MAR 20110013: SMOKY THE BEAR

Smoky the Bear - A report on diamond exploration near Read Earth Creek, northern Alberta.

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NTS 84B

ASSESSMENT REPORT FOR GRIZZLY DISCOVERIES INC.'S BUFFALO HEAD HILLS SMOKY THE BEAR PERMITS: 9305010838, 9306110741-42, 9309040392 and 9309050320-21

Approximate Property Location
Latitude: 57°, 00'00.0" N
Longitude: 114°, 47'45.44' W
Near The Town of Red Earth Creek,
120 km North of Slave Lake, North-Central Alberta (NTS 84B)

Completed By :
APEX Geoscience Ltd.
Suite 200, 9797 – 45 Avenue
Edmonton, Alberta, Canada
T6E 5V8

Completed For:
Grizzly Discoveries Inc.
Suite 220, 9797 – 45 Avenue
Edmonton, Alberta, Canada
T6E 5V8

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

July 12, 2011
Edmonton, Alberta Canada

ASSESSMENT REPORT FOR GRIZZLY DISCOVERIES INC.'S BUFFALO HEAD HILLS SMOKY THE BEAR PERMITS: 9305010838, 9306110741-42, 9309040392 and 9309050320-21

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LIST OF ABBREVIATIONS

APEX - APEX Geoscience Ltd.
Grizzly – Grizzly Discoveries Inc.
Ashton – Ashton Mining of Canada Inc.
AEC – Alberta Energy Company
PUG – Pure Gold Minerals Inc.
BHHJV – Buffalo Head Hills joint venture between Ashton Mining of Canada Inc., Alberta Energy Company (now EnCana Corporation and Pure Gold Minerals Inc.
DIM – Diamond Indicator Minerals
DIF – Diamond Inclusion Field
EM – Electromagnetic (Surveys)
GEOTEM – Fixed-wing airborne geophysical electromagnetic survey
UTEM – Ground Geophysical electromagnetic survey:
HRAM – High Resolution Airborne Magnetic (Surveys)
PRA – Peace River Arch
BHT – Buffalo Head Terrane (A basement terrane)
GSC – Geological Survey of Canada
AGS – Alberta Geological Survey
ATV – All Terrain Vehicle
NTS – National Topographic System

km – Kilometers
m – meters
ft – feet
kg – kilograms
lbs - pounds
ha - hectares
cpht – carats per hundred tonnes
asl – above sea level
°C – degrees celsius
Ga – Billion years
nT – NanoTesla (a unit of magnetic susceptibility)

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Summary

APEX Geoscience Ltd. (APEX) was contracted in the spring of 2011 as consultants by Grizzly Discoveries Inc. (Grizzly) to complete a ground geophysical surveying program on their Smoky the Bear Property. Grizzly owns an undivided 100% interest in the Buffalo Head Hills properties, which comprise 49 mineral permits and 128,674 hectares (approximately 317,630 acres). The Grizzly Buffalo Head Hills claims are situated adjacent to the Buffalo Head Hills joint venture property (BHHJV), currently operated by Diamondex Resources Ltd. (Diamondex).

The regional setting in the Buffalo Head Hills area is considered favourable for the presence of diamondiferous kimberlites. The Grizzly Buffalo Head Hills property is 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. 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. This has been confirmed through the discovery of 38 kimberlite pipes, 26 of which are diamondiferous, in the Buffalo Head Hills area by the BHHJV. More recently, in 2008, three new diamondiferous kimberlites BE-01, BE-02 and BE-03 were discovered on the Smoky the Bear Claim Block by Grizzly, which in addition to LL8, BM-02, BM-03 and BM-16 total 7 known intrusions.

Previous exploration on the Buffalo Head Hills properties by Grizzly includes indicator mineral sampling, numerous ground geophysical surveys, HRAM airborne surveys and drilling. During the winter of 2007-2008, 31 ground magnetics surveys were completed on the Smoky the Bear property over anomalies chosen from a previously flown airborne magnetics survey. In spring 2008 follow-up of anomalous results from the ground geophysical program through drilling led to the discovery of 2 new kimberlites on the property. The first new kimberlites discovered in approximately five years and the first kimberlites discovered by a company outside of the BHHJV in the Buffalo Head Hills area. Kimberlite BE-01 yielded 2 microdiamonds from a total of 265.35 kg of core and kimberlite BE-02 yielded 54 microdiamonds from a total of 56.6 kg of core. A sample collected from the till at the bottom of drillhole SMB08-01 yielded 1 pyrope garnet, 2 chrome diopsides, 107 olivines and 2 picroilmenites perhaps suggesting that the drill hole was about to enter a kimberlite upon exiting the overburden. Kimberlite BE-01 (drillhole SMB08-02) yielded 105 pyrope garnets, 113 chrome diopsides, 102 olivines and 182 chromites. Kimberlite BE-02 (drillhole SMB08-03) yielded 1 pyrope

garnet, 100 olivines and 28 chromites. Drill cores of the BE-01, BE-02, and BE-03 intrusions were sampled and processed for heavy mineral concentrates, from which perdiotic garnet, clinopyroxene and spinel xenocrysts were isolated and analyzed by an electron microprobe. Mantle/lower crustal xenocrysts from the Smoky the Bear Property intrusions provide definitive evidence as to the diamond potential of these bodies. The BE-01 intrusion appears to have sampled or even originated in, mantle that is much shallower than the mantle sampled by BE-02, BE-03, and other diamondiferous bodies in the northern Alberta kimberlite province. Thus the diamond potential of the BE-01 body is low. In contrast, the BE-02 intrusion is clearly considered to be of high diamond potential, particularly when compared to other diamondiferous kimberlites in the Buffalo Head Hills field. The same conclusion is extended to the BE-03 body, which has the fewest analytical data in this dataset, but has xenocryst chemistry that appears to mimic BE-02. This data provided by the sampling provides contention that BE-02 (and BE-03) has diamond potential and merit follow-up exploration.

A summer and autumn exploration campaign in 2008 included a ground geophysical program consisting of line cutting, ground magnetometer surveys, and supervision of a ground gravity survey, and a drilling program. A total of 7 ground magnetometer survey grids and one gravity survey grid were completed. The follow-up drill program consisted of 5 holes totalling 965.5m: 2 holes targeted the BE-02 kimberlite and 3 holes targeted additional high priority anomalies in the vicinity of BE-02 identified from the ground geophysical surveys. Kimberlite BE-02 was intersected by 2 drill holes resulting in the recovery of 518.55kg of kimberlite for caustic fusion. Caustic fusion analysis returned 316 diamonds including 5 macrodiamonds. Additionally, one of the 3 drill holes targeting the other anomalies intersected a new kimberlite: BE-03. A total of 365.35kg of kimberlite was collected for caustic fusion which returned 218 diamonds including 5 macrodiamonds. The two remaining holes did not intersect kimberlite however the presence of kimberlite cannot be conclusively excluded.

During the spring 2011 exploration program, 1 ground magnetometer geophysical survey was conducted over the BM-03 and BM-16 kimberlites, which were previously discovered by the BHHJV but are now part of the Grizzly land package. The BHHJV originally reported drilling intersecting 35 m of kimberlite in BM-03 while BM-16 drilling intersected only a narrow 0.8 m zone of kimberlite. It was proposed that the narrow zone of the BM-16 kimberlite resulted from the BHHJV drilling the edge of the intrusion, possibly because the drill collar was based on the original airborne geophysical survey, or on a ground magnetic survey that was erroneously orientated in the same north-trending direction as the BM-16 intrusion. The survey conducted by APEX in the spring 2011 exploration reveals the actual center of BM-16 to be northwest of the BHHJV drill collar, confirming that their drill hole was indeed located at the edge of the intrusion.

Although diamond exploration on Grizzly's Buffalo Head Hills properties is in its intermediate stages, the potential for discovery of further diamondiferous kimberlites is considered high based on the regional geological setting in conjunction with the positive results of exploration conducted to date. This was reinforced by exploration conducted between 2009 and 2011, which provided evidence that the BM-16 kimberlite has not been adequately tested, and it is recommended a follow-up drill program be initiated. The prospect of possible high diamond content from intrusions BE-02 and BE-03 also provide grounds for future exploration.

Between 2009 and 2011, Grizzly spent a total of CDN$67,240.07 (not including GST or the allowed 10% Administration Overhead) on exploration on the Smoky the Bear property.

INTRODUCTION AND TERMS OF REFERENCE

APEX Geoscience Ltd. (APEX) was retained during 2011 as consultants by Grizzly Discoveries Inc. (Grizzly) to continue exploration on its Smoky the Bear Property, located in the Buffalo Head Hills region of northern Alberta (Figure 1). The spring 2011 ground geophysics that was conducted was based on the contention that the main portion of the BM-16 kimberlite body previously discovered by Ashton Mining of Canada Inc. (Ashton) was not intersected in a previous drilling program due to the collar location being chosen using the original airborne geophysical survey in the area, or on a ground magnetic survey that was erroneously orientated in the same north-trending direction as the BM-16 intrusion. During the spring of 2011, APEX personnel, on behalf of Grizzly, completed 1 ground magnetometer geophysical survey on the Smoky the Bear Claim Blocks whose dimensions encompass both the BM-03 and BM-16 kimberlites.

This report summarizes the exploration performed by APEX on behalf of Grizzly on the Smoky the Bear Property between 2009 and 2011. Mr. M.B. Dufresne, M.Sc., P.Geol., a Qualified Person, has visited all the Buffalo Head Hills Claim Blocks on a number of occasions while performing exploration and research related work on behalf of Grizzly and also the Alberta Geological Survey. Grizzly spent a total of CDN $67,240.07 (not including GST or the allowed 10% Administration Overhead) on exploration on their Smoky the Bear Property between 2009 and 2011 (Appendix 1).

DISCLAIMER

The author, in writing this report, used sources of information as listed in the references. The report written by Mr. M. 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 listed in the references were prepared by a person or persons holding post secondary geology, or related university degree(s). For those reports, which were prepared prior to the implementation of the standards relating to National Instrument 43-101, the information is assumed to be accurate based on the property visits and data review and exploration conducted by the author, however they are not the basis for this report. The most recent exploration has resulted in the acquisition of high resolution magnetic mapping over the BM-03 and BM-16 kimberlites which provided the information that the BM-16 kimberlite has not been adequately tested for diamonds in previous exploration programs, as well as grounds to suspect high diamond content from the BE-02 and BE-03 intrusions. Grizzly's Smoky the Bear property area is still considered an intermediate stage exploration project.

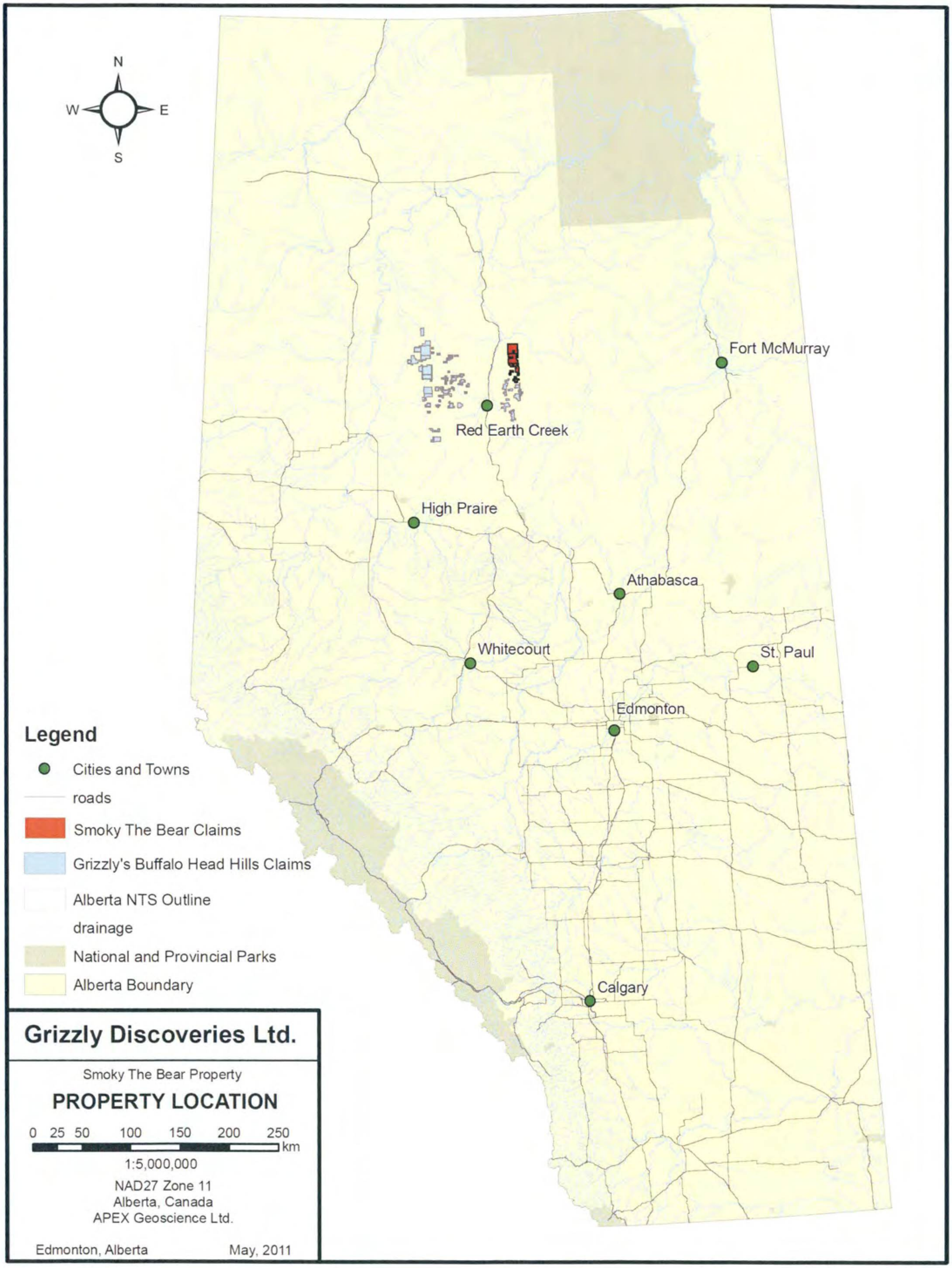

N
W
E
S
Fort McMurray
Red Earth Creek
High Praire
Athabasca
St. Paul
Whitecourt
Edmonton
Calgary
Legend
Cities and Towns
roads
Smoky The Bear Claims
Grizzly's Buffalo Head Hills Claims
Alberta NTS Outline
drainage
National and Provincial Parks
Alberta Boundary
Grizzly Discoveries Ltd.
Smoky The Bear Property
PROPERTY LOCATION
0 25 50 100 150 200 250 km
1:5,000,000
NAD27 Zone 11
Alberta, Canada
APEX Geoscience Ltd.
Edmonton, Alberta
May, 2011

FIGURE 1

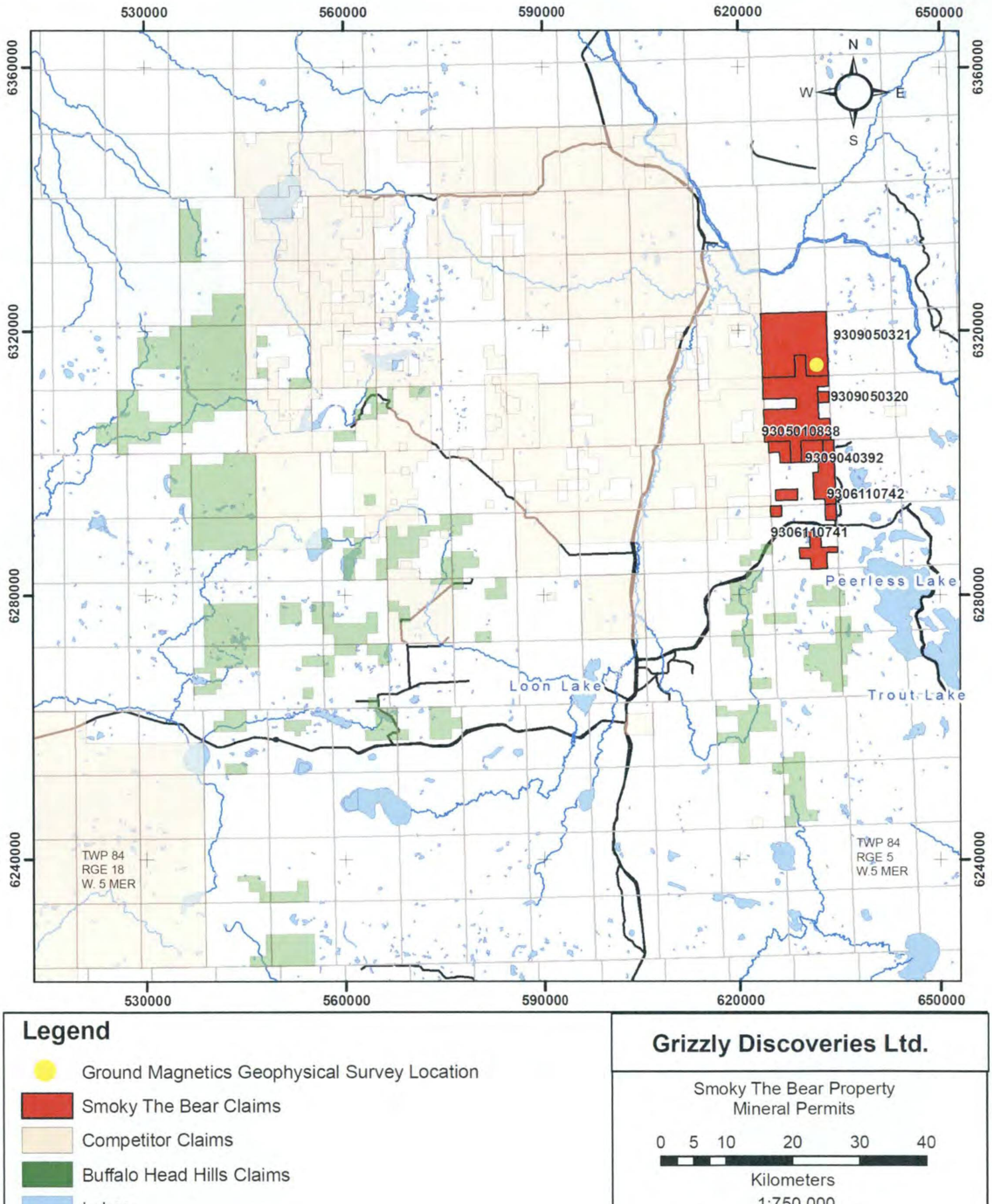
PROPERTY DESCRIPTION AND LOCATION

Grizzly Discoveries Inc.'s Smoky the Bear Property is a part of Grizzly's Buffalo Head Hills diamond properties comprised of the Grand Cub Aidan, White Bear, Preston upon Wolverine, Bearpaw, Kodiak and Grand Cub Parker, and respectively Smoky The Bear Claim Blocks. The claims are all located in the Buffalo Head Hills west and north of the town of Red Earth Creek, approximately 120 km (75 miles) north of the town of Slave Lake and 330 km northwest of Edmonton, in north-central Alberta (Figure 1). The metallic mineral permits roughly cover all, or portions of Townships 89 through 92, Range 6; west of the 5th meridian (Figure 2).

Grizzly's Buffalo Head Hills diamond property encompasses 49 mineral permits and 128,674 hectares (approximately 317,630 acres). The properties are situated adjacent to the Buffalo Head Hills joint venture property (BHHJV), a joint venture comprised of Diamondex Resources Ltd. (Diamondex), Shore Gold Inc. (Shore Gold), Encana Corporation (Encana) and Pure Diamonds Exploration Inc. (Pure Diamonds), in which Diamondex is the current operator of the project. The properties are located within 1:250,000 scale National Topographic System (NTS) map sheets 84B, 84C, 84F and 84G (Jackpine Lake, Peerless Lake, Peace River, Bison Lake and Wadlin Lake Map Sheets) and, more specifically, 1:50,000 scale NTS map sheets 84B/10,11,12, 13, 15; 84C/9,10,15, 16; 84F/1,2,7,8,9,12; and 84G/4, 5, 6. A list of legal descriptions for the Claim Blocks is provided in Table 1.

The mineral permits are currently held in the name of either Grizzly Discoveries Inc. of Suite 220, 9797 – 45th Avenue, Edmonton, Alberta, Grizzly Gold Inc. of Comp 2 Site 17, Peers, Alberta or APEX Geoscience Ltd. of Suite 200, 9797 – 45th Avenue, Edmonton, Alberta (Table 1). The mineral permits held by APEX Geoscience Ltd. were staked in trust on behalf of Grizzly Discoveries Inc. APEX retains no interest in these mineral permits. Based upon a property title search, the mineral permits appear to be free of any encumbrances and are 100% owned by Grizzly Gold Inc., Grizzly Discoveries Inc. and APEX Geoscience Ltd. with no option and/or royalty agreements that the author is aware of in effect. This report is filed on 6 of the Smoky the Bear Metallic Mineral Permits 930905320, 930905321, 9305010838, 9309040392, 9306110741 and 9306110742 totaling approximately 24,448 hectares (60,412 acres).

Alberta Mining regulations grant metallic mineral permits to the permittee for 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 for 15-year terms and may be renewed. A



Legend

- Ground Magnetics Geophysical Survey Location
- Smoky The Bear Claims
- Competitor Claims
- Buffalo Head Hills Claims
- Lakes
- Alberta Township System
- Streams and Rivers
- Roads

Grizzly Discoveries Ltd.

Smoky The Bear Property
Mineral Permits

0 5 10 20 30 40

Kilometers

1:750,000

NAD 27 Zone 11

APEX Geoscience Ltd.

