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THE DIAMOND POTENTIAL OF BRILLIANT MINING CORPORATION'S MEDLEY RIVER PROPERTY, EAST-CENTRAL ALBERTA

A Qualifying Report Prepared for

Brilliant Mining Corporation

APEX Geoscience Ltd.

February, 2001

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SUMMARY

APEX Geoscience Ltd. (APEX), was retained during the late summer of 1999 as consultants by Brilliant Mining Corporation (Brilliant) in order to aid Brilliant in the exploration for diamonds on the company's Medley River property, near Cold Lake. Brilliant holds an undivided 100% interest in the Medley River property, which is comprised of nine mineral permits totaling approximately 63,181 hectares (ha) and is located along the north and west sides of Cold Lake about 300 km northeast of Edmonton, along the Alberta–Saskatchewan border. Although diamond exploration at the property is still in the early stages, the potential for discovery of diamondiferous kimberlites in the region and on Brilliant's property is considered high based upon the regional geological setting in conjunction with the positive results from exploration that has been conducted to date.

The regional setting for Brilliant's Medley River property is considered highly favourable for the presence of diamondiferous kimberlites. The permits are predominantly underlain by Early Proterozoic basement of the Rimbey Magmatic Zone and Archean basement of the Hearne Sub-Province, near the southern limit of the property. The Medley River property is located along the north flank of the Meadow Lake Escarpment near the eastern terminus of the Grosmont high and in an area where seismic refraction indicates crustal thickness ranges from 35 to 40 km. In addition, the permit area is in close proximity to the northeast trending Snowbird Tectonic Zone, a major crustal lineament. This regional structural setting is considered complex but favourable for the formation, preservation and transport of diamonds in the upper mantle during periodic tectonic activity associated with movement along the Peace River Arch, the Grosmont High, the Meadow Lake Escarpment or the Snowbird Tectonic Zone.

The Cold Lake area is underlain by Upper Cretaceous Lea Park and Belly River formation shales, which are roughly age equivalent or slightly younger than the shales that host the diamondiferous kimberlites discovered in the Buffalo Head Hills area and the Birch Mountains. The glacial history for the Cold Lake area is very complex with highly variable drift thickness ranging from less than 25 m to more 175 m. The areas of thin drift and less glacial complexity should be the focus of any future exploration programs. Those areas underlain by thick drift in preglacial river channels should be omitted from future exploration.

Exploration to date has included several sampling campaigns, an airborne magnetic survey and a ground geophysical survey. Three separate parties have conducted sampling programs on separate occasions during 1999 and 2000 in order to collect information on the types and concentrations of diamond indicator minerals present within the Medley River property. A high-resolution airborne magnetic survey was conducted over the northern half of the Medley River property during early 2000. In addition, a ground geophysical survey was conducted in the May Lake area during 1999. The results of diamond indicator mineral sampling conducted to date are encouraging based on the types, abundance and

morphology of the minerals that have been recovered. The Medley River and its tributaries have yielded up to six confirmed diamond indicator minerals at multiple sites including pyrope garnets, chrome diopsides, picroilmenites and chromites, indicating the probable existence of mantle derived intrusions such as kimberlites in the region. The size and morphology of the diamond indicator mineral grains, including pyrope garnets up to 1.0 mm in diameter with orange peel texture indicates that the grains could be proximal to their original source. The preliminary chemistry of the diamond indicator minerals, including the recovery of 4 Gurney G10 sub-calcic pyrope garnets out of a total of 25 pyrope garnets, indicates that the potential is good for the existence of diamonds and/or kimberlites that might be present in the region. The Cold Lake area is one of only two areas in Alberta that are known to have yielded multiple G10 sub-calcic pyrope garnets, which are considered indicative of high diamond potential.

A review of the high-resolution airborne magnetic data indicates that there are a number of magnetic anomalies in the Medley River area, some of which are considered high priority for kimberlite exploration. These anomalies in conjunction with the number and types of diamond indicator minerals that have been recovered from the Medley River area indicate that the Cold Lake region is a high priority target area for kimberlite exploration.

In conclusion, the potential for discovery of diamondiferous kimberlites within or in close proximity to Brilliant's Medley River permits is considered high based upon (a) the number, diversity, morphology and chemistry of the diamond indicator minerals that have been recovered to date, (b) the presence of numerous high to moderate quality magnetic anomalies that could be indicative of kimberlites on the property, (c) the favourable basement and tectonic setting, and (d) the presence of areas of thin to moderate thickness glacial drift on the property. Based upon these favourable characteristics, an aggressive, systematic two-stage exploration program is warranted to search for diamondiferous kimberlites at Brilliant's Medley River property in the Cold Lake area.

The **Stage 1** exploration should consist of aggressive surface sampling program using a variety of sample mediums including beach sands and stream gravels as well as an aggressive overburden till sampling campaign using an auger drilling system. The sampling program should be conducted in conjunction with a detailed compilation and review of the drift thickness and Quaternary geology for the Medley River property. The Stage 1 program should also include a provision to conduct ground geophysical surveys over a number of moderate to high priority magnetic anomalies. The estimated cost to conduct the Stage 1 program is $200,000. **Stage 2** should comprise a water-well or reverse circulation-drilling program of 10 to 15 kimberlite targets within the Medley River property. The estimated cost to conduct the Stage 2 drilling program is $300,000. The total estimated cost of the recommended two-stage exploration and drilling program for the Medley River property is $500,000.

INTRODUCTION

Terms of Reference

APEX Geoscience Ltd. (APEX), was retained during January 2001 as consultants by Brilliant Mining Corporation (Brilliant) to prepare an independent evaluation of the diamond potential of Brilliant's Medley River property. This evaluation has been prepared on the basis of available published and unpublished material. M.B. Dufresne has personally visited the Medley River property.

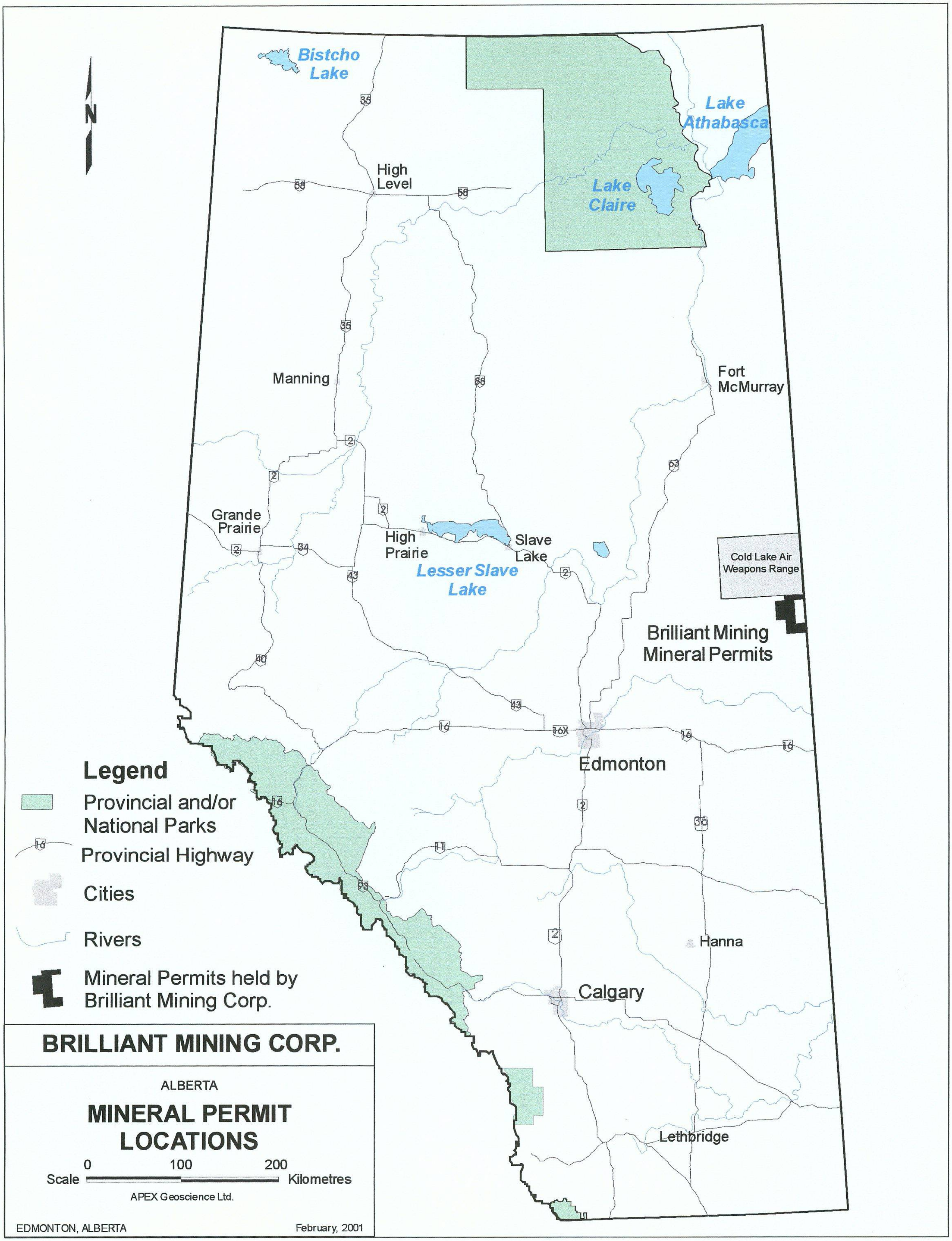
Property Description and Location

The Medley River property is located to the west of Cold Lake in east central Alberta, covering townships 63-66 and ranges 1-4, west of the 4th meridian (Figure 1). This property encompasses nine mineral permits totalling approximately 63,181 ha, which are located within the Sand River (73L) 1:250,000 scale National Topographic System (NTS) map sheet, more specifically 73L/9 (Marie Lake) and 73L/8 (Cold Lake) 1:50,000 scale NTS map sheets. A list of legal descriptions for the Medley River properties is provided in Table 1 and a detailed listing of current permit boundaries is provided in Appendix 1.

TABLE 1
LEGAL PERMIT DESCRIPTIONS*

Permit Number	Term Date	Term Period	First Anniversary	Permit Holder	Area (Ha)
939399060001	1999-06-14	10 years	2001-06-14	Brilliant Mining Corporation	7480
939398120012	1998-12-21	10 years	2000-12-21	Brilliant Mining Corporation	5888
939399060002	1999-06-14	10 years	2001-06-14	Brilliant Mining Corporation	6133
939399060003	1999-06-14	10 years	2001-06-14	Brilliant Mining Corporation	3495
939398120010	1998-12-21	10 years	2000-12-21	Brilliant Mining Corporation	8815
939398120013	1998-12-21	10 years	2000-12-21	Brilliant Mining Corporation	9216
939399060004	1999-06-14	10 years	2001-06-14	Brilliant Mining Corporation	4608
939398120011	1998-12-21	10 years	2000-12-21	Brilliant Mining Corporation	9178
9399110001	1999-11-15	10 years	2001-11-15	Brilliant Mining Corporation	8368

*Provided by Brilliant Mining Corp. Edmonton, Alberta.



Bistcho Lake
Lake Athabasca
Lake Claire
High Level
Manning
Fort McMurray
Grande Prairie
High Prairie
Slave Lake
Lesser Slave Lake
Cold Lake Air Weapons Range
Brilliant Mining Mineral Permits
Edmonton
Hanna
Calgary
Lethbridge
N
35
58
88
2
63
34
43
40
16
16X
36
11
93
Legend
Provincial and/or National Parks
Provincial Highway
Cities
Rivers
Mineral Permits held by Brilliant Mining Corp.
BRILLIANT MINING CORP.
ALBERTA
MINERAL PERMIT LOCATIONS
0
100
200
Scale
Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
February, 2001

FIGURE 1.

Accessibility, Climate and Local Resources

The Medley River property may be accessed via Provincial Highway 897 and 892, all weather and dry weather gravel roads, cart trails and seismic lines. Portions of the permit area may be accessed by four-wheel drive vehicles or argos. Accommodation, food, fuel, and supplies are best obtained in the towns of Grand Centre and Cold Lake (now amalgamated). Camping facilities may be available in English Bay and Ethel Lake Provincial Recreation Areas.

The Medley River property is situated within the Eastern Alberta Plains and Mostoos Hills Upland physiographic zones (Klassen, 1989). Relief generally comprises rolling hills and undulating plains. Elevation in the region varies from 535 m to 640 m above sea level (asl). Major topographic features in the region include Cold and Marie lakes, situated in the centre of the property; areas of extensive muskeg to the northwest of the property; and the Medley and Martineau rivers. Numerous streams and creeks drain the region, flowing into Cold Lake, which in turn drains into the Beaver River to the south. The Sand River map sheet is the locus of a subcontinental divide where the Beaver River and its tributary, the Sand River, drain in to Hudson Bay via the Churchill River System. The northwest corner of the map sheet (73L) drains into the Arctic Ocean via the La Biche–Athabasca–MacKenzie River System. In addition to the numerous small lakes and ponds, much of the property is covered by swamps, marshes and fens. A boreal forest containing mainly spruce and jack pine covers the property. Annual temperatures range from -40°C in January to 25°C in July.

BACKGROUND ON KIMBERLITES

To understand the significance of diamond indicator minerals (DIMs), it is important to understand the type of igneous rocks from which primary diamond deposits are mined. The most common rock type from which diamonds are mined are kimberlites and, to a lesser extent, lamproites and orangeites. DIMs describe minerals that are common constituents of these three rock types, some of which are phenocrysts and others that are xenocrysts. For the purposes of this discussion, DIMs will refer to minerals that are both characteristic and diagnostic of kimberlites.

Kimberlites

Kimberlite is best described as a hybrid igneous rock (Mitchell, 1986, 1989, 1991; Skinner, 1989; Scott Smith, 1995). Kimberlites are igneous in nature since they have crystallised from a molten liquid (kimberlitic magma) originating from the earth's upper mantle. Kimberlite magma contains volatile gases and is relatively buoyant with respect to the upper mantle. As a result, pockets of kimberlitic magma will begin to ascend upward through the upper mantle and along a path of least resistance to the earth's surface. As the kimberlitic magma ascends, the volatile gases within the magma expand, fracturing the overlying rock, continually creating and expanding its own conduit to the earth's surface. As a kimberlitic magma begins to ascend to the earth's surface it rips up and incorporates fragments or xenoliths of the various rock types the magma passes through on its way to surface. As the magma breaks down and incorporates these xenoliths, the chemistry and mineralogy of the original magma becomes altered or hybridised. The amount and type of foreign rock types a kimberlite may assimilate during its ascent will determine what types of minerals are present in the kimberlite when it erupts at surface.

When kimberlitic magma reaches or erupts at the earth's surface, the resulting volcanic event is typically violent, creating a broad shallow crater surrounded by a ring of kimberlitic volcanic ash and debris ("tuffaceous kimberlite"). The geological feature created by the eruption of a kimberlite is referred to as a diatreme or kimberlite pipe (Mitchell, 1986, 1989, 1991). In a simplified cross section a kimberlite diatreme appears as a near vertical, roughly "carrot shaped" body of solidified kimberlite magma capped by a broad shallow crater on surface that is both ringed and filled with tuffaceous kimberlite and country rock fragments (Mitchell, 1986, 1989, 1991).

Diamond Indicator Minerals

Diamonds do not crystallise from a kimberlitic magma: they crystallise within a variety of diamond-bearing igneous rocks in the upper mantle called peridotites and eclogites. Peridotites and eclogites are each made up of a diagnostic assemblage of minerals that crystallise under specific pressure and temperature conditions similar to those conditions necessary to form and preserve diamonds ("diamond stability field"). Diamond bearing peridotite can be further broken down into three varieties which are, in order of greatest diamond bearing significance, garnet harzburgite, chromite harzburgite, and, to a lesser extent, garnet lherzolite. For a kimberlite to be diamond bearing, the primary kimberlitic magma must disaggregate and incorporate some amount of diamond bearing peridotite or eclogite during its ascent to the earth's surface. The type and amount of diamond bearing peridotite or eclogite the kimberlitic magma incorporates during its ascent will determine the diamond content or grade of that specific kimberlite as well as the size and quality of diamonds. Diamond bearing peridotite and eclogite occur as discontinuous pods and horizons in the upper mantle, typically underlying the thickest, most stable regions of Archean continental crust or cratons (Helmstaedt, 1993). As a result, almost all of the economic diamond bearing kimberlites worldwide occur in the middle of stable Archean cratons.

Diamond indicator minerals (DIMs) include minerals that have crystallised directly from a kimberlitic magma (phenocrysts), or mantle derived minerals (xenocrysts) that have been incorporated into the kimberlitic magma as it ascends to the earth's surface. Examples of DIMs are picroilmenite, titanium and magnesium rich chromite, chrome diopside, magnesium rich olivine, pyrope and eclogite garnets. Varieties of garnet include G1, G2, G9, G10, G11, G12 pyropes as defined by Dawson and Stephens (1975), G9 and G10 pyropes as defined by Gurney (1984) and Gurney and Moore (1993) and G3, G4, G5, and G6 eclogitic garnets as defined by Dawson and Stephens (1975). From this paragraph on, reference to G1, G2, G3, G4, G5, G6, G11 and G12 pyrope garnets refers to Dawson and Stephens' (1975) classification and G9 and G10 refers to Gurney's (1984) G9 and G10 pyrope garnets of lherzolitic and harzburgitic origin, respectively.

DIMs are used not only to assess the presence of kimberlites in regional exploration programs but also to assess whether the kimberlites have the potential to contain diamonds. There are a limited variety of DIMs from which information pertaining to the diamond bearing potential of the host kimberlite can be gained. Typically, these are DIMs which have been derived from diamond bearing peridotite and eclogite in the upper mantle (Mitchell, 1989). The most common examples of these would include sub-calcic, G10 Cr-pyrope garnets (harzburgitic), G9 pyrope garnets (lherzolitic), Cr- and Mg-rich chromite (diamond inclusion quality or "DIF" chromite from chromite or spinel harzburgite), diamond inclusion quality "DIF" eclogitic garnets and chemically distinct jadeite clinopyroxene (diagnostic of diamond bearing eclogites).

Other indicator minerals that have crystallised from a kimberlitic magma can provide information as to how well the diamonds in a given kimberlite have been preserved during their ascent to surface. For instance, the presence of low iron and high magnesium picroilmenites in a kimberlite is a positive indication that the oxidising conditions of a kimberlitic magma were favourable for the preservation of diamonds during their ascent to surface in the kimberlitic magma.

Exploration

Due to the unique geometry of a kimberlite pipe and the manner in which the kimberlite has intruded a pre-existing host rock type, there are often differences in the physical characteristics of a kimberlite and the host rock. Sometimes these contrasting physical characteristics are significant enough to be detected by airborne or ground geophysical surveys. Two of the most commonly used geophysical techniques are airborne or ground magnetic surveys and electromagnetic (EM) surveys. A magnetic survey measures the magnetic susceptibility and EM surveys measure the electrical resistivity of the material at or near the earth's surface. When magnetic or resistivity measurements are collected at regular spaced intervals along parallel lines, the data can be plotted on a map and individual values can be compared. If a geophysical survey is conducted over an area where the bedrock and overburden geology is constant and there are no prominent structures or faults, there will be little variation in magnetic or resistivity response. However, when a kimberlite intrudes a homogenous geologic unit and erupts on surface, there is often a detectable change in the geophysical signature or anomalous magnetic or resistivity response over the kimberlite diatreme. When the data are contoured the anomalous results often occur as a circular or oval anomaly outlining the surface or near surface expression of the diatreme.

The effectiveness of geophysical methods in kimberlite exploration is dependent on the assumption that the difference between the geophysical signature of the hosting rock unit and a potential kimberlite is significant enough to be recognised by the geophysical techniques available. There are many examples of economic kimberlites that produce very subtle, unrecognisable geophysical responses as well as non kimberlite geologic features and man made structures (referred to as “cultural interference”) such as oil wells, fences, bridges, buildings which can produce kimberlite like anomalies. For these reasons, it is extremely important that other information such as DIM surveys be used in tandem with geophysical evidence to confirm whether there is other information to support the presence of a kimberlite pipe (Fipke *et al.*, 1995).

REGIONAL GEOLOGICAL SETTING

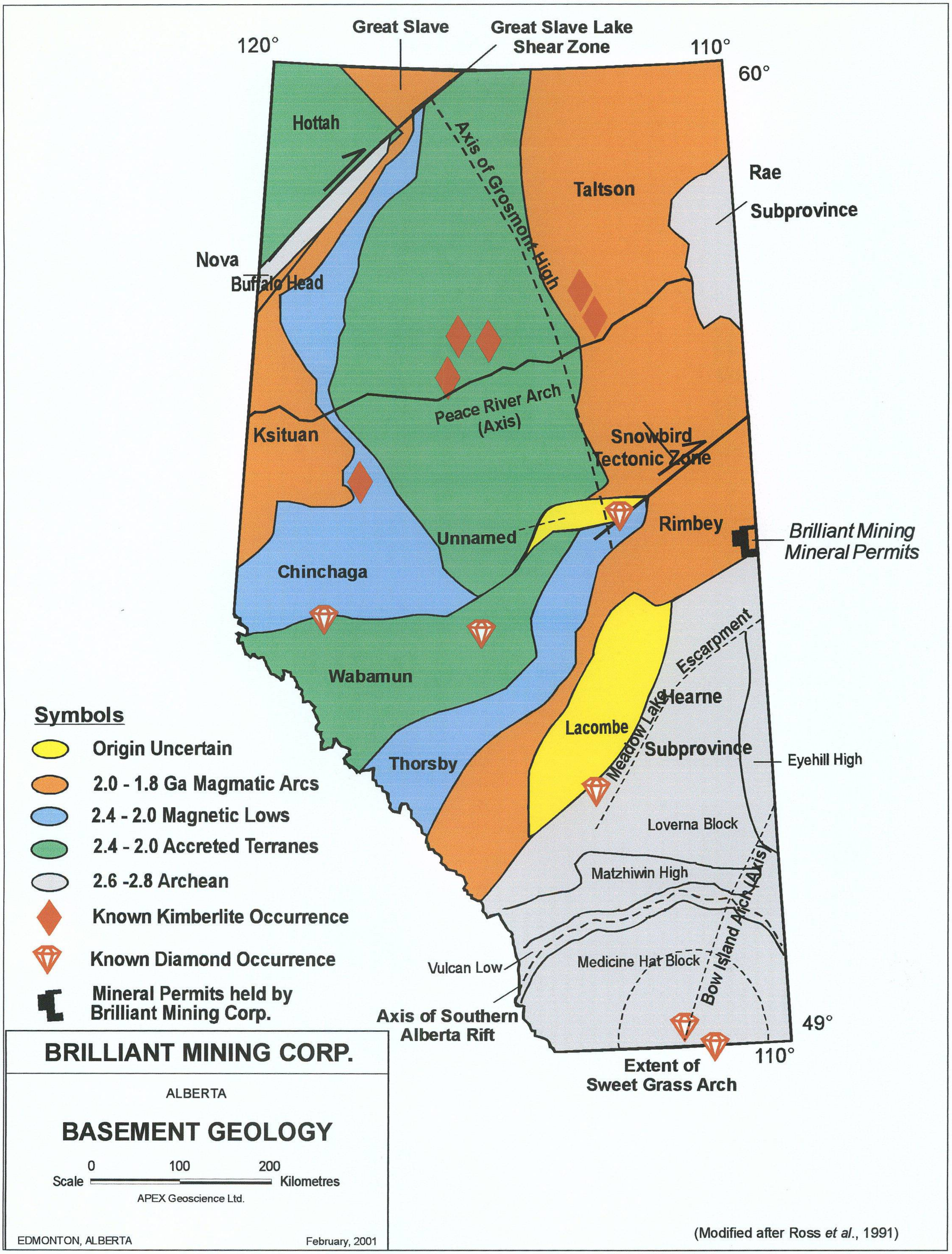
Precambrian

The Medley River permits lie in the Western Canada Sedimentary basin along the northern flank of the Meadow Lake Escarpment (MLE). Precambrian rocks are not exposed within the Sand River map sheet (NTS 73L). The basement underlying the Medley River permits borders the Hearne Subprovince (HSP) and the Rimbey Magmatic Zone (RMZ) near the Meadow Lake Escarpment (Figure 2). Basement to the Medley permits is part of the Rimbey Magmatic Zone (RMZ), a 2.0 to 1.8 Ga aged terrane that represents a magmatic arc related to collisional orogeny of the Buffalo Head Terrane and the Churchill Structural Province (Hearne and Rae Subprovinces) during the Proterozoic (Burwash *et al.*, 1962; Burwash and Culbert, 1976; Burwash *et al.*, 1994; Ross and Stephenson, 1989; Ross *et al.*, 1991, 1998, Villeneuve *et al.*, 1993). Thick Archean cratons such as the HSP are considered favourable for the formation and preservation of diamonds within the upper mantle. The location of the contact zone between the RMZ and the HSP is highly uncertain but has been broadly ascertained on the basis of available drill hole intersections, regional airborne geophysics, and geochronology. The RMZ is characterized by a highly corrugated internal fabric comprised of extremely high relief, northeast-trending sinuous magnetic anomalies. Seismic refraction and reflection studies indicate that the crust in the Cold Lake region is likely around 35 to 40 km thick, a trait favourable for the formation and preservation of diamonds in the upper mantle (Dufresne *et al.*, 1996). In addition, studies by Lithoprobe have indicated that a deep mantle root, as illustrated in Fig. 25 in Helmstaedt (1993), exists proximal to the area. Due to their relatively stable history since accretion, the RMZ and HSP are currently the focus of diamond exploration in eastern Alberta.

To the north of the Medley River permits, the underlying RMZ is divided from the Talston Magmatic Zone by the Snowbird Tectonic Zone (STZ). The STZ is a major northeast-trending crustal lineament that is a prominent lineament on both the aeromagnetic and the gravity maps of Canada (GSC, 1990a, b). The STZ separates the Churchill Structural Province into two distinct basement domains, the Rae and Hearne Subprovinces, and extends to the northeast as far as Baker Lake, Nunavut (Ross *et al.*, 1991).

