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ASSESSMENT REPORT FOR THE LIEGE PROPERTY, NORTHERN ALBERTA: MINERAL PERMITS #9302050133 TO 9302050134

Approximate Property Location
Latitude: 50° 51' N
Longitude: 113° 46' W
140 Km West of Fort McMurray, North-Central Alberta

Completed By:
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Edmonton, Alberta, Canada
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June, 2006
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ASSESSMENT REPORT FOR THE LIEGE PROPERTY, NORTHERN ALBERTA: MINERAL PERMITS #9302050133 TO 9302050134

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ASSESSMENT REPORT FOR SHEAR MINERALS LTD.'S LIEGE PROPERTY, NORTHERN CENTRAL ALBERTA: MINERAL PERMITS # 9302050133 TO 9302050134

SUMMARY

APEX Geoscience Ltd. (APEX) was retained during 2006 as consultants by Shear Minerals Ltd. (Shear) on behalf of 977554 Alberta Ltd. (Alberta Ltd.) to compile all existing geological and geophysical data for the Liege and Legend properties and for the preparation of an independent evaluation of the potential of the properties to host diamondiferous kimberlites. Shear's properties, currently held by 977554 Alberta Ltd., are comprised of 11 mineral permits and 61,952 hectares (153,086 acres), which are 370 km northeast of Edmonton. Shear's properties cover portions of Townships 90 to 91, Ranges 23 to 25, Townships 91 to 92, Ranges 14 to 17 and Townships 93 to 94, Range 14, west of the 4th meridian. During the 2006 program Shear spent a total of $70,963.20 (not including GST) on exploration on the Liege Property, the subject of this report. Exploration on the Liege property by APEX during the spring of 2006 consisted of an airborne geophysical program, which delineated eleven anomalies.

The regional setting in the Buffalo Head Hills area is considered favourable for the presence of diamondiferous kimberlites. The Liege permits are underlain by Early Proterozoic to Archean basement of the Buffalo Head Craton. The local bedrock geology and the underlying Archean to Proterozoic crystalline basement in association with deep seated, penetrative structures, such as the Peace River Arch, likely provided a favourable environment for the ascent of kimberlitic magmas in the Buffalo Head Hills region. The regional cratonic setting is also considered favourable for the formation and preservation of diamonds in the upper mantle and their transport to surface in kimberlitic magma during periodic tectonic activity associated with movement along the Peace River Arch.

To date, previous exploration work by other companies recovered a number of diamond indicator minerals from glacial outwash gravel, recent fluvial gravel and till on and around Shear's properties. The importance of these indicator minerals is unknown due to the presence of variable thicknesses of glacial drift and the poor sampling density. A limited number of samples collected from and around the Liege property have yielded significant numbers of indicator minerals including olivine, pyrope garnet, chromite and picroilmenite. Therefore there is a strong likelihood that undiscovered kimberlites exist on or to the north of the Liege property. The diamond potential of the Shear properties cannot be fully assessed with the limited amount of sampling that has been conducted to date. However, several airborne surveys were conducted and have delineated five targets in total on both the Liege and Legend properties.

A review of all the existing and available airborne magnetic and electromagnetic data for the Liege property resulted in the identification of eleven magnetic anomalies that warrant follow-up exploration.

INTRODUCTION AND TERMS OF REFERENCES

APEX Geoscience Ltd. (APEX) was retained during 2006 as consultants by Shear Minerals Ltd. (Shear) to compile all existing geological, geophysical and geochemical data for the Liege property and to prepare an independent evaluation of the potential of the property to host diamondiferous kimberlites. During 2006, APEX oversaw the completion of a fixed-wing airborne magnetic survey over the Liege property. In the spring of 2006, APEX evaluated the identified airborne anomalies. This assessment report documents the results of the data review by APEX and others to date on the Liege property. Mr. M.B. Dufresne, M.Sc., P.Geol., a Qualified Person, visited the property on a number of occasions. During the last year, Shear Minerals Ltd. spent a total of CAN$ 70,963.20 (not including GST) on exploration on the Liege Property for the data compilation and airborne survey.

Firefly Aviation Ltd conducted a high resolution airborne magnetic (HRAM) survey on the Liege property between February 14, 2006 and March 26, 2006. Eleven (11) magnetic anomalies were suggestive of kimberlitic intrusives identified and picked on the Liege property.

DISCLAIMER

The author, in writing this report, use sources of information as listed in the references. The report, written by Mr. M. B. Dufresne, M.Sc., P.Geol., a Qualified Person, is a compilation of proprietary and publicly available information as well as information obtained during a number of property visits. The government reports were prepared by a person or persons holding post secondary geology, or related university degree(s), prior to the implementation of the standards relating to National Instrument 43-101. The information in those reports is therefore assumed to be accurate. Those reports written by other geologists are also assumed to be accurate based on the property visits and data review conducted by the author, however are not the basis for this report.

PROPERTY DESCRIPTION AND LOCATION

The centre of the Liege property is situated approximately 140 km (87 miles) west of Fort McMurray, Alberta and approximately 370 km (230 miles) northeast of Edmonton, Alberta (Figure 1). The property is located in North Central Alberta within 1:250 000 scale National Topographic System (NTS) map sheets 84A and 84H at 50" 51' N latitude and 113" 46' W longitude. The Liege property consists of 2 metallic and industrial mineral permits totalling 18,432 Ha (Figure 2). A list of legal descriptions for the Liege property is provided in Table 1. The Legal Description column is Meridian, Range, Township and Section respectively. Copies of the mineral permit agreements and the land titles are included in Appendix 1.

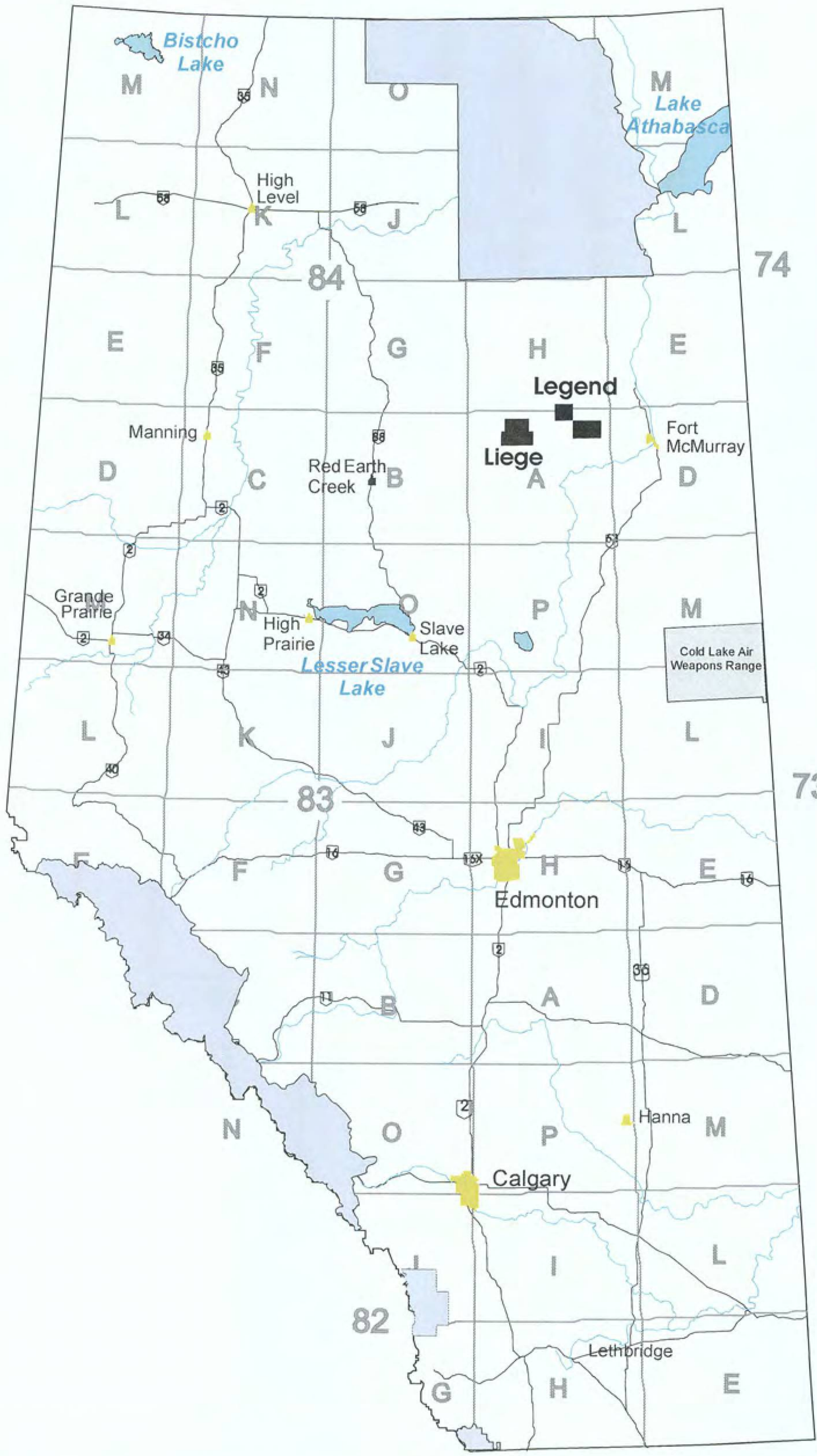
TABLE 1
LEGAL PERMIT DESCRIPTIONS*

Permit Number	Record Date	Term Period	Legal Description	Permit Holder	Area (Ha)
Liege Property					
9302050133	2002-5-24	10 years	4-23-090: 19-21; 28-33 4-23-091: 3-10; 15-18 4-24-090: 22-27; 34-36 4-24-091: 1-2; 11-14	977554 Alberta Ltd.	9216
9302050134	2002-5-24	10 years	4-24-090: 19-21; 28-33 4-24-091: 03-05; 8-10; 15-17 4-25-090: 19-36	977554 Alberta Ltd.	9216
				Property Total	**18, 432Ha**

*based on land titles search

Alberta Mining regulations grant metallic mineral permits to the permittee in 10 year terms, during which at any time after the initial two year term, the mineral permit may be converted into a lease. Leases are granted in 15 year terms and may be renewed. A metallic mineral permit gives APEX the exclusive right to explore for and develop economic deposits of minerals, including diamonds, within the boundaries of the permit. The exclusive right to explore is subject to ALBERTA REGULATION 66/93 of the Alberta Mines and Minerals Act and the contained Metallic and Industrial Minerals Regulations within the act. The Standard Terms and Conditions for the permits are described in detail on Alberta Energy's website at http://www.qp.gov.ab.ca/Documents/REGS/1993_066.CFM.

A permit holder shall spend or cause to be spent with respect to the location of his mineral permit on assessment work an amount equal to $5 for each hectare in the location during the first two year period; an amount equal to



Legend

- Provincial and/or National Parks
- Provincial Highway
- Cities
- Rivers
- Liege Property
- Legend Property

SHEAR MINERALS LTD.