Edmonton, Alberta

May, 2011

FIGURE 2

TABLE 1: LEGAL PERMIT DESCRIPTIONS*

Permit Number*	Record Date*	Term Period*	Legal Description	Permit Holder*	Area (Ha)*
Smoky the Bear Claim Block					
9305010838	19-Jan-2005	14 Years	5-06-090: 28,33 5-06-091: 1-12,14-18,22,23,26-36 5-06-092: 3,10	**Grizzly Gold Inc.	**8704**
9306110741	7-Nov-2006	14 Years	5-06-089: 02;03SE,NE;09SE,NE;10-11;12NW,NE;14SW,NW;15SE,NE;22SE,SW;25NW,NE;31;36	Grizzly Discoveries Inc.	**2176**
9306110742	7-Nov-2006	14 Years	5-06-090: 01;02NW,NE;04NW;05NW,NE; 06NE;07SE;08SE,SW;09SW;11-14; 23SE,NE;24-25;29;31-32;36	Grizzly Discoveries Inc.	**3584**
9309040392	17-Apr-2006	14 Years	5-06-090: 26-27; 34-35	Grizzly Discoveries Inc.	**1024**
9309050320	22-May-2009	14 Years	5-06-091: 24NW,NE;25SE,SW	Grizzly Discoveries Inc.	**256**
9309050321	22-May-2009	14 Years	5-06-092: 01-2;04-9;11-36	Grizzly Discoveries Inc.	**8704**
Total Permits 6			**Total Claim Block Area 24,448 ha**		

*Based upon a land titles search April 2011**; Grizzly Gold Inc., is a private company controlled by Mr. B. Testo, president of Grizzly Discoveries Inc.

metallic mineral permit gives Grizzly 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:

http://www.qp.gov.ab.ca/documents/Regs/2005_145.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 $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 Smoky the Bear Property may be accessed via Provincial Highways 88 and 686, all weather and dry weather gravel roads, cart trails and seismic lines. Most portions of the mineral permit areas may be accessed by four-wheel drive vehicles or all terrain vehicles (ATV's) during the summer and winter months. Accommodation, food, fuel, and supplies are best obtained in the towns of Red Earth Creek, Peace River and Slave Lake.

The Smoky the Bear Property is situated within the Eastern Alberta Plains along the southern edge of the Buffalo Head Hills Upland. Relief generally comprises rolling hills and undulating plains. Elevation in the region varies from 450 m to 825 m (1,475 ft to 2,700 ft) above sea level (ASL). Major topographic features in the region include Cadotte, Lubicon, Loon and Peerless lakes, as well as Red Earth Creek and the Loon and Lubicon rivers. In addition to the numerous small lakes and ponds, much of the properties are covered by swamps, marshes and fens. A boreal forest containing mainly spruce and jack pine covers the property. Annual temperatures range from -40°C in January to 25°C in July.

HISTORY: PREVIOUS EXPLORATION

Previous Exploration Buffalo Head Hills Region

Historical exploration in the Buffalo Head Hills region focused primarily on the search for hydrocarbon and aggregate deposits and the determination of hydro geological 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 Hills region is well known for its wealth of energy resources. The primary established reserves are $47,196.4 \times 10^3$ m^3 of oil in 12 conventional fields and 808×10^6 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 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, 1989a and 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 18 km (11 miles) north of Grizzly's Smoky the Bear 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 BHHJV (between 1996 to 2006 the joint venture was between Ashton Mining of Canada Inc. (Ashton), Alberta Energy Company (AEC, now Encana) and Pure Gold Minerals Inc. (Pure Gold), it was determined that this till site is less than one kilometre (0.6 miles) southwest of the 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).

During 1995, EnCana (as Alberta Energy Company Ltd.) 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 region. The survey identified several shallow based, short-wavelength, high frequency magnetic anomalies that also corresponded to areas of very strong diffractions in seismic profiles (Rob Pryde, *personal communication*, 1998; Carlson *et al.*, 1999; Skelton and Bursey, 1999). As a result, during October 1996 the Buffalo Head Hills Joint Venture option agreement, the), was signed by Ashton, EnCana, and Pure Gold to investigate these anomalies, with Ashton as the operator.

In January 1997, Ashton performed 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. The initial 2 drill holes, located on anomalies identified as 7B and 7C, penetrated olivine-dominated fragmental and tuffaceous volcanic materials 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 from the basement through a thick column of overlying younger sedimentary rocks to the preglacial surface (Ashton Mining of Canada Inc., 1997a). Petrographic studies of core from K7B and K7C confirmed that the drill holes 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 are diamondiferous; 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 yield euhedral to subhedral xenocrystic (mantle derived) garnet and clinopyroxene suggesting that resorption has 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.

More recent results indicate that the Buffalo Head Hills kimberlite field does contain kimberlites that have excellent potential to host a population of commercial-sized diamonds and are approaching the threshold of being economic. As an example, Ashton reported that a 22.8 tonne mini-bulk sample collected from the K252 Kimberlite, located approximately 21 km or 13 miles west of Grizzly's Smoky the Bear property, yielded a grade of 55 carats per hundred tonnes (cpht) (Ashton Mining of Canada Inc., 2001a). The mini-bulk sample also yielded a grade of 85.4 cpht from the deeper breccia phase of the pipe. If these grades and the quality of the stones persist through larger bulk sampling programs the K252 Kimberlite could be the first in a series of economic kimberlite pipes in the Buffalo Head Hills. As a result, Ashton and its joint venture partners approved further drilling of other kimberlite targets and the collection of a 200 to 400 tonne bulk sample from the K252 Kimberlite during 2002 (Ashton Mining of Canada Inc., 2001b).

Ashton's more recent work was expanded to focus on defining new EM and gravity targets and drilling of previously discovered targets including K252. During February 2002, a six to eight hole delineation drilling program was completed to test the geophysical interpretation and better define the size and shape of K252. Seven 12 cm diameter holes were drilled by reverse circulation along the outer edge of the geophysical anomaly to depths of approximately 200 m. The drilling confirmed that K252 is irregular in shape and likely less than two hectares in size (Skelton et al., 2003).

During January and February 2003, the southern vent of target K6, discovered in 1997, was drilled to a depth of 251 m. In addition, drill-testing of three electromagnetic anomalies resulted in the discovery of two new kimberlites, K296 and K300 (Ashton Mining of Canada Inc., 2003c; Skelton et al., 2003). Targets K300 and K296 were discovered at the intersections of several vertical holes, and exhibit electromagnetic anomalies with approximate surface dimensions of 300 m x 300 m, and 400 m x 400 m, respectively. Lab results of the samples indicated that K300 contained a total of 54 diamonds, while K296 had 125 diamonds within sample weights of 170.8 kilograms (kg) and 275.0 kg (Ashton Mining of Canada Inc., 2003a and 2003b).

In late 2003, Ashton completed a 10,500 line-km airborne electromagnetic and magnetic survey over the Buffalo Head Hills region, which had not previously been investigated by this method, resulting in the discovery of several new electromagnetic anomalies (Ashton Mining of Canada Inc., 2004).

Then in 2004, airborne and ground geophysical gravity surveys were conducted by Ashton as follow up exploration over targets located by the 2003 magnetic and electromagnetic airborne surveys (Ashton Mining of Canada Inc., 2005).

Activities of 2005 focused on target drilling, based on results from airborne and ground geophysical targets found in 2003, 2004, and 2005 (Ashton Mining of Canada Inc., 2005). The Ashton 2005 drill program did not result in kimberlite discovery, and geophysical signatures were attributed to compositional variations in the overburden.

To date, 38 kimberlites have been found by the BHHJV, 26 of which have been found to be diamondiferous.

Previous Exploration on Grizzly's Buffalo Head Hills Properties

Exploration by the BHHJV commenced on its main Buffalo Head Hills property in earnest during 1997 with the drilling of a number of kimberlites and a fixed wing HRAM survey (Skelton and Bursey, 1998). The survey was flown by Sanders Geophysics Ltd. (Sanders), using a Cessna 402B aircraft and a flight line spacing of 250 m (820 ft). Grizzly's entire Smoky the Bear property, which at the time represented the southernmost portion of the BHHJV's Buffalo Head Hills main property, was flown as part of the HRAM survey (Skelton and Bursey, 1998). Subsequently, Ashton surveyed high priority targets with either 100 m (325 ft) line-spaced helicopter magnetic surveys or helicopter magnetic-electromagnetic (EM) surveys during the summer of 1998 (Skelton and Bursey, 1998 and 1999). The helicopter magnetic and magnetic-EM surveys were completed by High-Sense Geophysics Ltd. (High-Sense) and Geoterrex-Dighem (Dighem) over 52 blocks. A total of 8 of the 52 High Sense or Dighem Helicopter Survey blocks accounts for about 31 magnetic targets, which generally range from 1 to 2 km (0.6 to 1.2 miles) in diameter and were found to exist on Grizzly's Smoky the Bear Claim Block. A few of the magnetic anomalies on these blocks within the Smoky the Bear Claim Block warranted further exploration. The remaining survey blocks are presently over lands retained by the BHHJV or lands that have been dropped by the joint venture and have been recently staked by competitors.

Exploration by the BHHJV commenced on its Loon Lake property during the spring of 1998 when a fixed-wing HRAM survey was flown by Sanders, using a Cessna 402B aircraft and a flight line spacing of 250 m (820 ft). In total, 24,650 line-kms (14,790 miles) of fixed-wing magnetic data were captured by Sanders for the joint venture's Loon Lake block. Part of the BHHJV Loon Lake block survey was conducted over Grizzly's current White Bear Claim Block (Skelton and Bursey, 1999; Skelton and Willis, 2001). Subsequently, the BHHJV surveyed high priority targets with 100 m (325 ft) line-spaced helicopter magnetic surveys by High-Sense during the summer of 1998 and 1999 (Skelton and Bursey, 1999; Skelton and Willis, 2001). A total of 13 blocks, encompassing 21 magnetic targets and 802.7 line-km (482 line-miles) of data were flown during the fall program. At least one of these survey blocks yielding one magnetic target presently exists within Grizzly's White Bear Claim Block. The remaining survey blocks are presently over lands retained by the BHHJV or lands that have been dropped by the joint venture and have been recently staked by competitors.

Exploration on the BHHJV's Muddy River block commenced during the spring of 1998 with a fixed wing HRAM survey flown by Sanders (Skelton and Bursey, 1999; Skelton and Willis, 2001). A large portion of this survey was conducted over Grizzly's Grand Cub Aidan Claim Block. In addition, at least seven helicopter magnetic surveys and eight ground geophysical surveys were conducted on ground now part of Grizzly's Grand Cub Aidan Claim Block (Skelton and Bursey, 1999; Skelton and Willis, 2001). A number of these surveys have yielded geophysical anomalies that warranted follow-up exploration. Exploration was also conducted by Monopros Limited (Monopros) on behalf of Troymin Resources Ltd. (Troymin) over the southern portion (T96, R10-14) of Grizzly's Grand Cub Aidan Claim Block during 1997 to 1999 (Wood, 1999). A number of priority geophysical anomalies and diamond indicator mineral anomalies of interest were identified on and in the vicinity of the Grand Cub Aidan claims. Many of the anomalies were not followed up. Wood (1999) reports 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 southern boundary of the Grand Cub Aidan Claim Block. Although the bulk of the kimberlite indicator minerals recovered by Monopros were chromite and ilmenite with a few pyrope garnets, Wood (1999) suggests that the grains are likely locally derived due to thin overburden and the limited drainage basin in the areas where the indicator grains were recovered from. Wood (1999) also suggested that a number of geophysical anomalies detected on the property could correspond with the abundance of indicator minerals in the drainages and undiscovered kimberlite intrusions. The vast majority of these targets were not surveyed by ground geophysical surveys or drill tested. See figures 5 and 6 in Dufresne and Kupsch (2004) for locations of the geophysical surveys.

Exploration and drilling during 1997 to 1999 by the BHHJV resulted in the discovery of at least 10 kimberlites situated less than 15 km north of the northern boundary of Grizzly's Smoky the Bear Claim Block, with 3 kimberlites within 5 km of Grizzly's northern boundary (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). Confirmed kimberlites K1 and K160, discovered by the joint venture on their main Buffalo Head Hills block during 1997 and 1998, exist approximately 2.2 km (about 1.3 miles) and 1.6 km (1 mile) north of the central portion of the Smoky the Bear Claim Block. One suspected kimberlite, magnetic anomaly TQ108, exists on Grizzly's Smoky the Bear Claim Block in the southeast corner of the block (Skelton and Bursey, 1998 and 1999). The BHHJV attempted to drill magnetic anomaly TQ108, which has a signature almost identical to a number of the Buffalo Head Hills kimberlites and were unsuccessful in penetrating the overburden due to wet flowing sand. The drill hole reached a maximum depth of 91m before it was abandoned (Skelton and Bursey, 1999; Skelton and Willis, 2001).

The BHHJV has performed a number of diamond indicator mineral surveys for which the grain count data are available from assessment records (Skelton and Bursey, 1998 and 1999; Skelton and Willis 2001). In general, diamond indicator mineral data (picked minerals only) are present in assessment records for areas covered formerly by the BHHJV's Loon Lake, Muddy River, Birch Mountain, Caribou Mountain, Athabasca, Rabbit Lake and Whitemud blocks. A number of the samples were collected on ground now part of Grizzly's Grand Cub Aidan and White Bear Claim Blocks. No BHHJV indicator minerals results are available for Grizzly's Smoky the Bear Claim Block. The BHHJV collected approximately 11 samples from the White Bear Claim Block, 4 samples from the Grand Cub Aidan Claim Block and an unknown amount of samples from the Smoky the Bear Claim Block. At least five diamond indicator samples were collected from the BHHJV's Loon Lake block and are less than 10 km south of and down-ice of the Smoky the Bear Claim Block (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001).

In the available assessment reports, no mineral chemistry is available for the Ashton samples. However, recent papers by Carlson *et al.* (1999), Aulbach *et al.* (2003), Creighton and Eccles (2003), Davies *et al.* (2003) and Hood and McCandless (2003), indicate that the indicator mineral assemblage for the Buffalo Head Hills kimberlites is dominated by xenocrystic olivine with lesser amounts of pyrope garnet, chromite, eclogitic garnet, chromium diopside, titanian pyrope, picroilmenite and phlogopite. Carlson *et al.* (1999) and Hood and McCandless (2003) indicate that although Gurney G10 pyrope garnets and high chromium chromites, which are often associated with diamonds, are present in a number of kimberlites and regionally in the Buffalo Head Hills, to date, there is no direct association of these minerals in kimberlites with better diamond counts. In addition, Hood and McCandless (2003) indicate that some of the highly diamondiferous kimberlites such as K252 and K6 contain relatively few xenocrystic indicator minerals, while some kimberlite with abundant mantle xenocrysts such as K2 and K95 are only weakly diamondiferous. Carlson *et al.* (1999)

and Hood and McCandless (2003) indicate that the northern cluster of kimberlites tend to be more diamondiferous and yield a number of pyrope garnets and chromites that yield very high concentrations of chromium, in the case of pyrope garnets from 16 to 18 weight percent (wt.%) Cr_2O_3. In addition, the northern cluster of kimberlites yields few titanian pyrope garnets and low concentrations of picroilmenite, and when picroilmenite is present, it usually contains low concentrations of niobium. In contrast, the southern cluster of kimberlites yield lower chromium pyrope garnets often with high concentrations of calcium, in some cases likely derived from wehrlite, high titanian pyrope garnets, chromites with lower overall chromium concentrations, picroilmenites with high concentrations of niobium and few if any eclogitic garnets (Carlson *et al.*, 1999; Hood and McCandless, 2003). Davies *et al.* (2003), indicate that inclusions in diamonds studied from the K10 and K14 kimberlites consist of roughly equal amounts of peridotitic and eclogitic suite of inclusions, with the peridotitic inclusions indicative of both harzburgite and lherzolite derivation. Davies *et al.* (2003) point out the presence of rare ferropericlase and majorite in some of the diamonds, which are generally indicative of ultradeep mineral assemblages and diamonds formed at depths greater than 400 km. Majoritic garnet was also recognised as an inclusion from a diamond from the K11 kimberlite (Banas *et al.*, 2007). Additionally, in the study of diamonds from K11, K91, and K252 Banas *et al.* (2007) found a high abundance of nitrogen free diamonds (i.e. Type II) and diamonds with highly aggregated nitrogen at low concentrations (Type IaB) corroborating that the BHH kimberlites sampled an ultradeep diamond source. Eccles *et al.* (2003), suggest that the most highly diamondiferous Buffalo Hills kimberlites tend to be the more primitive kimberlites with the highest amount of olivine (indicated by overall bulk magnesium number) and the highest concentrations of chromium and nickel, in conjunction with the lowest concentrations of titanium, niobium, silicon and aluminum. See figures 7 and 8 in Dufresne and Kupsch (2004) for DIM sample locations and grain counts.

Based upon assessment records (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001), and the author's knowledge of exploration costs in Alberta, approximately $1.7 million was spent by the BHHJV on exploration for kimberlites on Grizzly's Grand Cub Aidan, White Bear and Smoky the Bear Claim Blocks. A large portion of this expenditure was incurred on the Smoky the Bear Claim Block ($1,297,500) with smaller expenditures on the White Bear ($133,500) and Grand Cub Aidan blocks ($224,000). These costs are based upon assuming an overall cost of $10 per line-km for fixed wing magnetic surveys, $10,000 per 1 km^2 helicopter or ground geophysics grid and about $1,000 per indicator mineral sample. Ground truthing of a number of prospective magnetic anomalies identified from Ashton's historic assessment reports (Skelton and Bursey, 1999; Skelton and Willis, 2001) indicates that further work was warranted and recommended by the joint venture, however, assessment requirements and a lack of adequate expenditures forced the BHHJV to drop large portions of the lands surrounding their main Buffalo Head Hills block.

Previous Exploration on behalf of Grizzly Discoveries Inc.

APEX Geoscience Ltd. was contracted during early 2004 by Grizzly to compile all the available geological, geophysical and mineralogical data for three of the Buffalo Head Hills Claim Blocks (Grand Cub Aidan, White Bear and Smoky the Bear), in order to evaluate the potential of the Buffalo Head Hills property to host kimberlites and, therefore possibly diamonds. Based on the recommendations that resulted from the compilation and review, a program of fixed-wing airborne geophysics was initiated and completed over the White Bear Claim Block during April of that year (Dufresne and Kupsch, 2004)

From March to May 2004, APEX personnel reviewed and compiled the following data: (1) the detailed fixed-wing, helicopter and ground geophysical data from a number of BHHJV's assessment reports (Skelton and Bursey, 1998, 1999; Skelton and Willis, 2001; Willis and Skelton, 2002), (2) the 600m (2,000 ft) line spaced proprietary Utikuma magnetic data covering much of the Buffalo Head hills region, (3) all available public and proprietary diamond indicator mineral data for samples collected on and down ice of Grizzly's Buffalo Head Hills property and (4) all available public and proprietary petroleum, hydrogeological and other types of well data in order to construct a drift thickness picture for the Buffalo Head Hills region.

The review of publicly available geophysical data included detailed helicopter, fixed wing and ground based geophysical grids completed by Ashton on behalf of the BHHJV, as assessment work on what is now part of Grizzly's Buffalo Head Hills property (Figures 5 and 6 in Dufresne and Kupsch, 2004). The BHHJV's various surveys revealed at least 31 magnetic anomalies ranging from high to very low priority (Skelton and Bursey, 1998 and 1999). A single magnetic anomaly was identified with a helicopter magnetic survey on the White Bear Claim Block (Figure 6 in Dufresne and Kupsch, 2004). No follow up ground geophysical grids were completed on the block at that time, however a number of additional prospective magnetic anomalies were identified with subsequent White Bear magnetic surveys. The BHHJV completed at least seven helicopter magnetic surveys and eight ground geophysical surveys over ground now part of Grizzly's Grand Cub Aidan Claim Block (Skelton and Bursey, 1999; Skelton and Willis, 2001). Additionally Troymin and Monopros identified at least 22 priority 1 and 2 magnetic anomalies on the Bison Lake block townships that now represent the southernmost five townships of Grizzly's Grand Cub Aidan Claim Block (Wood, 1999). These anomalies are listed and shown on Figure 5 in Dufresne and Kupsch (2004). Anomaly TQ-108 in the southeast corner of Grizzly's Smoky the Bear property is almost an identical magnetic anomaly to two tier 1 strongly magnetic circular anomalies, LL-07 and LL-08. These are located on Ashton's Loon Lake Block, and both were drill tested and yielded kimberlite pipes. Drilling at TQ-108 during 1998 failed due to wet flowing sand at 91 metres, and did not penetrate the overburden. Further testing may require a water well drilling rig and employing significant lengths of casing in order to have success.

During March 2004, a high-resolution airborne magnetic (HRAM) survey was commissioned for Grizzly's White Bear Claim Block in order to satisfy assessment requirements and to identify potential targets for future fieldwork at the Property. The HRAM survey was conducted between April 5 and April 27, 2004 (Dufresne and Kupsch, 2004). The survey was conducted over all but one of the White Bear permits and included 8,364 line kilometres of survey data (Figures 9 and 10 in Dufresne and Kupsch, 2004). APEX reviewed the airborne magnetic data in May 2004 to identify high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features such as kimberlites. A total of 23 priority 1 and 32 priority 2 magnetic anomalies were identified as prospective for kimberlites (Figures 9 and 10 in Dufresne and Kupsch, 2004). This large number of unexplained high priority magnetic anomalies required ground checking for man-made culture, and subsequent ground geophysical surveys in the absence of cultural interference.

From January 15 to March 8, 2005 APEX completed a field program on behalf of Grizzly on the Smoky the Bear Claim Block and a few adjoining mineral permits from the White Bear Claim Block. The program consisted of line-cutting, checking airborne geophysical anomalies and conducting ground geophysical surveys. The airborne anomalies were identified from the airborne fixed wing magnetic survey flown during the spring of 2004 by Grizzly and historic airborne magnetic and electromagnetic surveys flown by Ashton. A total of two ground magnetic surveys were completed over two prospective anomalies on the White Bear Claim Block (WB-130 and WB-068). Exploration on the Smoky the Bear Claim Block consisted of five ground geophysical survey grids. Three magnetic survey grids were constructed over anomalies SMB-01c, SMB-01d, and TQ-108; and two electromagnetic survey grids over SMB-01a and SMB-01b.

The 2005 exploration on the Grand Cub Aidan property consisted of a HRAM survey, which identified 95 magnetic anomalies, from which 16 remained unexplained high priority targets for potential kimberlite. In the fall of 2005, prospecting on the Preston Upon Wolverine property was completed by APEX personnel, with a subsequent airborne GEOTEM 30 Hz TDEM electromagnetic and magnetic geophysical survey flown over the property from December 2005 to January 2006. The data gathered from the winter 2005-2006 GEOTEM survey was interpreted and 17 priority targets were identified from 100 responses. Recommendations were made in early 2006 to complete four ground survey grids over the high priority targets within the Preston Upon Wolverine Claim Block.

From January to March 2006 APEX completed a field program, on behalf of Grizzly, on the Smoky the Bear, Grand Cub Aidan, and Preston Upon Wolverine Claim Blocks. Two diamond drill holes on the Smoky the Bear property, totalling 160.8m, attempted to test the double lobed EM target SMB-01 (Figure 5 in Dufresne, 2007). Unfortunately, both holes were terminated in overburden due to difficult drilling conditions. Grand Cub Aidan exploration consisted of ground truthing and ground geophysical surveys over priority targets identified from the winter 2005 HRAM survey data (Figure 11 in Dufresne *et al.*, 2006). Exploration on the Preston Upon Wolverine Claim Block entailed ground TDEM survey grids over five targets generated from a GEOTEM survey in 2005 (Appendix 3, Dufresne, 2006).

