf,bio	lam
690	w	m-c	phlog,bio	mas
691	w	m-c	gf,py	mas
692	w	m-c	gf,phlog	mas
693	w	f-m	-	lam
694	w	m-c	phlog	lam
695	w	f-c	trem	lam
696	w-mg	m	gf,c-s,phlog	mas
697	w	c	sp,py	mas
698	w-lg	f-m	py,q,fel,gf	lam
699	w-lg	f-m	phlog,bio,gf	lam
700	w-dg	f-m	py	lam
701	w	m	diop,phlog,bio	lam
702	w	f-m	py,gf,diop	lam
703	w-lg	f	bio,hem	mas
704	w	f-m	phlog,bio,py	mas
705	w	f	py,c-s	mas
706	w	m-c	phlog,bio,hb	mas
707	w	f	diop,hb	mas
708	w	f-m	trem,py	fol
709	w	f	trem	mas
710	lg	f-m	py,phlog(15%)	lam
711	w	m-c	py,trem	mas
712	w	m	py	lam
713	lg	m	phlog,py,c-s	lam
714	lg	m	phlog,py,q,hb	lam
715	w-lg	m	phlog,py,gf	lam
716	w	m	trem	lam
717	w	m	trem,phlog	lam
718	w	m	bio,phlog	lam
719	lg	f-m	trem,diop,bio	lam
720	w	m	phlog	mas
721	lg	f-m	bio,phlog	lam
722	lg	m	phlog	lam
723	mg	f	diop,phlog,q	lam
724	w	m-c	trem(20%),py	mas
725	mg	m	trem	mas

Sample No.	Colour	Grain Size	Impurities	Structure
726	lg-dg	m	py,phlog	lam
727	lg	m	phlog	lam
728	lg	m	fel	lam
729	lg-dg	m	mus,py,trem,q	lam
730	w-lg	c	mus,q	lam
731	w	m	mus,trem	lam
732	w	f-c	trem	mas
733	w	m-c	-	mas
734	w	m	hb	mas
735	w-dg	m	-	mas
736	w	f-m	fel,q	mas
737	mg	f	-	lam
738	lg	m	-	mas
739	mg	f-m	fel	lam
740	w	m-c	phlog	mas
741	w-lg	m-c	q,mus	lam
742	lg-dg	m	-	lam
743	w	m-c	-	lam
744	lg	f-m	bio,py	lam
745	w-lg	m	chl,diop	mas
746	lg	m-c	q,py,hb	lam
747	w	m-c	trem	lam
748	w	m	trem(10%)	lam
749	mg	f-m	trem(10%),hem,chl	mas
750	w-lg	m-c	trem	lam
751	lg-dg	c	bio	lam
752	lg-dg	m	py	lam
753	lg	m	py,phlog,mus	lam
754	lg-mg	f-m	trem	lam
755	w-lg	m	trem,phlog	lam
756	mg	m	trem	lam
757	w-lg	m-c	phlog,hem	lam
758	w-mg	m	py	lam
759	w-lg	m-c	py	lam
760	w-mg	m	py	lam
761	lg	m	-	lam
762	dg	m	c-s	lam
763	lg	m	py,phlog	mas
764	lg	f	-	lam
765	mg	m-c	gf,phlog	lam
766	lg	f	py,trem	mas
767	lg	f	trem,py,phlog	lam
768	w	m	hb,phlog	lam
769	w	m-c	phlog,q	lam
770	w	m-c	phlog	lam
771	w	m	c-s,bio	mas
772	w-lg	m-c	gf	lam
773	w-lg	m-c	-	lam
774	w-lg	m	gf	lam
775	w-lg	m	gf	lam
776	lg	m	phlog,c-s	lam
777	lg-mg	m	py	lam
778	lg	m	py,c-s	lam
779	w-lg	m-c	gf,phlog	lam
780	w	f-m	gf,phlog	lam
781	w-lg	m	trem	lam
782	lg-dg	m-c	-	lam
783	w-lg	m	py	lam
784	lg	m	c-s	lam
785	w-lg	f-m	phlog,c-s	lam
786	w-lg	m-c	-	mas
787	w	m	c-s,py	lam
788	or-bf	m-c	-	mas
789	w-dg	m-c	py,bio,q	lam

Sample No.	Colour	Grain Size	Impurities	Structure
790	w	m-c	-	lam
791	lg-dg	f-m	-	lam
792	w	m	trem	mas
793	lg-mg	f-m	-	lam
794	lg-dg	f	trem	mas
795	dg	f	-	lam
796	w-lg	f	trem	lam
797	w-dg	f-m	trem	lam
798	w	m	trem	lam
799	dg	m	gf	lam
800	lg	m	aplite	lam
801	w	m	trem,py	lam
802	w	m	trem	mas
803	lg	f-m	trem	mas
804	lg-dg	f-m	-	lam
805	w	f	trem(5%)	mas
806	w-lg	f-m	trem(10%)	mas
807	w-lg	f-m	trem	mas
808	w	m-c	phlog,c-s	lam
809	w-lg	f-m	c-s,py	lam
810	w-lg	f-m	hb	lam
811	w-or	c	trem,phlog	lam
812	w-lg	m-c	trem,phlog	lam
813	mg	m-c	phlog,bio	lam
814	w-lg	m	py,q,bio	mas
815	w-lg	m	phlog,hb	mas
816	w-lg	m-c	py,trem,mus	lam
817	w	m-c	bio,trem(10%),hb	lam
818	w-lg	m	hb,q,bio,phlog	mas
819	dg	c	gf,py,q,hb	mas
820	dg	m	gf,phlog,hb	lam
821	w-mg	m-c	bio,hb,q	lam
822	w	f-m	bio,c-s	mas
823	w-dg	f-c	q,bio	lam
824	dg	m	bio,c-s	lam
825	w	m-c	trem	lam
826	w	m-c	phlog,hb	lam
827	w	m-c	c-s,trem	lam
828	w	m	c-s	mas
829	dg	f-m	phlog	mas
830	w-lg	m	py	lam
831	w	m	q	lam
832	lg-dg	f-m	mus	lam
833	dg	c	bio(70%)	mas
834	pk	f-m	bio,py	mas
835	w	f	py	mas
836	w	m-c	py	mas
837	dg	f	py	lam
838	w	m	py,c-s	lam
839	w	m	py,c-s	mas
840	lg-dg	m	q,bio	lam
841	lg	f-m	py,bio	lam
842	dg	f	py,diop,phlog	lam
843	lg	f	py,q,bio	lam
844	w	f-m	trem,chl,py	lam
845	lg	f	py	mas
846	lg	f	py,chl	lam
847	lg	f	py,q,hb	lam
848	lg	f	bio,py,hb,q	lam
849	lg-dg	f-m	py,act	lam
850	dg	f-m	py,bio,q	lam
851	mg	f	py,bio	mas
852	mg	f-m	hb,q	mas
853	lg	f	py,bio(10%)	lam