ALBERTA

PROPERTY LOCATION

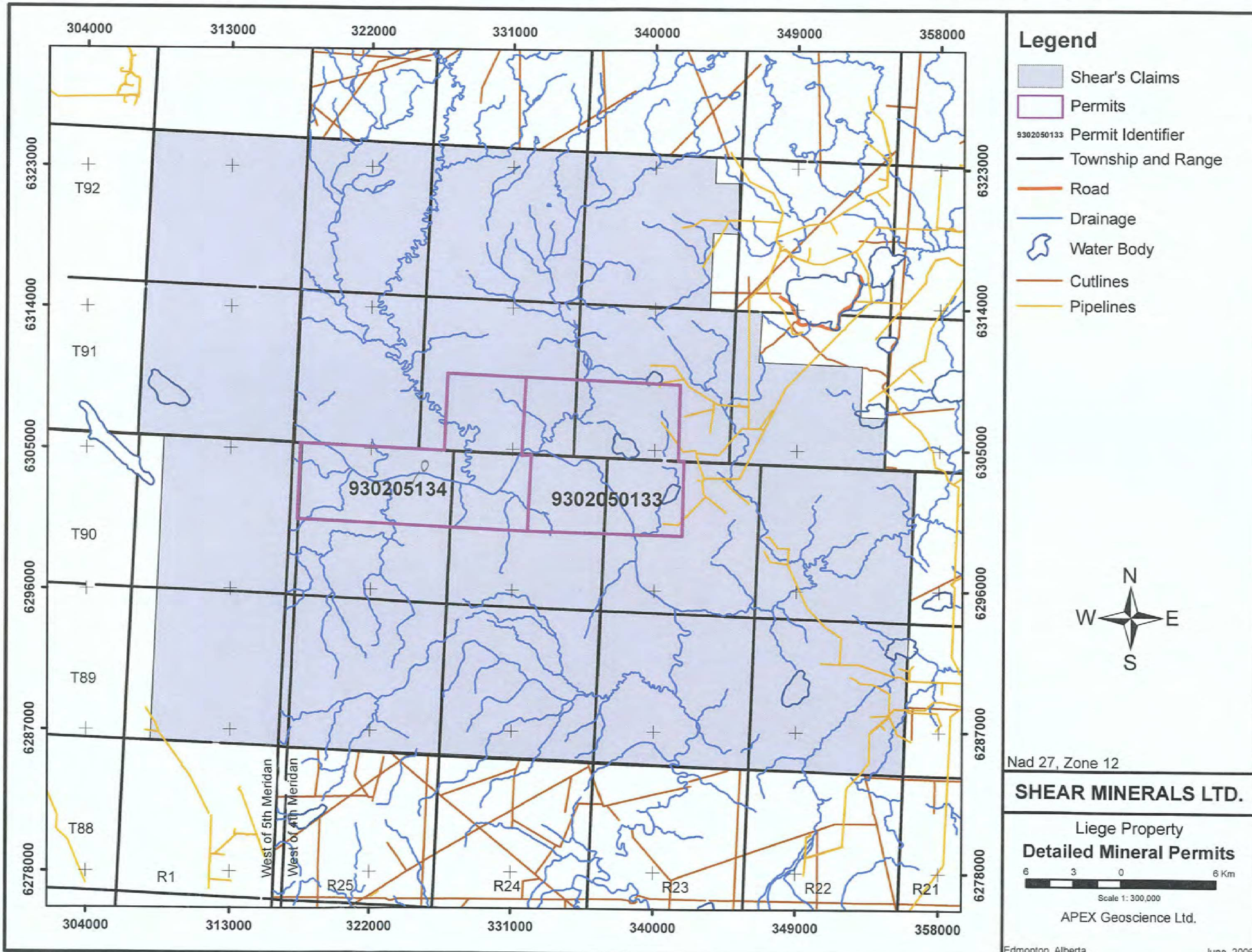
Scale 0 100 200 Km

APEX Geoscience Ltd.

Edmonton, Alberta

June, 2006

FIGURE 1.



Legend
Shear's Claims
Permits
9302050133 Permit Identifier
Township and Range
Road
Drainage
Water Body
Cutlines
Pipelines
304000
313000
322000
331000
340000
349000
358000
6323000
6314000
6305000
6296000
6287000
6278000
T92
T91
T90
T89
T88
R1
R25
R24
R23
R22
R21
West of 5th Meridian
West of 4th Meridian
930205134
9302050133
N
W
E
S
Nad 27, Zone 12
SHEAR MINERALS LTD.
Liege Property
Detailed Mineral Permits
6 3 0 6 Km
Scale 1: 300,000
APEX Geoscience Ltd.
Edmonton, Alberta
June, 2006

Figure 2.

$10 per hectare for each of the second and third two year periods; and an amount equal to $15 per hectare for each of the fourth and fifth two year periods. Mineral permits may be grouped and excess expenditures may be carried into the next two year period.

In addition to the financial commitment, a metallic mineral permit holder is required to file an assessment report that documents all of the work conducted as well as the results of the work to Alberta Energy. The assessment report must be filed within 90 days after the record date after each two year period.

ACCESSIBILITY, CLIMATE AND LOCAL RESOURCES

The Liege property is located 370 km north of Edmonton and 140 km west of Fort McMurray and may be accessed via Provincial Highways 813 and 63, all weather and dry weather gravel roads, cart trails and seismic lines. Most portions of the mineral permits area may be accessed by four-wheel drive vehicles or all terrain vehicles (ATV's) during the summer and winter months. There are several airstrips in the area including one at Chipewyan Lake situated on the Liege property. Accommodation, food, fuel, and supplies are best obtained in the town of Fort McMurray.

The Liege property is located within a forest containing mainly mixed poplar, spruce and birch trees on a flat lying plateau with numerous small lakes and ponds, meandering rivers and creeks as well as swamps and marshes. . Elevation in the region varies from 400 m to 600 m (1312 ft to 1969 ft) above sea level (asl). Climate is typically long cold winters and short hot summers with annual temperatures ranging from -40°C in January to 25°C in July.

HISTORY: PREVIOUS EXPLORATION

Previous Exploration Buffalo Head Hills Region

Previous exploration in the Buffalo Head Hills region has focussed primarily on the search for hydrocarbon and aggregate deposits and for 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).

The Buffalo Head Hill region is well known for its wealth of energy resources. The primary established reserves are 47,196.4 x 10^3 m^3 of oil in 12 conventional fields and 808 x 10^6 m^3 of gas in 3 fields (Eccles *et al.*, 2001). The geology of the Utikuma Lake Keg River Sandstone A and Red Earth Granite Wash A oil pools, the largest pools in the area, was outlined by Angus *et al.*

(1989), who suggested that the pools are hosted by Granite Wash sandstone reservoirs. The Granite Wash Formation is composed of interbedded sandstone, siltstone, and shale, with minor amounts of dolostone and anhydrite (Greenwalt, 1956), and is thought to resemble a diachronous basal nonmarine to shallow marine clastic unit, deposited farther from the Peace River Arch (Grayston *et al.*, 1964). The oil is trapped in Granite Wash sandstone reservoirs that pinch out against or drape over numerous paleotopographic features on the Precambrian surface and are sealed by the overlying Muskeg Formation anhydrite.

During 1950 to 1952, the Geological Survey of Canada (GSC) conducted aeromagnetic surveys of the Peerless Lake (NTS 84B) and Peace River (NTS 84C) map areas as part of a regional survey (Geological Survey of Canada, 1989 a, b). The surveys were flown at an altitude of 305 m (1,000 ft) with flight lines spaced every 1 mile (1.6 km) and cross-lines every 15 miles (24 km). Closer examination of the 1:250,000 scale aeromagnetic map for the Peerless Lake area indicates a predominance of north to northwest trending basement magnetic highs. These highs parallel the trend of the boundaries of the Buffalo Head Terrane. Unfortunately, the flight lines from the 1950 to 1952 surveys are too widely spaced to be useful for locating possible kimberlites. In addition, the digital data derived from these surveys is the result of manual digitization of the old maps and is not the true raw data, which would be required as part of any search for kimberlites.

The first strong indication that the region could host diamondiferous kimberlites came during September 1995, from sampling conducted by the Alberta Geological Survey (AGS). A single sample from a road cut yielded 152 possible pyrope garnets from 25 kg (60 lbs) of dark greyish brown, silty clay till. The sample was collected from a site about 45 km (28 miles) northwest of Red Earth Creek and about 127 km (78.9 miles) west of the center of Liege property (Fenton and Pawlowicz, 1997). A total of 35 garnet grains were analyzed by electron microprobe; 27 were classified as Group 9 (G9) garnets according to Gurney's (1984) CaO versus Cr_2O_3 discrimination scatter plot. The same site was resampled in August 1996 and yielded 176 possible pyrope garnets, thus duplicating the high number of pyrope garnets initially recovered by the AGS (Pawlowicz *et al.*, 1998a). Based on later work conducted by the Buffalo Head Hills Joint Venture (BHHJV), a joint venture between Ashton Mining of Canada Inc. (Ashton), Alberta Energy Company (AEC) and Pure Gold Minerals Inc. (Pure Gold), it was determined that this till site is less than one kilometre (0.6 miles) southwest of their K4 Kimberlite. A number of other government surface and auger drillhole samples have also yielded high counts of Diamond Indicator Minerals (DIMs) in the Buffalo Head Hills (Pawlowicz *et al.*, 1998a,b; Eccles *et al.*, 2001).

Alberta Energy Company Ltd. (now known as EnCana Corporation) conducted a wide spaced (600 m or 2,000 ft line-spaced) high resolution, fixed-wing aeromagnetic (HRAM) survey in the search for oil and gas deposits over the Buffalo Head Hills during 1995. The survey identified several shallow based, short-wavelength, high frequency magnetic anomalies that also corresponded to areas of very strong diffraction's in seismic profiles (Rob Pryde, *personal communication*, 1998; Carlson *et al.*, 1999; Skelton and Bursey, 1999)). As a result, during October 1996 a joint venture option agreement, the Buffalo Head Hills Joint Venture (BHHJV), was signed by Ashton, AEC, and Pure Gold to investigate these anomalies.

In January 1997, Ashton announced a drill program to test 10 isolated geophysical anomalies in the Buffalo Head Hills area, approximately 35 to 45 km (21 to 27 miles) northwest of the town of Red Earth Creek. An initial two drillholes, located on Ashtons anomalies 7B and 7C, penetrated olivine-dominated fragmental and tuffaceous volcanic rocks underlying glacial overburden at depths of 34.0 m (111.5 ft) and 36.6 m (120 ft), respectively. The rock types were interpreted by Ashton to represent kimberlite pipes (diatremes) that intruded the basement into a thick column of overlying younger sedimentary rocks and the preglacial surface (Ashton Mining of Canada Inc., 1997a). Petrographic studies of core from K7B and K7C confirmed that the drillholes intersected kimberlites and yielded indicator minerals such as chromite, eclogitic garnet and peridotitic garnet (Ashton Mining of Canada Inc., 1997b). By March 1997, a total of 11 kimberlites within a 100 km^2 area (36 square miles) had been discovered, 10 by drilling and 1 by bulldozer, including kimberlites K2, K4A, K4B, K4C, K5A, K5B, K6, K7A, K7B, K7C, and K14 (Ashton Mining of Canada Inc., 1997c). The first microdiamond analyses of samples collected from kimberlites K2, K4, and K14 were released in April 1997 and confirmed that the pipes were diamondiferous and more significantly, 3 samples totaling 152.5 kg (387 lbs) from kimberlite K14 yielded significant numbers of diamonds, including 139 microdiamonds and 11 macrodiamonds (Ashton Mining of Canada Inc., 1997d). Mineralogical analysis of indicator minerals from the Buffalo Head Hills kimberlites indicates that although they are not abundant, a significant number of favourable G10 pyrope garnets, some with exceptionally high chromium contents (up to 17.8 wt% Cr_2O_3), along with abundant diamond inclusion quality chromites, have been obtained from several of the kimberlites in the central and northern portion of the cluster (Carlson *et al.*, 1999; Hood and McCandless, 2003). In addition, a large number of the kimberlites yielded euhedral to subhedral xenocrystic (mantle derived) garnet and clinopyroxene suggesting that resorption had been limited, therefore, the potential to preserve any carried diamonds may be considered high (Carlson *et al.*, 1999). These results ushered in a new era in the history of resource development in Alberta. To date, 38 kimberlites were found on the joint venture property, 26 of which are diamondiferous. Seven kimberlites, referred to as Legend kimberlites, were discovered north and northwest of the Liege and Legend properties by junior resource companies but none of these kimberlites are diamondiferous (Cavey and LeBel, 2003).

Previous Exploration: Shear's Liege and Legend Properties

Between 1997 and 2000, Ashton Mining of Canada Ltd. (Ashton) did exploration work on the former Rabbit Lake property which is now the Liege property and one-third of Legend property. Exploration work included several airborne and ground geophysical programs as well as diamond drilling of one target and a heavy mineral, kimberlite indicator mineral sampling program (Skelton and Willis, 2001; Ryziuk, 2004).