Phanerozoic

Overlying the basement in the Cold Lake region is a thick sequence of Phanerozoic rocks comprising mainly Cretaceous sandstones and shales near surface and Cambrian to Ordovician sandstones and shales to Devonian carbonates and salts at depth (Hitchon and Andriashek, 1985; Mossop and Shetson, 1994). Bedrock exposure within the permit blocks is limited primarily to river and stream cuts and topographic highs. Table 2 shows the upper units found in the region. Further information pertaining to the distribution and character of these and older units can be obtained from well log data in government databases and various geological and hydrogeological reports (Carrigy, 1971; Ozoray *et al.*, 1980; Hitchon and Andriashek, 1985).



Great Slave
Great Slave Lake Shear Zone
120°
110°
60°
Hottah
Axis of Grosmont High
Taltson
Rae Subprovince
Nova
Buffalo Head
Peace River Arch (Axis)
Ksituan
Snowbird Tectonic Zone
Rimbey
Brilliant Mining Mineral Permits
Unnamed
Chinchaga
Wabamun
Meadow Lake Escarpment
Hearne Subprovince
Lacombe
Eyehill High
Thorsby
Loverna Block
Matzhiwin High
Bow Island Arch (Axis)
Vulcan Low
Medicine Hat Block
Axis of Southern Alberta Rift
49°
110°
Extent of Sweet Grass Arch
Symbols
Origin Uncertain
2.0 - 1.8 Ga Magmatic Arcs
2.4 - 2.0 Magnetic Lows
2.4 - 2.0 Accreted Terranes
2.6 -2.8 Archean
Known Kimberlite Occurrence
Known Diamond Occurrence
Mineral Permits held by Brilliant Mining Corp.
BRILLIANT MINING CORP.
ALBERTA
BASEMENT GEOLOGY
0
100
200
Scale
Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
February, 2001
(Modified after Ross et al., 1991)

FIGURE 2.

TABLE 2
GENERALIZED STRATIGRAPHY COLD LAKE PERMIT AREA

SYSTEM	GROUP	FORMATION	AGE* (MA)	DOMINANT LITHOLOGY
PLEISTOCENE			Recent	Glacial till and associated sediments
TERTIARY			6.5 to Recent	Preglacial sand and gravels
UPPER CRETACEOUS		Belly River	70 to 80	Shale, silty-shale and ironstone
	Smoky	Lea Park	75 to 86	Shale, silty-shale and ironstone, First White Specks
		Bad Heart	86 to 88	Thin or absent; Sandstone
		Kaskapau	88 to 92	Shale, silty-shale and ironstone, Second White Specks
		Dunvegan	92 to 95	Thin or absent; Sandstone and siltstone
	Fort St. John	Shaftesbury	95 to 98	Shale, bentonites, Fish-Scale Fm.
LOWER CRETACEOUS	Colorado	Viking	98 to 100	Glauconitic sands, siltstone, mudstone and conglomerate
		Joli Fou	100 to 103	Shale, glauconitic sandstone and bentonite

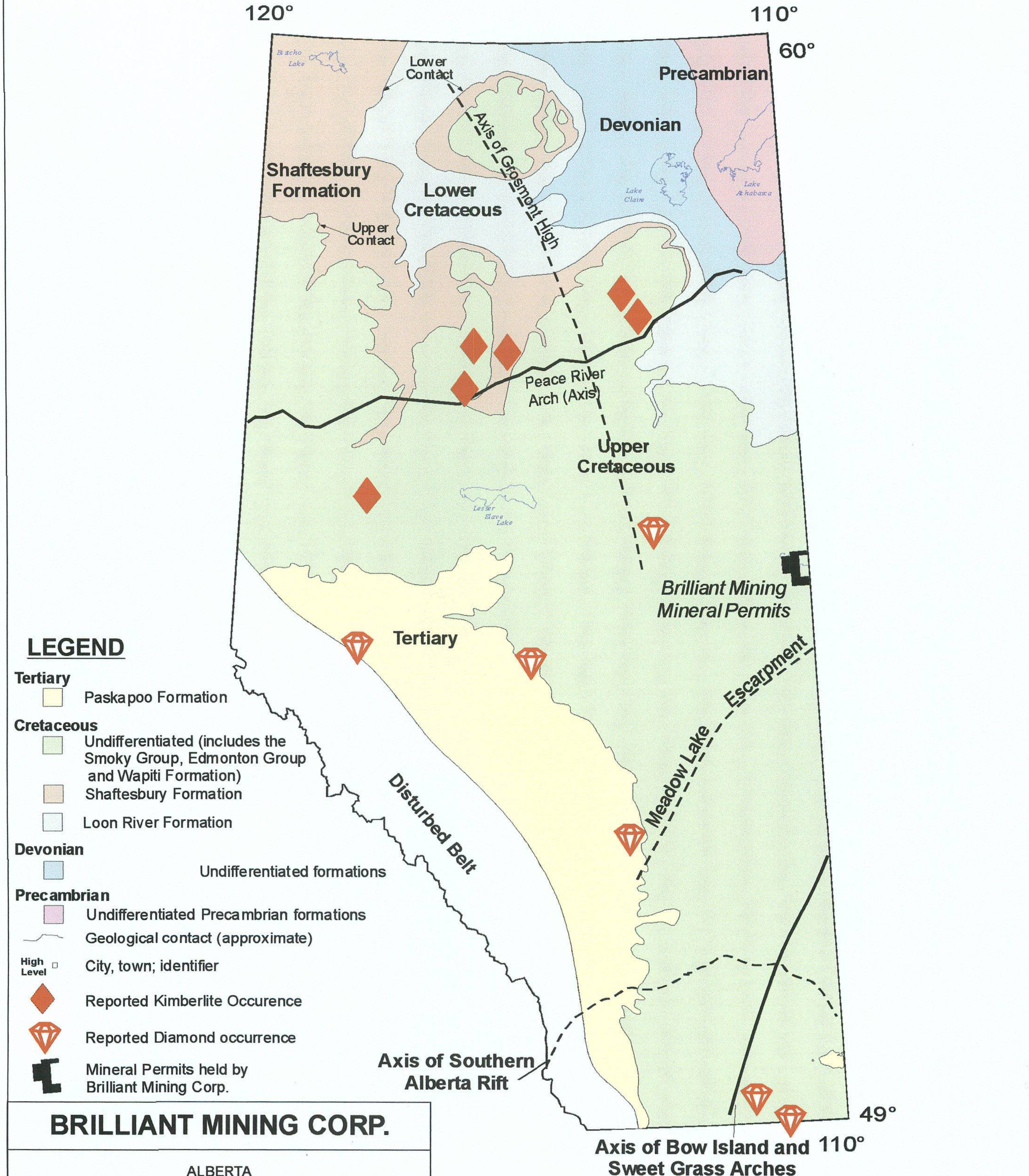
*Ages approximate from Green *et al.* (1970), Glass (1990), Dufresne *et al.* (1996), Leckie *et al.* (1997).

Underlying the near surface Cretaceous units in the Cold Lake area is a thick succession of Cambrian to Devonian sandstones, carbonates, calcareous shales and salt horizons (Hitchon and Andriashek, 1985; Mossop and Shetson, 1994). Several of the Devonian carbonate units are part of the Grosmont Reef Complex, a large structure whose eastern edge extends in a northwesterly direction from the Cold Lake area to the N.W.T. (Bloy and Hadley, 1989). The Grosmont Reef Complex is likely the result of tectonic uplift during the Devonian along this trend. During the middle Devonian, a large part of the Siluro-Ordovician stratigraphy was eroded or faulted away to form the northeast trending Meadow Lake Escarpment, a prominent Phanerozoic structural feature within the Western Canada Sedimentary Basin. These structures in conjunction with the Peace River Arch in northern Alberta could have played a significant role in the localisation of faults and other structures that could have provided favourable pathways for kimberlite volcanism.

In general, the Cretaceous strata underlying the Cold Lake permits is composed of alternating units of marine and nonmarine sandstones, shales, siltstones, mudstones and bentonites. The oldest documented units exposed in the permit area belong to the Lea Park Formation, a sequence of Upper Cretaceous calcareous and noncalcareous shales with thin intercalated sandstone layers (Figure 3). However, older units from the base of the Fort St. John and/or the top of the Colorado groups may be exposed in river and stream cuts.

The Colorado Group is Lower Cretaceous in age and contains numerous formations, including the Joli Fou and the Viking formations, which are correlative with the Peace River Formation of the Fort St. John Group further west (Dufresne *et al.,* 1996). The Joli Fou Formation is comprised of shale with interbedded, bioturbated to glauconitic sandstones and minor amounts of bentonite, pelecypod coquinas, nodular phosphorite and concretionary layers of calcite, siderite and pyrite (Glass, 1990). The Viking Formation disconformably overlies the Joli Fou Formation and is gradational with the overlying Shaftesbury Formation (shales of the Colorado Group) and is correlative with the Cadotte and Paddy Sands of the Peace River area (Fort St. John Group). The Viking Formation is comprised of glauconitic sands, interbedded siltstone and mudstone with minor amounts of conglomerate. Coalified plant fragments and bioturbated sandstones are locally abundant.

The La Biche Formation is a frequently incorrectly used term correlative to units of the Shaftesbury Formation and other formations within the Smoky and Colorado groups (Glass, 1990). In the Medley River permit area, the term Shaftesbury Formation (Fort St. John Group) is more commonly used. This unit is correlative with the shales overlying and underlying the Fish Scale unit in the Colorado Group. The Shaftesbury Formation is lower Upper Cretaceous in age and is comprised of marine shales with fish scale bearing silts, thin bentonitic streaks and ironstones. The upper contact is conformable and transitional with the Dunvegan Formation, however, the Dunvegan Formation is likely absent in the Cold Lake region, as sandy units within the Cretaceous stratigraphy generally thin out or become absent in deeper parts of the Western Sedimentary Basin. The Shaftesbury Formation may be exposed along deep rivers and stream cuts. Evidence of extensive volcanism during deposition of the Kaskapau and the Shaftesbury formations exists in the form of bentonites of variable thickness, distribution and composition. Numerous bentonitic horizons exist throughout the Shaftesbury Formation, especially within and near the Fish Scales horizon across much of Alberta (Leckie *et al.*, 1992; Bloch *et al.*, 1993). The time span of deposition of the Shaftesbury Formation is also chronologically correlative with the deposition of the Crowsnest Formation volcanics of southwest Alberta (Olson *et al.*, 1994; Dufresne *et al.*, 1995) and with kimberlitic volcanism near Fort à la Corne in Saskatchewan (Lehnert–Thiel *et al.*, 1992; Scott Smith *et al.*, 1994). In addition, there is documented igneous activity associated with the Steen River Anomaly, a possible impact structure, which formed in northwestern Alberta about this time (Carrigy, 1968; Dufresne *et al.*, 1995).



BRILLIANT MINING CORP.

ALBERTA

GENERALIZED GEOLOGY

Scale 0 100 200 Kilometres

APEX Geoscience Ltd.

EDMONTON, ALBERTA February, 2001

(Modified after Dufresne *et al.*, 1996)

FIGURE 3.

The Smoky Group is Upper Cretaceous in age and is comprised of thinly bedded, marine, silty shale with occasional ironstone and claystone nodules and thin bentonite streaks. The group is divided into three formations: (a) a lower shale unit, Kaskapau, which includes the Second White Specks marker unit; (b) a middle sandstone, named the Bad Heart; and, (c) an upper shale, Lea Park, which contains the First White Specks marker unit. The Smoky Group is conformably and transitionally overlain by the Wapiti Formation. Ammonite fossils and concretions are present in both the Puskwaskau and the Kaskapau formations. In addition, foraminifera are present in the lower arenaceous units (Glass, 1990). The upper formations of the Smoky Group are correlative with the Lea Park Formation. The lower portions of the Smoky Group are correlative with the middle to upper units of the Colorado Group, including the First and Second White Speckled Shale marker units (Glass, 1990). The Bad Heart, Dunvegan, and Wapiti formations are likely absent to very thin within the Cretaceous stratigraphy underlying the Cold Lake area. Bedrock exposures in the Cold Lake permits comprise the Lea Park and Belly River formations, however much (up to 1 km) of the upper portions of the Smoky Group have been eroded away by glacial and/or post-depositional processes. In general, exposures of the Smoky Group are limited to river and stream cuts topographic highs, and regions with thin drift veneer. There is strong evidence of volcanism associated within the depositional time span of the Smoky Group in the vicinity of the PRA (Auston, 1998; Carlson *et al.*, 1998). Ashton's recently discovered Buffalo Head Hills kimberlites intrude Kaskapau shale and yield emplacement ages of 86 to 88 Ma (Auston, 1998; Carlson *et al.*, 1998).

The youngest bedrock units in the Cold Lake area are the Belly River and Lea Park formations of Upper Cretaceous age, comprised of marine, thinly bedded to massive shales. The upper surfaces of the Belly River and Lea Park formations are generally erosional. Thickness of the two units may exceed 100 m (Glass, 1990). The Belly River Formation is exposed in the southeastern half of the Sand River map sheet around Cold Lake. The Lea Park formation outcrops within the northeast half of the Sand River map sheet. The Mountain Lake Kimberlite near Grande Prairie intrudes the Wapiti Formation, which is time correlative with the sedimentary rocks of the Belly River Formation and yields an emplacement age of 75 Ma (Leckie *et al.,* 1997).

Quaternary

Data and information about the surficial geology in central to northern Alberta is sparse and regional in nature (Klassen, 1989; Shetson, 1990). Prior to continental glaciation during the Pleistocene, most of Alberta, including the Cold Lake region, had reached a mature stage of erosion. Large, broad paleochannels and their tributaries drained much of the region, flowing in an east to northeasterly direction (Dufresne *et al.*, 1996; Edwards *et al.*, 1994). In addition, fluvial sand and gravel was deposited preglacially in much of the region.

During the Pleistocene, multiple southwesterly and southerly glacial advances of the Laurentide Ice Sheet across the region resulted in the deposition of ground moraine and associated sediments (Fig. 5 in Dufresne *et al.,* 1996). In addition, the advance of glacial ice resulted in the erosion and glaciotectonism of the underlying bedrock. Ice thrusted bedrock has been documented at the southwest terminus of Primrose Lake (Andriashek, *pers com.*, 1999). Glacial sediments infilled low-lying and depressional areas draped topographic highs and covered much of the Cold Lake area as veneers and/or blankets of till and diamict. Localised pockets of deposits from glacial meltwater and proglacial lakes infill the numerous spillway channels present near the area.

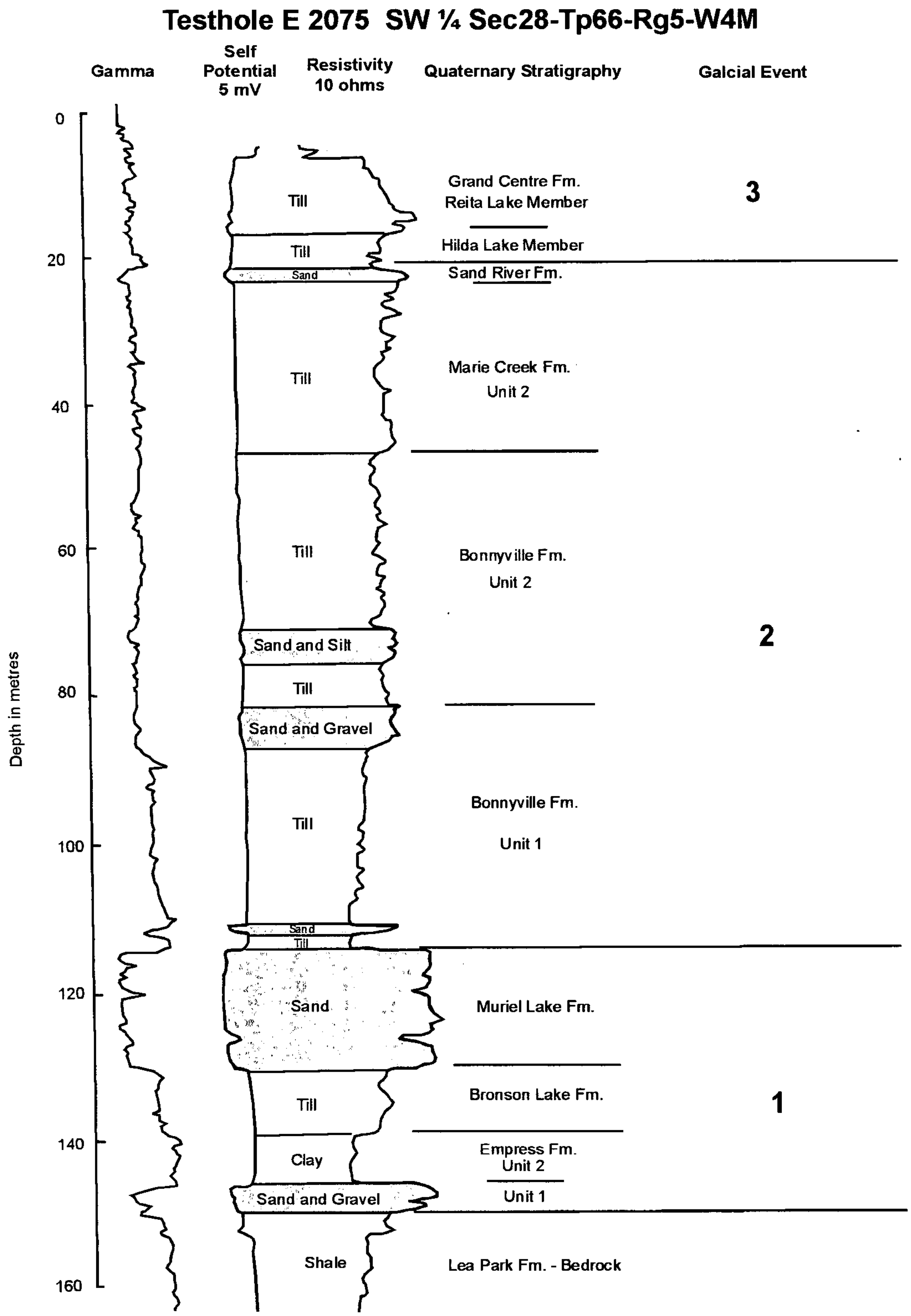
Glacial ice is believed to have receded from the area about 15,000 years ago. After the final glacial retreat, lacustrine clays and silts were deposited in low-lying regions along with organic sediments. Rivers previously re-routed due to glaciation, re-established easterly to northeasterly drainage regimes similar to that of the pre-Pleistocene. Extensive colluvial and alluvial sediments accompanied post-glacial river and stream incision.

The Quaternary stratigraphy within the Cold Lake area is complex and has been developed during three episodes of glaciation (Hitchon and Andriashek, 1985). The Quaternary stratigraphy is defined by several formations that are related to specific glacial events (Figure 4). The oldest and lowermost unit within the regional stratigraphy is the Empress Formation which comprises a lower sand and gravel horizon (Unit 1) with an overlying fluvial or lacustrine silt and clay (Unit 2). Unit one is largely composed of quartzite, chert and sandstone cobbles that were deposited in paleochannels by rivers flowing eastward from the Rocky Mountains. During the first glaciation event, a thick sheet of glacial sediment or till of the Bronson Lake Formation was deposited above the preglacial Empress Formation and local bedrock of the Lea Park Formation. This till is very clay rich and mainly occupies buried bedrock valleys such as those at Bronson Lake and the Helina Valley.

Following the retreat of the first glacial event and perhaps during the advance of the second glaciation extensive glaciofluvial sand of the Muriel Lake Formation was deposited above the Bronson Lake till sheet. The second glacial event deposited the very thick till sequences of the Bonnyville Formation. This till is characterized by a relatively high ratio of quartz to rock fragment within the matrix. The formation, divided into Units 1 and 2, commonly contains intercalations of glaciofluvial sand and gravel at the unit contacts. Following retreat of the second glacial ice advance silt and lacustrine sediment of the Ethel Lake Formation was deposited on top of the Bonnyville Formation tills, in the central and eastern art of map sheet NTS 73L.

The third and final glacial event deposited an extensive cover of till and glacially thrust sediments of the Grand Centre Formation. Based on spatial, textural and landform characteristics the Grand Centre Formation has been divided into four members. The lowermost (Hilda Lake Member) is found only in the east, and consists clay rich till that was intermixed with glacially thrust sediment of the Lea Park formation. The predominant glacial direction is oriented northeast to southwest based on the geometry of glacial flutes and drumlins of the Hilda Lake Member.

The Reita Lake Member is also found within the eastern part of NTS 73L and overlies most of the Hilda Lake Member. The Reita Lake Member comprises sandy clay till that occurs within higher relief landforms on the south side of major lakes, with glacially displaced masses of Marie Creek till forming the majority of the Member. These types of landforms have been referred to as "hill–hole pairs" and represent glacially thrusted



BRILLIANT MINING CORP.

Medley River Property

Quaternary Stratigraphy
Cold Lake, Alberta

APEX Geoscience Ltd.

EDMONTON, ALBERTA | February, 2001

After Hitchon and Andriashak (1985)

FIGURE 4.

material. Seismic profiles within the Cold Lake region display evidence that glacial thrust planes, ramps, and duplexes may commence at the bedrock and overburden contact (Andriashek, *pers com.*, 1999). This shows that the overburden and Tertiary/Quaternary stratigraphy may in places be piggybacked, and thickened by the related glacial tectonism. This has important implications for the design of surface till sampling programs for DIMs and interpretation of the results.

Overlying the Reita Lake Member are the sandy tills of the Kehiwin Lake Member. This member gradationally interfingers with the Reita Lake Member in the centre of NTS 73L along a north-south trend. The predominant glacial orientation of flutes within the Kehiwin Member is north–south. Overlying the Kehiwin Member in the western half of the Sand River map sheet are the till of the Vilna Member which are typified by glacial flutes that are oriented northwest–southeast.

In general, the tills of the Grand Centre Formation are higher in crystalline rock fragments than the underlying till formations. It is interpreted that the Grand Centre tills saw very little interaction with bedrock and thus represent an ablation till. This has important implications for the design of a regional till sampling program for DIMs in that, the upper till sheet likely did not interact with possible kimberlite diatremes that are age correlative with the underlying Upper Cretaceous Lea Park stratigraphy. More specific details of the glacial stratigraphy of the Cold Lake area and Sand River Map sheet are presented in Hitchon and Andriashek (1985) and Andriashek (1985).

The majority of area within the Medley River permits is underlain by drift of variable thickness, ranging from less than 25 m to likely over 175 m (Fenton and Andriashek, 1983). Drift thickness decreases considerably outside of infilled depressions and meltwater channels and in areas of high topographic relief, in particular near the west side of Cold Lake. However, local drift thicknesses can not be confirmed without detailed compilation of available drill hole data. Information regarding bedrock topography and drift thickness in northwest Alberta is available from the logs of holes drilled for petroleum, coal or groundwater exploration and from regional government compilations (Fenton and Andriashek, 1983; Pawlowicz and Fenton, 1995a, b; Dufresne *et al.*, 1996). An extensive study through the use of this information was done by Andriashek to determine the drift thickness in the Sand River area (Hitchon and Andriashek, 1985). The bedrock topography map compiled by Gold *et al.,* 1983, outlines the zones of thickest drift associated with preglacial and glacial channels. There are two such channels that predominantly trend east west within the Medley River permits, one of which underlies Marie Lake. Complex overburden with thick drift and multiple till sheets can significantly obscure the existence of kimberlites. However, there areas with thinner zones of drift within the permits north and south of Cold Lake that are more prospective for kimberlite exploration.

Structural Geology

In eastern-central Alberta, the Meadow Lake Escarpment (MLE) is a region where the younger Phanerozoic rocks which overlie the Precambrian basement, have undergone periodic vertical and, possibly, compressive deformation from the Proterozoic into Tertiary time (Cant, 1988; O'Connell *et al.*, 1990; Dufresne *et al.*, 1995, 1996). This pattern of long-lived, periodic uplift and subsidence has imposed a structural control on the deposition patterns of the Phanerozoic strata in eastern Alberta (Kent, 1986, 1994; Christopher, 1990). In addition, this periodic movement has resulted in a rectilinear pattern of faults that not only is responsible for structurally controlled oil and gas pools, but may have provided potential pathways for later deep-seated intrusive kimberlitic magmas (Herbaly, 1974).

During the mid-Cretaceous and Early Tertiary, compressive deformation occurred as a result of the orogenic event that eventually led to the formation of the Rocky Mountains. The MLE was emergent during this period resulting in the reactivation of many prominent basement faults. The Phanerozoic rocks beneath the Medley River permits lie within the northern edge of the MLE and are underlain by and proximal to basement faults related to the STZ, and the Grosmont Reef Complex, the latter being formed over the Grosmont High (Bloy and Hadley, 1990; Dufresne *et al.*, 1996). Basement faults likely controlled the emplacement of the Mountain Lake Kimberlite and the Buffalo Head Hills kimberlites northwest of the Medley River permits (Dufresne *et al.*, 1996; Leckie *et al.*, 1997). Therefore, structures in the Cold Lake area resulting from tectonic activity associated with movement along the MLE, the Grosmont High, the STZ, or even along contacts between different basement terranes could be pathways for kimberlitic volcanism.

PREVIOUS EXPLORATION

Cold Lake Region

During 1952, the GSC conducted an aeromagnetic survey of the Sand River NTS map sheet (73L) as part of a regional study (GSC, 1983). The survey was flown at an altitude of 300 m with flight lines spaced every one mile and cross-lines every 15 miles. Closer examination of the 1:250,000 scale aeromagnetic map for the Cold Lake area indicates a predominance of northeast trending basement magnetic highs. These highs parallel the trend of the Snowbird Tectonic Zone and pass through the northeast quadrant of the map sheet, just north of Cold Lake. Unfortunately, the flight lines from this 1952 survey are too widely spaced to be useful for locating possible kimberlites.

Previous exploration in the Cold Lake area has focussed primarily on the search for hydrocarbon and aggregate deposits and the determination of hydrogeological and geothermal regimes (Hackbarth and Nastasa, 1979; Mandryk and Richardson, 1988; Bachu *et al.*, 1993; Edwards *et al.*, 1994). Only recently has the focus of exploration been redirected towards diamonds (Dufresne *et al.*, 1996). In summary, prior exploration for diamonds conducted within the Medley River permits comprised staking, reconnaissance prospecting, sampling (gravel and sand) and geophysical surveying (ground magnetic).