Sample No.	Colour	Grain Size	Impurities	Structure
854	lg	f	py,bio,chl	lam
855	lg	f	py,mus	lam
856	lg	f	py,q	lam
857	lg	f	bio	lam
858	lg	f	bio,py,chl	lam
859	mg	f	bio(15%),chl	lam
860	mg	f	bio(5%)	lam
861	mg	f	act,bio,q	lam
862	lg	f	bio,chl,py	mas
863	lg	f	bio,mus,py	lam
864	dg	f-m	bio,py,gt	lam
865	lg	f	bio,py	lam
866	lg	f	bio,py,chl	lam
867	lg	f	py,fel,mus,q	lam
868	w	f-m	py,q	lam
869	lg-dg	f-m	bio(15%)	lam
870	lg	f-m	py	lam
871	w	f	py,chl	lam
872	mg-dg	f	bio,hb	lam
873	mg	f	bio,q,py	lam
874	mg	f	bio,py	mas
875	mg	f	py,bio,trem,c-s	lam
876	mg	f	bio,chl	lam
877	lg-mg	f	bio,chl,q	lam
878	lg	f	cp,py,fel,q	lam
879	lg	f-m	bio,py,gt	lam
880	lg-dg	f	bio,q,chl,tour	lam
881	w	f-m	q	lam
882	w	f	py,bio	lam
883	w	f-m	tour	mas
884	lg-dg	f-m	bio,q,chl,py	mas
885	w	m	bio,q	lam
886	mg	f	bio,q,hb	lam
887	mg	f	bio,hb	lam
888	dg	f	bio,mus,phlog	lam
889	mg	f-m	bio,hb,c-s	lam
890	dg	m	py,bio,phlog	lam
891	dg	f	q,py,hb	lam
892	w	c	bio	lam
893	mg	f	bio,chl,phlog	lam
894	lg-dg	m	bio,phlog	lam
895	lg-dg	m	phlog	lam
896	mg	m	bio,q	lam
897	dg	m	bio	lam
898	mg	f	bio,phlog	lam
899	mg	f	phlog,bio,hb	lam
900	mg	m	bio(30%),hb,q	lam
901	w-lg	f-c	bio,phlog	lam
902	mg	f	phlog,q	lam
903	mg	f-m	hb,bio,phlog	lam
904	g	m	bio,phlog,hb	breccia
905	mg	f	hb	lam
906	mg	f	bio	lam
907	lg	m	q,bio,hb	lam
908	mg	f	phlog,bio,hb	lam
909	lg	f	bio,hb	lam
910	mg	f	hb,bio	lam
911	mg	m	hb,bio	lam
912	mg	f	bio,phlog	lam
913	mg	f	bio,hb,phlog	lam
1001	w	c	py,phlog	mas
1002	w	c	py,q,bio	mas
1003	w	c	py,gf	mas
1004	w	c	gf	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1005	w-lg	c	gf	mas
1006	w	c	gf	lam
1007	w	c	gf	mas
1008	lg-or	c	c-s,bio	lam
1009	lg-dg	f	gf,py,c-s	lam
1010	lg	f	gf,diop	lam
1011	mg	m	diop,gf,c-s	lam
1012	w	c	c-s,py,gf	mas
1013	w	m	c-s,py,gf	mas
1014	w	c	c-s	mas
1015	or	m	gf,py	lam
1016	lg	f	phlog,gf	mas
1017	w	m	c-s,gf	mas
1018	w	m	diop,py,gf	mas
1019	or	c	gf	mas
1020	lg	m	gf,py	lam
1021	or	c	c-s,gf	mas
1022	or-w	m	py,bio	lam
1023	w	m	phlog,diop	lam
1024	w	m	gf,phlog	lam
1025	w	m	gf,phlog	lam
1026	lg	f-m	gf,diop	lam
1027	lg	c	diop,phlog,hem	mas
1028	w	m	diop,gf	mas
1029	w	c	gf	mas
1030	w	c	gf,phlog,mus	mas
1031	w	m	c-s,bio,diop	lam
1032	w-mg	m	phlog,diop,gf	lam
1033	w	f	bio	lam
1034	w	f	q	mas
1035	lg	f	py,gf	lam
1036	lg-w	f	gf,py	lam
1037	lg-w	c	gf,py	lam
1038	w	c	gf	lam
1039	lg-w	m	py,bio,gf	lam
1040	lg	m	-	mas
1041	lg-w	m	c-s	lam
1042	w	c	gf	mas
1043	w	m	gf	mas
1044	w-or-lg	m	-	lam
1045	w-pk	m	gf,py	mas
1046	w	m-c	py	mas
1047	w	f-c	c-s	mas
1048	w-lg	m	gf,bio,py	lam
1049	w	c	gf,c-s	mas
1050	lg	m	gf,py	mas
1051	lg	f-c	gf	lam
1052	w	m	c-s,q	mas
1053	w-pk	c	py	mas
1054	w-lg	c	gf	mas
1055	w	c	gf	mas
1056	w	m	gf,phlog	lam
1057	w	m	gf	mas
1058	w	c	gf	mas
1059	w	m	c-s	mas
1060	lg	c	gf,py,c-s	mas
1061	lg	m	gf,c-s	mas
1062	lg	m	c-s,py,gf	mas
1063	lg-w	m	c-s,gf	mas
1064	w-lg	m	gf	lam
1065	w	m	gf	mas
1066	lg-w	m	gf,py	mas
1067	lg	m	c-s,gf	lam
1068	w	m	gf	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1069	w	c	gf,mus	lam
1070	w	m	c-s,gf	mas
1071	w	c	c-s,gf	lam
1072	w	m	c-s,gf	mas
1073	w-lg	c	gf	mas
1074	w	m	gf,bio	lam
1075	w-lg	m	bio,gf,py	mas
1076	w-lg	c	py,gf	lam
1077	lg	m	gf	lam
1078	lg	m	py,diop,c-s	lam
1079	w	c	c-s	mas
1080	w	c	py	mas
1081	w	c	gf	mas
1082	lg	c	gf,phlog	mas
1083	w	c	gf,py	mas
1084	w-lg	m	phlog	mas
1085	w	c	gf	mas
1086	w	m	phlog,gf,py	mas
1087	w	m	gf,bio	lam
1088	w	m	gf,phlog	lam
1089	lg	m	phlog	lam
1090	w	c	phlog,gf	mas
1091	w	c	phlog,gf	mas
1092	w	c	phlog,gf	lam
1093	w	c	c-s,gf	mas
1094	w	c	gf	mas
1095	w	c	bio,gf,py	mas
1096	w	m	gf	mas
1097	w	f-m	gf,py,c-s	mas
1098	or	c	gf	mas
1099	w	m	phlog	mas
1100	w	m	gf,c-s	mas
1101	w-lg	m-c	c-s	mas
1102	w	m	c-s,phlog	mas
1103	w	m-c	c-s,gf	mas
1104	w	m	py,phlog,c-s	lam
1105	w-lg	m	gf,phlog	mas
1106	lg	m	gf,phlog,c-s	mas
1107	w	m	c-s,gf,phlog	mas
1108	w-lg	m	c-s,gf	mas
1109	w	m	gf,c-s,phlog,py	mas
1110	w	m	gf,py	mas
1111	w-or	m	gf,phlog,c-s	mas
1112	lg	m	gf,phlog	mas
1113	w	m	gf,phlog	mas
1114	w-lg	c	gf,py	mas
1115	w-lg	c	gf,c-s	mas
1116	w	c	phlog	mas
1117	w-lg	c	gf	mas
1118	w-lg	c	gf,act	mas
1119	w-lg	c	gf	fol
1120	lg	c	gf	mas
1121	w	m	py,gf	mas
1122	w	c	gf,phlog	mas
1123	w	c	gf,act,py	mas
1124	lg	m	phlog,gf	mas
1125	w	m	gf	mas
1126	w	m	gf,c-s	mas
1127	w-lg	m	gf	mas
1128	lg	m	c-s	mas
1129	w	m	phlog	lam
1130	lg	m	gf	mas
1131	w-or	m	gf,py	mas
1132	w-lg	m	gf,bio,c-s	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1133	w	c	phlog,diop	mas
1134	w	c	gf	mas
1135	w	c	act,gf	mas
1136	w	c	phlog,diop	mas
1137	w-lg	c	phlog,gf,py	mas
1138	w-lg	c	phlog,gf,act	mas
1139	w	c	gf	mas
1140	w-or	c	act,phlog,gf	mas
1141	w-or	c	phlog	mas
1142	w	c	phlog,act	mas
1143	w-or	m	gf,phlog,c-s	mas
1144	w	m	c-s,gf	mas
1145	w	c	gf	mas
1146	w-or	c	c-s,py,gf	mas
1147	w-lg	c	gf,c-s	mas
1148	w-lg	c	c-s,act,gf	mas
1149	w	c	phlog,c-s	mas
1150	w-lg	c	c-s,phlog,gf	mas
1151	w	c	act,gf,py	mas
1152	w	c	gf,act	mas
1153	w-lg	c	gf,py	mas
1154	w	c	c-s,bio,phlog	mas
1155	w	c	py	mas
1156	w-or	c	py,gf	mas
1157	w	c	gf,phlog	mas
1158	w	c	phlog,c-s	mas
1159	w-lg	c	diop,c-s	mas
1160	w-or	c	phlog,py	mas
1161	w	c	phlog,py	mas
1162	or	c	phlog,gf	mas
1163	w-lg	c	gf,act	mas
1164	w-or	c	phlog,py	mas
1165	or	c	act,phlog,py	mas
1166	w-or	c	gf,phlog,py	mas
1167	w	c	gf	mas
1168	w	c	act,gf,py	mas
1169	w-lg	m	phlog,act	mas
1170	w-lg	c	phlog,act	mas
1171	w-or	c	gf	mas
1172	w-pk	m	phlog,act	mas
1173	w-or	m	gf,phlog	mas
1174	or	m	phlog,act	mas
1175	pk	m	phlog,py	mas
1176	w-lg	c	gf,phlog	mas
1177	w-lg	c	act,gf	mas
1178	w-lg	m	phlog,act	mas
1179	pk	m	bio,phlog,diop	mas
1180	w-pk	m	phlog,gf	mas
1181	w	m	phlog,act	mas
1182	pk	c	gf,py,c-s	mas
1183	w	c	py,phlog	mas
1184	w-lg	m	gf,py	mas
1185	pk	c	gf,py	mas
1186	w-pk	m	py,q	mas
1187	w-lg	m	phlog,py	mas
1188	pk	c	c-s	mas
1189	lg	m	gf,hem	mas
1190	w-pk	m	c-s	mas
1191	lg	m	act,gf,py	mas
1192	w-pk	m	py,phlog	mas
1193	w-lg	m	py,act,phlog	mas
1194	w	c	act	mas
1195	w	c	act,gf,py	mas
1196	w	c	gf,py,act	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1197	mg	m	py	mas
1198	w-lg	c	phlog,gf,act	mas
1199	w	c	act,py	mas
1200	w	c	act,c-s	mas
1201	pk	c	phlog,act	mas
1202	w-lg	c	act,phlog,py	mas
1203	lg	c	gf,act	mas
1204	w-lg	c	phlog,gf,act	mas
1205	pk	m	q	mas
1206	w	c	phlog,gf,py	mas
1207	w	c	py,phlog	mas
1208	w	c	act,gf,py	mas
1209	w	m	gf	mas
1210	w	m	q(5-20%)	mas
1211	w	c	phlog,gf	mas
1212	w	c	gf,py	mas
1213	w	c	phlog,gf	mas
1214	pk	m	act,py,q	mas
1215	lg	m	act,py	mas
1216	lg	m	phlog,gf,act	mas
1217	w	c	gf,py	mas
1218	w	c	phlog,gf,act	mas
1219	w	m	gf	mas
1220	w	c	phlog	mas
1221	w	c	act,py,gf	mas
1222	w	c	py,act	mas
1223	lg	m	act,phlog	mas
1224	w	c	phlog,py	mas
1225	w	c	phlog,act,gf	mas
1226	w	c	phlog,act	mas
1227	w	c	act,phlog,py	mas
1228	w	m	hem,lim	mas
1229	w	m	act,gf,py	mas
1230	w	c	phlog	mas
1231	w-pk	m	act,gf	mas
1232	w	c	phlog,act,gf	mas
1233	w-pk	c	phlog,gf,act	mas
1234	w-or	c	py,gf	mas
1235	mg	m	c-s,lim	fol
1236	pk	c	act	mas
1237	w	c	act,c-s,gf	mas
1238	w	c	gf,phlog,py	mas
1239	w	c	phlog,gf,py	mas
1240	w-lg	m	phlog,gf	mas
1241	w	c	phlog,gf	mas
1242	lg	c	phlog,gf,act	mas
1243	w	c	phlog,gf	mas
1244	w	m	act,phlog	mas
1245	w	c	act,gf,py	mas
1246	w	c	phlog,py,gf	fol
1247	w	c	gf,phlog	mas
1248	w-lg	c	phlog,py,gf	mas
1249	w	c	phlog,py	mas
1250	w	c	phlog	mas
1251	w-or	c	act,phlog,gf	mas
1252	w	c	phlog,gf	mas
1253	w-lg	m	act,gf,py	mas
1254	w-lg	m	phlog,gf	fol
1255	w	c	c-s,phlog,py	mas
1256	w	m	act,py	mas
1257	w	c	gf,phlog	mas
1258	w	c	phlog,gf,py	mas
1259	w	c	gf,phlog,py	mas
1260	w	c	phlog	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1261	w	c	phlog,gf,py	mas
1262	w	c	gf,phlog	mas
1263	w	c	gf,phlog	mas
1264	w-lg	c	act,gf,py	mas
1265	w	c	phlog,gf	mas
1266	w-lg	c	gf,phlog,py	mas
1267	w	c	phlog,py,gf	mas
1268	pk	c	py,phlog	mas
1269	pk	c	gf,phlog,py	mas
1270	w	c	c-s,phlog,gf	mas
1271	w	c	phlog,gf	mas
1272	w	c	py,gf	mas
1273	w-lg	c	phlog	mas
1274	w	c	act,gf	mas
1275	w-lg	c	gf	mas
1276	w	c	phlog,gf,py	mas
1277	w	c	phlog,gf	mas
1278	w	c	phlog,gf	mas
1279	w	c	phlog,gf	mas
1280	w	c	gf,py,act	fol
1281	w	c	c-s,act	mas
1282	w	c	act(30%),phlog	mas
1283	w	c	phlog,gf	mas
1284	w	c	gf,phlog	mas
1285	w	c	gf,act,phlog	mas
1286	w	c	act,gf	fol
1287	w	c	act,phlog	mas
1288	w	c	phlog	mas
1289	w	m	bio(50%)	mas
1290	w	c	gf,phlog	mas
1291	w	c	gf,py	mas
1292	w	c	py	mas
1293	w	c	phlog,py,gf	mas
1294	w	c	phlog,gf	mas
1295	w	m	phlog,py	mas
1296	w	c	gf,py	mas
1297	w	c	gf,py	mas
1298	w	c	phlog,gf	mas
1299	w	m	phlog,gf	mas
1300	w	m	phlog,gf	mas
1301	w	m	gf,phlog	mas
1302	w-or	c	gf,py	mas
1303	w-pk	c	phlog,gf	mas
1304	or	c	phlog	mas
1305	w	c	phlog,gf,py	mas
1306	w	c	act,py	mas
1307	w	m	gf,phlog	mas
1308	pk	c	phlog	mas
1309	w-or	c	phlog,gf	mas
1310	w	m	gf,phlog	mas
1311	w	m	act	mas
1312	w	c	act,py	mas
1313	pk	c	phlog,gf	fol
1314	w	c	act	mas
1315	w	c	act,c-s,gf	fol
1316	w-or	c	phlog	mas
1317	w	c	gf,py,act	mas
1318	w	c	phlog,gf	mas
1319	or	c	phlog,act	mas
1320	w	c	c-s,act	mas
1321	or	c	phlog	mas
1322	or	c	phlog,act	mas
1323	w	c	phlog,gf,py	mas
1324	w-or	c	phlog,py,gf	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1325	w-lg	c	gf,phlog	mas
1326	w-lg	c	py,gf,phlog	mas
1327	w-or	c	gf,phlog	mas
1328	w	c	gf,phlog	mas
1329	w-or	c	act,phlog,py	mas
1330	w	c	phlog,gf	mas
1331	w	c	act,gf,py	mas
1332	w	c	act,py,gf	mas
1333	pk	c	gf,phlog	mas
1334	w	c	py,gf	mas
1335	w-or	c	gf,phlog	mas
1336	w-lg	m	gf,act	mas
1337	w	c	act,phlog,py	mas
1338	w	c	act,gf	mas
1339	w-lg	c	gf,py	mas
1340	w	c	phlog,gf	mas
1341	w	c	phlog,gf	mas
1342	w	c	phlog,gf	mas
1343	w	c	phlog,py	mas
1344	pk	c	phlog,gf	mas
1345	w-pk	c	act,phlog	mas
1346	w	c	py,phlog,gf	mas
1347	w	c	act,phlog	mas
1348	pk	c	phlog,act	mas
1349	w	c	gf,phlog,py	mas
1350	w	c	phlog,gf	mas
1351	w	c	diop	mas
1352	w	c	phlog,py	mas
1353	w	c	act,phlog,gf	mas
1354	w	m	act,phlog,gf	mas
1355	w	m	phlog,act	mas
1356	w	c	phlog,gf	mas
1357	w	c	phlog,gf	mas
1358	w	c	act,gf,c-s	mas
1359	w	c	gf	mas
1360	w-lg	c	act,gf,phlog	mas
1361	w-or	c	py,gf	mas
1362	w	c	act	mas
1363	w	c	phlog,py,gf	mas
1364	w	m	phlog,gf	mas
1365	w	c	gf,phlog	mas
1366	w	c	phlog,act	mas
1367	w-lg	c	phlog,gf	mas
1368	w-or	c	py,act,bio(15%)	mas
1369	w	c	phlog,gf	mas
1370	w	c	c-s,gf,phlog	mas
1371	w	m	py,phlog,gf	mas
1372	w	c	gf,phlog	mas
1373	w-lg	c	phlog,gf	mas
1374	w-or	m	phlog,act,gf	mas
1375	w-or	c	gf,py	mas
1376	w-lg	c	phlog,gf,py	mas
1377	pk	c	act	mas
1378	w	c	py,gf,phlog	mas
1379	w	c	py	mas
1380	w-or	c	gf,phlog,py	mas
1381	w	c	gf,py	mas
1382	w-lg	c	act,gf	mas
1383	w	c	gf,py	mas
1384	w-pk	c	gf,act	mas
1385	w-lg	m	act,py	mas
1386	w-or	c	gf,phlog,py	mas
1387	w	c	phlog,act	mas
1388	w	c	gf,phlog	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1389	w	m	-	fol
1390	w-or	m	-	fol
1391	w-pk	m	-	mas
1392	lg	m	py	mas
1393	w-or	m	c-s	mas
1394	w	m	c-s	fol
1395	w-lg	m	py	mas
1396	lg	f	-	lam
1397	lg	f	phlog	lam
1398	w-lg	f	-	lam
1399	lg-or	m	-	lam
1400	lg	f	mus,py	lam
1401	w	f	bio	lam
1402	w-lg	f	phlog,bio	lam
1403	w-or	m	trem	mas
1404	lg-or	f	py,phlog	lam
1405	w-lg	f	-	lam
1406	lg-or	f	bio,phlog	mas
1407	lg	f	bio	lam
1408	w	m	hb(50%)	mas
1409	lg-or	f	hb(20%)	mas
1410	lg	f	hb(40%)	lam
1411	lg	f	bio	mas
1412	lg-or	f	bio(20%)	mas
1413	lg	m	bio(10%)	lam
1414	w-lg	m	bio	mas
1415	lg	f	bio(10%)	lam
1416	lg	f	bio	lam
1417	lg	f	bio(10%)	mas
1418	w-lg	f	py,phlog	lam
1419	lg	f	hb	mas
1420	w-lg	m	bio	lam
1421	w-lg	f	bio(10%)	lam
1422	w-or	m	bio(15%),fel	lam
1423	w	m	py	mas
1424	w-or	m	py,mus(10%)	mas
1425	w	m	gf	lam
1426	w-lg	m	act	mas
1427	w-or	f	bio(10%)	mas
1428	w-lg	m	c-s	mas
1429	w	m	-	mas
1430	w	m	bio(15%)	mas
1431	w	c	gf	mas
1432	w	m	bio,py	mas
1433	w-lg	m	py,bio	fol
1434	w	c	py,act	mas
1435	w-pk	m	bio,py	mas
1436	w	c	bio	mas
1437	w-pk	c	act,bio	mas
1438	lg	m	bio,py	mas
1439	w	c	gf,bio	mas
1440	w-lg	c	act(20%)	mas
1441	lg	m	act,bio	mas
1442	w-lg	m	bio	mas
1443	w-lg	c	gf,phlog	mas
1444	w-lg	c	act,py	mas
1445	w-lg	m	bio(10%),act	mas
1446	w-lg	m	phlog,py	mas
1447	w-or	c	act	fol
1448	w-lg	m	bio,act	mas
1449	w-or	c	phlog,act	mas
1450	w	c	phlog,act	fol
1451	w-lg	m	bio,act	lam
1452	w-lg	m	phlog,act	fol

