MAR 19980009: PELICAN MOUNTAIN

Received date: Jun 12, 1998

Public release date: Jun 13, 1999

19980009

NTS 83P/11, 83P/12

ASSESSMENT REPORT ON METALLIC MINERAL PERMITS No. 9396020002, 939602003, 939602004 and 939602005

PELICAN MOUNTAIN AREA, ALBERTA

Prepared for
Ellesmere Minerals Ltd.

APEX Geoscience Ltd.

JUNE, 1998

D. Vernet
M.B. Dufresne

ASSESSMENT REPORT ON METALLIC MINERAL PERMITS No. 9396020002, 9396020003, 9396020004 and 9396020005 PELICAN MOUNTAIN AREA, ALBERTA

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ASSESSMENT REPORT ON METALLIC MINERAL PERMITS No. 9396020002, 9396020003, 939602004 AND 9369602005 PELICAN MOUNTAIN AREA, ALBERTA

SUMMARY

APEX Geoscience Ltd. (APEX), was retained in the spring of 1998 as consultants by Ellesmere Minerals Ltd. to prepare an independent evaluation of the diamond potential of the Pelican Mountain property (Metallic Minerals Permits 9396020002, 9396020003, 9396020004, and 9396020005). Although diamond exploration at Ellesmere's mineral permits is still considered high risk because the presence of kimberlite has not been confirmed, the potential for discovery of kimberlites on the permit areas is considered good based upon the regional geological setting in conjunction with the positive results of limited exploration that has been conducted to date.

Based upon (a) the favourable regional geological setting and (b) the presence of several high quality magnetic targets for the Pelican Mountain mineral permits, an aggressive, systematic follow-up exploration program is warranted to search for diamondiferous kimberlites in the permit area. Exploration for the permit area should include systematic follow-up surface prospecting and sampling, and conducting ground geophysical surveys to determine whether any of the airborne magnetic anomalies could be indicative of near surface diatremes that may warrant drill testing. Finally, a review and interpretation of available seismic data over high priority targets for both properties should be considered to aid in evaluation of airborne magnetic anomalies. The estimated cost of the exploration program at the Pelican Mountain Property, not including GST, is estimated at $70,000.

INTRODUCTION

Ellesmere Minerals Ltd. (Ellesmere) owns the rights to mineral permits 9396020002, 9396020003, 939602004, and 9396020005 (hereafter referred to as the 'Pelican Mountain permits') in northcentral Alberta (Figure 1). In early 1998, Ellesmere commissioned Spectra Exploration Geoscience Corp. to fly a high reoslution airborne magnetic survey (HRAM survey) over its Pelican Mountain Property. In February 1998, APEX Geoscience Ltd. (APEX) was commissioned by Ellesmere to review the HRAM survey data and to compare the results to HRAM surveys over known kimberlites.

Property Location

The claim blocks which comprise the Ellesmere permits are south of South Wabasca Lake in the Pelican Mountain area and approximately 75 km northeast of the town of Slave Lake (Figure 1). Slave Lake is located 200 km north-northwest of Edmonton and can be reached via Provincial Highways 2 and 44. Slave Lake is also accessible by air or rail, with

daily air passenger service.

The Ellesmere permits are geographically centered at about latitude 55°35' N and longitude 113°35' W, and are within 1:50,000 National Topographic System (NTS) map areas 83P/11 and 83P/12. The size and legal township-range legal description for mineral permits 9396020002, 9396020003, 9396020004, and 939602005 are summarized in Table 1.

TABLE 1
PROPERTY DESCRIPTION OF THE PELICAN MOUNTAIN PERMITS

Permit Identifier	Date Issued	Expiry Date	Size (ha)	Location (mer-rng-twp) Legal Description
9396020002	1996/02/13	2006/02/13	6656	4-23-076
9396020003	1996/02/13	2006/02/13	9216	4-24-076
9396020004	1996/02/13	2006/02/13	7380	4-23-077
9396020005	1996/02/13	2006/02/13	9216	4-25-077
TOTAL AREAL EXTENT			32468	

Property Description and Access

The Pelican Mountain permits are owned 100% by Ellesmere Minerals Ltd. and consist of 32,468 acres in partial or full townships. Geographically, the Pelican Mountain area is composed of a number of topographic peaks surrounded by flat prairie and muskeg. The elevation of Pelican Mountain is up to 3000 m above sea level (asl) and the average elevation of the surrounding area is approximately 2200 m asl. The Ellesmere permits encompass a large part of Pelican Mountain and some of the surronding lowlands. There is extensive forest cover over the Ellesmere permits.

A number of all weather roads which come within 10 km of the Ellesmere permits can be accessed from Slave Lake via Secondary Highways 67 and 813. In addition, there are a number of dry weather gravel roads crossing the permits which can be accessed by truck or all terrain vehicles. In addition a number of seismic cutlines also cross the permits and can be accessed by all- terrain vehicles. Due to the high number of seismic lines and roads, and the high topography in the area, ground access should be good even in wet conditions. The closest serviced airstrip is just north of Calling Lake, about 25km southeast of the permits, which is suitable for helicopter or small aircraft. Due to the number of seismic lines and seasonal roads helicopter access in the permits is also good.

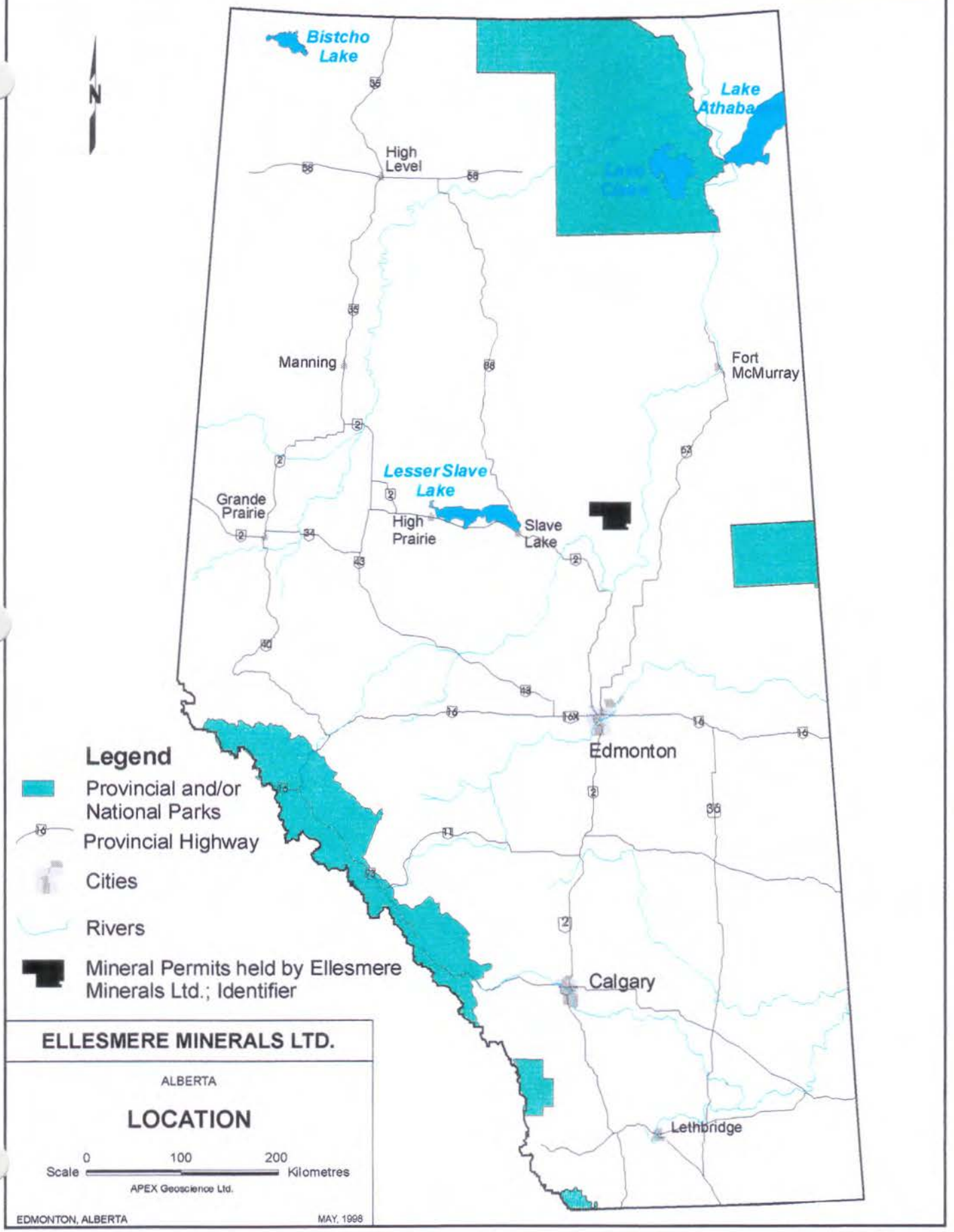

Bistcho Lake
Lake Athabasca
High Level
Manning
Fort McMurray
Lesser Slave Lake
Grande Prairie
High Prairie
Slave Lake
Edmonton
Calgary
Lethbridge
Legend
Provincial and/or National Parks
Provincial Highway
Cities
Rivers
Mineral Permits held by Ellesmere Minerals Ltd.; Identifier
ELLESMERE MINERALS LTD.
ALBERTA
LOCATION
0 100 200
Scale
Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
MAY, 1998

FIGURE 1

REGIONAL GEOLOGICAL SETTING

Precambrian

The Pelican Mountain permits lie in the Western Canadian Sedimentary basin along the south flank of the Peace River Arch (PRA). However, Precambrian rocks are not exposed within the Pelican River region (NTS 83P). The basement underlying the PRA is comprised of several terranes including the Buffalo Head and the Chinchaga (Figure 2), which collectively form the Buffalo Head Craton (Ross *et al.*, 1991, 1998). The Buffalo Head Craton was accreted to the western edge of the Churchill Structural Province approximately 2.0 to 2.4 billion years ago. Due to their relatively stable history since accretion, the Buffalo Head and Chinchaga terranes are currently the focus of extensive diamond exploration in northern Alberta.

