GRAYMONT WESTERN CANADA INC.

2002 GEOLOGIC MAPPING AND MAGNETOMETER SURVEY ON THE VARNEY CLAIMS

SOUTH OF RUPERT INLET, BRITISH COLUMBIA
(NANAIMO MINING DIVISION)

CLAIMS VARNEY 1 to 4

Geographic Coordinates
50° 34' N
127° 31' W
NTS Sheets 92 L/11 W and 92L/12 E

Owner of Claims: Varney 1 to 4
Ecowaste Industries Ltd.
190, 3025 - 12 Street N.E.
Calgary, AB, T2E 7J2

Operator: Graymont Western Canada Inc.
190, 3025 - 12 Street N.E.
Calgary, AB, T2E 7J2

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1. INTRODUCTION

Adjacent to Varney Bay on the south shore of Rupert Inlet on northern Vancouver Island, limestone of the Quatsino Formation outcrops along the north to northwest trending Varney Ridge. The claims which encompass these limestone occurrences were originally acquired by Ecowaste Industries Ltd. in October, 1993. In 1993 Stan Krukowski of Continental Lime Inc. completed a cursory examination of the claims. Subsequently, in 1994, eight holes were drilled within the central parts of the current Varney 3 mineral claim. The property was abandoned, re-staked and surveyed by McElhanney Associates in 1997.

Between October 16 and 20, 2002, Dahrouge Geological Consulting Ltd. on behalf of Graymont Western Canada Inc. conducted geologic mapping and a ground magnetic survey at the Varney claims. In preparation for the ground magnetic survey, a grid was established with a north-south baseline and two east-west wing lines spaced about 150 meters apart. About 4.50 line-km of grid was established with five-meter stations, and later surveyed by magnetometer. The exploration used Global Positioning Systems for mapping.

Throughout this report attitudes of bedding and other planar features are given as A°/B° SW, where A° is the azimuth of the strike and B° is the amount of dip in the direction indicated. A magnetic declination of 20½° east was used. Where bedding could not be determined, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation was used.

1.1 GEOGRAPHIC SETTING

1.1.1 Location and Access

The Varney Bay claims are within the Insular Tectonic Belt along the northwestern part of Vancouver Island, British Columbia. The property lies along the southwest shore of Rupert Inlet about 30 km southwest of the town of Port Hardy (Fig. 1.1) and about 30 km west of Port McNeill. Rupert Inlet outlets to the Pacific Ocean through Quatsino Narrows and Quatsino Sound.

From Port Hardy, the Varney Bay property is reached by driving south on paved Highway 19 for about 22 km and then west on the gravel Rupert Main logging road (Fig. 1.2). At approximately 7 km there is a junction where the southern Port Hardy Main logging road leads to the Varney Main logging road which connects to spur road 510 which passes through the property. Approximately 2 km along spur road 510 are a disused network of logging roads which provide access to claims Varney 1 and 3.

The network of logging roads which traverse the Varney Bay property are owned and maintained

by Western Forest Products Ltd. (WFP). The current network of logging roads generally grade less than 8 per cent.

1.1.2 Geographic Names, Topography, Vegetation and Climate

Within the west-central part of the Varney Bay Property is the northwest trending Varney Ridge, that is approximately 1,500 m in length. Its northern part is composed of a few knolls, Hill 6 and Hill 8, each up to 200 m across. The western part of the ridge forms a gentle slope to the shore of Rupert Inlet, while its eastern boundary is marked by a steep, cliff-forming slope. East of the ridge are a number of low-lying areas (Fig. 3.1). Elevations range from sea level along the shores of Rupert Inlet to 202 m at the crest of Varney Ridge.

Most of the property, including Varney Ridge, has been clear-cut logged within recent years. Areas logged within the last several years are now covered with decomposing slash and a thick cover of second growth. A buffer of mature forest remains along the shores of Rupert Inlet. Forest vegetation consists of Alder, Balsam, Cedar, Hemlock, Douglas Fir, Poplar and Spruce trees and varies from location to location. Within the mature forest, tree cover is widely spaced with fairly open undergrowth. Near impenetrable underbrush are formed locally by immature Cedar and Spruce in areas of recent logging.

The area is part of the coastal rainforest climatic zone with generally mild and wet conditions. Temperatures rarely exceed 25°C during summer months and rarely fall below -20°C during winter months. Precipitation is considered heavy throughout the region, with average annual amounts between 500 to 610 cm. Most precipitation occurs during winter months; however, heavy and prolonged rainfall during the summer is not uncommon.

Throughout this report informal names have been applied to previously unnamed creeks, ridges, and other topographic features to facilitate reference to geographic locations.

TABLE 1.1 LIST OF MINERAL CLAIMS

Claim Name	Tenure Number	Units/Claim	Record Date	Actual or Expected Expiry Date
Varney 1	355660	8	2008/04/29	2013/04/29
Varney 2	355661	6	2008/04/29	2013/04/29
Varney 3	355662	12	2005/04/29	2013/ 04/29
Varney 4	355663	1	2008/04/29	2013/04/29
		27		

1.2 PROPERTY

The Varney Bay Property was originally acquired by Ecowaste Industries Ltd. in October, 1993, and consisted of one 4-post claim and seven 2-post claims, Var 1 to 8. Four additional 2-post claims, Var 9 to 12, were staked in June, 1994. On April 22, 1997 claims Var 1 to 12 were abandoned and restaked with four 4-post claims, Varney 1 to 4 (Fig. 1.3; Table 1.1).

1.3 HISTORY AND PREVIOUS INVESTIGATIONS

The earliest reported examination of the northern part of Vancouver Island dates back to the last century when Dawson (1887) assigned limestone units near Quatsino Sound to the Vancouver Group. Dolmage (1919) assigned the extensive limestone occurrences at Quatsino and Barkley sounds to the Quatsino Formation. Subsequent work by Gunning(1930, 1932, 1938a, 1938b) detailed the stratigraphy of the region and it was proposed the Vancouver Group be subdivided, as follows: basal Karmutsen Volcanics, middle Quatsino Formation and upper Bonanza Group. The division was subsequently corroborated at other locations on Vancouver Island (Hoadley, 1953; and Jeletzky, 1970, 1976).

The Alice Lake - Benson Lake area was mapped by Jeffery (1962) at a scale of 1:63 360. Muller et. al. (1974) mapped the area as part of the Alert-Cape Scott map area at a scale of 1:250 000, which was subsequently revised by Roddick (1980). Detailed information on the geology and stratigraphy of the Varney Bay area was published by Northcote (1968), Muller et al. (1974) and Jeletzky (1976).

The earliest analyses of limestone from the northern part of Vancouver Island were reported by Goudge (1945). Compilation work by Fishl (1992) on limestone and dolomite in British Columbia includes a summary of available information on the northern part of Vancouver Island.

In 1993 Dr. Stanley Krukowski of Continental Lime Inc. examined several limestone prospects within southwestern British Columbia. During the latter part of 1993 two groups of claims were staked; one group was located on the south side of Rupert Inlet at Varney Bay and the other on the northeast side of Nimpkish Lake. In May of 1994, eight holes totalling 1,073 m, were completed at the Varney Claims (Krukowski, 1994).

1.4 PURPOSE OF SURVEY

The work described herein was undertaken to determine the stratigraphy of the Quatsino Formation along Varney Ridge and to identify the extent of intrusives, if any, that may adversely affect the quality of limestone within the Varney Claims.

1.5 SUMMARY OF WORK

Between October 12 and 20, 2002, some 230 distinct stratigraphic sections were examined and geological observations and measurements of structural elements were recorded (Appendix 2, Fig. 3.1). Interval thicknesses were determined by measuring outcrops perpendicular to bedding, where it could be identified. At locations where bedding could not be accurately identified, stratigraphic thicknesses were calculated using orientations from adjacent units. The 2002 sections were collected from the 27 locations listed in Table 2.1, representing a total of approximately 655½ m of strata.

Specific gravities for 11 samples collected during 2002 were determined by the displacement method (Appendix 3). Specific gravities were determined by weighing a sample and measuring the amount of water that sample displaces. The weight of the sampled divided by its volume is the specific gravity.

To assist in geologic mapping, locating structures and potential sills/dykes, ground magnetic surveys were employed both along roads and a cut grid. In preparation for the ground geophysical survey, about 1.6 km of grid was blazed, cut, and marked with flagging at 10-m intervals. The grid was based on the UTM NAD83 grid system (Fig 3.2) with the baseline (BL 5150E) placed north-south and two east-west cross lines. A total of 2.90 km was flagged along preexisting roads, with a total of 4.50 line-km established and surveyed by ground magnetics.

1.6 FIELD OPERATIONS

Field operations were conducted by a either a four-person or six-person crew based in a motel in Port Hardy, British Columbia. Transportation between Port Hardy and the property was by a rented four-wheel drive vehicles.

2. EXPLORATION, SAMPLING AND GEOPHYSICS

2.1 MEASURED SECTIONS AND SAMPLING

Between October 12 and 20, 2002, some 230 sections were examined and stratigraphic thicknesses were determined by measuring outcrops perpendicular to bedding, where it could be identified (Appendix 2). At locations where bedding could not be accurately identified, stratigraphic thicknesses were calculated using orientations from adjacent units. The 2002 sections were from the 27 locations listed in Table 2.1, representing a total of approximately 655½ m of strata. Geological observations included recording lithologic features, measurement of structural elements and other pertinent details.

TABLE 2.1 LOCATIONS EXAMINED IN 2002 °

Location	Total Stratigraphic Thick (m)	Covered Stratigraphic Thick (m)	Examined Stratigraphic Thick (m)
VB2002-01	5	1	4
VB2002-02	8¼	1	7¼
VB2002-03	85	21	64
VB2002-04	12½	-	12½
VB2002-05	39¾	-	39¾
VB2002-06	11½	-	11½
VB2002-07	8	1¼	6¾
VB2002-08	36½	-	36½
VB2002-09	5	-	5
VB2002-10	14	-	14
VB2002-11	45¾	4¾	41
VB2002-12	13¼	-	13¼
VB2002-13	3½	-	3½
VB2002-14	1¾	-	1¾
VB2002-15	32¾	9¾	23
VB2002-16	55¼	8¾	46½
VB2002-17	13½	-	13½
VB2002-18	4	-	4
VB2002-19	2	-	2
VB2002-20	16¼	-	16¼
VB2002-21	6½	-	6½
VB2002-22	10½	-	10½
VB2002-23	2	-	2
VB2002-24	6	-	6
VB2002-25	122½	43½	79
VB2002-26	84¼	2	82¼
VB2002-27	10	-	10
Totals:	655¼	93	562¼

° See Appendix 2 for detailed descriptions.
* All thicknesses are approximate.

Specific gravities of 11 of the samples collected during 2002 were determined by the displacement method (Appendix 3). Specific gravities were determined by weighing a sample and measuring the amount of water the sample displaces. The weight of the sampled divided by its volume is the specific gravity.

2.2 GROUND GEOPHYSICS

To assist in geologic mapping, locating structures and potential sills/dykes, ground magnetic surveys were employed both along roads and a cut grid. In preparation for the ground geophysical survey, about 1.6 km of grid was blazed, cut, and marked with flagging at 10-m intervals. The grid was based on the UTM NAD83 grid system (Fig 3.2) with the baseline (BL 5150E) placed north-south and two east-west cross lines. A total of 2.90 km was flagged along preexisting roads, with a total of 4.50 line-km established and surveyed by ground magnetics.

Magnetic readings were collected using a GEM System GSM-19 integrated Overhauser effect proton procession magnetometer and corrected for diurnal magnetic variations using a stationary GSM-19 base station. Readings were taken at 5-m stations along the lines with the corrected data being used to generate a series of magnetic profiles (Appendix 1; Fig's. 3.3 to 3.10).

An examination of the data in 'profile format' shows that at locations underlain by Quatsino Formation limestone, the magnetic background is relatively uniform with most responses in the range of 25 to 40 nT. Most are presumably related to minor amounts of magnetic materials within the surficial sediments. Variations in the trend of the profile may be caused by a change in thickness of the Quatsino Formation. At locations with faults (Fig's. 3.3 to 3.10) a distinctive negative response ranging from 10 to 1000 nT, may have a 'dipolar' character which is indicative of a steep-dipping or near vertical feature. The magnetic background at locations underlain by Karmutsen Formation volcanics generally exhibits a variable high-frequency response, presumably caused by multiple point sources.

3. REGIONAL GEOLOGY

The Insular Belt of the Pacific Margin comprises several discrete terranes of disparate origin, the largest of which are Alexander and Wrangellia terranes (Gabrielse et al., 1991). Wrangellia is a complex of Paleozoic through Cenozoic volcanic arc, oceanic, and clastic wedge assemblages comprising the modern Pacific Continental Margin from Vancouver Island northward to Queen Charlotte Islands. It is disrupted by northwest trending dextral transcurrent faults, west verging

thrust faults, plutonic rocks and anticlinoria.

Within the Insular Belt of southwestern British Columbia, limestone has been quarried in commercial quantities from the Mount Mark Formation of the Sicker Group and the Quatsino Formation of the Vancouver Group (Table 3.1). Parts of the Parsons Bay Formation are reported to contain some thin intervals of limestone, but it has not produced commercial quantities. Only the stratigraphy of Quatsino Formation is discussed herein. Accounts of the regional stratigraphy of the other units listed in Table 3.1 are available in Hoadley (1953), Muller et al. (1974) and Muller (1980).

TABLE 3.1 STRATIGRAPHY OF THE NORTHERN PART OF VANCOUVER ISLAND *

Period	Stratigraphic Unit			
	Group	Formation	Lithology	Approx. Thick. (m)
Tertiary	-	Tertiary Volcanics and Sediments		305
	-	Tertiary Intrusions	quartz diorite	-
Cretaceous	Nanaimo		clastics, coal	125
	Queen Charlotte		clastics, coal	305 - 1050
	-	Longarm Formation	clastics	60 - 400
	-	Pacific Rim Sequence	clastics	-
Jurassic	-	Island Intrusions	granitic intrusives	-
Triassic	Vancouver	Bonanza	volcanics	305 - 5650
		Harbledown	clastics and tuffs	
		Parsons Bay[1] - Sutton	calcareous clastics and limestone	305 - 710
		Quatsino[2]	limestone	30 - 750
		Karmutsen	volcanics	3000 - 6100
		Sediment Sill Unit	clastics and volcanics	750
Pennsylvanian	Buttle Lake°	Mount Mark (Buttle Lake)	limestone	215

* Modified after Muller et al. (1974) and Fischl (1992)

° Formerly of the Sicker Group (Massey and Friday, 1988)

[1] Equivalent to the Sutton Formation of western Vancouver Island (Jeletzky, 1970)

[2] In part, previously mapped as Sutton Formation on southern Vancouver Island and equivalent to the Marble Bay Formation of Texada Island (Fischl, 1992)

3.1 STRATIGRAPHY OF THE QUATSINO FORMATION

The Upper Triassic Quatsino Formation of the Vancouver Group paraconformably overlies and is interbedded with volcanic and limestone litho-types of the Karmutsen Formation. The Karmutsen Formation includes basaltic and andesitic flows, tuffs, agglomerates, and breccias; with minor interbedded limestone (Hoadley, 1953). It is widely exposed along the southwest Pacific margin and is up to 6,100 m thick (Muller et al., 1974).

Extensive outcrops of the Quatsino Formation are known from Texada and Vancouver islands. Within the northern part of Vancouver Island the formation outcrops along three parallel belts. They are segmented by faults and intruded by granitic stocks and batholiths of the Jurassic Island plutonic suite (Fishl, 1992). The most extensive of the three belts is the discontinuous western Quatsino-Tlupana belt. Within the western belt, the Quatsino Formation attains a maximum thickness of 760 m at a location immediately south of Alice Lake (Fischl, 1992).

Within northern Vancouver Island the Quatsino is divisible into lower and upper parts (Hoadley, 1953; Muller et al., 1974; and Jeletzky, 1976). The lower part with highly variable thickness (Table 3.2) is characterized as a predominately thick-bedded to massive, brownish-grey, or light-grey to medium-grey, crypto- to microcrystalline limestone (Muller et al., 1974; Jeletzky, 1976) with some chert and a few thin interbeds of andesite or basalt (Hoadley, 1953).

The upper part of the Quatsino Formation consists of thin- to medium-bedded, medium-grey to brownish-grey limestone with interbeds and laminations of black calcareous siltstone. Inclusions, interbeds, layers and laminations of brownish-grey, dark-grey or black chert are common. Upwards, laminations and interbeds of calcareous black shale increase in frequency and thickness. Toward the top of the unit the limestone is increasingly dark-grey or black, due to increasing quantities of carbonaceous matter (Hoadley, 1953). Bedding and color banding is distinctive and well preserved. Locally the upper part contains abundant ammonites and pelecypods (Muller et al., 1974).

TABLE 3.2 MEASURED THICKNESS OF THE QUATSINO FORMATION FROM THE NORTHERN PART OF VANCOUVER ISLAND

Location	Quatsino Formation *		
	Lower Part Approx. Thick. (m)	Upper Part Approx. Thick. (m)	Description
Western Belt			
Alice Lake	488	302	- immediately south of Alice Lake
Klaskino	25	49	- along north side of Klaskino Inlet (50°18'50", 127°51'50")
Central Nimpkish Belt			
Tsulton Property°	~ 135	-	- opposite halfway Islands on Nimpkish Lake
Eastern Belt			
Beaver Cove	76 +	140	- along a tributary of Tsulton River south of Beaver Cove (50°29'50", 126°53'20")

* Modified after Muller et al. (1974)
° After Coffin and Soux (1988)

3.2 ISLAND INTRUSIONS

Within the northern part of Vancouver Island Jurassic dykes, sills, stocks, and batholiths are widespread. The Island Intrusions (Eastwood, 1965) which have invaded all rock types are medium- to coarse-grained and range in composition from gabbro to quartz monzonite. Typically elongate in a northwesterly direction, they form narrow 3 km to 8 km wide northwesterly trending belts separated by Upper Triassic volcanic and sedimentary rocks (Fig. 5.1; Hoadley, 1953). The intrusive belts are up to 80 km in length and show a pronounced decrease in size towards the western part of Vancouver Island. Localized recurrent folding of the Quatsino Formation along northwest axes was accompanied by emplacement of andesitic sills and dykes (Carlisle, 1972). According to Hoadley (1953, p. 37)

> "The fact that the lineation is more or less parallel with the general fold structure of the invaded rocks indicates that the intrusions were associated with orogenic disturbances, and that they were intruded at about the time the invaded rocks were folded. They were probably guided in part by contemporaneous faults."

Intense metamorphism associated within the emplacement of large-scale batholiths and stocks is common. Most bodies exhibit well developed agmatitic intrusive breccias within marginal zones. Within a few kilometers of the intrusive bodies limestone lithotypes can be strongly contorted, fractured, and jointed; cut by numerous dykes; and altered to calc-silicate minerals. Skarn

mineralization is common; however, it rarely results in the complete alteration of limestone bodies (Eastwood, 1965).

Smaller stocks, sills, and dykes genetically related to the Island Intrusions generally exhibit limited metamorphism and sharp contacts with the surrounding country rock. However, these intrusive bodies are most abundant within the contact aureole of the larger batholiths.

3.3 TERTIARY INTRUSIONS

Small Tertiary stocks- to medium- intrusive bodies, commonly as dykes, sills and small plutons are exposed throughout the entire length of Vancouver Island. These rocks vary widely in size, texture, and mineralogical composition and include medium- to coarse-grained granite porphyry, diorite porphyry, gabbro and finer-grained dacitic rocks. Jeletzky (1976) terms the intrusives the 'Sooke Intrusions', Massey and Friday (1988) the "Catface Intrusions", while Muller and Carson (1969) discuss "Tertiary Intrusions".