In 2007, APEX managed the completion of a 25,000 line-km HRAM survey conducted by Firefly Aviation Inc. on the Smoky the Bear Claim Block. The survey commenced February 16 and should have been completed during early March, however, extreme weather and wind conditions hampered the survey resulting in more than 30 non production days during the survey as well as a number of production days that had to be repeated due to poor quality data. The survey was completed on April 17th, 2007. A preliminary inspection of the maps resulted in the identification of at least 104 potential kimberlite targets (Figures 7 to 14 in Dufresne and Carey, 2007b). Initial results from the ground truthing, ground geophysical surveys and subsequent drilling of the anomalies identified by the HRAM survey were reported in Dufresne, 2008. The continuation of the follow-up of the anomalies identified by the HRAM survey through ground truthing, ground geophysical surveys and subsequent drilling on the Smoky the Bear Property are the subject of this report and can be found in the Exploration section.

During the summer and fall of 2007 a total of 9 heavy mineral concentrate stream sediment samples were collected on both on the Grand Cub Aidan and Preston Upon Wolverine Properties. A total of 8 diamond indicator minerals were recovered from the 4 samples that were collected on the Grand Cub Aidan Property. This included 5 olivines, 2 chromites, and 1 chrome diopside. A total of 427 diamond indicator minerals were returned from the 5 samples that were collected on the Preston Upon Wolverine Property. This included 57 pyropes, 1 eclogitic garnet, 3 chrome diopsides, 275 olivines, 22 picroilmenites, and 69 chromites.

During the summer of 2007, APEX proceeded with ground checking and subsequent ground geophysics of anomalies that were identified from the airborne geophysical surveys flown in 2005 and 2006 by Grizzly as well as from historic airborne magnetic and EM surveys flown by the BHHJV. This resulted in 3 ground magnetic grids on the Grand Cub Aidan property.

From November 2007 to March 2008, APEX completed a ground geophysical program on behalf of Grizzly Diamonds on their Smoky the Bear, Grand Cub Aidan, and Preston Upon Wolverine Properties. Targets were picked from prospective anomalies from the 2004-2007 Grizzly airborne surveys and also from historic BHHJV airborne surveys. A total of 43 ground geophysical grids were completed including 31 grids on the Smoky the Bear, 2 grids on the Grand Cub Aidan and 10 grids on the Preston Upon Wolverine Properties.

In February 2008, a 42,000 line-km high resolution airborne magnetic (HRAM) survey over the Bearpaw, Kodiak, Preston Upon Wolverine, and Grand Cub Parker Claim Blocks. The Preston Upon Wolverine survey consisted of 12,096 line km and yielded 47 anomalies. The Kodiak survey consisted of 13,796 line km and yielded 78 anomalies. The Bearpaw survey consisted of 10,057 line km and yielded 50 anomalies. The Grand Pub Parker survey consisted of 6,117 km and yielded 26 anomalies.

During the months of January to March 2008, APEX conducted a 7 hole, 1177.18 m drill program on behalf of Grizzly on both the Smoky the Bear and Grand Cub Aidan Properties. All holes were drilled at a 90 degree dip, using NQ2 drill rods and NW casing. This program resulted in the discovery of the BE-01 and BE-02 kimberlites on the Smoky the Bear property. Drillhole 08SMB02 intersected the BE-01 kimberlite at the overburden-bedrock contact at 124.21 m depth and remained in kimberlite at the termination of the hole at 200.25 m. The BE-01 kimberlite was described as crustal lithic breccia, sparsely macrocrystic kimberlite. A total of 2 microdiamonds were recovered from the caustic fusion analysis from 265.35 kg (Table 2). Drill hole SMB08-03 intersected the BE-02 kimberlite at the overburden-bedrock contact at 122.40 m depth and remained in kimberlite until intersecting Cretaceous Colorado Group bedrock at 140.57 m. The BE-02 kimberlite was described as macrocrystic-pyroclastic kimberlite which contains some extremely carbonated sections. A total of 54 microdiamonds were recovered through caustic fusion from 56.60 kg of core (Table 2).

Table 2: Caustic Fusion Diamond Results for Kimberlites BE-01 and BE-02 from Winter 2008 Drilling

ID	No. of Samples	Total Sample Weight (kg)	Total No. of Diamonds	No. of Diamonds per Sieve Size (mm square Mesh sieve)						
				0.075 mm	0.106 mm	0.150 mm	0.212 mm	0.300 mm	0.425 mm	0.600 mm
BE-01	37	265.35	2	1	1	0	0	0	0	0
BE-02	8	56.6	54	28	16	5	5	0	0	0

* From Grizzly Diamonds Ltd. Press Release May 6, 2008

APEX was further contracted in the summer of 2008 to complete a ground geophysical and drilling program on Grizzly's Smoky the Bear Property. A total of 7 ground magnetometer survey grids and one gravity survey grid were completed. The follow-up drill program consisted of 5 holes totalling 965.5m: 2 holes targeted the BE-02 kimberlite and 3 holes targeted additional high priority anomalies in the vicinity of BE-02 identified from the ground geophysical surveys. Kimberlite BE-02 was intersected by 2 drill holes resulting in the recovery of 518.55kg of kimberlite for caustic fusion. Caustic fusion analysis returned 316 diamonds including 5 macrodiamonds. Additionally, one of the 3 drill holes targeting the other anomalies intersected a new kimberlite: BE-03. A total of 365.35 kg of kimberlite was collected for caustic fusion which returned 218 diamonds including 5 macrodiamonds. The two remaining holes did not intersect kimberlite however the presence of kimberlite cannot be conclusively excluded.

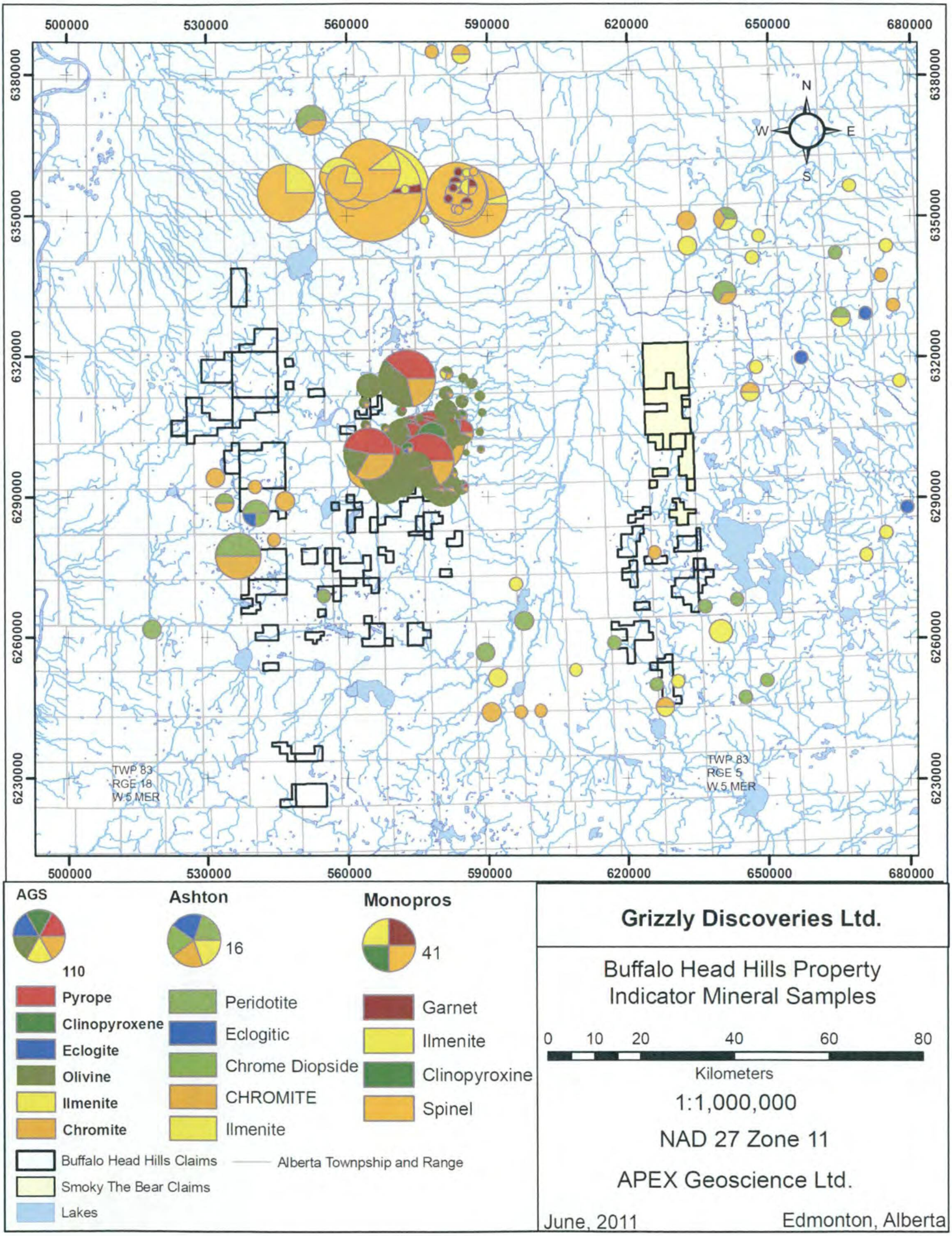
Prior Government and Industry Diamond Indicator Mineral and Other Scientific Surveys

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 centred around the Wabasca and Loon rivers in the vicinity of Red Earth Creek (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 the initial 1993 survey (Fenton and Pawlowicz, 1998a, b; Pawlowicz *et al.*, 1998a, b; Pawlowicz and Fenton, 2001), with varying degrees of success. Surface sampling was conducted by the AGS on the Peerless Lake and Wadline Lake Map Sheets during 1998. This resulted in the collection of 37 samples from the Grand Cub Aidan and Smoky the Bear Claim Blocks which were sent for diamond indicator mineral analysis (Eccles et al., 2001 and Friske et al., 2003). In addition, more than 60 samples were collected by Eccles et al. (2001) and Friske et al. (2003) within 20 km (12 miles) and down ice (south to southwest) of these two Claim Blocks. A multidisciplinary study conducted by Eccles et al. (2001) and Friske et al. (2003) on the Peerless Lake, Peace River, Bison Lake and Wadlin Lake Map areas (NTS84B, 84C, 84F and 84G) included the collection of 338 samples. This 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. More recent AGS sampling in 2004 in the Buffalo Head Hills has resulted in 23 samples taken from Grizzly's properties: 9 samples on Grand Cub Aidan, 5 on Preston Upon Wolverine, 5 on White Bear and 4 on Smoky the Bear (Figure 3; McCurdy *et al,* 2006). Additional sampling in 2005 in the Jackpine Lake region (NTS 84C-15/16 and 84F-1/2) resulted in 11 samples on the Grizzly Preston Upon Wolverine Claim Block, several of which were highly anomalous for DIMs (Figure 3; Prior *et al.*, 2006). Diamond indicator mineral information from the samples in the Jackpine lake area show a distinctly different mineralogy from the known kimberlites (Prior *et al.,* 2006).

Assessment records indicate that the BHHJV also conducted limited DIM sampling on the Grand Cub Aidan Claim Block (four samples) and the White Bear Claim Block (eight samples) during 1997 to 1999 (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). Picked DIM data is available for these samples, but no microprobe data is available. It also appears that Ashton collected about 35 DIM samples on the Smoky the Bear Claim Block, but the bulk of this data is not reported. Monopros appears to have collected about 182 DIM samples within or immediately down-ice of the Grand Cub Aidan Claim Block (Figure 3). Picked indicator mineral results are available for these samples, but no microprobe data for individual mineral grains is available.

The DIM sampling that has been conducted to date on the Smoky the Bear, Grand Cub Aidan, and White Bear Claim Blocks works out to about one sample per square kilometre or about 6 samples per township. The vast majority of the samples were collected by Monopros in the southernmost five townships of the Grand Cub Aidan Claim Block (Figure 3). Several kimberlites on the BHHJV's Buffalo Head Hills block yielded strong DIM anomalies down-ice or down drainage from kimberlites (within about 5 to 10 km), however, the drift thickness in the area of the indicator mineral anomalies ranges from less than 10m up to about 70m (Figure 3). Most of the joint venture's kimberlites in areas of deeper drift appear to yield sporadic amount's of DIMs in the tills down-ice of the kimberlites. The drift thickness on Grizzly's Buffalo Head Hills properties likely ranges from a minimum of 10m to more than 150m in some areas underlain by preglacial channels. In addition, the drift likely consists of multiple till sheets. The behaviour and dispersion patterns of indicator minerals derived from deeply buried kimberlites is poorly understood in areas of thick drift and multiple till sheets. However, it should be noted that a number of the creeks within 5 to 10 km (6 miles), and on rare occasion up to 20 km (12 miles), of nearby kimberlites yield stream sediment sample sites with multiple DIMs (Figure 3).


500000
530000
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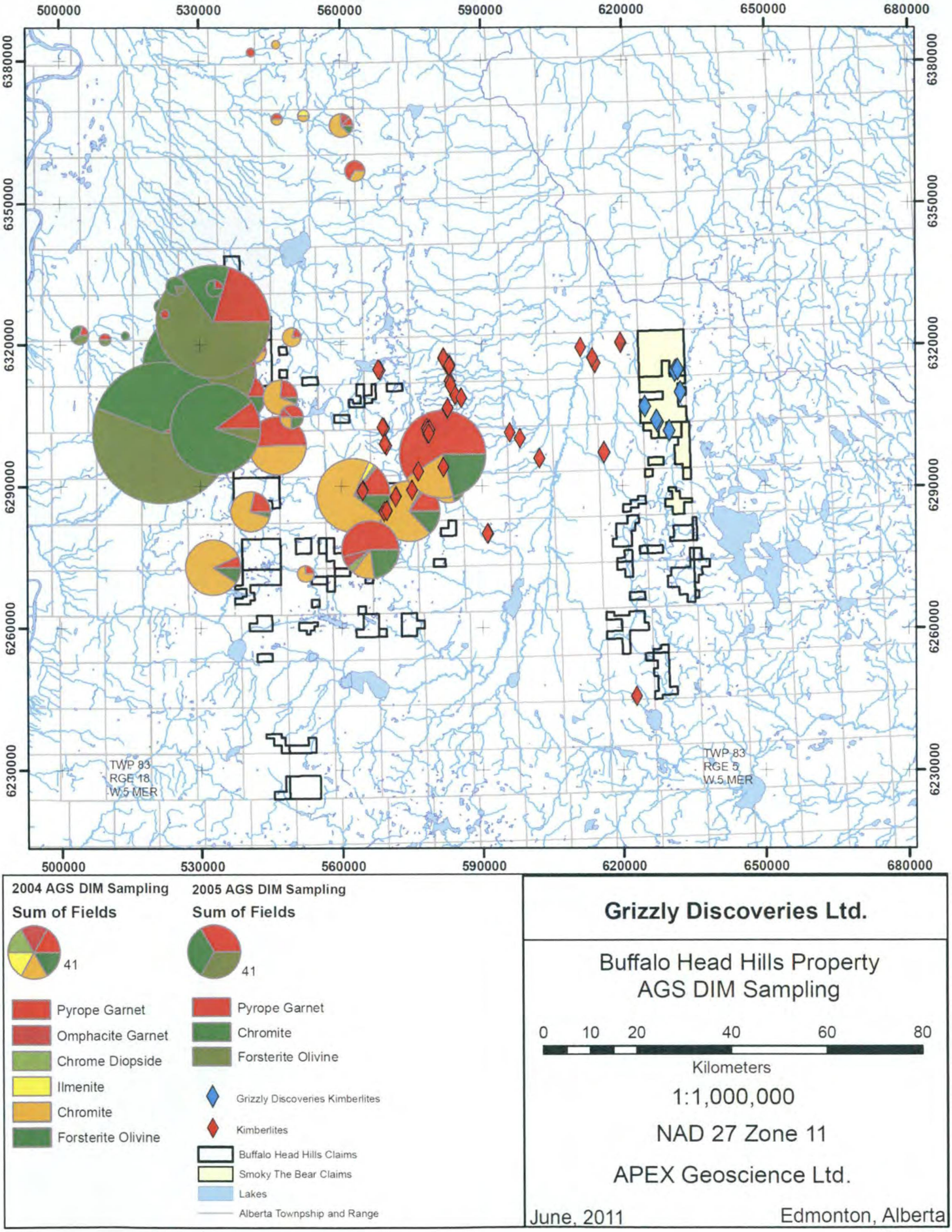
110
Ashton
16
Monopros
41
Pyrope
Clinopyroxene
Eclogite
Olivine
Ilmenite
Chromite
Peridotite
Eclogitic
Chrome Diopside
CHROMITE
Ilmenite
Garnet
Ilmenite
Clinopyroxine
Spinel
Buffalo Head Hills Claims
Alberta Townpship and Range
Smoky The Bear Claims
Lakes
Grizzly Discoveries Ltd.
Buffalo Head Hills Property
Indicator Mineral Samples
0 10 20 40 60 80
Kilometers
1:1,000,000
NAD 27 Zone 11
APEX Geoscience Ltd.
June, 2011
Edmonton, Alberta
FIGURE 3

Based upon the results of indicator minerals sampling conducted to date a few important observations can be made. On the Grand Cub Aidan Claim Block, the sampling conducted by the AGS and GSC in combination with Monopros has yielded a significant number of samples with anomalous amounts of indicator minerals, in some cases more than a hundred grains (Figure 3). These highly anomalous sample results are indicative of undiscovered kimberlites as they have all been collected north of the northernmost known Buffalo Head Hills kimberlite. In addition, the mineralogy seen in these samples with abundant picroilmenite is significantly different than the results of DIM sampling down-ice of the Buffalo Head Hills kimberlites, which are reported to be picroilmenite poor (Carlson *et al.*, 1999; Aulbach *et al.*, 2003; Creighton and Eccles, 2003; Davies *et al.,* 2003; hood and McCandless, 2003). This further supports the conclusion that undiscovered kimberlites remain to be located in the north portion of the Buffalo Head Hills beyond the kimberlites that have been discovered to date and that these kimberlites are likely mineralogically different to the kimberlites found to date.

The AGS sampling in 2005 on the southern portion of the Preston Upon Wolverine Claim Block, which borders the White Bear Claim Block produced anomalous high grain-count DIM results with 11 of the 15 samples located on the property. Preliminary results showed that four of the samples had over 100 DIMs, the highest having 287 grains. The dominant DIMs from these samples were forsterite olivine and chromite (Prior et al., 2006). This is coincident with samples taken from the White Bear Claim Block by Ashton, which were also composed primarily of olivine and chromite with minor pyrope content (Skelton and Bursey, 1999; Skelton and Willis, 2001). This compares to the main Buffalo Head Hills kimberlites, which are predominantly pyrope and chromite rich. The White Bear and Preston Upon Wolverine Claim Blocks show a different mineralogy, supporting the conclusion that undiscovered kimberlites may exist on these two Claim Blocks. However, Skelton and Bursey (1999) and Skelton and Willis (2001) concluded that the indicator minerals were likely derived from the Buffalo Head Hills kimberlites on the BHHJV's main properties. This interpretation is not supported by the ice direction in the White Bear Claim Block which was from North to South and from Northwest to Southeast with a lobe of ice from the Peace River valley flowing southeast to almost easterly around the southwest portion of the Buffalo Head Hills (Pawlowicz and Fenton, 1995 a, b, 2005 a, b; Fenton *et al.*, 2003 a, b, c; Paulen *et al.*, 2003).

In summary, a large number of samples collected from within the boundaries of or down-ice of Grizzly's Buffalo Head Hills property have yielded a large number of anomalous samples with indicator minerals (Figures 3 and 4). Predominant ice-direction was from North to South, in particular for the Grand Cub Aidan and the Smoky the Bear Claim Blocks (Pawlowicz and Fenton, 1995a,b, 2005a,b; Fenton *et al.*, 2003a,b,c; Paulen *et al.*, 2003). Ice direction for the White Bear and Preston Upon Wolverine Claim Blocks was from north to south, and from northwest to southeast with a lobe of ice coming out of the Peace River valley and flowing southeast to almost easterly around the southwest portion of the Buffalo Head Hills (Pawlowicz and Fenton, 1995a, b, 2005a, b; Fenton *et al.,* 2003a, b, c; Paulen *et al.*, 2003). Indicator results for samples taken from the Grand Cub Aidan, Smoky the Bear, White Bear and Preston



Grizzly Discoveries Ltd.

Buffalo Head Hills Property
AGS DIM Sampling

1:1,000,000

NAD 27 Zone 11

APEX Geoscience Ltd.

June, 2011

Edmonton, Alberta

FIGURE 4

Upon Wolverine Claim Blocks have been found to be highly anomalous in terms of the number of samples with indicator minerals and the number of indicator minerals in some samples. The sample results to date are suggestive of the presence of possible kimberlites on all four of the Claim Blocks.

DEPOSIT MODEL: DIAMONDIFEROUS KIMBERLITES

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

Kimberlites

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

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

Diamond Indicator Minerals

Diamonds do not crystallise from a kimberlitic magma: they crystallise within a variety of diamond bearing igneous rocks in the upper mantle called peridotite and eclogites. Peridotite 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 Grizzly held Legend and Little Legend properties are staked on the Proterozoic Taltson magmatic arc.

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.