The Alberta Geological Survey (AGS) and the Geological Survey of Canada (GSC) collected three till samples (NAT92-32, NAT92-33, and 43-4-1-T) from the Cold Lake region in 1992 (Dufresne *et al.*, 1995, 1996). These samples were collected for regional DIM analyses to provide background information on the diamond potential of the region (Figure 5). Sample NAT92-32 yielded a single chrome grossular garnet. Chrome grossular garnet is not unique to kimberlite intrusives but may be sourced from mantle derived intrusives such as kimberlite or lamproite. Sample NAT92-33 yielded no DIMs. Sample 43-4-1-T was collected from the southwest side of Cold Lake. This till sample returned a G1 and G2 pyrope, both of which are titanium rich pyropes. These types of pyropes are rare, and when found are often considered a diagnostic mineral indicative of local kimberlite intrusives.

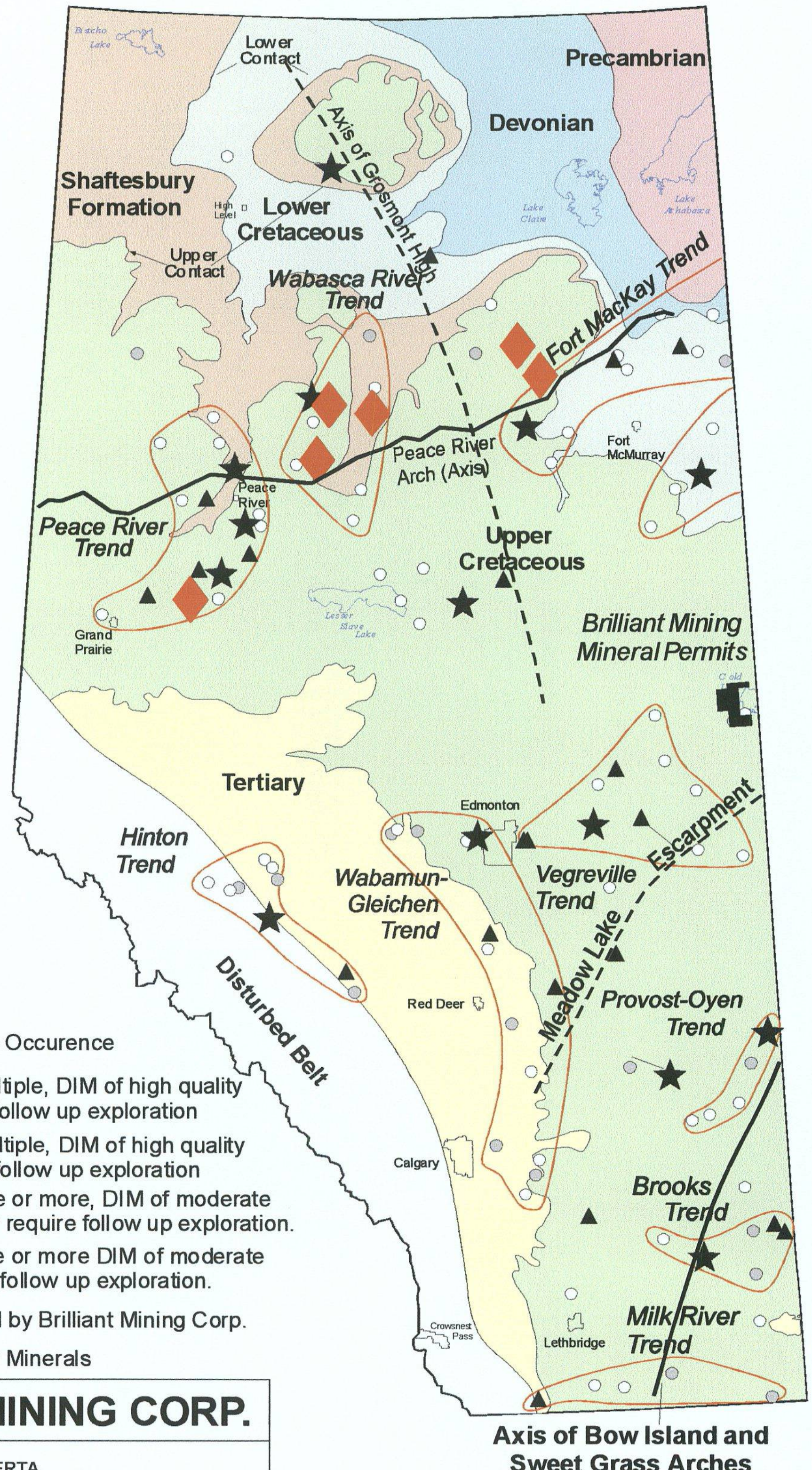
Sunburst Mines Ltd. (Sunburst) and Ice River Mining Ltd. (Ice River) conducted diamond exploration in the Martineau River area during the summer of 1999 (Dufresne and Copeland, 1999). APEX, on behalf of Sunburst and Ice River, collected a total of eight gravel and river sediment samples for heavy mineral concentrate analyses. DIM pick results yielded up to 31 DIMs from these samples and mineral chemistry analyses confirmed the samples contained pyrope garnet (G1, G2, G9 and G10), chrome diopside, chromite and picroilmenite. Two of the pyrope garnets classify as important G10 subcalcic harzburgitic composition as defined by Gurney (1984). Based on these findings Dufresne and Copeland (1999) concluded that the area near the Saskatchewan border north of Cold Lake is highly prospective for kimberlites. In addition, a number of DIMs have been recovered from samples in the Beaver River area south of Cold Lake, however this data is unpublished at this time.

Medley River Property

Sampling

In May 1999, Brilliant employees or subcontractors collected bulk gravel samples from the Medley River area, identified in this report as 'Bulk-1' and 'Bulk-2'. The locations for the two bulk samples correspond to the 1999 APEX samples 9TK004 and 9TK005 (Figure 6). The two samples consisted of gravel from already existing gravel pits and weighed approximately 1,000 and 2,000 lbs respectively. The samples were processed in the field using a jig system to separate the samples into several different fractions (based on size and specific gravity) which were subsequently submitted as separate samples. These samples were submitted to the Saskatchewan Research Council (SRC), Saskatoon, Saskatchewan for gold and DIM processing and picking.

Twelve samples were collected within Brilliant's mineral permits between June 15 and June 18, 1999 by Mr. Stuart C. Fraser of Stuart C. Fraser Geological (Fraser) in Edmonton, Alberta. The samples (MR-01 to MR-12) were collected from excavated gravel pits and/or clearings near the Medley River using shovels and augers, and panned to a concentrate on site for further processing (Fraser, 1999a, b). Sample locations are listed in Appendix 2. It is unknown how much sample was originally collected or what type of concentration method was used to obtain the concentrate. These samples were submitted by Fraser to Loring Laboratories (Calgary, Alberta) for processing for heavy mineral concentrates and for gold assaying. The samples were then sent to Mr. Fraser



LEGEND

- Reported Kimberlite Occurence
- Sample site with multiple, DIM of high quality chemistry; requires follow up exploration
- Sample site with multiple, DIM of high quality chemistry; requires follow up exploration
- Sample site with one or more, DIM of moderate to good quality; may require follow up exploration.
- Sample site with one or more DIM of moderate quality; may require follow up exploration.
- Mineral Permits held by Brilliant Mining Corp.

DIM = Diamond Indicator Minerals

BRILLIANT MINING CORP.

ALBERTA

DIAMOND INDICATOR MINERAL TRENDS

Scale 0 100 200 Kilometres

APEX Geoscience Ltd.

EDMONTON, ALBERTA

February, 2001

(Modified after Dufresne *et al.*, 1996)

FIGURE 5.

for DIM picking and the picked grains were probed at the University of Alberta's microprobe facility. The microprobe results of the grains picked by Fraser (1999a, b) have been obtained by APEX and included in this report for review and interpretation.

Geophysics

During early March, 1999, EXCEL GEOPHYSICS INC. (EXCEL) of High River Alberta, completed a winter ground magnetic survey over sections 13, 24 (Tp. 66, Rg. 4) and sections 18, 19 (Tp. 66, Rg. 3) of the Medley River permit area (Kruszewski *et al.*, 1999) (Figure 7). One large grid at a cross line spacing of 200 m using north-south lines was cut and surveyed. The spacing between individual magnetometer readings was 20 m. The magnetic data was collected using a GEM Systems GSM-19 Overhauser and Omnimetrics G816 magnetometer with a GSM-19 and Omni IV base station to correct for diurnal variation of the magnetic field. Anomalous magnetic readings from man made structures (ie. culture) such as well heads and pipelines were removed from the data set. EXCEL produced a series of preliminary maps and profiles but did not produce a final report outlining the logistics, scientific or interpretative aspects of the survey they conducted. Kruszewski *et al.* (1999) on behalf of Brilliant produced an internal company document that outlines some of the survey parameters and preliminary interpretations of the survey data. The interpretation presented below is based on a review by APEX of the available preliminary maps provided by EXCEL.

Results

The bulk gravel samples (Bulk-1 and Bulk-2) collected from the Medley River drainage by Brilliant employees or subcontractors during 1999 returned encouraging DIM results, despite the unconventionally large sample size. The Bulk-1 sample returned a total of 9 definite pyrope garnets, 3 possible chrome diopsides, and 1 possible eclogitic garnet. The Bulk-2 sample returned 59 definite pyrope garnets, 23 possible pyrope garnets, 3 definite and 7 possible chrome diopsides, and 1 possible eclogitic garnet. The mineral pick results for the DIMs are listed in Appendix 3. Microprobe analyses for the indicator grains recovered from these two bulk samples have not been conducted.

The Medley River gravel samples collected by Fraser (1999 a, b) yielded gold and DIMs. These results are documented in Fraser's (1999b) report. The corrected gold assay results, in ppb, for samples MR-01 to MR-10 are listed in Table 3 however, data for MR-11 and MR-12 were not reported. Only the non-magnetic 0.1 to 0.5 mm size fraction from the gravel samples were analysed. The fine, coarse and magnetic fractions were not analysed for gold; therefore the gold results reported here likely underestimated the total concentration of gold for these samples.

TABLE 3
GOLD ASSAY RESULTS (FRASER, 1999b)

	MR 01	MR 02	MR 03	MR 04	MR 05	MR 06	MR 07	MR 08	MR 09	MR-10 A	MR-10 B	MR 11	MR 12
Au (ppb)	0.2	12.3	0.5	1.0	0.3	1.6	45.6	2.9	9.3	0.8	1.1	N/A	N/A

N/A=not available

Fraser (1999 a, b) did not document exact DIM pick results, however he does state that several possible pyrope garnets, chrome diopsides and picroilmenites were present. A total of 11 DIMs were confirmed by microprobe analysis from six of the samples collected by Fraser (1999 a, b). These samples yielded several pyrope garnets, including one Gurney (1984) subcalcic G10 pyrope garnet and several picroilmenites. Although the samples were not collected by APEX, subsequent sampling by APEX and data review and interpretation by APEX has corroborated the results obtained by Fraser and others. Microprobe data for these DIMs is included in Appendix 4 and respective chemistry plots displaying the data are in Appendix 5.

Nine possible garnets were selected for microprobe analyses (Appendix 4). Eight of the garnets are lherzolitic in composition (G9 pyrope garnets) and one is harzburgitic in composition (subcalcic G10 pyrope garnet) based on the Gurney (1984) garnet classification. The division in composition can be seen on a CaO vs Cr_2O_3 chemistry plot where the G10 garnet plots to the left of Gurney's (1984) 85% line indicative of high diamond potential (Appendix 5). G10 pyropes are derived from harzburgitic mantle and are commonly associated with diamonds that have been incorporated into the kimberlite.

Some of the G9 pyrope garnets contain high concentrations of Cr_2O_3 approaching 10wt% or more and low concentrations of CaO. These high chrome G9 pyropes are considered by some explorationists to be prospective in that some of the grains may have been derived from the diamond stability field. All of these pyropes are likely derived from kimberlites that have sampled lherzolitic or metasomatized harzburgitic mantle.

In total, two picroilmenite grains were analysed and are characterized by high concentrations of MgO (12–14 wt%) and low FeO (<40 wt% total Fe as FeO), which is typical of Mg-rich ilmenites derived from kimberlites. The low Fe and high MgO generally indicate a state of low oxygen fugacity within the kimberlite magma, a trait that is considered favourable for preservation of diamonds. In hot, oxidising environments, diamonds readily convert to CO_2 and/or graphite.

The results of the ground geophysical survey conducted over a four-section area in the vicinity of May Lake were inconclusive and did not likely indicate the presence of a kimberlite body. An outline of the extent of the ground geophysical survey is shown on Figure 7. This interpretation is based upon a review of preliminary maps provided by EXCEL to Brilliant. The survey does tend to indicate an overall south to north transition in the bedrock geology from a relatively low magnetic intensity (granite pluton or gneiss) in the south to a lithology with a higher magnetic signature (mafic gneiss or greenstone) in the north. Anomalous readings were only recovered on one line (line 4) of the survey (UTM NAD 27; 534360 mE, 6064400 mN). This isolated magnetic high is approximately 80 m to 100 m wide and is approximately 100 nT above background (59060 nT) for the area. This anomaly is likely too narrow to be representative of a kimberlite body and the magnitude is suggestive of a culture source for the anomaly.

1999 AND 2000 EXPLORATION

1999 APEX Exploration

Prospecting and Sampling

During late summer of 1999, Mr. M. Dufresne of APEX conducted two days of gravel and river sediment (heavy mineral concentrate) in the vicinity of the Medley River (Figure 6). Sample locations are listed in Appendix 2. The samples that were collected (9TK001 to 9TK005) consisted of nearly full five-gallon pails of unscreened riverbed (recent and ancient) gravel. Many of the larger cobble to boulder sized detritus was not collected for sampling, as this size fraction is unnecessary for DIM recovery.

Geophysics

There were no geophysical surveys carried out by APEX during the 1999 exploration season.

Sample Results

All five samples were sent for DIM processing and picking to the SRC in Saskatoon. The samples were also processed for gold grains. A total of 20 DIMs were picked from the five samples (9TK001 to 9TK005) collected by APEX with the bulk of the indicator minerals coming from samples 9TK002, 9TK004 and 9TK005. Appendix 3 summarizes the DIM pick results.

At least a couple of samples yielded a diverse assemblage of indicator minerals (including pyrope garnets, chrome diopsides, eclogitic garnets and chrome grossular garnets). Several of the pyropes are angular and are up to 1.0 mm in size (Figure 8). In addition, a few of the pyropes display weak orange peel texture, which is a remnant of the reaction rim normally formed by interaction of the xenocryst with the enclosing kimberlite magma. The morphology, size and abundance of the indicator minerals recovered from the Medley River indicate the DIMs have not been transported significant distances in a fluvial environment. Presence of DIMs in most of the samples indicate that the recent and glacial gravels are likely eroding kimberlitic or lamproitic source rocks within the region.

The DIMs confirmed through microprobe analyses include Gurney G9 pyrope garnet, chrome diopside and picroilmenite. Microprobe analyses of the indicator minerals are included in Appendix 4 followed by mineral chemistry plots in Appendix 5. All of the pyropes acquired from the APEX sampling program are G9's and plot within the garnet lherzolite field. The G9 lherzolitic pyropes are of little use in qualifying the diamond potential of a prospective source kimberlite, however, they are a strong indication that kimberlites exist in the region. Four of the lherzolitic garnets yield high TiO_2 values (>0.6 wt%) and have low Cr_2O_3 (<4 wt%). These grains classify as G1/G2 megacrystic or macrocrystic pyrope garnets, which are known to be almost exclusively derived from kimberlites (Mitchell, 1989). Microprobe analyses revealed three garnets to be chrome grossular garnets containing Cr_2O_3 contents between 12 and 19 wt%. These garnets may or may not be derived from kimberlite or related alkaline intrusions.

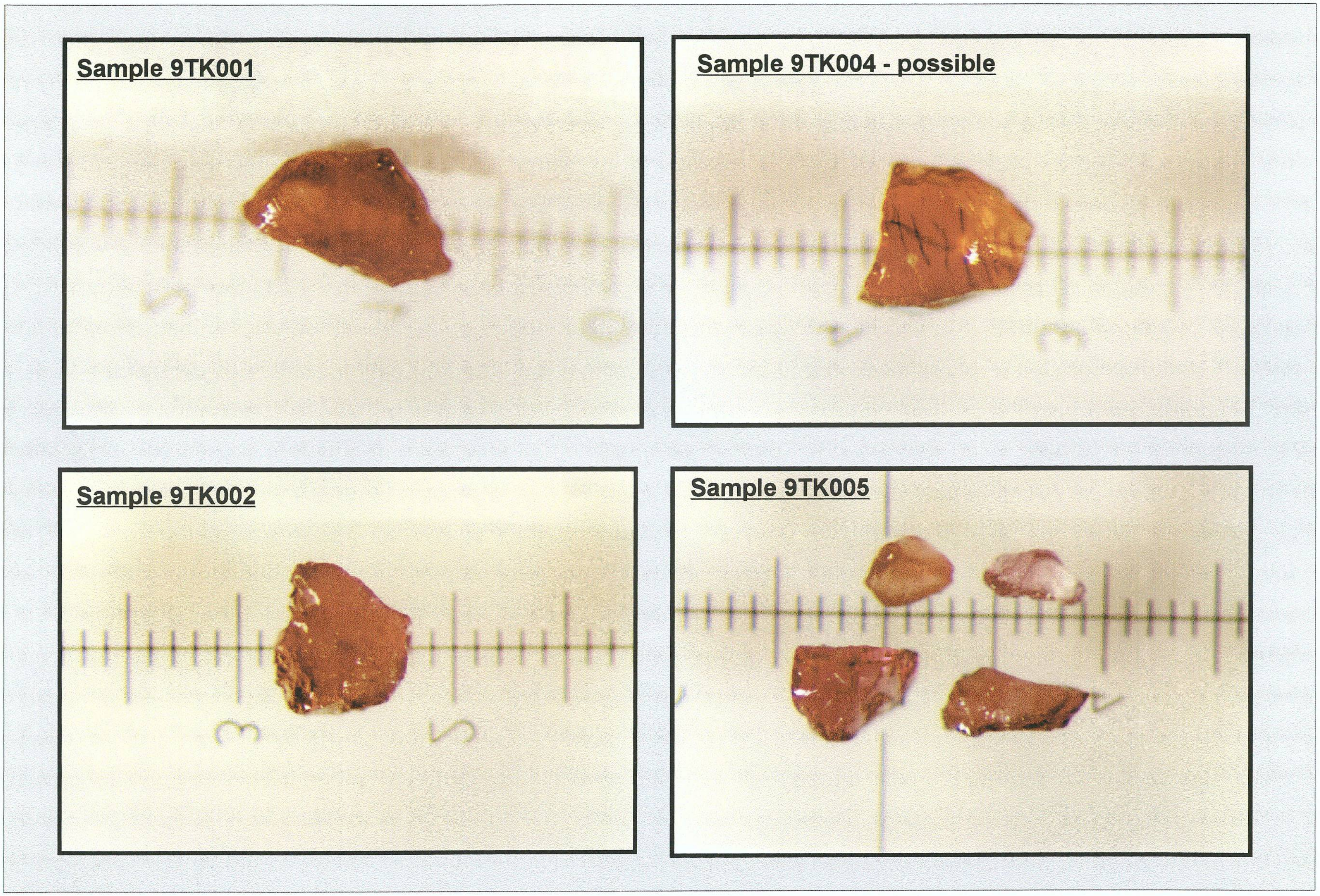


Figure 8. Photomicrograph of picked pyropes from Brilliant Mining Corp.'s Medley River property, Cold Lake, Alberta. The scale bar in the background is in milimetres.

Two chrome diopsides were recovered from the 1999 Medley River samples; one each from samples 9TK004 and 9TK005. These grains have chemistries similar to chrome diopsides from the Mountain Lake Kimberlite and the Lac de Gras area and plot within the field of mantle-derived chrome diopsides (Appendix 5). The chrome diopsides cannot be used to assess diamond potential but they are likely derived from lherzolitic mantle that has been brought to surface by a kimberlite or related alkaline intrusive.

Five picroilmenite grains were analysed from samples 9TK001, 003, 004, and 005. These grains are characterized by high concentrations of MgO (11.5 to 15 wt%), elevated Cr_2O_3 (up to 1.09 wt%) and low concentrations of total Fe (<40 wt% total Fe as FeO) (Appendices 4 and 5). The picroilmenite grains recovered are most likely derived from a kimberlite or closely related alkaline intrusion.

2000 Brilliant Exploration

Prospecting and Sampling

During the summer 2000 exploration season, Tom Bryant, Vice President of Brilliant Mining, collected 25 surface samples (BM-1 to BM-12 and BM-14 to BM-26), each weighing approximately 20 kg, in the Marie Lake area (Figure 6). The samples collected were not panned to a concentrate at the sample sites. Sample locations and comments are listed in Appendix 2. The samples were submitted to the SRC in Saskatoon for DIM analyses. The samples were then sent to Tom Bonli at the University of Saskatoon for microprobe analyses.

Airborne Geophysics

A high-resolution fixed-wing airborne magnetic (HRAM) survey was conducted by Spectra Exploration Geoscience Corp. (Spectra) during May 2000 (Figure 7). The Spectra survey was flown using a twin engine Navajo with a single tail boom magnetic sensor. The survey was flown at an approximate mean terrain clearance of about 90m along crosslines spaced at 200 m. Tielines were flown at 1.0km intervals. The data provided by Spectra includes grids of total magnetic intensity (TMI), calculated horizontal and vertical magnetic gradient (HG and VG), 1st vertical derivative (1VD), a shallow bandpass (BP1) and a shallow target (ST) filter (combined bandpass and gradient).

Sample Results

All samples collected by Mr. Bryant were processed for DIMs. A total of 7 definite and 5 possible pyrope garnets, 3 definite and 5 possible chrome diopsides, 14 possible eclogitic garnets, 6 possible olivines, and 2 possible picroilmenites were picked from the samples. DIM pick results are listed in Appendix 3. Microprobe results from BM-1 to BM-12 and BM14 to BM-26 have been received.

A total of 32 indicator minerals were confirmed by microprobe analyses from samples BM-1 to BM-12 and BM-14 to BM-26. Out of the 12 pyrope garnets picked 10 were confirmed as pyropes by microprobe analyses. Eight eclogitic garnets were confirmed as well as eight chrome diopsides. Microprobe results are in Appendix 4 and the respective chemistry scatter plots for each mineral are in Appendix 5.

On a CaO vs Cr_2O_3 chemistry plot with Gurney's (1984) 85% line, three of the analysed pyrope garnets plot within the harzburgitic or G10 field (along with one pyrope from a prior sampling campaign). Four of the pyrope garnets contain concentrations of TiO_2 greater than 0.6wt% and concentrations of Cr_2O_3 of less than 4wt% classifying them as G1/G2 garnets. The results are similar to the results obtained by APEX during 1999.

Eight of the possible eclogitic garnets have high FeO compositions (26 to 30 wt%) and low to moderate MgO compositions (2 to 10 wt%), which is likely indicative of crustal derived almandine garnet. In addition, several of the high FeO garnets have MnO compositions greater than 2 wt% confirming that the garnets are likely crustal derived. However, four of the possible eclogitic garnets contain less than 22wt% FeO with MgO ranging from 6.30 up to 13.43 wt%. All of these garnets contain elevated TiO_2 and at least two of the garnets contain elevated Na_2O. On a scatter plot of FeO vs MgO these garnets plot within the field of eclogitic garnets found as inclusions in diamonds (commonly known as the diamond inclusion field), therefore confirming that they are likely derived from mantle eclogite and that they could have been derived from the diamond stability field (Appendix 5). All four and in particular the two high MgO eclogitic garnets are of excellent chemistry.

The three confirmed chrome diopsides yield similar compositions as those analysed from the APEX samples and also plot within the Lac de Gras and Mountain Lake chrome diopside compositional fields (Appendix 5). The mantle (lherzolite) derived chrome diopsides are characterized by low FeO and elevated Na_2O that mimics increases in Cr_2O_3.

Figure 9 is a map that qualitatively displays the diamond indicator mineral results by ranking samples based upon the types and quality of indicator minerals recovered from sampling to date. The best sample results to date are from those samples concentrated around the Medley River drainage. Good DIM results have also been obtained from the Martineau River (Dufresne and Copeland, 1999).

A hand specimen that was collected by Mr. Ted Belter from the Medley River area during the summer 2000 was sent to Vancouver Petrographics Ltd. (VPL) for thin sectioning and microscopic interpretation. A copy of the report provided by VPL is in Appendix 6. VPL described the sample as being an altered mafic volcanic breccia consisting of prismatic pyroxene with interstitial devitrified glass, clinopyroxene phenocrysts and remnants of biotite or phlogopite (Appendix 6). Alteration to amphibole, mica, epidote and carbonate is also evident. Quartz and chalcedony are also reported to infill fractures and cavities within the groundmass. VPL indicated that if kimberlites were suspected in the area that larger portions of the rock should be submitted for DIM analysis as the breccia could have kimberlitic affinities.

Geophysics Results

The total field magnetic intensity from the HRAM survey indicates the presence of two basement magnetic highs: a prominent northeast-southwest oriented feature along the southeast portion of the survey area and a prominent bulls eye type magnetic high north of May Lake along the north-central boundary of the survey area. The magnetic intensity range is about 600 nT across the entire survey area excluding spikes due to culture. The prominent large amplitude magnetic highs likely represent the magnetic signature of the basement rocks at depths that likely exceed 1 km.

A review of the airborne geophysical profile data and magnetic maps resulted in the identification of 94 shallow based high frequency magnetic anomalies that are unlikely related to culture such as wells and pipelines (Figure 10). A preliminary review of the magnetic data indicates that there are a number of magnetic anomalies that are likely related to shallow geological features such as glacial sand and gravel deposits with magnetite and potentially some that could be related to kimberlites. The locations and descriptions of these targets are listed in Appendix 7.