Sample No.	Colour	Grain Size	Impurities	Structure
1453	w-lg	c	phlog,gf	mas
1454	w-lg	m	phlog	mas
1455	w-lg	m	phlog	mas
1456	or	m	act	mas
1457	w-lg	c	phlog,gf,py	mas
1458	w-lg	c	phlog,gf	mas
1459	w	m	phlog,act,py	mas
1460	w	c	phlog,py	mas
1461	w	m	act	mas
1462	w	m	act,py,bio	mas
1463	w	m	phlog	fol
1464	w-lg	m	phlog,act,py	mas
1465	w-or	c	phlog,act	mas
1466	w-or	m	phlog	mas
1467	lg	m	act,py	mas
1468	w-lg	m	act,bio	mas
1469	w-lg	m	act,bio	mas
1470	w-lg	m	bio,act	mas
1471	w-lg	c	gf,py	mas
1472	w-lg	m	phlog,act	mas
1473	w-lg	m	phlog,py	mas
1474	w-lg	c	phlog,py	mas
1475	w-lg	c	gf,py	mas
1476	w-dg	m	hb(10%),phlog	mas
1477	lg	m	act,phlog	mas
1478	lg	m	act,py,phlog	mas
1479	w-lg	m	act(15%),phlog	fol
1480	w-lg	m	bio,act	fol
1481	lg	m	act(10%),phlog	mas
1482	lg	m	phlog,py	mas
1483	w-lg	m	act,phlog	mas
1484	w-lg	m	phlog,act	mas
1485	w-lg	c	act,bio	mas
1486	lg	c	phlog,py	mas
1487	w-lg	c	phlog,py	mas
1488	w-lg	c	phlog,act	mas
1489	w-lg	m	bio,act	mas
1490	w-lg	c	bio,act	mas
1491	w-lg	c	phlog,py	mas
1492	w-lg	c	phlog,gf	mas
1493	w	c	phlog	mas
1494	w-lg	c	phlog,gf	mas
1495	w-lg	c	phlog	mas
1496	w-lg	c	phlog,gf	mas
1497	mg	m	phlog	lam
1498	w-lg	m	bio,py	fol
1499	w	c	phlog,gf	mas
1500	w-lg	c	diop,gf	mas
1501	w-lg	c	py,trem,bio	lam
1502	mg	f	trem,q,py,c-s	lam
1503	lg	f	py,hb,c-s	lam
1504	w	f-m	-	mas
1505	mg	f	py	lam
1506	lg	f	trem,bio	lam
1507	lg	f	py	lam
1508	w-lg	f	trem,bio,py	mas
1509	w-dg	f	bio,py	lam
1510	lg	f	trem	mas
1511	dg	m-c	bio,py	lam
1512	mg	m	trem,py	lam
1513	mg	c	c-s,bio	mas
1514	dg	f-m	py	lam
1515	lg	f	trem,bio,py	lam
1516	dg	f	trem,q,bio	lam