According to Hoadley (1953) the Tertiary Intrusions are most commonly dark-green to black, diabase dykes which vary in width from a few centimeters up to 5 m. Furthermore (Hoadley, 1953, p. 36),

> "where these dykes occur in Vancouver Group rocks they are almost impossible to distinguish in the field from dykes associated with the Triassic volcanic rocks."

Near Port Alberni, Massey and Friday (1988) note that these intrusives occur as dykes up to 3 m wide and are commonly found along fault zones, which may have acted as conduits for emplacement.

3.4 STRUCTURE

The northern part of Vancouver Island is transected by north to northwest trending anticlinoria flanked by steep normal or strike-slip vertical faults that trend northwest to west-northwest. These principal faults delineate several structurally disconnected fault blocks with variable orientations and different levels of exposed stratigraphy. The principal fault blocks are characterized by a multitude of close-spaced major and minor faults that predominate in north, northeast, northwest and east to west directions (Jeletzky, 1976). The principal fault blocks are broken into innumerable smaller, irregular-shaped blocks that may measure down to only a few square metres.

According to Muller (1967, p. 83) the area east of Quatsino Sound

"consists of tilted blocks separated by two or three sets of normal faults, trending northwest, north and northeast."

Jeletzky (1976) terms the area south and southwest of Rupert Inlet as the Quatsino Fault Block. Its northwestern boundary is defined by the regionally significant northwest striking Holberg fault, which passes immediately to the northeast of Varney Bay. The eastern part of the fault block, which exposes strata of the Quatsino Formation east of Varney Bay, is strongly upthrown relative to adjacent blocks, forming a faulted section of a northwest-striking and southwest-dipping homocline.

4. PROPERTY GEOLOGY

4.1 STRATIGRAPHY

At least three unique lithological units are recognized at the Varney claims (Table 4.1), including volcanic rocks of the Karmutsen Formation, and carbonate lithotypes of the upper and lower Quatsino Formation.

The Karmutsen Formation comprises incompletely metamorphosed basaltic and andesitic flows, tuffs, agglomerates and breccias with minor interbedded limestone (Hoadley, 1953). At Varney Bay the Quatsino Formation is divisible into upper and lower parts (Hoadley, 1953; Muller et al., 1974; and Jeletzky, 1976). The lower part occupies much of Varney Ridge (Fig. 3.1) and consists of grey to light-brownish-grey, massive, microcrystalline limestone with interbeds of laminated mudstone, dolomitic limestone and dolomite (Section 4.2). The upper part of the Quatsino Formation, which occurs along the shores of Rupert Inlet, includes brownish-grey, microcrystalline, massive limestone with interbeds, laminations and irregular masses of black chert.

In contrast to other localities underlain by the Quatsino Formation within the northern part of Vancouver Island, differentiating between primary bedding and secondary structures was possible at most outcrops at the Varney Bay Property. Also, a number of laminated dolomitic marker horizons with distinct lithological characteristics were recognized which facilitated stratigraphic correlation and structural analysis (Fig. 3.1).

Although prevalent in other areas of Vancouver Island, dykes and sills of the Jurrasic and Tertiary suites of intrusives are generally absent on the property. However, five of the eight drill holes completed during 1994, intersected sill or dyke up to two metres thick, just above the Quatsino - Karmutsen contact. It is described as a dacite or diabase and is porphyritic in some of the drill core (Krukowski, 1994). Associated alteration includes haloes to several meters of thermal recrystallization and thin zones of skarnification adjacent to the contact. Based on the descriptions

(Krukowski, 1994), the igneous rock is interpreted to be a late stage mafic (andesite - basalt) volcanic sill or flow related to the Karmutsen Formation.

The region is covered by a veneer of unconsolidated glacial sediments which range in thickness from nil to several meters. Surficial weathering has resulted in a weathering profile which varies from a few centimeters up to several meters thickness. Many of the erosional (topographic) features appear elongate along the pre-existing structural trend. Locally, the bedrock surface is highly irregular and subsurface cavities or caves are probable.

4.2 LITHOLOGY

Although the Quatsino Formation is generally described as a thick succession of monotonous massive, brownish-grey, microcrystalline limestone, a number of different lithologies have been observed at Varney Bay, both within prior drilling (Krukowski, 1994) and during the 2002 field work (Appendix 2). Within the lower part of the Quatsino Formation, a number of different lithologies have been observed, including:

- massive impure limestone with some weakly laminated to shaly interbeds, and some thin interbeds of basics dykes, sills or Karmutsen volcanics;
- massive limestone, with a few semi-continuous interbeds of slightly dolomitic limestone and dolomitic limestone. It is commonly light- to dark-brown or grey, cryptocrystalline to microcrystalline with rare laminated mudstone beds and rare fossil debris; and
- banded dolomite, dolomitic limestone and limestone, with some laminated dolomite beds from a few centimeters to a few meters thick.

Within the upper part of the Quatsino Formation, similar lithologies were observed, including brownish-grey, microcrystalline, massive limestone with interbeds, laminations and irregular masses of black chert. In general, the concentrations of black chert observed within the upper part of the Quatsino Formation, were not observed within its lower parts (Appendix 2).

4.3 STRUCTURE

Structural measurements were collected from carbonate units on the Varney Bay Property (Appendix 2). Where unequivocally determined, original bedding (S_o) possess a moderate dip whereas, secondary structure such as joints or cleavage (S_1) are steeply dipping to near vertical. Most outcrops show evidence of deformation with one or more of the above mentioned planar structures. Orientations of the different categories of planar elements are relatively consistent throughout the region and distinguishing between primary bedding and secondary structural features is possible in the field. Statistical analyses are employed to provide mean orientations of the planar

elements and differentiate separate tectonic (superimposed) surfaces.

A statistical analysis of the orientation data measured within carbonate units exposed on the property was completed by plotting poles to measured planes in the southern hemisphere of a Schmidt (equal angle) stereographic projection (Fig. 4.1). Overall, bedding measurements group within a well-defined cluster and have a mean orientation (n=67) of 151°/40° SW. Bedding measurements that deviated from the mean orientation tended to be near structural zones and may have been slightly rotated.

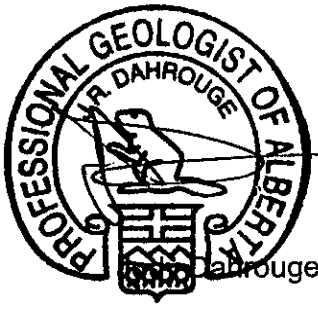
Based on measurements and stereographic plots, at least three distinguishable structural elements are present at the Varney claims. The most prevalent structure is a fracture cleavage (S_1) that plots in a well-defined cluster and has a mean orientation of (n=5) 032°/81° SE. Two other near vertical joint sets were measured and likely related to local faults. The first is a west-trending fracture surface (joint set A) that roughly parallels a series of interpreted faults. An orientation of 002°/75° E was obtained off a local fault which is coincident with the second, north-trending fracture surface (joint set B). Both of these planar elements are likely related to major north-northwest trending faults that mark the contact between the Quatsino Formation and Karmutsen Volcanics along the eastern margin of Varney Ridge.

At the Varney claims the Quatsino Formation forms a northwest-southeast trending homocline that has been deformed by later tectonic events including folding and faulting. Folding produced the main fracture cleavage (S_1). Subsequent relaxation from the compressional event resulted in the east-west trending faults and joint surfaces. The roughly north-south trending structures cross-cut all other planar elements and are likely related to the major northwest faults in the region.

5. DISCUSSIONS AND CONCLUSIONS

Fieldwork conducted during 2002 at the Varney claims failed to identifying in outcrop or with ground magnetometer surveys, any significant intrusive bodies the may adversely affect the quality of limestone within the Quatsino Formation.

Varney Ridge, Hill 6 and Hill 8 are underlain by thick sequences of the Lower Quatsino Formation. Here, the Lower Quatsino Formation is composed primarily of grey to light-brownish-grey, massive, microcrystalline limestones with interbeds of laminated mudstone, dolomitic limestone and dolomite. West of Varney Ridge, along the shores of Rupert Inlet, are chert-bearing limestones of the Upper Quatsino Formation.



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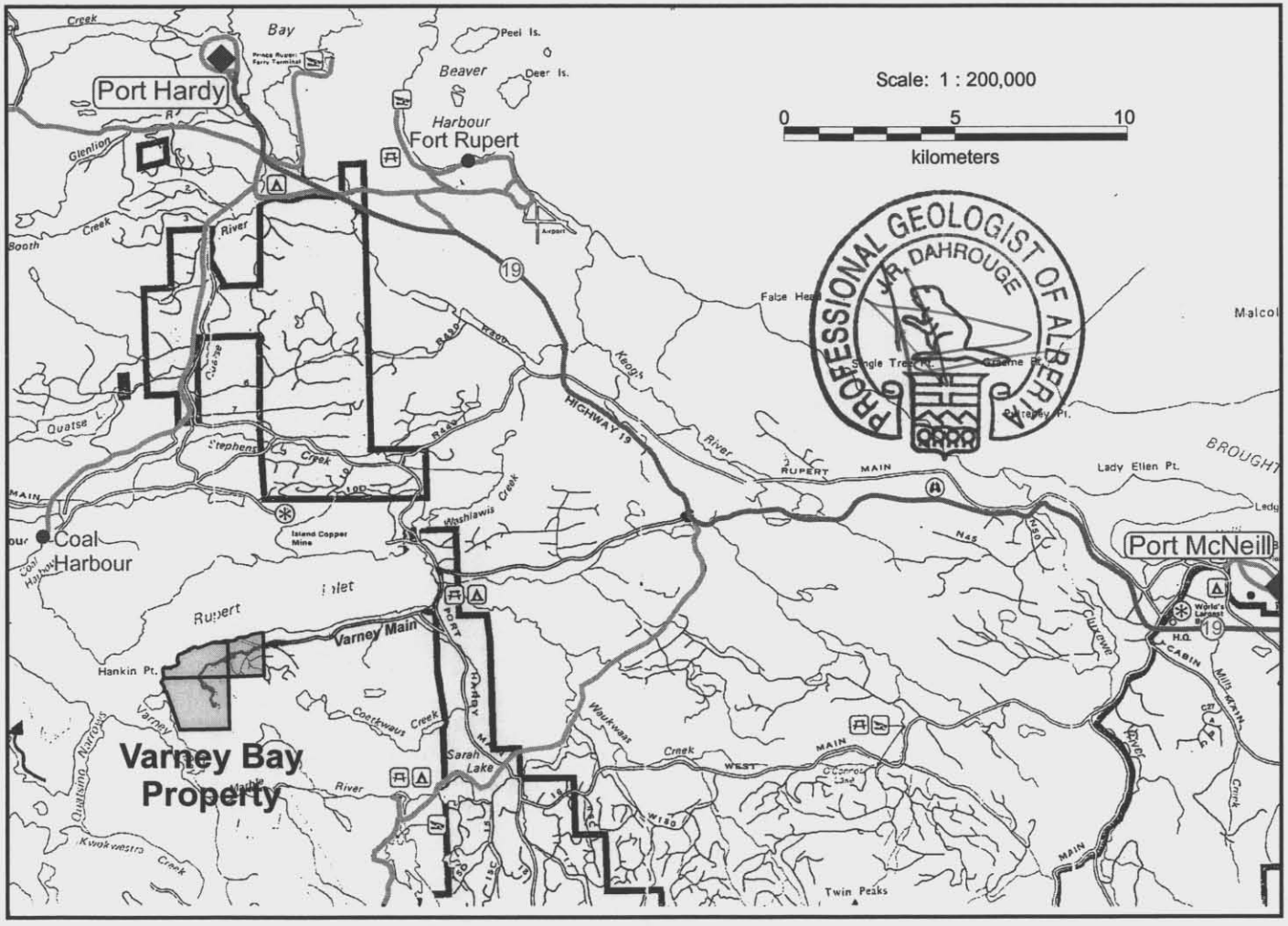
EDMONTON, ALBERTA

SOUTHWESTERN BRITISH COLUMBIA

Fig. 1.1 Location Map

MDS 2003.03

F1



Notes

Modified after the Access Map of Canadian Forest Products Ltd., 1992.

F2

LEGEND & SYMBOLS

- Major Highway
- Paved Road
- Secondary Road
- Logging Road
- Varney Bay Property
- Town
- Community

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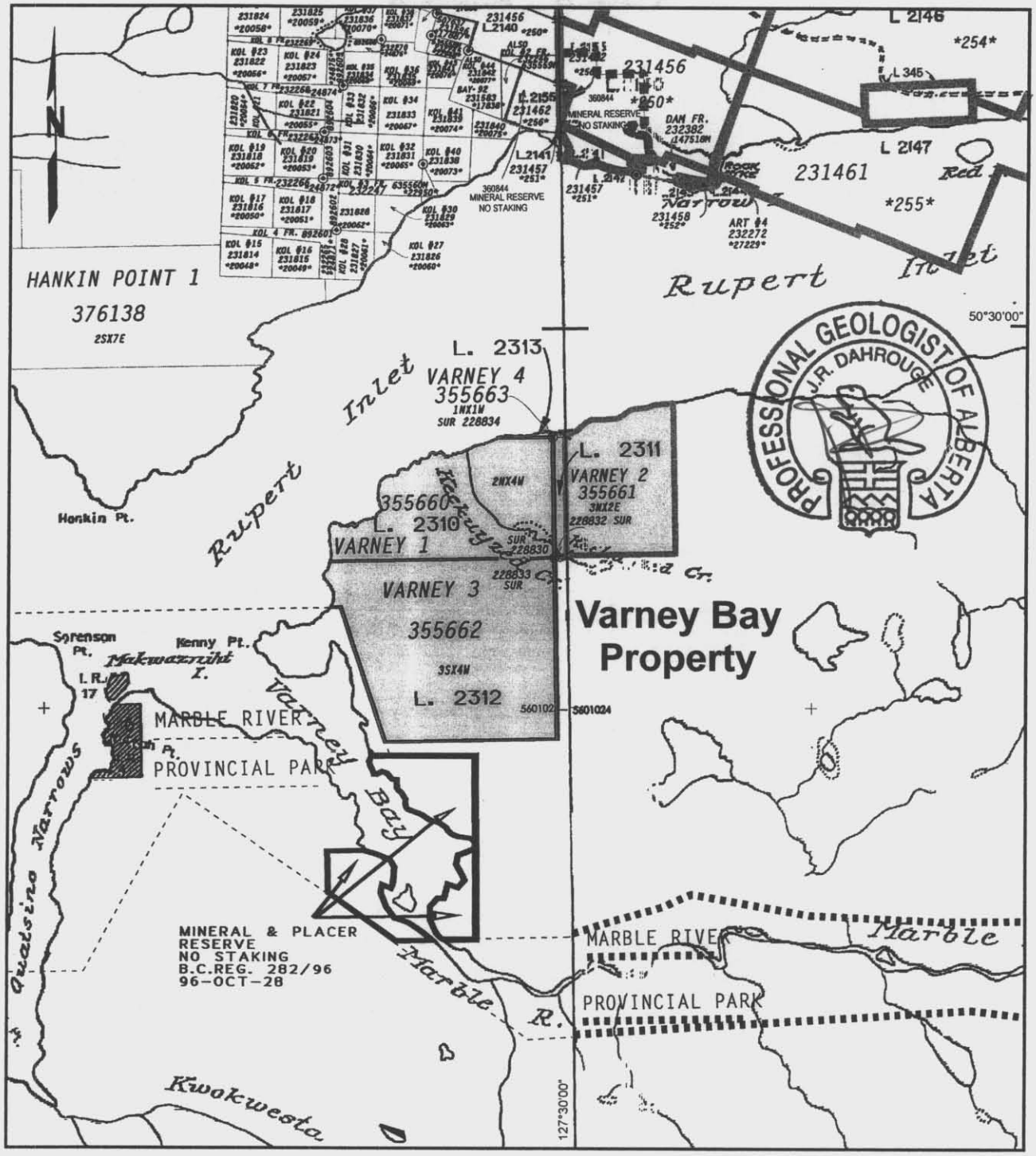
SOUTHWESTERN BRITISH COLUMBIA

Fig. 1.2 Access Map

MDS 2003.03



Varney Bay Property

NOTES

Parts of Mineral Titles Reference Maps
92L11W - Updated Jan 21, 2003
92L12E - Updated Jan 8, 2003

GRAYMONT WESTERN CANADA INC.		
Dahrouge Geological Consulting Ltd. EDMONTON, ALBERTA		
SOUTHWESTERN BRITISH COLUMBIA		
Fig. 1.3 Property Map		
MDS	SCALE 1:50000	2003.03

PORT HARDY
VARNEY BAY
Cluxewe
S.U.P. 6000
PORT McNEILL
Benson Lake
NIMPKISH LAKE
Beaver Cove
Alert Bay
Sointula
MALCOLM ISLAND
PROVINCIAL FOREST
VANCOUVER ISLAND RANGE
NIMPKISH RANGE
BONANZA RANGE
(Western Limestone Belt)
Quatsino-Tlupana
(Central Limestone Belt)
Nimpkish
(Eastern Limestone Belt)
Bonanza
Salmon Channel
George Passage
Broughton Strait
Cormorant Channel
Retreat Passage
Johnstone Strait
50°30' N
127°00' W

LEGEND

TERTIARY
- Ts — Cobble conglomerate

MIOCENE
- Tv — Basaltic to dacitic lava, tuff, breccia, conglomerate

EOCENE
- Tg — Quartz diorite

CRETACEOUS
UPPER CRETACEOUS
- uKN2 — Suquash Formation: siltstone, shale
- uKN1 — Greywacke, conglomerate, siltstone, coal

JURASSIC
- Jg — Island Intrusions: quartz diorite, granodiorite, quartz monzonite, quartz feldspar porphyry

TRIASSIC AND JURASSIC
LOWER JURASSIC
- lJBV — Bonanza Volcanics: andesitic to rhyodacitic lava, tuff, breccia
- lJH — Harbledown Formation: argillite, greywacke

UPPER TRIASSIC
- uTRPB — Parson Bay Formation: calcareous siltstone, shale, limestone, greywacke, conglomerate, breccia
- uTRQ — Quatsino Formation: limestone
- uTRK — Karmutsen Formation: basaltic lava, pillow lava, breccia, aquagene tuff

SYMBOLS

- Graymont mineral claims .....
- Location of limestone quarry ..... Cluxewe
- Geological boundary (approximate) ....
- Fault, lineament (approximate) .....
- Bedding (horizontal, inclined, vertical) ..

NOTES

Geology after Muller et al. (1974).