A total of 11 magnetic anomalies have been ranked as high priority, 11 have been ranked as moderate priority and 72 have been ranked as low priority anomalies. The high priority magnetic anomalies are generally comprised of well defined, narrow peaks or shoulders of 4.0 to 13.5 nT in magnitude. Figure 10 indicates the presence of several interesting clusters of high, moderate and a few low priority anomalies, which are excellent target areas for further surface sampling. Approximately seven clusters are identified in the Marie Lake area. Two clusters exist north of Marie Lake and another two northwest of Marie Lake. The clusters to the north of Marie Lake are likely in a position that was up-ice from diamond indicator minerals recovered from the Medley River. The fifth cluster of magnetic anomalies is located within Marie Lake and the sixth cluster exists along the southeast shore of Marie Lake. The seventh cluster is located on the northwest shore of Cold Lake just south of the mouth of the Medley River. A northwest-southeast trend of high and moderate priority magnetic anomalies extends from the western edge of the property to Cold Lake. A number of these anomalies roughly correspond to the underlying Helina Valley subsurface channel.

In summary, there are a number of magnetic anomalies some of, which are considered high priority for kimberlite exploration, which have been identified from the Medley River HRAM survey flown by Spectra. These anomalies in conjunction with the number and types of DIMs that have been recovered from the Medley and Martineau rivers indicate that the Cold Lake area is a high priority target area for kimberlite exploration.

EXPLORATION EXPENDITURES

Brilliant reports that a total of $413,620.25 including GST has been spent on the Medley River property to date. This total includes documented expenditures pertaining to ground and airborne geophysical surveys, sampling, geochemical surveying, as well as leasing and purchase of required field equipment and supplies totaling $309,532.47 (Appendix 8). The remaining expenditures of $104,087.78 include management and accounting fees as well as general business, office overhead and administration costs etc. (Appendix 8).

DISCUSSION

The local bedrock geology and the underlying Archean and Proterozoic crystalline basement in association with Phanerozoic structures likely provided a favourable environment for the formation and ascent of kimberlitic magmas in the Cold Lake area. Significant crustal thickness (35 to 40 km) underlying the area in combination with a number of important Gurney (1984) G10 subcalcic pyrope garnets are a strong indication that the area was suitable for the formation and preservation of diamonds within the upper mantle. The existence of basement structures such as the Snowbird Tectonic Zone and the Meadow Lake Escarpment as well as a major lithologic boundary between the Proterozoic Thorsby Magmatic Terrane and the Archean Hearne Sub-Province, indicate that the area is highly prospective for the structural pathways that would have been required for the upward migration of kimberlite magmas to surface.

Limited bedrock exposures have been observed and reported within the area due to presence of extensive glacial deposits. Hitchon and Andriashek (1985) indicate that the Lea Park and Belly River formations outcrop within the Cold Lake area, and that lower stratigraphic units of the Smoky Group may be locally exposed in incised valleys. Local bedrock exposed in the area or intersected in near surface drilling is age correlative to bedrock in other parts of Northern Alberta such as the Sturgeon Lake area and the Birch Mountains that has been intruded by kimberlites.

The glacial history for the Cold Lake area is very complex with regions of thick glacial drift, extensive glacial gravel and evidence of extensive glacial tectonism. Drift thickness is known to range from less than 25 m to greater than 175 m with multiple layers of till and glacial outwash. The complex glacial deposits and glacial history can be a serious impediment to exploration for kimberlites. Future exploration programs for kimberlites and diamonds in the Cold Lake area should include a full compilation of the glacial deposits and drift thickness based on the extensive work of Andriashek (1985) and Fenton and Andriashek (1983) prior to conducting any sizeable sampling and/or drilling campaigns in the region. In particular, detailed drift thickness data should be compiled in order to delineate those areas of thick versus thin drift. The areas of thin drift and less glacial complexity should be the focus of any future exploration programs. Those areas underlain by thick drift in preglacial paleo river channels should be omitted from future exploration.

To date, abundant diamond indicator minerals have been recovered from both glacial gravels and recent fluvial gravels along the Medley and Martineau rivers, leading to the observation that the glacial gravels are, in part, a source for the indicator minerals recovered in these rivers. However, the presence of large (>1 mm), unabraded pyrope garnets with orange peel texture within the Medley and Martineau rivers indicates that the Medley and Martineau river drainages are potentially eroding a nearby kimberlite source. The unabraded nature along with orange peel texture of the pyropes along with a number of the other indicator minerals is strongly suggestive of a local source for the minerals. The source for the diamond indicator minerals within both the glacial and recent gravels is likely to the north and/or northeast of the mouth of the Medley River. The morphology and size of the indicator grains is suggestive that the source for the indicator minerals could be within 10 km of their present location under normal circumstances. However, strong evidence exists for extensive glacial thrusting of bedrock and pre-existing glacial units in the vicinity of Cold Lake south of the Medley River and Primrose Lake northeast of the

Medley River. The process of glacial thrusting of blocks of kimberlite could be responsible for transportation of diamond indicator minerals with little or no evidence of abrasion several tens of kilometers.

The chemistry of the diamond indicator minerals recovered to date from the Medley and Martineau rivers is excellent and indicates that there is good potential for the discovery of diamondiferous kimberlites in the region. Limited sampling to date has resulted in the recovery of four Gurney (1984) G10 subcalcic pyrope garnets. This occurrence of multiple G10 pyrope garnets is only the second known location of multiple G10 pyrope garnets in Alberta and is a significant early stage discovery in a grassroots diamond exploration program. Other significant diamond indicator minerals that were recovered from the limited sampling conducted to date include diamond inclusion quality low iron eclogitic garnets, low iron mantle derived chrome diopsides and chrome enriched picroilmenites. The high titanium G1/G2 pyropes and high magnesium, low iron chrome-bearing picroilmenites likely indicate the presence of local kimberlite diatremes in the Medley River area, since these diamond indicators minerals are almost exclusive to kimberlites. Additionally, the low iron chemistry of the picroilmenites is likely indicative of low oxygen fugacity in the kimberlite magma, which is regarded as an important indication that any diamonds carried by the host kimberlite would have been preserved. The variety, size, volume and morphology of the indicator minerals recovered to date strongly suggest that a kimberlitic source may exist within 10 km of the Medley River under normal circumstances. However, it should be noted that strong evidence exists for extensive glacial thrusting in the region, which could have lead to transportation of indicator minerals large distances with little or no evidence of abrasion.

The diamond potential of the area cannot be fully assessed with the limited amount of sampling, and the small number of DIMs that have been recovered to date. Although diamond stability field indicator minerals were recovered, only a small part of the property has been sampled, and therefore a limited population of DIMs have been recovered. It is expected that further systematic sampling will lead to a better understanding of the diamond potential of the property.

A number of magnetic anomalies, of which some are considered high priority for kimberlite exploration, have been identified from the Medley River HRAM survey flown by Spectra on behalf of Brilliant. These anomalies in conjunction with the number and types of DIMs that have been recovered from the Medley and Martineau rivers indicate that the Cold Lake area is a high priority target area for kimberlite exploration.

CONCLUSIONS

The regional setting for Brilliant's Medley River property is considered highly favourable for the presence of diamondiferous kimberlites. The permits are predominantly underlain by Early Proterozoic basement of the Rimbey Magmatic Zone and Archean basement of the Hearne Sub-Province near the southern limit of the property. The Medley River property is located along the north flank of the Meadow Lake Escarpment near the eastern terminus of the Grosmont high and in an area where seismic refraction indicates crustal thickness ranges from 35 to 40 km. In addition, the permit area is in close proximity to the northeast trending Snowbird Tectonic Zone, a major crustal lineament. This regional structural setting is considered complex but favourable for the formation and preservation of diamonds in the upper mantle and their transport to surface during periodic tectonic activity associated with movement along the Peace River Arch, the Grosmont High, the Meadow Lake Escarpment or the Snowbird Tectonic Zone.

The Cold Lake area is underlain by Upper Cretaceous Lea Park and Belly River formation shales, which are roughly age equivalent or slightly younger than the shales that host the diamondiferous kimberlites discovered in the Buffalo Head Hills area and the Birch Mountains. Although the glacial history for the Cold Lake area is very complex with regions of thick glacial drift, extensive glacial gravel and evidence of extensive glacial tectonism, the diamond indicator results to date are considered favourable and potentially indicative of the presence of diamondiferous kimberlites in the vicinity of Brilliant's Medley River mineral permits.

A recent HRAM survey conducted by Spectra indicates the presence of at least 94 potential high frequency magnetic targets that range from low priority to high priority. Exploration by Fraser, APEX and Bryant on behalf of Brilliant has yielded indications of the presence of local mantle-derived intrusives, such as kimberlites in the Cold Lake region with the detection of DIMs particularly in and around the Medley River. Indicator minerals recovered to date include G1, G2, G9 and G10 pyrope garnets, eclogitic garnets, chrome diopsides, picroilmenites and chromites. The size and morphology of the diamond indicator mineral grains, including pyrope garnets up to 1.0 mm in diameter with orange peel texture, indicates that the grains could be proximal to their original source. The preliminary chemistry of the diamond indicator minerals, including the recovery of 4 Gurney G10 sub-calcic pyrope garnets out of a total of 25 pyrope garnets recovered to date, indicates that the potential is good for the existence of diamonds in at least some of the kimberlites that might be present in the region. The Cold Lake area is one of only two areas in Alberta that are known to have yielded multiple G10 sub-calcic pyrope garnets, which are considered indicative of high diamond potential.

Based on these results an aggressive follow-up property-scale exploration program is warranted for the Medley River area including detailed sampling in conjunction with ground geophysical surveys and drilling of high priority targets.

RECOMMENDATIONS

Based upon the favourable regional geological setting and the positive results of exploration conducted to date within the Medley River permits, an aggressive, systematic follow-up exploration program, including drilling, is warranted to search for diamondiferous kimberlites in the Medley River area. Because of the complex overburden and glacial setting with no easy way to recognize kimberlites in the magnetic data it is strongly recommended that an aggressive sampling program be undertaken. Sampling of all beach and streams is strongly recommended as well as an aggressive overburden till sampling campaign using an auger drilling system in order to get below surface ablation till.

The potential for discovery of mantle-derived intrusives within or in close proximity to Brilliant's Medley River property is considered high based upon the regional geological setting in conjunction with the positive results of limited diamond indicator mineral sampling conducted to date. In addition, the presence of high quality Gurney G10 pyrope garnets and high quality eclogitic garnets indicates that the potential for at least some of the kimberlites in the region to host diamonds is excellent. The exploration recommended at Brilliant's Medley River mineral permits is still considered high risk because the presence of kimberlites has not yet been confirmed and exploration is still at an early stage.

At the Medley River permits, exploration should be conducted in two stages and consist of the following:

Stage 1: Conduct a systematic surface sampling program for diamond indicator minerals using a variety of sample mediums including beach and stream sediments and an aggressive overburden till sampling program using an auger drilling system. The sampling program should be conducted in conjunction with a detailed compilation and review of the drift thickness and Quaternary geology for the Medley River property. The Stage 1 program should also include a provision to conduct ground geophysical surveys over a number of moderate to high priority magnetic anomalies. The estimated cost of this program including data collection, processing and interpretation is $200,000, not including a provision for GST.

Stage 2: Conduct a water well or reverse circulation drilling program of 10 to 15 kimberlite targets within the Medley River property. The estimated cost to conduct the Stage 2 drilling program is $300,000, not including a provision for GST.

APEX Geoscience Ltd.

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature
Date Feb. 16, 2001
PERMIT NUMBER: P-5824
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL GEOLOGIST
MICHAEL B. DUFRESNE
ALBERTA

M.B. Dufresne M.Sc., P.Geol.

Andrea Noyes
A.K. Noyes, M.Sc.

February, 2001
Edmonton, Alberta

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CERTIFICATION

I, M.B. DUFRESNE OF [redacted] EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF NORTH CAROLINA AT WILMINGTON WITH A B.SC. DEGREE IN GEOLOGY (1983) AND A GRADUATE OF THE UNIVERSITY OF ALBERTA WITH A M.SC. DEGREE IN ECONOMIC GEOLOGY (1987). I AM REGISTERED AS A PROFESSIONAL GEOLOGIST WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF ALBERTA.

MY EXPERIENCE INCLUDES SERVICE AS AN EXPLORATION GEOLOGIST WITH THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT, YUKON, FROM 1983 TO 1985. FROM 1986 TO 1993, I HAVE CONDUCTED AND DIRECTED PROPERTY EXAMINATIONS AND EXPLORATION PROGRAMS ON BEHALF OF COMPANIES AS A GEOLOGIST IN THE EMPLOY OF R.A. OLSON CONSULTING LTD. AND ITS PREDECESSOR COMPANY TRIGG, WOOLLETT, OLSON CONSULTING LTD. OF EDMONTON, ALBERTA. SINCE JANUARY 1994, I HAVE CONDUCTED AND DIRECTED PROPERTY EXAMINATIONS, PROPERTY EVALUATIONS AND EXPLORATION PROGRAMS ON BEHALF OF COMPANIES AS A PRINCIPAL IN APEX GEOSCIENCE LTD.

I HAVE NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTIES THAT ARE THE SUBJECT OF THIS REPORT OR SECURITIES OF BRILLIANT MINING CORP., NOR DO I EXPECT TO RECEIVE SUCH INTEREST. AS WELL, APEX GEOSCIENCE LTD. HAS NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTIES, OR SECURITIES OF BRILLIANT MINING CORP., NOR DOES IT EXPECT TO RECEIVE SUCH INTEREST.

THIS REPORT ENTITLED "THE DIAMOND POTENTIAL OF BRILLIANT MINING CORPORATION'S MEDLEY RIVER PROPERTY, EAST-CENTRAL ALBERTA" WAS WRITTEN UNDER MY SUPERVISION AND IS BASED UPON THE STUDY OF PUBLISHED AND UNPUBLISHED DATA. I HAVE PERFORMED A FIELD EXAMINATION OF THE MEDLEY RIVER PROPERTY, AND HAVE CONDUCTED CONSIDERABLE FIELDWORK IN THE REGIONS SURROUNDING EACH OF THIS PROPERTY.

I HEREBY GRANT BRILLIANT MINING CORP. OF EDMONTON, ALBERTA, PERMISSION TO USE THIS REPORT AS A QUALIFYING REPORT FOR THE MEDLEY RIVER PROPERTY.

PROFESSIONAL GEOLOGIST
MICHAEL B. DUFRESNE
ALBERTA

M.B. DUFRESNE, M.SC., P.GEOL.

FEBRUARY, 2001
EDMONTON, ALBERTA

CERTIFICATION

I, A.K. NOYES OF [redacted], EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF WESTERN ONTARIO WITH A B.SC. DEGREE IN GEOLOGY (1997) AND A GRADUATE OF THE UNIVERSITY OF ALBERTA WITH AN M.SC. DEGREE IN GEOLOGY (2000).

MY EXPERIENCE INCLUDES SERVICE AS A GEOLOGICAL ASSISTANT WITH MONOPROS LTD., YELLOWKNIFE, NORTHWEST TERRITORIES DURING THE SUMMERS OF 1996 TO 1999. SINCE JUNE 2000, I HAVE BEEN EMPLOYED BY APEX GEOSCIENCE LTD. AS AN EXPLORATION GEOLOGIST.

I HAVE NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTIES THAT ARE SUBJECT OF THIS REPORT OR SECURITIES OF BRILLIANT MINING CORP., NOR DO I EXPECT TO RECEIVE SUCH INTEREST. AS WELL, APEX GEOSCIENCE LTD. HAS NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTIES, OR SECURITIES OF BRILLIANT MINING CORP., NOR DOES IT EXPECT TO RECEIVE SUCH INTEREST.

THIS REPORT ENTITLED "THE DIAMOND POTENTIAL OF BRILLIANT MINING CORPORATION'S MEDLEY RIVER PROPERTY, EAST-CENTRAL ALBERTA" IS BASED UPON STUDY OF PUBLISHED AND UNPUBLISHED DATA AND FIELD EXAMINATIONS CONDUCTED THEREON. I HAVE NOT PERSONALLY VISITED THE PROPERTIES THAT ARE THE SUBJECT OF THIS REPORT.

I HEREBY GRANT BRILLIANT MINING CORP., EDMONTON, ALBERTA, CANADA PERMISSION TO USE THIS REPORT.

[redacted]

A.K. NOYES, M.SC.

FEBRUARY, 2001
EDMONTON, ALBERTA

APPENDIX 1

LEGAL DESCRIPTION OF MEDLEY RIVER PERMITS

APPENDIX 1

LEGAL DESCRIPTION OF MEDLEY RIVER PERMITS

PERMIT NUMBER	LEGAL DESCRIPTION
9399060001	**4-01-063**: 1-7; 8SW, NWP; 9NEP;10NP; 11NWP, NEP; 12 NWP; 13SP, NW, NEP; 14S, NWP, NE; 15N, SE, SWP; 16SP, NW, NEP;17P; 18S, NP; 19 SEP, SWP, NW, NEP; 20P; 21N, SE, SWP; 22N, SEP, SW; 23-28; 29SP, N; 30-36.
9398120012	**4-01-066:** 19; 29-32; **4-02-066:** 19-36.
9399060002	**4-02-063:** 1SE, L5NE, L12SE; 2W, L7NW, L10W; 3; 8-17; 18N; 19; 20; 21S, NE, L13SW, L14SE; 22; 23; 24N, SEP, SW; 25-27; 28S; 29S; 35; 36.
9399060003	**4-02-64:** 1; 2E, WP; 11E, WP; 12; 13; 14N, SE, SWP; 15SP, N; 16NP, SEP; 22-26; 35; 36.
9398120010	**4-02-065:** 1-9; 11N, SEP, SW; 12-23; 24EP, W; 25N, SEP, SW; 26-36.
9398120013	**4-02-066:** 1-18; **4-02-066:** 1-18.
9399060004	**4-03-064:** 19-36.
9398120011	**4-03-065:** 1-25; 26S, NWP, NE; 27-34; 35N, SE, L5, L6; 36.
9399110001	**4-03-066:** 19; 20; 22SE, L9, L10; 23-26; 27N, L4, L5; 28S, NE, L11, L12; 29-32; 33SE; 34; 35S, L9; 36; **4-04-066:** 1-3; 10-15; 22-27; 34-36.

Permit boundaries as of January 23, 2001

APPENDIX 2

SAMPLE LOCATIONS

APPENDIX 2

SAMPLE LOCATIONS

Sample Name	Easting	Northing	Comments
NAT92-32	543529	6030717	Alberta Geological Survey and Geological Survey of Canada
NAT92-33	543528	6030717	Alberta Geological Survey and Geological Survey of Canada
43-4-1-T	551798	6034916	Alberta Geological Survey and Geological Survey of Canada
Bulk-1	549470	6057378	Medley River
Bulk-2	551320	6054176	Medley River
MR-01	551025	6053990	0 to 1m sand and gravel; water noted at 1m depth.
MR-02	550865	6053300	Sand and gravel.
MR-03	551.03	6054095	Sand and gravel.
MR-04	551390	6054200	0 to 0.5m sand and gravel; 0.5 to 1m clay.
MR-05	551180	6053885	Sand and gravel.
MR-06	551270	6053995	Sand and gravel.
MR-07	549415	6057460	Crushed sand and gravel.
MR-08	549420	6057295	Crushed sand and gravel.
MR-09	551100	6053850	Sand and gravel.
MR-10A	551410	6054150	0 to 0.5m sand.
MR-10B	551410	6054150	0.5 to 1.5m sand and gravel.
MR-11	551410	6054150	Sand and gravel.
MR-12	551475	6054200	0 to 0.6m clay; 0.6 to 0.9m sand and gravel; water at 0.7m depth. Note: small sample not submitted for analyses.
9TK001	550754	6058746	Medley River
9TK002	549567	6058260	Medley River
9TK003	553020	6062907	Medley River
9TK004	549470	6057378	Medley River
9TK005	551320	6054176	Medley River
9TK006	562452	6059914	Martineau River
9TK007	564117	6062462	Martineau River
9TK008	566808	6061703	Martineau River
9TK009	563526	6061326	Martineau River
9TK010	562974	6060440	Martineau River
9DCH400	566808	6061703	Martineau River
9DCH401	571210	6065229	Martineau River
9DCH402	564741	6061068	Martineau River
9DCH403	563732	6012685	Beaver River
9DCH404	562189	6011947	Beaver River
BM-1	542535	6051561	Sand sample from course rock area on shoreline.
BM-2	542456	6051977	Shoreline sample west of BM-1.
BM-3	548115	6055883	Shoreline sample.

Sample Name	Easting	Northing	Comments
BM-4	551638	6061261	Drainage sample east of Medley River bridge.
BM-5	551620	6060857	Borrow pit, reworked till?, likely part of channel formation.
BM-6	551969	6058029	Road cut; till sample.
BM-7	551220	6051537	Gravel pit.
BM-8	560040	6065924	Borrow pit.
BM-9	560247	6065110	Road cut.
BM-10	560150	6063954	Garvel cut; till - reworked?
BM-11	?	?	Sandy area; sample of drainage worked sands.
BM-12	541549	6043853	Gravel pit.
BM-14	544822	6051895	Shoreline.
BM-15	544253	6051480	Sand beach west of BM-14.
BM-16	543505	6051242	Shoreline south of lake target.
BM-17	543239	6051839	Shoreline; siginificant black sand in sample.
BM-18	549010	6054537	Down ice of mag target; scoured gravel beach with course rock; clay underbelly.
BM-19	549010	6054537	Fine sandy material from sluff area on hill behind BM-18; till.
BM-20	549459	6054943	Shoreline sample 70m south of BM-18
BM-21	548865	6054669	Shoreline north of BM-18
BM-22	548865	6054669	Fine sandy material from sluff area on hill behind BM-21; till
BM-23	541305	6056304	Sampled in mouth of Marie Creek; sandy area.
BM-24	?	?	Garnet sand skim from beach.
BM-25	546915	6059049	Creek crossing north of Shelter Bay Park; north of wellsite; down ice of mag target; till.
BM-26	546877	6058108	Roadcut east of wellsite; till.

APPENDIX 3

DIAMOND INDICATOR PICK RESULTS

APPENDIX 3

DIAMOND INDICATOR MINERAL PICK RESULTS

Sample Number	Sample Type	Weight (kgs)	Pyrope Garnet DEF	Pyrope Garnet POS	Cr-Diopside DEF	Cr-Diopside POS	Eclogitic POS	Olivine POS	Other POS	% Picked	Picroilmenite DEF	Picroilmenite POS	Chromite DEF	Chromite POS	% Picked
1999 Brilliant Mining Corp.															
Bulk-1	Gravel	1000	9	3	0	3	1	0		100	N/A	N/A	N/A	N/A	N/A
Bulk-2	Gravel	2000	59	23	3	7	1	0		100	N/A	N/A	N/A	N/A	N/A
2000 APEX Geoscience Ltd.															
9TK001	Gravel	33.45	1	0	0	1	0	0		100	0	34	0	0	4
9TK002	Gravel	30.95	1	3	0	2	2	1	1Uv	100	0	16	0	0	5
9TK003	Gravel	27.15	0	0	0	0	0	0		100	0	10	0	0	12
9TK004	Gravel	35.9	0	2	0	1	0	0	1Uv	100	0	10	0	0	17
9TK005	Gravel	46.35	4	0	1	1	0	0		100	0	14	0	0	8
9TK003 (Repick)	Gravel	27.15	0	0	0	0	0	0		100	0	2	0	0	12
2000 Brilliant Mining Corp.															
BM-1 Grey	Beach	8.45	0	3	0	0	2	1		100	0	0	0	0	10
BM-1 Red	Beach	8.45	0	0	0	0	0	1		100	0	0	0	0	15
BM-2	Beach	3.25	0	0	0	0	1	1		100	0	0	0	0	15
BM-3	Beach	6.1	2	0	0	1	6	2		100	0	0	0	0	3
BM-4	Gravel	28.35	0	0	0	0	0	0		100	0	0	0	0	10
BM-5	Till	18.4	1	0	0	0	1	0		100	0	0	0	0	15
BM-6	Till	12.75	0	0	0	0	0	0		100	0	0	0	0	45
BM-7	Gravel	17.15	2	0	1	0	1	0		100	0	0	0	0	10
BM-8	Till	16.7	0	0	0	0	0	0		100	0	0	0	0	100
BM-9	Till	15.7	0	0	0	0	0	0		100	0	0	0	0	100
BM-10	Till	35.3	0	0	0	0	0	0		100	0	0	0	0	100
BM-11	Sand	9.35	0	0	0	0	0	0		100	0	0	0	0	25
BM-12	Gravel	28.35	1	0	0	0	2	1		100	0	0	0	0	10
BM-1 Grey (Repick)	Beach	8.45	1	0	0	1	0	0		100	0	0	0	0	100
BM-14	Beach	32.35	0	0	0	2	0	0	1Uv	100	0	0	0	0	15
BM-15	Beach	25.4	0	0	0	0	0	0		100	0	0	0	0	40
BM-16	Beach	24.3	0	0	0	0	1	0	1Uv	100	0	0	0	0	20
BM-17	Beach	21.45	0	0	2	0	0	0	2Uv	100	0	0	0	0	16
BM-17 Clay	Beach	6.2	0	0	0	1	0	0		100	0	0	0	0	45
BM-18	Beach	28.9	0	0	0	0	0	0		100	0	2	0	0	16
BM-19	Till	27.45	0	0	0	0	0	0		100	0	0	0	0	25
BM-20	Beach	15.25	0	0	0	0	0	0		100	0	0	0	0	20
BM-21	Beach	23.65	0	0	0	0	0	0		100	0	0	0	0	100
BM-22	Till	21.35	0	0	0	0	0	0		100	0	0	0	0	40
BM-23	Beach	27.65	0	0	0	0	0	0		100	0	0	0	0	15
BM-24	Beach														
BM-25	Till	19.8	0	0	0	0	0	0		100	0	0	0	0	100
BM-26	Till	18.45	0	0	0	0	0	0		100	0	0	0	0	100
BM-17	Beach		0	0	0	0	0	0		100	0	0	0	0	16
Repick										100					