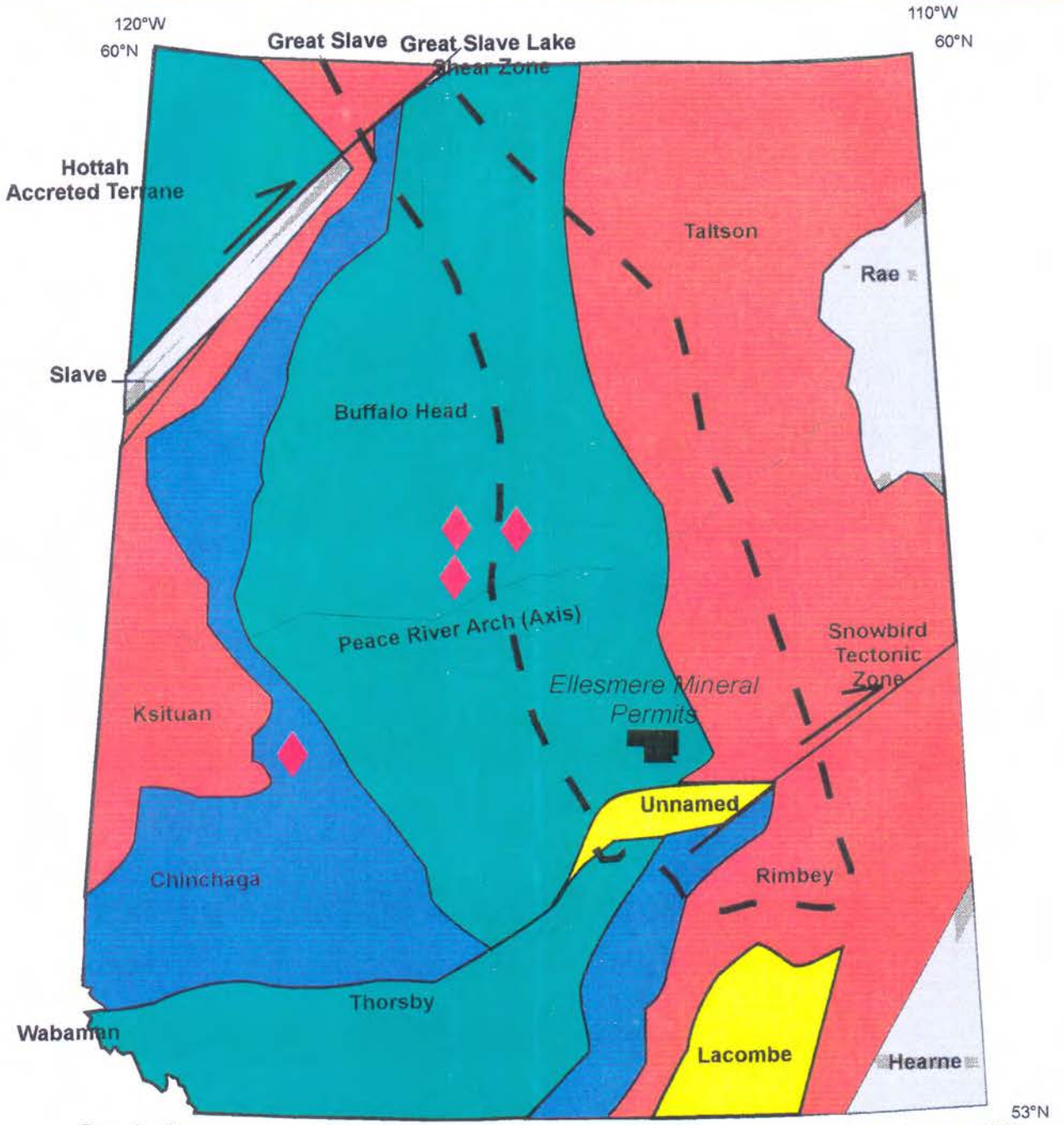
Ellesmere's Pelican Mountain permits are underlain by the southeast extension of the Buffalo Head Terrane (BHT)(Figure 2). The BHT is an area of high positive magnetic relief with a north to northeasterly fabric (Villeneuve *et al.*, 1993). Seismic and gravity data indicate crustal thickness is likely around 35 to 40 km in the vicinity of the Peace River Arch, a characteristic favorable for the preservation and formation of diamonds in the upper mantle (Dufresne et al., 1993). The area of Ashton Mining of Canada Inc.'s (Ashton) kimberlite discovery is underlain by basement of the BHT.

The BHT is thought to represent either Archean crust that has been thermally reworked during the Hudsonian (Proterozoic) Orogeny (Burwash *et al.*, 1962; Burwash and Culbert, 1976; Burwash *et al.*, 1994) or accreted Proterozoic terranes that may or may not have an Archean component (Ross and Stephenson, 1989; Ross *et al.*, 1991; Villeneuve *et al.*, 1993). Precambrian rocks which have been intersected in drill core from the BHT comprise felsic to intermediate metaplutonic rocks, felsic metavolcanic rocks and high-grade gneisses (Villeneuve *et al.*, 1993). The presence of a large number of eclogitic garnets and eclogitic pyroxenes in association with kimberlites or related intrusions in northern Alberta may indicate the presence of a significant volume of subducted sedimentary protolith in the upper mantle and lower crust beneath the Buffalo Head Craton. The Pelican Mountain permits lie within an area with an intermediate to high residual gravity signature.

Phanerozoic

Overlying the basement in the Pelican Mountain region is a thick sequence of Phanerozoic rocks comprised mainly of Cretaceous sandstones and shales and Mississippian to Devonian carbonates and salts (Glass, 1990)(Figure 3). Table 2 shows the upper units found in the region.

Underlying the near surface Cretaceous units in the Pelican Mountain area is a thick succession of Devonian to Mississippian carbonates, calcareous shales and salt horizons (Mossop and Shetson, 1994). Several of the Devonian carbonate units are part of the



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
- Ellesmere Minerals Ltd. Mineral Claim Boundaries; identifier
- Extent of Grossmont Reef Complex

ELLESMERE MINERALS LTD.

NORTHERN ALBERTA

BASEMENT GEOLOGY

Scale 0 100 200 Kilometres

APEX Geoscience Ltd.

EDMONTON, ALBERTA MAY, 1998

FIGURE 2

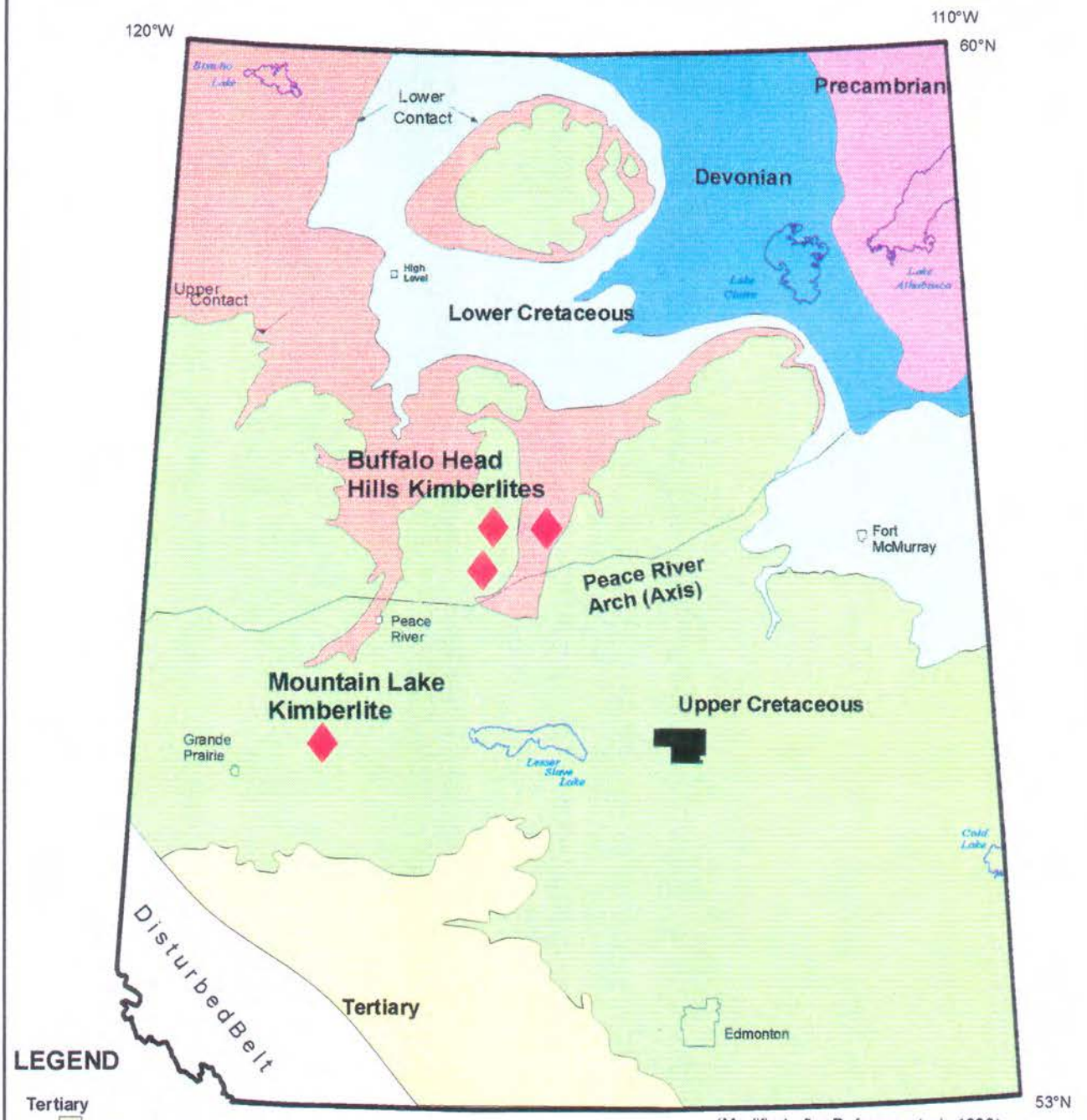
TABLE 2
GENERALIZED STRATIGRAPHY PELICAN MOUNTAIN PERMIT AREA

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		Wapiti	70 to 80	Sandstone, minor coal seams and conglomerate lenses
	Smoky	Puskwaskau	75 to 86	Shale, silty-shale and ironstone, First White Specks
		Bad Heart	86 to 88	Sandstone
		Kaskapau	88 to 92	Shale, silty-shale and ironstone, Second White Specks
		Dunvegan	92 to 95	Sandstone and siltstone
	Fort St. John	Shaftesbury	95 to 98	Shale, bentonites, Fish-Scale Fm.
LOWER CRETACEOUS	Colorado	Pelican	98 to 100	Glauconitic sandstone, siltstone, mudstone and conglomerate
		Joli Fou	100 to 103	Shale, glauconitic sandstone and bentonite

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

Grosmont Reef Complex, a large structure that extends in a northwesterly direction from the Pelican Mountain area to the N.W.T. (Bloy and Hadley, 1990) The Grosmont Reef Complex is likely the result of tectonic uplift during the Devonian along this trend. This structure in conjunction with the PRA 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 Pelican Mountain 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 Smoky Group, a sequence of Upper Cretaceous calcareous and noncalcareous shales. However, older units from the top of the Fort St. John and/or the base of the Colorado groups may be exposed in river and stream cuts.