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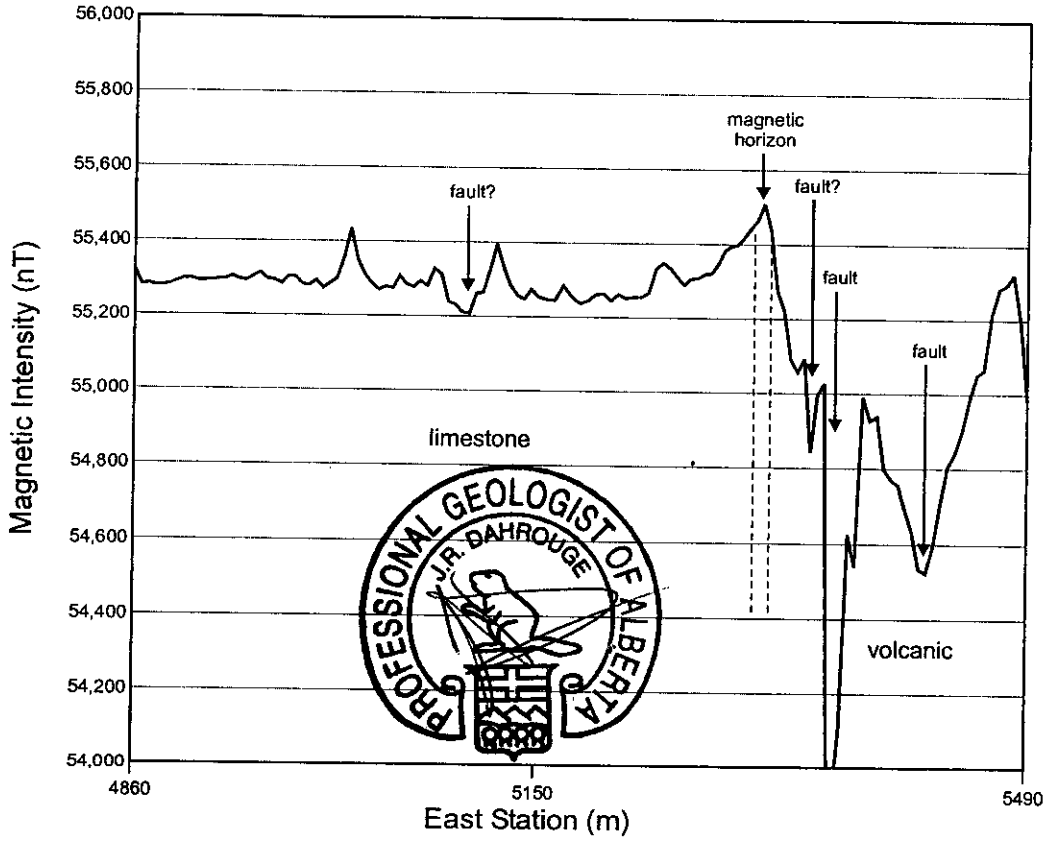
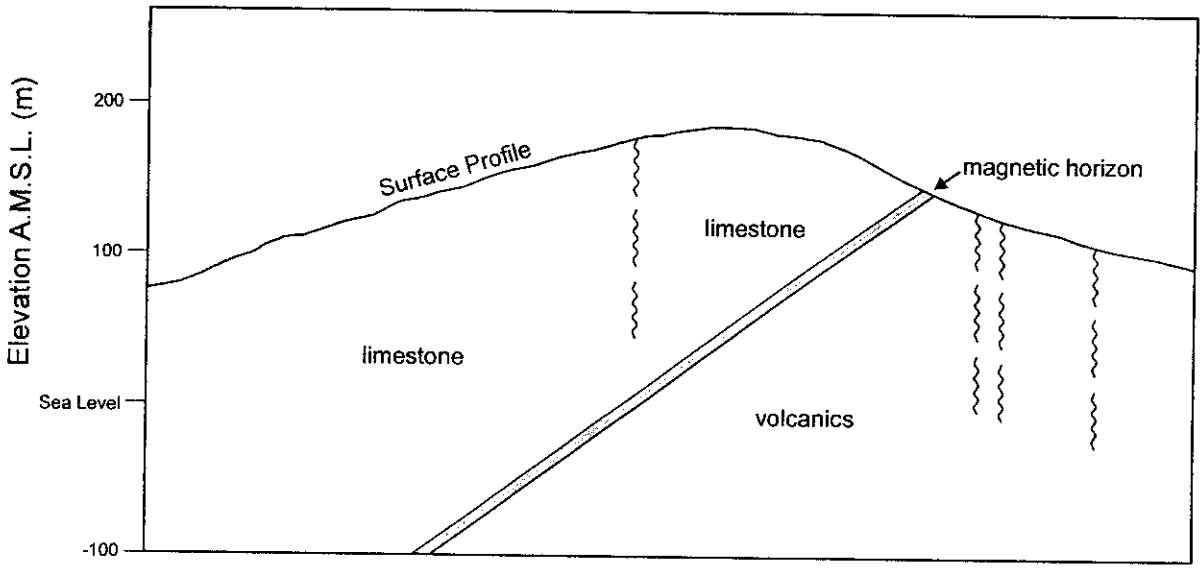
NORTHERN PART OF VANCOUVER ISLAND
BRITISH COLUMBIA

Fig. 2.1
Regional Geology

JRD | 1 : 250,000 | 2003.04





SYMBOLS & NOTES

Magnetic profile (nT)

Fault (interpreted)

Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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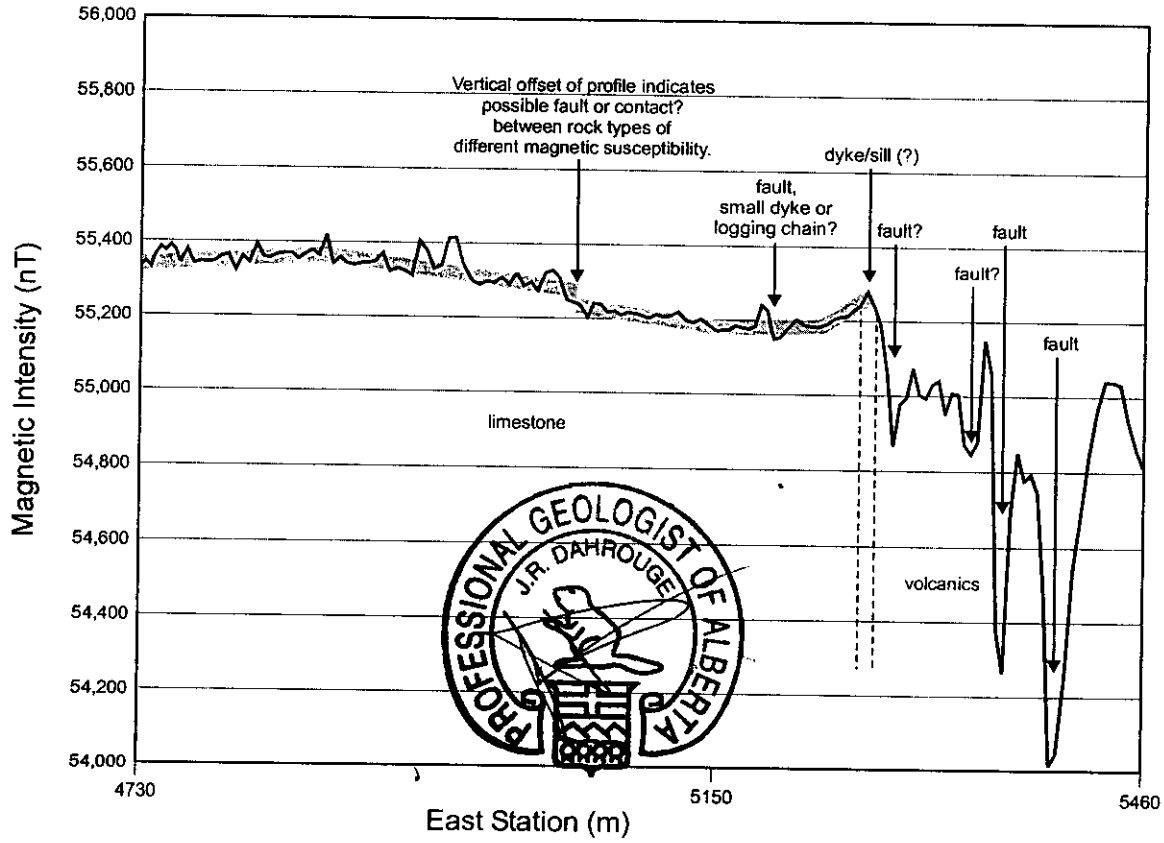
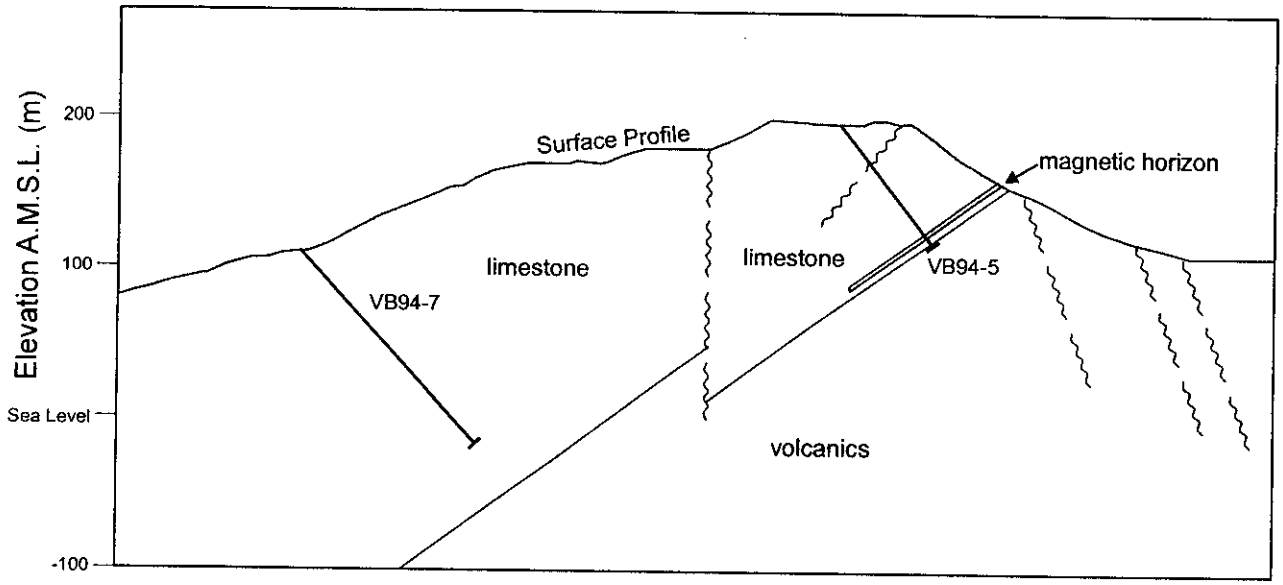
VARNEY BAY PROPERTY, BRITISH COLUMBIA

Fig. 3.3
Magnetic Profile for Line 1600 N

WM 2003.03





SYMBOLS & NOTES

Magnetic profile (nT)

Fault (interpreted)

Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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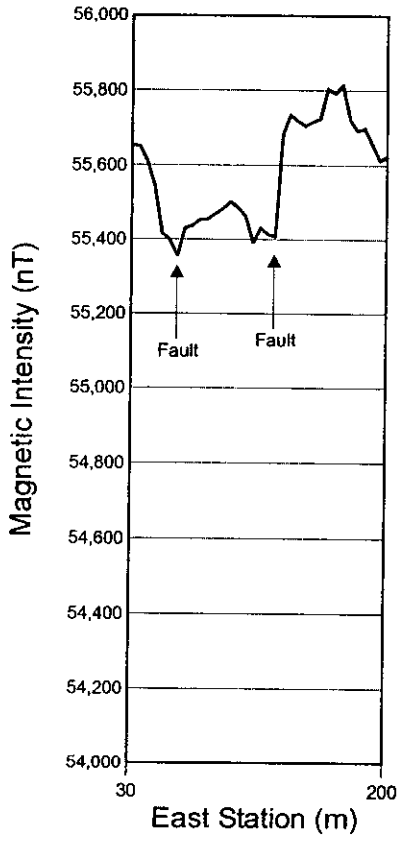
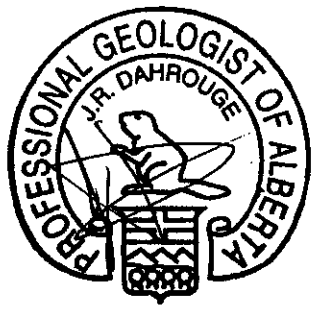
Edmonton, Alberta

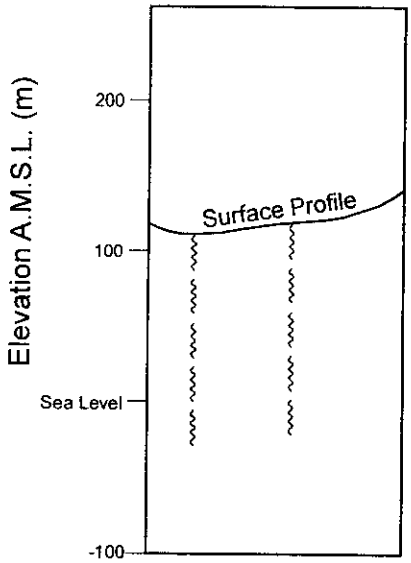
VARNEY BAY PROPERTY, BRITISH COLUMBIA

Fig. 3.4
Magnetic Profile for Line 1850 N

WM 2003.03







SYMBOLS & NOTES

Magnetic profile (nT)

Fault (interpreted)

Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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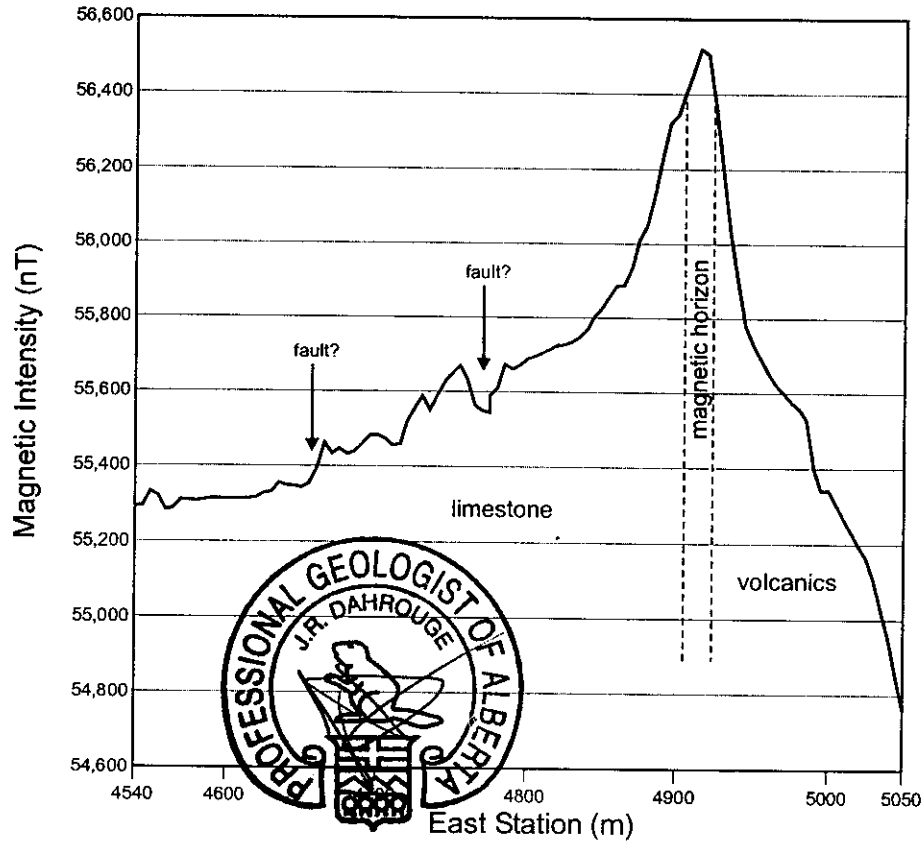
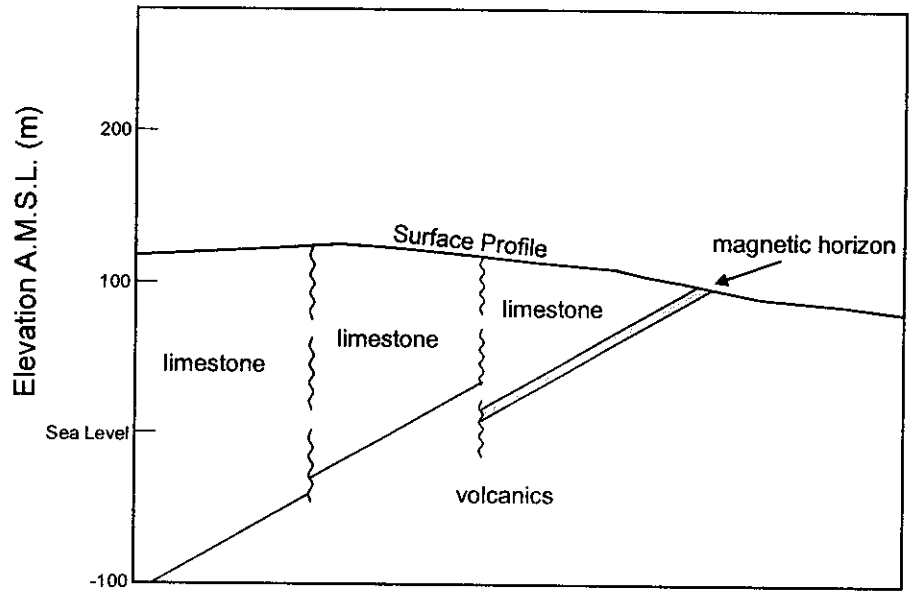
VARNEY BAY PROPERTY, BRITISH COLUMBIA

Fig. 3.5
Magnetic Profile for Line 2300N

MDS 2003.03





SYMBOLS & NOTES

Magnetic profile (nT)

Fault (interpreted)

Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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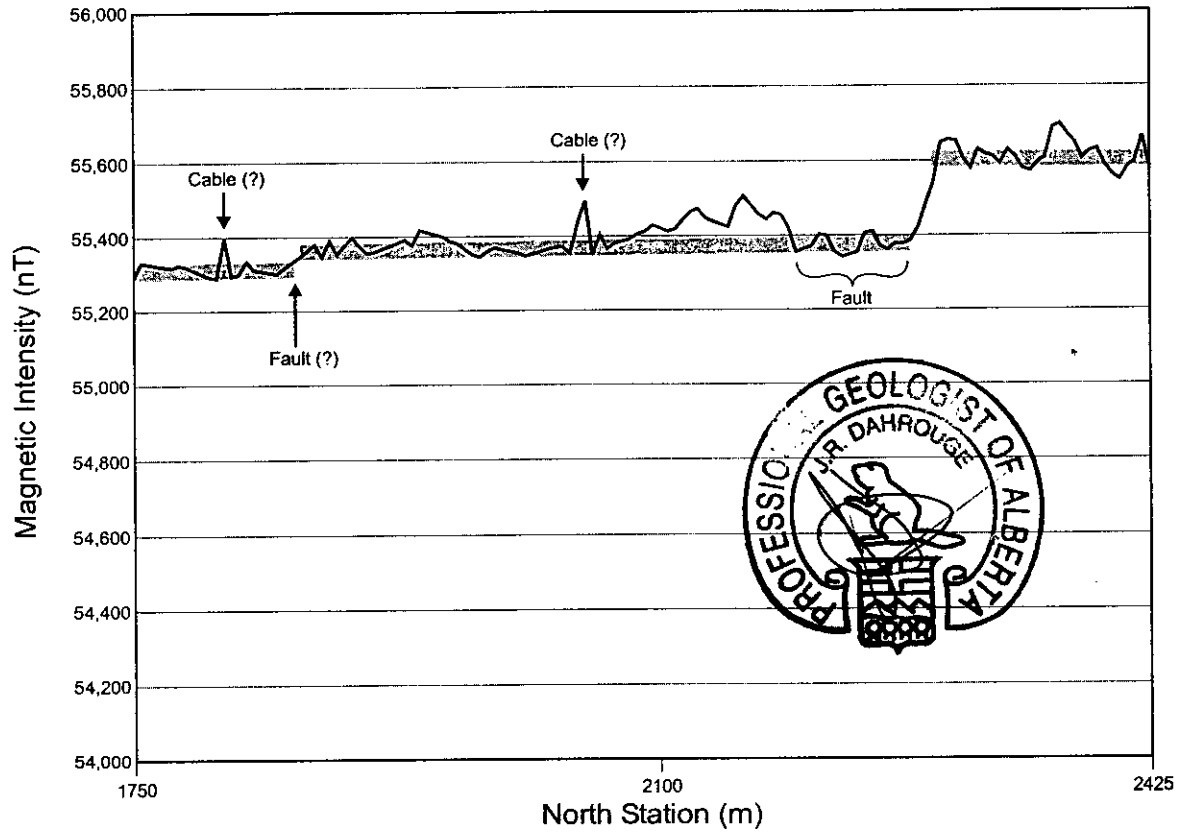
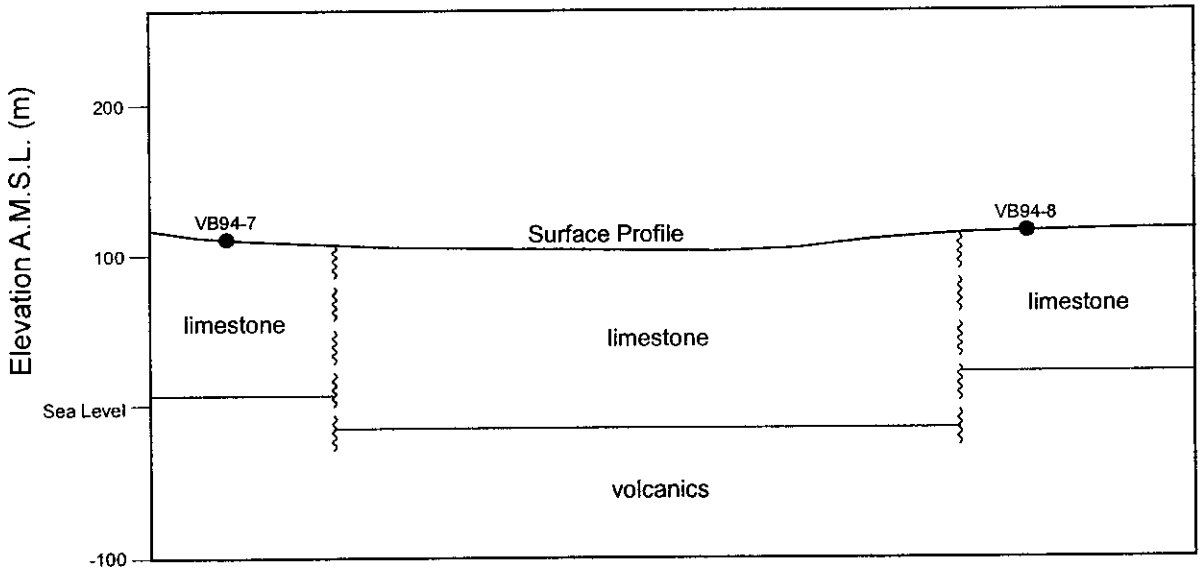
VARNEY BAY PROPERTY, BRITISH COLUMBIA