The geophysics exploration program on the former Rabbit Lake property included a fixed wing aeromagnetic survey, two detailed helicopter aeromagnetic surveys of selected anomalies, both conducted by High Sense Geophysics Ltd. and ground magnetic surveys on 18 targets (Skelton and Willis, 2001; Cavey and LeBel, 2003). The fixed wing aeromagnetic survey was flown with a terrain clearance of 100m and a 250m spacing, totaling 30,863 line-kms (Skelton and Bursey, 1999). The detailed helicopter aeromagnetic surveys were flown in 1998 with a terrain clearance of 50m and a 100m spacing over the property totaling in 2,079.48 line-kms covering 47 targets on 36 blocks (Skelton and Bursey, 1999). Ground magnetic surveys were conducted on the property between 1999 and 2000 on 18 selected targets using GEM System GSM-19 with two second measurement intervals and 50m station spacing (Skelton and Bursey, 1999; Skelton and Willis, 2001).

Ashton also conducted a sampling program on and around the properties, collecting 108 indicator minerals samples. Thirty-six (36) of these samples were collected on the Liege property of which eight (8) samples were anomalous, including three adjacent samples (AL04-0138, 0139, 0140) with 6, 11 and 29 indicator mineral grains (Cavey and LeBel, 2003) and two (2) anomalous samples (A104-137, 0138) with a total of 15 indicator mineral grains were collected from the Legend property (Skelton and Willis, 2001; Cavey and LeBel, 2003). The complete list of these samples' results is shown in one of Ashton's assessment reports (Ashton, 2001). Regional glacial ice direction in the area is from northeast of the Liege property and with the known kimberlites (Figure 3) located northwest to north of the property could be the source responsible for the anomalous samples (Skelton and Willis, 2001).

Ashton only drilled one hole, DDHRL1-01, on one target on the Liege property to test an aeromagnetic anomaly in February of 2000 (Skelton and Willis, 2001; Cavey and LeBel, 2003). The drillhole failed to intersect kimberlite to a depth of 94.5 metres resulting in termination of further work to be completed on the property and allowing the permits to expire in 2001.

977554 Alberta Ltd. (Alberta Ltd.) then acquired the Liege and Legend claims in 2002 based on information of the possibility of diamondiferous kimberlites in the area. Alberta Ltd. conducted several exploration work on the properties including indicator minerals sampling, airborne geophysics and diamond drilling.

Alberta Ltd. conducted work on the properties based on the results of seismic reflection surveys and drilling by Paramount Resources Ltd. (Paramount) who used the area for natural gas exploration (Cavey and LeBel, 2003). Seismic surveys are not a primary tool for diamond exploration, however, in a sedimentary environment the tool is useful in identifying a kimberlite diatreme through the sedimentary layering by interruptions and/or disruptions in seismic reflections (Cavey and LeBel, 2003). According to Skelton and Bursey (1999a) these seismic reflection surveys resulted in the identification of the K2, K4, K5, K6, K7, K32 and K92 kimberlites on the Buffalo Head Hills region west of the properties. The results from the surveys over the Liege and Legend properties revealed two seismic anomalies (Target A and B) on the Liege property and five seismic anomalies (1, 2, 3, 4 and 5) on the Legend property, which indicated kimberlite bodies (Cavey and LeBel, 2003; Figure 3). Seismic reflection surveys also aided in the geometry and structure of kimberlites (Cavey and LeBel, 2003) which determined the seismic signatures of the Buffalo Head Hills' kimberlites which are similar to the interrupted seismic reflections of the anomalies on both the properties. Seismic results from anomaly A bears resemblance to the K5 pipe in the Buffalo Head Hills region (Skelton and Bursey, 1999a) based on the appearance of a "bed" (Cavey and LeBel, 2003). Prior drilling on the Buffalo Head Hills region which intersected kimberlites revealed that some of the kimberlites appeared to be beds rather than pipes therefore anomaly A could be a kimberlite bed or a pipe with a shallow root (Cavey and LeBel, 2003).

Alberta Ltd. collected seven indicator mineral sampling on the property of which only two samples were anomalous with more than two indicator mineral grains with a total of six diamond indicator minerals, five G1-G10 garnets and one chrome diopside (Ryziuk, 2004). Results of all seven samples are shown in Table 2.

TABLE 2

2003 Picked Results*

Sample Number	NTS Map	Possible Pyrope	Possible Chrome Diopside	Possible Olivine	Possible Ilmenite/ Chromite	Total	Other
LW03-1	84A/5	1	0	0	3	4	

LW03-2	84A/13	3	1	0	0	4	
LW03-3	84A/13	0	2	0	1	3	
LW03-4	84A/13	0	0	0	0	0	
LW03-5	84A/13	1	1	0	1	3	
LW03-6	84A/13	2	2	3	0	7	4
LWT03-1	84A/12	0	0	0	0	0	
TOTAL						21	

*based on information provided by Ryziuk (2004) and C.F.Mineral Research Ltd.

Fugro Airborne Surveys Corp. (Fugro) was contracted by Alberta Ltd. to conduct a helicopter borne magnetic and electromagnetic survey over the two targets on the Liege property and a third known kimberlite target for seismic recognition (Ryziuk, 2004). A total of 29.2 line-kms was completed and results revealed target B to be a large pipe-like resistor (Cain, 2004) and two drillholes were drilled to test the target. The drillholes (DDH04-5 and DDH04-6) were drilled to a depth of 103.6 metres and no bedrock were intersected, recovering only unconsolidated till with no core recovery (Ryziuk, 2004) and no explanation for the seismic anomalies. The locations of the drillholes are listed in Table 3 and shown on Figure 3.

TABLE 3

Liege's Drillhole Locations

DDH Number	**Easting (NAD27/Zone12)**	**Northing (NAD27/Zone12)**	**NTS**	**Depth Drilled (metres)**
DHH04-5	337886	6304239	84 A/13	103.6
DDH04-6	338220	6304263	84 A/13	103.6

Despite poor results on Alberta Ltd.'s work, a number of priority geophysical anomalies and diamond indicator mineral anomalies were identified on and in the vicinity of the Liege and Legend properties. Many of these anomalies were not followed up. Wood (1999) reported the presence of a large number of anomalous stream sediment samples with up to 137 and 66 kimberlite indicator minerals in two separate drainages along the north-western boundary of the Liege property.

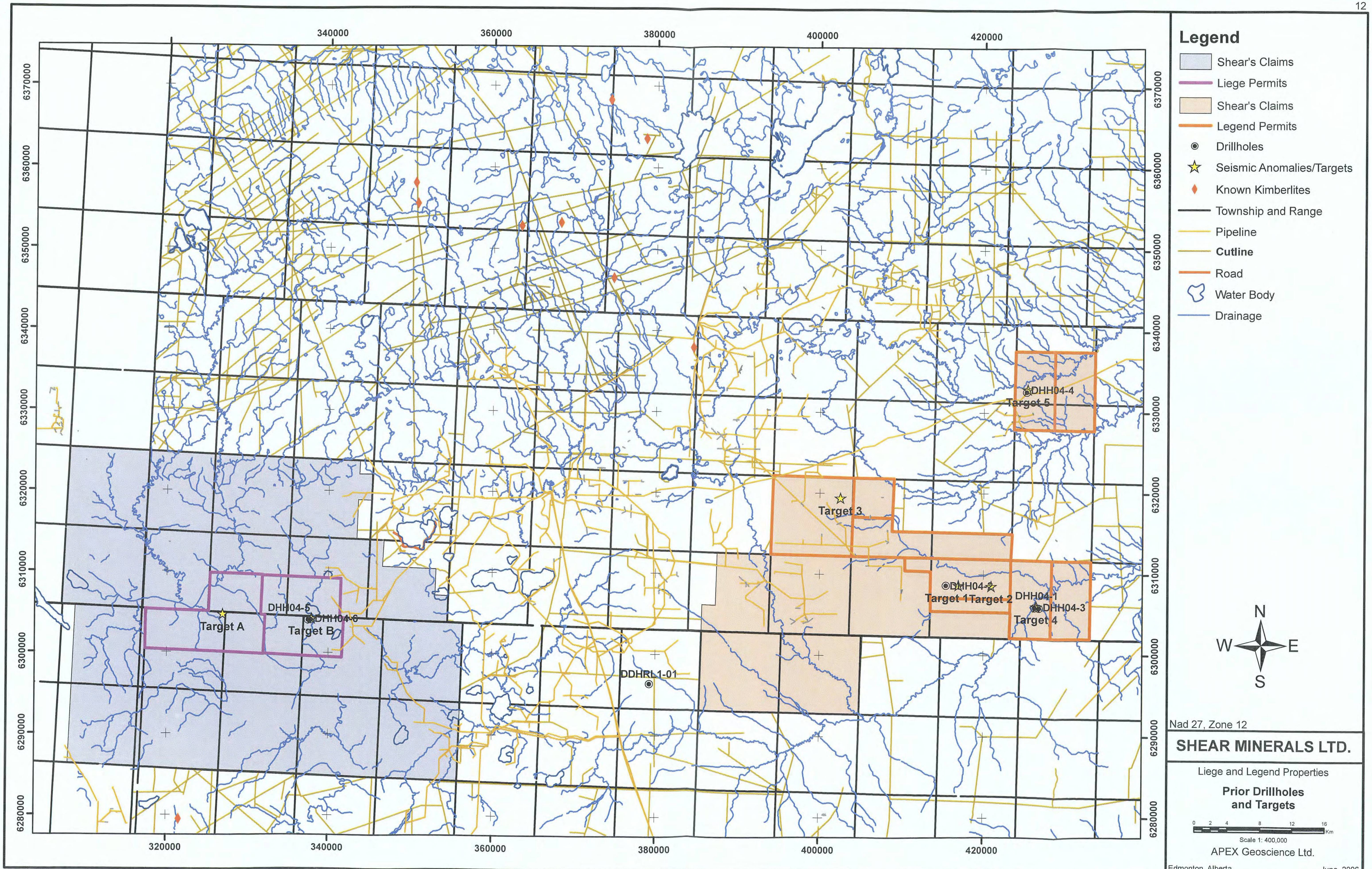

Legend
Shear's Claims
Liege Permits
Shear's Claims
Legend Permits
Drillholes
Seismic Anomalies/Targets
Known Kimberlites
Township and Range
Pipeline
Cutline
Road
Water Body
Drainage
DHH04-4
Target 5
Target 3
DHH04-2
Target 1
Target 2
DHH04-1
DHH04-3
Target 4
DHH04-5
DHH04-6
Target A
Target B
DDHRL1-01
N
W
E
S
Nad 27, Zone 12
SHEAR MINERALS LTD.
Liege and Legend Properties
Prior Drillholes and Targets
Scale 1: 400,000
APEX Geoscience Ltd.
Edmonton, Alberta
June, 2006

Figure 3.

Although the bulk of the kimberlite indicator minerals recovered by Monopros were chromite and ilmenite with a few pyrope garnets, Wood (1999) suggested that the grains were likely locally derived due to thin overburden and the limited drainage basin that most of the indicator was recovered from. Wood (1999) also suggested that a number of geophysical anomalies detected on the property could be kimberlites and be responsible for the indicator minerals in the drainages. The vast majority of these targets have not been ground surveyed or drill tested.