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

LEGEND

Tertiary
- Paskapoo Formation

Cretaceous
- Undifferentiated (includes the Smoky Group, Edmonton Group and Wapiti Formation)
- Shaftesbury Formation
- Loon River Formation

Devonian
- Undifferentiated formations

Precambrian
- Undifferentiated Precambrian formations
- Geological contact (approximate)
- High Level — City, town; identifier
- Ellesmere Minerals Ltd. Permit block; identifier
- Known kimberlite occurrence

ELLESMERE MINERALS LTD.

NORTHERN ALBERTA

REGIONAL GEOLOGY

Scale 0 100 200 Kilometres

APEX Geoscience Ltd.

EDMONTON, ALBERTA MAY, 1998

FIGURE 3

The Colorado Group is Lower Cretaceous in age and contains numerous formations, including the Joli Fou and the Pelican 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 Pelican 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 Pelican 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 (GSC, 1977; Glass, 1990). In the Pelican Mountain 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 may be absent in the Pelican Mountain region. The Shaftesbury Formation may be exposed along deep river and stream cuts along the Athabasca River. 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).

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, Puskwaskau, 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, foramnifera 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). Bedrock exposures in the Calling Lake permits are likely comprised of the Kaskapau

Formation, in particular, the Second White Specks unit or lower, since most of the upper portions of the Smoky Group have been eroded away by glacial and/or post-depositional processes. However, areas, where the Smoky Group is overlain by the Wapiti Formation, may still have most of the Bad Heart and/or Puskwaskau formations still intact with minimal erosion. 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 unit in the Pelican Mountain area is the Wapiti Formation of Upper Cretaceous age, comprised of non-marine, thinly bedded to massive sandstone with minor coal seams and thin conglomerate lenses. The upper surface of the Wapiti Formation is generally erosional. Thickness of the unit may exceed 100 m (Glass, 1990). The Wapiti Formation is occurs under Quaternary cover and occasionally outcrops in the vicinity of Pelican Mountain. In addition, smaller outliers or remnants of the Wapiti Formation are known to be present south and east of the permits (Green *et al.*, 1970). The Mountain Lake Kimberlite near Grande Prairie intrudes the Wapiti Formation sediments and yields an emplacement age of 75 Ma (Leckie *et al.,* 1997).

Structural Geology

In north-central Alberta, the PRA 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 northern Alberta. 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.

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 PRA was emergent during this period resulting in the reactivation of many prominent basement faults. The Phanerozoic rocks beneath the Pelican Mountain permits lie within the southeastern edge of the PRA and are underlain by and proximal to basement faults related to the STZ and the underlying Grosmont Reef Complex (Bloy and Hadley, 1990; Ross, 1995; Dufresne *et al.*, 1996). Basement faults may have controlled the emplacement of the Mountain Lake Kimberlite and the Buffalo Head Hills kimberlites northwest of the Pelican Mountain permits (Dufresne *et al.*, 1996; Leckie *et al.*, 1997). The Ellesemere permits lie in proximity to the eastern and southern boundaries of the BHT and the STZ to the south, and are therefore structurally complex.

WORK CONDUCTED IN 1998

Airborne geophysical survey

In early 1998, a high resolution (200 metre line spacing) fixed-wing airborne magnetic survey was conducted on the Pelican Mountain permits on behalf of Ellesmere. The survey was flown by Spectra Aviation Services and processed by Spectra Exploration Geoscience Corp (Spectra). In late January 1998, APEX received digital airborne geophysical data, the raw data line profiles, and a number of filtered magnetic maps processed from the data. The raw and processed data was then used to by APEX to evaluate the data for the presence of possible near-surface kimberlite or lamproite diatremes.

Raw data profiles were used to: (1) identify shallow responses superposed on larger wavelength basement responses; (2) to identify possible culture effects indicated by very high noise; (3) to evaluate the topography over the respective flight lines; and (4) to evaluate anomalies identified on the high pass difference filter map. In conjunction with the profiles, the high pass difference filter map was used to identify twenty-eight near surface anomalies which are prioritized and described in Table 2. Of the twenty-eight magnetic anomalies sixteen exist Prioritization of anomalies was based on: (1) the distortion of the total magnetic field by a low wavelength (shallow source) feature described as either a peak or a shoulder, which were further quantified (ie. good, moderate, strong) based on their amplitude (typically 0.5 nT to 2.0 nT in this survey); (2) the absence of strong magnetic noise indicating cultural features; and, (3) the location of the anomaly with respect to known cultural features.

Results and comparison with known kimberlites

Twenty-eight magnetic shallow-sourced anomalies were identified that display magnetic characteristics that could be indicative of near surface intrusive pipes (Table 2). Seven anomalies were classified as either medium or high priority near surface anomalies which require follow-up exploration for kimberlites or related intrusions (Figure 4). The initial inspection of the shallow target enhancement maps and the first vertical derivative map indicate that there are no apparent targets which are not culture related of the quality of the magnetic targets that have yielded kimberlites in the Buffalo Head Hills. However, there are several important points to make about the Buffalo Head Hills kimberlite pipes. First, while there are a few spectacular magnetic anomalies that have yielded kimberlites there are many that are less spectacular that have yielded kimberlites as well. In general, very few (perhaps two or three pipes) of the Buffalo Head Hills pipes are visible on the contoured total field magnetics for airborne geophysical data similar in quality to the Ellesmere magnetic survey data. However, most or all of the Buffalo Head Hills pipes are visible as discreet anomalies on the bulk of the filtered magnetic maps. The Ellesmere magnetic data for the Pelican Mountain seems to yield few map anomalies that could be indicative of kimberlites on the total magnetics map. The background magnetic data from the basement beneath the Pelican Mountains is comparable to the background magnetic data for the Buffalo Head Hills area. For example, a contour map of the 1st vertical derivative of the total magnetic field for the Buffalo Head Hills area yields a total range of 300 nT/m. The range for Ellesmere's Pelican Mountain permits is about 200 nT/m for the same map. Anomalies that could be of interest are tabulated in Table 2. The more prospective magnetic anomalies include 3, 4, 10, 12, 26, 27

and 28. Several of the above mentioned anomalies could be of interest for possible kimberlite or lamproite related intrusions or volcanic horizons and, therefore, warrant conducting further exploration.

Little sampling for indicator minerals has been conducted on the Ellesmere permit date. A sample provided to Ellesmere by the vending prospector has yielded several pyropic garnets, eclogitic garnets, picrochromites and a chrome diopside. The exact location of this sample on the permits is unknown. However, an anomalous till sample has also been collected by the Alberta Geological Survey about 10 km east of the Ellesmere permits. The sample yielded G1 and G9 pyropic garnets and a high magnesium spinel. These diamond indicator results warrant follow up exploration.

CONCLUSIONS AND RECOMMENDATIONS

At this stage, conducting further airborne geophysical surveys, including infilling the prior survey, is likely not going to result in the discovery of any other high quality magnetic anomalies that could be indicative of kimberlites or lamproites that were not identified in the initial survey. Any further airborne geophysical surveys will likely only enhance the existing targets that have been identified to date. The existing targets warrant further exploration including ground testing prior to conducting any drill tests.

Based upon the good quality of several of the profile magnetic anomalies a field test of selected magnetic anomalies is warranted and should include the following: (a) ground checking and prospecting all the potential anomalies of interest in order to eliminate those anomalies that are likely related to culture and/or natural features such as drainage, (b) collecting a number of till, soil or rock samples at each of the higher priority magnetic targets in order to evaluate whether any of the magnetic anomalies yield indicator minerals that could be indicative of kimberlites, and (c) conducting ground geophysical surveys over selected higher priority airborne magnetic anomalies in order to evaluate whether any of the anomalies are real and unexplained and, therefore, could be indicative of near surface diatremes that may warrant a drill test. As well, the possibility of obtaining existing seismic data for several of the higher priority magnetic anomalies should be investigated. The recommended exploration program will likely require two weeks of field work by a three man geological crew working out of fly camps with a small amount of helicopter support for camp moves and reconnaissance prospecting and sampling. The estimated cost to conduct the recommended fieldwork is $70,000, not including G.S.T.

APEX Geoscience Ltd.