Fig. 3.6
Magnetic Profile for Line 2425 N

WM 2003.03





SYMBOLS & NOTES

- Magnetic profile (nT)
- Fault (interpreted)
- Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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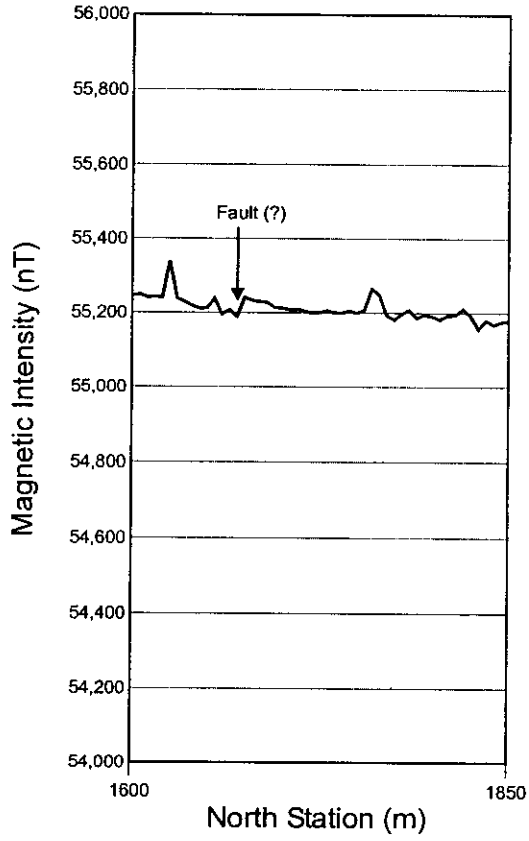
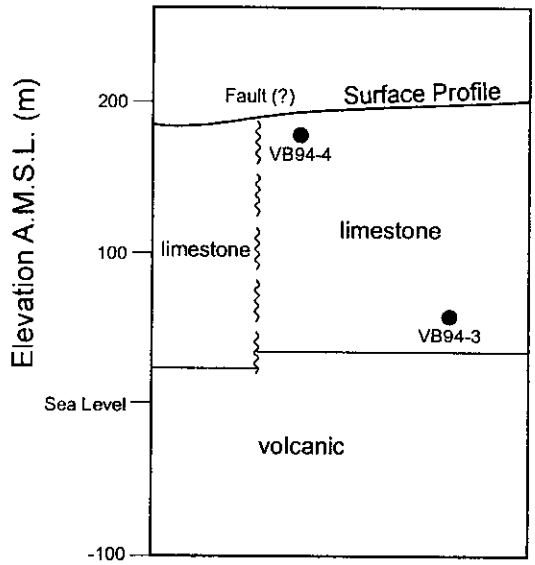
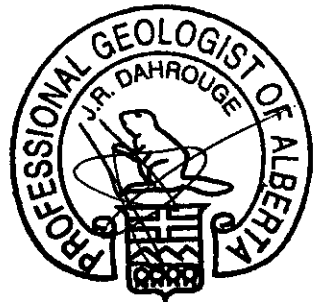
VARNEY BAY PROPERTY, BRITISH COLUMBIA

Fig. 3.7
Magnetic Profile for Line 4775E

MDS 2003.03







SYMBOLS & NOTES

- Magnetic profile (nT)
- Fault (interpreted)
- Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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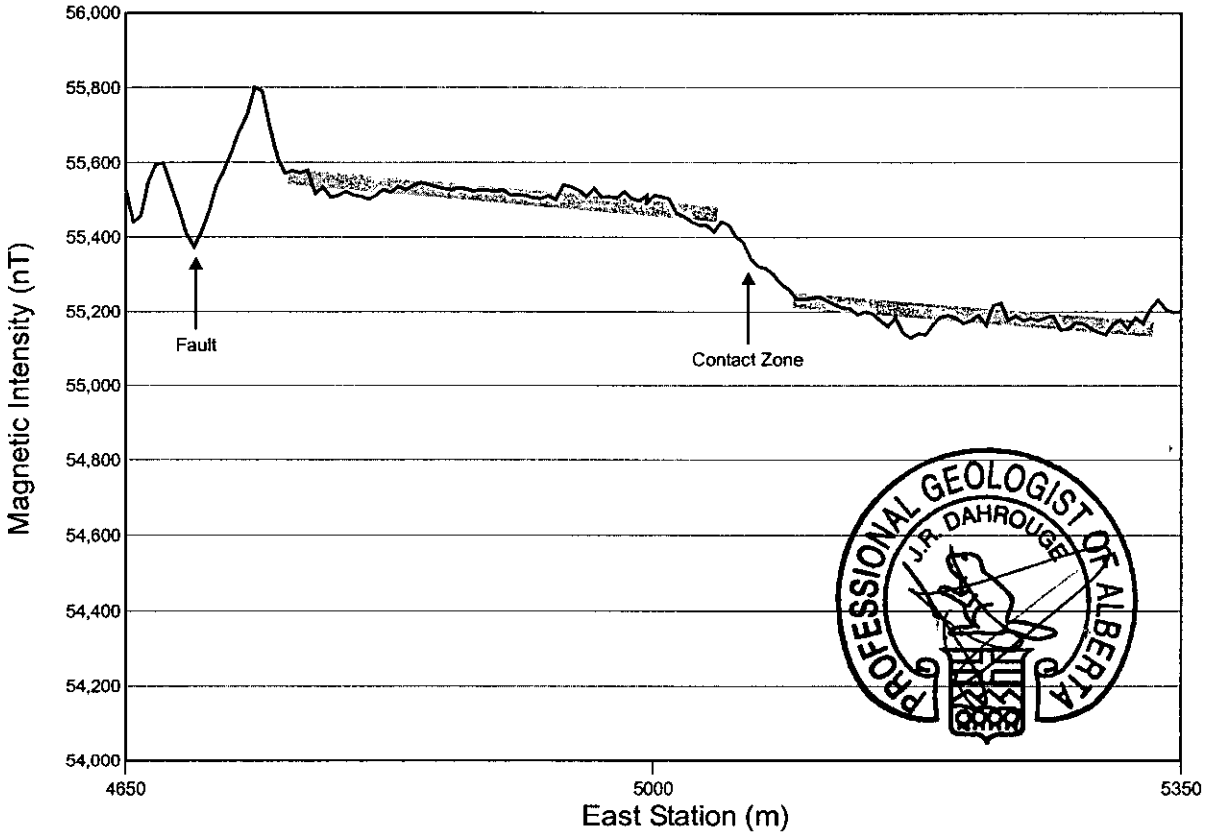
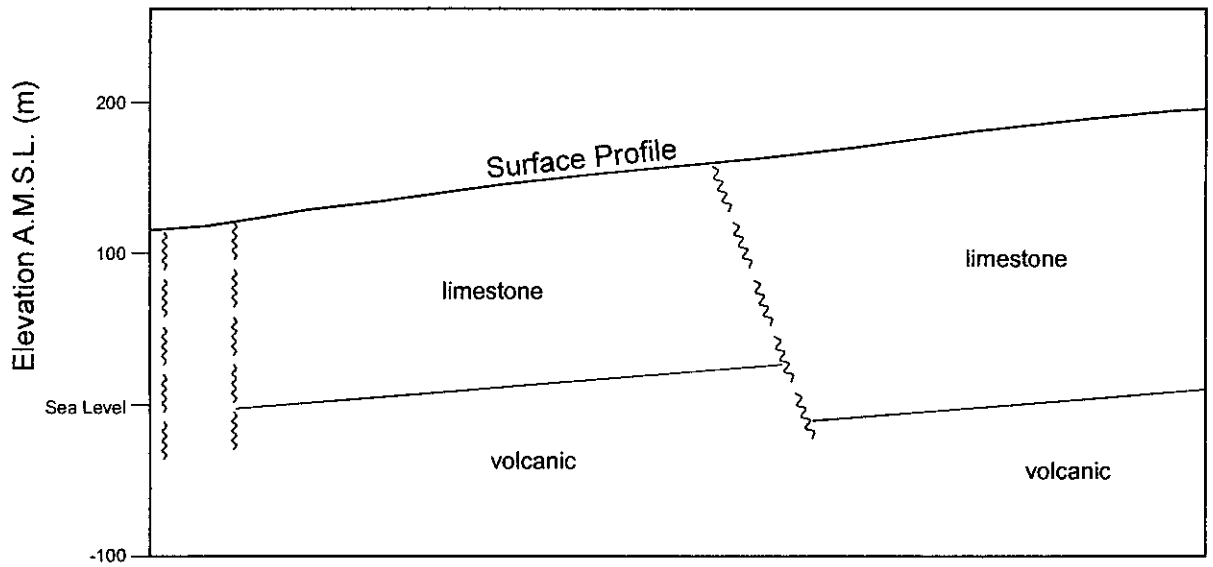
VARNEY BAY PROPERTY, BRITISH COLUMBIA

Fig. 3.8
Magnetic Profile for Line 5150E

MDS 2003.03





SYMBOLS & NOTES

Magnetic profile (nT)

Fault (interpreted)

Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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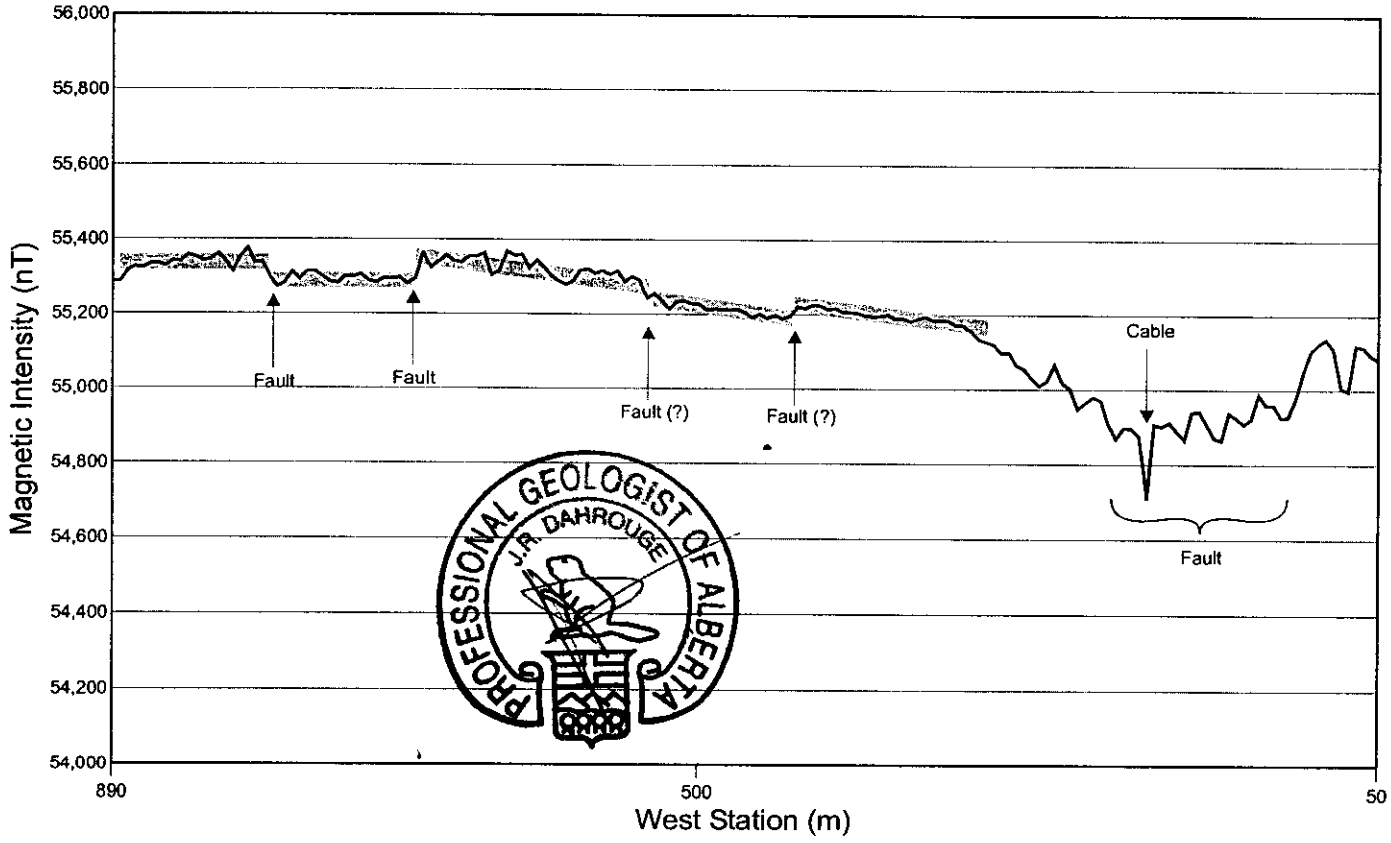
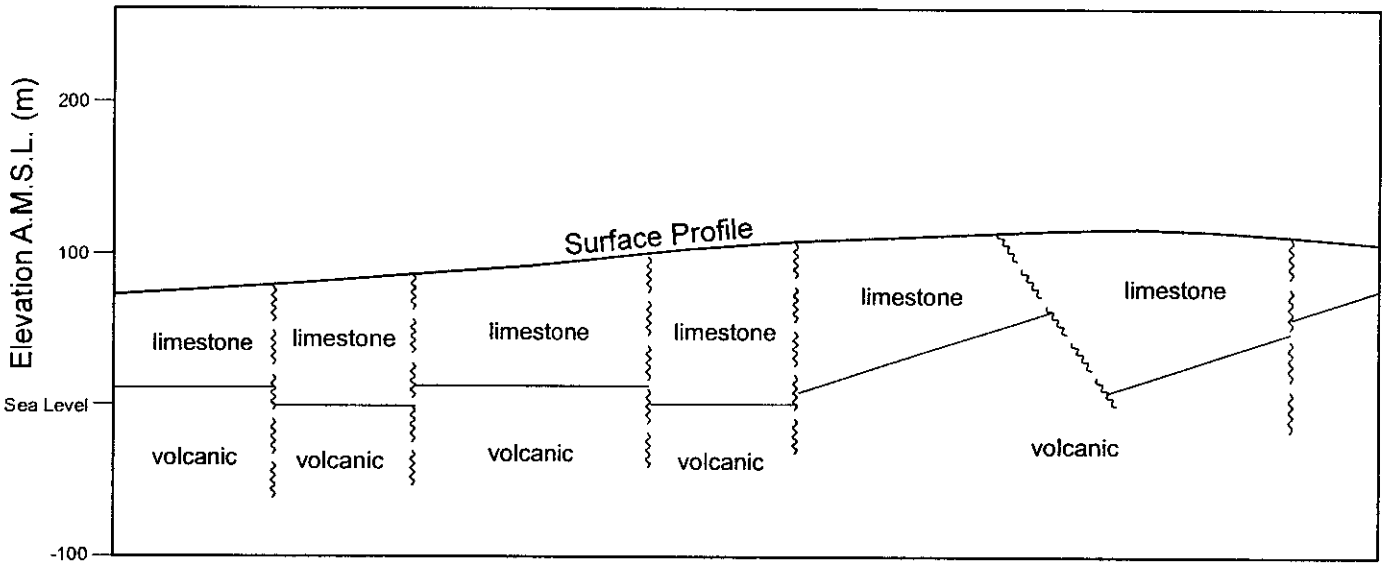
Fig. 3.9
Magnetic Profile for Shawna Road

MDS 2003.03





SYMBOLS & NOTES

Magnetic profile (nT)

Fault (interpreted)

Magnetic horizon: possible dyke or sill, or skarn

1) See Fig. 3.2 for location of survey line.
2) Limestones are Quatsino Formation and volcanics are Karmutsen Formation.