Government Diamond Indicator Mineral And Other Scientific Surveys

Diamond indicator mineral studies in the search for kimberlites were first conducted in the region by the AGS in 1993 (Fenton *et al*, 1994; Dufresne *et al.*, 1996). This initial survey and all of the early reconnaissance work prior to the discovery of the Buffalo Head Hills kimberlites are reviewed in Dufresne *et al.* (1996). The Buffalo Head Hills area yielded a few diamond indicator minerals within the "Wabasca River Trend", which was defined as a northerly belt of sites yielding anomalous diamond indicator minerals centered around the Wabasca and Loon rivers in the vicinity of Red Earth Creek and the Liege and Legend properties (Dufresne *et al.*, 1996). The first indication that the region may host diamondiferous kimberlites came from sampling conducted by the AGS during September 1995, when a single till sample from a road cut in close proximity to the BHHJV's K4 Kimberlite yielded 152 possible pyrope garnets (Fenton and Pawlowicz, 1997). A number of surveys have been conducted in the region since then (Fenton and Pawlowicz, 1998a,b; Pawlowicz *et al.*, 1998a,b; Pawlowicz and Fenton, 2001), with varying degrees of success since the initial 1993 survey. A recent multidisciplinary study included the collection of 338 samples in the Peerless Lake, Peace River, Bison Lake and Wadlin Lake Map areas (NTS 84B, 84C, 84F and 84G) by Eccles *et al.* (2001) and by Friske *et al.* (2003). These surveys have resulted in the discovery of a number of diamond indicator mineral anomalies that potentially indicate the presence of a number of undiscovered kimberlites in the region.

GEOLOGICAL SETTING

Precambrian Geology

The Liege property lies near the northeastern to eastern edge of the Western Canadian Sedimentary basin within the central segments of the Peace River Arch (Figure 4). Precambrian rocks are not exposed within the Buffalo Head Hills region. The basement underlying the Peace River Arch (PRA) is comprised of several terranes, including the Buffalo Head and the Chinchaga, both of which were accreted between 1.8 and 2.4 billion years (Ga) ago and collectively form the Buffalo Head Craton (Ross *et al.*, 1991, 1998). Due to their relatively stable history since accretion, the Buffalo Head and Chinchaga terranes (Figure 4) have been and are currently the focus of extensive diamond exploration in northern Alberta. Ashton along with EnCana and Pure Gold have discovered at least 38 kimberlite pipes proximal to the center of the proposed Buffalo Head Craton (Figure 5). To date, 26 of the 38 kimberlites, discovered in the region by the Buffalo Head Hills Joint Venture, have yielded diamonds.

The Liege property is underlain by basement comprised of the Buffalo Head Terrane (BHT). The BHT is an area of high positive magnetic relief with a north to northeasterly fabric (Villeneuve *et al.,* 1993). The diamondiferous Buffalo Head Hills Kimberlites and Grizzly's property lie near the geographic center of the Buffalo Head Craton (Figure 5). Part of the Churchill Structural Province (Rae Subprovince), the Buffalo Head Craton may 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 an accreted Early Proterozoic terrane that may or may not have an Archean component (Ross and Stephenson, 1989; Ross *et al.*, 1991; Villeneuve *et al.*, 1993). Precambrian rocks intersected in drill core from the BHT comprise felsic to intermediate metaplutonic rocks, felsic metavolcanic rocks and high-grade gneisses (Villeneuve *et al.*, 1993). Even though Hood and McCandless (2003) suggest that the paucity of subcalcic pyrope garnets in the Buffalo Head Hills is consistent with Proterozoic crust and mantle, recent work by Aulbach *et al.* (2003), indicates that a number of geochemical aspects of the xenoliths from the kimberlites is indicative of the presence of Archean mantle beneath the Buffalo Head Terrane which was likely reworked during Proterozoic crust formation from 2.3 to 2.0 Ga. Seismic refraction and reflection studies indicate that the crust beneath the Buffalo Head Craton is likely between 35 to 40 km (21 to 24 miles) thick, a trait favourable for the formation and preservation of diamonds in the upper mantle (Dufresne *et al.,* 1996). The favourable nature of the Buffalo Head Craton has been confirmed by the discovery of 26 diamondiferous kimberlite pipes near the center of the craton.

Phanerozoic Geology

Overlying the basement in the Buffalo Head Hills region is a thick sequence of Phanerozoic rocks comprised mainly of Cretaceous sandstones and shales near surface and Mississippian to Devonian carbonates and salts at depth (Glass, 1990). Bedrock exposure within the permit block is limited primarily to river and stream cuts and topographic highs. Table 4 describes 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 (Green *et al.*, 1970; Tokarsky, 1972; Vogwill, 1978; Ceroici, 1979; Glass, 1990; Mossop and Shetson, 1994).

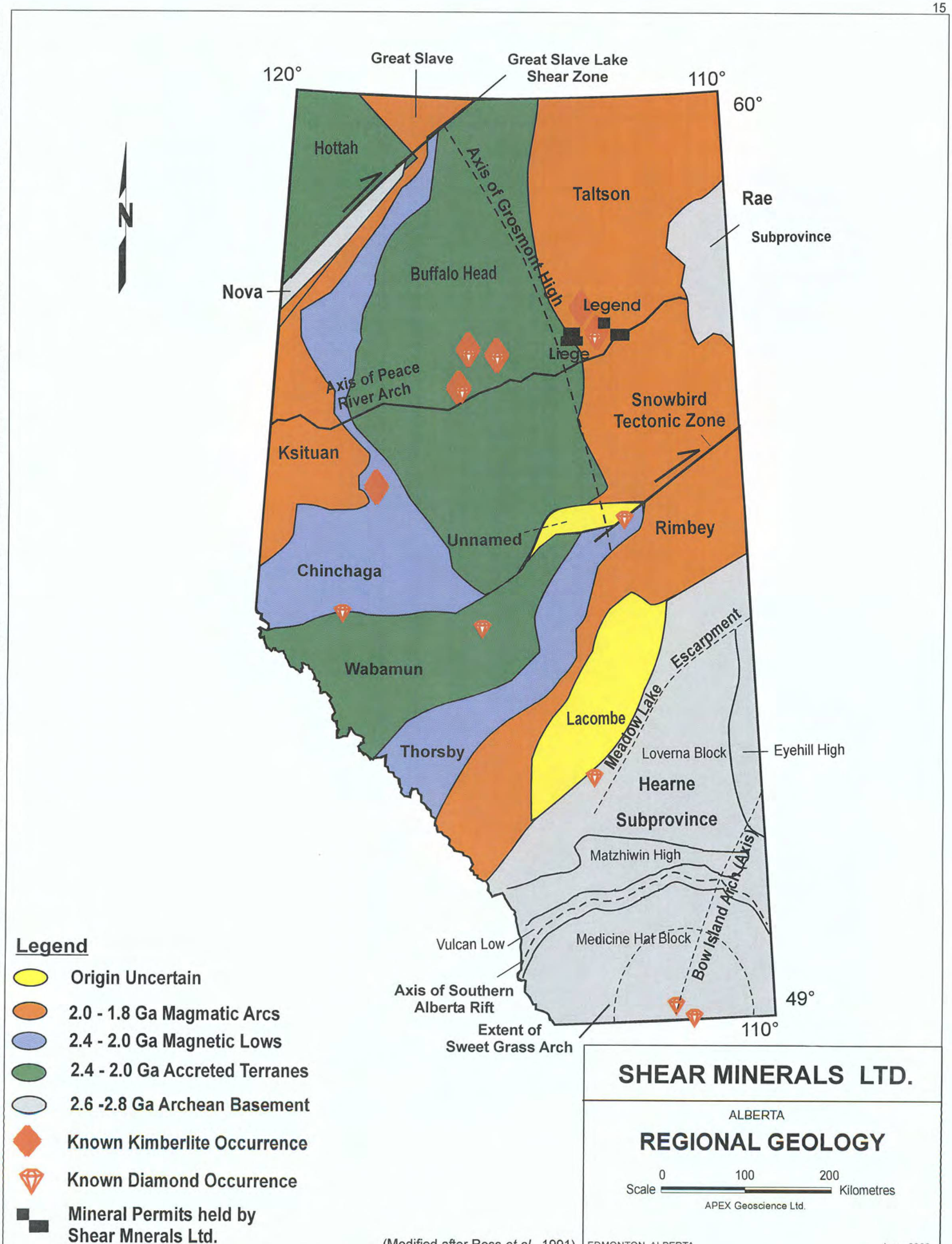

Great Slave
Great Slave Lake Shear Zone
120°
110°
60°
Hottah
Axis of Grosmont High
Taltson
Rae
Subprovince
N
Buffalo Head
Nova
Legend
Liege
Axis of Peace River Arch
Snowbird Tectonic Zone
Ksituan
Unnamed
Rimbey
Chinchaga
Wabamun
Meadow Lake Escarpment
Lacombe
Thorsby
Loverna Block
Eyehill High
Hearne Subprovince
Matzhiwin High
Bow Island Arch (Axis)
Vulcan Low
Medicine Hat Block
Axis of Southern Alberta Rift
49°
Extent of Sweet Grass Arch
110°
Legend
Origin Uncertain
2.0 - 1.8 Ga Magmatic Arcs
2.4 - 2.0 Ga Magnetic Lows
2.4 - 2.0 Ga Accreted Terranes
2.6 -2.8 Ga Archean Basement
Known Kimberlite Occurrence
Known Diamond Occurrence
Mineral Permits held by Shear Mnerals Ltd.
(Modified after Ross et al., 1991)
SHEAR MINERALS LTD.
ALBERTA
REGIONAL GEOLOGY
Scale 0 100 200 Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
June, 2006

FIGURE 4.