DEF=definite; POS=possible
N/A=not available

APPENDIX 4

MICROPROBE ANALYSES

APPENDIX 4

MICROPROBE ANALYSES FOR THE MEDLEY RIVER AREA INDICATOR MINERALS

Sample	Mineral Identification (Dawson and Stephens, 1975)	TiO2	Cr2O3	FeO	MgO	CaO	SiO2	Al2O3	Na2O	MnO	K2O	Total
1999 Fraser Sampling												
MR-01	G_09_CHROME_PYROPE	0.17	3.25	7.12	20.45	4.64	41.69	21.66	0.06	0.30	0.03	99.37
MR-04	G_01_TITANIAN_PYROPE	0.50	5.16	6.97	20.29	5.35	41.02	19.18	0.03	0.27	0.02	98.79
MR-04	G_11_UVAROVITE_PYROPE	0.43	8.66	7.52	18.57	6.46	40.14	16.86	0.05	0.45	0.02	99.16
MR-04	G_10_LOW_CALCIUM_CHROME_PYROPE	0.09	8.27	6.73	20.57	4.27	40.86	17.81	0.00	0.31	0.01	98.91
MR-04	G_10_LOW_CALCIUM_CHROME_PYROPE	0.00	6.74	7.82	18.17	6.56	40.49	18.85	0.02	0.47	0.02	99.13
MR-07	G_10_LOW_CALCIUM_CHROME_PYROPE	0.05	9.57	7.18	18.59	6.56	39.94	16.42	0.02	0.43	0.01	98.76
MR-09	G_09_CHROME_PYROPE	0.22	4.25	8.25	19.72	5.07	41.03	20.53	0.03	0.36	0.02	99.48
MR-09	G_11_UVAROVITE_PYROPE	0.69	7.48	7.15	19.81	5.91	40.78	17.14	0.05	0.24	0.01	99.27
MR-09	G_11_UVAROVITE_PYROPE	0.52	7.84	6.63	19.99	5.95	40.73	16.94	0.04	0.29	0.01	98.94
MR-11	PICRO_ILMENITE	51.20	0.46	32.52	12.62	0.02	0.01	0.50	n/a	0.30	n/a	97.69
MR-10B	PICRO_ILMENITE	52.60	0.71	29.45	14.04	0.01	0.00	0.41	n/a	0.29	n/a	97.66
1999 APEX Sampling												
9TK-001	G_01_TITANIAN_PYROPE	0.48	3.74	6.99	20.89	5.01	42.46	20.13	0.08	0.27	0.06	100.10
9TK-001	Cr-GROSSULAR	0.20	19.01	3.47	0.03	35.09	36.71	5.24	0.05	0.14	0.06	99.99
9TK-001	PICRO_ILMENITE	52.50	0.55	33.87	12.57	n/a	0.00	0.57	n/a	0.23	n/a	100.68
9TK-002	G_11_UVAROVITE_PYROPE	0.38	7.18	8.22	18.95	5.99	41.81	17.21	0.10	0.41	0.00	100.26
9TK-002	G_02_HIGH_TITANIUM_PYROPE	0.85	3.65	7.64	21.27	5.10	41.77	19.83	0.12	0.26	0.00	100.49
9TK-002	G_09_CHROME_PYROPE	0.06	4.70	8.11	19.10	5.65	41.46	19.57	0.09	0.52	0.10	99.37
9TK-002	G_05_MAGNESIAN_ALMANDINE	0.08	0.00	28.05	4.92	6.82	37.51	21.34	0.00	1.92	0.00	100.64
9TK-002	G_05_MAGNESIAN_ALMANDINE	0.06	0.05	24.13	7.79	7.81	38.60	21.28	0.00	0.41	0.00	100.12
9TK-002	FERRO_GROSSULAR	0.20	0.00	9.72	0.06	23.85	37.90	25.49	0.00	0.20	0.00	97.41
9TK-002	Cr-GROSSULAR	0.35	12.68	4.89	0.27	33.21	38.06	9.35	0.02	0.76	0.00	99.57
9TK-003	PICRO_ILMENITE	51.00	0.34	35.14	11.51	n/a	0.01	0.24	n/a	0.28	n/a	98.84
9TK-004	CPX_05_UNKNOWN	0.24	1.69	3.21	15.09	23.52	53.83	2.45	0.73	0.10	0.00	100.85
9TK-004	G_01_TITANIAN_PYROPE	0.84	3.03	8.39	20.13	5.28	42.45	19.08	0.08	0.32	0.00	99.60
9TK-004	Cr-GROSSULAR	0.26	19.08	4.73	0.05	32.74	36.44	6.09	0.09	0.25	0.00	99.74
9TK-004	PICRO_ILMENITE	52.32	0.53	33.07	13.18	n/a	0.00	0.53	n/a	0.30	n/a	100.34
9TK-004	PICRO_ILMENITE	53.60	0.66	30.94	13.58	n/a	0.00	0.50	n/a	0.38	n/a	99.86
9TK-005	CPX_05_CHROME_DIOPSIDE	0.30	0.93	2.50	14.65	21.95	52.76	5.56	1.49	0.11	0.02	100.26
9TK-005	G_01_TITANIAN_PYROPE	0.63	5.10	6.82	21.32	5.06	41.78	18.51	0.09	0.37	0.00	99.69
9TK-005	G_09_CHROME_PYROPE	0.09	5.27	7.92	20.34	5.32	41.81	19.60	0.05	0.48	0.00	100.88
9TK-005	G_10_LOW_CALCIUM_CHROME_PYROPE	0.18	6.71	7.43	19.43	6.11	40.88	18.17	0.06	0.39	0.14	99.50
9TK-005	G_11_UVAROVITE_PYROPE	0.61	9.68	6.35	19.74	6.72	41.94	14.98	0.05	0.33	0.01	100.41
9TK-005	PICRO_ILMENITE	54.74	1.09	28.60	15.14	n/a	0.07	0.50	n/a	0.34	n/a	100.87

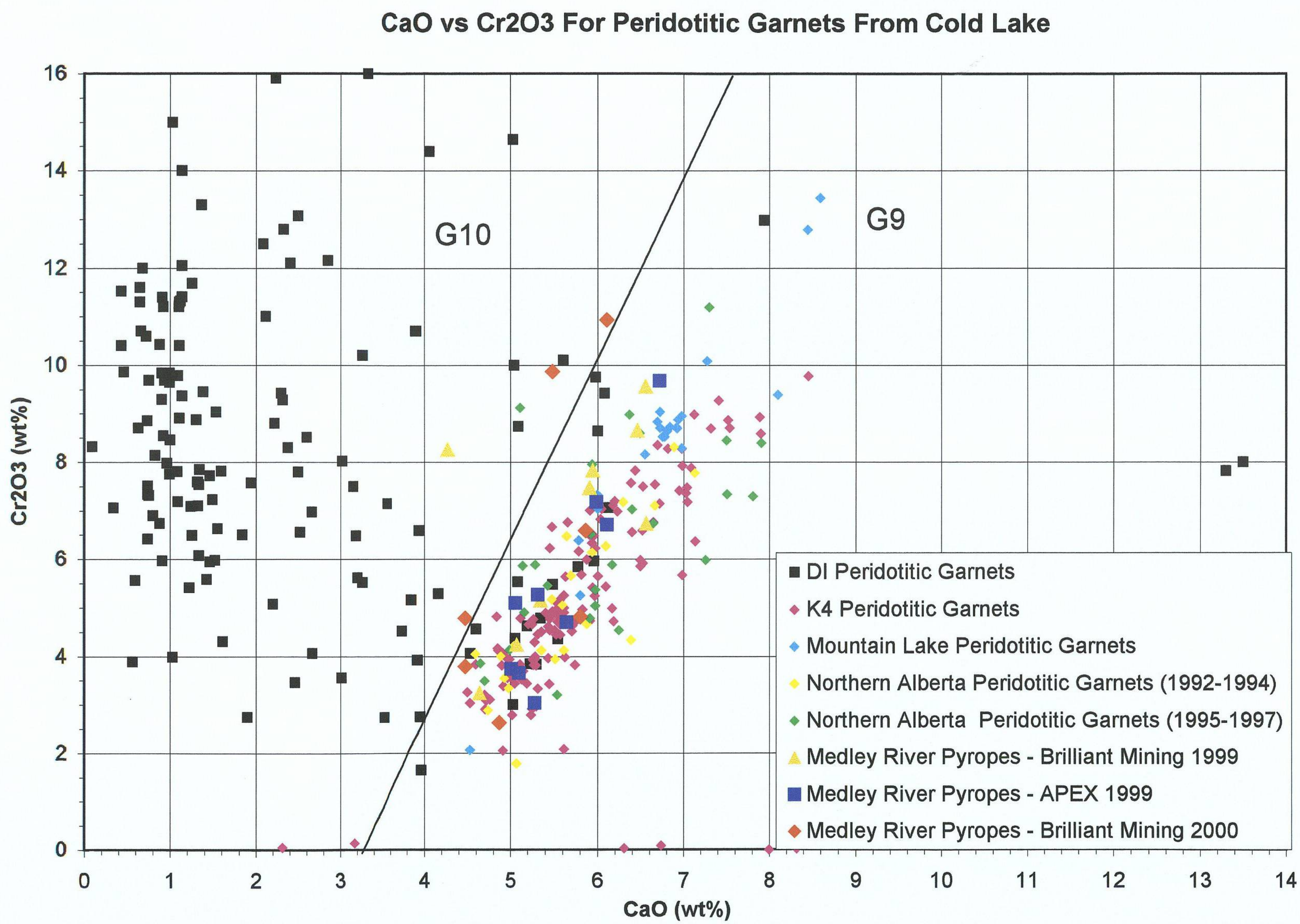
Mineral classification from the program by Quirt (1992a,b); n/a = not analysed

Sample	Mineral Identification (Dawson and Stephens, 1975)	TiO2	Cr2O3	FeO	MgO	CaO	SiO2	Al2O3	Na2O	MnO	K2O	Total
2000 Brilliant Sampling												
BM-1	CPX_05_CHROME_DIOPSIDE	0.00	0.87	2.44	14.97	21.99	51.82	5.89	1.29	0.00	n/a	99.27
BM-1	G_09_CHROME_PYROPE	0.00	3.79	7.62	20.49	4.48	42.10	20.47	0.01	0.34	n/a	99.31
BM-1	G_05_MAGNESIAN_ALMANDINE	0.00	0.07	30.37	3.08	5.02	37.38	20.85	0.08	2.22	n/a	99.08
BM-1	G_05_MAGNESIAN_ALMANDINE	0.06	0.00	27.16	10.20	1.16	39.29	21.64	0.01	0.61	n/a	100.14
BM-3	G_02_HIGH_TITANIUM_PYROPE	0.90	4.82	6.84	20.82	5.81	41.99	18.65	0.03	0.01	n/a	99.87
BM-3	G_09_CHROME_PYROPE	0.06	4.79	7.68	20.36	4.48	42.08	19.85	0.08	0.38	n/a	99.75
BM-3	G_04_TITANIAN,_CALCIC,_MAGNESIAN_ALMANDINE	0.71	0.08	21.27	6.30	11.28	39.06	21.49	0.00	0.50	n/a	100.70
BM-3	G_05_MAGNESIAN_ALMANDINE	0.00	0.00	30.03	2.13	5.61	37.55	20.29	0.02	4.08	n/a	99.71
BM-3	G_05_MAGNESIAN_ALMANDINE	0.00	0.06	28.50	2.67	6.16	37.59	20.57	0.00	4.11	n/a	99.65
BM-3	G_05_MAGNESIAN_ALMANDINE	0.07	0.00	29.77	3.83	5.89	37.78	20.74	0.05	1.26	n/a	99.39
BM-3	G_05_MAGNESIAN_ALMANDINE	0.00	0.00	29.61	2.09	5.91	37.47	20.30	0.04	4.17	n/a	99.59
BM-3	CPX_04_UNKNOWN	0.55	1.23	3.84	18.55	19.33	52.99	2.50	0.41	0.10	n/a	99.51
BM-5	G_09_CHROME_PYROPE	0.09	2.63	7.75	20.68	4.87	42.49	21.09	0.06	0.31	n/a	99.97
BM-5	G_05_MAGNESIAN_ALMANDINE	0.00	0.01	26.06	6.65	6.44	38.63	21.50	0.00	0.52	n/a	99.80
BM-7	G_05_MAGNESIAN_ALMANDINE	0.00	0.07	28.56	8.06	3.11	38.92	21.31	0.04	0.72	n/a	100.78
BM-7	G_10_LOW_CALCIUM_CHROME_PYROPE	0.00	9.87	6.72	20.25	5.49	41.44	15.22	0.00	0.31	n/a	99.30
BM-7	G_09_CHROME_PYROPE	0.29	6.59	7.27	19.61	5.87	41.31	18.09	0.00	0.47	n/a	99.50
BM-7	CPX_05_UNKNOWN	0.00	1.24	3.38	14.65	22.86	52.82	2.29	1.04	0.07	n/a	98.36
BM-12	G_11_UVAROVITE_PYROPE	0.66	10.94	6.38	20.33	6.11	40.60	14.84	0.05	0.39	n/a	100.29
BM-12	G_04_TITANIAN,_CALCIC,_MAGNESIAN_ALMANDINE	0.84	0.00	16.28	9.01	12.44	39.47	21.86	0.00	0.25	n/a	100.16
BM-12	G_03_CALCIC_PYROPE_ALMANDINE	0.39	0.01	20.57	7.11	10.68	39.16	21.26	0.04	1.16	n/a	100.39
BM-14	CPX_01_SUB_CALCIC_DIOPSIDE	0.01	0.71	4.45	22.37	11.57	56.57	1.93	0.41	0.12	0.00	98.14
BM-14	CPX_01_UNKNOWN	0.03	0.97	4.49	19.76	12.19	53.62	4.73	0.48	0.10	0.09	96.66
BM-14	Cr-GROSSULAR	0.41	9.44	4.08	0.09	35.04	38.04	11.76	0.00	0.26	0.00	99.12
BM-16	Cr-GROSSULAR	0.22	18.00	1.13	0.38	32.75	36.84	5.82	0.00	3.07	0.04	98.25
BM-16	G_03_CALCIC_PYROPE_ALMANDINE	0.11	0.16	16.43	12.43	7.95	40.25	22.27	0.05	0.50	0.00	100.16
BM-17	CPX_05_UNKNOWN	0.08	1.54	3.41	15.91	22.26	54.54	0.28	1.50	0.10	0.06	99.67
BM-17	CPX_05_CHROME_DIOPSIDE	0.22	1.79	2.55	15.51	21.02	53.10	4.83	1.48	0.14	0.14	100.79
BM-17	Cr-GROSSULAR	0.49	5.44	4.00	0.26	34.66	38.26	14.06	0.02	0.40	0.04	97.64
BM-17	Cr-GROSSULAR	0.50	10.61	4.99	0.25	33.43	37.49	11.15	0.03	0.42	0.00	98.88
BM-17	CPX_01_UNKNOWN	0.02	1.01	2.99	21.56	12.00	54.29	3.84	0.80	0.09	0.12	96.72
BM-26	SUB_PICRO_CHROMITE	0.34	49.84	30.05	7.69	0.00	0.03	10.31	0.00	0.47	0.00	99.02

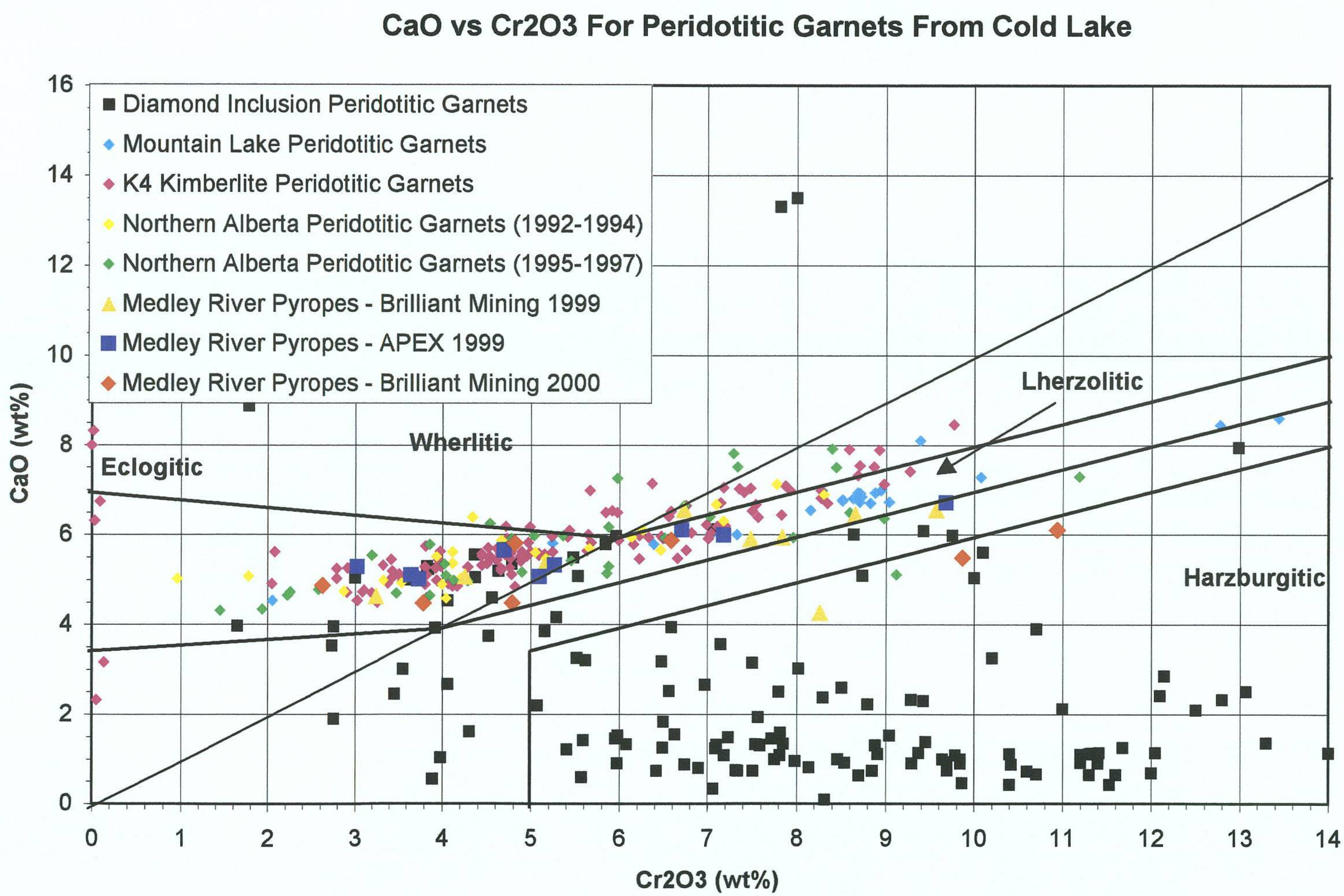
Mineral classification from the program by Quirt (1992a,b)
n/a = not analysed

APPENDIX 5

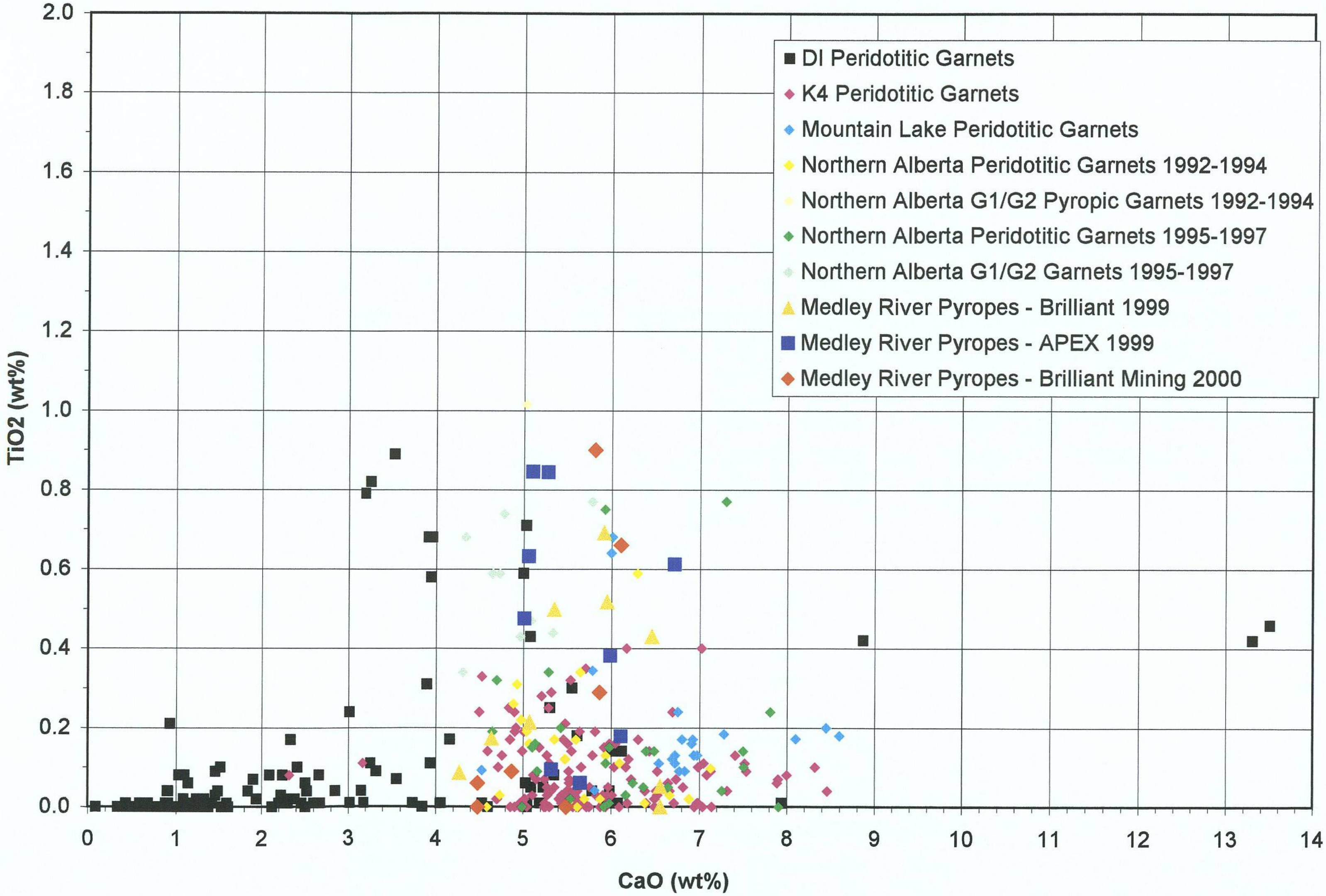
MINERAL CHEMISTRY PLOTS

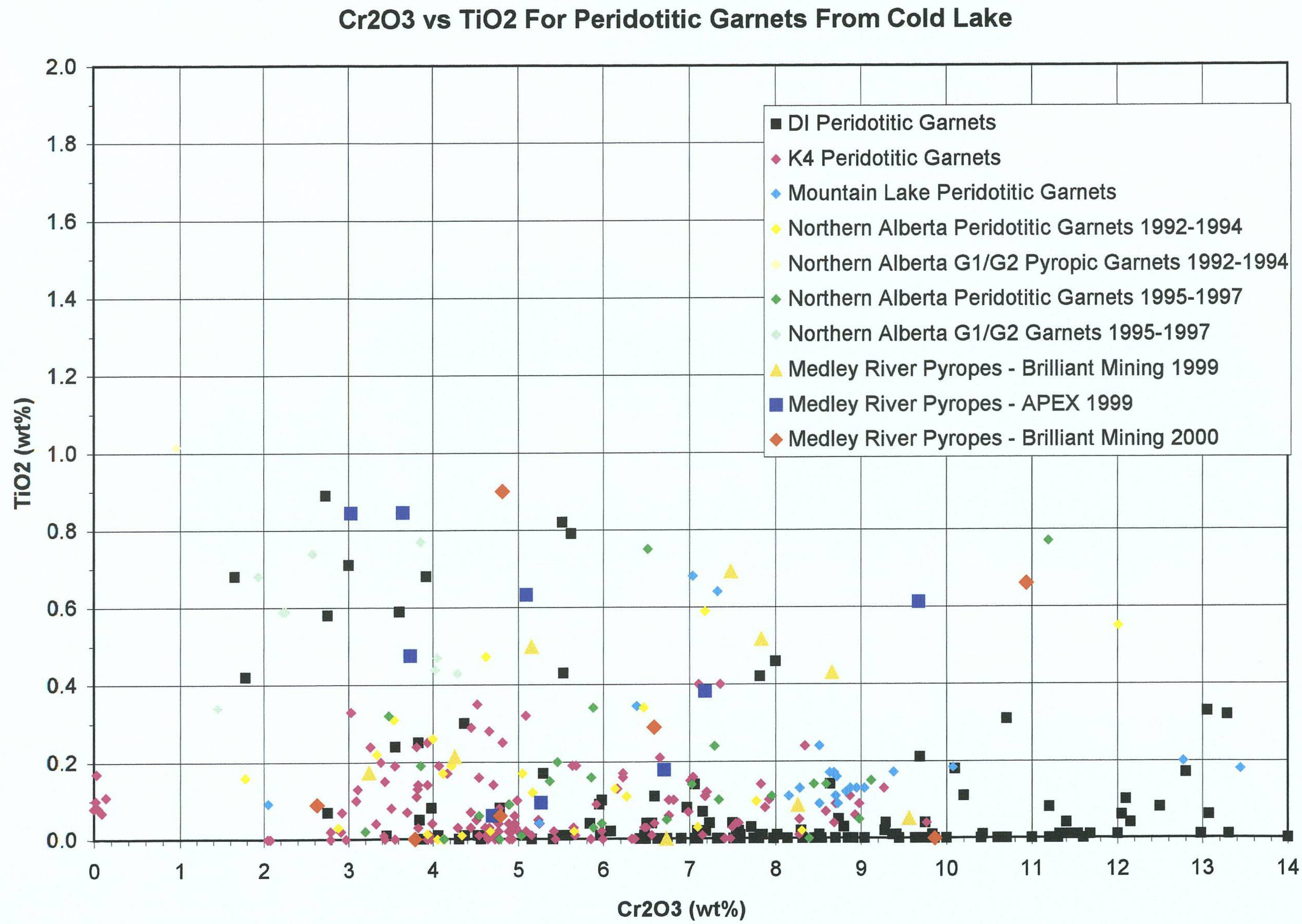


CaO vs Cr2O3 For Peridotitic Garnets From Cold Lake
Cr2O3 (wt%)
CaO (wt%)
16
14
12
10
8
6
4
2
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
G10
G9
DI Peridotitic Garnets
K4 Peridotitic Garnets
Mountain Lake Peridotitic Garnets
Northern Alberta Peridotitic Garnets (1992-1994)
Northern Alberta Peridotitic Garnets (1995-1997)
Medley River Pyropes - Brilliant Mining 1999
Medley River Pyropes - APEX 1999
Medley River Pyropes - Brilliant Mining 2000