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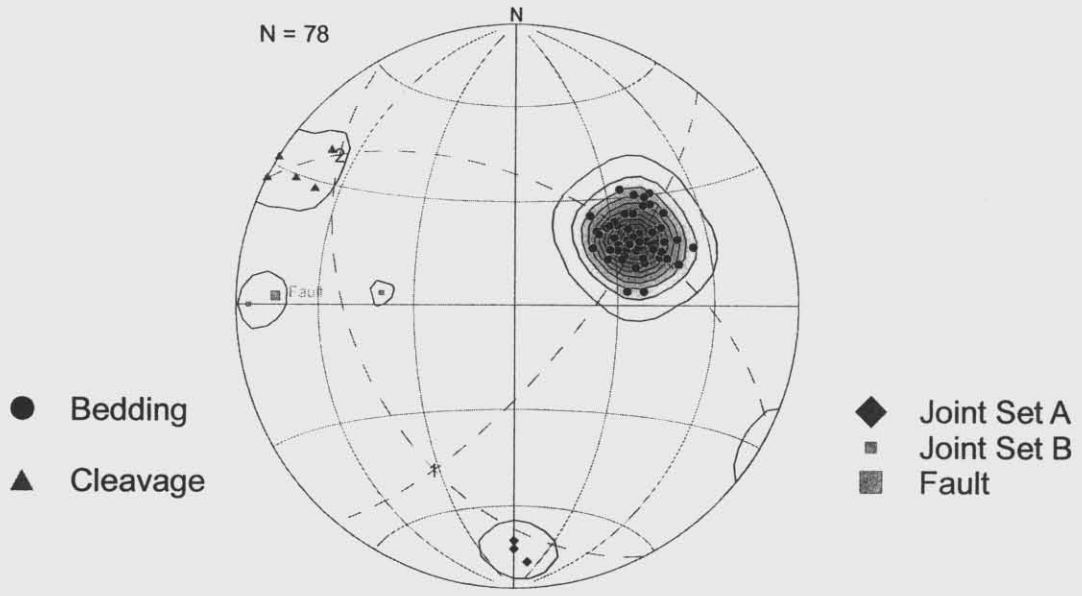
VARNEY BAY PROPERTY, BRITISH COLUMBIA

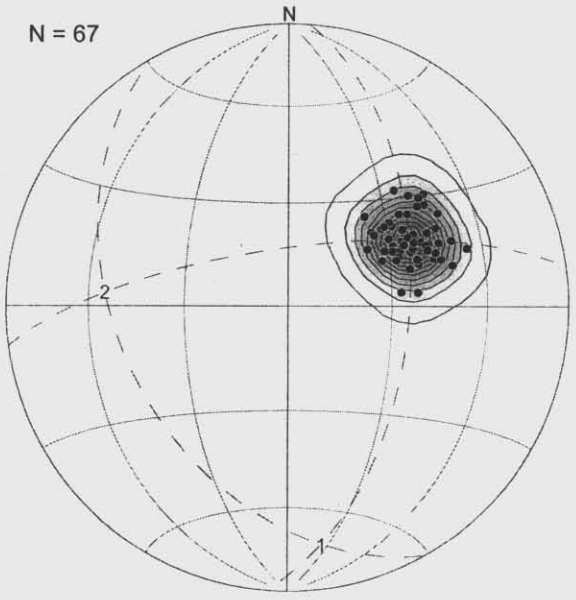
Fig. 3.10
Magnetic Profile for South Road

MDS 2003.03

ALL DATA

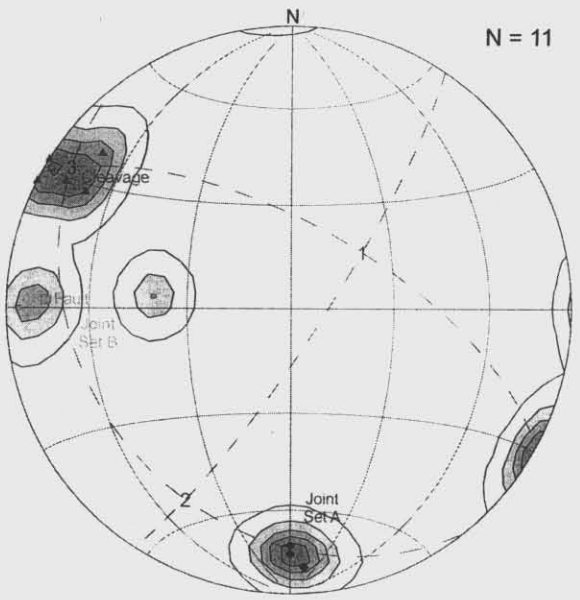


Bedding



Mean Bedding Orientation: 151°/40° SW

Structure



Mean Cleavage Orientation: 032°/81° SE

Figure 4.1: Stereographic Projection of Poles to Planar Structural Elements Measured in Limestone Units near Varney Bay. Equal Area Schmidt Net.

APPENDIX 1: ITEMIZED COST STATEMENT

a) Personnel

B. Robison, geologist (Graymont Western US Inc.)					
3.0	days	field work and travel between October 16 to 20, 2002			
3.0	days	@ $ 508.25	$ 1,524.75		
M. Gidluck, geologist (Graymont Western Canada Inc.)					
3.0	days	field work and travel between October 16 to 20, 2002			
1.0	days	arrangements and preparations for field			
4.0	days	@ $ 481.50	$ 1,926.00		
J. Dahrouge, geologist (Dahrouge Geological Consulting Ltd.)					
9.0	days	field work and travel between October 12 to 20, 2002			
7.0	days	preparations for field, organizing, supervising and preparing report			
16.0	days	@ $ 454.75	$ 7,276.00		
W. McGuire, assistant (Dahrouge Geological Consulting Ltd.)					
9.0	days	field work and travel between October 12 to 20, 2002			
18.1	days	compiling field data, drafting, preparing figures and maps			
27.1	days	@ $ 390.55	$ 10,583.91		
M. Smith, geologist (Dahrouge Geological Consulting Ltd.)					
9.0	days	field work and travel between October 12 to 20, 2002			
13.1	days	compiling field data, determine specific gravities, prepare figures, assist with report writing			
22.1	days	@ $ 350.43	$ 7,744.39		
G. Sauer, assistant (Dahrouge Geological Consulting Ltd.)					
9.0	days	field work and travel between October 12 to 20, 2002			
9.0	days	@ $ 272.85	$ 2,455.65		
				$	31,510.70

b) Food and Accommodation

42 man-days	@ $ 40.34	accommodations (motel)	$ 1,694.30	
42 man-days	@ $ 44.52	groceries and meals	$ 1,870.04	
				$ 3,564.34

c) Transportation

AirFares:	4 Flights Edmonton to Vancouver, and Vancouver to Port Hardy Return	$ 3,398.60	
	1 Flights Salt Lake City to Vancouver, and Vancouver to Port Hardy Return	$ 1,232.05	
	1 Flights Calgary to Vancouver, and Vancouver to Port Hardy Return	$ 1,176.56	
Vehicles:	4x4 Sports Utility Truck Rental (9 days) and Repairs	$ 1,461.19	
	4x4 Truck Rental (2 days)	$ 203.93	
	Fuel	$ 211.51	
			$ 7,683.84

APPENDIX 1: CONTINUED

d) Instrument Rental				
24 unit-days @ $ 58.85	GEM System GSM-19 Magnetometer and Base Station	$ 1,412.40		
e) Drilling	n/a			
f) Analyses	n/a			
g) Report	Reproduction and assembly	$ 82.50		
			$	82.50
h) Other				
	Base map(s) and map reproductions	$ 382.53		
	Courier, postage and shipping	$ 1,002.91		
	Field supplies	$ 391.84		
	Long distance telephone	$ 4.94		
	Other	$ 257.15		
	Publications	$ 59.60		
			$	2,098.97
Total			$	44,940.34

APPENDIX 2: DESCRIPTIONS OF THE 2002 STRATIGRAPHIC SECTIONS AT VARNEY BAY

Notes: Stratigraphic thicknesses are based on measured attitudes of bedding listed below, with appropriate interpolations. Those provided in brackets [10] are horizontal distances. Attitudes are strike and dip. An asterisks (*) denotes isolated sample. Samples are listed in order from stratigraphic top to bottom. Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83.
Abbreviations: **uQ** - Upper Quatsino Formation, **lQ** - Lower Quatsino Formation, and **KmV** - Karmutsen Volcanics.

Sample	Formation	Strat. Thick. (m)	Description
VB2002-01 (UTM 604432E, 5602826N)			
14379	lQ	2½	**Micritic Limestone**, dark-grey, microcrystalline, coarse secondary calcite veinlets, massive
-	-	1	covered
14378	lQ	1½	**Micritic Limestone**, dark-grey, microcrystalline, network of coarse secondary calcite veinlets/masses, some dolomitic(?) veinlets, brecciated appearance, pyrite present
VB2002-02 (UTM 604397E, 5602787N)			
14381	lQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, some secondary calcite stringers and veinlets, rusty fractures, massive, attitude of beds 132°/46°SW and fractures 032°/90°
-	-	1	covered
14380	lQ	3¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, some secondary calcite stringers and veinlets, rust stain on fractures
VB2002-03 (UTM 604268E, 5602755N)			
14396	lQ	4½	**Micritic Limestone**, light-brown-grey, cryptocrystalline, massive, attitude of beds 148°/52° SW
14395	lQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline; massive
14394	lQ	4	**Micritic Limestone**, light-brown-grey to grey, cryptocrystalline, abundant secondary calcite veinlets and stringers to ½ cm, rusty material on fractures, massive
14393	lQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, some secondary calcite veinlets, massive, very good reaction to HCl
14392	lQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, very good HCl, some secondary calcite veinlets
14391	lQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, very good HCl
14390	lQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, very good HCl
14389	lQ	4½	**Micritic Limestone**, light-brown-grey, cryptocrystalline, very good HCl, concoidal fracture
-	-	5¾	covered
(UTM 604324E, 5602756N)			
14388	lQ	3½	**Micritic Limestone**, light-brown-grey, cryptocrystalline, secondary calcite stringers/veinlets, massive
14387	lQ	4¾	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate to good reaction to HCl, secondary calcite veins/stringers, mottled appearance, attitude of joints 005°/40° E
-	-	5	covered/Offset
14386	lQ	7	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good HCl, calcite stringers/veins to ½ cm, rusty material on fractures, attitude of beds 143°/50° SW
-	-	1½	covered
(UTM 604371E, 5602767N)			
14385	lQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, calcite stringers/veinlets to 2 mm, massive
14384	lQ	4	**Micritic Limestone**, as above
14383	lQ	3¾	**Micritic Limestone**, as above with black material on fractures, attitude of beds 152°/48° SW
14382	lQ	4	**Micritic Limestone**, as above

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-04 (UTM 604155E, 5602577N)			
13999	uQ	2+	**Cherty Limestone**, tan-brown-grey, microcrystalline, several thin chert beds to 10 cm, beds up to ½ m
13998	uQ	4	**Micritic Limestone**, light-brown-grey, microcrystalline, good HCl; massive, 152°/42° SW
-	-	(significant)	offset
13997	uQ(?)	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate reaction to HCl, outcrop mostly covered
-	-	(significant)	offset
13996	lQ	½	**Micritic Limestone**, brown-grey, cryptocrystalline, mottled appearance, beds ¼ to ½ m, attitude of beds 152°/46° SW
(UTM 604392E, 5602551N)			
13995	lQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, some calcite stringers from 1 to 2 mm
(UTM 604377E, 5602540N)			
13994	lQ	2	**Micritic Limestone**, light-brown, cryptocrystalline, moderate-good reaction to HCl, few calcite stringers
VB2002-05 (UTM 604457E, 5602511N)			
13993	lQ	2¾	**Micritic Limestone**, light-grey to brown-grey, cryptocrystalline, moderate reaction to HCl, some calcite stringers to 2 mm, beds to ½ m, attitude of beds 142°/38° SW
-	-	[95]	covered/Offset
(UTM 604491E, 5602501N)			
13992	lQ	¼	**Laminated Mudstone**, grey with buff weathering, good reaction to HCl, minor calcite stringers, beds/laminations up to ½ cm, attitude of beds 146°/35° SW
-	-	[69]	covered/Offset
(UTM 604523E, 5602445N)			
13989	lQ	¼	**Micritic Limestone**, light-brown to brown-grey, cryptocrystalline, moderate reaction to HCl, massive
13990	lQ	1	**Micritic Limestone**, as above
13991	lQ	grab	**Breccia/Calcite Vein**, tan, some clay altered material and clasts, some rust stain, calcite vein to 10 cm, attitude of beds 020°/50° SW
-	-	[80]	covered/Offset
(UTM 604611E, 5602430N)			
13988	lQ(?)	1¾	**Micritic Limestone**, light-brown to brown-grey, cryptocrystalline, coarse secondary calcite stringers and blebs, fractured and rubbly, beds less than ¾ m
13987	lQ(?)	1¼	**Micritic Limestone**, light- brown-grey, orange-tan weathered material, fractured and rubbly
13986	lQ(?)	2¼	**Micritic Limestone**, light- brown to brown-grey, cryptocrystalline, moderate reaction to HCl, some calcite stringers/veinlets, fractured and rubbly
13985	lQ(?)	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, calcite veinlets/stringers in lower ½ m, stylolites filled with black material, beds to 1 m, attitude of beds 150°/35° SW
13984	lQ(?)	2	**Micritic Limestone**, light-brown-grey,cryptocrystalline, moderate reaction to HCl, some calcite stringers, stylolites, rubbly, beds to 1 m, attitude of beds 162°/40° SW
13983	lQ(?)	2	**Micritic Limestone**, as above with some calcite veins to 1 cm
-	-	2½	covered
(UTM 604666E, 5602430N)			
13982	lQ(?)	2¼	**Micritic Limestone**, light-grey, cryptocrystalline, very good reaction to HCl, beds 1 to 2 m, attitude of beds 162°/45° SW
13981	lQ(?)	2	**Micritic Limestone**, as above with prominent stylolites
13980	lQ(?)	5¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, calcite stringers, rubbly/fractured
13979	lQ(?)	5¼	**Micritic Limestone**, as above, attitude of beds 150°/40° SW
-	-	[100]	covered/Offset

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-05 (continued)			
13978	IQ(?)	1¾	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, black wisps, beds to ¼ m
-	-	2¼	covered
(UTM 604790E, 5602426N)			
13977	IQ	2	**Micritic Limestone**, light-grey, microcrystalline, good reaction to HCl, calcite blebs/stringers, beds up to ¼ m, attitude of beds 149°/50° SW
13976	IQ	2	**Micritic Limestone**, as above
-	-	1	covered
13975	IQ	2	**Micritic Limestone**, light-brown-grey, microcrystalline, moderate-good reaction to HCl, some tan weathered material, partly covered
13974	IQ	1¾	**Micritic Limestone**, light-brown-grey, microcrystalline, some secondary calcite blebs, partly covered
VB2002-06 (UTM 604695E, 5602579N)			
13972	IQ	1¾	**Micritic Limestone**, light-brown-grey, cryptocrystalline, minor secondary calcite blebs, rubbly and covered outcrop; beds <1 m
13971	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, minor secondary calcite blebs, rubbly; beds <1 m, 142°/48° SW
13970	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, minor secondary calcite blebs, rubbly; beds <1 m
-	-	39	covered
(UTM 604756E, 5602609N)			
13969	IQ	1¾	**Micritic Limestone**, light-brown, cryptocrystalline, moderate HCl, black carbonate wisps; beds up to 1½ m
13968	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate HCl, black carbonate material on rare stylolites; beds up to 1½ m
13967	IQ	1½	**Micritic Limestone**, brown-grey, cryptocrystalline, slow HCl, secondary calcite stringers/veinlets; beds up to 1½ m, 140°/42° SW
13966	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, slow HCl, secondary calcite stringers/veinlets; massive
-	-	[20-30]	covered/Offset
(UTM 604787E, 5602567N)			
13973	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, secondary calcite stringers mm size
VB2002-07 (UTM 604673E, 5602342N)			
14003	IQ	1	**Micritic Limestone**, light-grey, cryptocrystalline, moderate to slow reaction to HCl; fractured, beds to 1 m
14002	IQ	¾	**Laminated Dolomitic Mudstone**, brown with buff weathered surfaces, microcrystalline, slow reaction to HCL, beds and laminations to 10 cm, attitude of beds 138°/32° SW
-	-	1¼	covered
14001	IQ	3	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, few calcite veinlets and stringers, partly covered
14000	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, rare calcite stringers, fractured
VB2002-08 (UTM 604613E, 5602338N)			
14005	IQ	2½	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, abundant calcite stringers and veins to 2 cm, rubbly, partly covered
14004	IQ	2½	**Micritic Limestone**, as above

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-09 (UTM 604790E, 5602582N)			
13965	IQ	1¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, slow to moderate reaction to HCl, secondary calcite stringers/blebs, beds less than 1 m
13964	IQ	1¼	**Micritic Limestone**, light-brown-grey, micro-cryptocrystalline, moderate reaction to HCl, fractured, beds less than 1 m
13963	IQ	2½	**Micritic Limestone**, light-brown-grey, microcrystalline, very good HCl, secondary calcite veinlets/stringers, beds to ¾ m, attitude of beds 160°/42° SW
13962	IQ	2	**Micritic Limestone**, light-brown-grey, crypto-microcrystalline, calcite blebs and stringers, buff material on fractures, massive
13961	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, secondary calcite veinlets/stringers, fairly fractured, rust stain on weathered surfaces, beds up to ¾ m
13960	IQ	2¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, secondary calcite veinlets/stringers, fairly fractured, rust stain on weathered surfaces, beds up to 1 m, attitude of stylolites 155°/40° SW
13959	IQ	2	**Micritic Limestone**, as above
13958	IQ	2	**Micritic Limestone**, as above, beds 1½ m to massive
13957	IQ	3	**Micritic Limestone**, light-brown-grey, buff material on fractures and stylolites, cryptocrystalline, very good reaction to HCl, calcite blebs/stringers, beds 1½ m to massive, attitude of beds 156°/39° SW
13956	IQ	3	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate-good reaction to HCl, some secondary calcite, massive
13955	IQ	3	**Micritic Limestone**, as above, beds to 1 m, stylolites parallel to bedding
13954	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, moderate-good reaction to HCl, some secondary calcite, beds to 1 m
13953	IQ	3¾	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate-good reaction to HCl, some secondary calcite, beds ¼-1 m
13952	IQ	3	**Micritic Limestone**, as above, good reaction to HCl
13951	IQ	3½	**Micritic Limestone**, as above with coarse secondary calcite, beds up to 1 m, attitude of beds 152°/46° SW
-	-	[5]	covered/Offset
-	KmV	2+	**Amygdaloidal Basalt**, subcrop in road
VB2002-10 (UTM 604764E, 5602345N)			
11932	IQ	3	**Micritic Limestone**, grey-brown, cryptocrystalline, moderate reaction to HCl, tan-orange material on fractures, calcite stringers, massive, dipslope or eroded at top
11931	IQ	2	**Micritic Limestone**, as above
11930	IQ	2	**Micritic Limestone**, as above
11929	IQ	2	**Micritic Limestone**, brown-grey, microcrystalline, slow reaction to HCl, rusty material on fractures, massive
11928	IQ	1	**Micritic Limestone**, dark-brown-grey, crypto-microcrystalline, grains up to ½-mm, calcite stringers and blebs near upper contact, upper contact at clay-lined fault, attitude of beds 150°/40° SW
11927	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, moderate reaction to HCl, rusty-brown material on fractures, some calcite stringers, beds up to 1 m
11926	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, moderate reaction to HCl, rusty-brown material on fractures, some calcite stringers, beds up to 1 m, attitude of beds 140°/35° SW