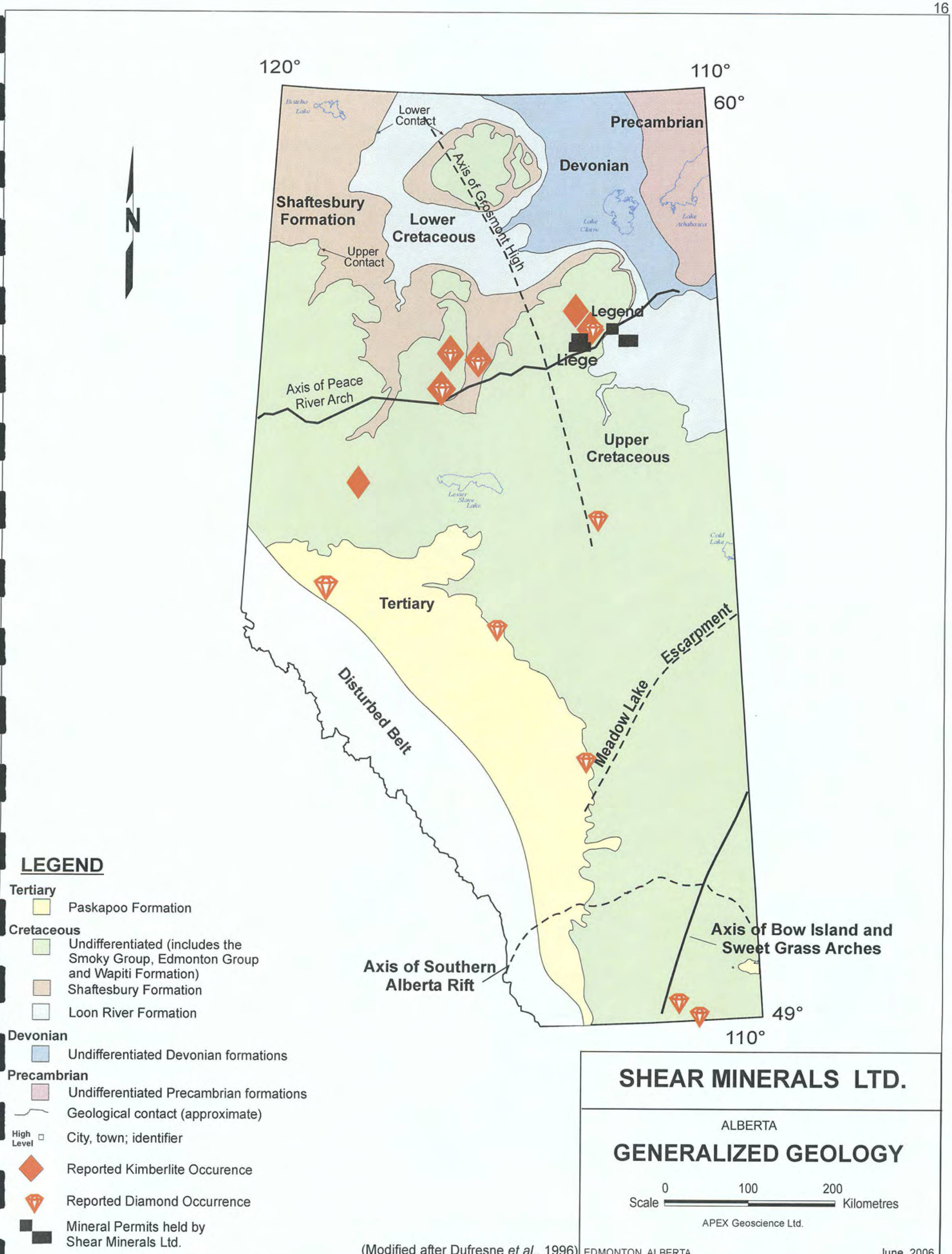

120°
110°
60°
Lower Contact
Precambrian
Devonian
Axis of Grosmont High
Shaftesbury Formation
Lower Cretaceous
Upper Contact
Legend
Liege
Axis of Peace River Arch
Upper Cretaceous
Tertiary
Disturbed Belt
Meadow Lake Escarpment
Axis of Bow Island and Sweet Grass Arches
Axis of Southern Alberta Rift
49°
110°
N
LEGEND
Tertiary
Paskapoo Formation
Cretaceous
Undifferentiated (includes the Smoky Group, Edmonton Group and Wapiti Formation)
Shaftesbury Formation
Loon River Formation
Devonian
Undifferentiated Devonian formations
Precambrian
Undifferentiated Precambrian formations
Geological contact (approximate)
High Level
City, town; identifier
Reported Kimberlite Occurence
Reported Diamond Occurrence
Mineral Permits held by Shear Minerals Ltd.
(Modified after Dufresne et al., 1996)
SHEAR MINERALS LTD.
ALBERTA
GENERALIZED GEOLOGY
0
100
200
Scale
Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
June, 2006

FIGURE 5.

Underlying the near surface Cretaceous units in the Buffalo Head Hills 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 Grosmont Reef Complex, a large structure that extends in a northwesterly direction from east of Lesser Slave Lake to the N.W.T. (Bloy and Hadley, 1989). The Grosmont Reef Complex is likely the result of tectonic uplift along this trend during the Devonian. This structure, in conjunction with the PRA, may have played a significant role in the localization of faults and other structures that could have provided favourable pathways for kimberlite volcanism.

TABLE 4
GENERALIZED STRATIGRAPHY
BUFFALO HEAD HILLS REGION

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	Smoky	Kaskapau	88 to 92	Shale, silty-shale and ironstone; includes the Second White Specks unit
		Dunvegan	92 to 95	Sandstone and siltstone
	Fort St. John	Shaftesbury	95 to 98	Shale, bentonites, Fish-Scale Member
LOWER CRETACEOUS	Fort St. John	Peace River	>98 to <105	Quartzose and glauconitic sandstones and silty shale.
		Loon River	98 to 105	Shale, siltstone and glauconitic sandstone

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

In general, the Cretaceous strata underlying the Liege property 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 Shaftesbury Formation, a sequence of Upper Cretaceous shales. However, older units from the base of the Fort St. John Group, such as the Peace River and Loon River formations, may be exposed in river and stream cuts.

Part of the Fort St. John Group, the Loon River Formation is Lower Cretaceous in age and is comprised of marine, dark grey, fossiliferous silty-shale and laminated siltstone. Nodules and thin beds of concretionary ironstone may be present within the unit. The Loon River Formation is correlative with the Spirit River Formation. The upper contact is abrupt, but conformable with the Peace River Formation.

The Peace River Formation is Lower Cretaceous in age and comprises three members, Cadotte, Harmon and Paddy. Correlative with the Pelican and Joli Fou formations, the unit averages 60 m in thickness and contains abundant graptolites and starfish. The lowermost member, the Cadotte, comprises massive, clean, fine-grained quartzose sandstone with alternating bands of thin sandstone and shale. Concretions ranging from 3 to 5 m in diameter are common. The middle member, the Harmon, comprises a fissile, non-calcareous, dark grey silty-shale with thin interbeds of bentonite and siltstone. Both the Cadotte and the Harmon members are laterally extensive, relatively thick and marine in origin. The third member, the Paddy, is comprised of fine-grained glauconitic sandstone with silty interbeds in the lower portions. Thin coal beds and marine fossils may be present. The Paddy is laterally discontinuous and varies from marine to continental (deltaic) in origin. If the Paddy unit is intact, the upper contact is conformable, but abrupt with the Shaftesbury Formation. In many regions, the upper contact of the Peace River Formation is an abrupt hiatus.

The Shaftesbury Formation is lower Upper Cretaceous in age and is comprised of marine shales with fish-scale marker bed bearing silts, thin bentonitic streaks and ironstones. The upper contact is conformable and transitional with the Dunvegan Formation. The Shaftesbury Formation may be exposed along river and stream cuts. Evidence of extensive volcanism during deposition of the Shaftesbury Formation exists in the form of numerous bentonitic horizons throughout the formation, especially within and near the Fish Scales horizon (Leckie *et al.*, 1992; Bloch *et al.*, 1993). The 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 á la Corne in Saskatchewan (Lehnert –Thiel *et al.*, 1992; Scott Smith *et al.*, 1994). In many cases, the Ashton kimberlite pipes contain extensive volumes of Cretaceous mudstone, most of which is likely derived from the Shaftesbury Formation.

Deltaic to marine, feldspathic sandstones, silty shales and laminated carbonaceous siltstones, characterise the Dunvegan Formation (Glass, 1990). Thin beds of shelly material, coal, siltstone and bentonite may be present. The formation is rich in shallow-water fauna, including abundant molluscs. The Dunvegan Formation becomes more arenaceous and thinner eastwards, where it grades into the LaBiche Formation. The upper contact of the unit is conformable and transitional with the shales of the Kaskapau Formation of the Smoky Group. The Ashton pipes exist just above or near the contact between the Kaskapau and the Dunvegan formations (Dufresne *et al.*, 2001).

The youngest bedrock units belong to the Smoky Group (Glass, 1990). 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 (SWS); (b) a middle sandstone, named the Bad Heart; and, (c) an upper shale, Puskwaskau, which contains the First White Specks marker unit. Bedrock exposures in the "Bison Lake" Property are likely comprised of the Kaskapau Formation, in particular, the SWS or lower. Most of the upper portions of the Smoky Group have been eroded away during tectonic uplift, possibly associated with uplift of the PRA. The Kaskapau Formation contains abundant ammonite fossils and concretions. In addition, foraminifera are present in the lower arenaceous units (Glass, 1990). Exposures of the Smoky Group are generally limited to topographic highs and stream cuts within the Buffalo Head Hills. There is strong evidence of volcanism associated within the depositional time span of the Smoky Group around the PRA (Auston, 1998; Carlson *et al.*, 1999). The BHHJV's recently discovered Buffalo Head Hills kimberlites yield emplacement ages of 86 to 88 Ma (Auston, 1998; Carlson *et al.*, 1999).

Quaternary Geology

Data and information about the surficial geology in central to northern Alberta is sparse and regional in nature. Prior to continental glaciation during the Pleistocene, most of Alberta, including the Buffalo Head Hills 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). In addition, fluvial sand and gravel was deposited preglacially in these channels.

During the Pleistocene, multiple southeasterly and southerly glacial advances of the Laurentide Ice Sheet across the region resulted in the deposition of ground moraine and associated sediments (Figure 5 in Dufresne *et al.*, 1996). The advance of glacial ice may have resulted in the erosion of the underlying substrate and modification of bedrock topography. Dominant ice flow directions within the Buffalo Head Hills region appear to be topographically controlled, following the south-southwest trend of the BHH (Fenton and Pawlowicz, 2000). In addition, topographic variations may have locally channelled ice flow towards the south to south-southeast east of the BHH. Glacial sediments infilled low-lying and depressional areas, draped topographic highs and covered much of the area as veneers and/or blankets of till and diamict. Localised pockets of deposits from glacial meltwater and proglacial lakes likely infilled areas of low relief (Fenton and Pawlowicz, 2000).

The majority of the Buffalo Head Hills area is covered by drift of variable thickness, ranging from 15 m to over 250 m (Pawlowicz and Fenton, 1995a, 1995b, 2005a, 2005b and Balzer and Dufresne, 1999). The vast majority of the property is thought to be covered with drift ranging from about 75 m to 150 m thick. Drift thickness may be thinner locally, in areas of higher topographic relief. Unfortunately, local drift thickness for Grizzly's Buffalo Head Hills properties can not be easily delineated due to the paucity of publicly available data for the region. Limited general information regarding bedrock topography and drift thickness in northern Alberta is available from the logs of holes drilled for petroleum, coal or groundwater exploration and from regional government compilations (Tokarsky, 1972; Mossop and Shetson, 1994; Pawlowicz and Fenton, 1995a, 1995b, 2005a, 2005b; Dufresne *et al.*, 1996). It should be noted that the drift thickness over the Buffalo Head Hills Kimberlites is extremely variable ranging from more than 120 m to kimberlites that outcrop or subcrop. Several of the kimberlites intersected in drilling to date exist as positive topographic features relative to the local bedrock surface beneath the glacial overburden. For example, the BHHJV's K6 Kimberlite was initially intersected beneath 13 m of overburden (Ashton Mining of Canada Inc., 1997c). The K6 Kimberlite yields depths of overburden of more than 70 m at the margins of the pipe and even thicker depths of overburden over the mudstone bedrock surrounding the pipe (Mr. B. Clements, *personal communication*, 2002). The K6 Kimberlite is one of a number of kimberlites in the Buffalo Head Hills that display this relationship. The implications of this are that in areas where the overburden is estimated to be 75 to 150 m, there is still a chance that any kimberlites found could be covered by substantially less overburden.

Glacial ice is believed to have receded from the BHH region between 15,000 and 10,000 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.

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. Eccles *et al.* (2000) show that several of the Buffalo Head Hills kimberlites occur at the intersection of north and east-northeast trending lineaments likely related to underlying faults that have been reactivated during periodic tectonic activity associated with the Peace River Arch. Eccles *at al.* (2000) used a combination of very detailed digital elevation data and RadarSat data to identify the intersecting lineaments.

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 Red Earth Creek region lie along the axis of the PRA, and are underlain by and proximal to basement faults related to the Grosmont Reef Complex, which formed over the Grosmont High (Bloy and Hadley, 1989; Dufresne *et al.*, 1996). There is strong evidence that basement faults that have manifested themselves in the overlying Phanerozoic sedimentary succession may have controlled the emplacement of the Buffalo Head Hills kimberlites west-northwest from the Liege property (Dufresne *et al.*, 1996; Leckie *et al.*, 1997; Eccles *et al.*, 2000). Similar structures observed on the property could have resulted from tectonic activity associated with movement along the PRA or the Grosmont High and therefore could have provided pathways for kimberlitic volcanism.

DEPOSIT MODEL

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 emplacement 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 Precambrian (typically Archean) cratons. The Buffalo Head Hills Craton is an example of such a craton.

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, pyropic and eclogitic 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 conductivity (or 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. In addition, in areas of thick overburden, such as the Buffalo Head Hills region, sand and gravel with water and placer accumulations of heavy oxide minerals, can yield both 2magnetic and EM anomalies that are easily confused with those due to kimberlite. 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).

2006 EXPLORATION

APEX was retained during 2006 by Shear to compile all the available geological, geophysical and mineralogical data for the Liege property and evaluate the potential of the property to host kimberlites and, possibly, diamonds. Based upon the recommendations that resulted from the data compilation and review, a program consisting of a fixed-wing airborne geophysical survey was completed by Firefly Aviation Ltd.. The airborne magnetic survey was flown over the Liege property between February 16 and March 26, 2006. No ground geophysical program was conducted at the time.