Sample No.	Colour	Grain Size	Impurities	Structure
1517	dg	f	trem,py	lam
1518	lg-dg	f	trem,py	lam
1519	lg-dg	f-m	bio,py,hb	lam
1520	dg	m	py,hb	mas
1521	lg-dg	m-c	trem,py	lam
1522	lg-dg	m	bio,py	lam
1523	lg-dg	f-m	bio,py	lam
1524	lg-dg	f-m	bio,py,c-s	lam
1525	dg	m	bio,py	lam
1526	lg-dg	m	phlog,py,c-s	lam
1527	dg	f	py,phlog,c-s	lam
1528	lg-dg	f-m	phlog,py	lam
1529	or	m-c	c-s,py	mas
1530	or	m	phlog,c-s	mas
1531	mg	f-m	trem,py	lam
1532	w	f-m	trem,py	mas
1533	dg	f-m	trem,hem	lam
1534	lg-dg	m	py	lam
1535	lg-dg	f	trem(30%),py	lam
1536	dg	f-m	trem,py	lam
1537	lg-dg	f-m	phlog,py	lam
1538	lg-dg	f	trem,py	lam
1539	lg-dg	m	phlog,py	lam
1540	lg-dg	f	trem	lam
1541	lg-dg	m	c-s,trem	mas
1542	lg-dg	f	c-s,py	lam
1543	lg	m-c	diop,py	mas
1544	lg-dg	m	phlog,py	lam
1545	lg-dg	m-c	phlog,py,diop	lam
1546	lg-w	m-c	c-s,phlog	mas
1547	dg	f	c-s	lam
1548	lg-dg	f-m	py	lam
1549	mg	f-m	-	mas
1550	lg-dg	m	py	lam
1551	lg-dg	f-m	trem(30%),py	mas
1552	lg-dg	f	py	lam
1553	lg-dg	f-m	py	mas
1554	lg-dg	m	phlog,c-s	lam
1555	lg-dg	f	c-s,phlog,py	lam
1556	lg-dg	f	c-s	lam
1557	w	f-m	c-s	lam
1558	lg-dg	f	py	lam
1559	lg	f	trem	lam
1560	w	f	py,talc	mas
1561	lg	f	talc,py,q	lam
1562	or	f	py	lam
1563	dg	f	diop	lam
1564	lg-dg	m-c	trem,py	lam
1565	lg-dg	m	trem,py,diop	mas
1566	lg	f-m	trem	lam
1567	dg	f	trem,py	lam
1568	w	f	trem,py,q	mas
1569	lg-dg	f-m	phlog,py	lam
1570	dg	c	trem,py	lam
1571	lg-dg	c	phlog,c-s,py	lam
1572	lg	c	trem(40%),py	mas
1573	lg-dg	f	py	lam
1574	lg	f-m	trem,py,c-s	lam
1575	lg-dg	f	py	lam
1576	lg	f	phlog,py	lam
1577	lg	f	trem,py	lam
1578	lg	m-c	py	lam
1579	lg-dg	f	trem,phlog,c-s	lam
1580	lg	f	py	lam