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-11 (UTM 604973E, 5602371N)			
14377	IQ	3	**Micritic Limestone**, light-brown-grey, cryptocrystalline, some secondary calcite stringers, rubbly/displaced subcrop, few stylolites
14376	IQ	2½	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, calcite stringers/blebs to 1 cm, massive
14025	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, calcite stringers/blebs to 1 cm, massive, attitude of beds 140°/38° SW and fractures 090°/12° N
14024	IQ	2¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good HCl, some secondary calcite stringers/veinlets, rubbly, partly covered
14023	IQ	1¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, some calcite stringers, rubbly
14022	IQ	2	**Micritic Limestone**, light-grey-brown, cryptocrystalline, poor exposure, subcrop
-	-	3¼	covered
14021	IQ	1¾	**Micritic Limestone**, light-grey-brown, cryptocrystalline, some calcite stringers, rubbly
-	-	1½	covered
14020	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, some calcite stringers/blebs, massive, attitude of beds 150°/38° SW
14019	IQ	2	**Micritic Limestone**, light-brown-grey, microcrystalline, good reaction to HCl, some calcite stringers/blebs, partly covered, massive
14018	IQ	2	**Micritic Limestone**, light-grey, cryptocrystalline, very good reaction to HCl, some calcite stringers, massive
14017	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, some calcite stringers, rare stylolites, massive, partly covered
14016	IQ	2	**Micritic Limestone**, as above
14015	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, poor - slow reaction to HCl, dolomitic(?), coarse secondary calcite blebs, beds 10 cm to 1 m, attitude of beds 140°/32° SW
14014	IQ	2	**Micritic Limestone**, as above, few stylolites
14013	IQ	2¼	**Micritic Limestone**, light-brown-grey, microcrystalline, concoidal fracture, coarse secondary calcite, buff weathered surfaces, beds 1 m, attitude of beds 152°/38° SW
14012	IQ	2½	**Micritic Limestone**, light-grey-brown, cryptocrystalline, abundant secondary calcite blebs/stringers, beds up to 1 m
14011	IQ-Li	2	**Micritic Limestone**, as above, beds greater than ½ m
14010	IQ-Li	2	**Micritic Limestone**, light-grey-brown, microcrystalline, calcite blebs/stringers, few stylolites, beds ¼-½ m, attitude of beds 150°/42° SW
14009	IQ-Li	2	**Micritic Limestone**, light-grey-brown, crypto-microcrystalline, rare calcite stringer, few stylolites, beds ¼-½ m
14008	IQ-Li	¾	**Micritic Limestone**, brown-grey, rusty-brown weathered, microcrystalline, good reaction to HCl, rare lamination, mottled surfaces, attitude of beds 158°/44° SW
14007	IQ-Li	¾	**Micritic Limestone**, brown-grey, microcrystalline, recessive, poor exposure
-	-	[55]	covered/Offset
-	KmV	4+	**Amygdaloidal Basalt**, borrow pit along road
VB2002-12 (UTM 605130E, 5601762N)			
18367	IQ	3½	**Micritic Limestone**, dark-brown-grey, cryptocrystalline, coarse secondary calcite along fractures, beds up to 30 cm, attitude of beds 153°/36° SW
(UTM 604750E, 5602190N)			
18368	IQ	2	**Micritic Limestone**, tan-brown, cryptocrystalline, beds to 1 m
(UTM 604733E, 5601975N)			
18369	IQ	2	**Micritic Limestone**, dark-brown-grey, cryptocrystalline; beds to 1 m, attitude of joints 005°/90°

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-12 (continued)			
(UTM 604747E, 5601935N)			
18370	IQ	2	**Micritic Limestone**, tan-grey, cryptocrystalline, massive
18371	IQ	1½	**Micritic Limestone**, dark-tan-grey, cryptocrystalline, massive
(UTM 604829E, 5601765N)			
18372	IQ	1	**Micritic Limestone**, tan-grey, cryptocrystalline, vuggy, beds up to 30 cm, attitude of beds 156°/35° SW
18373	IQ	1¼	**Micritic Limestone**, dark-brown-grey, cryptocrystalline, beds up to 40 cm
VB2002-13 (UTM 604663E, 5602120N)			
14006	IQ	3½	**Micritic Limestone**, light-brown-grey, microcrystalline, good reaction to HCl, some calcite stringers to a few mm, poorly exposure, rubbly outcrop
VB2002-14 (UTM 604862E, 5602205N)			
18374	IQ	1¾	**Micritic Limestone**, tan-grey, cryptocrystalline, coarse secondary calcite along fractures, beds ½-1 m, attitude of beds 160°/46° SW
VB2002-15 (UTM 604926E, 5602180N)			
11939	IQ	3	**Micritic Limestone**, tan to brown-grey, cryptocrystalline, secondary calcite along fractures, beds up to ¾ m, attitude of beds 148°/40° SW
11940	IQ	2	**Micritic Limestone**, brown-grey, microcrystalline, moderate reaction to HCl, some calcite stringers
11941	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, coarse secondary calcite on joints and fractures, beds up to 1 m, attitude of joints 030°/80° SE
11942	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, coarse secondary calcite on joints and fractures, beds up to 1 m
-	-	4¼	covered/Offset
11943	IQ	2¾	**Micritic Limestone**, tan-brown-grey, microcrystalline, beds to ½ m
-	-	1½	covered
11944	IQ	2½	**Micritic Limestone**, tan to brown-grey, micro-cryptocrystalline, minor secondary calcite on fractures, beds up to 1 m
-	-	4	covered
11945	IQ	2½	**Micritic Limestone**, tan-grey, cryptocrystalline, coarse calcite blebs/stringers, beds up to 40 cm
11946	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate reaction to HCl, rare secondary calcite, beds ¼-¾ m, attitude of beds 146°/40° SW
11947	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate reaction to HCl, rare secondary calcite
11948	IQ	2¼	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate reaction to HCl, rare secondary calcite
VB2002-16 (UTM 604979E, 5602160N)			
18555	IQ	4	**Micritic Limestone**, grey, cryptocrystalline, moderate to good reaction to HCl, dissolution cavities, massive, attitude of beds 153°/35° SW
-	-	¼	covered/Offset(?)
18556	IQ	5½	**Micritic Limestone**, grey, cryptocrystalline, moderate to good reaction to HCl, calcite blebs/stringers to a few mm, massive, attitude of beds 153°/35° SW
18557	IQ	4¾	**Micritic Limestone**, brown-grey, cryptocrystalline, moderate reaction to HCl, dissolution cavities, vugs to ¼ mm, calcite blebs/stringers, massive
18558	IQ	2	**Micritic Limestone**, grey, cryptocrystalline, moderate to good reaction to HCl, rare fossil fragment
18559	IQ	2	**Micritic Limestone**, grey, cryptocrystalline, good reaction to HCl, stylolites, attitude of beds 153°/35° SW
18560	IQ	2¼	**Mudstone**, grey, fine-grained, coarse secondary calcite veins along fractures, massive

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-16 (continued)			
-	-	8½	covered
18561	IQ	3	**Mudstone**, light-grey, fine-grained, good HCl, few dark grains to 1 mm, coarse secondary calcite blebs and stringers to 2 cm, brecciated, beds ½ to 1¼ m
18562	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate to good reaction to HCl; secondary calcite blebs, stringers and veinlets to 3 cm; massive
18563	IQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, secondary calcite veinlets/blebs, generally massive, attitude of beds 156°/50° SW
18564	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline with some grains to ¾ mm, poor reaction to HCl, coarse secondary calcite blebs/stringers, beds to 1 m, attitude of beds 153°/42° SW
18565	IQ	4	**Micritic Limestone**, light-grey, cryptocrystalline, moderate reaction to HCl, coarse secondary calcite blebs/stringers, beds to 1 m
18566	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate reaction to HCl, secondary calcite veinlets to ½ cm, partly covered, attitude of beds 154°/36° SW
18567	IQ(?)	3	**Micritic Limestone**, light-brown-grey, cryptocrystalline, moderate reaction to HCl, abundant secondary calcite blebs and along fractures
VB2002-17 (UTM 604937E, 5602073N)			
11933	IQ	1½	**Micritic Limestone**, brown-grey, cryptocrystalline, moderate-good reaction to HCl, calcite stringers, beds up to 1 m
11935	IQ	grab	**Fault Material**, orange-brown stain on fractures, slickensides indicate east-side up, attitude of fault 002°/75° E
11934	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, moderate-good reactin to HCl, calcite stringers, beds up to 1 m , attitude of beds 162°/56° SW
-	-	(significant)	offset
11938	IQ	2½	**Micritic Limestone**, mottled brown-grey, microcrystalline, good reaction to HCl, beds up to ¾ m , attitude of beds 154°/43° SW and joints 040°/75° NW, sample may be equivalent to 11935(?)
-	-	(significant)	offset
(UTM 604985E, 5602035N)			
11937	IQ	3¾	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, moderate to well fractured, secondary calcite, massive, attitude of beds 162°/33° SW or 142°/35° SW
11936	IQ	3¾	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, moderate to well fractured, secondary calcite, massive
VB2002-18 (UTM 604912E, 5601905N)			
11949	IQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, secondary calcite along fractures, massive, attitude of beds 150°/40° SW
VB2002-19 (UTM 605133E, 5601978N)			
11950	IQ	2	**Micritic Limestone**, tan-grey, few black veins, oolitic, beds up to ¾ m, attitude of beds 150°/32° SW
VB2002-20 (UTM 605027E, 5601879N)			
15805	IQ	3½	**Micritic Limestone**, light-grey, cryptocrystalline, tan material along fractures, beds up to ¾ m
15804	IQ	3½	**Micritic Limestone**, light-grey, cryptocrystalline, few fractures, beds up to ¾ m
15803	IQ	3	**Micritic Limestone**, light-tan-grey, cryptocrystalline, beds to 1 m
(UTM 605034E, 5601899N)			
15802	IQ	1	**Laminated Mudstone**, brown-grey, black laminations 1-2 mm
(UTM 605055E, 5601917N)			
15801	IQ(?)	5¼	**Micritic Limestone**, brown-grey, cryptocrystalline, beds to ½ m

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-21 (UTM 605169E, 5601843N)			
18551	IQ	1½	**Micritic Limestone**, brown-grey, cryptocrystalline, poor reaction to HCl, secondary calcite blebs/stringers, massive
18552	IQ	2½	**Micritic Limestone**, brown-grey, cryptocrystalline, poor reaction to HCl, secondary calcite blebs/stringers, massive, attitude of cleavage 000°/85° W and 087°/80° N
(UTM 605149E, 5601997N)			
18553	IQ	2½	**Micritic Limestone**, brown-grey, cryptocrystalline, slow to moderate reaction to HCl, secondary calcite blebs/stringers to a few mm, stylolites, massive, attitude of beds 154°/30° SW
(UTM 605068E, 5602063N)			
18554	IQ	?	**Micritic Limestone**, brown-grey, cryptocrystalline, slow reaction to HCl, secondary calcite blebs/stringers, abundant fractures, rusty material on fractures
VB2002-22 (UTM 605130E, 5601762N)			
18366	IQ	2	**Micritic Limestone**, dark-brown-grey, cryptocrystalline, attitude of possible beds(?) 170°/45° SW
(UTM 605144E, 5601708N)			
18365	IQ	1½	**Micritic Limestone**, brown-grey, cryptocrystalline, beds up to 1 m, attitude of beds 156°/45° SW
(UTM 605133E, 5601592N)			
18364	IQ	2	**Micritic Limestone**, dark-brown-grey, cryptocrystalline, beds greater than 1 m
(UTM 605108E, 5601522N)			
18363	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, beds up to 1 m, attitude of beds 140°/52° SW
18362	IQ	3	**Micritic Limestone**, tan-grey, microcrystalline, beds to 30 cm
VB2002-23 (UTM 605136E, 5601564N)			
15825	IQ	2	**Micritic Limestone**, light-brown-grey, microcrystalline, some coarse calcite along fractures, abundant fractures
VB2002-24 (UTM 604937E, 5601487N)			
15818	IQ	3	**Micritic Limestone**, light-brown-grey, cryptocrystalline, some secondary calcite stringers/blebs to 1 cm, attitude of beds 152°/49° SW
(UTM 604993E, 5601382N)			
15819	IQ	3	**Micritic Limestone**, light-to tan-grey, cryptocrystalline, secondary calcite, abundant fractures, rusty material along fractures, attitude of beds 163°/47° SW
VB2002-25 (UTM 605098E, 5601377N)			
18360	IQ	1	**Micritic Limestone**, tan-grey, cryptocrystalline, secondary calcite along fractures, beds up to 30 cm
18359	IQ	1	**Micritic Limestone**, tan-grey, cryptocrystalline, beds up to 30 cm, attitude of beds 155°/40° SW
-	-	1¾	covered
18361	IQ	¾	**Micritic Limestone**, tan-grey, cryptocrystalline, beds up to 30 cm, attitude of beds 157°/48° SW
-	-	1¾	covered
18358	IQ	1¼	**Micritic Limestone**, tan-brown, cryptocrystalline, very fractured
-	-	12	covered
18357	IQ	1¼	**Micritic Limestone**, tan-brown, cryptocrystalline, abundant coarse secondary calcite, styolites, beds 1 m, attitude of beds 152°/38° SW
18356	IQ	1½	**Micritic Limestone**, tan-brown, cryptocrystalline, abundant coarse secondary calcite, styolites, beds 1 m, attitude of beds 140°/50° SW
18355	IQ	1¾	**Micritic Limestone**, tan-brown, cryptocrystalline, abundant coarse secondary calcite, beds 1 m

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-25 (continued)			
18354	IQ	1½	**Micritic Limestone**, grey, microcrystalline, coarse secondary calcite, beds up to ¾ m
18353	IQ	1½	**Micritic Limestone**, tan-grey, microcrystalline, secondary calcite along fractures, thin laminated intervals 5 to 10 cm, beds up to ½ m
18352	IQ	2	**Micritic Limestone**, light-tan-grey, cryptocrystalline, beds 20 to 40 cm
18351	IQ	2	**Micritic Limestone**, as above with coarse secondary calcite
18350	IQ	2	**Laminated Mudstone**, light-tan-grey, cryptocrystalline, a thin layers with laminations to a few mm, attitude of beds 153°/41° SW
18349	IQ	2	**Laminated Mudstone**, light-tan-grey, cryptocrystalline, 15 cm tan-grey laminated layer, laminations 2 to 4 mm, attitude of beds 140°/36° SW
18348	IQ	2½	**Mudstone**, brown-grey, fine-grained, subcrop, beds up to ½ m
-	-	8	covered
18347	IQ	1½	**Micritic Limestone**, light-grey, coarse secondary calcite along fractures, highly fractured, possible fault zone
-	-	11¾	covered
(UTM 605174E, 5601376N)			
18346	IQ	3¼	**Micritic Limestone**, tan-grey, cryptocrystalline, rare secondary calcite, attitude of beds 156°/44° SW
18345	IQ	2	**Micritic Limestone**, grey, cryptocrystalline, some secondary calcite, beds 20 to 40 cm
18344	IQ	2	**Micritic Limestone**, light-tan, microcrystalline, coarse secondary calcite along fractures, partly covered subcrop, beds to 30 cm
18343	IQ	2	**Micritic Limestone**, grey to tan-grey, cryptocrystalline, coarse secondary calcite along fractures, partly covered
18342	IQ	2	**Micritic Limestone**, dark-grey, cryptocrystalline, secondary calcite along fractures, partly covered, beds 15 to 30 cm
-	-	6¼	covered
18341	IQ	2¾	**Micritic Limestone**, grey, micro-cryptocrystalline, abundant secondary calcite, fractures, beds 15 to 30 cm, attitude of beds 150°/32° SW
18340	IQ	2	**Micritic Limestone**, grey, micro-cryptocrystalline, fractured, beds 15 to 30 cm
18339	IQ	2	**Micritic Limestone**, as above
18338	IQ	1¾	**Mudstone**, dark-grey, fine-grained, secondary calcite along fractures, beds 15 to 30 cm
18337	IQ	2	**Mudstone**, dark-grey, fine-grained, beds 15 to 50 cm, attitude of beds 147°/38° SW
18336	IQ	2¾	**Micritic Limestone**, tan-grey, cryptocrystalline, fractured, partly covered
-	-	8	covered
(UTM 605282E, 5601427N)			
18335	IQ	2	**Micritic Limestone**, tan-brown, cryptocrystalline, clear-black fragments to 1 mm, very fractured, beds less than ½ m
18334	IQ	3	**Micritic Limestone**, tan-brown, microcrystalline, clear-black fragments along fractures, beds up to 1 m
18333	IQ	3	**Micritic Limestone**, brown-grey, cryptocrystalline, poor-moderate reactin to HCl, very fractured, possible fault zone, beds up to 30 cm
18332	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, fractured, beds up to 30 cm
18331	IQ	2	**Micritic Limestone**, tan-brown, microcrystalline, abundant secondary calcite, stylolites ½ to 1 cm, beds up to 1 m
18330	IQ	2	**Micritic Limestone**, tan-brown, microcrystalline, fine secondary calcite, beds up to 1m, attitude of beds 142°/44° SW
18329	IQ	2	**Micritic Limestone**, tan-brown, microcrystalline, fine secondary calcite, green blebs along fractures, beds up to 1 m
18328	IQ	2	**Micritic Limestone**, tan-brown, microcrystalline, secondary calcite, beds up to 1 m, attitude of beds 130°/34° SW
18327	IQ	2	**Micritic Limestone**, light-brown-grey, cryptocrystalline, oolitic layers in lower ½ m, beds to 1 m, attitude of beds 130°/34° SW
18326	IQ	2	**Micritic Limestone**, grey-brown, cryptocrystalline, oolitic layers, beds up to 1 m

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-26 (UTM 605180E, 5601200N)			
15817	IQ	4½	**Micritic Limestone**, light-grey, microcrystalline, top ½ m positively weathered black fragments up to 1 mm, abundant fractures, massive
15816	IQ	5¼	**Micritic Limestone**, light-grey, microcrystalline, abundant fractures, massive
15815	IQ	2	**Micritic Limestone**, as above
15814	IQ	4	**Micritic Limestone**, as above, attitude of fractures 030°/72° SE
15813	IQ	4	**Micritic Limestone**, grey, microcrystalline, minor secondary calcite, beds up to 1 m
15812	IQ	4	**Micritic Limestone**, as above, beds 15 to 40 cm, attitude of beds 166°/50° SW
-	-	2-2½	covered
15811	IQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, abundant coarse secondary calcite, abundant mud and breccia near top of sample, massive
15810	IQ	2	**Micritic Limestone**, brown-grey, cryptocrystalline, mostly massive but two **Laminated Mudstone** beds (15 cm, 4 cm), coarse secondary calcite along fractures
15809	IQ	2½	**Micritic Limestone**, grey-brown, cryptocrystalline, coarse secondary calcite along fractures, brown mottles, beds 1½ m to massive
15808	IQ	1	**Laminated Mudstone**, tan-grey, microcrystalline, dissolution breccia, wavy laminations 1-2 mm
15807	IQ	2	**Micritic Limestone**, dark-brown-grey, cryptocrystalline, coarse secondary calcite along fractures, beds ½ to 1 m
15806	IQ	3	**Micritic Limestone**, brown-grey, cryptocrystalline, secondary calcite veins up to 2 to 3 mm, stylolites, massive, attitude of beds 137°/48° SW
18575	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good HCl, secondary calcite veinlets/stringers, rare stylolites; massive, joint 144°/28° SW
18574	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, secondary calcite veinlets/stringers, rare stylolites, massive, attitude of beds 154°/34° SW
18573	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, secondary calcite veinlets/stringers, rare stylolites, massive
18572	IQ	4	**Micritic Limestone**, tan- to light-brown-grey, cryptocrystalline, moderate reaction to HCl, abundant secondary calcite stringers/veinlets to a few cm's, buff material on weathered surfaces, massive
18571	IQ	1	**Laminated Mudstone**, light-brown-grey, cryptocrystalline, secondary calcite veinlets/stringers, dolomitic(?) stringers, laminations to a few cm's, attitude of beds 173°/33° SW
18570	IQ	3	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, abundant secondary calcite stringers and veinlets, rubbly and fractured
18569	IQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, abundant secondary calcite stringers, attitude of fractures 169°/82° E, 140°/90° and 027°/90°
18568	IQ	4	**Micritic Limestone**, brown-grey, cryptocrystalline, good reaction to HCl, secondary calcite stringers, massive, attitude of beds 160°/40° SW
14400	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good HCl, minor secondary calcite stringers/veinlets; beds 1 m to massive, 163°/37° SW
14399	IQ	4	**Micritic Limestone**, light-brown-grey, cryptocrystalline, good reaction to HCl, minor secondary calcite stringers/veinlets, beds 1 m to massive
14398	IQ	4	**Micritic Limestone**, tan-brown, microcrystalline, massive
14397	IQ	4	**Micritic Limestone**, light-grey to light-tan-grey, cryptocrystalline, secondary calcite stringers (¼ cm), massive, attitude of joints 090°/75° N
VB2002-27 (UTM 605436E, 5601329N)			
-	IQ	2½	**Micritic Limestone**, inaccessible cliff-face
15824	IQ	2	**Micritic Limestone**, dark-brown-grey, moderate-good reaction to HCl, massive, attitude of beds 158°/52° SW
15823	IQ	2	**Micritic Limestone**, dark-brown-grey, moderate-good reaction to HCl; fault ½ m below top sub-parallel to beds, gouge-filled; minor secondary calcite, massive, attitude of beds 158°/44° SW

APPENDIX 2: **CONTINUED**

Sample	Formation	Strat. Thick. (m)	Description
VB2002-27 (continued)			
15822	IQ	2	**Micritic Limestone**, dark-brown-grey, moderate-good reaction to HCl, massive
15821	IQ	2	**Micritic Limestone**, as above
15820	IQ	2	**Micritic Limestone**, as above

APPENDIX 3: MEASURED SPECIFIC GRAVITIES FOR LIMESTONE SAMPLES FROM CLAIMS VARNEY 1 AND 3

Note: Average specific gravity for all samples is 2.82. See Appendix 2 for complete sample descriptions.