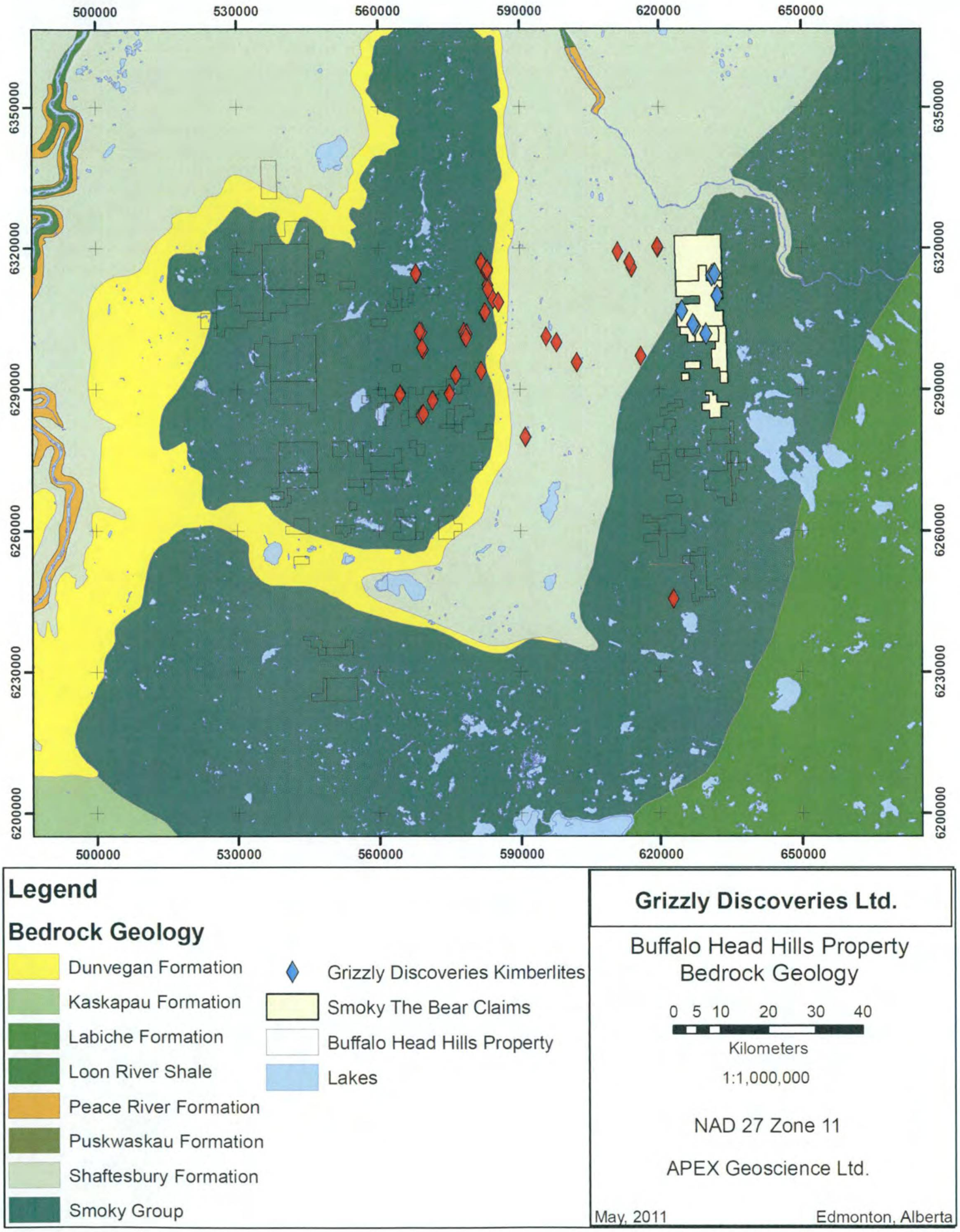
The effectiveness of geophysical methods in kimberlite exploration is dependent on the assumption that the difference between the geophysical signature of the hosting rock unit and a potential kimberlite is significant enough to be recognised by the geophysical techniques available. There are many examples 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 Legend region, sand and gravel with water and placer accumulations of heavy oxide minerals, can yield both magnetic 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).

GEOLOGICAL SETTING

Precambrian Geology

Grizzly Discoveries Inc.'s Buffalo Head Hills mineral permits lie near the north-eastern to eastern edge of the Western Canadian Sedimentary basin within the central segments of the Peace River Arch (Figure 5). 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 terranes, 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 5), have been and are currently the focus of extensive diamond exploration in northern Alberta.

Grizzly's Buffalo Head Hills property is underlain by a basement comprised of the Buffalo Head Terrane (BHT). The BHT is an area of high positive magnetic relief with a north to north-easterly 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 a kimberlite field with a high diamondiferous to barren kimberlite ratio near the center of the craton.


500000
530000
560000
590000
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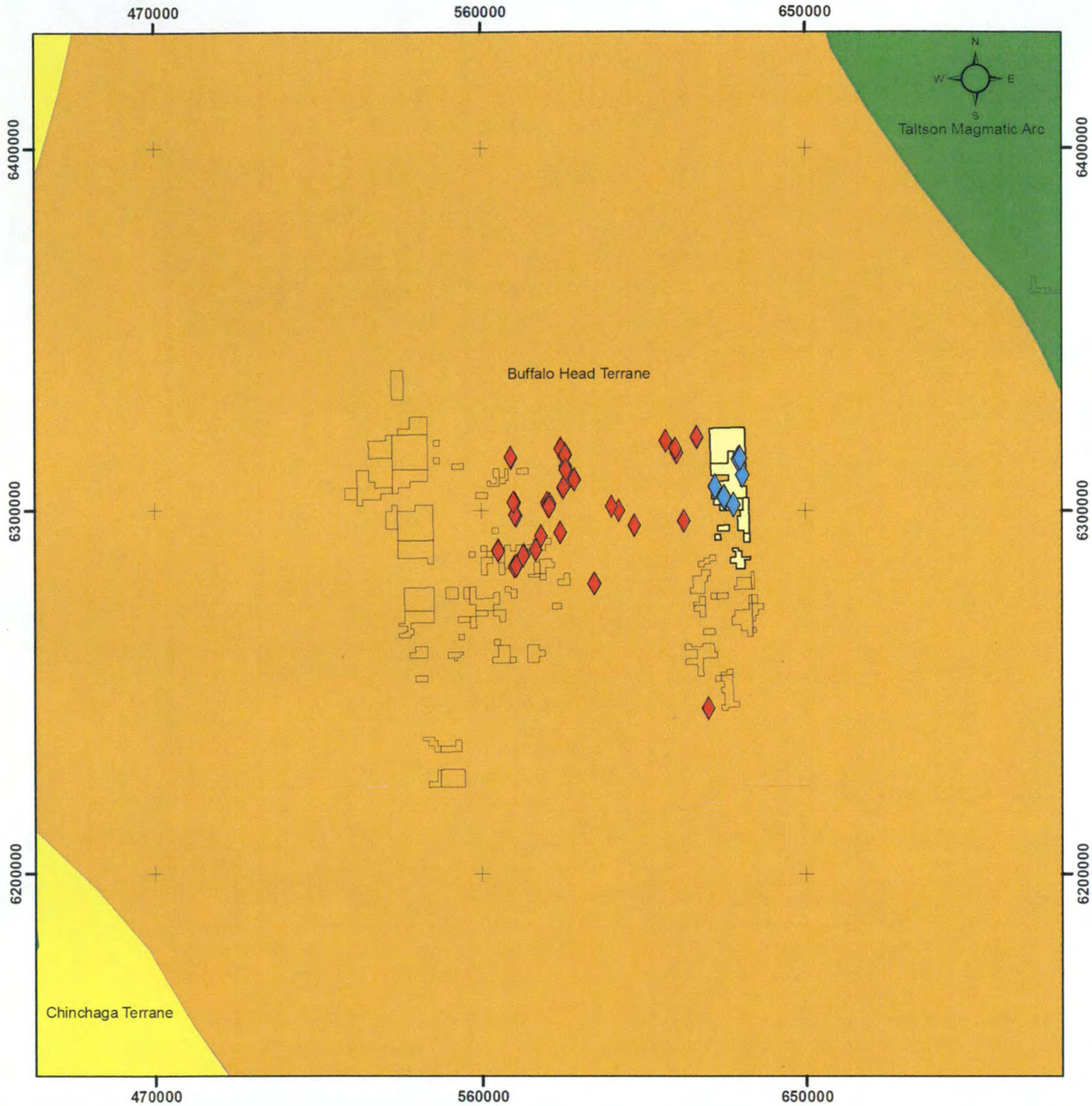
650000
6350000
6320000
6290000
6260000
6230000
6200000
Legend
Bedrock Geology
Dunvegan Formation
Kaskapau Formation
Labiche Formation
Loon River Shale
Peace River Formation
Puskwaskau Formation
Shaftesbury Formation
Smoky Group
Grizzly Discoveries Kimberlites
Smoky The Bear Claims
Buffalo Head Hills Property
Lakes
Grizzly Discoveries Ltd.
Buffalo Head Hills Property
Bedrock Geology
0 5 10 20 30 40
Kilometers
1:1,000,000
NAD 27 Zone 11
APEX Geoscience Ltd.
May, 2011
Edmonton, Alberta

FIGURE 6



Legend

Basement Geology

- 2.0 - 1.8 Ga Magmatic Arcs
- 2.4 - 2.0 Ga Accreted Terranes
- 2.4 - 2.0 Ga Magnetic Lows
- Origin Uncertain

- Grizzly Discoveries Kimberlites
- Kimberlites
- Major Structures
- Smoky The Bear Claims
- Property Boundaries

Grizzly Discoveries Ltd.

Buffalo Head Hills Property
Basement Geology

0 10 20 40 60 80
Kilometers
1:1,500,000
NAD 27 Zone 11
APEX Geoscience Ltd.

May, 2011 Edmonton, Alberta

FIGURE 5

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 3 shows the upper units found in the region. Further information pertaining to the distribution and character of these and older units can be obtained from well log data in government databases and various geological and hydrogeological reports (Green *et al.*, 1970; Tokarsky, 1972; Vogwill, 1978; Ceroici, 1979; Glass, 1990; Mossop and Shetson, 1994).

TABLE 3: 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).

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 north-westerly 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.

In general, the Cretaceous strata underlying Grizzly's Buffalo Head Hills properties 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 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 Buffalo Head Hills kimberlites yield emplacement ages of 86 to 88 Ma (Auston, 1998; Carlson *et al.*, 1999).

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 proximal to Grizzly's Buffalo Head Hills properties (Dufresne *et al.*, 1996; Leckie *et al.*, 1997; Eccles *et al.*, 2000). Similar structures observed on Grizzly's Buffalo Head Hills 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.

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 north-easterly direction (Dufresne *et al.*, 1996). In addition, fluvial sand and gravel was deposited preglacially in these channels.

During the Pleistocene, multiple south-easterly 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 Buffalo Head Hills (Fenton and Pawlowicz, *2005 a, b*). In addition, topographic variations may have locally channelled ice flow towards the south to south-southeast east of the Buffalo Head Hills. 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, *2005 a, b*).

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, *2005 a, b*, 1995a, b; 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 property cannot 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, *2005 a, b* , 1995a,b; 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 crops out, but drillholes directly adjacent to the outcrop yields overburden depths of more than 70 m (Mr. B.

Clements, *personal communication*, 2002). The K6 Kimberlite is one of a number of kimberlites in the Buffalo Head Hills that display a conical (coning upwards) shape. 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 portions of the same kimberlite complex 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 north-easterly drainage regimes similar to that of the pre-Pleistocene. Extensive colluvial and alluvial sediments accompanied post-glacial river and stream incision.

EXPLORATION

2009 Diamond Indicator Mineral Sampling Results and Analysis

Kimberlite Mantle/Lower Crustal Xenocryst Results

Drill cores of the BE-01, BE-02 and BE-03 intrusions were sampled and processed for heavy mineral concentrates, from which peridotitic garnet, clinopyroxene and spinel xenocrysts (crystals foreign to the igneous rock in which it occurs) were isolated and analyzed by the electron microprobe. The geochemistry of these grains clearly differentiates the composition of the mantle/lower crustal materials that were sampled by the diamond-poor BE-01 body versus those of the diamondiferous BE-02 and BE-03 kimberlites.

Peridotitic Garnet

Peridotitic garnets from the BE-01, BE-02 and BE-03 bodies are dominated by G9 lherzolitic garnet (109 of 121 grains or 90%; Table 7). Peridotitic garnet from BE-01 (n=99) comprise a variety of garnet species including G9 lherzolitic (n=89), G12 wehrlitic (8), G11 high-TiO_2 peridotitic (1), G1 megacrystic (1) and G0 non-classified (1) garnet. Peridotitic garnet from the BE-02 and BE-03 kimberlites (n=21) contain lherzolitic garnet (n=20) with a single grain of G11 high-TiO_2 peridotitic garnet.
Of the 121 garnets from BE-01, BE-02 and BE-03 shown on the CaO versus Cr_2O_3 diagram (Figure 7), the majority of the garnet plots on the G9 side of the G9-G10 boundary line of Gurney (1984) supporting the dominant lherzolitic garnet species classification. Figure 7a also shows garnets from BE-01 occur in separate geochemical clusters versus those from BE-02 and BE-03. While garnets from both groups have similar CaO content, the BE-02 and BE-03 garnet has significantly higher Cr_2O_3. That is BE-01 garnet averages 3.7 wt. % Cr_2O_3, versus Cr_2O_3 content from BE-02 and BE-03 that averages 7.6 wt. % with values of up to 9.7 wt. %. The BE-02 and BE-03 Cr_2O_3 values are similar to the high-Cr_2O_3 lherzolitic garnet that is typically associated with diamondiferous kimberlite in the Buffalo Head Hills field including those intrusions that

have received significant exploration attention (e.g., K6, K14, K91; Hood and McCandless, 2004; Eccles, 2011).

Chemical dissimilarity between BE-01 and BE-02/BE-03 peridotitic garnet is further emphasized by the Ca-intercept method, which conveys garnet Cr/Ca content by a single number (Figure 7b,c). Grütter et al. (2004) used this method to suggest that Ca-intercept values of <4.3 may discriminate diamond-stable from graphite-stable conditions in cratonic upper-mantle lithosphere. BE-01 garnet Ca-intercepts average 4.8 (up to 5.7) versus BE-02/BE-03 garnet that average 4.2 (as low as 3.7). Clearly, the peridotitic garnet geochemistry indicates that the BE-02 and BE-03 kimberlites have far greater potential to have sampled diamondiferous mantle versus the BE-01 body. Based on the manganese in peridotitic garnet temperature regression at 50°C (T_{Mn} interval; Grütter et al., 1999), lherzolitic garnet xenocrysts from BE-01, BE-02 and BE-03 occupy a wide T_{Mn} range (Table 4). However, BE-01 garnet T_{Mn} interval is significantly cooler (average 979° C) versus garnet from BE-02 and BE-03 (average 1147° C). This implies that BE-01 sampled, or even originated in, mantle that is shallower than the mantle sampled by BE-02, BE-03, and other diamondiferous bodies in the northern Alberta kimberlite province (Eccles, 2011).

Clinopyroxene

Clinopyroxene from BE-01 (n=59) versus BE-02 (n=65) and BE-03 (n=2) has a narrow range of average compositions of Mg# (94 versus 93) and Ca# (49 versus 46; Table 5). However, there are some significant chemical variations between BE-01 clinopyroxene and those from BE-02/BE-03, with BE-01 having higher Al_2O_3 (2.2 versus 1.5 wt. %), and lower Cr_2O_3 (1.5 versus 2.0 wt. %), Na_2O (1.47 versus 1.54 wt. %) and MgO (16.5 versus 17.2 wt. %). These chemical inequalities translate into two substantially different geothermobarometric source areas. On the single grain clinopyroxene pressure-temperature diagram, which is based on the thermobarometer of Nimis and Taylor (2000), BE-01 yields shallow depths (<37 kbar) and cool temperatures (<925° C) plotting well outside the diamond-stability field (Figure 8). In contrast, clinopyroxene from BE-02 and BE-03 has pressures (36-62 kbar and averaging 46 kbar) and temperatures (averaging 991° C and up to 1294° C) that fall within the diamond stability field.

Chrome-Spinel

Typical diamond inclusion Cr-spinel contains exceptionally high Cr (>62 wt. % Cr_2O_3) and Mg (>11 wt. % MgO) while being Ti-poor (<0.5 wt. %; Sobolev et al., 2004). Like all Buffalo Head Hills kimberlites, spinel is present in the Smoky the Bear Property kimberlites. A total of 460 spinel grains were analyzed including selected grains from BE-01 (n=184), BE-02 (n=255) and BE-03 (n=21; Table 6). Spinels from the BE-02 and BE-03 kimberlites generally have higher average MgO (12.7 wt. %) and Cr_2O_3 (54.3 wt. %) than those from the BE-01 body (11.0 wt. % and 53 wt. %, respectively; Figure 9a). BE-02 spinel has Cr_2O_3 values that extend into the diamond inclusion field with 43 grains containing >60 wt. % Cr_2O_3, 16 of which have >62 wt. % Cr_20_3. The high Cr_2O_3 spinel from BE-02 are also characterized by low-Ti (generally <0.5 wt. % TiO_2; Figure 9b) defining the magmatic trend 1 field. In addition, BE-02 and BE-03 spinel yield a prominent aluminomagnesian chromite (AMC) trend defined by higher MgO at lower Cr_2O_3. Thus, the spinel from BE-02 and BE-03 are analogous to the diamondiferous kimberlite in the Buffalo Head Hills field, which forms high-Cr_2O_3 spinel in both the magmatic trend 1 and AMC populations (Hood and McCandless, 2004).

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

Sample	Kimberlite	Drillhole	Grain#	Analysis	SIO_2	TIO_2	AL_2O_3	Cr_2O_3	FeO	MnO	MgO	ZnO	NiO	Total
08TGP001	BE-01	08SMB02	CHR 1	1	0.02	0.75	2.15	61.94	26.88	0.38	7.75	0.11	0.21	100.19
08TGP001	BE-01	08SMB02	CHR 2	2	0	0.15	11.28	52.25	25.79	0.51	9.56	0.15	0.23	99.92
08TGP001	BE-01	08SMB02	CHR 3	3	0.02	3.88	3.79	52.43	29.25	0.42	9.51	0.07	0.33	99.7
08TGP001	BE-01	08SMB02	CHR 4	4	0	0.22	11.58	58.28	18.45	0.2	11.33	0.1	0.19	100.35
08TGP001	BE-01	08SMB02	CHR 5	5	0	0.02	15.88	53.28	18.99	0.29	11.68	0.13	0.11	100.38
08TGP001	BE-01	08SMB02	CHR 6	6	0	0.18	12.24	54.78	21.57	0.18	10.88	0.16	0.16	100.15
08TGP001	BE-01	08SMB02	CHR 7	7	0	0.12	19.19	50.05	17.09	0.22	12.42	0.16	0.2	99.45
08TGP001	BE-01	08SMB02	CHR 8	8	0	0	39.19	30.09	14.45	0.12	15.45	0.15	0.18	99.63
08TGP001	BE-01	08SMB02	CHR 9	9	0	0.24	17.22	52.44	17.19	0.19	12.3	0.05	0.16	99.79
08TGP001	BE-01	08SMB02	CHR 10	10	0	0.13	18.33	51.07	16.99	0.21	12.6	0.13	0.18	99.64
08TGP001	BE-01	08SMB02	CHR 11	11	0.02	0.08	11.57	57.25	19.24	0.27	11.18	0.13	0.16	99.9
08TGP001	BE-01	08SMB02	CHR 12	12	0	0.11	17.43	52.49	17.13	0.24	12.11	0.15	0.17	99.83
08TGP001	BE-01	08SMB02	CHR 13	13	0.01	1.11	3.88	58.63	27.03	0.41	8.69	0.26	0.21	100.23
08TGP001	BE-01	08SMB02	CHR 14	14	0	0.11	15.62	54.27	17.08	0.35	11.73	0.15	0.19	99.5
08TGP001	BE-01	08SMB02	CHR 15	15	0.02	1.35	3.75	57.44	27.47	0.5	8.37	0.13	0.3	99.33
08TGP001	BE-01	08SMB02	CHR 16	16	0.01	0.18	12.18	54.91	20.33	0.36	11.41	0.14	0.22	99.74
08TGP001	BE-01	08SMB02	CHR 17	17	0.02	0.26	11.99	56.47	19.13	0.3	11.63	0.2	0.19	100.19
08TGP001	BE-01	08SMB02	CHR 18	18	0	0.21	12.87	54.33	20.15	0.26	11.65	0.09	0.17	99.73
08TGP001	BE-01	08SMB02	CHR 19	19	0.03	3.88	3.53	52.77	29.87	0.39	9.14	0.12	0.3	100.03
08TGP001	BE-01	08SMB02	CHR 20	20	0.04	0.13	13.32	57.35	16.28	0.24	12.54	0.01	0.24	100.15
08TGP001	BE-01	08SMB02	CHR 21	21	0	0.32	11.98	54.1	22.21	0.3	10.81	0.17	0.17	100.06
08TGP001	BE-01	08SMB02	CHR 22	22	0	0.27	33.59	30.63	21.47	0.19	13.04	0.08	0.18	99.45
08TGP001	BE-01	08SMB02	CHR 23	23	0	0.06	16.76	52.1	18.74	0.22	11.61	0.12	0.16	99.77
08TGP001	BE-01	08SMB02	CHR 24	24	0	0.31	10.39	57.26	19.61	0.35	11.43	0.13	0.27	99.75
08TGP001	BE-01	08SMB02	CHR 25	25	0	0.24	36.21	31.47	18.08	0.29	13.88	0	0.16	100.33
08TGP001	BE-01	08SMB02	CHR 26	26	0	0.31	16.58	52.93	16.7	0.3	12.22	0.17	0.24	99.45
08TGP001	BE-01	08SMB02	CHR 27	27	0.03	0.08	12.86	57.41	16.92	0.25	12.05	0.26	0.19	100.05
08TGP001	BE-01	08SMB02	CHR 28	28	0	0.22	36.42	30.89	18.28	0.13	14.03	0.01	0.13	100.11
08TGP001	BE-01	08SMB02	CHR 29	29	0	0.29	10.32	57.26	20.32	0.27	11.53	0.1	0.21	100.3
08TGP001	BE-01	08SMB02	CHR 30	30	0	0.25	36.52	31.25	17.48	0.21	13.89	0	0.12	99.72
08TGP001	BE-01	08SMB02	CHR 31	31	0.02	1.79	0.73	59.41	28.87	0.39	8.22	0.07	0.26	99.76
08TGP001	BE-01	08SMB02	CHR 32	32	0.01	0.2	11.08	58.1	18.62	0.22	11.49	0.12	0.28	100.12
08TGP001	BE-01	08SMB02	CHR 33	33	0	0.34	13.74	56.05	17.47	0.28	12.11	0.15	0.17	100.31
08TGP001	BE-01	08SMB02	CHR 34	34	0.03	1.82	2.53	57.59	28.6	0.43	8.49	0.11	0.27	99.87
08TGP001	BE-01	08SMB02	CHR 35	35	0.01	2.62	0.68	55.57	32.24	0.49	7.35	0.25	0.35	99.56
08TGP001	BE-01	08SMB02	CHR 36	36	0	0.19	13.42	55.64	18.94	0.22	11.45	0.04	0.23	100.13
08TGP001	BE-01	08SMB02	CHR 37	37	0	0.13	16.14	53.81	17.33	0.25	11.97	0.14	0.15	99.92
08TGP001	BE-01	08SMB02	CHR 38	38	0	0	17.59	51.77	17.93	0.19	11.84	0.21	0.15	99.68
08TGP001	BE-01	08SMB02	CHR 39	39	0.01	0.24	12.42	57.92	16.54	0.26	12.03	0.15	0.23	99.8
08TGP001	BE-01	08SMB02	CHR 40	40	0	0.35	13.18	56.41	17.38	0.29	12.11	0.15	0.25	100.12
08TGP001	BE-01	08SMB02	CHR 41	41	0	1.23	14.93	50.66	20.77	0.32	12.27	0.11	0.17	100.46
08TGP001	BE-01	08SMB02	CHR 42	42	0	0	15.43	53.94	18.32	0.35	11.57	0.09	0.18	99.88
08TGP001	BE-01	08SMB02	CHR 43	43	0	0.1	12.93	54.52	20.44	0.19	11.67	0.05	0.23	100.13
08TGP001	BE-01	08SMB02	CHR 44	44	0	0.9	14.86	48.7	24.93	0.38	9.82	0.15	0.24	99.98
08TGP001	BE-01	08SMB02	CHR 45	45	0	0.21	15.88	53.67	17.32	0.32	11.92	0.19	0.15	99.66
08TGP001	BE-01	08SMB02	CHR 46	46	0.01	0.11	14.87	55.13	17.19	0.25	12.12	0.04	0.2	99.92
08TGP001	BE-01	08SMB02	CHR 47	47	0.02	4.15	1.73	51.32	31.5	0.21	10	0	0.29	99.22
08TGP001	BE-01	08SMB02	CHR 48	48	0	0.87	5.57	58.98	25.04	0.48	8.89	0.14	0.22	100.19
08TGP001	BE-01	08SMB02	CHR 49	49	0.03	3.05	3.23	53.85	30.47	0.37	8.8	0.13	0.42	100.35
08TGP001	BE-01	08SMB02	CHR 50	50	0.04	3.02	3.19	54.15	30.09	0.41	8.8	0.1	0.3	100.1
08TGP001	BE-01	08SMB02	CHR 51	51	0	0	17.11	52.09	18.53	0.25	11.56	0.11	0.14	99.79
08TGP001	BE-01	08SMB02	CHR 52	52	0.02	0.23	12.69	54.24	21.28	0.16	11.13	0.11	0.18	100.04