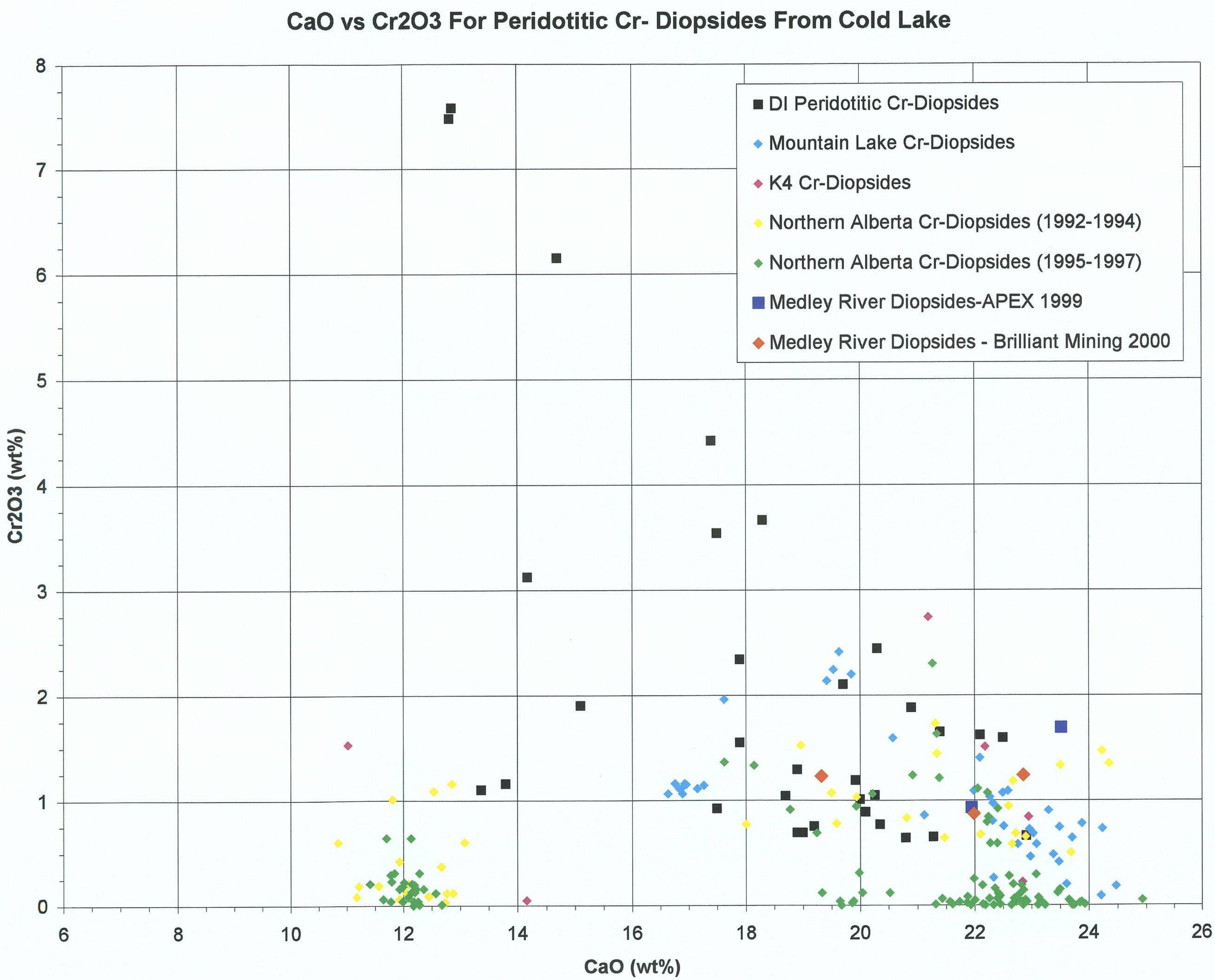

CaO vs Cr2O3 For Peridotitic Garnets From Cold Lake
Diamond Inclusion Peridotitic Garnets
Mountain Lake Peridotitic Garnets
K4 Kimberlite Peridotitic Garnets
Northern Alberta Peridotitic Garnets (1992-1994)
Northern Alberta Peridotitic Garnets (1995-1997)
Medley River Pyropes - Brilliant Mining 1999
Medley River Pyropes - APEX 1999
Medley River Pyropes - Brilliant Mining 2000
Eclogitic
Wherlitic
Lherzolitic
Harzburgitic
CaO (wt%)
Cr2O3 (wt%)
0
2
4
6
8
10
12
14
16
1
3
5
7
9
11
13

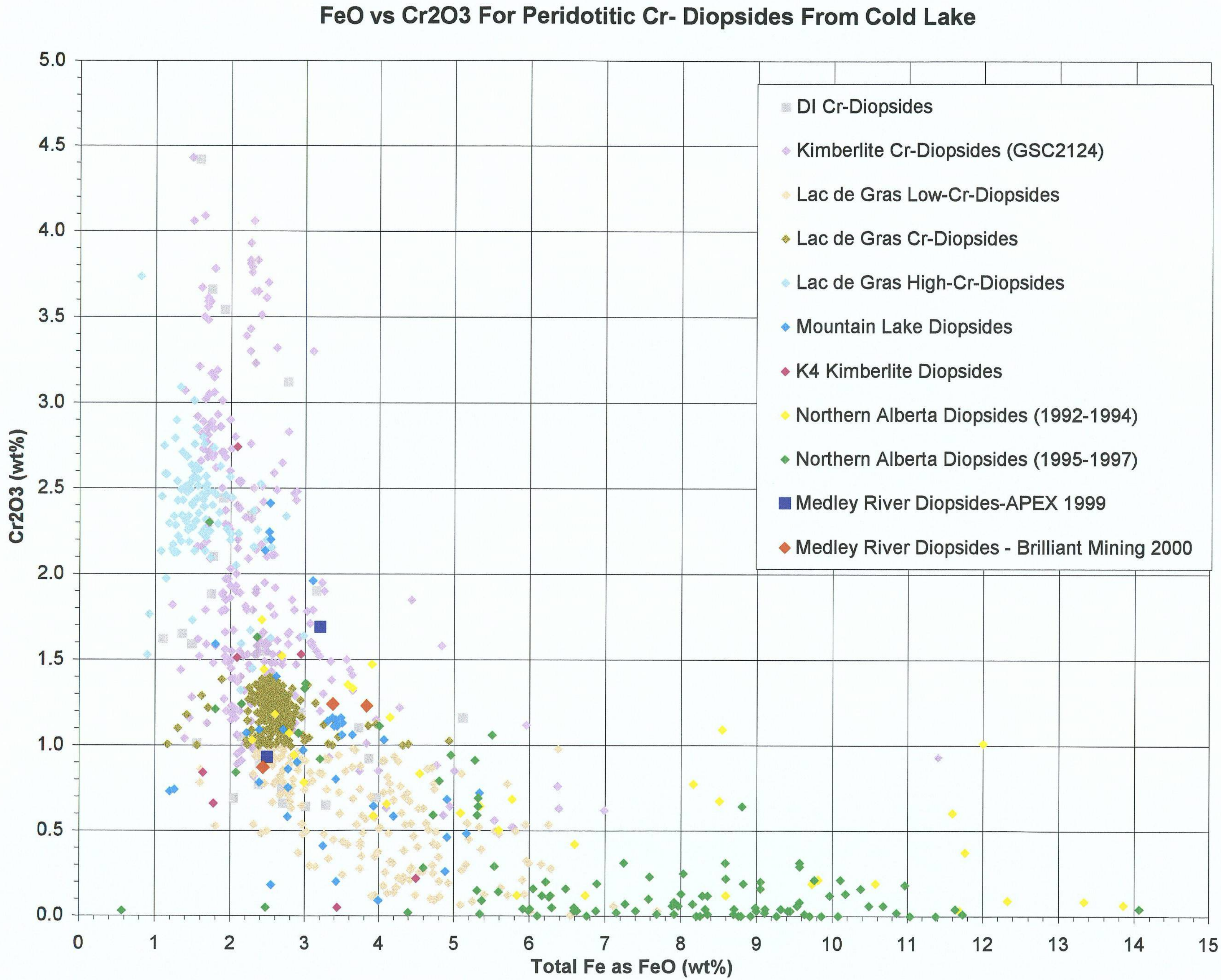
CaO vs TiO2 For Peridotitic Garnets From Cold Lake

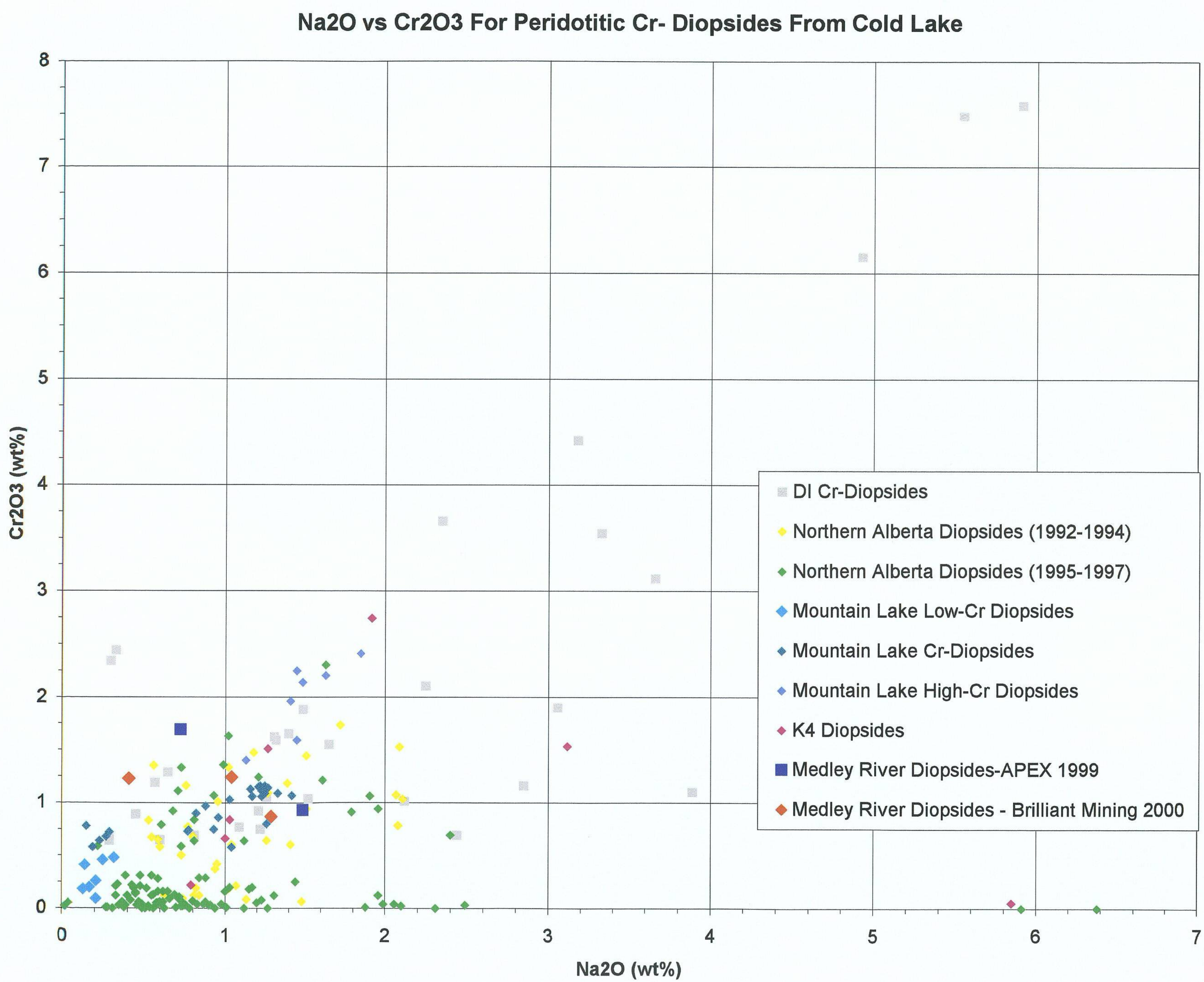




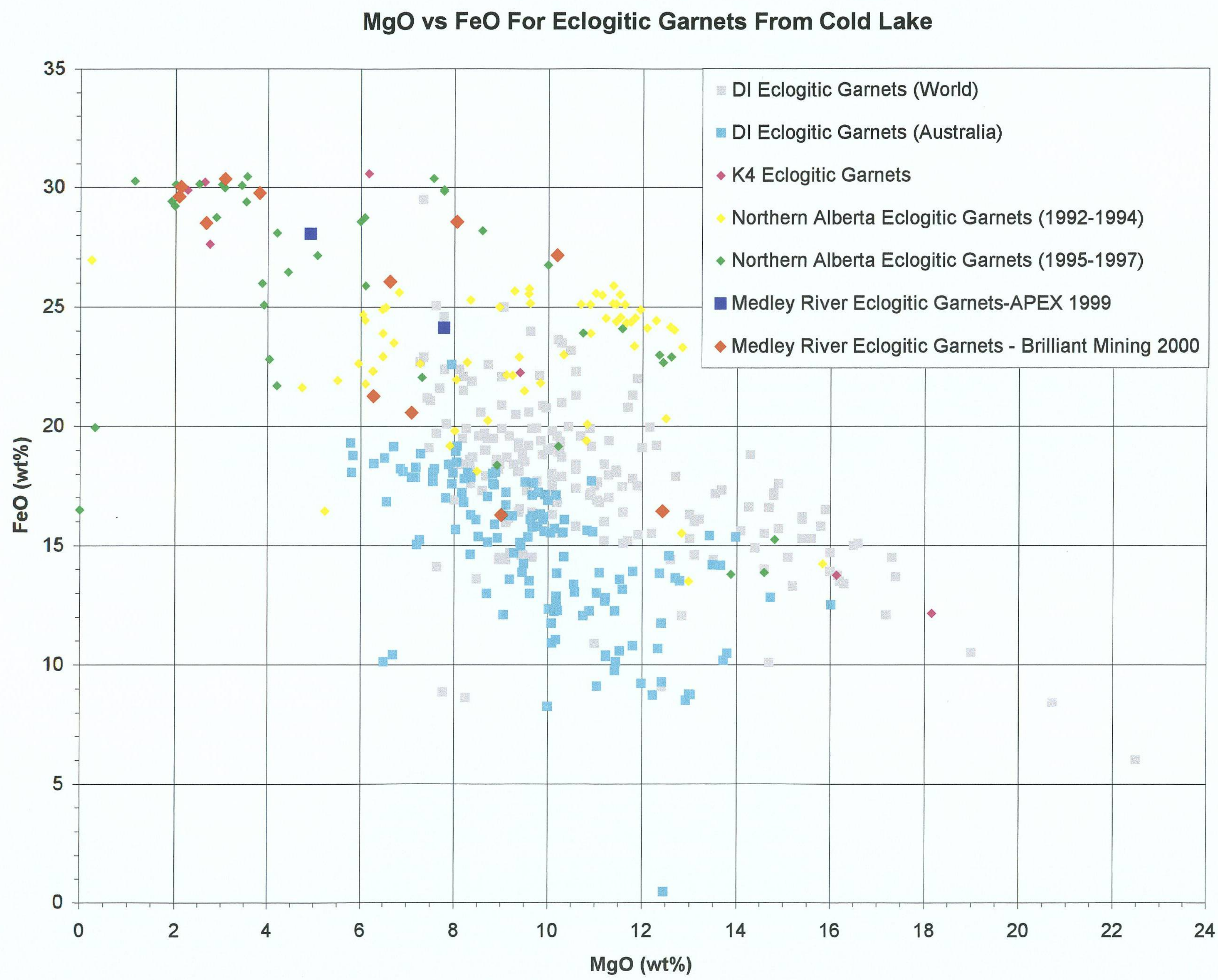
Cr2O3 vs TiO2 For Peridotitic Garnets From Cold Lake
TiO2 (wt%)
Cr2O3 (wt%)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
DI Peridotitic Garnets
K4 Peridotitic Garnets
Mountain Lake Peridotitic Garnets
Northern Alberta Peridotitic Garnets 1992-1994
Northern Alberta G1/G2 Pyropic Garnets 1992-1994
Northern Alberta Peridotitic Garnets 1995-1997
Northern Alberta G1/G2 Garnets 1995-1997
Medley River Pyropes - Brilliant Mining 1999
Medley River Pyropes - APEX 1999
Medley River Pyropes - Brilliant Mining 2000

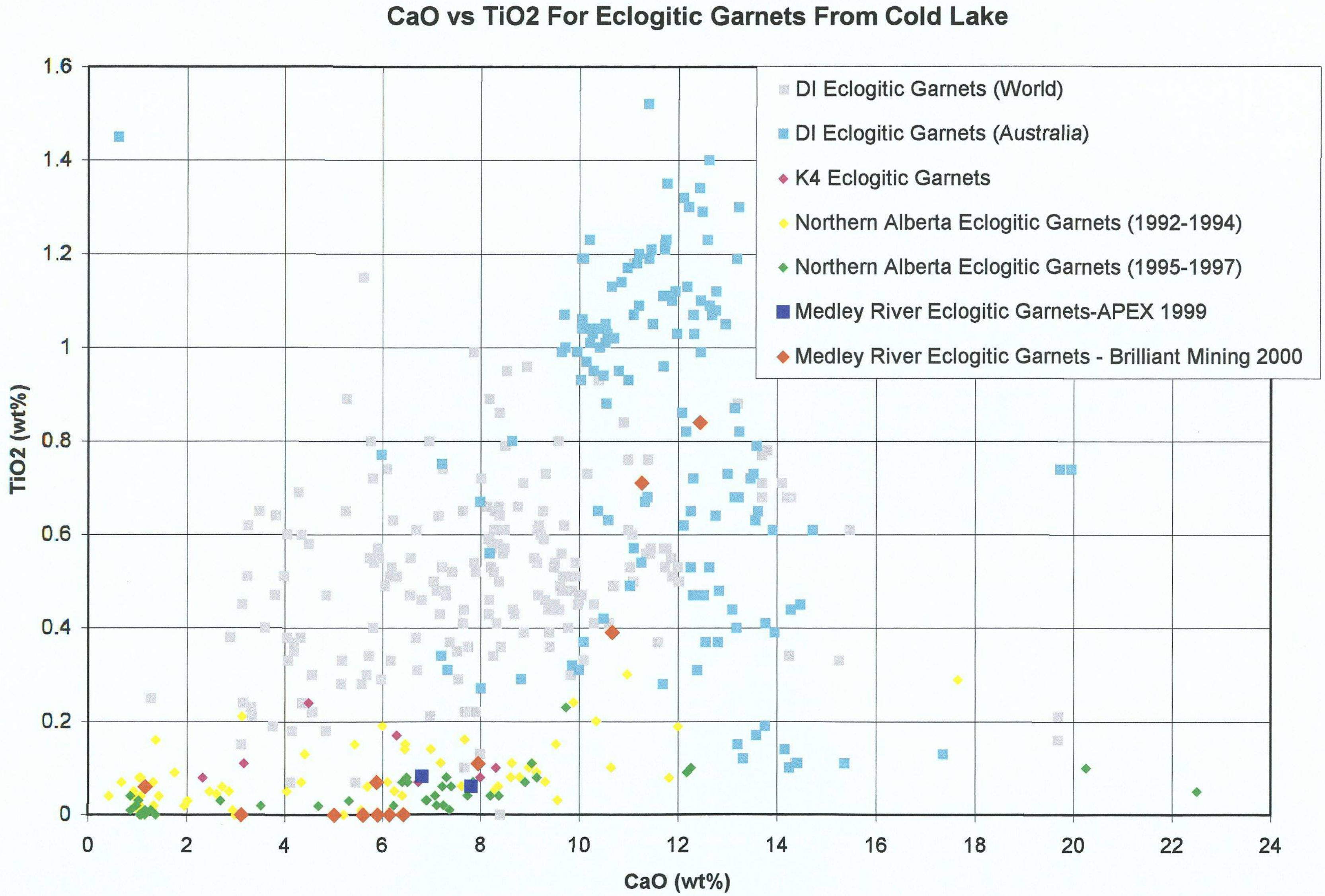

CaO vs Cr2O3 For Peridotitic Cr- Diopsides From Cold Lake
DI Peridotitic Cr-Diopsides
Mountain Lake Cr-Diopsides
K4 Cr-Diopsides
Northern Alberta Cr-Diopsides (1992-1994)
Northern Alberta Cr-Diopsides (1995-1997)
Medley River Diopsides-APEX 1999
Medley River Diopsides - Brilliant Mining 2000
Cr2O3 (wt%)
CaO (wt%)
0
1
2
3
4
5
6
7
8
6
8
10
12
14
16
18
20
22
24
26

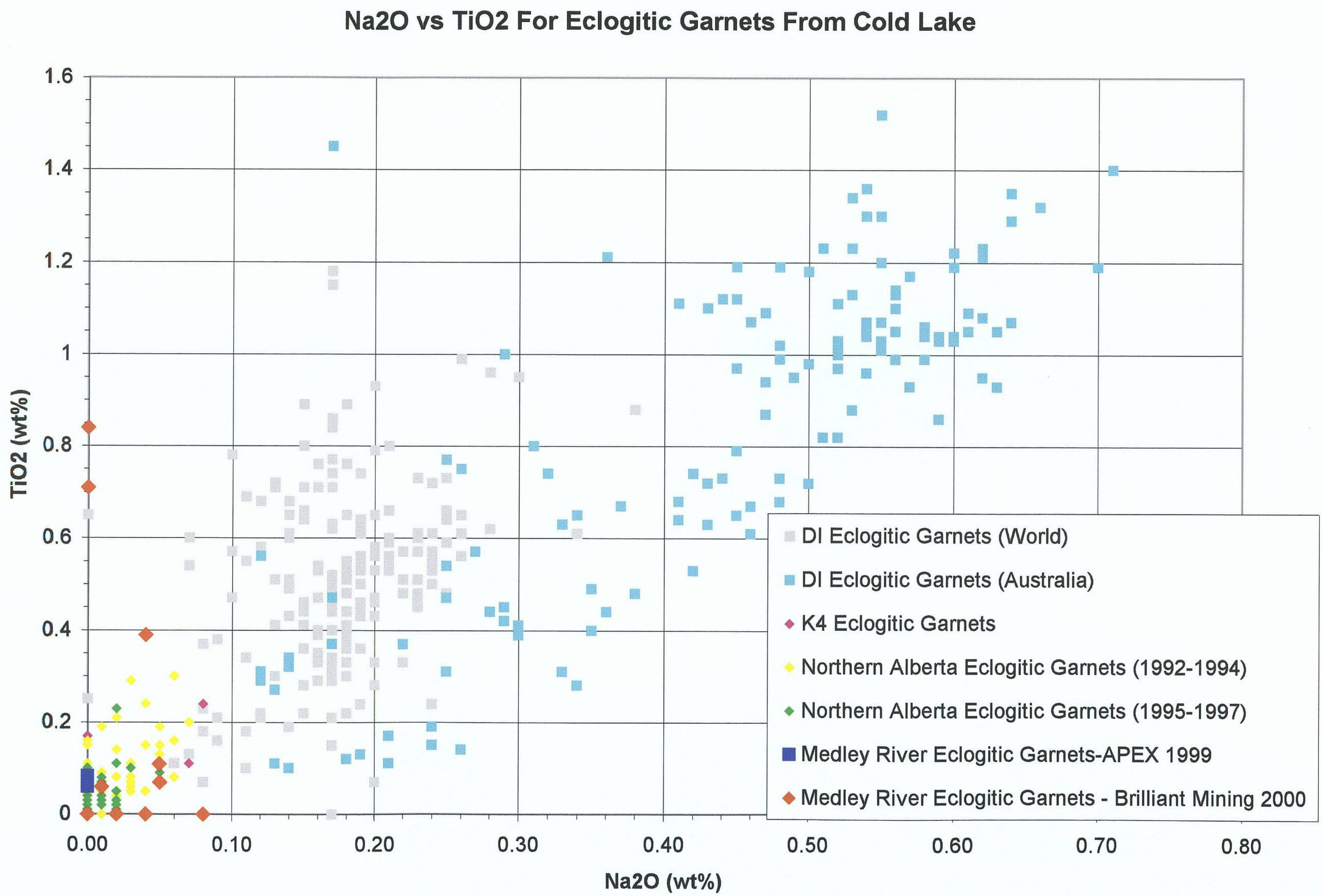

FeO vs Cr2O3 For Peridotitic Cr- Diopsides From Cold Lake
Cr2O3 (wt%)
Total Fe as FeO (wt%)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
DI Cr-Diopsides
Kimberlite Cr-Diopsides (GSC2124)
Lac de Gras Low-Cr-Diopsides
Lac de Gras Cr-Diopsides
Lac de Gras High-Cr-Diopsides
Mountain Lake Diopsides
K4 Kimberlite Diopsides
Northern Alberta Diopsides (1992-1994)
Northern Alberta Diopsides (1995-1997)
Medley River Diopsides-APEX 1999
Medley River Diopsides - Brilliant Mining 2000