Sample Number	Sample Weight (g)	Displaced Water (ml)	Specific Gravity	Sample Description
11928	282.5	95	2.97	dark-brown-grey, cryptocrystalline to microcrystalline
14015	147.8	47	3.14	light-brownish-grey, cryptocrystalline, poor HCl reaction, slightly dolomitic(?)
15817	326.6	122	2.68	light-grey, microcrystalline, with some black (fossils?) fragments
18331	193.0	69	2.80	tan-brown, microcrystalline, stylolites
18332	401.5	144	2.79	brownish-grey, cryptocrystalline
18345	398.9	137	2.91	grey, cryptocrystalline
18347	530.1	207	2.56	light-grey, fractured, possible fault zone
18348	247.2	86	2.87	brownish-grey, fine-grained lime mudstone
18355	609.8	231	2.64	tan-brown, cryptocrystalline
	Average Limestone:		**2.82**	
15802	487.4	174	2.80	laminated dolomite, brownish-grey with black laminated beds
18372	494.9	176	2.81	dolomitic limestone, tan-grey, cryptocrystalline, vuggy
	Average Dolomitic Limestone:		**2.81**	
5 Samples	2523.7	932.0	**2.71**	Samples: 15802-18332-18347-18355-18372

APPENDIX 4: MAGNETOMETER READINGS FROM CLAIMS VARNEY 1 AND 3

Note: TMI (Total Magnetic Intensity) equals magnetic intensity corrected for the diurnal variation.

Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI
East	North	(nT)	East	North	(nT)	East	North	(nT)	East	North	(nT)
Baseline 5150E			**Line 1600N**			**Line 1600N** (con't)			**Line 1600N** (con't)		
5150	1850	56878.8	4860	1600	57019.2	5125	1600	57033.8	5365	1600	56315.8
5150	1850	56876.7	4865	1600	56980.8	5130	1600	56982.8	5365	1600	56327.0
5150	1845	56875.9	4870	1600	56983.4	5135	1600	56957.0	5370	1600	56238.4
5150	1840	56867.7	4875	1600	56977.5	5140	1600	56946.9	5375	1600	56690.3
5150	1835	56879.6	4880	1600	56979.2	5145	1600	56972.7	5380	1600	56627.3
5150	1830	56856.3	4885	1600	56982.1	5150	1600	56953.7	5385	1600	56637.9
5150	1825	56890.8	4890	1600	56990.4	5150	1600	56932.7	5390	1600	56499.2
5150	1820	56910.9	4895	1600	56997.4	5155	1600	56946.3	5395	1600	56470.3
5150	1815	56893.7	4900	1600	56998.3	5160	1600	56944.5	5400	1600	56456.7
5150	1810	56893.2	4905	1600	56991.8	5165	1600	56984.2	5405	1600	56391.7
5150	1805	56881.9	4910	1600	56992.2	5170	1600	56954.1	5410	1600	56331.4
5150	1800	56890.6	4915	1600	56994.2	5175	1600	56937.0	5415	1600	56234.2
5150	1795	56895.6	4920	1600	56995.3	5180	1600	56944.3	5420	1600	56223.0
5150	1790	56885.7	4925	1600	56996.8	5185	1600	56960.8	5425	1600	56293.9
5150	1785	56907.8	4930	1600	57004.7	5190	1600	56962.9	5430	1600	56408.2
5150	1780	56897.3	4935	1600	56995.9	5195	1600	56944.1	5435	1600	56505.7
5150	1775	56881.2	4940	1600	56993.1	5200	1600	56961.6	5440	1600	56543.0
5150	1770	56892.8	4945	1600	57004.4	5205	1600	56951.0	5445	1600	56600.5
5150	1765	56948.7	4950	1600	57014.5	5210	1600	56954.3	5450	1600	56684.5
5150	1760	56964.2	4955	1600	56997.3	5215	1600	56954.5	5455	1600	56751.5
5150	1755	56906.5	4960	1600	56994.8	5220	1600	56965.9	5460	1600	56764.7
5150	1750	56899.3	4965	1600	56984.3	5225	1600	57032.3	5465	1600	56914.7
5150	1745	56904.3	4970	1600	57004.8	5230	1600	57048.1	5470	1600	56982.7
5150	1740	56900.2	4975	1600	57003.7	5235	1600	57033.9	5475	1600	56993.1
5150	1735	56900.4	4980	1600	56983.0	5240	1600	57010.4	5480	1600	57022.0
5150	1730	56905.0	4985	1600	56980.3	5245	1600	56988.6	5485	1600	56897.6
5150	1725	56900.5	4990	1600	56993.9	5250	1600	57005.1	5485	1600	56896.0
5150	1720	56900.1	4995	1600	56972.6	5255	1600	57007.2	5490	1600	56749.4
5150	1715	56903.3	5005	1600	56999.8	5260	1600	57018.5	5490	1600	56684.0
5150	1710	56909.4	5010	1600	57055.8	5265	1600	57020.4			
5150	1705	56907.7	5015	1600	57168.6	5270	1600	57044.5			
5150	1700	56912.2	5015	1600	57133.7	5275	1600	57082.4			
5150	1695	56913.1	5020	1600	57050.8	5280	1600	57094.6			
5150	1690	56927.6	5025	1600	57010.6	5285	1600	57098.7			
5150	1685	56929.2	5030	1600	56986.4	5290	1600	57119.2			
5150	1680	56932.5	5035	1600	56970.0	5295	1600	57142.8			
5150	1675	56940.7	5040	1600	56978.2	5300	1600	57162.5			
5150	1670	56889.5	5045	1600	56972.9	5305	1600	57209.1			
5150	1665	56907.8	5050	1600	57007.7	5310	1600	57120.6			
5150	1660	56894.9	5055	1600	56985.1	5310	1600	57135.4			
5150	1655	56938.1	5060	1600	56977.4	5315	1600	56998.4			
5150	1650	56912.0	5065	1600	56993.5	5315	1600	56972.1			
5150	1645	56910.6	5070	1600	56981.4	5320	1600	56922.0			
5150	1640	56918.7	5075	1600	57028.0	5325	1600	56789.6			
5150	1635	56929.0	5080	1600	57013.3	5330	1600	56756.9			
5150	1630	56937.4	5085	1600	56938.9	5335	1600	56793.0			
5150	1625	57039.6	5090	1600	56931.3	5340	1600	56534.1			
5150	1620	56940.6	5095	1600	56910.6	5340	1600	56542.1			
5150	1615	56942.2	5100	1600	56908.0	5345	1600	56695.8			
5150	1610	56940.4	5105	1600	56960.9	5350	1600	56727.4			
5150	1605	56948.8	5110	1600	56964.3	5355	1600	55515.1			
5150	1600	56945.3	5115	1600	57028.4	5355	1600	55516.2			
5150	1595	56946.6	5120	1600	57095.1	5360	1600	55799.3			

APPENDIX 4: CONTINUED

Grid Coordinates East	Grid Coordinates North	TMI (nT)	Grid Coordinates East	Grid Coordinates North	TMI (nT)	Grid Coordinates East	Grid Coordinates North	TMI (nT)	Grid Coordinates East	Grid Coordinates North	TMI (nT)
Line 1850N			**Line 1850N** (con't)			**Line 1850N** (con't)					
5150	1850	56869.8	4880	1850	57118.6	5275	1850	56759.9			
5145	1850	56886.3	4875	1850	57064.7	5280	1850	56567.0			
5140	1850	56900.6	4870	1850	57077.7	5285	1850	56675.8			
5135	1850	56891.6	4865	1850	57067.5	5290	1850	56694.1			
5130	1850	56897.2	4860	1850	57055.0	5295	1850	56774.7			
5125	1850	56920.4	4855	1850	57069.6	5300	1850	56703.4			
5120	1850	56909.2	4850	1850	57069.2	5305	1850	56692.4			
5115	1850	56906.0	4845	1850	57066.3	5310	1850	56730.7			
5110	1850	56911.9	4840	1850	57057.3	5315	1850	56741.6			
5105	1850	56902.3	4835	1850	57059.8	5320	1850	56650.6			
5100	1850	56909.5	4830	1850	57093.4	5325	1850	56708.2			
5095	1850	56914.4	4825	1850	57044.2	5330	1850	56704.4			
5090	1850	56917.3	4820	1850	57060.0	5335	1850	56570.0			
5085	1850	56910.1	4815	1850	57022.1	5340	1850	56546.6			
5080	1850	56920.1	4810	1850	57065.8	5345	1850	56577.9			
5075	1850	56917.1	4805	1850	57060.2	5350	1850	56850.7			
5070	1850	56938.3	4800	1850	57045.9	5355	1850	56762.5			
5065	1850	56939.9	4795	1850	57044.2	5360	1850	56076.8			
5060	1850	56903.6	4790	1850	57045.6	5365	1850	55963.1			
5055	1850	56934.2	4785	1850	57039.9	5370	1850	56390.7			
5050	1850	56942.8	4780	1850	57079.3	5375	1850	56549.7			
5045	1850	56949.8	4775	1850	57041.2	5380	1850	56477.6			
5040	1850	57007.5	4770	1850	57075.2	5385	1850	56492.0			
5035	1850	57028.5	4765	1850	57089.8	5390	1850	56445.0			
5030	1850	57021.5	4760	1850	57074.2	5395	1850	56175.5			
5025	1850	56972.9	4755	1850	57084.6	5400	1850	55712.0			
5020	1850	56994.9	4750	1850	57066.1	5405	1850	55746.9			
5015	1850	56985.9	4745	1850	57030.5	5410	1850	55949.0			
5010	1850	57020.3	4740	1850	57044.0	5415	1850	56240.5			
5005	1850	56988.3	4735	1850	57033.8	5420	1850	56386.8			
5000	1850	57007.2	5155	1850	56872.2	5425	1850	56543.9			
4995	1850	56992.6	5160	1850	56873.1	5430	1850	56660.7			
4990	1850	56997.5	5165	1850	56884.7	5435	1850	56741.0			
4985	1850	56987.7	5170	1850	56878.8	5440	1850	56740.2			
4980	1850	56997.6	5175	1850	56874.8	5445	1850	56732.6			
4975	1850	57044.1	5180	1850	56881.5	5450	1850	56634.2			
4970	1850	57114.2	5185	1850	56940.2	5455	1850	56562.1			
4965	1850	57112.6	5190	1850	56924.7	5460	1850	56510.4			
4960	1850	57039.4	5195	1850	56849.2						
4955	1850	57029.6	5200	1850	56853.8						
4950	1850	57078.8	5205	1850	56879.8						
4945	1850	57104.9	5210	1850	56901.4						
4940	1850	57010.5	5215	1850	56887.4						
4935	1850	57024.6	5220	1850	56883.2						
4930	1850	57030.8	5225	1850	56882.4						
4925	1850	57022.1	5230	1850	56890.9						
4920	1850	57071.5	5235	1850	56904.7						
4915	1850	57050.1	5240	1850	56909.5						
4910	1850	57044.0	5245	1850	56912.7						
4905	1850	57043.7	5250	1850	56929.3						
4900	1850	57038.4	5255	1850	56943.3						
4895	1850	57042.5	5260	1850	56977.9						
4890	1850	57058.7	5265	1850	56939.8						
4885	1850	57043.1	5270	1850	56888.5						

APPENDIX 4: CONTINUED

Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI
Line	Station	(nT)	Line	Station	(nT)	Line	Station	(nT)	Line	Station	(nT)
Line 1200			Line 1200 (con't)			Line 1200 (con't)			Line 1200 (con't)		
50	1200	56779.0	300	1200	56796.9	570	1200	57008.5	840	1200	57058.0
50	1200	56779.8	305	1200	56819.4	575	1200	57020.7	845	1200	57040.3
55	1200	56791.2	310	1200	56827.2	580	1200	57017.2	850	1200	57042.0
60	1200	56814.2	315	1200	56833.6	585	1200	56988.4	855	1200	57028.7
65	1200	56818.6	320	1200	56857.9	590	1200	56977.7	860	1200	57034.6
70	1200	56696.9	325	1200	56871.1	595	1200	56987.0	865	1200	57033.7
70	1200	56700.8	330	1200	56872.9	600	1200	57001.7	870	1200	57022.6
75	1200	56704.8	335	1200	56885.0	605	1200	57024.2	875	1200	57026.2
80	1200	56809.3	340	1200	56885.1	610	1200	57045.1	880	1200	57015.0
85	1200	56836.0	345	1200	56885.4	615	1200	57021.7	885	1200	56986.8
90	1200	56822.9	350	1200	56894.4	620	1200	57059.3	885	1200	56982.5
95	1200	56801.6	355	1200	56889.7	625	1200	57057.0	890	1200	56985.3
100	1200	56746.1	360	1200	56882.5	630	1200	57068.5			
105	1200	56675.6	365	1200	56890.2	635	1200	57014.9	Line 2050		
110	1200	56628.0	370	1200	56889.8	640	1200	57004.0	2050	4650	57227.1
115	1200	56625.7	375	1200	56899.5	645	1200	57063.5	2050	4655	57137.3
120	1200	56658.8	380	1200	56896.1	650	1200	57054.3	2050	4655	57138.9
125	1200	56658.8	385	1200	56895.6	655	1200	57054.7	2050	4660	57157.6
125	1200	56689.6	390	1200	56897.3	660	1200	57037.8	2050	4665	57248.4
130	1200	56687.1	395	1200	56903.7	665	1200	57042.3	2050	4670	57294.5
135	1200	56621.6	400	1200	56906.1	670	1200	57057.0	2050	4675	57297.8
140	1200	56608.1	405	1200	56907.4	675	1200	57040.6	2050	4680	57234.9
145	1200	56624.5	410	1200	56916.8	680	1200	57023.4	2050	4685	57176.1
150	1200	56637.2	415	1200	56913.3	685	1200	57064.4	2050	4690	57108.0
155	1200	56564.5	420	1200	56924.0	690	1200	56993.1	2050	4695	57073.1
160	1200	56572.0	425	1200	56924.8	695	1200	56980.2	2050	4700	57114.3
165	1200	56607.9	430	1200	56916.8	700	1200	56996.0	2050	4705	57169.9
170	1200	56642.5	435	1200	56920.2	705	1200	56993.1	2050	4710	57238.9
175	1200	56639.5	440	1200	56895.9	710	1200	56994.5	2050	4715	57278.9
180	1200	56567.0	445	1200	56888.7	715	1200	56983.0	2050	4720	57329.6
185	1200	56588.5	450	1200	56898.1	720	1200	56987.4	2050	4725	57384.5
190	1200	56611.7	455	1200	56890.7	725	1200	57005.0	2050	4730	57426.4
195	1200	56601.2	460	1200	56900.6	730	1200	56998.4	2050	4735	57500.7
200	1200	56606.5	465	1200	56891.9	735	1200	56999.3	2050	4740	57489.8
205	1200	56407.9	470	1200	56905.7	740	1200	56982.1	2050	4745	57393.1
205	1200	56421.6	475	1200	56913.1	745	1200	56984.3	2050	4750	57314.3
210	1200	56576.3	480	1200	56911.3	750	1200	56999.6	2050	4755	57269.9
215	1200	56596.6	485	1200	56912.6	755	1200	57013.5	2050	4760	57277.3
220	1200	56597.1	490	1200	56913.9	760	1200	57012.9	2050	4765	57271.0
225	1200	56569.5	495	1200	56911.7	765	1200	56992.3	2050	4770	57278.3
230	1200	56608.2	500	1200	56926.9	770	1200	57011.4	2050	4775	57216.0
235	1200	56671.3	505	1200	56927.9	775	1200	56982.3	2050	4780	57233.5
240	1200	56679.6	510	1200	56935.5	780	1200	56971.0	2050	4785	57206.4
245	1200	56664.1	515	1200	56933.2	785	1200	56996.9	2050	4790	57211.2
250	1200	56646.9	520	1200	56913.5	790	1200	57039.2	2050	4795	57221.5
255	1200	56703.5	525	1200	56935.9	795	1200	57036.7	2050	4800	57211.4
260	1200	56716.9	530	1200	56954.0	800	1200	57075.9	2050	4805	57208.6
265	1200	56765.2	535	1200	56942.8	805	1200	57052.0	2050	4810	57200.9
270	1200	56722.4	540	1200	56989.6	810	1200	57012.9	2050	4815	57211.3
275	1200	56709.3	545	1200	57001.0	815	1200	57043.1	2050	4820	57226.3
280	1200	56730.6	550	1200	56986.4	820	1200	57061.0	2050	4825	57218.6
285	1200	56754.6	555	1200	57015.9	825	1200	57044.4	2050	4830	57235.4
290	1200	56764.1	560	1200	57005.6	830	1200	57042.6	2050	4835	57226.2
295	1200	56798.0	565	1200	57016.1	835	1200	57052.5	2050	4840	57238.7