[redacted]

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

PROFESSIONAL GEOLOGIST MICHAEL B. DUFRESNE ALBERTA

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature
Date June 12, 1998
PERMIT NUMBER: P-5824
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Edmonton, Alberta June 10, 1998

ELLESMERE MINERALS LTD.
Magnetic Anomalies of Interest for the Pelican Mountains Property
(Project 98206)

Anomaly	Line	Fiducial	Description	Priority	UTME	UTMN
1	27	6640	8-9 nT peak; very noisy; about 290 m diameter; likely culture related to drillpad	very low	347031	6173307
2	24	6772	1 nT weak shoulder; about 250 m diameter; likely related to bridge	very low	345063	6173874
3	18	3453	1.5-2.0 nT peak, about 210 m diameter; low topography; low noise; near river	med	341844	6175094
4	59	8023	6-7 nT strong shoulder; about 550 m diameter anomaly halo; in topographic low; possibly forestry clearing; 4 line anomaly- on l63 at 3862; on l61 at 8812 and 8820	high	339625	6166973
5	91	11085	10 nT peak; very noisy; about 250 m diameter; likely related to drillpad	very low	336805	6160692
6	90	10620	4 nT peak; very noisy; well	very low	334943	6160866
7	40	2807	2-3 nT peak, about 290 m diameter; associated swamp or vegetation anomaly	high	333476	6171072
8	39	2391	2 nT peak, low noise; about 340 m diameter; vegetation anomaly; topographic high	high	332977	6171359
9	17	2412	5-6 nT peak, moderate noise; about 510 m diameter; slight topographic high	high	330248	6175452
10	16	1406	7-8 nT peak; very noisy; about 380 m diameter; anomaly centred on seismic line; possibly culture	med	326904	6175648
11	7	1370	12 nT peak, about 300 m diameter; well	very low	325848	6177450
12	42	4224	2-3 nT broad shoulder; low noise; about 500 m diameter	med	332977	6171359
13	49	2108	1 nT moderate shoulder; low noise; low topography; possibly paleochannel	low	354269	6169080
14	74	3168	3.5 nT rounded peak; low noise; moderate topography; 2 line anomaly- on l74 at 3307	high	322481	6164046
15	10	3528	2 nT sharp peak; moderate noise; in valley; possibly topographic effect	low	320450	6176735
16	24	6969	very weak deflection; low noise; topographic high	low	361377	6174103
17	45	5060	1.5 nT peak; moderate noise; low topography	high	356071	6169645
18	90	10553	8 nT sharp peak; very noisy; topographic low; likely culture	low	340764	6161008
19	30	242	10 nT peak; very noisy; likely well	low	337470	6172897
20	26	8004	5 nT peak; very noisy; low topography; likely well	low	340148	6173673
21	17	2340	9 nT peak; very noisy; topographic low; likely culture	low	335706	6174225
22	86	5526	nothing in profile	low	326861	6161543
23	55	6404	5 nt peak; low noise; low topography	high	322165	6167898
24	50	2667	weak deflection; low noise; low topography	low	321782	6168086
25	26	7805	7.5 nT peak; very noisy; likely well	low	323569	6173604
26	39	2290	1 nT rounded peak; low noise; anomaly centered on topographic high	med	340026	6171107
27	8	1283	2 nT good shoulder; low noise; low to level topography	med - high	320329	6168086
28	99	1037	3 nT rounded peak; low noise; slight topographic high; part of large > 1km linear anomaly; possibly fault or dyke	med	336150	6159000

310000

380000

6190000

6140000

I.R. 166D

SOUTH WABASCA LAKE

I.R. 166

RIVER

MUSKEG

SANDY LAKE

PELICAN LAKE

PELICAN RIVER

CROOKED RIVER

FIFTH MERIDIAN

FAWCETT RIVER

ROCK ISLAND LAKE

ORLOFF LAKE

79 78 77 76 75 26 25 24 23 22 21 20 19 74

9396020005

9396020004

9396020003

9396020002

AGS
G1, G9, Spinel

LEGEND

- High priority airborne magnetic anomaly.
- Medium priority airborne magnetic anomaly.
- Low priority airborne magnetic anomaly.
- AGS G1 — Alberta Geological Survey Till Site.
- Airborne magnetic geophysical survey area.
- Permit boundaries held by Ellesmere Minerals Ltd.; permit identifier.
- River, stream.
- Lake.
- Highway.

ELLESMERE MINERALS LTD.

NORTHERN ALBERTA

PERMIT LOCATIONS AND GEOPHYSICAL ANOMALIES

NTS: 83P

SCALE 0 3 6 9 12 Kilometres

1:250,000

APEX Geoscience Ltd.

EDMONTON, ALBERTA MAY, 1998

FIGURE 4

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CERTIFICATION

I, D.C.M. VERNET OF [redacted], EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF QUEEN'S UNIVERSITY WITH A B.SC. SPECIALIZATION DEGREE IN GEOLOGICAL ENGINEERING (1996). I AM ELIGIBLE FOR REGISTRATION AS A GEOLOGICAL ENGINEER WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF ALBERTA.

MY EXPERIENCE INCLUDES SERVICE AS AN EXPLORATION GEOLOGIST WITH BLUE RIBBON RESOURCES, VANCOUVER, BRITISH COLUMBA IN 1996. FROM OCTOBER 1996 TO PRESENT I HAVE CONDUCTED AND DIRECTED PROPERTY EXAMINATIONS AND EXPLORATION PROGRAMS ON BEHALF OF COMPANIES AS A GEOLOGIST IN THE EMPLOY APEX GEOSCIENCE LTD.

I HAVE NO INTEREST OR SECURITIES, DIRECT OR INDIRECT, IN THE PROPERTY HELD BY ELLESMERE MINERALS LTD., NOR DO I EXPECT TO RECEIVE SUCH INTEREST. AS WELL, APEX GEOSCIENCE LTD. HAS NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTY, NOR DOES IT EXPECT TO RECEIVE SUCH INTEREST.

THIS REPORT ENTITLED "ASSESSMENT REPORT ON METALLIC MINERAL PERMITS No. 9396020002, 9396020003, 9396020004, AND 9396020005, PELICAN MOUNTAIN AREA, ALBERTA" IS BASED UPON THE STUDY OF PUBLISHED AND UNPUBLISHED DATA.

I HEREBY GRANT ELLESMERE MINERALS LTD. OF EDMONTON, ALBERTA, PERMISSION TO USE THIS REPORT IN A PROSPECTUS OR STATEMENT OF MATERIAL FACTS FOR THE PURPOSE OF PRIVATE OR PUBLIC FINANCING.

[redacted]

D. VERNET, B.SC.

MAY, 1998
EDMONTON, ALBERTA

CERTIFICATION

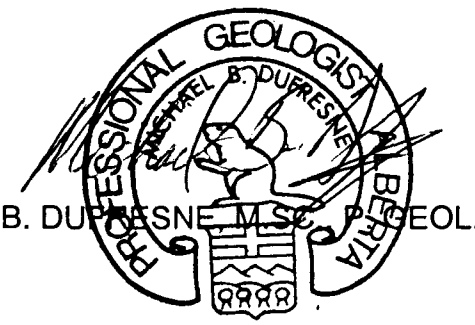
I, M.B. DUFRESNE OF [redacted] EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF NORTH CAROLINA AT WILMINGTON WITH A B.SC. DEGREE IN GEOLOGY (1983) AND A GRADUATE OF THE UNIVERSITY OF ALBERTA WITH A M.SC. DEGREE IN GEOLOGY (1987). I AM REGISTERED AS A PROFESSIONAL GEOLOGIST 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., 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 OR SECURITIES, DIRECT OR INDIRECT, IN THE PROPERTY HELD BY ELLESMERE MINERALS LTD., NOR DO I EXPECT TO RECEIVE SUCH INTEREST. AS WELL, APEX GEOSCIENCE LTD. HAS NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTY, NOR DOES IT EXPECT TO RECEIVE SUCH INTEREST.

THIS REPORT ENTITLED "ASSESSMENT REPORT ON METALLIC MINERAL PERMITS No 9396020002, 9396020003, 9396020004, AND 9396020005, PELICAN MOUNTAIN AREA, ALBERTA" IS BASED UPON THE STUDY OF PUBLISHED AND UNPUBLISHED DATA.

I HEREBY GRANT ELLESMERE MINERALS LTD. OF EDMONTON, ALBERTA, PERMISSION TO USE THIS REPORT IN A PROSPECTUS OR STATEMENT OF MATERIAL FACTS FOR THE PURPOSE OF PRIVATE OR PUBLIC FINANCING.



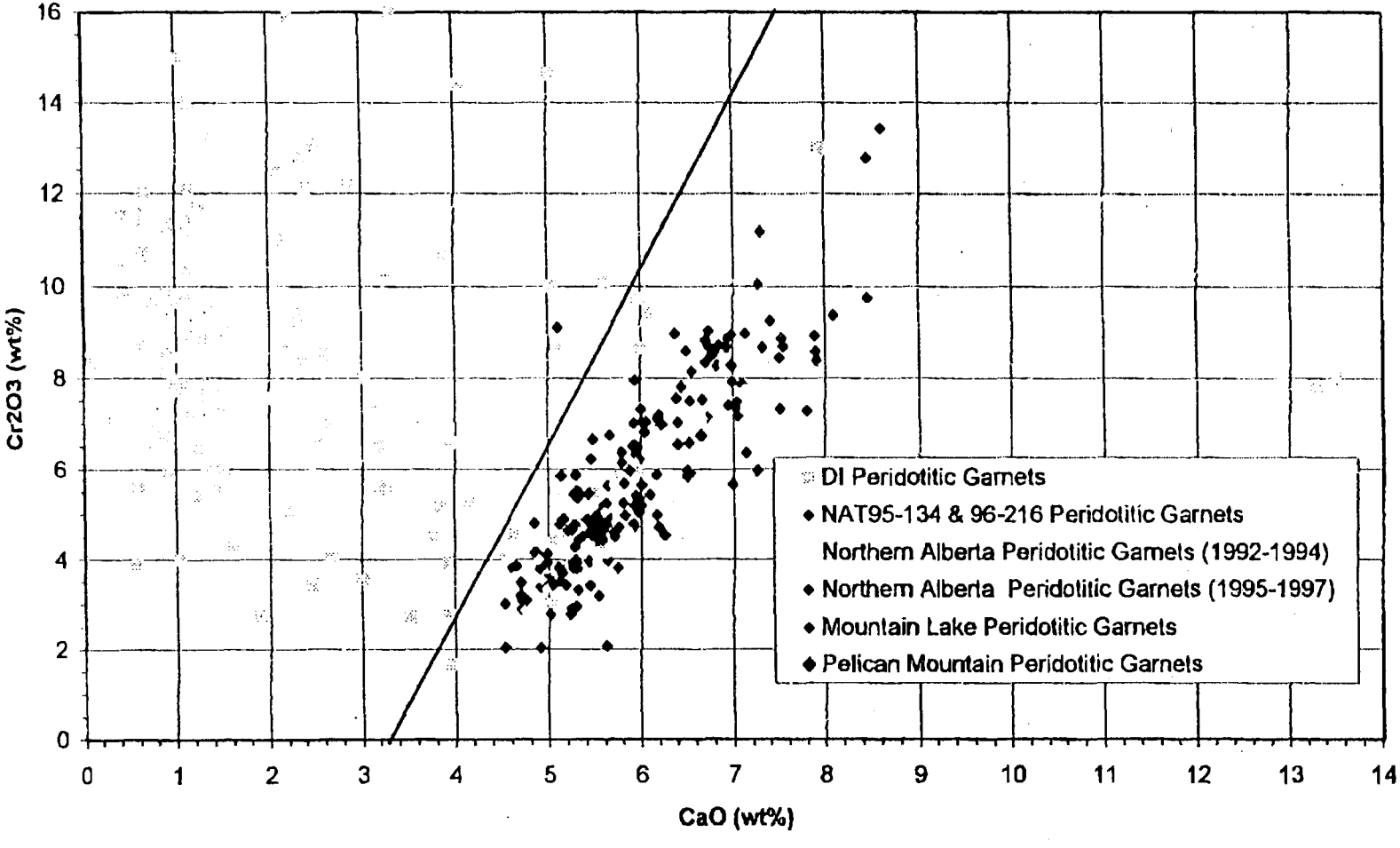
M.B. DUFRESNE, M.SC., P.GEOL.