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08TGP001	BE-01	08SMB02	CHR 53	53	0	0.31	16.46	53.6	16.91	0.3	12.27	0.11	0.2	100.16
08TGP001	BE-01	08SMB02	CHR 54	54	0	0.01	14.03	54.02	20.65	0.28	10.86	0.12	0.15	100.12
08TGP001	BE-01	08SMB02	CHR 55	55	0.03	0.25	11.81	57.99	17.13	0.27	11.96	0.08	0.18	99.7
08TGP001	BE-01	08SMB02	CHR 56	56	0.01	0.11	13.51	57.35	16.85	0.23	11.77	0.05	0.18	100.06
08TGP001	BE-01	08SMB02	CHR 57	57	0.01	0.07	10.26	58.47	18.83	0.22	12.05	0.17	0.2	100.28
08TGP001	BE-01	08SMB02	CHR 58	58	0	0.85	14.16	54.01	19.49	0.26	11.24	0.11	0.24	100.36
08TGP001	BE-01	08SMB02	CHR 59	59	0	0.01	17.24	52.73	18.03	0.25	11.57	0.16	0.21	100.2
08TGP001	BE-01	08SMB02	CHR 60	60	0	0.17	12.9	52.38	22.56	0.27	11.6	0	0.26	100.14
08TGP001	BE-01	08SMB02	CHR 61	61	0	0.17	11.28	58.36	18.29	0.3	11.17	0.2	0.17	99.94
08TGP001	BE-01	08SMB02	CHR 62	62	0	0.35	13.2	51.86	22.33	0.31	11.33	0.12	0.24	99.74
08TGP001	BE-01	08SMB02	CHR 63	63	0	0.4	14.01	56.37	16.56	0.29	12.15	0.13	0.09	100
08TGP001	BE-01	08SMB02	CHR 64	64	0	0.35	11.54	56.12	20.41	0.26	11.19	0.1	0.24	100.21
08TGP001	BE-01	08SMB02	CHR 65	65	0	0.01	12.19	58.41	16.86	0.25	12.41	0.11	0.22	100.46
08TGP001	BE-01	08SMB02	CHR 66	66	0	0.12	18.08	51.96	16.86	0.32	12.42	0.23	0.2	100.19
08TGP001	BE-01	08SMB02	CHR 67	67	0	0.04	14.95	54.58	17.64	0.23	11.81	0.12	0.26	99.63
08TGP001	BE-01	08SMB02	CHR 68	68	0	0.16	14.62	55.79	17.3	0.23	12.02	0.04	0.15	100.31
08TGP001	BE-01	08SMB02	CHR 69	69	0	0.06	14.07	55.16	18.73	0.32	11.04	0.11	0.18	99.67
08TGP001	BE-01	08SMB02	CHR 70	70	0	0.07	21.25	48.86	16.01	0.27	12.81	0.12	0.16	99.55
08TGP001	BE-01	08SMB02	CHR 71	71	0	0.01	16.88	52.29	19.28	0.25	11.44	0.14	0.2	100.49
08TGP001	BE-01	08SMB02	CHR 72	72	0	0.02	42.63	25.09	17.16	0.19	14.61	0	0.21	99.91
08TGP001	BE-01	08SMB02	CHR 73	73	0	0.13	14.35	56.14	16.6	0.33	12.18	0.08	0.27	100.08
08TGP001	BE-01	08SMB02	CHR 74	74	0	0.02	13.46	55.2	19.46	0.3	11.14	0.07	0.25	99.9
08TGP001	BE-01	08SMB02	CHR 75	75	0	0.09	13.49	57.2	16.81	0.25	12.08	0.11	0.2	100.23
08TGP001	BE-01	08SMB02	CHR 76	76	0	2.3	0.74	55.98	32.6	0.39	7.19	0.25	0.29	99.74
08TGP001	BE-01	08SMB02	CHR 77	77	0.02	0.29	7.25	59.94	20.76	0.33	10.72	0.16	0.23	99.7
08TGP001	BE-01	08SMB02	CHR 78	78	0	0.32	33.54	30.99	21.68	0.19	12.68	0.09	0.13	99.62
08TGP001	BE-01	08SMB02	CHR 79	79	0	0.29	13.67	53	20.77	0.18	11.73	0.17	0.25	100.06
08TGP001	BE-01	08SMB02	CHR 80	80	0.03	3.33	1.56	57.16	28.44	0.36	8.88	0.17	0.35	100.28
08TGP001	BE-01	08SMB02	CHR 81	81	0	0.26	36.27	31.3	18.33	0.2	13.67	0.07	0.16	100.26
08TGP001	BE-01	08SMB02	CHR 82	82	0	0.13	14.6	54.33	18.95	0.38	11.49	0.1	0.2	100.18
08TGP001	BE-01	08SMB02	CHR 83	83	0.01	2.26	0.92	60.15	27.79	0.39	8.38	0.17	0.31	100.38
08TGP001	BE-01	08SMB02	CHR 84	84	0.04	3.94	2.86	51.63	32.68	0.41	8.05	0.15	0.31	100.07
08TGP001	BE-01	08SMB02	CHR 85	85	0.02	3.97	3	51.46	33.12	0.34	8.23	0.09	0.35	100.58
08TGP001	BE-01	08SMB02	CHR 86	86	0	0.18	14.61	56.33	16.63	0.21	11.93	0.11	0.2	100.2
08TGP001	BE-01	08SMB02	CHR 87	87	0	0.1	18.63	50.66	17.41	0.26	12.16	0.14	0.16	99.52
08TGP001	BE-01	08SMB02	CHR 88	88	0	0.05	16.55	52.64	18.17	0.23	11.56	0.17	0.21	99.58
08TGP001	BE-01	08SMB02	CHR 89	89	0	1.68	1.12	61.95	26.64	0.44	8.06	0.18	0.25	100.32
08TGP001	BE-01	08SMB02	CHR 90	90	0.02	0.29	11.61	58.52	17.12	0.22	11.56	0.04	0.19	99.57
08TGP001	BE-01	08SMB02	CHR 91	91	0.03	0.04	10.56	60.57	16.12	0.25	12.39	0.12	0.13	100.21
08TGP001	BE-01	08SMB02	CHR 92	92	0.02	0.15	11.53	57.36	18.53	0.24	11.82	0.1	0.24	99.99
08TGP001	BE-01	08SMB02	CHR 93	93	0.03	0.17	14.13	53	20.56	0.31	11.33	0.13	0.16	99.82
08TGP001	BE-01	08SMB02	CHR 94	94	0	0.16	17.77	51.06	17.82	0.26	12.77	0.12	0.18	100.14
08TGP001	BE-01	08SMB02	CHR 95	95	0	0.01	18.66	51.41	17.74	0.18	12.18	0.16	0.15	100.49
08TGP001	BE-01	08SMB02	CHR 96	96	0	0.62	15.87	53.58	16.92	0.16	12.02	0.15	0.18	99.5
08TGP001	BE-01	08SMB02	CHR 97	97	0	0.05	21.47	47.29	17.22	0.25	13.09	0.06	0.24	99.67
08TGP001	BE-01	08SMB02	CHR 98	98	0.04	4.36	3.29	49.9	32.71	0.41	8.68	0.21	0.36	99.96
08TGP001	BE-01	08SMB02	CHR 99	99	0.01	0.19	12.83	56.09	19.3	0.12	11.56	0.26	0.17	100.53
08TGP001	BE-01	08SMB02	CHR 100	100	0	0.06	18.58	51.98	17.03	0.34	12.25	0.06	0.19	100.49
08TGP001	BE-01	08SMB02	CHR 101	101	0	0.21	11.9	58.09	18.1	0.24	11.49	0.1	0.24	100.37
08TGP001	BE-01	08SMB02	CHR 102	102	0.01	0.24	11.08	56.46	20.64	0.3	11.39	0.07	0.26	100.45
08TGP001	BE-01	08SMB02	CHR 103	103	0.01	0.4	14.62	54.94	17.86	0.32	12	0.17	0.11	100.43
08TGP001	BE-01	08SMB02	CHR 104	104	0.05	0.17	8.7	58.76	21.53	0.29	9.81	0.22	0.19	99.72
08TGP001	BE-01	08SMB02	CHR 105	105	0	0.24	12.28	55.31	20.13	0.27	11.52	0.1	0.3	100.15

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08TGP001	BE-01	08SMB02	CHR 106	106	0	0.29	12.64	55.15	19.95	0.37	11.26	0.18	0.22	100.06
08TGP001	BE-01	08SMB02	CHR 107	107	0.05	0.85	10.24	57.18	18.91	0.27	12.69	0.03	0.26	100.48
08TGP001	BE-01	08SMB02	CHR 108	108	0	0.42	11.47	57.77	18.03	0.18	11.63	0.18	0.24	99.92
08TGP001	BE-01	08SMB02	CHR 109	109	0.02	0.67	3.37	62.25	23.16	0.43	9.46	0.06	0.26	99.68
08TGP001	BE-01	08SMB02	CHR 110	110	0	0.13	18.68	51.57	16.83	0.25	12.75	0.13	0.14	100.48
08TGP001	BE-01	08SMB02	CHR 111	111	0	0.15	17.1	52.99	17.14	0.29	12.17	0.16	0.12	100.12
08TGP001	BE-01	08SMB02	CHR 112	112	0.02	0.1	10.59	60.37	16.57	0.28	12	0.02	0.19	100.14
08TGP001	BE-01	08SMB02	CHR 113	113	0	0.08	21.32	47.76	16.86	0.24	13.06	0.16	0.18	99.66
08TGP001	BE-01	08SMB02	CHR 114	114	0.01	0.27	13.45	55.66	17.85	0.25	11.83	0.13	0.22	99.67
08TGP001	BE-01	08SMB02	CHR 115	115	0	0.09	20.96	49.23	16.33	0.25	13.15	0.12	0.18	100.31
08TGP001	BE-01	08SMB02	CHR 116	116	0.03	0.07	10.98	59.73	16.43	0.28	12.13	0.1	0.18	99.93
08TGP001	BE-01	08SMB02	CHR 117	117	0.01	2.44	0.92	58.81	28.54	0.39	8.34	0.24	0.32	100.01
08TGP001	BE-01	08SMB02	CHR 118	118	0	2.38	1.03	59.17	28.54	0.41	8.2	0.1	0.29	100.12
08TGP001	BE-01	08SMB02	CHR 119	119	0	0.19	35.44	30.45	20.51	0.17	13.38	0.1	0.19	100.43
08TGP001	BE-01	08SMB02	CHR 120	120	0	0.12	12.86	53.72	21.5	0.28	10.71	0.17	0.22	99.58
08TGP001	BE-01	08SMB02	CHR 121	121	0.01	0.32	11.3	57.18	18.49	0.2	11.69	0.16	0.18	99.53
08TGP001	BE-01	08SMB02	CHR 122	122	0	0.09	12.44	54.88	20.86	0.26	10.96	0.15	0.2	99.84
08TGP001	BE-01	08SMB02	CHR 123	123	0	0.26	34.73	30.91	20.07	0.29	13.38	0	0.19	99.83
08TGP001	BE-01	08SMB02	CHR 124	124	0.01	0.73	9.46	54.35	24.57	0.39	10.37	0.18	0.33	100.39
08TGP001	BE-01	08SMB02	CHR 125	125	0	0.07	13.95	56.42	16.79	0.32	12.15	0.1	0.14	99.94
08TGP001	BE-01	08SMB02	CHR 126	126	0	0.1	16.51	52.9	17.51	0.22	12.39	0.13	0.21	99.97
08TGP001	BE-01	08SMB02	CHR 127	127	0	0.03	18.76	51	16.73	0.29	12.39	0.11	0.13	99.44
08TGP001	BE-01	08SMB02	CHR 128	128	0	0.25	11.1	58.44	18.41	0.27	11.73	0.1	0.23	100.53
08TGP001	BE-01	08SMB02	CHR 129	129	0.03	1.65	3.59	55.3	30.99	0.49	7.39	0.31	0.22	99.97
08TGP001	BE-01	08SMB02	CHR 130	130	0	0.01	16.09	53.36	18.41	0.28	11.49	0.14	0.19	99.97
08TGP001	BE-01	08SMB02	CHR 131	131	0.02	0.05	10.94	60.44	16.18	0.29	12.34	0.01	0.16	100.43
08TGP001	BE-01	08SMB02	CHR 132	132	0	0.03	15.2	55.59	16.7	0.25	12.11	0.06	0.17	100.11
08TGP001	BE-01	08SMB02	CHR 133	133	0	0.18	12.36	55.55	19.33	0.29	11.67	0.16	0.16	99.7
08TGP001	BE-01	08SMB02	CHR 134	134	0	0.19	14.51	55.99	17.41	0.23	11.81	0.11	0.13	100.38
08TGP001	BE-01	08SMB02	CHR 135	135	0	0.18	15.75	54.49	17.01	0.19	11.94	0.13	0.19	99.88
08TGP001	BE-01	08SMB02	CHR 136	136	0.03	0.12	10.64	61.02	13.99	0.3	13.32	0.05	0.26	99.73
08TGP001	BE-01	08SMB02	CHR 137	137	0.01	0.19	11.49	57.45	19.55	0.25	11.07	0	0.25	100.26
08TGP001	BE-01	08SMB02	CHR 138	138	0	0.13	19.12	51.16	16.87	0.25	12.31	0.26	0.2	100.3
08TGP001	BE-01	08SMB02	CHR 139	139	0	0.05	14.16	56.45	16.95	0.29	11.75	0.25	0.18	100.08
08TGP001	BE-01	08SMB02	CHR 140	140	0	0.51	7.09	60.55	21.16	0.4	10.11	0.17	0.28	100.27
08TGP001	BE-01	08SMB02	CHR 141	141	0	0.14	16.71	51.26	20.28	0.24	11.2	0.22	0.18	100.23
08TGP001	BE-01	08SMB02	CHR 142	142	0	0.06	18.24	51.63	17.34	0.23	12.26	0.06	0.2	100.02
08TGP001	BE-01	08SMB02	CHR 143	143	0.06	0.54	13.67	52.38	22.46	0.35	10.51	0.01	0.16	100.14
08TGP001	BE-01	08SMB02	CHR 144	144	0.02	0.2	13.04	53.8	20.69	0.32	11.26	0.11	0.21	99.65
08TGP001	BE-01	08SMB02	CHR 145	145	0.05	0.06	10.81	57.11	19.91	0.25	11.47	0.08	0.15	99.89
08TGP001	BE-01	08SMB02	CHR 146	146	0.02	0.45	10.54	55.58	21.99	0.27	10.59	0.11	0.23	99.78
08TGP001	BE-01	08SMB02	CHR 147	147	0	0.22	14.85	55.27	16.96	0.3	12.02	0.14	0.25	100.01
08TGP001	BE-01	08SMB02	CHR 148	148	0	0.18	18.83	51.65	17.11	0.23	12.19	0.15	0.2	100.54
08TGP001	BE-01	08SMB02	CHR 149	149	0	0	17.44	52.77	18	0.28	11.54	0.2	0.17	100.4
08TGP001	BE-01	08SMB02	CHR 150	150	0.04	0.71	10.78	57.86	18.36	0.31	11.8	0.08	0.32	100.26
08TGP001	BE-01	08SMB02	CHR 151	151	0.02	4.09	3.92	55.15	25.1	0.28	11.37	0.06	0.33	100.32
08TGP001	BE-01	08SMB02	CHR 152	152	0	0.09	15.14	55.3	16.97	0.27	11.98	0.09	0.19	100.03
08TGP001	BE-01	08SMB02	CHR 153	153	0.03	1.95	2.44	56.94	29.23	0.4	8.53	0.15	0.24	99.91
08TGP001	BE-01	08SMB02	CHR 154	154	0.02	0.02	10.45	60.96	15.84	0.22	12.05	0	0.2	99.76
08TGP001	BE-01	08SMB02	CHR 155	155	0	0.06	16.16	53.92	17.33	0.2	11.78	0.16	0.12	99.73
08TGP001	BE-01	08SMB02	CHR 156	156	0.01	0.29	12.21	54.41	21.58	0.32	11.08	0.23	0.21	100.34
08TGP001	BE-01	08SMB02	CHR 157	157	0	0.04	11.55	58.54	16.98	0.26	12.21	0.09	0.2	99.87
08TGP001	BE-01	08SMB02	CHR 158	158	0	0.22	35.83	30.64	18.23	0.2	14.02	0.12	0.13	99.39

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08TGP001	BE-01	08SMB02	CHR 159	159	0.03	1.49	1.77	62.18	24.3	0.41	9.31	0.11	0.23	99.83
08TGP001	BE-01	08SMB02	CHR 160	160	0	0.23	12.25	53.72	21.52	0.33	11.37	0.25	0.2	99.87
08TGP001	BE-01	08SMB02	CHR 161	161	0	0.11	19.01	50.54	16.98	0.23	12.4	0.17	0.13	99.57
08TGP001	BE-01	08SMB02	CHR 162	162	0	0.36	11.09	55.06	22.21	0.26	10.85	0.15	0.33	100.31
08TGP001	BE-01	08SMB02	CHR 163	163	0.01	0.09	37.06	31.41	15.73	0.18	15.22	0.1	0.08	99.88
08TGP001	BE-01	08SMB02	CHR 164	164	0	0.43	11.32	57.8	18.98	0.25	11.29	0.18	0.21	100.46
08TGP001	BE-01	08SMB02	CHR 165	165	0	0.08	11.94	53.34	24.18	0.42	10.27	0.16	0.15	100.54
08TGP001	BE-01	08SMB02	CHR 166	166	0.02	0.09	21.71	48.77	16.17	0.2	13.14	0.08	0.22	100.4
08TGP001	BE-01	08SMB02	CHR 167	167	0	0.02	15.99	53.46	18.32	0.22	11.94	0.09	0.21	100.25
08TGP001	BE-01	08SMB02	CHR 168	168	0.01	0.21	19.06	50.67	16.89	0.19	12.31	0.08	0.21	99.63
08TGP001	BE-01	08SMB02	CHR 169	169	0	0.24	36.24	29.98	19.81	0.17	13.3	0.04	0.19	99.97
08TGP001	BE-01	08SMB02	CHR 171	170	0.04	1.06	4.38	57.85	27.02	0.37	8.79	0.29	0.33	100.13
08TGP001	BE-01	08SMB02	CHR 172	171	0.01	0.14	14.92	55.52	17.02	0.21	12.16	0.12	0.22	100.32
08TGP001	BE-01	08SMB02	PYR 32	200	0.02	0.27	15.81	55.54	17	0.28	11.18	0.12	0.24	100.46
08TGP001	BE-01	08SMB02	PYR 52	201	0	0.13	13.27	58.17	17.39	0.34	11.12	0.07	0.11	100.6
08TGP001	BE-01	08SMB02	PYR 64	202	0	0.36	13.63	52.83	21.56	0.24	11.4	0.17	0.15	100.34
08TGP001	BE-01	08SMB02	PYR 105	203	0.01	0.02	17.27	53.6	17.96	0.32	11.12	0.12	0.16	100.58
08TGP001	BE-01	08SMB02	AMPH 38	204	0.02	0.11	15.05	54.13	18.85	0.27	11.85	0.18	0.2	100.66
08TGP001	BE-01	08SMB02	CPX 44	205	0	0.01	13.87	53.15	21.44	0.28	11.26	0.19	0.13	100.33
08TGP001	BE-01	08SMB02	PYR 103	206	0.02	0.3	12.07	58.11	17.68	0.32	11.51	0.17	0.15	100.33
08TGP001	BE-01	08SMB02	CPX 27	207	0.01	0.03	13.99	56.48	17.34	0.4	11.4	0.15	0.13	99.93
08TGP001	BE-01	08SMB02	AMPH 40	208	0.03	0.14	14.27	54.6	19.05	0.27	11.34	0.16	0.17	100.03
08TGP001	BE-01	08SMB02	AMPH 44	209	0.03	0.08	13.25	53.13	21.52	0.32	10.79	0.15	0.22	99.49
08TGP001	BE-01	08SMB02	AMPH 56	210	0.02	0.09	12.52	54.7	21.15	0.36	10.86	0.1	0.22	100.02
08TGP001	BE-01	08SMB02	AMPH 64	211	0.04	0.03	14.36	55.85	18.45	0.38	10.68	0.28	0.11	100.18
08TGP001	BE-01	08SMB02	CPX 74	212	0.01	0.01	15.53	54.31	18.41	0.46	11.17	0.19	0.14	100.23
				Min	**0**	**0**	**0.68**	**25.09**	**13.99**	**0.12**	**7.19**	**0**	**0.08**	**99.22**
				Max	**0.06**	**4.36**	**42.63**	**62.25**	**33.12**	**0.51**	**15.45**	**0.31**	**0.42**	**100.66**
				Avg	**0.01**	**0.52**	**14.04**	**53.33**	**20.11**	**0.29**	**11.4**	**0.13**	**0.21**	**100.03**