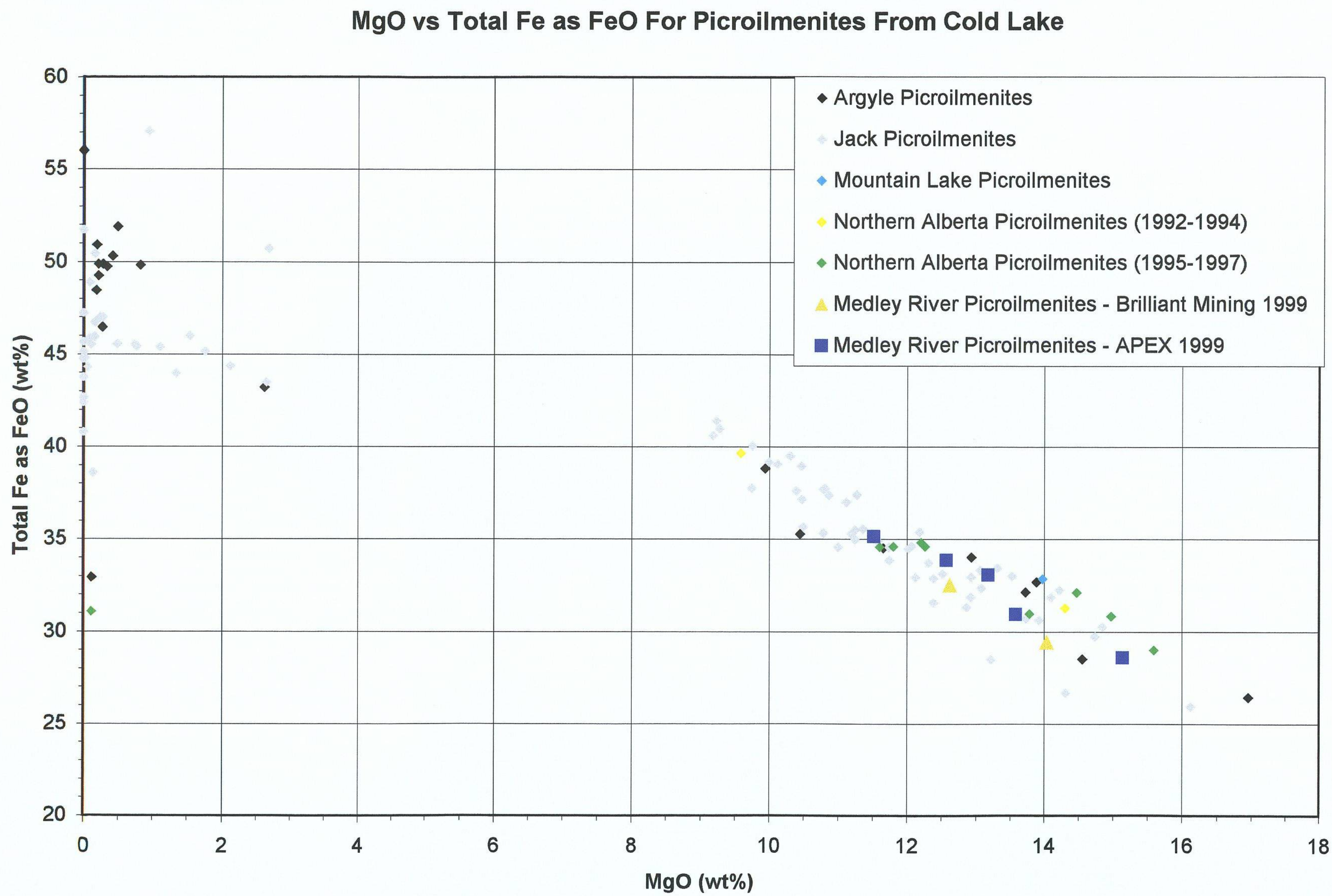


Na2O vs Cr2O3 For Peridotitic Cr- Diopsides From Cold Lake
Cr2O3 (wt%)
Na2O (wt%)
DI Cr-Diopsides
Northern Alberta Diopsides (1992-1994)
Northern Alberta Diopsides (1995-1997)
Mountain Lake Low-Cr Diopsides
Mountain Lake Cr-Diopsides
Mountain Lake High-Cr Diopsides
K4 Diopsides
Medley River Diopsides-APEX 1999
Medley River Diopsides - Brilliant Mining 2000

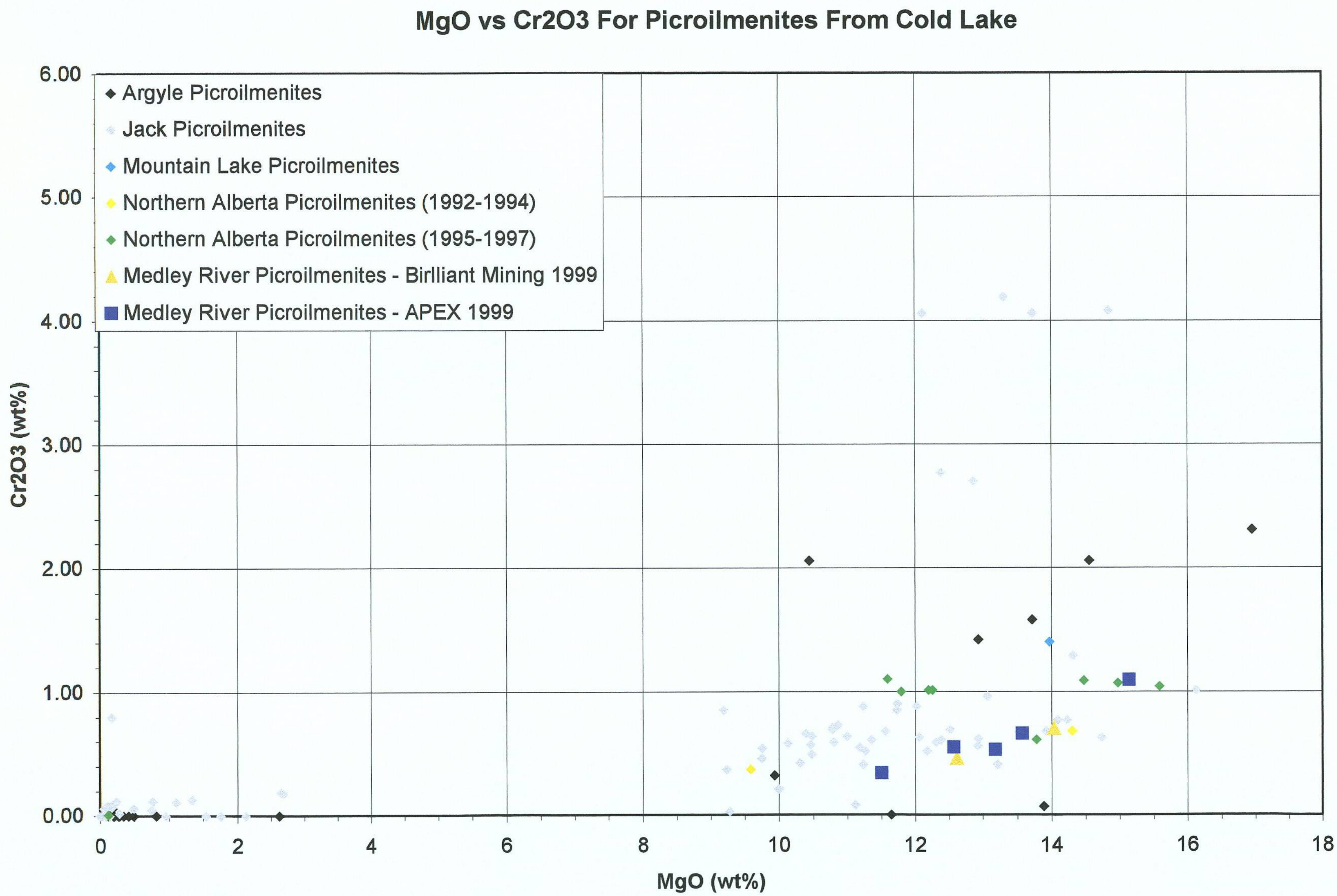

MgO vs FeO For Eclogitic Garnets From Cold Lake
FeO (wt%)
MgO (wt%)
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
16
18
20
22
24
DI Eclogitic Garnets (World)
DI Eclogitic Garnets (Australia)
K4 Eclogitic Garnets
Northern Alberta Eclogitic Garnets (1992-1994)
Northern Alberta Eclogitic Garnets (1995-1997)
Medley River Eclogitic Garnets-APEX 1999
Medley River Eclogitic Garnets - Brilliant Mining 2000

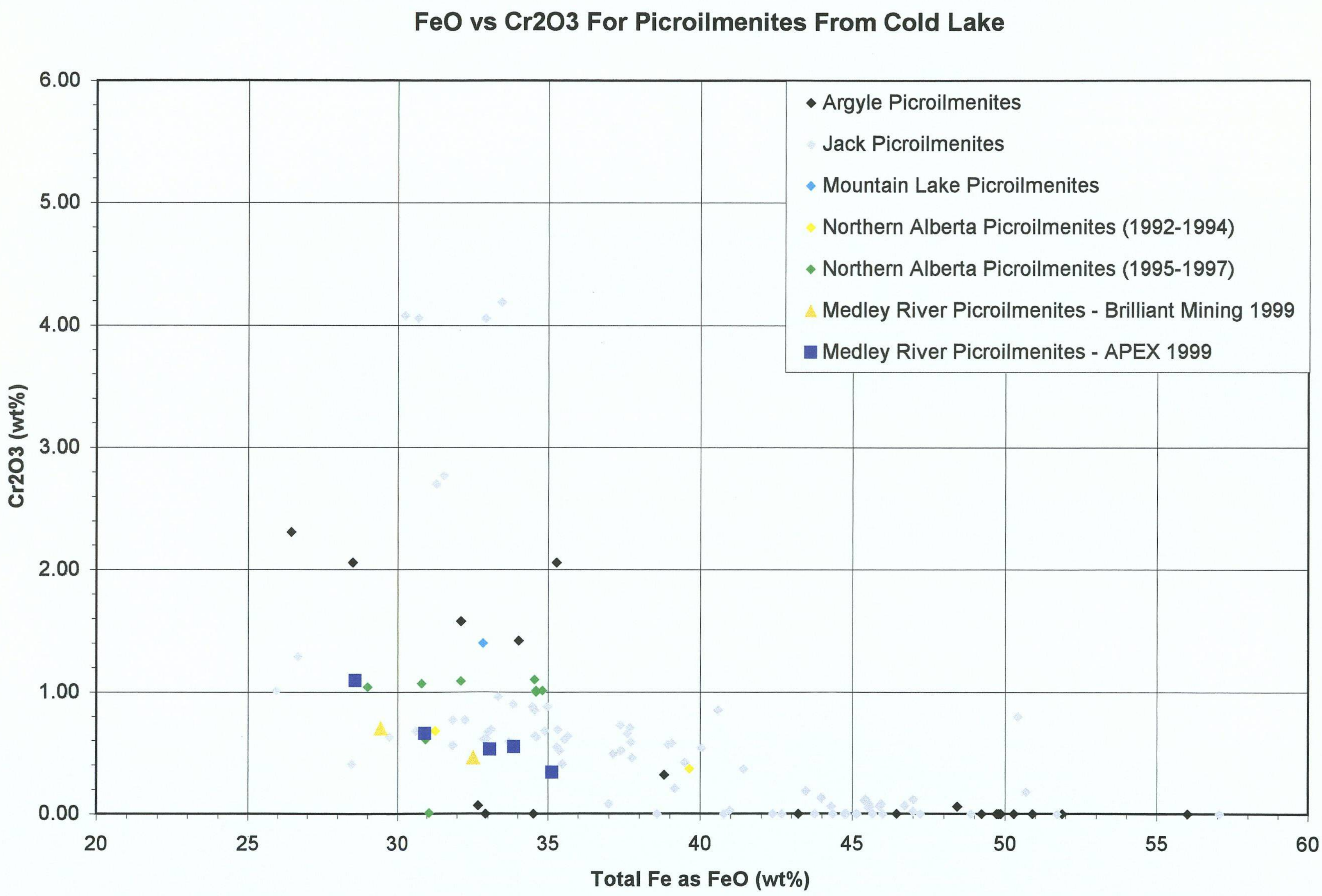

CaO vs TiO2 For Eclogitic Garnets From Cold Lake
TiO2 (wt%)
CaO (wt%)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
0
2
4
6
8
10
12
14
16
18
20
22
24
DI Eclogitic Garnets (World)
DI Eclogitic Garnets (Australia)
K4 Eclogitic Garnets
Northern Alberta Eclogitic Garnets (1992-1994)
Northern Alberta Eclogitic Garnets (1995-1997)
Medley River Eclogitic Garnets-APEX 1999
Medley River Eclogitic Garnets - Brilliant Mining 2000


Na2O vs TiO2 For Eclogitic Garnets From Cold Lake
TiO2 (wt%)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
Na2O (wt%)
DI Eclogitic Garnets (World)
DI Eclogitic Garnets (Australia)
K4 Eclogitic Garnets
Northern Alberta Eclogitic Garnets (1992-1994)
Northern Alberta Eclogitic Garnets (1995-1997)
Medley River Eclogitic Garnets-APEX 1999
Medley River Eclogitic Garnets - Brilliant Mining 2000



MgO vs Total Fe as FeO For Picroilmenites From Cold Lake
Argyle Picroilmenites
Jack Picroilmenites
Mountain Lake Picroilmenites
Northern Alberta Picroilmenites (1992-1994)
Northern Alberta Picroilmenites (1995-1997)
Medley River Picroilmenites - Brilliant Mining 1999
Medley River Picroilmenites - APEX 1999
Total Fe as FeO (wt%)
60
55
50
45
40
35
30
25
20
0
2
4
6
8
10
12
14
16
18
MgO (wt%)


MgO vs Cr2O3 For Picroilmenites From Cold Lake
Cr2O3 (wt%)
MgO (wt%)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
0
2
4
6
8
10
12
14
16
18
Argyle Picroilmenites
Jack Picroilmenites
Mountain Lake Picroilmenites
Northern Alberta Picroilmenites (1992-1994)
Northern Alberta Picroilmenites (1995-1997)
Medley River Picroilmenites - Birlliant Mining 1999
Medley River Picroilmenites - APEX 1999


FeO vs Cr2O3 For Picroilmenites From Cold Lake
Argyle Picroilmenites
Jack Picroilmenites
Mountain Lake Picroilmenites
Northern Alberta Picroilmenites (1992-1994)
Northern Alberta Picroilmenites (1995-1997)
Medley River Picroilmenites - Brilliant Mining 1999
Medley River Picroilmenites - APEX 1999
Cr2O3 (wt%)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
20
25
30
35
40
45
50
55
60
Total Fe as FeO (wt%)

APPENDIX 6

VANCOUVER PETROGRAPHICS LTD. REPORT

Ice River Altered Mafic Volcanic Breccia
Summary Description

Strongly altered mafic volcanic, originally consisting mainly of porphyritic material/ fragments of the same. A few patches consisting of fine elongate prismatic pyroxene with interstitial devitrified glass are believed to represent original groundmass texture. Abundant carbonate pseudomorphs are suspected after feldspar (plagioclase), but this is not confirmed. Clinopyroxene phenocrysts are present and a single biotite or phlogopite phenocryst survives.

Alteration to amphibole, micas, epidote and carbonate is patchy, but strong, leaving only small patches representing original mineralogy and texture. Very little original feldspar has survived.

Note: Although phlogopite, carbonate and clinopyroxene are present, other minerals characteristic of kimberlites are not found in this sample (garnet, apatite, serpentine). In addition, the volcanic fragments contain what appears to be devitrified glass and fine prismatic, unbroken pyroxene in the groundmass. If kimberlite is suspected, preparation of a heavy mineral separate from a larger sample is suggested in addition to geochemical analysis.

Microscopic Description
Transmitted Light

Phenocrysts:

Carbonate pseudomorphs; 15-20%, subhedral to euhedral (0.1 to ~2 mm). Completely altered, mainly to carbonate, but commonly with some chalcedony. Most of these pseudomorphs suspected after feldspar phenocrysts.

Clinopyroxene; 5-7%, subhedral to euhedral (0.2 to ~2 mm). Typically with slightly rounded, corroded edges.

Feldspar; ≤2%, subhedral (~3 mm). A single carbonate and clay-altered phenocryst survives. Probably originally K-feldspar.

Biotite/phlogopite; traces, anhedral (~1 mm). A single pale brown mica flake with ragged, edges, apparently partly resorbed or corroded.

Amphibole; traces, subhedral (~1 mm). A single phenocryst of pale amphibole, partly corroded or resorbed, as for the pyroxene.

Groundmass: (only small patches not obscured by alteration)

Pyroxene; 5-7%, subhedral to euhedral (<0.01 to 0.2 mm). Randomly-oriented, narrow, elongate lath-shaped prismatic crystals. Believed to be original. Identified as clinopyroxene on basis of moderately high relief, birefringence and maximum extinction angle of approximately 45°.

Devitrified glass; ≤5% (microcrystalline). Patches of brown and green microcrystalline material interstitial to the fine lathy pyroxene in groundmass.

Opaques/semiopaques; 2-3%, anhedral (<0.01 to 0.05 mm). Finely and unevenly scattered in small irregular clots in altered portions of the sample. The sample does not attract a pencil magnet. Semiopaques include some sphene.

Alteration: (the section is 80-90% altered)

Carbonate; 40-45%, anhedral (<0.01 to 0.2 mm). Forms pseudomorphs, suspected after feldspar phenocrysts. Also replacing the entire rock, including groundmass in patches with micas and amphibole. Reacts weakly with cold dilute HCl when powdered, consistent with dolomitic composition.

Green pleochroic amphibole; 10-15%, anhedral (<0.01 to 0.3 mm). Ragged green amphibole is scattered in patches in altered portions of the sample with micas and carbonate.

Muscovite; 5-7%, subhedral (0.01 to 0.3 mm). Colourless mica intermixed with carbonate in strongly altered patches.

Biotite/phlogopite; 5-7%, subhedral (0.01 to 0.3 mm). Pale brown mica scattered through the carbonate-altered patches, with the colourless mica, in some cases intergrown with the colourless mica.

Epidote; 5-7%(?), anhedral (microcrystalline). Small, irregular aggregates of microcrystalline material, sparser in the strongly carbonate-altered patches.

Clays; ≤5%, anhedral (microcrystalline). Dusting of clays in devitrified glass and in surviving feldspar.

K-Feldspar; <5%, anhedral (0.05 to 0.5 mm). A single irregular patch of partly interlocking microperthitic feldspar with clay alteration. Suspect this represents an early stage of secondary feldspar.

Chlorite; ≤1%, anhedral (microcrystalline). Some chlorite alteration of amphibole and mica.

Amygdules/other cavities: (filling minerals listed in estimated order of abundance)

Quartz; anhedral to subhedral (0.05 to ~3 mm). Interlocking quartz with intergrown acicular green amphibole, minor epidote and sphene.

Chalcedony; fibrous (microcrystalline). Patchy chalcedony with the coarser quartz.

Amphibole; subhedral (0.01 to 0.5 mm). Acicular green pleochroic amphibole in sheaf-like aggregates in quartz.

Epidote; traces, anhedral (<0.01 to 0.1 mm). Small aggregates found with amphibole and quartz.

APPENDIX 7

MEDLEY RIVER ANOMALY TARGETS

APPENDIX 7

MEDLEY RIVER ANOMALY TARGETS

LOCATION	LINE	FIDUCIAL	~nT	EASTING	NORTHING
High Priority Points from Mag Data					
1	T260	3029	6.0	554380	6068202
4	620	1271	7.0	536370	6057419
5	610	1335	6.0	536679	6057585
6	600	1916	6.0	536657	6057795
7	501	842	4.0	531563	6059825
8	440	685	6.0	547892	6060985
9	430	1117	6.0	548100	6061191
13	70	6547	5.5	543849	6068376
14	70	6577	8.5	546554	6068391
21	1080	191	13.5	538485	6048154
22	780	1186	6.0	546537	6054178
Medium Priority Points from Mag Data					
24	510	5690	4.0	532624	6059554
25	450	211	3.0	547683	6060784
27	420	1596	4.5	548112	6061399
30	170	1971	4.5	541472	6066383
32	100	5297	3.5	543922	6067760
33	1030	1374	5.0	551784	6049396
34	1010	1852	3.0	551880	6049562
35	860	2318	3.5	549365	6052590
36	860	2325	2.0	548748	6052581
37	800	647	2.0	546635	6053749
38	770	1483	3.0	546603	6054381
Low Priority Points from Mag Data					
39	1060	576	1.5	543984	6048552
40	1020	1429	3.5	551742	6049396
41	1000	1907	2.5	551794	6049740
42	980	2393	2.0	552051	6050143
43	970	2684	2.5	538935	6050349
44	960	2898	2.5	551123	6050349
45	960	2935	2.0	548196	6050567
46	930	715	1.5	553654	6051205
48	890	1697	2.0	551425	6051947
49	870	2064	2.0	538987	6052396
50	850	2661	1.5	548363	6052714
51	850	2668	2.0	549022	6052735
52	850	2672	2.5	549312	6052753
53	760	1694	1.5	549854	6054577
54	760	1846	2.0	536562	6054561
55	740	2249	2.5	548285	6054978
56	730	2583	2.0	548431	6055151
57	730	2586	3.0	548741	6055156
58	700	3431	2.5	538164	6055833
59	610	1453	2.0	547183	6057558
60	580	2695	1.5	548444	6058152

LOCATION	LINE	FIDUCIAL	~nT	EASTING	NORTHING
Low Priority Points from Mag Data					
61	580	2725	15.0	545823	6058126
62	580	2820	1.5	537497	6058130
67	560	3701	3.0	540073	6058584
68	520	5521	2.0	539656	6059349
69	520	5602	2.0	532586	6059404
70	520	5630	4.0	530109	6059412
71	510	5662	2.0	530195	6059585
73	491	1518	2.5	546763	6059988
74	491	1688	2.0	532172	6059972
75	481	1933	2.0	546891	6060199
76	481	1980	2.0	551105	6060206
77	450	250	1.5	551220	6060788
79	410	2047	4.5	548123	6061623
80	410	2067	3.0	550869	6061618
83	400	2478	3.0	550873	6061795
84	400	2508	3.5	548301	6061781
85	400	2512	3.5	547902	6061774
86	390	2950	2.5	548152	6061955
87	380	3389	4.5	550801	6062200
89	330	1075	2.0	541331	6063216
92	320	1714	2.0	540132	6063387
96	260	4366	3.0	549251	6064610
100	190	1216	1.0	556185	6065989
102	120	4283	1.5	553520	6067401
103	120	4292	1.5	552748	6067405
104	110	4708	2.5	541472	6067585
108	90	5657	6.5	545579	6067957
109	90	5665	7.0	546347	6067977
116	80	6182	8.0	546162	6068205
118	70	6518	3.5	541169	6068394
120	70	6568	8.5	545633	6068347
138	T80	1217	5.0	536375	6053810
139	T80	1259	4.0	536370	6057419
140	T100	3603	1.5	538331	6054481
141	T120	3002	3.0	540348	6062196
142	T120	3132	2.0	540342	6050802
143	T130	2765	2.0	541358	6056926
144	T130	2774	3.0	541364	6057581
145	T140	2497	3.0	542349	6057226
146	T140	2503	2.0	542337	6056415
147	T150	135	3.0	543337	6057922
148	T160	430	2.0	544372	6056962
149	T180	964	3.0	546350	6057200
150	T190	1235	2.0	547353	6059052
151	T190	1255	1.5	547354	6060890
152	T230	2335	2.5	551323	6059560
153	T240	2592	2.0	552354	6061806
154	T240	2600	2.0	552345	6061071
155	T240	2613	2.0	552344	6059980
156	T250	2890	4.0	553341	6060380
158	T290	3792	1.0	557319	6066871

APPENDIX 8

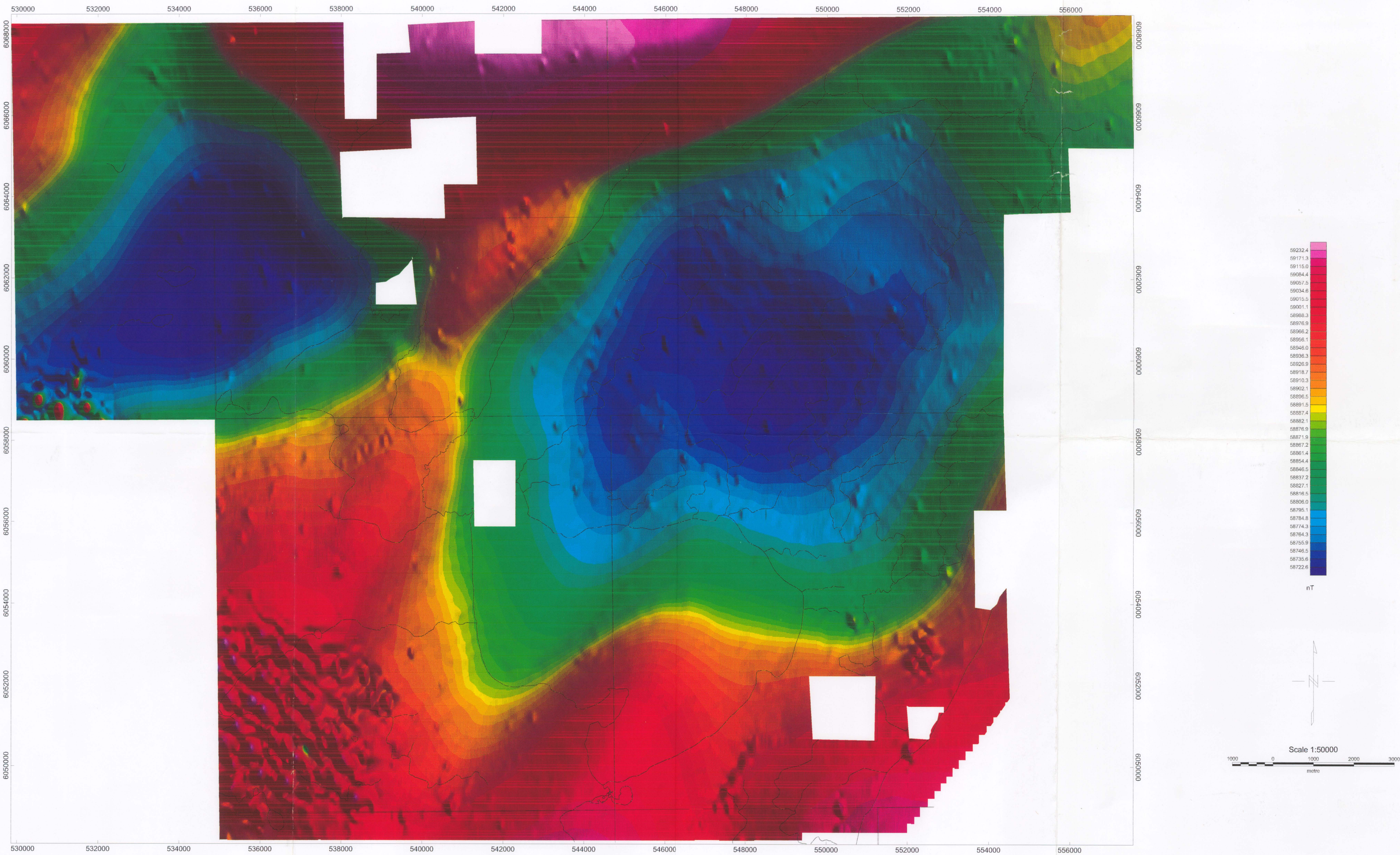
EXPLORATION EXPENDITURES

APPENDIX 8

EXPLORATION EXPENDITURES*

ITEM	ACTUAL COST
Office	
Office and Administration Fees	$39,087.78
Management Fees	$65,000.00
Sub-total	**$104,087.78**
Field Related Costs	
Geophysical Services	$77,403.41
Geological Services	$24,589.06
Exploration Consulting and Labor	$104,954.65
Food/Accomodation	$9,438.27
Travel	$14,312.27
Equipment rental	$59,852.02
Field Supplies	$7,769.62
Analytical Costs	$6,656.88
Accounts Payable	$4,556.29
Sub-total	**$309,532.47**
TOTAL EXPENDITURES	**$413,620.25**