MAY, 1998
EDMONTON, ALBERTA

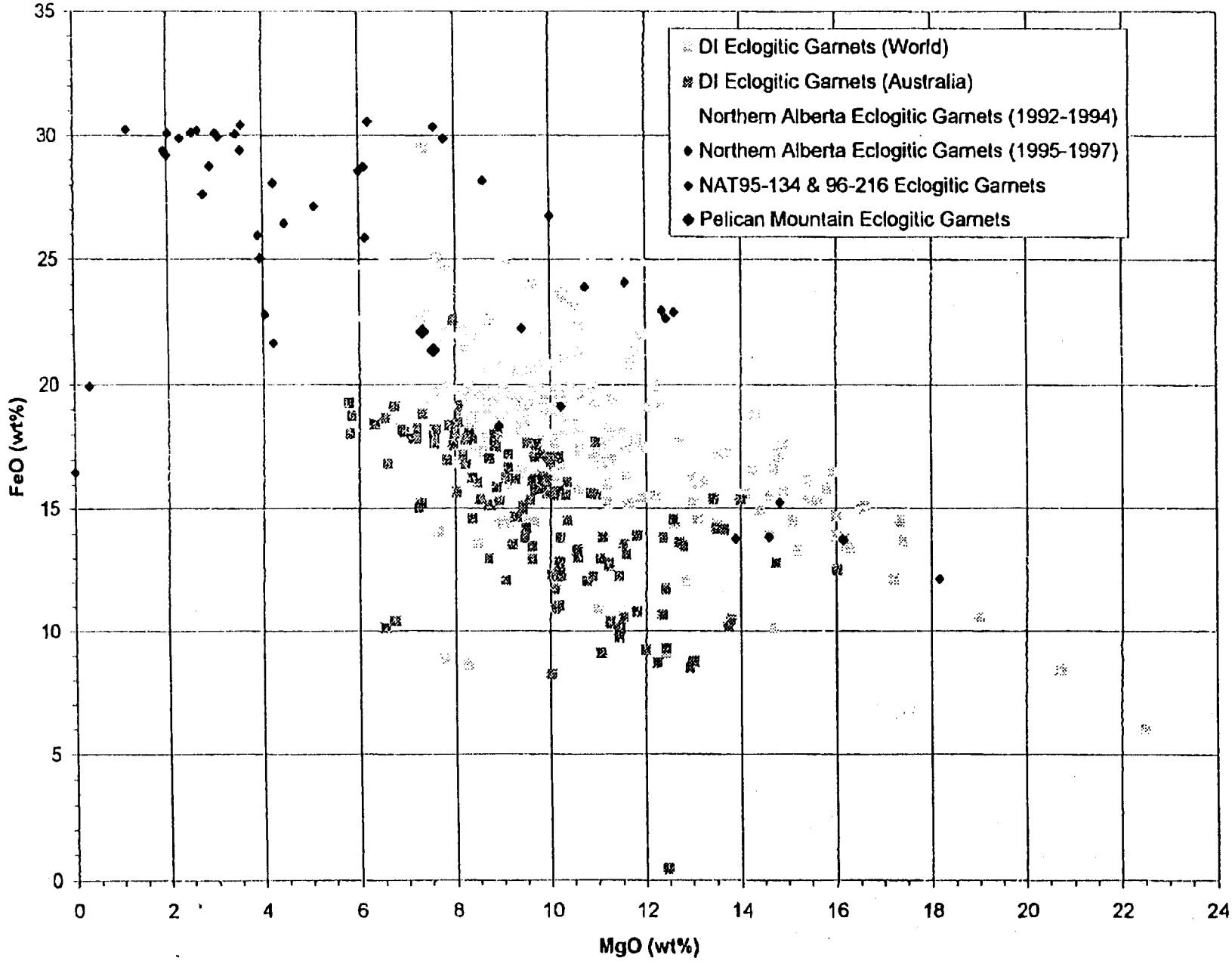
Table 1: Microprobe Results For Sample PM-001

Sample#	Pt#	Mineral (Min-id.asc)	SiO2 (wt%)	TiO2 (wt%)	Al2O3 (wt%)	Cr2O3 (wt%)	FeO (wt%)	MgO (wt%)	MnO (wt%)	CaO (wt%)	Na2O (wt%)	K2O (wt%)	Total (wt%)	NiO (wt%)	ZnO (wt%)
PM-001	Py-1	G_09_CHROME_PYROPE	41.50	0.00	20.38	5.20	8.78	17.96	0.49	5.97	0.08	0.00	100.38	n/a	n/a
PM-001	Py-3	G_09_CHROME_PYROPE	41.76	0.19	20.14	5.45	7.85	18.84	0.31	5.31	0.08	0.00	99.92	n/a	n/a
PM-001	Py-2	G_03_CALCIC_PYROPE_ALMANDINE	39.22	0.15	22.81	0.00	21.40	7.55	0.52	8.89	0.06	0.00	100.61	n/a	n/a
PM-001	Py-4	G_03_CALCIC_PYROPE_ALMANDINE	39.19	0.25	22.21	0.06	22.13	7.33	0.61	8.34	0.07	0.00	100.18	n/a	n/a
PM-001	CD-1	CPX_05_UNKNOWN	53.24	0.04	1.07	0.81	3.02	17.98	0.09	22.81	0.16	0.00	99.21	n/a	n/a
PM-001	Ox-1	PICRO_CHROMITE	0.04	1.75	14.17	46.02	21.35	14.58	0.23	0.06	n/a	n/a	98.44	0.1689	0.0761
PM-001	Ox-2	UNKNOWN (Sub-Picrochromite)	0.02	1.06	30.01	23.73	29.92	13.30	0.18	0.02	n/a	n/a	98.47	0.1278	0.1002
PM-001	Ox-3	SUB_PICRO_CHROMITE	0.00	0.51	17.16	42.89	29.32	7.50	0.48	0.00	n/a	n/a	98.38	0.1548	0.3599