Sample	Kimberlite	Drillhole	Grain#	Analysis	SIO_2	TIO_2	AL_2O_3	Cr_2O_3	FeO	MnO	MgO	ZnO	NiO	Total
08TGP002	BE-02	08SMB03	CHR 1	172	0.01	0.03	11.93	59.5	14.56	0.27	13.18	0	0.21	99.69
08TGP002	BE-02	08SMB03	CHR 2	173	0.17	4.34	13.84	41.2	24.72	0.15	14.79	0	0.37	99.58
08TGP002	BE-02	08SMB03	CHR 3	174	0.25	2.04	6.45	54.75	23.45	0.19	12.56	0.07	0.3	100.06
08TGP002	BE-02	08SMB03	CHR 4	175	0.08	0.82	5.39	61.95	20.13	0.28	11.46	0.05	0.25	100.41
08TGP002	BE-02	08SMB03	CHR 5	176	0.16	1.26	9.02	57.4	17.8	0.21	13.17	0	0.37	99.39
08TGP002	BE-02	08SMB03	CHR 6	177	0.14	1.2	10.83	56.21	17.82	0.3	13.63	0.01	0.28	100.42
08TGP002	BE-02	08SMB03	CHR 7	178	0.3	3.85	8.79	49.37	24.1	0.28	13.2	0.04	0.34	100.27
08TGP002	BE-02	08SMB03	CHR 8	179	0.13	2.36	9.47	51.93	21.54	0.31	13.33	0.02	0.32	99.41
08TGP002	BE-02	08SMB03	CHR 9	180	0.45	1.79	14.34	43.72	25.02	0.2	13.95	0.06	0.39	99.92
08TGP002	BE-02	08SMB03	CHR 10	181	0.31	2.39	11.1	48.28	23.67	0.24	13.65	0.11	0.43	100.18
08TGP002	BE-02	08SMB03	CHR 11	182	0.3	2.48	20.38	39.77	21.18	0.23	15.7	0.05	0.34	100.43
08TGP002	BE-02	08SMB03	CHR 12	183	0.41	1.78	14.49	44.02	24.9	0.3	13.97	0	0.33	100.2
08TGP002	BE-02	08SMB03	CHR 13	184	0.15	1.11	10.61	55.91	17.78	0.3	13.53	0.09	0.14	99.62
08TGP002	BE-02	08SMB03	CHR 14	185	0.01	2.93	0.66	53.83	34.42	0.42	7.56	0.19	0.25	100.27
08TGP002	BE-02	08SMB03	CHR 15	186	0.25	3.07	5.02	56.58	21.88	0.21	12.74	0.03	0.27	100.05
08TGP002	BE-02	08SMB03	CHR 16	187	0.2	3.11	5.02	56.78	21.69	0.26	12.6	0.01	0.26	99.93
08TGP002	BE-02	08SMB03	CHR 17	188	0.13	1.15	9.91	56.68	18.06	0.16	13.72	0.07	0.32	100.2
08TGP002	BE-02	08SMB03	CHR 18	189	0.03	2.71	8.55	49.87	25.73	0.28	12.49	0.07	0.24	99.97
08TGP002	BE-02	08SMB03	CHR 19	190	0.07	1.44	8.33	56.33	20.15	0.39	13.26	0.01	0.29	100.27
08TGP002	BE-02	08SMB03	CHR 20	191	0.16	1.2	7.48	59.84	17.65	0.24	13.04	0.17	0.25	100.03
08TGP002	BE-02	08SMB03	CHR 21	192	0.14	1.19	7.48	59.84	18.23	0.25	13.06	0.02	0.28	100.49
08TGP002	BE-02	08SMB03	CHR 22	193	0	2.95	0.67	52.53	38.16	0.49	5.14	0.23	0.21	100.38

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08TGP002	BE-02	08SMB03	CHR 23	194	0.15	1.26	7.57	59	18.56	0.21	13.3	0	0.27	100.32
08TGP002	BE-02	08SMB03	CHR 24	195	0.29	1.62	7.8	54.46	22.15	0.26	13.32	0.01	0.34	100.25
08TGP002	BE-02	08SMB03	CHR 25	196	0.12	1.1	8.55	59.02	17.27	0.18	13.44	0.06	0.25	99.99
08TGP002	BE-02	08SMB03	CHR 26	197	0.16	0.98	13.11	54.03	17.25	0.17	14.13	0.05	0.26	100.14
08TGP002	BE-02	08SMB03	CHR 27	198	0.17	2.27	9.38	52.89	21.31	0.25	13.22	0.01	0.25	99.75
08TGP002	BE-02	08SMB03	CHR 28	199	0.52	1.77	22.18	35.47	24.14	0.16	15.94	0.03	0.35	100.56
08JAP501	BE02	08SMB05	CPX3	1	0.06	0.44	17.34	45.98	25.49	0.62	9.94	0.1	0.23	100.2
08JAP501	BE02	08SMB05	CHR 1	2	0.14	1.21	7.31	60.14	17.98	0.59	12.58	0	0.37	100.32
08JAP501	BE02	08SMB05	CHR 2	3	0.31	1.03	19.66	37.92	25.01	0.46	15.26	0	0.5	100.15
08JAP501	BE02	08SMB05	CHR 3	4	0.42	0.5	23.79	29.56	28.67	0.41	15.59	0	0.5	99.44
08JAP501	BE02	08SMB05	CHR 4	5	0.28	1.31	4.73	60.33	21.15	0.54	11.41	0.11	0.39	100.25
08JAP501	BE02	08SMB05	CHR 5	6	0.36	1.27	18.16	43.12	22.42	0.43	14.12	0	0.51	100.39
08JAP501	BE02	08SMB05	CHR 6	7	0.09	1.2	6.51	61.12	18.55	0.62	12.11	0	0.25	100.45
08JAP501	BE02	08SMB05	CHR 7	8	0.16	1.18	9.05	58.47	18.12	0.41	12.82	0.01	0.32	100.54
08JAP501	BE02	08SMB05	CHR 8	9	0.25	1.53	7.94	55.66	21.02	0.53	12.94	0.03	0.21	100.11
08JAP501	BE02	08SMB05	CHR 9	10	0.27	1.78	5.73	58.58	20.66	0.58	12.49	0	0.21	100.3
08JAP501	BE02	08SMB05	CHR 10	11	0.15	1.07	9.68	57.4	17.86	0.56	13.23	0	0.18	100.13
08JAP501	BE02	08SMB05	CHR 11	12	0.01	0.28	10.21	56.82	19.05	0.44	13.23	0	0.15	100.19
08JAP501	BE02	08SMB05	CHR 12	13	0.01	0.63	10.07	59.57	16.62	0.54	12.71	0.02	0.12	100.29
08JAP501	BE02	08SMB05	CHR 13	14	0.13	1.24	8.46	59.5	17.22	0.5	13.21	0	0.14	100.4
08JAP501	BE02	08SMB05	CHR 14	15	0.05	2.22	6.08	55.93	23.53	0.67	11.3	0.02	0.17	99.97
08JAP501	BE02	08SMB05	CHR 15	16	0.06	2.22	6.07	56.31	22.56	0.57	11.55	0	0.2	99.54
08JAP501	BE02	08SMB05	CHR 16	17	0.41	1.72	20.77	36.2	24.7	0.43	15.21	0	0.28	99.72
08JAP501	BE02	08SMB05	CHR 17	18	0.07	0.65	5.5	63.08	18.27	0.67	11.88	0.04	0.09	100.25
08JAP501	BE02	08SMB05	CHR 18	19	0	2.99	0.95	54.58	32.83	0.65	8.06	0.1	0.14	100.3
08JAP501	BE02	08SMB05	CHR 19	20	0.17	1.21	9.34	57.47	18.32	0.52	13.03	0	0.12	100.18
08JAP501	BE02	08SMB05	CHR 20	21	0.15	1.11	10.29	56.18	18.52	0.39	13.3	0	0.14	100.08
08JAP501	BE02	08SMB05	CHR 21	22	0.08	1.28	6.83	60.21	18.53	0.7	12.47	0	0.15	100.25
08JAP501	BE02	08SMB05	CHR 22	23	0.07	1.25	6.51	60.1	17.95	0.63	12.84	0	0.24	99.59
08JAP501	BE02	08SMB05	CHR 23	24	0.14	1	10.25	57.55	17.58	0.51	13.04	0	0.1	100.17
08JAP501	BE02	08SMB05	CHR 24	25	0.42	1.9	17	41.44	23.5	0.46	14.75	0	0.21	99.68
08JAP501	BE02	08SMB05	CHR 25	26	0.13	1.02	10.65	56.87	17.46	0.6	13.34	0.04	0.16	100.27
08JAP501	BE02	08SMB05	CHR 26	27	0.08	1.7	4.4	61.04	20.29	0.68	11.97	0	0.19	100.35
08JAP501	BE02	08SMB05	CHR 27	28	0.04	1.5	5.14	60.82	18.46	0.55	12.83	0	0.36	99.7
08JAP501	BE02	08SMB05	CHR 28	29	0.04	0.16	5.95	65.88	15.14	0.62	12.12	0	0.3	100.21
08JAP501	BE02	08SMB05	CHR 29	30	0.33	1.31	6.65	56.13	22.21	0.61	12.73	0	0.04	100.01
08JAP501	BE02	08SMB05	CHR 30	31	0.01	0.45	8.41	61.39	16.2	0.52	12.99	0	0.23	100.2
08JAP501	BE02	08SMB05	CHR 31	32	0.06	0.36	5.26	65.64	16.75	0.66	11.33	0.05	0.3	100.41
08JAP501	BE02	08SMB05	CHR 32	33	0.11	1.28	10.07	56.66	18.43	0.62	13.05	0	0.34	100.56
08JAP501	BE02	08SMB05	CHR 33	34	0.1	0.16	6.07	65.93	15.46	0.61	11.77	0	0.02	100.12
08JAP501	BE02	08SMB05	CHR 34	35	0.02	2.77	1.17	57.5	25.91	0.6	11.96	0.06	0.19	100.18
08JAP501	BE02	08SMB05	CHR 35	36	0.24	1.31	13.88	47.32	22.71	0.45	13.58	0	0.18	99.67
08JAP501	BE02	08SMB05	CHR 36	37	0.13	1.08	9.57	58.31	17.44	0.6	12.89	0	0.14	100.16
08JAP501	BE02	08SMB05	CHR 37	38	0.11	1.24	6.75	60.13	17.78	0.57	12.7	0	0.11	99.39
08JAP501	BE02	08SMB05	CHR 38	39	0.05	1.39	4.78	61.76	19.07	0.58	12.51	0.03	0.15	100.32
08JAP501	BE02	08SMB05	CHR 39	40	0.12	1.14	9.96	57.25	17.83	0.5	13.02	0	0.18	100
08JAP501	BE02	08SMB05	CHR 40	41	0.28	1.86	9.39	53.09	21.28	0.45	13.61	0	0.17	100.13
08JAP501	BE02	08SMB05	CHR 41	42	0.1	1.34	9.22	56.85	18.33	0.48	13.13	0	0.16	99.61
08JAP501	BE02	08SMB05	CHR 42	43	0.14	1.01	12.21	55.14	17.18	0.56	13.84	0.03	0.14	100.25
08JAP501	BE02	08SMB05	CHR 43	44	0.08	0.53	9.68	56.54	22.39	0.66	10.55	0	0.1	100.53
08JAP501	BE02	08SMB05	CHR 44	45	0.16	1.11	9.79	56.98	18.08	0.6	13.24	0.06	0.22	100.24
08JAP501	BE02	08SMB05	CHR 45	46	0.13	1.25	7.87	58.61	17.92	0.65	12.9	0.07	0.2	99.6
08JAP501	BE02	08SMB05	CHR 46	47	0.16	1.07	11.38	55.61	17.63	0.51	13.52	0	0.17	100.05

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08JAP501	BE02	08SMB05	CHR 47	48	0.03	2.47	3.79	57.84	22.37	0.54	12.6	0.03	0.18	99.85
08JAP501	BE02	08SMB05	CHR 48	49	0.15	1.24	7.29	59.74	18.1	0.54	12.71	0	0.38	100.15
08JAP501	BE02	08SMB05	CHR 49	50	0.18	1.16	7.57	58.7	17.74	0.69	12.9	0	0.35	99.29
08JAP501	BE02	08SMB05	CHR 50	51	0.16	1.22	8.06	59.3	18.01	0.51	12.8	0	0.25	100.31
08JAP501	BE02	08SMB05	CHR 51	52	0.16	1.13	10.31	56.84	17.22	0.47	13.07	0	0.25	99.45
08JAP501	BE02	08SMB05	CHR 52	53	0.15	1.24	8.01	59.67	17.48	0.57	12.85	0	0.31	100.28
08JAP501	BE02	08SMB05	CHR 53	54	0.03	1.43	1.43	65.35	19.2	0.54	11.45	0.02	0.33	99.78
08JAP501	BE02	08SMB05	CHR 54	55	0.18	1.11	9.17	58.17	17.85	0.56	12.97	0	0.32	100.33
08JAP501	BE02	08SMB05	CHR 55	56	0.06	1.23	3.87	62.67	20.41	0.73	11.15	0.02	0.29	100.43
08JAP501	BE02	08SMB05	CHR 56	57	0.08	1.2	6.02	60.57	18.24	0.57	12.74	0	0.37	99.79
08JAP501	BE02	08SMB05	CHR 57	58	0.08	0.9	8.07	58.85	17.86	0.52	13.19	0	0.31	99.78
08JAP501	BE02	08SMB05	CHR 58	59	0.01	2.5	0.77	55.92	32.58	0.75	7.25	0.16	0.36	100.3
08JAP501	BE02	08SMB05	CHR 59	60	0.08	1.65	6.92	59.13	19.97	0.5	11.87	0.03	0.29	100.44
08JAP501	BE02	08SMB05	CHR 60	61	0.05	3.04	0.83	51.21	38.7	0.81	5.11	0.16	0.34	100.25
08JAP501	BE02	08SMB05	CHR 61	62	0.28	1.98	16.5	43.47	22.66	0.42	14.52	0	0.47	100.3
08JAP501	BE02	08SMB05	CHR 62	63	0.09	1.61	5.19	58.88	21.36	0.65	11.51	0	0.39	99.68
08JAP501	BE02	08SMB05	CHR 63	64	0.28	2.53	7.63	52.99	23.05	0.51	12.82	0	0.42	100.23
08JAP501	BE02	08SMB05	CHR 64	65	0.17	1.07	10.29	56.97	17.52	0.48	13.35	0	0.44	100.29
08JAP501	BE02	08SMB05	CHR 65	66	0.06	1.32	5.72	59.36	21.38	0.62	11.16	0.06	0.25	99.93
08JAP501	BE02	08SMB05	CHR 66	67	0.15	0.99	9.62	58.33	17.47	0.46	13.14	0.1	0.28	100.54
08JAP501	BE02	08SMB05	CHR 67	68	0.07	1.53	6.51	60.04	18.89	0.65	12.48	0	0.32	100.49
08JAP501	BE02	08SMB05	CHR 68	69	0.14	1.16	9.64	57.76	17.99	0.47	12.87	0	0.34	100.37
08JAP501	BE02	08SMB05	CHR 69	70	0.15	1.33	7.41	59.47	18.08	0.5	12.83	0	0.24	100.01
08JAP501	BE02	08SMB05	CHR 71	71	0.09	0	6.97	65.59	14.6	0.5	12.41	0	0.23	100.39
08JAP501	BE02	08SMB05	CHR 72	72	0.04	2.78	0.69	54.48	35.24	0.89	5.34	0.35	0.33	100.14
08JAP501	BE02	08SMB05	CHR 73	73	0.09	1.71	4.4	60.88	19.84	0.6	12.27	0.04	0.34	100.17
08JAP501	BE02	08SMB05	CHR 74	74	0.31	2.62	10.04	49.6	22.98	0.54	13.25	0	0.39	99.73
08JAP501	BE02	08SMB05	CHR 75	75	0.07	0.95	5.62	63.84	17.31	0.59	11.42	0	0.25	100.05
08JAP501	BE02	08SMB05	CHR 76	76	0.15	1.18	10.78	56.24	17.43	0.58	13.28	0	0.36	100
08JAP501	BE02	08SMB05	CHR 77	77	0.18	1.2	8.71	57.75	18.46	0.47	13.04	0	0.34	100.15
08JAP501	BE02	08SMB05	CHR 78	78	0.14	1.12	7.68	58.98	18.25	0.67	12.83	0	0.35	100.02
08JAP501	BE02	08SMB05	CHR 79	79	0.13	1.15	8.67	57.83	17.72	0.49	13.27	0	0.31	99.57
08JAP501	BE02	08SMB05	CHR 80	80	0.16	1.16	6.78	60.29	17.88	0.56	12.54	0.01	0.43	99.81
08JAP501	BE02	08SMB05	CHR 81	81	0.15	1.31	7.79	59.27	17.99	0.58	12.91	0	0.43	100.43
08JAP501	BE02	08SMB05	CHR 82	82	0.97	1.98	16.53	42.47	22.98	0.45	14.56	0	0.39	100.33
08JAP501	BE02	08SMB05	CHR 83	83	0.13	1.39	10.24	57.21	17.42	0.61	12.94	0	0.42	100.36
08JAP501	BE02	08SMB05	CHR 84	84	0.16	1.09	9.2	57.62	18.06	0.61	13	0	0.38	100.12
08JAP501	BE02	08SMB05	CHR 85	85	0	2.06	2.34	62.03	21.15	0.59	11.79	0	0.38	100.34
08JAP501	BE02	08SMB05	CHR 86	86	0.1	1.16	9.64	57.12	18.2	0.63	13.13	0	0.46	100.44
08JAP501	BE02	08SMB05	CHR 87	87	0.17	1.22	10.58	56.38	17.64	0.58	13.31	0	0.37	100.25
08JAP501	BE02	08SMB05	CHR 88	88	0	3.05	0.94	52.38	34.99	0.84	6.94	0.05	0.29	99.48
08JAP501	BE02	08SMB05	CHR 89	89	0.13	1.29	7.24	58.33	19.18	0.55	12.79	0.05	0.38	99.94
08JAP501	BE02	08SMB05	CHR 90	90	0.05	1.3	5.59	60.81	18.95	0.62	12.57	0	0.42	100.31
08JAP501	BE02	08SMB05	CHR 92	91	0.13	1.13	11.17	55.4	17.85	0.54	13.3	0	0.31	99.83
08JAP501	BE02	08SMB05	CHR 93	92	0.13	1.35	7.13	59.49	18.41	0.61	12.8	0.19	0.39	100.5
08JAP501	BE02	08SMB05	CHR 95	93	0.12	1.14	7.07	60.57	18.07	0.61	12.51	0	0.32	100.41
08JAP501	BE02	08SMB05	CHR 96	94	0.14	1.36	9.8	56.46	18.55	0.58	12.9	0	0.34	100.13
08JAP501	BE02	08SMB05	CHR 97	95	0.13	1.13	10.55	55.74	17.94	0.53	13.27	0	0.34	99.63
08JAP501	BE02	08SMB05	CHR 98	96	0.17	1.39	8.03	58.94	18.29	0.58	12.7	0	0.35	100.45
08JAP501	BE02	08SMB05	CHR 99	97	0	1.23	5.63	61.51	18.07	0.62	12.97	0	0.33	100.36
08JAP501	BE02	08SMB05	CHR 1	98	0.02	2.96	1.09	52.6	37.23	0.83	4.91	0.2	0.43	100.27
08JAP501	BE02	08SMB05	CHR 2	99	0	1.46	5.2	59.82	20.85	0.7	11.63	0	0.3	99.96
08JAP501	BE02	08SMB05	CHR 4	100	0	2.47	6.14	51.65	25.92	0.77	12.05	0	0.33	99.33