APPENDIX 4: CONTINUED

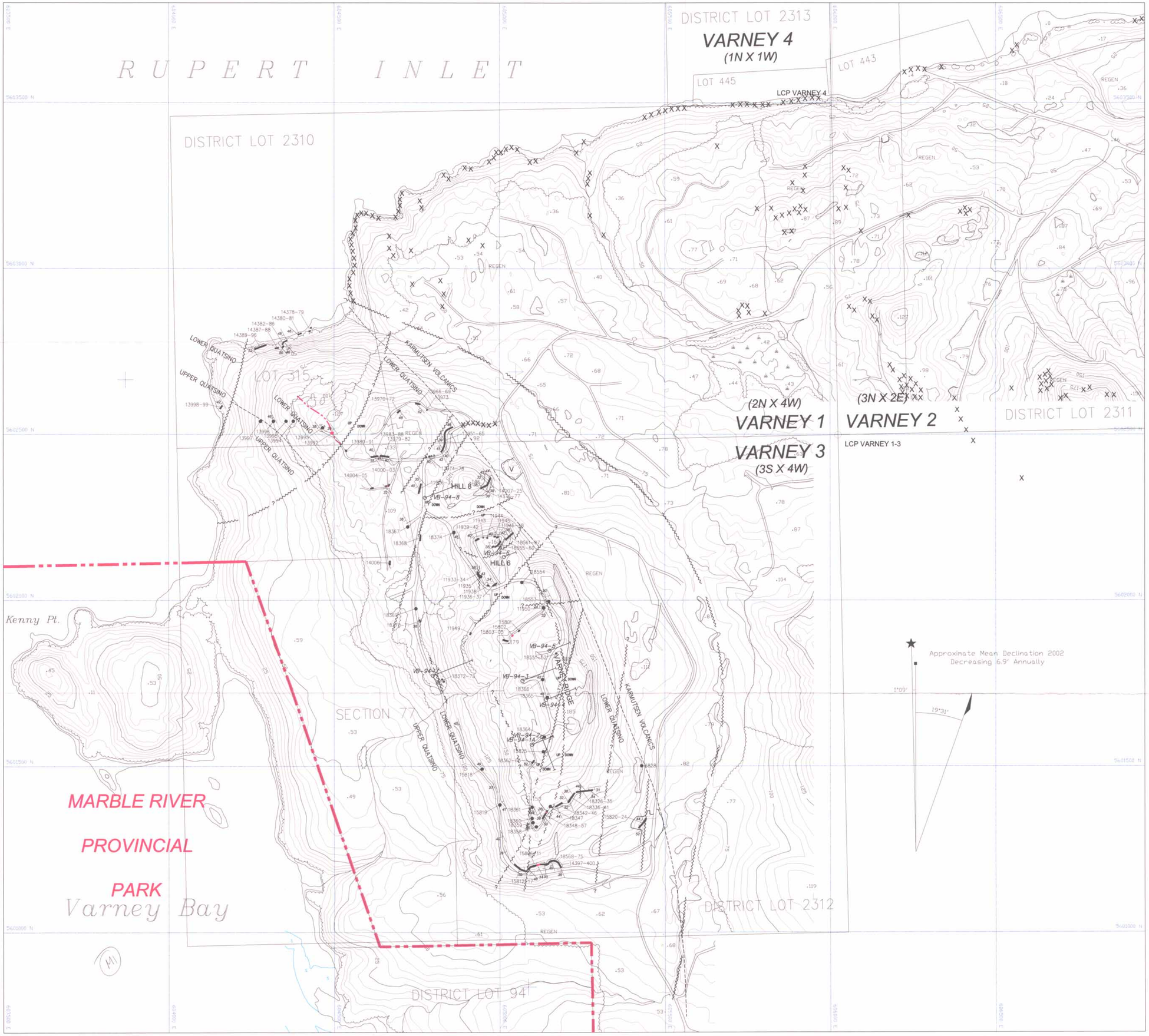
Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI
Line	Station	(nT)	Line	Station	(nT)	Line	Station	(nT)	Line	Station	(nT)
Line 2050 (con't)			Line 2050 (con't)			Line 2300			Line 2425 (con't)		
2050	4845	57246.1	2050	5090	56960.0	2300	195	57312.7	2425	4615	56802.4
2050	4850	57239.7	2050	5095	56934.5	2300	190	57355.5	2425	4620	57016.3
2050	4855	57234.8	2050	5100	56934.7	2300	185	57398.8	2425	4625	57028.8
2050	4860	57229.7	2050	5105	56936.4	2300	180	57392.4	2425	4630	57031.5
2050	4865	57226.7	2050	5110	56940.2	2300	175	57423.2	2425	4635	57056.2
2050	4870	57231.5	2050	5115	56930.4	2300	170	57519.7	2425	4640	57049.0
2050	4875	57228.5	2050	5120	56920.0	2300	170	57513.3	2425	4645	57048.2
2050	4880	57220.6	2050	5125	56911.5	2300	165	57491.8	2425	4650	57043.7
2050	4880	57222.2	2050	5130	56909.5	2300	160	57503.2	2425	4655	57054.9
2050	4880	57223.6	2050	5135	56892.2	2300	155	57424.6	2425	4660	57093.5
2050	4885	57226.2	2050	5140	56900.0	2300	150	57416.5	2425	4665	57162.0
2050	4890	57224.4	2050	5145	56894.6	2300	145	57406.1	2425	4670	57133.5
2050	4895	57222.4	2050	5150	56876.0	2300	140	57419.0	2425	4675	57146.6
2050	4900	57225.1	2050	5155	56860.1	2300	135	57756.9	2425	4680	57132.4
2050	4905	57212.1	2050	5160	56884.2	2300	135	57434.4	2425	4685	57140.0
2050	4910	57213.1	2050	5165	56842.3	2300	130	57383.4	2425	4690	57161.3
2050	4915	57211.1	2050	5170	56828.8	2300	125	57108.3	2425	4695	57182.5
2050	4920	57204.6	2050	5175	56840.8	2300	125	56982.7	2425	4700	57182.9
2050	4925	57203.6	2050	5180	56837.6	2300	120	57112.7	2425	4705	57173.8
2050	4930	57210.2	2050	5185	56866.4	2300	115	57130.9	2425	4710	57156.8
2050	4935	57200.2	2050	5190	56886.1	2300	110	57090.2	2425	4715	57159.0
2050	4940	57240.2	2050	5195	56890.4	2300	105	57161.2	2425	4720	57222.2
2050	4945	57233.8	2050	5200	56884.2	2300	100	57184.9	2425	4725	57255.5
2050	4950	57225.2	2050	5205	56867.8	2300	95	57201.3	2425	4730	57287.8
2050	4955	57208.8	2050	5210	56875.9	2300	90	57182.8	2425	4735	57250.3
2050	4960	57231.3	2050	5215	56890.9	2300	85	57168.5	2425	4740	57290.2
2050	4965	57206.7	2050	5220	56863.2	2300	80	57153.6	2425	4745	57326.8
2050	4970	57208.8	2050	5225	56917.9	2300	75	57152.8	2425	4750	57349.3
2050	4975	57204.2	2050	5230	56923.9	2300	70	57136.7	2425	4755	57368.8
2050	4980	57221.5	2050	5235	56876.8	2300	65	57130.0	2425	4760	57331.4
2050	4985	57203.1	2050	5240	56889.2	2300	60	57055.7	2425	4765	57263.8
2050	4990	57197.2	2050	5245	56876.2	2300	55	57098.3	2425	4770	57249.0
2050	4995	57212.4	2050	5250	56881.8	2300	50	57115.3	2425	4775	57243.5
2050	4995	57193.5	2050	5255	56876.9	2300	45	57241.1	2425	4775	57288.9
2050	5000	57211.7	2050	5260	56884.0	2300	40	57309.7	2425	4780	57310.1
2050	5000	57214.7	2050	5265	56889.6	2300	35	57349.8	2425	4785	57372.4
2050	5000	57208.7	2050	5270	56850.2	2300	30	57352.7	2425	4790	57360.5
2050	5005	57207.3	2050	5275	56853.7				2425	4795	57370.9
2050	5010	57202.6	2050	5280	56869.9	Line 2425			2425	4800	57387.3
2050	5015	57163.9	2050	5285	56868.0	2425	4540	56993.0	2425	4805	57437.3
2050	5020	57155.7	2050	5290	56855.6	2425	4545	56993.9	2425	4810	57467.7
2050	5025	57141.3	2050	5295	56844.9	2425	4550	57032.4	2425	4815	57440.3
2050	5030	57132.0	2050	5300	56837.6	2425	4555	57020.9	2425	4820	57426.1
2050	5035	57132.2	2050	5305	56865.4	2425	4560	56982.7	2425	4820	57423.4
2050	5040	57114.3	2050	5310	56878.2	2425	4565	56987.8	2425	4825	57465.9
2050	5045	57141.3	2050	5315	56853.2	2425	4570	57010.4	2425	4830	57435.4
2050	5050	57132.9	2050	5320	56883.1	2425	4575	57009.3	2425	4835	57447.9
2050	5055	57100.5	2050	5325	56868.6	2425	4580	57007.3	2425	4840	57467.2
2050	5060	57085.9	2050	5330	56908.0	2425	4585	57030.0	2425	4845	57502.4
2050	5065	57041.0	2050	5335	56932.7	2425	4590	57045.0	2425	4850	57523.9
2050	5070	57021.3	2050	5340	56905.9	2425	4595	57096.8	2425	4855	57555.8
2050	5075	57016.2	2050	5345	56897.8	2425	4600	57343.1	2425	4860	57586.3
2050	5080	56999.4	2050	5350	56901.0	2425	4605	57193.5	2425	4865	57588.7
2050	5085	56974.3	2300	200	57322.9	2425	4610	55889.5	2425	4870	57635.2

APPENDIX 4: CONTINUED

Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI	Grid Coordinates		TMI
Line	Station	(nT)	Line	Station	(nT)	Line	Station	(nT)	Line	Station	(nT)
Line 2425 (con't)			Line 4775 (con't)			Line 4775 (con't)			Line 4775 (con't)		
2425	4875	57710.4	4775	2350	57294.5	4775	2085	57105.7	4775	1825	57033.1
2425	4880	57748.0	4775	2345	57273.0	4775	2080	57091.9	4775	1820	56998.8
2425	4885	57831.3	4775	2340	57279.3	4775	2075	57086.0	4775	1815	56993.0
2425	4890	57930.1	4775	2335	57311.8	4775	2070	57080.4	4775	1810	57095.9
2425	4895	58022.1	4775	2330	57329.0	4775	2065	57065.8	4775	1805	56987.0
2425	4900	58043.5	4775	2325	57292.1	4775	2060	57103.8	4775	1800	56990.7
2425	4905	58102.1	4775	2320	57311.2	4775	2055	57048.7	4775	1795	57005.1
2425	4910	58158.5	4775	2315	57317.8	4775	2050	57192.0	4775	1790	56632.6
2425	4915	58218.6	4775	2310	57329.8	4775	2050	57194.5	4775	1785	57018.2
2425	4920	58204.3	4775	2305	57278.4	4775	2045	57137.3	4775	1780	57023.3
2425	4925	58065.4	4775	2300	57308.8	4775	2040	57053.4	4775	1775	57015.2
2425	4930	57896.8	4775	2295	57353.5	4775	2035	57071.3	4775	1770	57001.2
2425	4935	57723.8	4775	2290	57356.7	4775	2030	57070.9	4775	1765	56990.7
2425	4940	57596.6	4775	2285	57348.8	4775	2025	57064.9	4775	1760	56991.6
2425	4945	57421.4	4775	2280	57248.6	4775	2020	57110.5	4775	1755	57030.2
2425	4950	57290.9	4775	2280	57242.2	4775	2015	56986.1	4775	1750	56990.2
2425	4955	57223.0	4775	2275	57184.1	4775	2015	56988.7			
2425	4960	57272.3	4775	2270	57122.3	4775	2010	57046.3			
2425	4965	57321.6	4775	2265	57086.7	4775	2005	57055.3			
2425	4970	57332.4	4775	2260	57076.3	4775	2000	57050.9			
2425	4975	57275.7	4775	2255	57078.5	4775	1995	57089.2			
2425	4980	57259.1	4775	2250	57061.3	4775	1990	57068.8			
2425	4985	57227.3	4775	2245	57071.5	4775	1985	57060.2			
2425	4990	57098.9	4775	2240	57110.0	4775	1980	57044.6			
2425	4995	57041.6	4775	2235	57106.4	4775	1975	57050.5			
2425	5000	57042.6	4775	2230	57055.7	4775	1970	57051.8			
2425	5005	57005.3	4775	2225	57048.2	4775	1965	57081.3			
2425	5010	56967.2	4775	2220	57042.1	4775	1960	57086.6			
2425	5015	56932.3	4775	2215	57056.0	4775	1955	57099.4			
2425	5020	56895.8	4775	2210	57098.3	4775	1950	57129.3			
2425	5025	56864.4	4775	2205	57102.7	4775	1945	57123.2			
2425	5030	56806.8	4775	2200	57070.9	4775	1940	57116.2			
2425	5035	56727.3	4775	2195	57064.4	4775	1935	57075.9			
2425	5035	56726.9	4775	2190	57055.0	4775	1930	57090.8			
2425	5040	56650.0	4775	2185	57119.0	4775	1925	57019.7			
2425	5045	56551.4	4775	2180	57155.4	4775	1920	56951.3			
2425	5050	56460.3	4775	2175	57161.5	4775	1915	57113.5			
			4775	2170	57143.6	4775	1910	57058.1			
Line 4775			4775	2165	57156.4	4775	1905	57054.6			
4775	2425	57282.2	4775	2160	57182.1	4775	1900	57073.9			
4775	2420	57366.2	4775	2155	57206.6	4775	1895	57097.9			
4775	2415	57296.3	4775	2150	57181.3	4775	1890	57075.5			
4775	2410	57281.4	4775	2145	57123.5	4775	1885	57052.4			
4775	2405	57249.0	4775	2140	57131.0	4775	1880	57088.6			
4775	2400	57262.6	4775	2135	57138.2	4775	1875	57044.7			
4775	2395	57289.5	4775	2130	57147.6	4775	1870	57078.2			
4775	2390	57332.2	4775	2125	57172.2	4775	1865	57061.0			
4775	2385	57325.8	4775	2120	57164.1	4775	1860	57009.8			
4775	2380	57306.2	4775	2115	57141.4	4775	1855	56876.4			
4775	2375	57348.9	4775	2110	57118.0	4775	1850	57011.0			
4775	2370	57372.8	4775	2105	57112.0	4775	1845	56999.4			
4775	2365	57398.9	4775	2100	57121.0	4775	1840	56972.1			
4775	2360	57389.5	4775	2095	57127.9	4775	1835	57011.8			
4775	2355	57308.8	4775	2090	57111.8	4775	1830	57009.2			

APPENDIX 5: STATEMENT OF QUALIFICATIONS

The work described in this report was under supervision of Jody Dahrouge. Mr. Dahrouge is a geological consultant with Dahrouge Geological Consulting Ltd. based in Edmonton, Alberta. He obtained degrees in geology and computing science from the University of Alberta, Edmonton in 1988 and 1994, respectively. He is a member of the Canadian Institute of Mining and Metallurgy and is registered as a P.Geol. with the Association of Professional Engineers, Geologists and Geophysicists of Alberta. He has more than 10 years experience as in mineral exploration.



LEGEND

QUATERNARY
- Q — Glacial till, gravel, unconsolidated sediments

TERTIARY
- Dacite dykes

LOWER JURASSIC
BONANZA GROUP
- lJBv — Andesitic to rhyodacitic lava, tuff, breccia

UPPER TRIASSIC
VANCOUVER GROUP
- uTRPB — Parsons Bay Formation: calcareous siltstone, shale, limestone, greywacke, conglomerate, breccia
- uTRQ — Quatsino Formation: crystalline limestone
- uTRK — Karmutsen Formation: basaltic lava, pillow lava, breccia, aquagene tuff, greenstone; minor limestone

SYMBOLS

- Geological boundary (approximate, inferred)
- Fault (approximate)
- Bedding (inclined, horizontal)
- Foliation (inclined)
- Elevation contour (interval: 5 m)
- Paved Road
- Gravel Road
- Trail or cut line
- Measured section; number
- Outcrop of volcanics
- Mineral claim boundary
- Lot boundary
- Diamond drill hole

NOTES

1) Topography compiled by McElhanney Land Surveys Ltd. from 1 : 15 000 scale air photos, taken in 1988.
2) Geology modified after Muller et al. (1974).
3) UTM grid is North American Datum, 1983 (NAD83); UTM grid zone: 9U.
4) See Appendix 5 for detailed sample descriptions and analyses.
5) To accompany report entitled "2002 Geological Mapping, Magnetometer Survey, and Evaluation of Limestone Resources at the Varney Claims".

REVISIONS	
BY	DATE
WM	2003.05
WM	2003.07

GRAYMONT WESTERN CANADA INC.

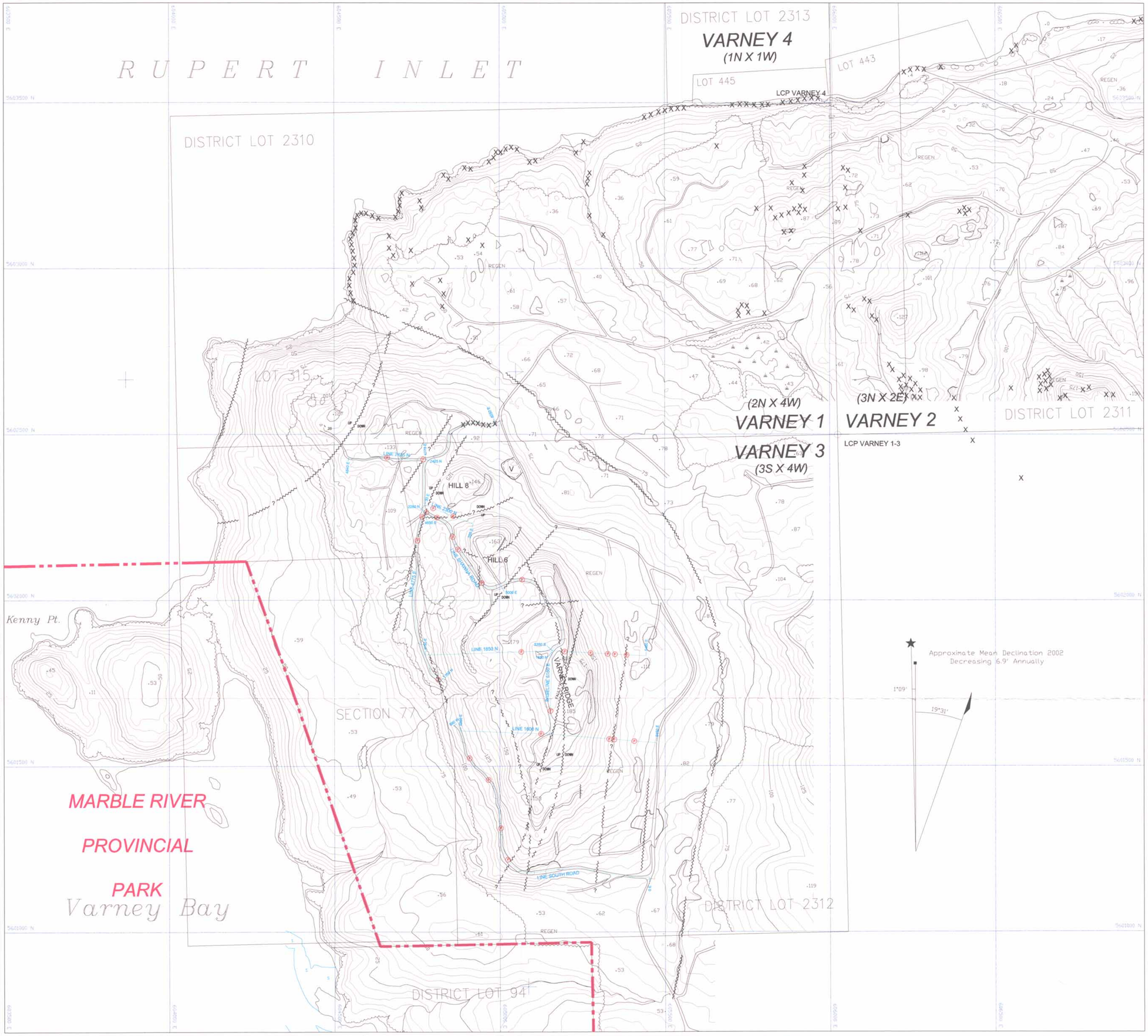
Dahrouge Geological Consulting Ltd.
EDMONTON, ALBERTA

VARNEY BAY AREA, BRITISH COLUMBIA

Fig. 3.1
Geology and Locations of Measured Sections

0 200 400 Metres
Scale: 1:5000

WM 2002.10



SYMBOLS

- Geological boundary (approximate, inferred)
- Fault (approximate)
- Bedding (inclined, horizontal)
- Foliation (inclined)
- Attitude of dyke (inclined, unknown)
- Elevation contour (interval: 5 m)
- Paved Road
- Gravel Road
- Trail or cut line
- Outcrop of volcanics
- Mineral claim boundary
- Lot boundary
- Magnetic survey line
- Fault interpreted from magnetic survey

NOTES

1) Topography compiled by McElhanney Land Surveys Ltd. from 1 : 15 000 scale air photos, taken in 1988.
2) Geology modified after Muller et al. (1974).
3) UTM grid is North American Datum, 1983 (NAD83); UTM grid zone: 9U.
4) To accompany report entitled "2002 Geological Mapping, Magnetometer Survey, and Evaluation of Limestone Resources at the Varney Claims".

REVISIONS	
BY	DATE
WM	2003.05
WM	2003.07

GRAYMONT WESTERN CANADA INC.

Dahrouge Geological Consulting Ltd.
EDMONTON, ALBERTA

VARNEY BAY AREA, BRITISH COLUMBIA

Fig. 3.2
Locations of Ground Magnetic Survey Lines

0 200 400 Metres
Scale: 1:5000

WM 2002.10