CaO vs Cr2O3 For Peridotitic Garnets From Northern Alberta



MgO vs FeO For Eclogitic Garnets From Northern Alberta



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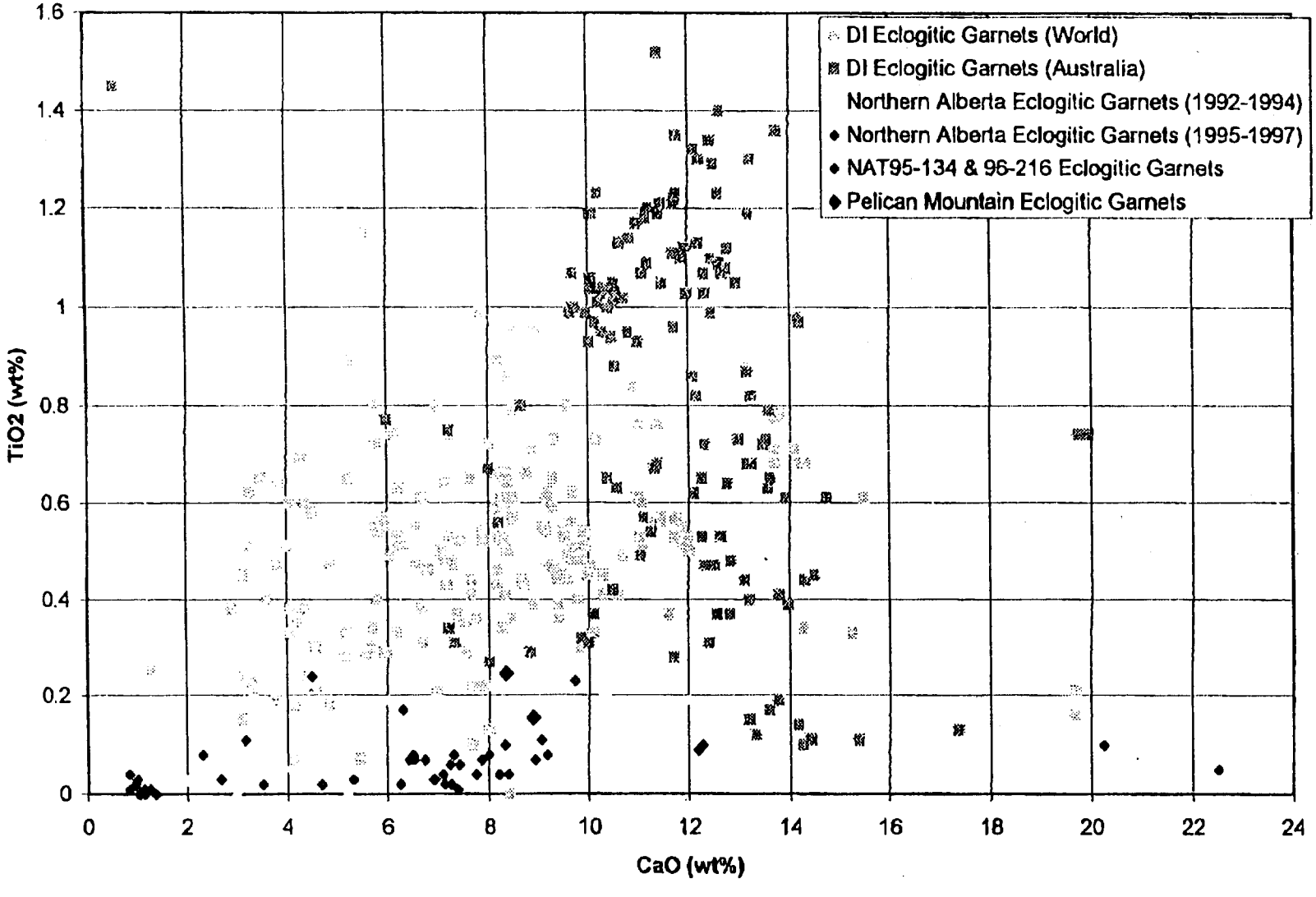
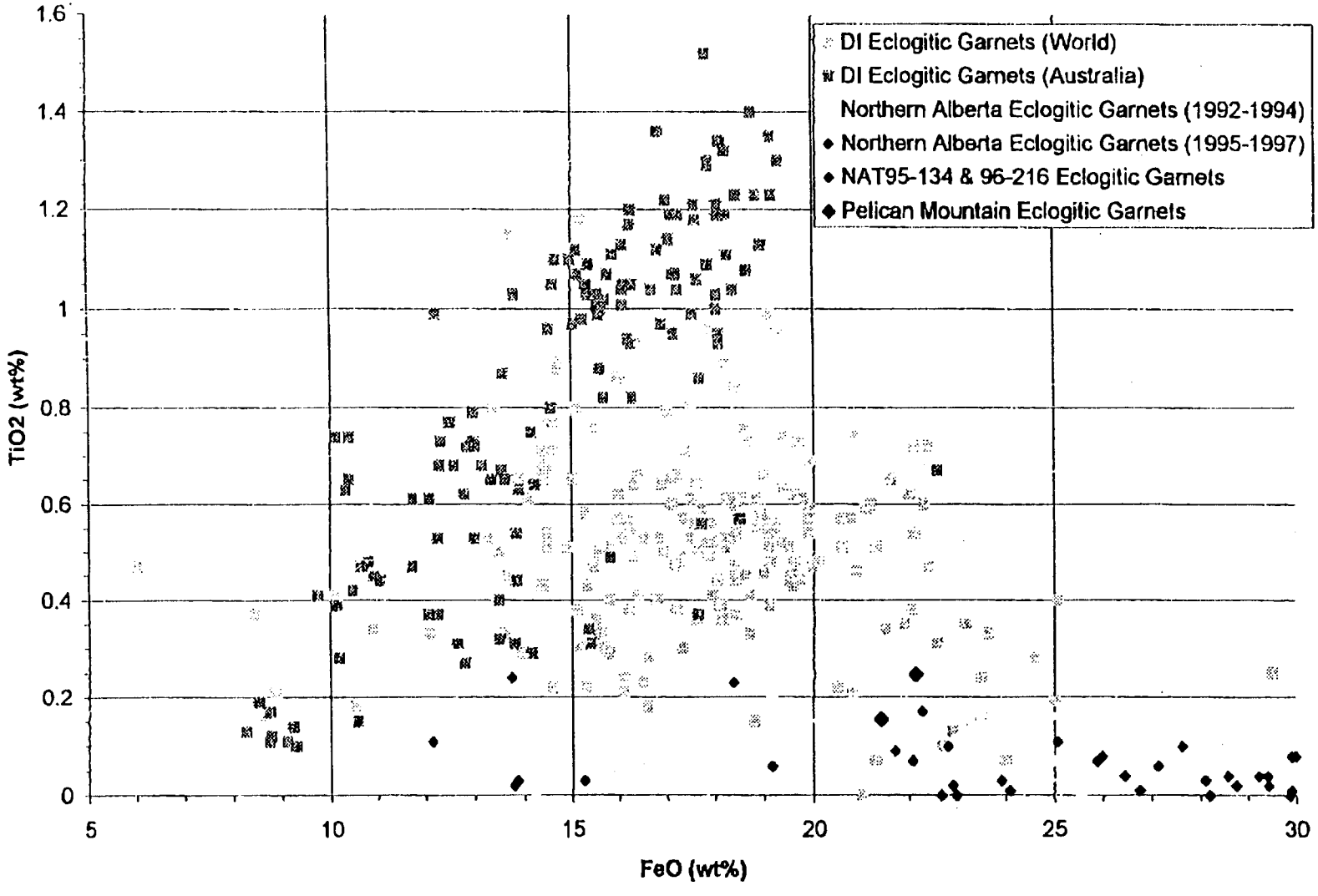
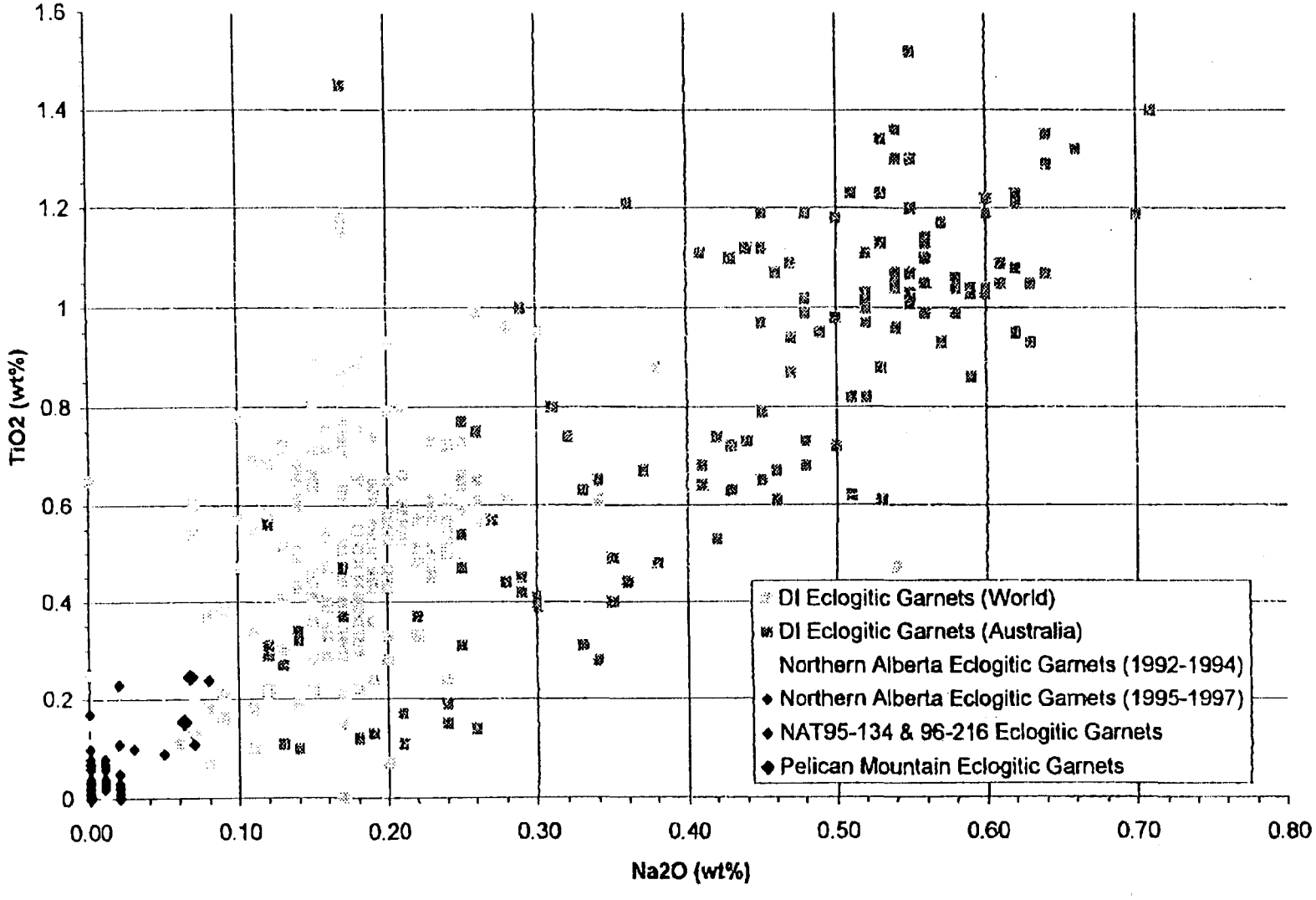


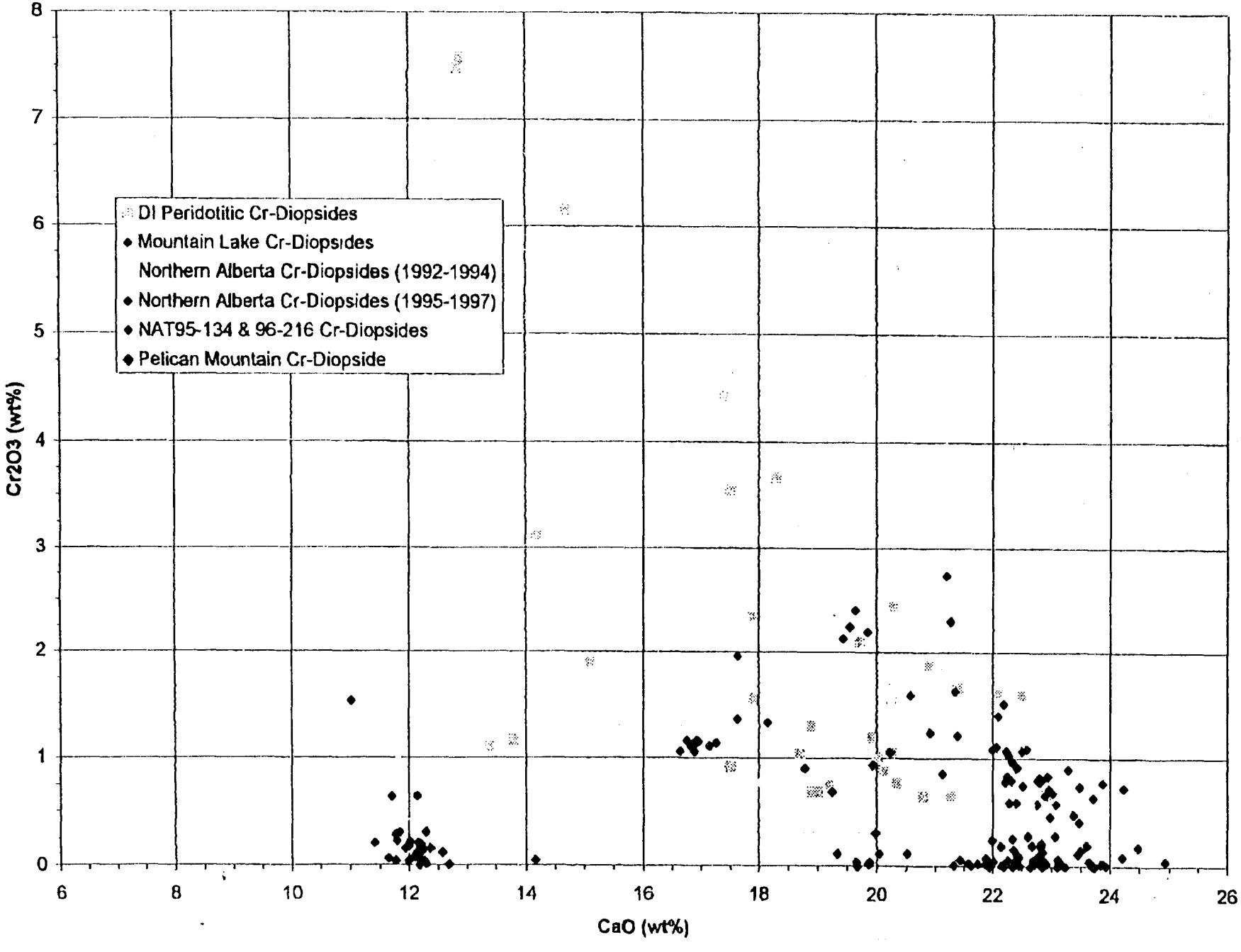
FeO vs TiO2 For Eclogitic Garnets From Northern Alberta