Sample No.	Colour	Grain Size	Impurities	Structure
1581	lg	m	c-s,phlog,py	lam
1582	lg-dg	f	trem,py	lam
1583	lg-dg	m	phlog,py	lam
1584	lg-dg	m	py	lam
1585	dg	f	py	lam
1586	lg	m-c	trem,py	mas
1587	w	m	trem,py,phlog	mas
1588	lg-dg	m	phlog,py	lam
1589	w	c	ph,phlog,c-s	mas
1590	lg-dg	c	phlog,py	lam
1591	lg-dg	c	c-s,py	lam
1592	lg-dg	f	py	lam
1593	lg-dg	f	trem,phlog,py	lam
1594	lg-dg	m	trem,phlog,c-s	mas
1595	lg-dg	f-m	py	lam
1596	lg	m	py	lam
1597	lg-dg	f-m	trem,py	lam
1598	lg-dg	m	py	lam
1599	dg	f	phlog,py	lam
1600	dg	f	c-s,py	lam
1601	dg	f	c-s,trem,phlog	lam
1602	dg	f	bio,c-s	mas
1603	lg-dg	f-m	trem,py	lam
1604	lg-dg	m	py,phlog	lam
1605	lg	f	trem(30%)	mas
1606	lg-dg	m	c-s,py	lam
1607	lg	m	py	lam
1608	dg	f	py	mas
1609	lg-dg	f	py	lam
1610	lg-dg	f	diop,phlog,py	lam
1611	lg-dg	f-m	py,c-s	lam
1612	lg-dg	m-c	gf,phlog	lam
1613	w-mg	f	c-s(20%)	lam
1614	lg-dg	f-m	gf,py	lam
1615	lg	m	gf,phlog,py	mas
1616	lg-dg	f	trem,py	lam
1617	lg-dg	m	trem,phlog,py	lam
1618	lg	f-m	trem,phlog	lam
1619	lg-dg	f-m	phlog,diop	lam
1620	lg	m-c	gf,c-s,py	lam
1621	lg-dg	m	diop,py	lam
1622	lg-dg	f-m	gf,py,diop	lam
1623	lg-dg	f-m	c-s,gf	lam
1624	lg	f-m	diop,gf,phlog	lam
1625	lg-dg	m	gf,diop,phlog	lam
1626	lg-dg	m	gf,py	lam
1627	lg	f-m	gf,py	lam
1628	lg	m	py	lam
1629	lg-dg	f-m	phlog,py,diop	lam
1630	lg	m-c	c-s,gf,py	lam
1631	lg	f-m	c-s,py,phlog	lam
1632	lg-dg	f-m	c-s,phlog,gf	lam
1633	lg	c	gf,py,phlog	mas
1634	lg	f	diop,py	lam
1635	bf	c	py,gf,c-s	mas
1636	lg	f	c-s,py,gf,q	lam
1637	lg	m-c	gf,py	mas
1638	lg	f	py	mas
1639	dg	f	q,bio,py	mas
1640	lg	m	c-s,py,gf	mas
1641	dg	f	c-s,py,gf	lam
1642	w-lg	f-m	gf,diop	lam
1643	mg	f	gf	lam
1644	lg	m-c	gf	lam

Sample No.	Colour	Grain Size	Impurities	Structure
1645	lg	f	trem,py,gf	lam
1646	lg-dg	m-c	gf,c-s	lam
1647	lg-dg	m	trem,gf,py	lam
1648	bf	m	phlog,py	lam
1649	lg-dg	f	gf,py,c-s	lam
1650	lg	f-m	trem,gf,py	lam
1651	w-lg	f	diop,py	mas
1652	lg	f	gf,py,diop	lam
1653	mg	c	py	lam
1654	lg	m	c-s,diop	lam
1655	lg	f-m	c-s,gf	lam
1656	dg	c	py,diop	lam
1657	dg	f-m	gf,py	lam
1658	dg	f	gf,diop	lam
1659	lg-dg	f-m	py,gf,c-s	lam
1660	lg-dg	f	gf,py,diop	lam
1661	dg	f	py	lam
1662	lg-dg	f	py	lam
1663	dg	f	py	lam
1664	dg	f	diop	lam
1665	w	m-c	gf,py	mas
1666	lg	f-m	diop,c-s	lam
1667	lg-dg	f-m	diop,py	lam
1668	lg	f-m	-	lam
1669	lg	f-m	diop,phlog	lam
1670	w-lg	f	trem,py	lam
1671	w	f	trem,py,q	lam
1672	lg	f-m	c-s,py	lam
1673	lg-dg	f	py	lam
1674	dg	f	-	lam
1675	dg	f	phlog,py,diop	lam
1676	dg	f	py	lam
1677	lg-dg	f-m	c-s	lam
1678	lg-dg	f-m	diop,py	lam
1679	lg	m	diop	lam
1680	lg-dg	f	py	lam
1681	dg	f-m	diop	lam
1682	dg	f-m	phlog,py,diop	lam
1683	lg-dg	f	c-s	lam
1684	lg-dg	f	py	lam
1685	lg-dg	f	c-s	lam
1686	dg	f	-	lam
1687	lg	f	py	mas
1688	lg	f	c-s	lam
1689	dg	f-m	py	lam
1690	w-lg	f-m	py,c-s	lam
1691	lg-dg	f	trem	lam
1692	w-lg	m	py,diop	lam
1693	lg-dg	f-m	c-s,py	lam
1694	lg-dg	f	diop	lam
1695	lg-dg	m	diop,trem	lam
1696	w	f-m	py	lam
1697	lg	f	py	lam
1698	lg-dg	f-m	py	lam
1699	dg	f	diop,py	lam
1700	lg	f	diop,py	mas
1701	lg	f	diop	mas
1702	w	f-m	diop,py	mas
1703	w	f-m	-	mas
1704	lg-dg	f	gf,py	lam
1705	lg-dg	f	py	lam
1706	lg-dg	f-m	trem,py	lam
1707	lg-dg	f	c-s,trem	lam
1708	lg	f-m	diop	mas

Sample No.	Colour	Grain Size	Impurities	Structure
1709	lg	f	trem,py	mas
1710	lg-dg	f	trem,diop	lam
1711	lg	f-m	diop	lam
1712	dg	f	py	lam
1713	lg-dg	f	diop,py	lam
1714	lg	f-m	diop,py	lam
1715	lg-dg	f-m	gf,py,c-s	lam
1716	lg	f-m	gf,py	lam
1717	lg	m	py	mas
1718	lg-dg	f	c-s,py	lam
1719	lg-dg	f-m	py	lam
1720	lg-dg	f-m	phlog,diop	lam
1721	lg-dg	f-m	diop,py	lam
1722	lg-dg	f-m	gf,py	lam
1723	lg-dg	f-m	gf,py	lam
1724	lg-dg	f-m	phlog,gf,diop	lam
1725	lg-dg	f-m	gf,py	lam
1726	lg-dg	f	gf,py	lam
1727	lg-dg	m	py	lam
1728	lg-dg	f-m	phlog,py	lam
1729	lg	m-c	gf,diop	lam
1730	w-lg	m-c	diop	lam
1731	lg	m	gf,py,c-s	lam
1732	w-lg	f-m	py,diop	mas
1733	w	f-m	diop,phlog,py	lam
1734	w-lg	f-m	phlog,diop	mas
1735	lg	f-m	gf,py,phlog	lam
1736	lg	m-c	py	mas
1737	lg-dg	m-c	py,q	lam
1738	lg-dg	f	diop,py	mas
1739	dg	c	py	lam
1740	w-lg	f	py	lam
1741	lg-dg	f	gf,py	lam
1742	lg-dg	f-m	gf,diop,py	lam
1743	lg-dg	m-c	gf,py,c-s	lam
1744	lg-dg	m	gf,py,c-s	lam
1745	lg	f-m	trem,py	lam
1746	w-lg	m	c-s,py	lam
1747	lg-dg	f	gf,py,phlog	lam
1748	lg	f-m	diop,py	lam
1749	bf	m	gf,py,trem	lam
1750	lg	f-m	c-s,gf,py	lam
1751	lg-dg	f	diop,py,gf	lam
1752	lg	m-c	diop,phlog,gf	lam
1753	lg	f-m	trem,gf,c-s	lam
1754	lg-dg	m	gf,py,phlog	lam
1755	lg-dg	f	phlog,gf,py,c-s	lam
1756	mg	f	trem,py,diop	mas
1757	lg-dg	f-m	phlog,gf,py	lam
1758	lg	f-m	phlog,c-s,gf	lam
1759	lg	f	c-s,py	mas
1760	w	f	trem(15%)	mas
1761	dg	f-m	phlog,py,trem	lam
1762	lg-dg	f	trem(15%),serp	mas
1763	lg-dg	f	gf,phlog,py	lam
1764	lg-mg	m	gf,phlog,py	lam
1765	lg	f-m	gf,phlog,py	mas
1766	lg-dg	f-m	gf,py,c-s	lam
1767	lg	f-m	diop	mas
1768	lg	f	c-s,gf	lam
1769	bf	f-m	diop,phlog,gf	lam
1770	lg	f	diop,c-s,phlog	lam
1771	lg	f-m	trem,py	lam
1772	lg	f-m	gf,diop	lam