* Provided by Brilliant Mining Corporation

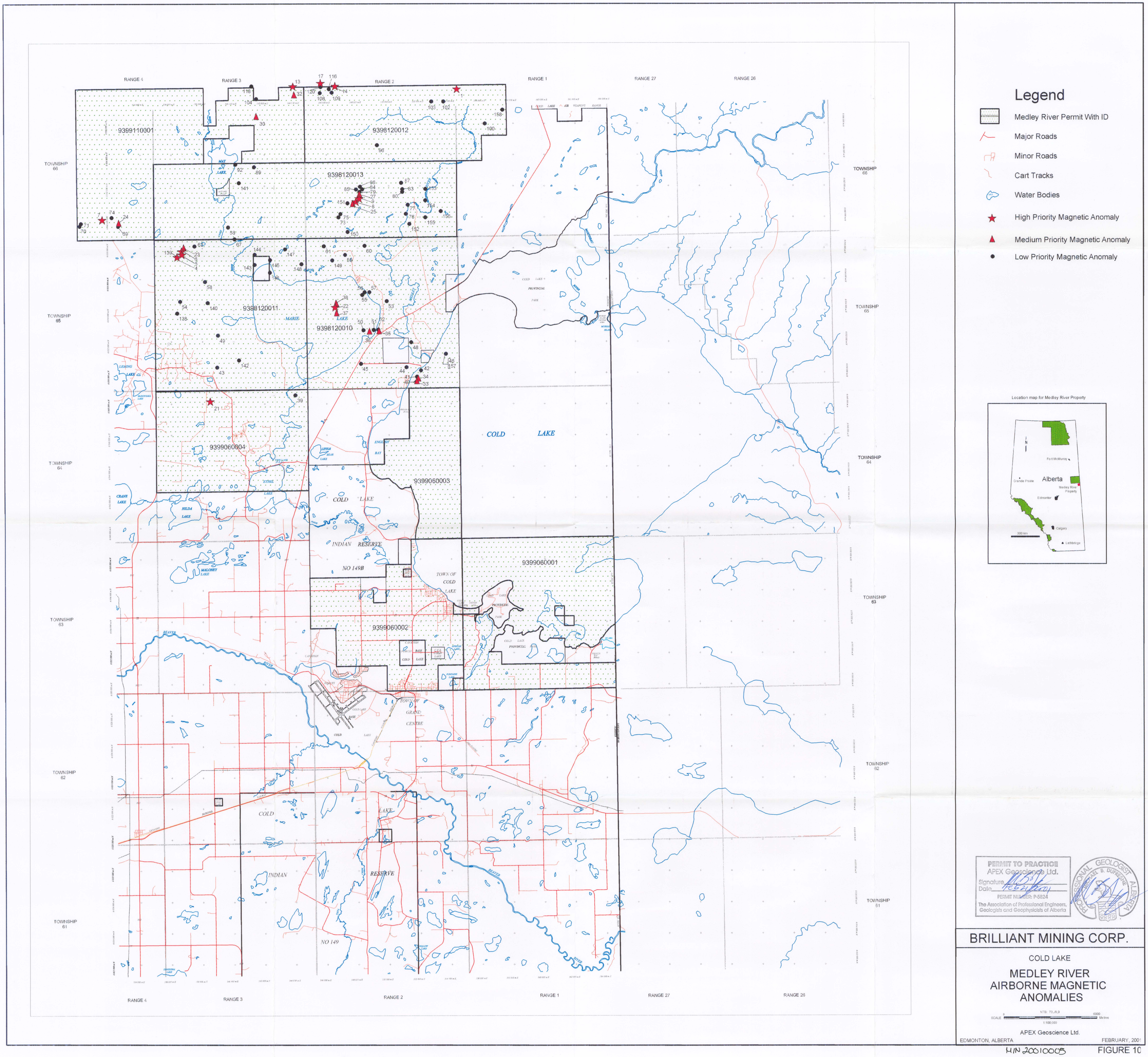


MIN 20010005

Brilliant Mining Corporation

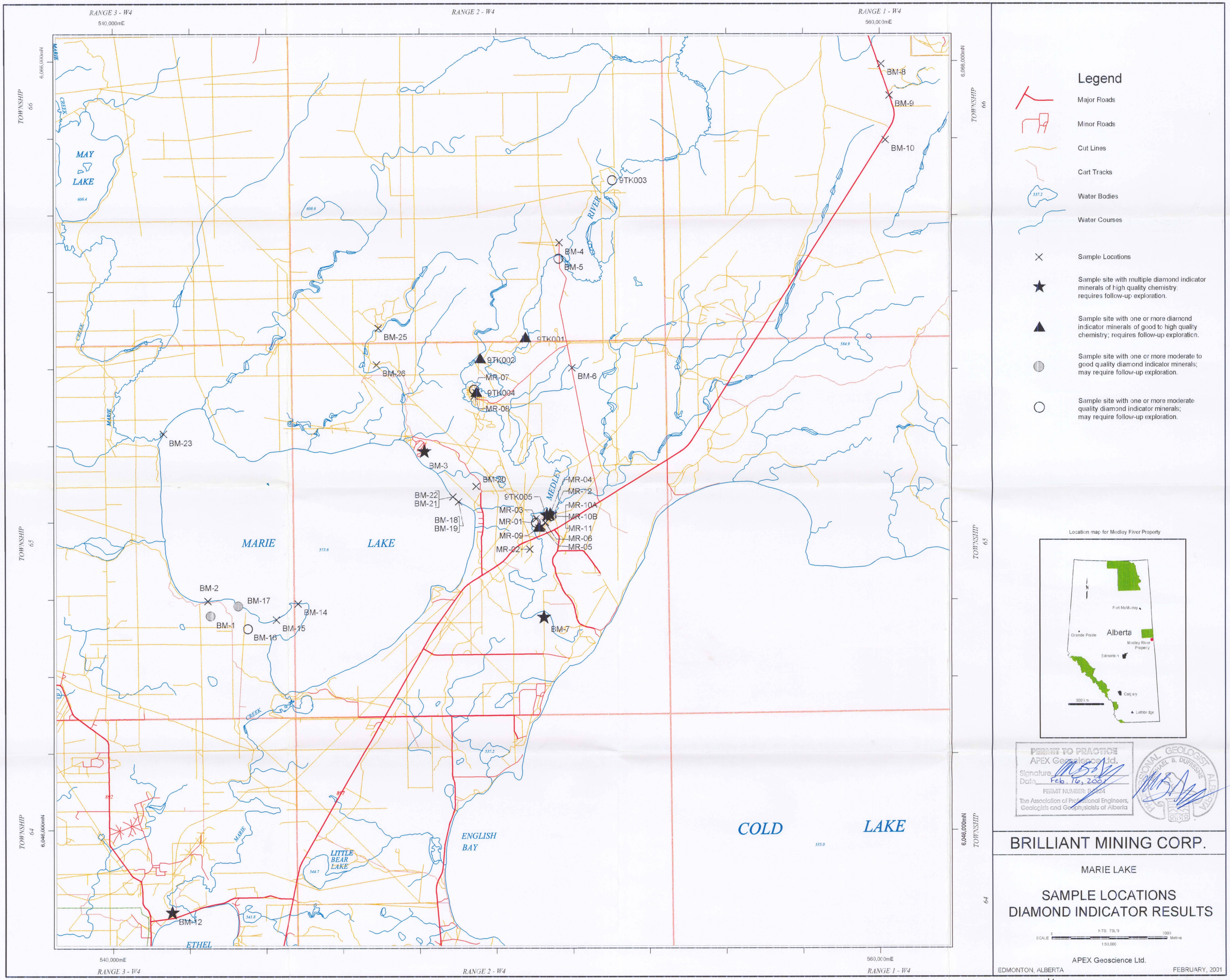
Contoured Total Field Magnetics
Medley River Property, Cold Lake, Alberta

APEX Geoscience Ltd.



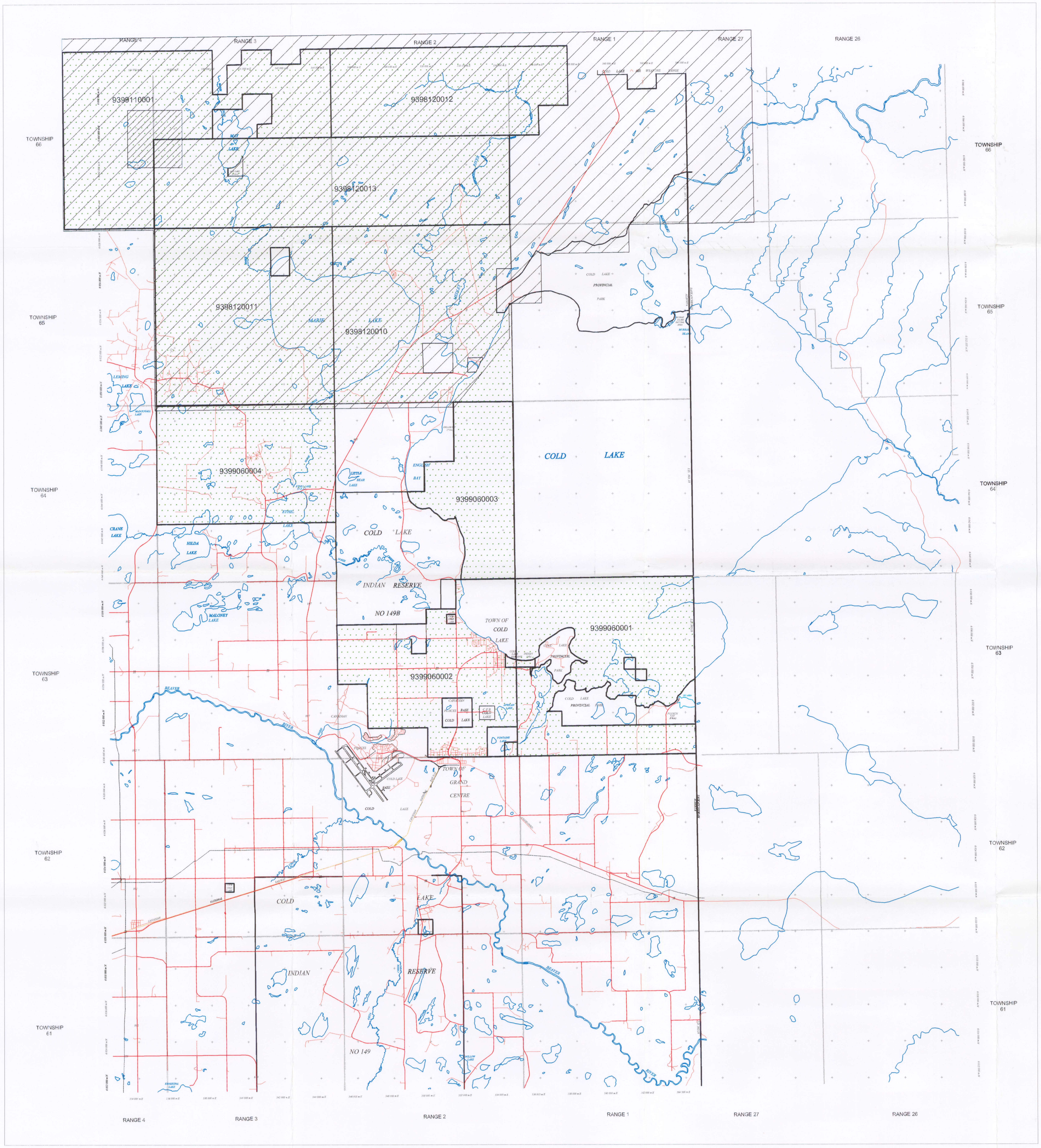
HN 20010005

FIGURE 10



HIN 20010005

FIGURE 9



Legend

- Medley River Permit With ID
- Major Roads
- Minor Roads
- Cart Tracks
- Water Bodies
- Airborne Geophysical Survey
- Ground Geophysical Survey

Location map for Medley River Property

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature
Date Feb. 16, 2001
PERMIT NUMBER: P-5824
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL GEOLOGIST
MICHAEL B. DUFRESNE
ALBERTA

BRILLIANT MINING CORP.

COLD LAKE

MEDLEY RIVER GEOPHYSICAL SURVEYS

NTS: 73L/8,9

SCALE 0 — 6000 Metres

1:100,000

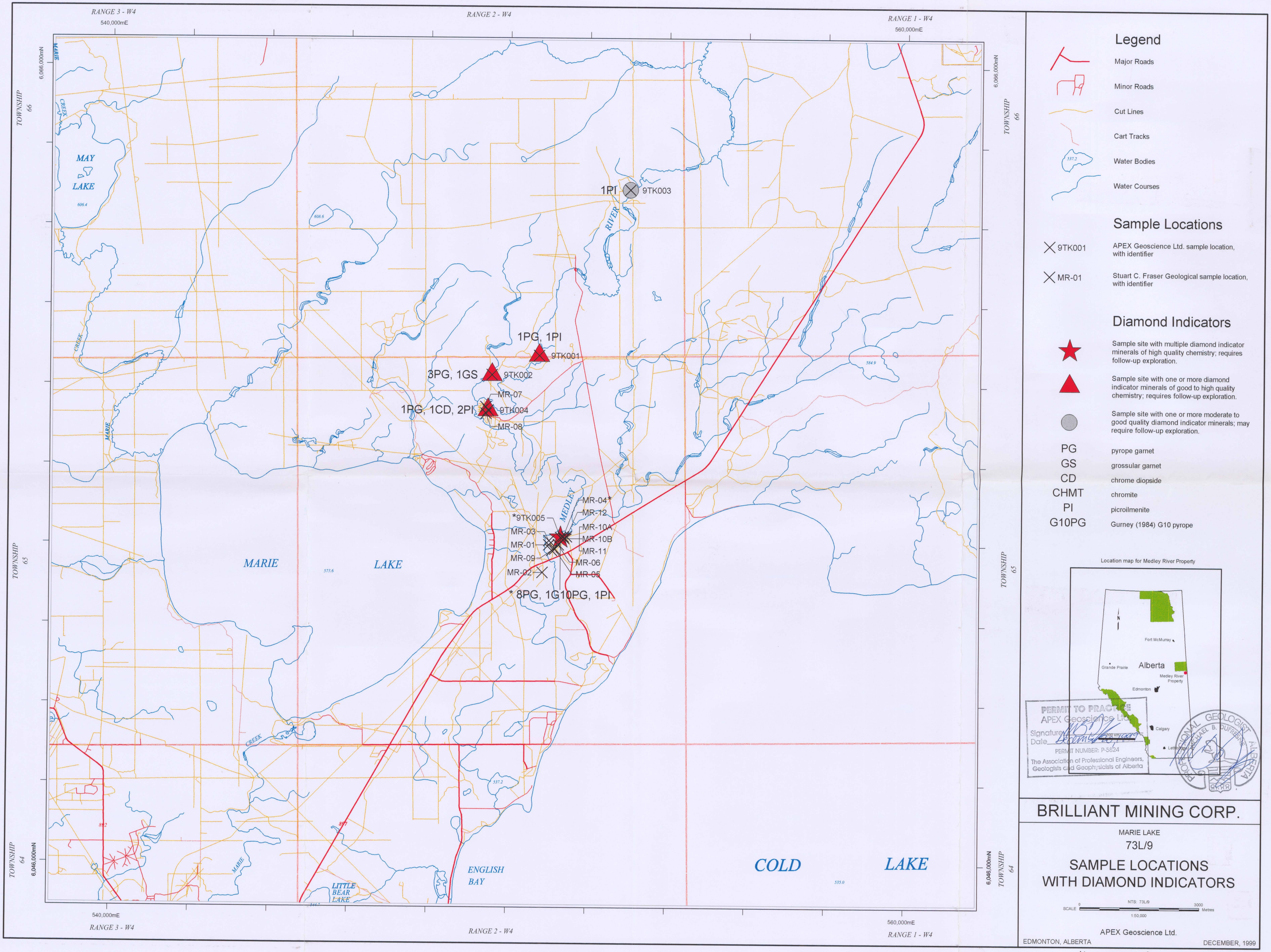
APEX Geoscience Ltd.

EDMONTON, ALBERTA

FEBRUARY 2001

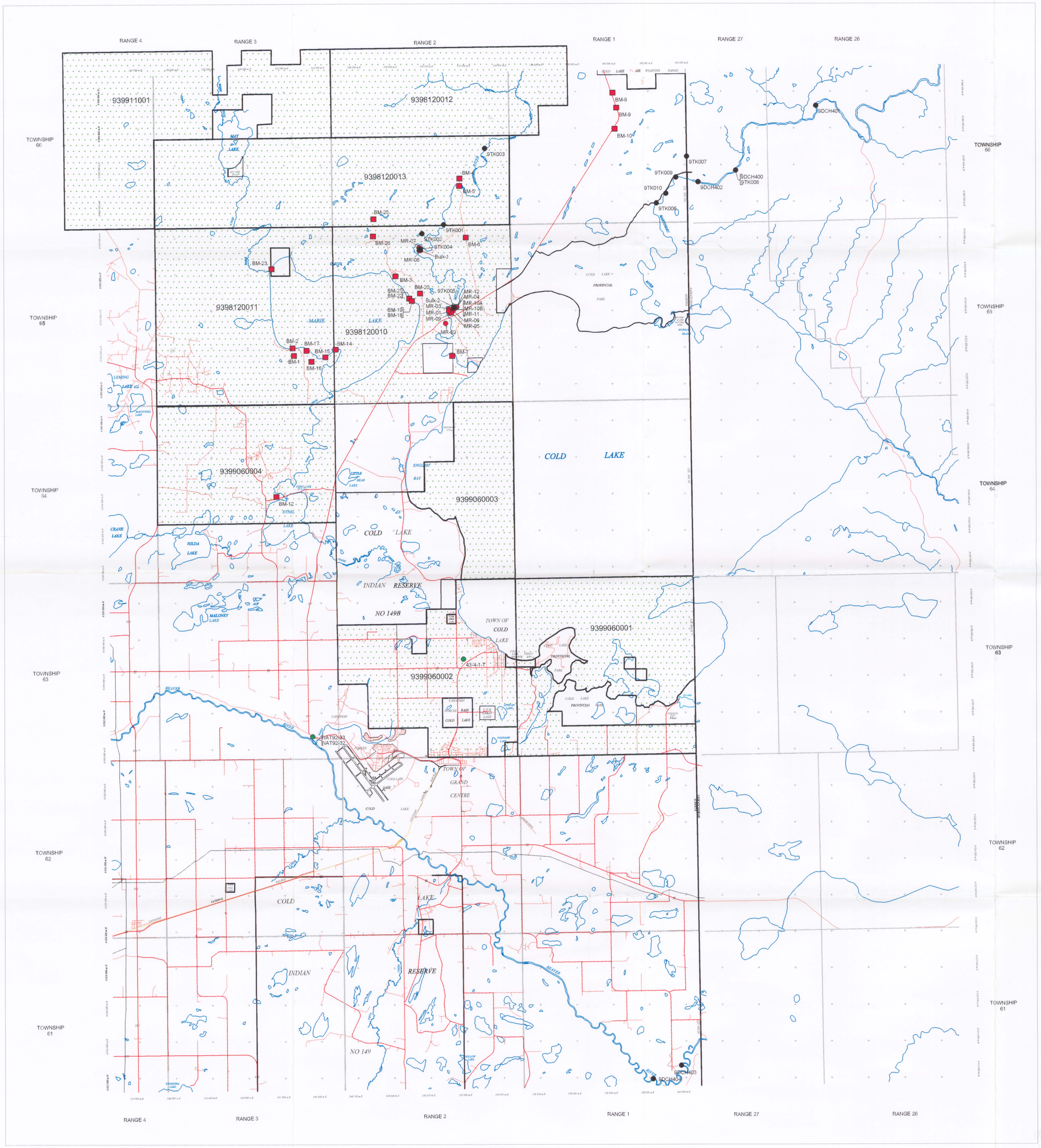
MIN 20010005

FIGURE 7



MIN 20010005

FIGURE 6.



Legend

- Medley River Permit With ID
- Major Roads
- Minor Roads
- Cart Tracks
- Water Bodies
- Stuart Fraser Sample; Identifier
- Government Sample; Identifier
- Apex Sample; Identifier
- Brilliant Mining Sample; Identifier

Location map for Medley River Property

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature
Date Feb 16, 2001
PERMIT NUMBER: P 5824
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL GEOLOGIST ALBERTA

BRILLIANT MINING CORP.

COLD LAKE

MINERAL PERMITS SAMPLE LOCATIONS

NTS: 73L/8,9

SCALE 1:100,000 Metres

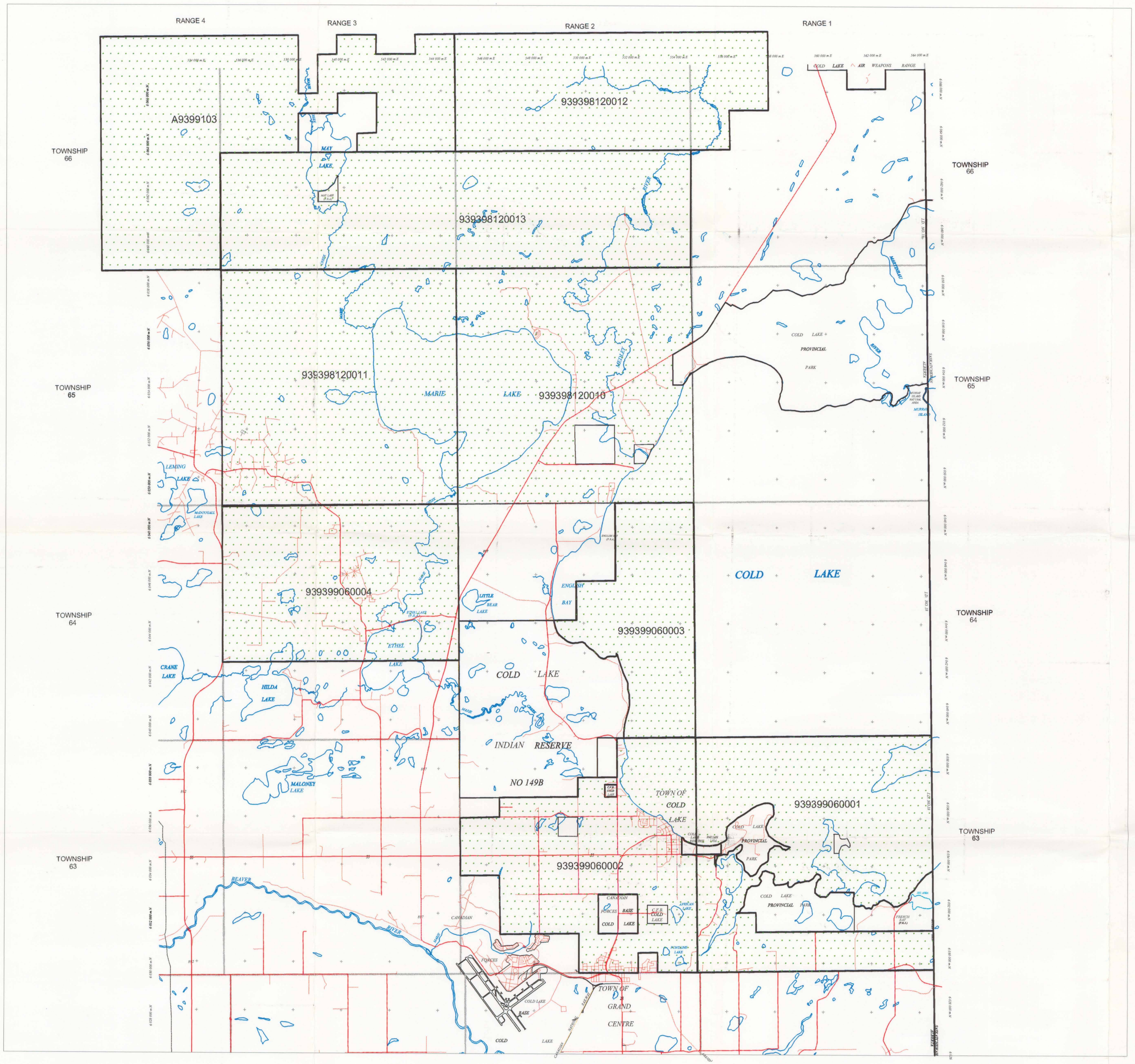
APEX Geoscience Ltd.

EDMONTON, ALBERTA

FEBRUARY, 2001

MIN 20010005

FIGURE 6



Legend

Medley River Permit With ID

Major Roads

Minor Roads

Cart Tracks

Water Bodies

Location map for Medley River Property

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature
Date Jan 10/2000
PERMIT NUMBER: P-5824
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL GEOLOGIST
MICHAEL B. DUFRESNE
ALBERTA

BRILLIANT MINING CORP.

MARIE LAKE

MEDLEY RIVER PERMITS

NTS: 73L/8,9

SCALE 0 6000 Metres

1:100,000

APEX Geoscience Ltd.

EDMONTON, ALBERTA

DECEMBER, 1999

MIN 20010005

APPENDIX 1.