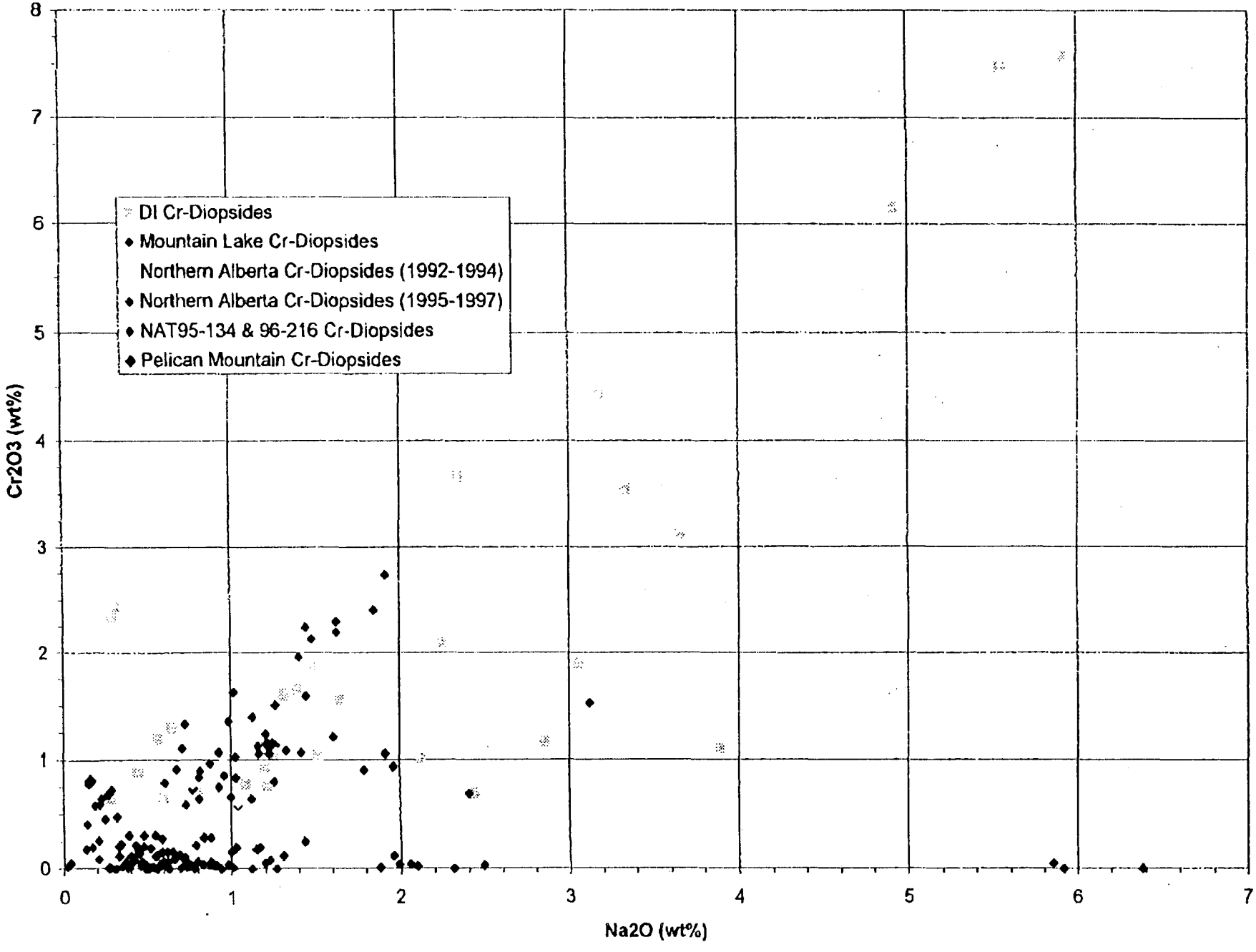
Na2O vs TiO2 For Eclogitic Garnets From Northern Alberta



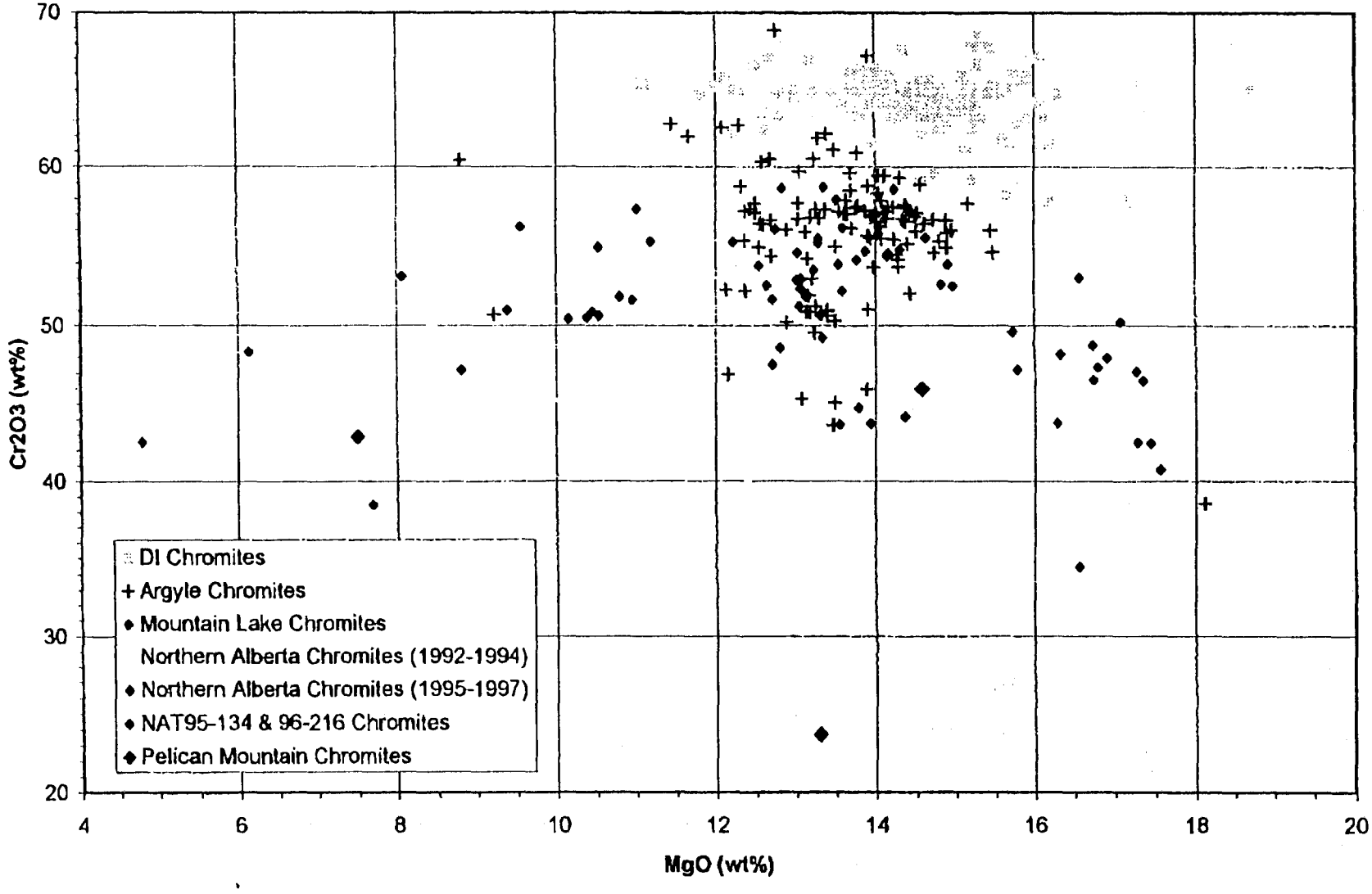
CaO vs Cr2O3 For Peridotitic Cr- Diopsides From Northern Alberta