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08JAP501	BE02	08SMB05	CHR 6	101	0.08	1.08	9.09	58.04	17.69	0.5	13.07	0.02	0.36	99.93
08JAP501	BE02	08SMB05	CHR 7	102	0.21	1.98	5.2	56.18	22.72	0.61	12.44	0	0.39	99.73
08JAP501	BE02	08SMB05	CHR 8	103	0	0	47.01	18.25	18.64	0.13	15.83	0	0.31	100.17
08JAP501	BE02	08SMB05	CHR 9	104	0.15	1.65	6.95	57.09	21.59	0.47	12.13	0	0.36	100.39
08JAP501	BE02	08SMB05	CHR 10	105	0.07	1.11	7.31	60.75	17.64	0.68	12.48	0.06	0.25	100.35
08JAP501	BE02	08SMB05	CHR 11	106	0.36	1.03	6.97	59.88	17.8	0.53	12.73	0.16	0.32	99.78
08JAP501	BE02	08SMB05	CHR 12	107	0.27	1.82	18.04	40.17	24.71	0.53	14.38	0	0.49	100.41
08JAP501	BE02	08SMB05	CHR 13	108	0	0	12.51	58.46	15.24	0.54	13.31	0	0.25	100.31
08JAP501	BE02	08SMB05	CHR 14	109	0.23	0.47	15.32	25.92	44.17	0.21	12.77	0	0.51	99.6
08JAP501	BE02	08SMB05	CHR 16	110	0.03	0.27	5.62	66.36	16.17	0.64	10.97	0.02	0.32	100.4
08JAP501	BE02	08SMB05	CHR 17	111	0.1	1.18	10.21	57.48	17.58	0.37	13.18	0	0.26	100.36
08JAP501	BE02	08SMB05	CHR 18	112	0.34	1.67	29.46	29.28	20.98	0.25	17.2	0	0.34	99.52
08JAP501	BE02	08SMB05	CHR 19	113	0.75	1.81	30.47	28.07	21.46	0.34	16.94	0	0.41	100.25
08JAP501	BE02	08SMB05	CHR 20	114	0.11	1.26	8.51	58.55	17.94	0.62	12.93	0	0.39	100.31
08JAP501	BE02	08SMB05	CHR 21	115	0	0.12	23.57	39.72	21.4	0.46	14.17	0	0.41	99.85
08JAP501	BE02	08SMB05	CHR 22	116	0.1	1.09	10.9	57.1	17.1	0.58	13.23	0	0.27	100.37
08JAP501	BE02	08SMB05	CHR 23	117	0.18	0.46	15.64	23.85	45.3	0.37	12.83	0.03	0.63	99.29
08JAP501	BE02	08SMB05	CHR 24	118	0.02	1.07	9	59.01	17.22	0.57	13.21	0	0.35	100.45
08JAP501	BE02	08SMB05	CHR 25	119	0.01	2.28	7.4	53.42	25.32	0.57	10.87	0.08	0.43	100.38
08JAP501	BE02	08SMB05	CHR 26	120	0.23	1.68	20.04	40.46	22.05	0.47	14.83	0	0.41	100.17
08JAP501	BE02	08SMB05	CHR 27	121	0	0.15	1.44	65.63	21.09	0.76	10.96	0.03	0.43	100.49
08JAP501	BE02	08SMB05	CHR 28	122	0.3	0.42	25.72	36.38	21.47	0.34	14.9	0	0.33	99.86
08JAP501	BE02	08SMB05	CHR 30	123	0.33	0.05	22.39	36.01	26.26	0.37	14.32	0	0.44	100.17
08JAP501	BE02	08SMB05	CHR 31	124	0.06	1.93	6.22	57.77	21.17	0.59	12.19	0	0.35	100.28
08JAP501	BE02	08SMB05	CHR 32	125	0.24	2.2	10.56	50.18	23.1	0.61	12.99	0	0.32	100.2
08JAP501	BE02	08SMB05	CHR 33	126	0.04	1.89	8.83	55.32	19.68	0.56	13.31	0.2	0.43	100.26
08JAP501	BE02	08SMB05	CHR 34	127	0.02	0.25	5.87	65.02	17.45	0.64	11.05	0	0.25	100.55
08JAP501	BE02	08SMB05	CHR 35	128	0.15	3.51	5.4	54.66	23.07	0.66	12.08	0	0.36	99.89
08JAP501	BE02	08SMB05	CHR 36	129	0.09	1.41	8.2	58.62	18.15	0.57	13.04	0.03	0.37	100.48
08JAP501	BE02	08SMB05	CHR 37	130	0	3.16	1.01	55.72	28.47	0.55	10.74	0.17	0.38	100.2
08JAP501	BE02	08SMB05	CHR 37	131	0.05	1.53	5.51	60.15	19.61	0.55	12.46	0	0.34	100.2
08JAP501	BE02	08SMB05	CHR 38	132	0	2.65	0.99	55.36	31.72	0.65	8.01	0.06	0.37	99.81
08JAP501	BE02	08SMB05	CHR 39	133	0.22	1.54	9.72	55.78	19.7	0.64	12.56	0	0.29	100.45
08JAP501	BE02	08SMB05	CHR 40	134	0.01	1.5	9.38	57.44	18.23	0.69	12.99	0.03	0.3	100.57
08JAP501	BE02	08SMB05	CHR 41	135	0.06	1.08	7.48	60.97	17.06	0.6	12.69	0.02	0.3	100.26
08JAP501	BE02	08SMB05	CHR 42	136	0.08	1.17	9.6	58.78	17.05	0.62	12.61	0.04	0.38	100.33
08JAP501	BE02	08SMB05	CHR 43	137	0	0	14.34	56.63	15.67	0.54	13.01	0	0.22	100.41
08JAP501	BE02	08SMB05	CHR 44	138	0.14	1.31	8.91	58.29	18.03	0.5	12.87	0	0.36	100.41
08JAP501	BE02	08SMB05	CHR 45	139	0.03	0.28	6.08	64.54	16.91	0.75	11.54	0	0.29	100.42
08JAP501	BE02	08SMB05	CHR 46	140	0.24	1.51	6.5	57.02	22.08	0.53	11.99	0.02	0.4	100.29
08JAP501	BE02	08SMB05	CHR 47	141	0.11	0.99	12.87	54.45	16.39	0.48	13.61	0.06	0.31	99.27
08JAP501	BE02	08SMB05	CHR 48	142	0.01	0.96	9.75	57.84	17.39	0.53	13.19	0	0.35	100.02
08JAP501	BE02	08SMB05	CHR 49	143	0.02	1.2	8	59.64	17.4	0.51	12.81	0.15	0.42	100.15
08JAP501	BE02	08SMB05	CHR 50	144	0.1	1.24	8.67	58.44	17.98	0.64	12.6	0	0.27	99.94
08JAP501	BE02	08SMB05	CHR 1	145	0.54	0.94	25.4	30.52	25.26	0.32	15.88	0	0.55	99.41
08JAP501	BE02	08SMB05	CHR 2	146	0.01	2.71	0.92	57.99	27.77	0.42	9.3	0.03	0.34	99.49
08JAP501	BE02	08SMB05	CHR 3	147	0.07	1.51	8.4	57.54	18.68	0.53	13.38	0	0.38	100.49
08JAP501	BE02	08SMB05	CHR 4	148	0.36	1.3	7.81	55.13	22.4	0.62	12.35	0	0.37	100.34
08JAP501	BE02	08SMB05	CHR 5	149	0.22	1.36	6.64	58.66	20.14	0.68	12.02	0	0.34	100.06
08JAP501	BE02	08SMB05	CHR 7	150	0	2.8	0.73	54.85	29.42	0.6	11.24	0.14	0.45	100.23
08JAP501	BE02	08SMB05	CHR 8	151	0.62	1.56	20.34	38.52	24.04	0.44	14.45	0	0.35	100.32
08JAP501	BE02	08SMB05	CHR 9	152	0.07	1.54	12.12	51.33	21.49	0.63	12.89	0	0.39	100.46
08JAP501	BE02	08SMB05	CHR 10	153	0.02	2.26	6.7	57.68	19.37	0.71	13.25	0.01	0.36	100.36

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08JAP501	BE02	08SMB05	CHR 11	154	0.08	2.27	7.15	55.01	23.05	0.54	11.5	0	0.28	99.88
08JAP501	BE02	08SMB05	CHR 12	155	0.03	2.31	24.69	30.28	26.87	0.42	15.31	0	0.34	100.25
08JAP501	BE02	08SMB05	CHR 13	156	0.46	0.11	32.44	31.59	18.77	0.34	16.56	0	0.27	100.54
08JAP501	BE02	08SMB05	CHR 14	157	0.16	1.06	10.64	56.72	17.49	0.51	13.23	0	0.32	100.13
08JAP501	BE02	08SMB05	CHR 16	158	0.16	1.14	10.3	57.75	17.25	0.51	13.07	0	0.27	100.45
08JAP501	BE02	08SMB05	CGR 17	159	0.13	1.24	11.15	55.5	18.12	0.52	13.22	0	0.45	100.33
08JAP501	BE02	08SMB05	CHR 18	160	0.04	2.23	7.34	56.36	19.9	0.54	13.18	0	0.39	99.98
08JAP501	BE02	08SMB05	CHR 19	161	0	0.33	10.78	58.03	17.21	0.5	13.39	0	0.28	100.52
08JAP501	BE02	08SMB05	CHR 20	162	0.69	2.34	8.43	52.28	22.7	0.59	12.6	0	0.4	100.03
08JAP501	BE02	08SMB05	CHR 21	163	0.52	2.89	22.7	34.97	23.24	0.47	15.15	0	0.44	100.38
08JAP501	BE02	08SMB05	CHR 22	164	0.02	3.78	0.59	44.44	45.33	0.93	4.01	0.19	0.33	99.62
08JAP501	BE02	08SMB05	CHR 23	165	0.35	3.07	19.4	39.59	22.58	0.51	14.68	0	0.39	100.57
08JAP501	BE02	08SMB05	CHR 24	166	0.08	0.06	6.6	65.57	14.6	0.49	12.76	0	0.17	100.33
08JAP501	BE02	08SMB05	CHR 25	167	0.02	1.12	7.76	55.9	23.46	0.54	10.6	0.13	0.41	99.94
08JAP501	BE02	08SMB05	CHR 26	168	0.16	1.09	10.78	56.48	17.73	0.53	13.34	0	0.34	100.45
08JAP501	BE02	08SMB05	CHR 27	169	0.01	2.59	0.97	57.02	28.12	0.67	9.86	0.14	0.34	99.72
08JAP501	BE02	08SMB05	CHR 28	170	0.06	1.4	8.55	57.36	19.47	0.58	12.6	0	0.29	100.31
08JAP501	BE02	08SMB05	CHR 29	171	0.12	1.03	11.78	55.67	17.91	0.51	13.14	0	0.34	100.5
08JAP501	BE02	08SMB05	CHR 30	172	0	3.14	0.77	54.78	28.09	0.62	11.34	0.04	0.38	99.16
08JAP501	BE02	08SMB05	CHR 31	173	0.24	1.37	6.55	57.57	21.2	0.49	11.81	0	0.41	99.64
08JAP501	BE02	08SMB05	CHR 32	174	0.26	1.35	6.81	58.35	20.33	0.61	12.14	0	0.35	100.2
08JAP501	BE02	08SMB05	CHR 33	175	0.16	1.13	11.74	54.81	18.43	0.45	13.41	0	0.26	100.39
08JAP501	BE02	08SMB05	CHR 34	176	0.31	1.51	10.44	51.48	21.48	0.56	13.15	0	0.42	99.35
08JAP501	BE02	08SMB05	CHR 35	177	0.16	1.05	8.13	59.45	17.56	0.58	13.06	0	0.38	100.37
08JAP501	BE02	08SMB05	CHR 36	178	0.27	1.23	5.01	61.23	20	0.61	11.75	0	0.37	100.47
08JAP501	BE02	08SMB05	CHR 37	179	0.14	1.18	9.04	58.43	17.51	0.6	12.97	0	0.26	100.13
08JAP501	BE02	08SMB05	CHR 38	180	0.1	1.54	5.84	60.13	19.03	0.5	12.75	0	0.36	100.25
08JAP701	BE02	08SMB07	CHR 1	202	0.03	2.73	0.78	53.19	37.75	0.79	4.7	0.32	0.29	100.58
08JAP701	BE02	08SMB07	CHR 2	203	0.33	1.6	8.18	55.27	20.49	0.6	13.33	0	0.35	100.15
08JAP701	BE02	08SMB07	CHR 3	204	0.23	2.32	4.06	60.27	20.19	0.51	12.42	0	0.39	100.39
08JAP701	BE02	08SMB07	CHR 4	205	0.14	1.14	9.83	56.89	18.08	0.43	13.03	0	0.28	99.82
08JAP701	BE02	08SMB07	CHR 5	206	0.09	0.02	5.63	65.49	16.03	0.58	12.4	0	0.3	100.54
08JAP701	BE02	08SMB07	CHR 6	207	0.23	2.31	4.63	59.2	20.25	0.58	12.36	0	0.37	99.93
08JAP701	BE02	08SMB07	CHR 7	208	0.16	1.22	8.96	57.92	17.6	0.63	12.73	0	0.33	99.55
08JAP701	BE02	08SMB07	CHR 8	209	0.26	2.93	5.84	56.27	21.58	0.65	12.53	0	0.32	100.38
08JAP701	BE02	08SMB07	CHR 9	210	0.14	1.1	11.28	55.54	17.83	0.43	13.2	0.08	0.26	99.86
08JAP701	BE02	08SMB07	CHR 10	211	0.02	0.02	1.79	59.99	28.39	0.62	9.1	0.27	0.25	100.45
08JAP701	BE02	08SMB07	CHR 11	212	0.24	2.47	4.52	60.17	19.03	0.63	12.69	0	0.4	100.15
08JAP701	BE02	08SMB07	CHR 12	213	0.28	2.57	4.76	59.09	19.32	0.6	12.39	0.11	0.37	99.49
08JAP701	BE02	08SMB07	CHR 13	214	0.23	0.43	16.42	47.83	20.99	0.48	13.65	0	0.33	100.36
08JAP701	BE02	08SMB07	CHR 14	215	0.13	1.14	7.93	59.44	17.89	0.69	12.91	0.03	0.36	100.52
08JAP701	BE02	08SMB07	CHR 15	216	0.26	2.55	4.62	59.08	19.34	0.6	12.83	0.13	0.3	99.71
08JAP701	BE02	08SMB07	CHR 16	217	0.23	2.25	4.56	60.05	19.66	0.63	12.48	0	0.41	100.27
08JAP701	BE02	08SMB07	CHR 17	218	0.04	2.13	6.64	55.58	21.56	0.59	13.09	0.01	0.33	99.97
08JAP701	BE02	08SMB07	CHR 18	219	0.39	1.2	24.95	35.02	22.21	0.46	15.04	0	0.4	99.67

Table 6 - Electron microprobe geochemical results of selected chromium spinels from the Smoky the Bear Property kimberlites.

08JAP701	BE02	08SMB07	CHR 19	220	0.05	3.23	1.69	52.75	29.51	0.48	11.77	0.1	0.41	99.99
08JAP701	BE02	08SMB07	CHR 20	221	0.15	1.08	10.66	57.47	17.08	0.63	13.19	0	0.27	100.53
08JAP701	BE02	08SMB07	CHR 21	222	0.2	1.23	8.89	58.49	17.87	0.68	12.81	0.03	0.32	100.52
08JAP701	BE02	08SMB07	CHR 22	223	0.23	2.85	7.14	55.31	21.39	0.53	12.47	0	0.33	100.25
08JAP701	BE02	08SMB07	CHR 23	224	0.34	1.6	8.92	54.52	20.88	0.62	12.52	0	0.33	99.73
08JAP701	BE02	08SMB07	CHR 24	225	0.17	1.11	11.38	56.01	17.54	0.48	13.1	0	0.32	100.11
08JAP701	BE02	08SMB07	CHR 26	226	0.09	0.87	13.57	50.69	22.08	0.66	11.78	0.1	0.32	100.16
08JAP701	BE02	08SMB07	CHR 27	227	0.25	2.36	4.52	59.67	19.58	0.52	12.33	0	0.35	99.58
08JAP701	BE02	08SMB07	CHR 28	228	0.32	1.91	7.29	54.94	21.43	0.56	12.5	0	0.39	99.34
08JAP701	BE02	08SMB07	CHR 29	229	0.15	1.28	10.89	54.73	18.52	0.46	13.24	0	0.29	99.56
08JAP701	BE02	08SMB07	CHR 30	230	0.16	1.29	10.45	56.48	17.85	0.57	13.45	0	0.31	100.56
08JAP701	BE02	08SMB07	CHR 31	231	0.14	1.21	10.06	56.19	18.29	0.49	13.12	0	0.4	99.9
08JAP701	BE02	08SMB07	CHR 32	232	0.14	1.29	9.12	56.56	18.11	0.63	13.3	0	0.35	99.5
08JAP701	BE02	08SMB07	CHR 34	233	0.14	1.06	11.73	55.64	17.47	0.59	13.42	0	0.39	100.44
08JAP701	BE02	08SMB07	CHR 35	234	0.46	2.78	7.13	53.73	21.81	0.56	12.83	0	0.37	99.67
08JAP701	BE02	08SMB07	CHR 36	235	0.39	3.24	19.22	37.85	23.32	0.41	14.56	0	0.46	99.45
08JAP701	BE02	08SMB07	CHR 37	236	0.35	2.26	10.83	50.35	22.34	0.5	13.36	0	0.29	100.28
08JAP701	BE02	08SMB07	CHR 38	237	0.23	0.43	16.54	47.67	20.23	0.56	13.54	0	0.35	99.55
08JAP701	BE02	08SMB07	CHR 39	238	0.1	1.51	10.62	55.39	19.25	0.46	12.76	0	0.32	100.41
08JAP701	BE02	08SMB07	CHR 40	239	0.09	1.63	6.31	58.94	19.3	0.5	12.82	0.01	0.34	99.94
08JAP701	BE02	08SMB07	CHR 42	240	0.14	1.06	11.85	55.83	17.34	0.47	13.41	0	0.39	100.49
08JAP701	BE02	08SMB07	CHR 43	241	0.28	2.78	6.95	53.85	22.42	0.54	12.24	0	0.35	99.41
08JAP701	BE02	08SMB07	CHR 44	242	0.27	1.65	5.18	59.87	19.65	0.49	12.06	0	0.41	99.58
08JAP701	BE02	08SMB07	CHR 45	243	0.22	1.67	5.15	58.2	20.83	0.59	12.34	0.12	0.28	99.4
08JAP701	BE02	08SMB07	CHR 46	244	0.05	1.8	6.57	58.44	19.02	0.74	13.05	0.01	0.31	99.99
08JAP701	BE02	08SMB07	CHR 47	245	0.15	1.23	10.82	56.08	17.89	0.53	12.92	0.02	0.29	99.93
08JAP701	BE02	08SMB07	CHR 48	246	0.05	2.58	8.02	51.27	23.82	0.51	13.26	0	0.39	99.9
08JAP701	BE02	08SMB07	CHR 49	247	0.26	1.38	5.08	61.06	18.57	0.58	12.25	0.14	0.33	99.65
08JAP701	BE02	08SMB07	CHR 50	248	0.17	1.08	10.73	55.31	17.9	0.74	13.09	0	0.35	99.37
08JAP601	BE03	08SMB06	CHR 1	181	0.24	1.4	3.72	63.18	19.12	0.51	11.1	0.03	0.28	99.58
08JAP601	BE03	08SMB06	CHR 2	182	0.03	2.77	0.77	52.16	39.03	0.71	4.51	0.18	0.33	100.49
08JAP601	BE03	08SMB06	CHR 3	183	0.01	1.33	3.29	58.51	25.55	0.64	10.54	0	0.3	100.17
08JAP601	BE03	08SMB06	CHR 4	184	0.14	1.1	10.72	56.43	17.58	0.57	12.92	0	0.35	99.81
08JAP601	BE03	08SMB06	CHR 5	185	0.23	1.85	12.02	50.36	21.57	0.46	13.36	0	0.36	100.21
08JAP601	BE03	08SMB06	CHR 6	186	0.27	0.99	6.84	57.98	19.58	0.65	12.65	0	0.29	99.25
08JAP601	BE03	08SMB06	CHR 7	187	0.01	2.43	15.13	41.87	26.05	0.58	13.25	0	0.18	99.5
08JAP601	BE03	08SMB06	CHR 8	188	0	0	60.28	8.68	12.29	0.02	18.77	0	0.18	100.22
08JAP601	BE03	08SMB06	CHR 9	189	0.25	1.93	12.11	48.29	23.22	0.54	13.02	0	0.4	99.76
08JAP601	BE03	08SMB06	CHR 10	190	0.27	1.13	10.38	55.79	17.68	0.61	13.15	0	0.32	99.33
08JAP601	BE03	08SMB06	CHR 12	191	0.38	2.55	16.38	40.29	25.27	0.51	14.24	0	0.42	100.04
08JAP601	BE03	08SMB06	CHR 13	192	0.3	1.83	15.91	45.73	21.85	0.46	13.86	0	0.41	100.35
08JAP601	BE03	08SMB06	CHR 13	193	0.02	2.54	10.3	49.6	23.06	0.49	13.84	0	0.43	100.28
08JAP601	BE03	08SMB06	CHR 14	194	0.07	1.96	5.97	58.38	19.73	0.36	12.59	0	0.33	99.39
08JAP601	BE03	08SMB06	CHR 15	195	0.32	1.1	17.26	43.03	24.04	0.42	13.05	0.05	0.41	99.68
08JAP601	BE03	08SMB06	CHR 16	196	0.38	0.04	25.57	35.37	23.19	0.36	15.15	0	0.39	100.45
08JAP601	BE03	08SMB06	CHR 17	197	0.37	2.05	17.6	40.61	24.57	0.47	14.01	0	0.52	100.2
08JAP601	BE03	08SMB06	CHR 18	198	0.12	1.15	9.17	58.06	17.91	0.52	12.94	0	0.31	100.18
08JAP601	BE03	08SMB06	CHR 19	199	0.45	1.3	15.72	43.7	24.41	0.45	13.78	0	0.56	100.37
08JAP601	BE03	08SMB06	CHR 20	200	0.08	1.25	9.27	56.75	18.97	0.56	12.89	0	0.29	100.06
08JAP601	BE03	08SMB06	CHR 21	201	0.43	1.38	15.56	43.6	24.4	0.56	13.88	0	0.5	100.31
				Min	**0**	**0**	**0.59**	**8.68**	**12.29**	**0.02**	**4.01**	**0**	**0.02**	**99.16**
				Max	**0.97**	**4.34**	**60.28**	**66.36**	**45.33**	**0.93**	**18.77**	**0.35**	**0.63**	**100.58**
				Avg	**0.16**	**1.51**	**9.647**	**54.27**	**20.97**	**0.52**	**12.66**	**0.03**	**0.32**	**100.08**

Table 5 - Electron microprobe geochemical results of selected clinopyroxenes from the Smoky the Bear Property kimberlites.