2006 AIRBORNE SURVEY RESULTS AND INTERPRETATION

Between February 17 and March 26, 2006, Firefly Aviation Ltd. completed a 3,898 line-km fixed wing high resolution airborne magnetic (HRAM) survey over the Liege property. The aeromagnetic survey over the property was conducted approximately 80 kilometres west northwest out of Bonnyville and approximately 100 kilometres out of Fort McMurray. The survey was carried out using a Cessna U206G aircraft, a single engine aircraft with full avionics, including real time differential 3D GPS navigation. The Cessna U206G was equipped with a rigid-mount tail boom, specially designed for geophysical survey operations, a high sensitivity magnetometer, a full on-board real time compensation recording computer, and related equipment. In order to conduct airborne geophysical surveys, the aircraft was modified so the electrical systems did not create any noise and also by the removal of all ferruginous materials in close proximity to the sensor.

The high resolution airborne magnetic survey was flown using parallel flight lines in a traverse line direction of 270 degrees with 150 meter spaced line intervals and data sample stations at every 5.0 meters along the lines. Tie lines were flown orthogonal to the flight lines and spaced at 1000 meters. The height at which the survey was flown was a best-fit 60-meter drape mode elevation. A high sensitivity base magnetic station was provided by a proton magnetometer and recorded the diurnal activity throughout the survey onto a PC module. A GPS base station was used to collect ground GPS data and to perform any post-flight differential correct range errors in the GPS flight path recovery. Airborne recorded data included total field magnetic data, radar altimeter and all ground GPS data. All magnetic data collected from the HRAM survey are provided on a CD-Rom. A HRAM logistical report of the Piche, Liege and Legend properties by Firefly Aviation Ltd. is provided in Appendix 2.

Preliminary data from the property was reviewed and potential targets were then selected for future fieldwork by APEX and Kit Campbell of Intrepid Geophysics (North Vancouver, BC), during May and June 2006. The data was contoured using Geosoft Oasis Montaj 6.0. The data was reviewed on a line by line profile basis to look for high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features, such as kimberlites. A number of interesting high frequency magnetic anomalies (greater than 30 nT) were identified during the review of the data (Figures 6, 7, 8, 9, 10 Appendix 3). A total of 11 magnetic targets were identified on the Liege property in the dataset and reviewed for kimberlite genesis potential (Figures 6, 7, 8, 9, 10; Appendix 3). A number of the magnetic anomalies present in the survey were identified to be the result of man-made culture or part of linear arrays, most likely related to pipelines or oil and gas wells in the area. These anomalies that were most likely related to man-made culture commonly produced very sharp spike like peaks often with an associated adjacent magnetic low on the maps termed a dipole anomaly. The two seismic anomalies (Target A and Target B) did not have corresponding magnetic anomalies from the airborne survey.

Based upon the review and interpretation of the 2006 fixed wing aeromagnetic survey over the Liege property, eleven (11) magnetic anomalies were identified on the property (Table 5). These anomalies then requires ground checking for man-made culture, and that those remaining anomalies left unexplained after ground truthing, are then considered for the next phase of exploration, which includes gridding and ground magnetic surveys and finally drill testing. In regards to the seismic anomalies, alternative geophysical methods such as ground gravity or electromagnetics should be investigated to explain the reason for the seismic discontinuities.

TABLE 5
LIEGE'S MAGNETIC TARGETS LOCATIONS

Magnetic Targets	Easting Zone 12 Nad 1927	Northing Zone 12 Nad 1927
LG001	339332.12	6312983.69
LG002	342847.98	6309066.02
LG003	345736.01	6294726.34

LG004	334384.81	6295680.64
LG005	329186.36	6299422.52
LG006	323460.54	6295781.10
LG007	324163.71	6295781.10
LG008	328508.31	6298794.69
LG009	329161.25	6296685.18
LG010	333480.73	6297815.27
LG011	325193.35	6313259.93

EXPLORATION EXPENDITURES

The cost to conduct 2006 exploration program within the Liege Property was CAN$ 70,963.20 (not including GST). A detailed breakdown of the expenses is presented in Appendix 3. Based upon regional airborne geophysical surveys as the main cost base, this represents an expenditure of about $34,007.04 per township.

CONCLUSION AND DISCUSSIONS

The regional setting for Shear's Liege property is considered highly favorable for the presence of diamondiferous kimberlites. The permits are predominantly underlain by Early Proterozoic to Archean basement of the Buffalo Head Craton. The local bedrock geology and the underlying Archean and Proterozoic crystalline basement in association with Phanerozoic structures, such as the Peace River Arch, likely provided a favorable environment for the formation and ascent of kimberlitic magmas in the Buffalo Head Hills area. This regional geological and structural setting is also considered favorable for the formation of kimberlitic magma in the upper mantle and its ascent to surface during periodic tectonic activity associated with movement along the Peace River Arch and the Grosmont High. Significant crustal thickness (35 to 40) underlying the area in combination with a number of important Gurney (1984) G10 subcalcic pyrope garnets are a strong indication that the area was underlain by upper mantle suitable for the formation and preservation of diamonds. This is confirmed with the discovery of at least 26 diamondiferous kimberlite pipes to date in the Buffalo Head Hills area by the BHHJV.

Limited bedrock exposures have been observed and reported within the area due to presence of extensive glacial deposits. Local bedrock exposed in the area or intersected in near surface drilling is age correlative to bedrock in other parts of the Buffalo Head Hills that has been intruded by kimberlites. The glacial history for the Buffalo Head Hills region 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 (80 ft) to greater than 250 m (820 ft) 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 Buffalo Head Hills area should include a full compilation of the glacial deposits and drift thickness. 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.

A review of all the existing and available magnetic data for Shear's property resulted in the identification of a number of magnetic anomalies that warrant follow-up exploration for kimberlites. Other geophysical anomalies of interest from past exploration have been identified on both properties. These anomalies in conjunction with the presence of nearby kimberlites indicate that these properties are high priority target areas for kimberlite exploration.

From February 17 to March 26, 2006, a 3,898 line-km fixed wing HRAM survey was conducted over the property. Using Geosoft Oasis Montaj 6.0 and ERMapper 6.3, the data was reviewed on a line by line profile basis to look for high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features such as kimberlites. A total of 11 magnetic anomalies were identified in the dataset and of these, a large number were deemed to be the result of man-made culture or part of linear arrays that are most likely related to pipelines and oil and gas wells in the surrounding area. The two seismic anomalies (Target A and Target B) did not have corresponding magnetic anomalies from the airborne survey. In regards to the seismic anomalies, alternative geophysical methods such as ground gravity or electromagnetics should be investigated to explain the reason for the seismic discontinuities.

RECOMMENDATIONS

Although historically there has been extensive oil exploration in the area, with respect to diamond potential, the Liege property is still in the early stages of exploration. In addition, the results of current exploration completed by Shear Minerals Ltd. have shown the Liege Property contains a number of geophysical targets that warrant further investigation. This illustrates the significant potential of Buffalo Head Craton and the Liege property to host kimberlites. A systematic follow-up exploration program, including ground checking, ground geophysical surveys (magnetics and EM, possible gravity) and drilling, is warranted to search for diamondiferous kimberlites. For the Liege property, future exploration should be conducted in two stages and consist of the following:

Stage 1: Conduct an aggressive summer program that includes a ground checking program to identify anomalies caused by culture. This program should be accompanied by or followed with a ground geophysical program to evaluate the existing medium to high priority geophysical anomalies. In addition, a compilation of all available indicator sampling data in conjunction with RadarSat, DEM and airborne geophysical data leading to a structural interpretation should be completed for the property. A test ground gravity survey is recommended over seismic Target A. This method may be used over other targets if proven successful. The estimated cost of the Stage 1 program including the data compilation, fieldwork, geophysics, processing and interpretation is **$200,000**, plus GST.

TABLE 6
RECOMMENDED 2005-2006 PROGRAM AND BUDGET
LIEGE PROPERTY

ITEM	DESCRIPTION	COST
Stage 1		
1	Full data compilation and structural interpretation; including LandSat, RadarSat, DEM and available all geophysical data	$30,000
2	Ground truthing existing geophysical anomalies ($20,000) and 8 ground geophysical surveys at $10,000 per target. Test ground gravity survey over seismic anomaly A.	$120,000
Total Stage 1 Project Costs, Excluding GST		**$150,000**
Stage 2		
1	Conduct an six hole reverse circulation drilling program at an estimated cost of $50,000 per drillhole; if six holes are not drilled cost per drillhole will increase	$300,000
	Total Stages 1 and 2 Project Costs, Excluding GST	**$450,000**

Stage 2: Conduct a water well or reverse circulation drilling program of six kimberlite targets within Shear's Liege Property. The development of all targets will depend upon the Stage 1 exploration program. The estimated cost to conduct an eight hole reverse circulation Stage 2 drilling program is **$300,000** plus GST.

The total estimated cost of the recommended first and second stages of exploration for Shear's Legend Property, not including any drilling, is **$450,000**, plus GST.

APEX Geoscience Ltd.

PROFESSIONAL GEOLOGIST MICHAEL B. DUFRESNE ALBERTA

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Edmonton, Alberta
June 23 , 2006

[redacted]

Robyn C. Mann, T.T.
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June 23 , 2006

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CERTIFICATE OF AUTHOR

I, Michael B. Dufresne, M.Sc., P.Geol., do hereby certify that:

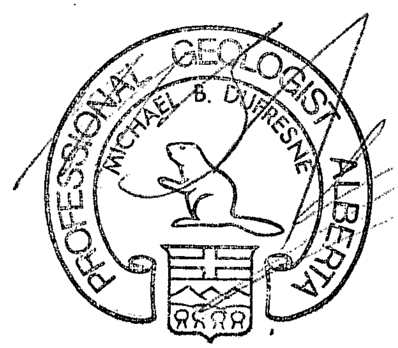
1. I am President of: APEX Geoscience Ltd.
Suite 200, 9797 – 45th Avenue
Edmonton, Alberta T6E 5V8
Phone: 780-439-5380

2. I graduated with a B.Sc. Degree in Geology from the University of North Carolina at Wilmington in 1983 and with a M.Sc. Degree in Economic Geology from the University of Alberta in 1987.

3. I am a Professional Geologist registered with APEGGA (Association of Professional Engineers, Geologists and Geophysicists), and NAPEGG and a 'Qualified Person' in relation to the subject matter of this report.

4. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, or the omission to disclose which makes the Report misleading.

5. I have visited the properties that are the subject of this Report during spring 2006.



Michael B. Dufresne, M.Sc., P.Geol.
Edmonton, Alberta, Canada
June 23, 2006.

CERTIFICATE OF AUTHOR

I, Robyn C. Mann, residing at 8416-149 Street, Edmonton, Alberta, Canada do hereby certify that:

1. I am a Geological Technician/Technologist in training at APEX Geoscience Ltd. ("APEX"), Ste.200, 9797 – 45 Avenue, Edmonton, Alberta, Canada.

2. I am a graduate of the Northern Alberta Institute of Technology, Edmonton, Alberta with an Exploration Specialization diploma in Geological Technology (2004) and have practised my profession continuously since 2004.

3. I am a Geological Technician/Technologist In Training registered with ASET (Association of Science and Engineering Technology Professionals of Alberta).

4. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Liege Property and do not hold securities of Shear Minerals Ltd.

5. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, or the omission to disclose which makes the Report misleading.