Sample No.	Colour	Grain Size	Impurities	Structure
1773	lg-dg	f	diop,c-s,py	lam
1774	lg	f-m	gf	lam
1775	lg-dg	f-m	gf,phlog,py	lam
1776	w-dg	f	gf	lam
1777	mg	f	gf,py	lam
1778	lg	f-m	gf,phlog,trem	mas
1779	lg	f	phlog,diop	lam
1780	lg	f	diop	mas
1781	lg	f-m	trem,c-s,gf	lam
1782	bf	f-m	py	mas
1783	lg	f-m	phlog,gf	lam
1784	lg-bf	f-c	phlog,py	mas
1785	lg-dg	f-m	gf,py	mas
1786	lg	f-m	c-s,talc,phlog	lam
1787	mg	f-m	c-s,py	lam
1788	lg	f-m	py	mas
1789	lg-dg	f	serp	lam
1790	lg	f-m	phlog,py	lam
1791	w-lg	f	gf,phlog	lam
1792	bf	m-c	gf,py	mas
1793	lg-dg	m	gf,phlog	lam
1794	lg	f-m	phlog,gf,py	lam
1795	lg	f-m	gf,py	lam
1796	lg-dg	f-m	-	lam
1797	w-lg	f-m	gf,phlog	lam
1798	lg-dg	f-m	gf,phlog	lam
1799	lg-dg	m	talc,gf	mas
1800	dg	f	q,py,diop	lam
1801	lg	f-m	q,py,phlog	lam
1802	lg-dg	c	py	lam
1803	lg	f-m	diop,gf	mas
1804	lg	f-m	gf,py,c-s	lam
1805	w-mg	m-c	gf,phlog,py	lam
1806	lg-dg	f	py	lam
1807	dg	f	q,py	lam
1808	dg	f	py	lam
1809	w	f	phlog,py	lam
1810	lg	m-c	py	mas
1811	lg-dg	m	phlog,c-s	lam
1812	lg-dg	m	c-s,gf	lam
1813	lg-dg	f	trem	lam
1814	lg-bf	f	trem,py	lam
1815	lg	f	py,c-s,diop	lam
1816	w	f	c-s,py	mas
1817	mg	f-m	trem,diop	lam
1818	lg-dg	f	py	lam
1819	lg	m-c	py	lam
1820	or-lg	f-m	py	lam
1821	dg	f-m	py	lam
1822	bf	f-m	diop,py,c-s	lam
1823	bf	f-m	py	lam
1824	lg-dg	f	py	lam
1825	lg-dg	f	py	lam
1826	lg-dg	f	phlog,py	lam
1827	lg	f	py	lam
1828	lg-dg	f	trem,phlog	lam
1829	lg-dg	f-m	trem,py	lam
1830	lg-dg	f	phlog,talc,py	lam
1831	lg-dg	f	trem,py	lam
1832	lg	m	trem,py	lam
1833	lg-bf	f	phlog,py	lam
1834	lg-dg	f	trem,py	lam
1835	lg-dg	f	trem,py	lam
1836	lg-dg	f	trem,phlog	lam

Sample No.	Colour	Grain Size	Impurities	Structure
1837	lg-dg	f	phlog	lam
1838	lg-dg	f	py	lam
1839	lg-dg	f-m	trem,phlog,py	lam
1840	lg-dg	f	phlog,trem,py	lam
1841	lg-dg	f-m	phlog,trem,py	lam
1842	lg-dg	f-m	phlog,py	lam
1843	lg-dg	f	trem,phlog,py	lam
1844	lg-dg	f	phlog,py	lam
1845	lg-dg	f-m	q,py,phlog	lam
1846	mg	f	phlog,py,hb	lam
1847	w	f	trem,diop	lam
1848	lg-dg	f-m	py	lam
1849	lg-dg	f	diop,py	lam
1850	lg-dg	f	trem,py	lam
1851	lg-dg	f	phlog,py	lam
1852	lg-dg	f	phlog,py	lam
1853	lg-dg	f-m	py,phlog	lam
1854	lg-dg	f	py	lam
1855	lg-dg	f	trem,diop	lam
1856	lg-dg	f-m	trem,phlog,py	lam
1857	lg-dg	f-m	trem,py	lam
1858	lg-dg	f	phlog,py	lam
1859	mg	f	-	lam
1860	lg-dg	f	phlog,py	lam
1861	dg	f	q,py	lam
1862	lg-dg	f	py	lam
1863	lg-dg	f	gf,py	lam
1864	lg	f	diop,py	lam
1865	dg	f	q,py	lam
1866	lg	f	py	lam
1867	lg-dg	f-m	trem,py	lam
1868	lg-dg	f	phlog,py	lam
1869	lg-dg	f	phlog,py	lam
1870	lg	f	phlog,q,trem	mas
1871	lg	f	py,phlog	lam
1872	lg	f	gf,phlog,py	lam
1873	lg-dg	f	py	lam
1874	lg	f	trem,q	lam
1875	lg-dg	f	diop,py,phlog	lam
1876	lg-dg	f	q,py	lam
1877	lg-dg	f	trem,py	lam
1878	lg	f	hb,gf,py,phlog	lam
1879	lg-dg	f	gf,py,diop	lam
1880	lg	m	gf,phlog,py	lam
1881	lg-dg	m-c	gf,py	lam
1882	lg	m-c	gf,py	mas
1883	lg	f	gf,diop,py	lam
1884	lg-dg	f	phlog,gf,diop	lam
1885	lg	f	diop,gf,py	lam
1886	lg	f-m	gf,phlog,py	lam
1887	lg	f-m	py,phlog	lam
1888	lg-dg	m	py,gf,hb	lam
1889	lg	f-m	gf,py,phlog	lam
1890	lg	f	gf,phlog,py	mas
1891	lg	f-m	gf,phlog,py,diop	mas
1892	lg	f-m	gf,phlog,py	lam
1893	lg	m-c	gf,py	lam
1894	lg-dg	f-m	gf,py,phlog	lam
1895	lg	f	phlog,gf,py	lam
1896	lg-dg	f	gf,py	lam
1897	mg	f-m	gf,phlog,py	lam
1898	w	f-m	gf,q,trem	mas
1899	lg-dg	f	trem,gf,phlog	lam
1900	lg-dg	f	gf,py,q	lam

Sample No.	Colour	Grain Size	Impurities	Structure
1901	lg-dg	f-m	phlog,py	lam
1902	lg-dg	f-m	c-s,gf,phlog,py	lam
1903	lg-dg	f	gf,py,phlog,c-s	lam
1904	lg-dg	f	trem,py,c-s,gf	lam
1905	lg-dg	f	trem,py	lam
1906	lg	f-m	trem,phlog,py	mas
1907	lg	m-c	py	mas
1908	lg	f-m	py,phlog,gf	lam
1909	lg-dg	f-m	gf,py,phlog	lam
1910	lg-dg	f-m	gf,py,phlog	lam
1911	lg-dg	f	trem,phlog,py	lam
1912	w-lg	m	diop,phlog	lam
1913	w-lg	m	gf,phlog,py	lam
1914	lg-mg	f	gf,py,phlog	lam
1915	w-lg	f-m	phlog,py	lam
1916	lg	f-m	phlog,gf	lam
1917	lg	f-m	gf,phlog,py	lam
1918	lg-dg	f	phlog,gf,py	lam
1919	lg	f-m	gf,py	lam
1920	lg	f-m	phlog,gf,diop	lam
1921	w	f-m	c-s,gf,phlog,py	lam
1922	lg	f	phlog,py,c-s	lam
1923	lg-dg	f	c-s,gf,phlog	lam
1924	lg	f-m	gf,py,phlog	lam
1925	lg	f-m	py,gf,phlog	lam
1926	lg-dg	f-m	gf,py,diop	lam
1927	lg-dg	f-m	gf,py,phlog	lam
1928	lg	f	phlog,gf	mas
1929	lg	f	phlog,gf	lam
1930	lg-dg	f	diop,phlog,py	lam
1931	lg	f	c-s,phlog	lam
1932	lg	f	phlog,gf	mas
1933	lg	c	gf	lam
1934	lg	m	act,phlog	mas
1935	lg	c	phlog,gf	mas
1936	lg	c	gf,act,py	mas
1937	lg	m	act,phlog	mas
1938	lg	m	phlog,act	mas

References

Adams, F.D., and Barlow, A.E.

1910: Geology of the Haliburton and Bancroft Areas, Province of Ontario; Geological Survey of Canada, Memoir 6, 419p. Accompanied by Map 770, scale 1:126 720 or 1 inch to 2 miles.

Carter, T.R.

1984: Metallogeny of the Grenville Province, Southeastern Ontario; Ontario Geological Survey, Open File Report 5515, 422p.

Evans, A.M.