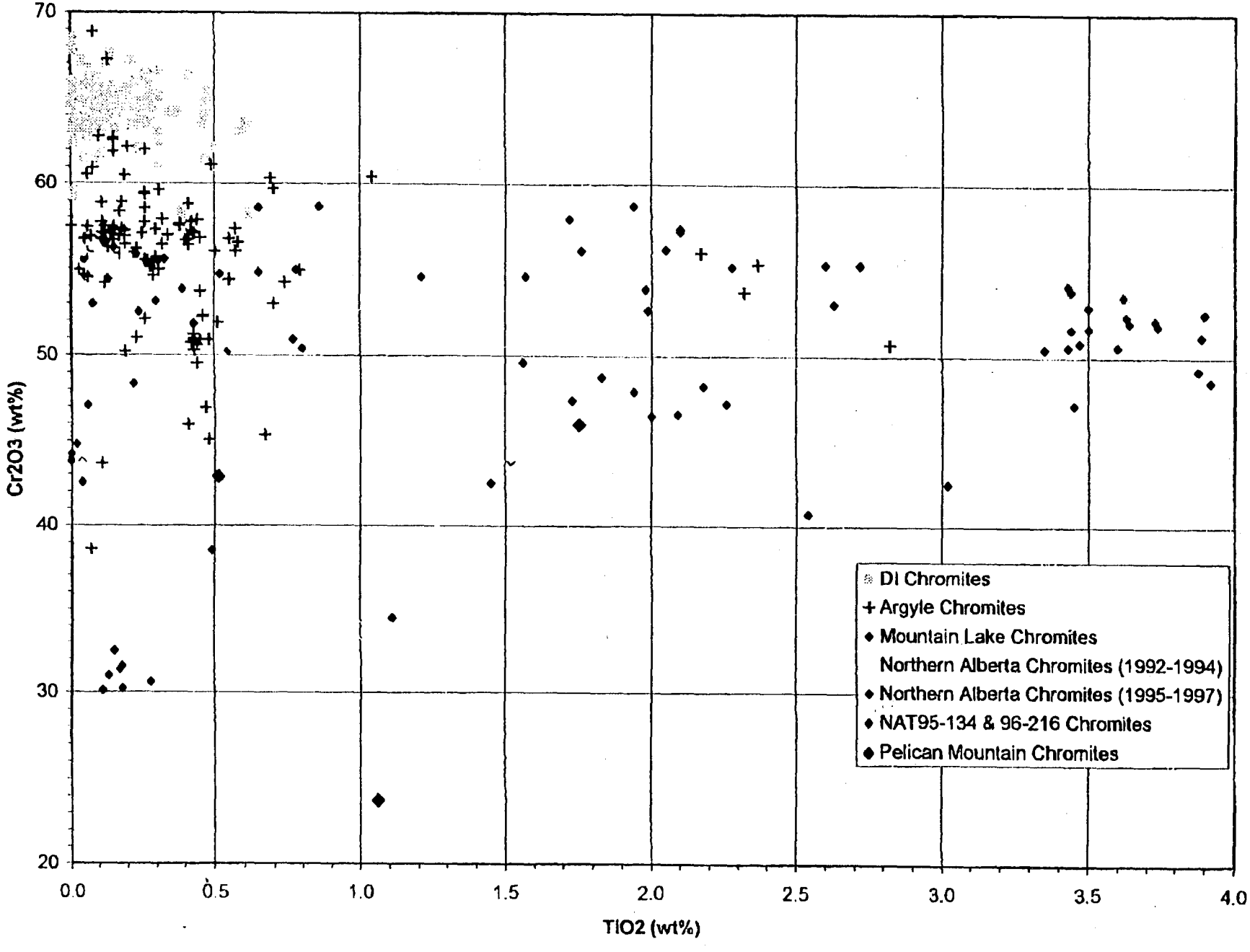
Na2O vs Cr2O3 For Peridotitic Cr- Diopsides From Northern Alberta



MgO vs Cr2O3 For Chromites From Northern Alberta



TiO2 vs Cr2O3 For Chromites From Northern Alberta



ELLESMERE MINERALS LTD. ELM-ASE

Suite 220, 9797 - 45th Avenue
Edmonton AB T6E 5V8
Bus: (403) 439-5380
Fax: (403) 433-1336

TABLE I

EXPENDITURES BY ELLESMERE MINERALS LTD. ON BEHALF OF LARRY McGOUGAN ON THE PELICAN MOUNTAIN PERMITS, NUMBERED 9396020002, 9396020003, 9396020004, AND 9396020005

Work performed by Ellesmere Minerals Ltd.

Review of geology; government reports including sediment sample data, rock grab sample data, and thin sections of selected samples; planning of airborne survey; logistics etc; 30 days at $500/day.

$15,000

Geological Consulting (APEX Geoscience Ltd.)

Includes review and interpretation of data; purchase of digital elevation data ($1700); purchase of data over known kimberlites ($ 4500); all costs associated with reporting; all adminstrative costs ie. communications, consumables, maps and publications ($200); 1 day at $300/day; 9 days at $225/day; 2 days at $450/day; 2 days at $187.50/day.

$10,000

Contractor costs (SPECTRA Exploration Geoscience Corp.)

Includes flying of high resolution airborne survey; all post acquisition data processing; deculturing costs; maps and digital data.

$60,500

Total Expenditures Excluding GST $85,500

APEX Geoscience Ltd.

Suite 200, 9797 - 45 Ave
Edmonton, AB • T6E 5V8
Bus. 403·439·5380 • Fax 403·433·1336
apexgeo@compusmart.ab.ca

Suite 200, 365 Bay Street
Toronto, ON • M5H 2V1
Bus. 416·366·3781 • Fax 416·366·3671
apexto@istar.ca

June 17, 1998

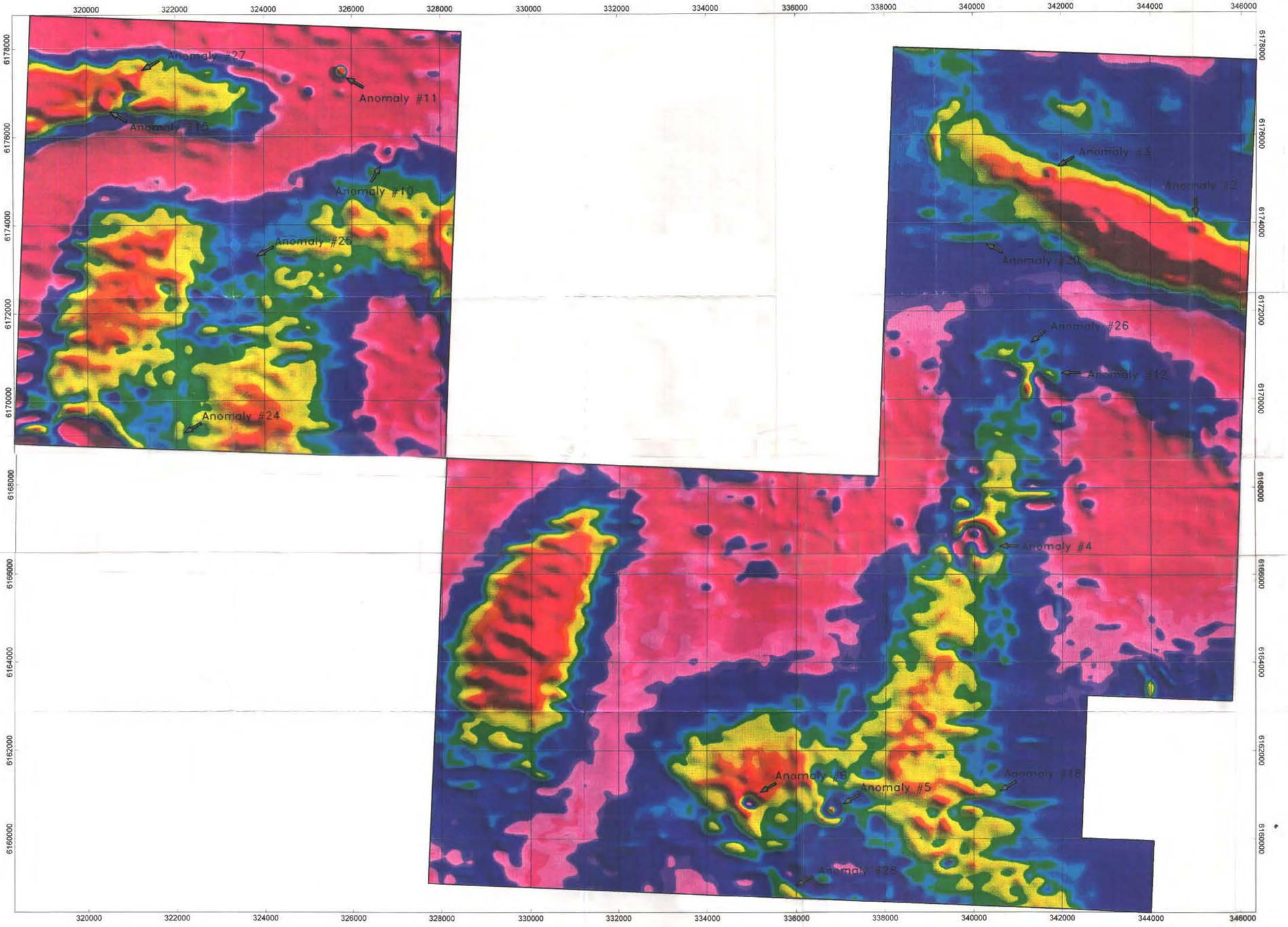
Dear Hazel:

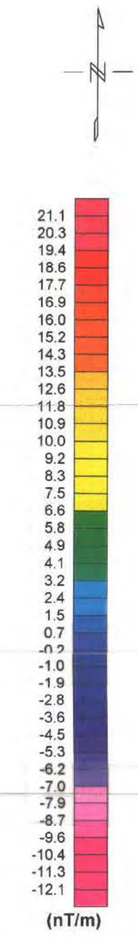
I have enclosed copies of the minor revisions to our report entitled "Assessment Report on Metallic Mineral Permits No. 9396020002, 9396020003, 9396020004, and 93696020005". I have included 2 copies of the expenditures summary and 2 copies of figure 4 as you requested. Please note that I have also included 2 copies of the cover and 2 copies of page 2 which also required some minor changes. Please bind these pages into the reports that I sent to your office and discard the old copies. I apologize if this has caused any inconvenience. Should you have any more questions or concerns please call me at 439-5380.

Sincerely,

[redacted]

Daniel Vernet, B.Sc.





Sun angles
Azimuth: 45 degrees
Elevation: 35 degrees

Flown by Spectra Aviation Services

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature
Date June 12, 1998
PERMIT NUMBER: P-5824
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL GEOLOGIST ALBERTA MICHAEL B. DUPRESNE

ELLESMERE MINERALS LTD.

Pelican Mountain Permits
CALCULATED VERTICAL GRADIENT OF TOTAL MAGNETIC INTENSITY
NTS 83P
Scale 1000 0.0 1000 2000 3000 meters
1:50000
APEX Geoscience Ltd.
Edmonton, Alberta June, 1998

FIGURE 5