[redacted]

Robyn C. Mann, T.T.
Edmonton, Alberta, Canada
June 23 , 2006

APPENDIX 1

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: June 6, 2006 10:43:30 AM

Agreement Number: 093 9302050134

Status: ACTIVE	Term Date: 2002-05-24
Agreement Area: 9216	Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8065185
Client Name: 977554 ALBERTA LTD.
Address: 888 3 ST SW SUITE 4700
CALGARY,AB
CANADA T2P 5C5

LAND / ZONE DESCRIPTION

4-24-090: 19-21;28-33
4-24-091: 03-05;08-10;15-17
4-25-090: 19-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: June 6, 2006 10:42:36 AM

Agreement Number: 093 9302050133

Status: ACTIVE
Agreement Area: 9216
Term Date: 2002-05-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8065185
Client Name: 977554 ALBERTA LTD.
Address: 888 3 ST SW SUITE 4700
CALGARY,AB
CANADA T2P 5C5

LAND / ZONE DESCRIPTION

4-23-090: 19-21;28-33
4-23-091: 03-10;15-18
4-24-090: 22-27;34-36
4-24-091: 01-02;11-14

METALLIC AND INDUSTRIAL MINERALS

APPENDIX 2

PICHE, LIEGE & LEGEND PROJECT
LAC LA BICHE -BONNYVILLE AREA
FORT McMURRAY AREA
ALBERTA

HIGH RESOLUTION AEROMAGNETIC SURVEY (HRAM)
LOGISTICAL REPORT

For

SHEAR MINERALS LTD.

April 2006

By

Bruce T. Evans, P.Geol.
Firefly Aviation Ltd.
Calgary, Alberta, Canada

TABLE OF CONTENTS

1.0 INTRODUCTION

This report describes the specifications and operations of an airborne geophysical survey carried out for Shear Minerals Ltd. by Firefly Aviation Ltd., during January to March 2006. The Firefly Aviation Ltd. Offices are located at Unit #4 550 Hurricane Drive, Springbank Airport, Calgary, Alberta T3Z 3S8. Telephone (403) 246-8083, fax (403) 202-1493.

The purpose of a survey of this type was to acquire high resolution, high sensitivity aeromagnetic data over an area located north-west of Bonnyville and north-west of Fort McMurray, Alberta. The end result of the HRAM data processing was to provide detailed data to assess the area for anomalies and magnetic features pertaining to their relevance in the local geology.

To achieve this purpose, the survey area was systematically traversed by an aircraft carrying geophysical instruments along parallel flight lines (traverses) spaced 150 meters apart in a east west alignment. Tie lines were flown normal to the traverses spaced at 1000 meters. The nominal flying height was a best–fit draped 60 meters above the terrain surface. Between 17 February 2006 and 26 March 2006 the total number of line kilometres flown and accepted are 14,864 km.

2.0 SURVEY AREA

The survey area(s) are located in Lac La Biche - Bonnyville area, approximately 80 kilometres north west of the town of Bonnyville, and 100 kilometres west north west of Fort McMurray, Alberta. The survey was conducted over areas as defined by Shear Minerals Ltd. The area(s) of the survey(s) are outlined by the co-ordinates included in the appendices of this report.

3.0 EQUIPMENT SPECIFICATIONS

3.1 AIRCRAFT

The survey was carried out using a Cessna U206G aircraft, registration C-GWAS, configured with a specially designed rigid-mount tail boom for geophysical survey operations. The aircraft is equipped with a high sensitivity magnetometer and a full on-board real time compensation recording computer, and related equipment. It is a single engine aircraft with full avionics, including real time differential 3D GPS navigation.

The aircraft has been modified to conduct airborne geophysical surveys. Considerable effort has been made to remove all ferruginous materials near the sensor and to ensure that the aircraft electrical systems do not create any noise.

The following table lists the relevant aircraft flight parameters for conducting HRAM surveys.

TYPE	Registration	TSOH HOURS	FUEL CAPACITY	CRUISE (kts)	SURVEY ENDURANCE
Cessna U206G	C-GWAS	~1400.0 hours	130 gallons, AVGAS 100/130	110 knots Survey: 110 kts	9.0 hours

Normal Climb/Descent Gradient 1,000 FPM **

Survey Fuel Consumption ~ 14.5.0 gph

* TSOH = Time Since Overhaul
** This is best rate of climb at SL at gross weight as indicated in the U206G pilots' operating manual; short duration rate of climb is much higher, dependent on outside temperature.

3.2 AIRBORNE GEOPHYSICAL EQUIPMENT

The airborne geophysical system has one high sensitivity, cesium vapor magnetometer. Ancillary support equipment include tri-axial fluxgate magnetometer, radar altimeter, barometric altimeter, GPS receiver and a navigation system which includes a left/right indicator and a screen showing the survey area with real time flight path. All data are collected and stored by the data acquisition system. The following provides the detailed equipment specifications.

Cesium Vapor Magnetometer:

Manufacturer	Geometrics
Model	G-822
Resolution	0.001 nT counting @ 0.1 per second
Sensitivity	+/-0.005 nT
Dynamic Range	15,000 to 100,000 nT
Fourth Difference	0.02 nT

Tri-Axial Magnetic Field Sensor (for compensation, mounted in the tail boom proximal to the CS-2 pod):

Manufacturer	Billingsley Magnetics
Model	TFM 1000
Internal Noise	at 1 Hz - 1 kHz; 0.6 nT rms
Bandwidth	0 to 1 kHz maximally flat, -12 dB/octave roll off beyond 1 kHz
Frequency Response	1 HZ - 100 Hz: +/- 0.5%
	100 Hz - 500 Hz: +/- 1.5%
	500 Hz - 1 kHz: +/- 5.0%
Calibration Accuracy:	+/- 0.5%
Orthogonality	+/- 0.5% worst case
Package Alignment	+/- 0.5% over full temperature range
Scaling Error	absolute: +/- 0.5%
	between axes: +/- 0.5%

Radar Altimeter:

Manufacturer	King
Model	KRA-10A
Accuracy	5% up to 2,500 feet
Calibrate Accuracy	1%
Output	Analog for pilot; Converted to digital for data acquisition

Differential 3D GPS Receiver

Manufacturer	Novatel
Model	ProPack LB Plus
Differential Source	CDGPS
Type	Continuous tracking, L1 frequency, C/A code (SPS), 12 channel (independent)
Position Sensitivity	twice per second

Accuracy	position (differentially corrected) ~1.0 meter position (SA implemented) 100 meters, position (no SA) 30 m, velocity 0.1 knot, time recovery 1 pps, 100 nsec pulse width
Data Recording	all GPS data and positional data logged by onboard DGR33A on compact flash

Navigation Interface (with pilot and operator readouts):

Manufacturer	AG-NAV Inc.
Model	P141
Data Input	Real time processing of GPS output data
Pilot Readout	Left/Right indicator / forward line projection screen
Operator Readout	Screen modes: map, survey and line
Data Recording	All data recorded in real time on Compact Flash disk via DGR33A

Data Acquisition System :

Manufacturer	RMS Instruments
Model	DGR33A with Chart Recorder
Operating System	MS-DOS
Microprocessor	RMS4183A
Memory	On board up to 128 MB, via SCSI Compact Flash Interface
Clock	real time; hardware implementation of MC14618 in the integrated peripherals controller
I/O Slots	5 AT and 3 PC compatible slots
Display	Electro – luminescent 640x400 pixels
Graphic Display	Scrolling analog chart simulation with up to 5 windows operator selectable; freeze display capability to hold image for inspection
Recording Media	128 MB SCSI Compact Flash Drive
Sampling	Programmable. Rate for this program set at 1 Hz.
Inputs	32 differential analog inputs
Serial Ports	2 RS-232/RS422
Parallel Ports	4 channel Serial I/O; 4 channel ARINC

Magnetometer Processor

Manufacturer	Geometrics
Model	
Input Range	20,000 - 100,000 nT
Resolution	0.001 nT
Bandwidth	0.7, 1 or 2 Hz
Input Signal	TTL, CMOS, Open collector compatible or sine wave with decoupler
Input Impedance	TTL>1K Ohm

Magnetic compensation for aircraft and heading effects is done in real time. Raw magnetic values are also stored and thus if desired, compensation with different variables can be run at a later time.

Magnetic Compensation System:

Manufacturer	RMS Instruments
Model	AADCII

Operating System	MS-DOS
Inputs	1 to 4 high sensitivity magnetometers
Input Frequency Range	70khz to 350khz
Magnetic Field Range	20,000 to 100,000 nT
Front End Counter	100 MHz
Resolution	1 pT
Compensation Perf.	Improvement ratio 10 to 20 typical for total field
Accuracy of Compens.	0.035 nT standard deviation for the entire aircraft flight envelope in the bandwidth 0 to 1 hz typical
Data Output Rate	10 hz maximum
Internal System Noise	less than 1 pT
Vector Magnetometer	3-Axis Fluxgate over sampled, 16 bit resolution
Outputs	3 Serial RS232C ports, max rate 19.2 Kbaud Magnetometer data output Direct Interface with GR33A Parallel output port, 16 bit with full handshaking 4 Analog outputs with 12 bit resolution.

Power Supplies:

1) Power Distribution Unit manufactured by Analytic Systems Ltd. interfaces with the aircraft power and provides filtered and continuous power at 27.5 VDC to all components.

3.3 MAGNETOMETER BASE STATION

High sensitivity base station data are provided by a GEM GSM-19 Overhauser magnetometer, data logging onto a dedicated PC module.

Magnetic Sensor:

GEM	GSM-19

Magnetic Processor:

Manufacturer	GEM
Model	GSM-19 Overhauser Mag
Input Range	15,000 - 100,000 nT
Resolution	0.1 nT
Bandwidth	1 or 2 Hz
Input Signal	TTL, CMOS, Open collector compatible or sine wave with decoupler
Input Impedance	TTL>1K Ohm

Logging Software:

Logging software by GEM-Terraplus Ltd. Compatible to PC with RS 232 input; supports real time graphics, automatic startup, compressed data storage, selectable start/stop times, automatic disk swapping, plotting of data to screen or printer at user selected scales, and fourth digital difference and diurnal quality flags set by user.

3.4 GPS BASE STATION

Ground GPS data was collected to perform any required post-flight differential correction to the flight path. The ground GPS base station equipment is described below:

Manufacturer	Novatel
Model	Novatel OEM2 Card
Type	Continuous tracking, L1 frequency, C/A code (SPS), 10 channel WAAS Enabled
Position Update	once per second
Accuracy	with SA implemented 100 meters, no SA 30 meters, velocity 0.1 knot, time recovery 1 pps, 100 nsec pulse width
Data Recording	all GPS raw and positional data logged by PC based data logger

4.0 SURVEY SPECIFICATIONS

4.1 LINES AND DATA

Survey area coverage	A total of 14,864 survey line kilometers were collected.
Traverse Line Direction	270 and 090 degrees true azimuth.
Line Interval	100 m
Tie Line Interval	1000 m flown orthogonal to survey lines.
Terrain Clearance	60 meters drape mode.
Average ground speed	60 meters/second
Data point interval:	Magnetic: 5.0 meters relative ground spacing per sample point.

4.2 TOLERANCES

a) Line spacing: At no point did the traverse or control lines deviate more than one third of the designated flight line spacing over a period of one kilometer of line flown.
b) Terrain clearance: All flight lines were within tolerance of the planned drape surface.
c) Diurnal magnetic variation: As per spec, with data not acquired during magnetic storms or short term disturbances which exceeded survey spec.
d) Missing data: Any lines with channels or portions of channels missing from the database were reflown.

4.3 NAVIGATION AND RECOVERY

The satellite navigation system was used to ferry to the survey site and to survey along each line using UTM coordinates. The survey coordinates of the survey outline for navigation purposes and flight path recovery were calculated from the project area coordinates listed above.

The navigation accuracy is variable depending on the number and condition of the satellites, however with use of the real time differential 3D GPS navigation it is generally less than five meters and typically in the 1 to 3 meter range. Post-flight differential correction of the flight path, which corrects for satellite range errors, improves the accuracy of the flight path recovery to approximately within one to three meters.

4.4 OPERATIONAL LOGISTICS

The main base(s) of operation for the Piche, Liege and Legend Project HRAM survey were the communities of Bonnyville (CYBF) and Fort McMurray (CYMM). The base station magnetometer and GPS equipment were located in a magnetically quiet location at the airport.

Fuel for the aircraft was purchased on site from the Bonnyville Flying Club. Accommodations for the field crew were secured in Bonnyville. While operating out of Fort McMurray fuel was purchased at the airport from McMurray Aviation.