1964: Geology of Ashby and Denbigh Townships; Ontario Department of Mines, Geological Report 26, 39p. Accompanied by Map 2031, Ashby Township, scale 1:31 680 or 1 inch to 1/2 mile, and Map 2049, Denbigh Township, scale 1:31 680 or 1 inch to 1/2 mile.

Goudge, M.F.

1938: Limestones of Canada, Their Occurrence and Characteristics, Part 4; Canada Department of Mines and Resources, Mines and Geology Branch, Number 781, 362p.

Grant, W.T., and Kingston, P.W.

1984: Geology and Geochemistry of Grenville Marble in Southeastern Ontario; Ontario Geological Survey, Open File Report 5509, 297p.

Harding, W.D.

1951: Geology of the Olden-Bedford Area; Ontario Department of Mines, Annual Report for 1947, Volume 56, Part 6, p.1-100. Accompanied by Map 1947-5, Olden-Bedford Area, scale 1:63 360 or 1 inch to 1 mile.

Hewitt, D.F.

1959: Geology of Cardiff and Faraday Townships; Ontario Department of Mines, Annual Report for 1957, Volume 66, Part 3, p.1-82. Accompanied by Map 1957-1, scale 1:31 680 or 1 inch to 1/2 mile.

1960: Methuen Township, County of Peterborough, Ontario; Ontario Department of Mines, Map 1960e, scale 1:31 680 or 1 inch to 1/2 mile.

1964a: Geological Notes for Maps 2053 and 2054, Madoc-Gananoque Area; Ontario Division of Mines, Geological Circular 12, 33p. (Reprinted 1974). Accompanied by Maps 2053 and 2054, scale 1:126 720 or 1 inch to 2 miles.

1964b: The Limestone Industries of Ontario, 1958-1963; Ontario Department of Mines, Industrial Mineral Report 13, 77p. Accompanied by Map 2059, scale 1:1 013 760 or 1 inch to 16 miles.

1964c: Building Stones of Ontario, Part III, Marble; Ontario Department of Mines, Industrial Mineral Report 16, 89p.

1968: Geology of Madoc Township and the North Part of Huntingdon Township, Hastings County; Ontario Department of Mines, Geological Report 73, 45p. Accompanied by Map 2154, scale 1:31 680 or 1 inch to 1/2 mile.

Hewitt, D.F., and James, W.

1956: Geology of Dungannon and Mayo Townships; Ontario Department of Mines, Annual Report for 1955, Volume 64, Part 8, p.1-65. Accompanied by Map 1955-8, scale 1:31 680 or 1 inch to 1/2 mile.

Hewitt, D.F., and Satterly, J.

1957: Haliburton-Bancroft Area, Province of Ontario; Ontario Department of Mines, Map 1957B, scale 1:126 720 or 1 inch to 2 miles. Revised 1972.

Hewitt, D.F., and Vos, M.A.

1972: The Limestone Industries of Ontario; Ontario Division of Mines, Industrial Mineral Report 39, 79p. Accompanied by Map 2264, Ontario Limestone Quarries, scale 1:1 013 760 or 1 inch to 16 miles.

Hill, P.A., Livingstone, K.W., Wilson, A.E., and Kirwan, J.L.

1974: Geology of Arnprior, Ontario; Geological Survey of Canada, Map 1363A, scale 1:50 000.

Holmes, Arthur

1960: Geological Time Scale.

Laakso, R.K.

1968: Geology of Lake Township, Hastings County; Ontario Department of Mines, Geological Report 54, 36p. Accompanied by Map 2106, Lake Township, scale 1:31 680 or 1 inch to 1/2 mile.

Lavin, O.P.

1988: Q'GAS User's Manual, Version 5.0.7; O.P. Lavin and Associates, Queen's University.

Lumbers, S.B.

1968: Geology of Cashel Township, Hastings County; Ontario Department of Mines, Geological Report 71, 54p. Accompanied by Map 2142, scale 1:31 680 or 1 inch to 1/2 mile.

1969: Geology of Limerick and Tudor Townships, Hastings County; Ontario Department of Mines, Geological Report 67, 110p. Accompanied by Map 2167, Limerick Township, scale 1:31 680 or 1 inch to 1/2 mile, and Map 2168, Tudor Township, scale 1:31 680 or 1 inch to 1/2 mile.

Meen, V.B., and Harding, W.D.

1942: Geology of the Grimsthorpe-Kennebec Area, Hastings, Lennox and Addington, and Frontenac Counties; Ontario Department of Mines, Map 51d, scale 1:63 360 or 1 inch to 1 mile.

Miller, W.G., and Knight, C.W.

1914: The Pre-Cambrian Geology of Southeastern Ontario; Ontario Bureau of Mines, Annual Report for 1913, Volume 22, Part 2, p.1-121.

Papertzian, V.C., and Kingston, P.W.

1982a: Chemistry of Grenville Carbonate Rocks; Ontario Geological Survey, Open File Report 5378, 81p. Accompanied by 1 figure, 1 table, and 1 map.

1982b: Appendix to Chemistry of Grenville Carbonate Rocks; Ontario Geological Survey, Open File Report 5378 (Part 2), 33p.

Pauk, L.

1982: Geology of the Ardoch Area, Frontenac County; Ontario Geological Survey, Open File Report 5381, 125p. Accompanied by Map P.2487, Geological Series-Preliminary Map, scale 1:15 840 or 1 inch to 1/4 mile.

1987: Geology of the Ardoch Area, Frontenac County; Ontario Geological Survey, Geological Report 241, 57p.

Accompanied by Map 2514, scale 1:31 680 or 1 inch to 1/2 mile.

Peach, P.A.

1958: The Geology of Darling Township and Part of Lavant Township, Southern Ontario; Ontario Department of Mines, Annual Report for 1956, Volume 65, Part 7, p.47-60. Accompanied by Map 1956-4, scale 1:63 360 or 1 inch to 1 mile.

Peach, P.A., and Smith, B.L.

1956: Clarendon-Dalhousie-Darling Area, Counties of Frontenac and Lanark; Ontario Department of Mines, Map 1956-4, scale 1:63 360 or 1 inch to 1 mile.

Pettijohn, F.J.

1975: Sedimentary Rocks; Third Edition, Harper and Row, New York.

Reinhardt, E.W., Wilson, A.E., and Liberty, B.A.

1973: Geology of the Carleton Place Area, Ontario; Geological Survey of Canada, Map 1362A, scale 1:50 000.

Riddle, C.

1983: Quality Control Report C-22239; Unpublished Report, Geoscience Laboratories, Ontario Geological Survey, Toronto.

Sangster, A.L.

1970: Metallogeny of Base Metal, Gold, and Iron Deposits of the Grenville Province of South-eastern Ontario; Unpublished PhD Thesis, Department of Geological Sciences, Queen's University, Kingston.

Satterly, J.

1943: Mineral Occurrences in the Haliburton Area; Ontario Department of Mines, Annual Report for 1943, Volume 52, Part 2, p.1-106. Accompanied by Map 52A, scale 1:126 720 or 1 inch to 2 miles.

Shaw, D.M., and Hewitt, D.F.

1962: Geology of Chandos Township, Peterborough County and Geology of Wollaston Township, Hastings County; Ontario Department of Mines, Geological Report 11, 55p. Accompanied by Map 2019, Chandos Township, scale 1:31 680 or 1 inch to 1/2 mile, and Map 2020, Wollaston Township, scale 1:31 680 or 1 inch to 1/2 mile.

Smith, B.L.

1958: Geology of the Clarendon-Dalhousie Area, Southern Ontario; Ontario Department of Mines, Annual Report for 1956, Volume 65, Part 7, p.1-46. Accompanied by Map 1956-4, scale 1:63 350 or 1 inch to 1 mile.

Stearn, C.W., Carroll, R.L., and Clark, T.H.

1979: Geological Evolution of North America; Third Edition, John Wiley and Sons, New York.

Storey, C.C., and Vos, M.A.

1981: Industrial Minerals of the Pembroke-Renfrew Area, Part 1: Marble; Ontario Geological Survey, Mineral Deposits Circular 21, 132p. Accompanied by Preliminary Map P.1980, scale 1:126 720.

Wilson, M.E.

1940a: Madoc, Hastings, Lennox and Addington Counties, Ontario; Geological Survey of Canada. Accompanied by Map 559A, scale 1:63 360 or 1 inch to 1 mile.

1940b: Marmora, Hastings, Peterborough, and Northumberland Counties, Ontario; Geological Survey of Canada. Accompanied by Map 560A, scale 1:63 360 or 1 inch to 1 mile.

Wilson, M.E., and Dugas, J.

1961: Geology of the Perth Area, Lanark and Leeds Counties, Ontario; Geological Survey of Canada, Map 1089A, scale 1:63 360 or 1 inch to 1 mile.

Wolff, J.M.

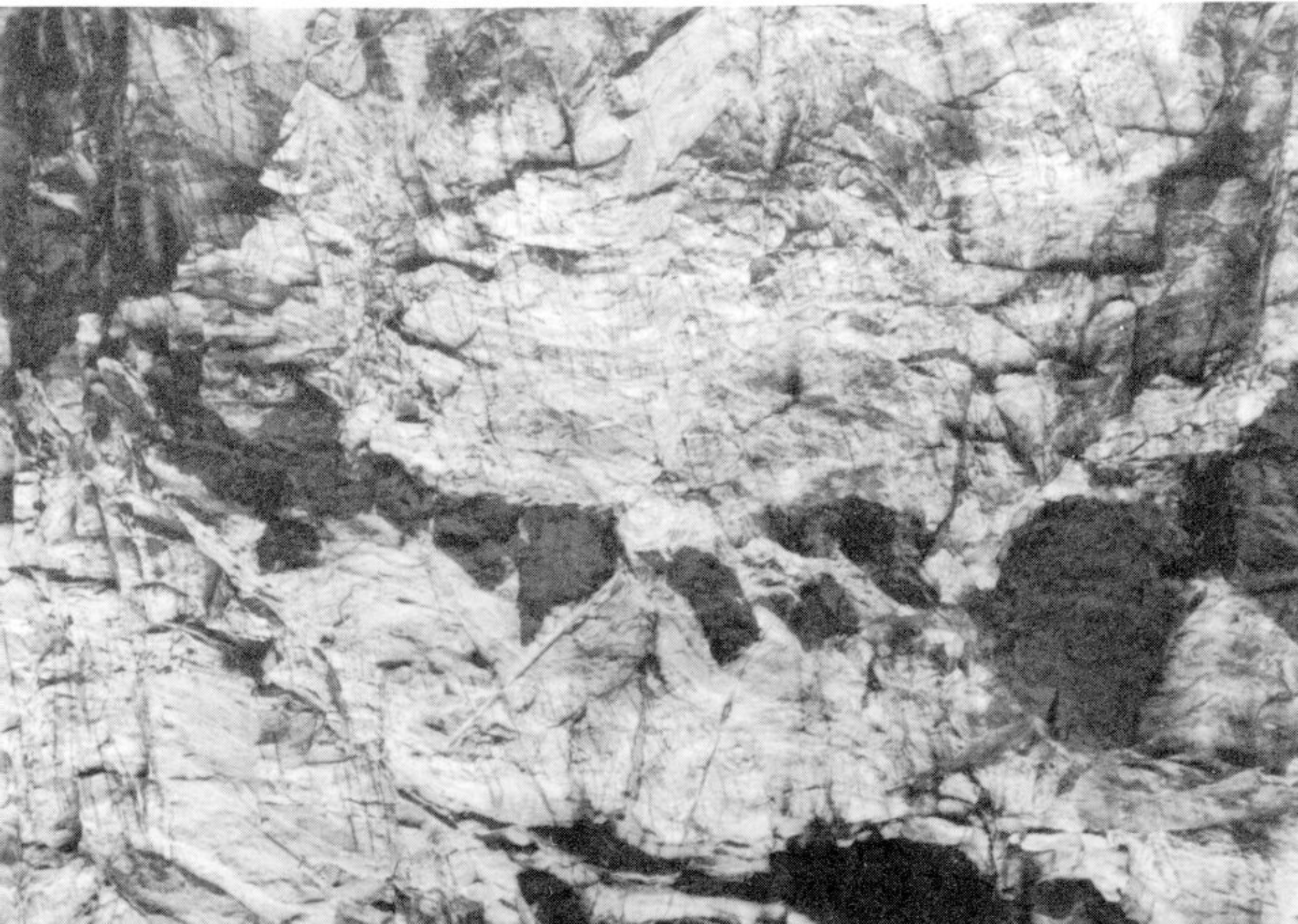
1982a: Geology of the Kaladar Area, Lennox and Addington and Frontenac Counties; Ontario Geological Survey, Geological Report 215, 94p. Accompanied by Map 2432, scale 1:31 680 or 1 inch to 1/2 mile.

1982b: Geology of the Long Lake Area, Lennox and Addington and Frontenac Counties; Ontario Geological Survey, Geological Report 216, 76p. Accompanied by Map 2449, scale 1:31 680 or 1 inch to 1/2 mile.

Wynne-Edwards, H.R.

1962: Geology of Gananoque, Ontario; Geological Survey of Canada Preliminary Series Map 27-1962, scale 1:63 360 or 1 inch to 1 mile.

1967: Westport Map-Area, Ontario, with Special Emphasis on the Precambrian Rocks; Geological Survey of Canada, Memoir 346, 142p. Accompanied by Map 1182A, scale 1:63 360 or 1 inch to 1 mile.



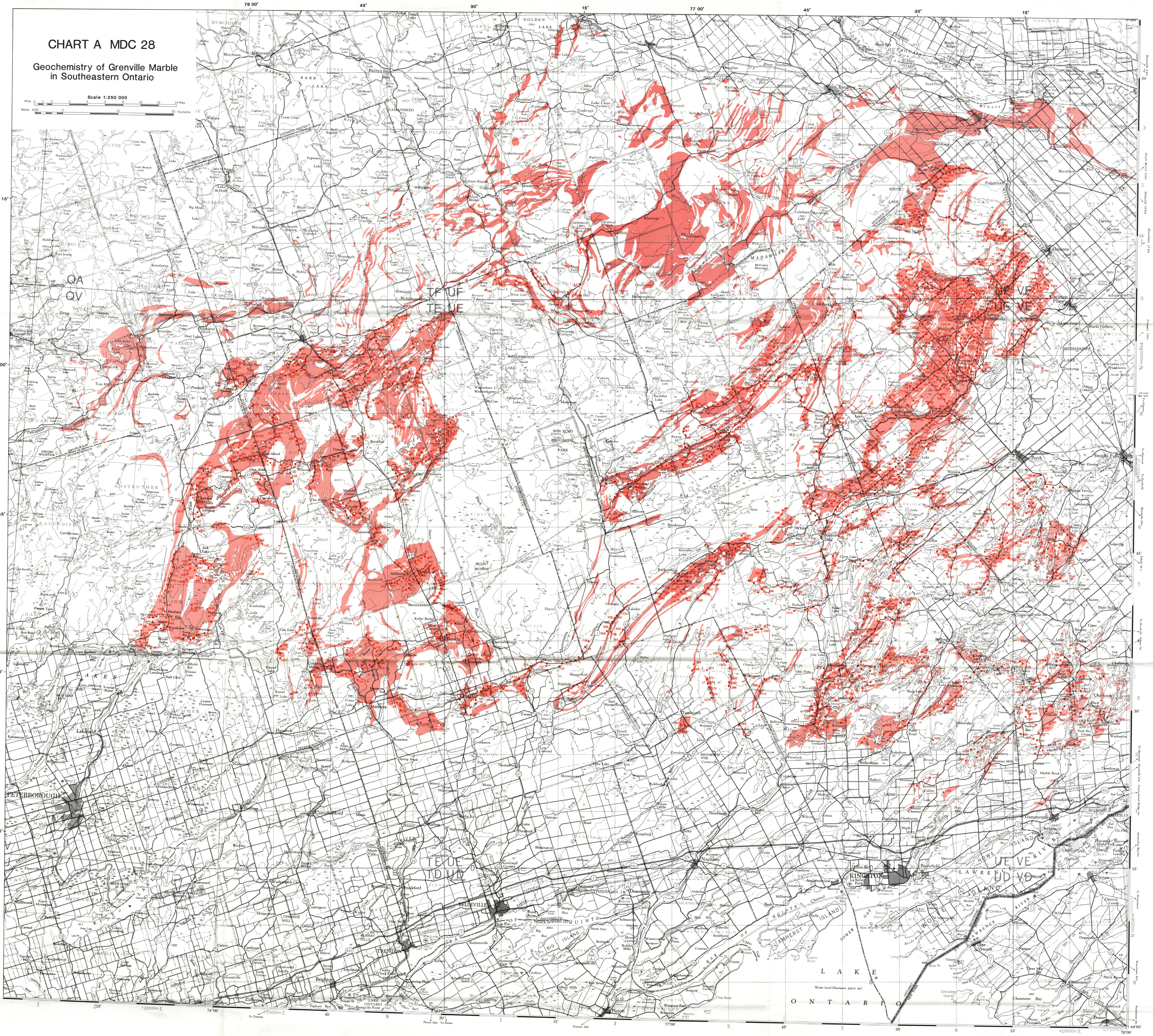


CHART A MDC 28
Geochemistry of Grenville Marble in Southeastern Ontario
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PETERBOROUGH
BELLEVILLE
KINGSTON
LAKE
ONTARIO