The field crew consisted of:	Olivier Nayet – Survey Pilot Travis Reed/Adam Harmer – Equipment Operator Jeremy Weber – Field Data Processor
The processing crew was:	Bruce Evans – Project Manager Jeremy Weber – Senior Processor, Quality Control Christopher Campbell (Intrepid Geophysics) – Final Processing and Map Production.

Field operations were conducted at the Piche, Liege and Legend project between 14 February 2006 and 26 March 2006. The aircraft and crew mobilized to the project on 14 March 2006, and conducted initial calibration and compensation flights 15 March 2006. The aircraft and crew demobilized from the project on 26 March 2006 and arrived back at the Calgary base the same day. The final acquisition flight was completed on 24 March 2006. There were a total of 26 accepted survey flights, including ferry and survey flights, compensation, and reflights. Unacceptable mission data flights are not included in this total.

5.0 DATA PROCESSING

After each mission the flight data was fully field processed and quality-checked. Each line of data was viewed on-screen, displaying raw mag, compensated mag, ground mag, noise, radar altitude, Lat./Long, flight path, and in-grid/out-of-grid. These, with the digital review, were the basis for the data QC. Any flight lines that exceeded the survey specifications due to aircraft positioning, diurnal variations or noise were noted for reflight, and forwarded to the flight crew for re-collection.

The generalized processing procedure during the survey consisted of the following:

1) Import all flight and base data into Geosoft.
2) Edit DIURNAL channel to remove any uncharacteristic spikes and linearly interpolate across any gaps.
3) Establish table of mean terrain clearances at intersection locations from tie line data to provide elevation guidance for survey line navigation. Grid differences in elevations at intersections of tie and survey lines to provide quality check on elevation control and tag any for reflight.
4) Edit flight path channels to remove any false spikes and linearly interpolate gaps.
5) Edit RAWMAG channel to remove any false spikes and linearly interpolate gaps.
6) Create new channel as MAGDC = (MAG1 - BASEMAG) + base constant (59656).
7) Perform lag correction and heading correction to MAGDC channel.
8) Perform tie line leveling using all the survey line data to level the tie lines.
9) Perform preliminary survey line leveling using the leveled tie lines; preliminary leveled channel is labeled MAG_PRELEV.
10) All data were viewed on the screen on a line-by-line basis using the interactive Geosoft Oasis Montaj database to inspect for quality, required tolerances and data integrity.
11) Produce preliminary flight path map and gridded magnetic intensity map including shadowing.
12) Plot survey line and tie line flight paths and profiles for quality control inspection.

5.1 DATA PRODUCTS

For the purposes of the Shear Minerals Ltd. "Piche, Liege and Legend Project", Firefly has been contracted to provide a complete data set which includes final micro-leveling, processing and plotting. Plotted products include a) Total Magnetic Intensity b) Calculated 1st Vertical Derivative and c) Flightpath.

Survey data has been provided on CD-ROM in a Geosoft Oasis Montaj XYZ database format.

6.0 SUMMARY

An airborne high sensitivity, high-resolution magnetic survey has been carried out at 60 meter drape mode elevation, 100 meter line intervals and with data sample stations at ~5.0 meters along the lines. Tie lines were spaced at 1000 meters. A high sensitivity base magnetic station recorded the diurnal activity throughout the survey and a base GPS station was used to correct range errors in the GPS flight path recovery. Airborne recorded data included one fully compensated magnetometer located in a tail boom mounted pod, radar altimeter and all attendant GPS data. The magnetic data have been processed, gridded and provided on CD-ROM.

FIREFLY AVIATION LTD.

Bruce T. Evans, P.Geol.
15 April 2006

APPENDIX

Piche, Liege and Legend Project Location

Block	Point	Easting	Northing	Datum	UTM Zone
LL 1	1	316572	6295649	NAD27	12
	2	316998	6305369	NAD27	12
	3	325069	6304972	NAD27	12
	4	325477	6314701	NAD27	12
	5	345065	6313934	NAD27	12
	6	334885	6304579	NAD27	12
	7	346718	6304131	NAD27	12
	8	346359	6294337	NAD27	12
	9	336610	6294705	NAD27	12
	10	326863	6295096	NAD27	12
LL 2	1	403614	6302442	NAD27	12
	2	403839	6312159	NAD27	12
	3	394035	6312397	NAD27	12
	4	394290	6322110	NAD27	12
	5	404064	6321873	NAD27	12
	6	403839	6312159	NAD27	12
	7	413635	6311944	NAD27	12
	8	433230	6311583	NAD27	12
	9	433074	6301867	NAD27	12
	10	423253	6302036	NAD27	12
	11	413433	6302228	NAD27	12
LL 3	1	423791	6331181	NAD27	12
	2	423970	6340905	NAD27	12
	3	433699	6340737	NAD27	12
	4	433543	6331013	NAD27	12
Piche	1	446513	6087816	NAD27	12
	2	446745	6107280	NAD27	12
	3	445715	6107293	NAD27	12
	4	445834	6117042	NAD27	12
	5	455631	6116933	NAD27	12
	6	465429	6116846	NAD27	12
	7	475227	6116781	NAD27	12
	8	475172	6107040	NAD27	12
	9	475942	6107035	NAD27	12
	10	475837	6087578	NAD27	12
	11	466060	6087642	NAD27	12
	12	456283	6087727	NAD27	12

Note: LL stands for Liege-Legend

APPENDIX 3

315000
320000
325000
330000
335000
340000
345000
350000
6315000
6310000
6305000
6300000
6295000
N
Township 92, Range 1W5
LG11
LG1
LG12
LG2
Target A
Target B
LG5
LG8
LG10
LG9
LG6
LG7
LG4
LG3
Township 89, Range 22W4
LEGEND
Liege 2006 magnetic target
Legend 2006 magnetic target
Liege/Legend Oil/Gas Well
Liege/Legend Development Line
Liege/Legend Pipeline
Liege Seismic Anomaly
Access Trail
Shear_wabasca_lands.shp
Kimberlite
Drilled But No Kimberlite
Liege_drill_holes.dbf
Trails.shp
Road_z12_nad27.shp
Twp_rng_major_z12_nad27.shp
Sections_n27_z12.shp
CutlineCutlines
Lake_z12_nad27.shp
Drainage_z12_nad27.shp
DrainageRivers
Provincial_park_polygon.shp
Diamond Indicator Minerals
Pyrope Garnets
Eclogitic Garnets
Cr_diopsides
Olivine
Ilmenites
Chromites
Size of Pie proportional
to the number of total indicators
SHEAR MINERALS LTD.
Liege Property
Diamond Indicators
and Target Locations
500m 0 500 1000m
NTS 84H, 1:50,000
NAD 27, Zone 12
APEX Geoscience Ltd.
Edmonton, Alberta
June, 2006
PERMIT TO PRACTICE
APEX GEOSCIENCE LTD.
Signature
Date
PERMIT NUMBER: P 407
The Association of Professional Engineers,
Geologists and Geophysicists of the NWT / NU
PROFESSIONAL GEOLOGIST
MICHAEL B. DUFRESNE
ALBERTA

FIGURE 10

N
Township 92, Range 1W5
Township 89, Range 22W4
Target A
Target B
LG1
LG2
LG4
LG5
LG6
LG7
LG8
LG9
LG10
LG11
LG12
315000
320000
325000
330000
335000
340000
345000
350000
6315000
6310000
6305000
6300000
6295000
LEGEND
Liege 2006 magnetic target
Legend 2006 magnetic target
Liege/Legend Oil/Gas Well
Liege/Legend Development Line
Liege/Legend Pipeline
Liege Seismic Anomaly
Access Trail
Shear_wabasca_lands.shp
Kimberlite
Drilled But No Kimberlite
Liege_drill_holes.dbf
Trails.shp
Road_z12_nad27.shp
Twp_rng_major_z12_nad27.shp
Sections_n27_z12.shp
CutlineCutlines
Lake_z12_nad27.shp
Drainage_z12_nad27.shp
DrainageRivers
Provincial_park_polygon.shp
Diamond Indicator Minerals
Pyrope Garnets
Eclogitic Garnets
Cr_diopsides
Olivine
Ilmenites
Chromites
Size of Pie proportional to the number of total indicators
SHEAR MINERALS LTD.
Liege Property
Horizontal Derivative and Target Locations
500m 0 500 1000m
NTS 84H, 1:50,000
NAD 27, Zone 12
APEX Geoscience Ltd.
Edmonton, Alberta
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PERMIT TO PRACTICE
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FIGURE 9

N
Township 92, Range 1W5
Township 89, Range 22W4
315000
320000
325000
330000
335000
340000
345000
350000
6315000
6310000
6305000
6300000
6295000
Target A
Target B
LG1
LG2
LG3
LG4
LG5
LG6
LG7
LG8
LG9
LG10
LG11
LG12
LEGEND
Liege 2006 magnetic target
Legend 2006 magnetic target
Liege/Legend Oil/Gas Well
Liege/Legend Development Line
Liege/Legend Pipeline
Liege Seismic Anomaly
Access Trail
Shear_wabasca_lands.shp
Kimberlite
Drilled But No Kimberlite
Liege_drill_holes.dbf
Trails.shp
Road_z12_nad27.shp
Twp_rng_major_z12_nad27.shp
Sections_n27_z12.shp
CutlineCutlines
Lake_z12_nad27.shp
Drainage_z12_nad27.shp
DrainageRivers
Provincial_park_polygon.shp
Diamond Indicator Minerals
Pyrope Garnets
Eclogitic Garnets
Cr_diopsides
Olivine
Ilmenites
Chromites
Size of Pie proportional to the number of total indicators
SHEAR MINERALS LTD.
Liege Property
Analytical Signal and Target Locations
500m 0 500 1000m
NTS 84H, 1:50,000
NAD 27, Zone 12
APEX Geoscience Ltd.
Edmonton, Alberta
June, 2006
PERMIT TO PRACTICE
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ALBERTA

FIGURE 8

Township 92, Range 1W5
Target A
Target B
LG11
LG1
LG12
LG8
LG10
LG9
LG6
LG7
LG4
Township 89, Range 22W4
315000
320000
325000
330000
335000
340000
345000
350000
6315000
6310000
6305000
6300000
6295000
LEGEND
Liege 2006 magnetic target
Legend 2006 magnetic target
Liege/Legend Oil/Gas Well
Liege/Legend Development Line
Liege/Legend Pipeline
Liege Seismic Anomaly
Access Trail
Shear_wabasca_lands.shp
Kimberlite
Drilled But No Kimberlite
Liege_drill_holes.dbf
Trails.shp
Road_z12_nad27.shp
Twp_rng_major_z12_nad27.shp
Sections_n27_z12.shp
CutlineCutlines
Lake_z12_nad27.shp
Drainage_z12_nad27.shp
DrainageRivers
Provincial_park_polygon.shp
Diamond Indicator Minerals
Pyrope Garnets
Eclogitic Garnets
Cr_diopsides
Olivine
Ilmenites
Chromites
Size of Pie proportional
to the number of total indicators
SHEAR MINERALS LTD.
Liege Property
1st Vertical Derivative
and Target Locations
500m 0 500 1000m
NTS 84H, 1:50,000
NAD 27, Zone 12
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Edmonton, Alberta
June, 2006
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ALBERTA

FIGURE 7

315000
320000
325000
330000
335000
340000
345000
350000
6315000
6310000
6305000
6300000
6295000
N
Township 92, Range 1W5
Township 89, Range 22W4
LG1
LG2
LG3
LG4
LG5
LG6
LG7
LG8
LG9
LG10
LG11
LG12
Target A
Target B
LEGEND
SHEAR MINERALS LTD.
Liege Property
Total Field Magnetics and Target Locations
500m 0 500 1000m
NTS 84H, 1:50,000
NAD 27, Zone 12
APEX Geoscience Ltd.
Edmonton, Alberta
June, 2006
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FIGURE 6