Sample	Kimberlite	Drillhole	Grain#	Analysis	SIO_2	TIO_2	AL_2O_3	Cr_2O_3	FeO	MnO	MgO	CaO	Na_2O	K_2O	Total	P_{NT} (kbar)	T_{NT} (°C)	Ca# x100	Mg# x100
08TGP001	BE-01	08SMB02	CPX 1	3	54.53	0	2.33	1.39	1.97	0	16.45	21.56	1.86	0.01	100.1	30.5	648.4	48.5	93.7
08TGP001	BE-01	08SMB02	CPX 2	4	54.5	0	2.05	1.45	1.79	0	16.87	21.9	1.46	0.02	100.04	32.3	754.8	48.3	94.4
08TGP001	BE-01	08SMB02	CPX 3	5	54.72	0.15	1.07	0.96	3.13	0.03	16.95	21.81	1.39	0.01	100.22		786.3	48.1	90.6
08TGP001	BE-01	08SMB02	CPX 4	6	54.71	0	2.14	1.89	1.69	0	16.6	21.37	1.8	0.02	100.22	33.6	741.6	48.1	94.6
08TGP001	BE-01	08SMB02	CPX 5	7	54.9	0.02	1.32	2.27	1.87	0	17.21	21.13	1.74	0.02	100.48	44.6	825.6	46.9	94.3
08TGP001	BE-01	08SMB02	CPX 6	8	54.92	0.01	1.01	2.3	2.02	0.01	16.82	21.28	1.77	0.01	100.15	51.5	757.3	47.6	93.7
08TGP001	BE-01	08SMB02	CPX 7	9	54.78	0	1.79	1.2	1.33	0	17.18	22.39	1.21	0.01	99.89	32.9	762.0	48.4	95.8
08TGP001	BE-01	08SMB02	CPX 8	10	54.76	0	1.78	1.73	1.79	0	16.76	21.85	1.49	0.03	100.19	35.3	733.5	48.4	94.3
08TGP001	BE-01	08SMB02	CPX 9	11	54.58	0	1.75	1.43	2.31	0.02	17.88	20.93	1.43	0.02	100.35	41.9	925.5	45.7	93.2
08TGP001	BE-01	08SMB02	CPX 10	12	54.76	0.07	0.6	1.08	2.62	0	17.54	22.41	1.03	0.02	100.13		778.3	47.9	92.3
08TGP001	BE-01	08SMB02	CPX 11	13	54.72	0	2.3	1.63	2	0.02	16.29	21.47	1.77	0.01	100.21	32.1	702.7	48.7	93.6
08TGP001	BE-01	08SMB02	CPX 12	14	54.96	0.13	0.68	1.08	2.24	0.03	17.34	22.94	0.99	0.02	100.41	57.3	694.4	48.7	93.2
08TGP001	BE-01	08SMB02	CPX 13	15	54.85	0.08	0.58	1.19	2.39	0	16.98	23.07	1.15	0.02	100.31		532.1	49.4	92.7
08TGP001	BE-01	08SMB02	CPX 14	16	54.68	0.16	1.96	2.01	2.52	0	16.49	20.16	1.99	0.03	100	43.6	902.4	46.8	92.1
08TGP001	BE-01	08SMB02	CPX 15	17	54.87	0	2.04	1.94	1.67	0	16.78	20.88	1.8	0	99.98	38.1	860.9	47.2	94.7
08TGP001	BE-01	08SMB02	CPX 16	18	54.9	0.01	2.81	2.84	1.95	0	15.93	19.15	2.52	0.02	100.13	36.8	917.0	46.4	93.6
08TGP001	BE-01	08SMB02	CPX 17	19	54.88	0	1.57	0.94	1.37	0	17.13	23.13	0.99	0.02	100.03	30.9	683.8	49.3	95.7
08TGP001	BE-01	08SMB02	CPX 18	20	55.1	0.1	2.27	1.87	2.85	0	17.69	18.34	1.99	0.04	100.25	48.1	1129.5	42.7	91.7
08TGP001	BE-01	08SMB02	CPX 19	21	54.68	0	2.98	2.31	1.45	0	16.04	20.54	2.3	0.01	100.31	30.0	749.2	47.9	95.2
08TGP001	BE-01	08SMB02	CPX 20	22	55.05	0.17	1.95	1.13	3.33	0	20.17	17.13	1.4	0.06	100.39	60.6	1351.1	37.9	91.5
08TGP001	BE-01	08SMB02	CPX 21	23	55.02	0.14	0.73	0.55	2.33	0	17.53	22.9	0.83	0.03	100.06	22.7	596.5	48.4	93.1
08TGP001	BE-01	08SMB02	CPX 22	24	53.27	0	2.31	1.66	2.13	0	16.78	23.5	0.81	0.07	100.53	17.6	636.6	50.2	93.4
08TGP001	BE-01	08SMB02	CPX 23	25	54.08	0	2.59	0.78	1.77	0	16.54	23.96	0.6	0.01	100.33	22.7	496.1	51.0	94.3
08TGP001	BE-01	08SMB02	CPX 25	26	54.74	0	2.13	1.26	1.43	0	16.54	23.02	1.34	0.01	100.47	12.3	554.5	50.0	95.4
08TGP001	BE-01	08SMB02	CPX 26	27	53.5	0	3.06	0.69	1.83	0	16.35	24	0.63	0.03	100.09	31.3	661.2	51.3	94.1
08TGP001	BE-01	08SMB02	CPX 27	28	54.8	0	1.32	0.94	1.44	0	17.25	23.43	0.84	0.01	100.03	15.8	632.6	49.4	95.5
08TGP001	BE-01	08SMB02	CPX 28	29	53.45	0	3.16	0.95	1.86	0	16.41	23.82	0.64	0.03	100.32	34.4	511.7	51.1	94.0
08TGP001	BE-01	08SMB02	CPX 29	30	55.17	0.01	2.21	2.41	2.2	0	15.13	20.64	2.56	0.03	100.36	13.5	567.7	49.5	92.5
08TGP001	BE-01	08SMB02	CPX 32	31	53.43	0	3.29	0.88	1.92	0	16.35	23.91	0.69	0.05	100.52	37.1	641.8	51.3	93.8
08TGP001	BE-01	08SMB02	CPX 36	32	55.48	0	2.29	2.3	2.23	0	15.34	20.48	2.48	0.01	100.61	33.6	653.3	49.0	92.5
08TGP001	BE-01	08SMB02	CPX 39	33	55.04	0	2.29	2.34	2.04	0	15.24	20.64	2.28	0.01	99.88	31.0	705.6	49.3	93.0
08TGP001	BE-01	08SMB02	CPX 42	34	55.26	0	1.85	1.13	1.5	0	16.78	22.8	1.13	0.01	100.46	11.3	578.0	49.4	95.2
08TGP001	BE-01	08SMB02	CPX 48	35	52.71	0.15	3.99	0.84	2.26	0	15.68	23.59	0.74	0.03	99.99	20.6	794.5	52.0	92.5
08TGP001	BE-01	08SMB02	CPX 51	36	53.91	0.02	3.2	0.91	1.93	0.05	16.57	23.31	0.61	0	100.51	34.6	652.2	50.3	93.9
08TGP001	BE-01	08SMB02	CPX 52	37	54.89	0.01	2.26	2.42	2.31	0	15.42	20.61	2.31	0.01	100.24	32.1	784.0	49.0	92.2
08TGP001	BE-01	08SMB02	CPX 54	38	55.24	0	2.8	1.93	1.74	0	15.93	20.73	2.15	0.02	100.54	7.7	403.0	48.3	94.2
08TGP001	BE-01	08SMB02	CPX 57	39	52.6	0	3.32	0.74	1.88	0.02	16.44	24.15	0.63	0.03	99.81	35.5	845.8	51.4	94.0
08TGP001	BE-01	08SMB02	CPX 62	40	55	0	2.04	1.56	2.18	0.01	16.67	21.59	1.5	0.01	100.56	35.4	649.9	48.2	93.2
08TGP001	BE-01	08SMB02	CPX 68	41	55.21	0	2.25	2.25	2.38	0	15.31	20.66	2.39	0	100.45	36.5	724.7	49.2	92.0
08TGP001	BE-01	08SMB02	CPX 73	42	54.92	0.19	1.73	1.33	2.45	0	16.26	21.97	1.5	0.02	100.37	36.3	718.5	49.3	92.2
08TGP001	BE-01	08SMB02	CPX 74	43	54.56	0	1.94	1.13	1.38	0	16.8	22.94	1.18	0.02	99.95	26.4	602.5	49.5	95.6
08TGP001	BE-01	08SMB02	CPX 76	44	55.09	0.01	2.04	1.37	1.92	0.1	16.57	21.64	1.52	0	100.26	35.1	813.6	48.4	93.9
08TGP001	BE-01	08SMB02	CPX 78	45	55.3	0	2.17	3.36	2.71	0	14.48	19.14	3.06	0.05	100.27	43.4	672.3	48.7	90.5
08TGP001	BE-01	08SMB02	CPX 80	46	55.65	0	3.01	3.52	2.53	0	14.09	18.17	3.3	0.01	100.28	37.2	813.5	48.1	90.8
08TGP001	BE-01	08SMB02	CPX 81	47	55.27	0	3.16	3.63	2.48	0.02	14.13	18.11	3.61	0.02	100.43	35.7	701.6	48.0	91.0
08TGP001	BE-01	08SMB02	CPX 82	48	54.48	0	1.79	1.02	1.48	0	16.98	23.38	1.1	0.03	100.26	23.7	484.9	49.7	95.3
08TGP001	BE-01	08SMB02	CPX 83	49	55.08	0	1.95	0.78	3.25	0.05	19.52	18.31	1.17	0.05	100.16	49.6	1245.9	40.3	91.5
08TGP001	BE-01	08SMB02	CPX 91	50	53.4	0	3.08	0.87	1.92	0	16.59	24.04	0.59	0.03	100.52	14.6	595.2	51.0	93.9
08TGP001	BE-01	08SMB02	CPX 92	51	54.78	0	1.39	0.72	1.63	0	17.12	24.11	0.77	0.01	100.53	23.2	443.3	50.3	94.9
08TGP001	BE-01	08SMB02	CPX 99	52	55.11	0	2.56	1.29	2.03	0	15.55	21.55	1.96	0	100.05	27.5	586.7	49.9	93.2
08TGP001	BE-01	08SMB02	CPX 100	53	55	0	2.34	1.78	1.81	0.01	16.23	21.69	1.64	0.01	100.51	31.2	732.0	49.0	94.1
08TGP001	BE-01	08SMB02	CPX 104	54	54.02	0	2.91	0.73	1.73	0	16.46	24.13	0.52	0.02	100.52	15.8	619.5	51.3	94.4
08TGP001	BE-01	08SMB02	CPX 106	55	53.67	0.15	3.84	0.74	1.95	0	15.95	23.34	0.85	0.02	100.51	14.0	670.1	51.3	93.6
08TGP001	BE-01	08SMB02	CPX 108	56	54.42	0.31	0.73	1.61	2.27	0	16.89	23.97	0.67	0.01	100.88	33.6	555.4	50.5	93.0
08TGP001	BE-01	08SMB02	CPX 109	57	53.45	0	2.96	0.83	1.87	0.02	16.09	24.05	0.54	0.03	99.84	14.3	583.1	51.8	93.9
08TGP001	BE-01	08SMB02	CPX 110	58	53.89	0	3.15	0.69	1.68	0	16.49	24.1	0.55	0.02	100.57	14.2	645.8	51.2	94.6
08TGP001	BE-01	08SMB02	CPX 111	59	55.42	0	2.35	1.4	1.42	0	15.96	22.24	1.55	0.02	100.36	27.9	672.4	50.0	95.2
08TGP001	BE-01	08SMB02	CPX 113	60	55.3	0.07	2.17	1.17	1.47	0	16.19	22.69	1.33	0.01	100.4	26.9	650.3	50.2	95.2
08TGP001	BE-01	08SMB02	PYR 52	61	54.98	0	2.72	2.29	1.64	0.03	15.56	20.37	2.25	0.01	99.85	32.3	767.5	48.5	94.4
				Min	**52.6**	**0**	**0.58**	**0.55**	**1.33**	**0**	**14.09**	**17.13**	**0.52**	**0**	**99.81**	**7.7**	**403.0**	**37.9**	**90.5**
				Max	**55.65**	**0.31**	**3.99**	**3.63**	**3.33**	**0.1**	**20.17**	**24.15**	**3.61**	**0.07**	**100.88**	**60.6**	**1351.1**	**52.0**	**95.8**
				Avg	**54.62**	**0.033**	**2.20**	**1.516**	**2.022**	**0.007**	**16.5**	**21.88**	**1.473**	**0.02**	**100.27**	**30.9**	**710.2**	**48.8**	**93.6**

Table 5 - Electron microprobe geochemical results of selected clinopyroxenes from the Smoky the Bear Property kimberlites.

	Kimberlite	Drillhole	Grain#	Analysis	SIO_2	TIO_2	AL_2O_3	Cr_2O_3	FEO	MnO	MgO	CaO	Na_2O	K_2O	Total	P_{NT} (kbar)	T_{NT} (°C)		
08JAP501	BE-02	08SMB05	CPX 1	1	55.7	0.19	1.23	3.5	2.29	0.08	15.7	19.3	2.21	0.05	100.26	49.1	962.4	46.8	92.4
08JAP501	BE-02	08SMB05	CPX 2	2	55.3	0.08	1.72	1.67	2.5	0.07	17.5	19.5	1.59	0.09	100.1	49.4	1077.2	44.5	92.6
08JAP501	BE-02	08SMB05	CPX 3	3	54.8	0.17	1.16	1.73	2.32	0.13	17.6	21	1.18	0.02	100.11	46.6	1005.5	46.1	93.1
08JAP501	BE-02	08SMB05	CPX 4	4	54.6	0.16	1.05	1.56	2.23	0	18	21.6	0.99	0	100.12	45.1	982.5	46.3	93.5
08JAP501	BE-02	08SMB05	CPX 5	5	54.6	0.14	1.13	1.74	2.1	0.14	17.9	21.5	1.06	0.01	100.26	43.9	977.2	46.3	93.8
08JAP501	BE-02	08SMB05	CPX 6	6	54.8	0.1	0.89	0.93	2.63	0.18	18.8	21.1	0.97	0.05	100.37	61.9	1043.3	44.7	92.7
08JAP501	BE-02	08SMB05	CPX 7	7	55.2	0.13	1.69	1.59	2.8	0.14	17.9	19.3	1.67	0.06	100.45	52.9	1088.3	43.7	91.9
08JAP501	BE-02	08SMB05	CPX 8	8	55	0.05	1.43	2.28	2.19	0.13	17.2	20.6	1.61	0.01	100.46	44.2	926.7	46.3	93.3
08JAP501	BE-02	08SMB05	CPX 9	9	54.8	0.08	1.63	1.29	2.72	0.15	17.8	20.5	1.29	0.09	100.42	45.7	997.8	45.3	92.1
08JAP501	BE-02	08SMB05	CPX 10	10	54.6	0.16	1.88	1.74	2.35	0.12	16.7	20.2	1.87	0.05	99.62	45.2	867.9	46.5	92.7
08JAP501	BE-02	08SMB05	CPX 11	11	54.5	0.11	1.72	1.92	2.76	0.17	17.6	19.6	1.7	0.06	100.06	47.2	992.4	44.5	91.9
08JAP501	BE-02	08SMB05	CPX 13	12	55.2	0.09	1.65	1.74	2.59	0.11	17.6	19.7	1.65	0.08	100.28	50.1	1013.2	44.6	92.4
08JAP501	BE-02	08SMB05	CPX 14	13	54.8	0.09	1.64	0.92	2.38	0.02	17.9	20.7	1.35	0.08	99.8	49.4	949.0	45.5	93.0
08JAP501	BE-02	08SMB05	CPX 1	14	55.2	0.1	0.21	1.68	3.03	0.1	15.7	22.9	1.28	0.02	100.18		492.8	51.2	90.2
08JAP501	BE-02	08SMB05	CPX 2	15	54.9	0.19	1.33	3.53	2.64	0.06	15.9	19.7	2.11	0.12	100.5	45.1	909.2	47.1	91.5
08JAP501	BE-02	08SMB05	CPX 3	16	52.4	0.19	2.74	1.41	4.7	0.2	19	19.3	0.26	0.02	100.17	35.8	1294.1	42.1	87.8
08JAP501	BE-02	08SMB05	CPX 4	17	54.2	0.14	1.35	2.52	2.26	0.12	17.4	20.4	1.47	0	99.82	43.4	1015.6	45.7	93.2
08JAP501	BE-02	08SMB05	CPX 5	18	54.6	0.06	1.32	2.24	2.38	0.11	17.8	20.3	1.33	0.01	100.16	44.5	1043.7	45.1	93.0
08JAP501	BE-02	08SMB05	CPX 6	19	54.4	0.12	2.45	2.23	2.34	0.09	16.8	19.3	2.36	0.03	100.16	41.3	904.5	45.3	92.7
08JAP501	BE-02	08SMB05	CPX 7	20	54.6	0.22	1.7	2.68	2.3	0.08	16.6	19.6	2.04	0.05	99.83	44.8	942.3	45.9	92.8
08JAP501	BE-02	08SMB05	CPX 8	21	54.9	0.13	2.41	2.29	2.4	0.15	16.4	19.2	2.22	0.06	100.14	41.6	966.6	45.7	92.4
08JAP501	BE-02	08SMB05	CPX 9	22	54.7	0.21	1.7	1.49	2.76	0.13	17.6	19.8	1.53	0.12	100.01	49.7	1042.9	44.7	91.9
08JAP501	BE-02	08SMB05	CPX 10	23	54.3	0.16	0.85	2.7	2.06	0.08	17.4	21.2	1.12	0.01	99.81	42.7	981.4	46.6	93.8
08JAP501	BE-02	08SMB05	CPX 11	24	54.6	0.17	2.46	2.25	2.32	0.1	16.5	19.2	2.39	0.03	100.05	41.8	916.5	45.6	92.7
08JAP501	BE-02	08SMB05	CPX 12	25	54.2	0.21	1.82	1.75	2.31	0.09	17	20.5	1.77	0.02	99.72	42.5	879.5	46.5	92.9
08JAP501	BE-02	08SMB05	CPX 13	26	55	0.16	2.44	2.36	2.38	0.07	16.4	19.2	2.49	0.03	100.44	42.8	908.5	45.7	92.5
08JAP501	BE-02	08SMB05	CPX 15	27	54.8	0.02	1.09	1.66	2.26	0.09	17.8	21.2	1.15	0.06	100.22	47.4	943.2	46.1	93.4
08JAP501	BE-02	08SMB05	CPX 16	28	54.6	0.19	1.83	1.78	2.27	0.15	16.9	20.5	1.76	0.02	99.99	42.2	870.1	46.7	93.0
08JAP501	BE-02	08SMB05	CPX 1	29	54.7	0.17	0.88	1.61	2.4	0.13	17.7	21.4	1.16	0.04	100.16	51.4	902.1	46.6	92.9
08JAP501	BE-02	08SMB05	CPX 2	30	55.2	0.13	1.65	3.91	2.45	0.12	15.8	18.3	2.72	0.05	100.25	48.1	916.5	45.4	92.0
08JAP501	BE-02	08SMB05	CPX 3	31	55.2	0.11	1.67	4.31	2.38	0.08	15.7	18	2.74	0.04	100.19	45.2	944.8	45.3	92.1
08JAP501	BE-02	08SMB05	CPX 4	32	54.6	0.04	1.17	1.95	2.18	0.12	17.2	21.3	1.53	0.04	100.09	47.5	811.3	47.1	93.4
08JAP501	BE-02	08SMB05	CPX 5	33	54.8	0.11	1.65	4.2	2.23	0.15	15.6	18.4	2.68	0.04	99.82	44.9	957.9	45.9	92.6
08JAP501	BE-02	08SMB05	CPX 1	34	55.5	0.18	1.75	3.91	2.07	0.04	15.4	18.5	2.59	0.07	100.05	45.2	966.7	46.3	93.0
08JAP501	BE-02	08SMB05	CPX 2	35	55.2	0.03	0.82	1.18	2.12	0.03	18	22.3	0.81	0.05	100.43	49.2	954.6	47.1	93.8
08JAP501	BE-02	08SMB05	CPX 3	36	55.7	0.06	1.18	1.51	2.05	0.08	17.2	21.3	1.37	0.05	100.53	52.6	947.3	47.0	93.7
08JAP501	BE-02	08SMB05	CPX 4	37	54.5	0.14	1.8	4.25	2.15	0.12	15.9	18.2	2.6	0.1	99.71	43.1	973.8	45.2	92.9
08JAP501	BE-02	08SMB05	CPX 5	38	55.4	0.11	1.67	2.39	2.56	0.08	17	19	1.87	0.09	100.16	49.1	1061.8	44.6	92.2
08JAP501	BE-02	08SMB05	CPX 6	39	55	0.11	1.81	1.85	2.44	0.05	17.2	19.8	1.69	0.06	99.99	46.0	1016.6	45.3	92.6
08JAP501	BE-02	08SMB05	CPX 7	40	55	0.1	1.04	1.38	2.74	0.16	18.4	20	1.09	0.09	100.01	56.3	1123.8	43.9	92.3
08JAP501	BE-02	08SMB05	CPX 8	41	55.5	0.09	1.72	1.5	2.26	0.08	17.1	20.3	1.6	0.02	100.08	47.2	1002.5	46.1	93.1
08JAP501	BE-02	08SMB05	CPX 9	42	55.6	0.17	1.75	1.9	2.19	0.06	16.7	19.8	1.74	0.03	99.95	47.1	1023.9	46.0	93.1
08JAP501	BE-02	08SMB05	CPX 10	43	55	0.24	1.82	1.69	2.61	0.04	16.6	19.9	1.83	0.06	99.74	48.3	959.3	46.3	91.9
08JAP501	BE-02	08SMB05	CPX 11	44	54.8	0.11	1.18	1.43	2.22	0.17	17.6	21.3	1.07	0.1	99.94	47.1	979.1	46.5	93.4
08JAP501	BE-02	08SMB05	CPX 12	45	55.1	0.28	1.81	1.9	2.52	0.07	16.7	20.1	1.91	0.02	100.27	46.4	932.9	46.4	92.2
08JAP501	BE-02	08SMB05	CPX 13	46	54.8	0.13	1.78	3.95	2.65	0.13	16.1	18.3	2.43	0.06	100.45	43.2	1008.4	45.0	91.6
08JAP501	BE-02	08SMB05	CPX 14	47	55.5	0.1	1.59	1.67	2.13	0.05	17.2	20.6	1.56	0.02	100.35	46.2	944.1	46.3	93.5
08JAP501	BE-02	08SMB05	CPX 15	48	54.9	0.07	1.22	1.85	2.36	0.14	17.5	20.9	1.16	0.05	100.05	44.9	986.5	46.2	93.0
08JAP501	BE-02	08SMB05	CPX 16	49	55.5	0.16	1.5	4.15	2.39	0.1	16	18.3	1.82	0.09	99.96	42.0	1095.5	45.1	92.2
08JAP501	BE-02	08SMB05	CPX 17	50	54.9	0.23	1.37	2.45	2.26	0	16.6	20.5	1.45	0.03	99.78	42.8	952.4	46.9	92.9
08JAP501	BE-02	08SMB05	CPX 18	51	55.5	0.11	1.29	1.17	3.52	0.1	19.4	18.4	0.81	0.07	100.38	50.7	1229.7	40.6	90.7
08JAP501	BE-02	08SMB05	CPX 19	52	55.2	0	0.75	1.3	2.09	0.04	18.1	22.3	0.67	0.02	100.47	46.8	953.6	46.9	93.9
08JAP501	BE-02	08SMB05	CPX 20	53	54.5	0.14	0.69	2.6	2.43	0.13	18.1	21	0.81	0.01	100.46	45.3	1116.9	45.5	93.0
08JAP501	BE-02	08SMB05	CPX 21	54	54.8	0.22	1.53	0.66	3.32	0.09	18.1	20.1	0.98	0.06	99.8	50.0	1137.1	44.5	90.6
08JAP501	BE-02	08SMB05	CPX 22	55	54.7	0.05	1.19	1.81	2.28	0.05	17.8	20.8	0.93	0.07	99.65	45.4	1093.5	45.7	93.3
08JAP501	BE-02	08SMB05	CPX 23	56	54.9	0.15	1.11	1.68	2.97	0.08	17.7	20.4	0.89	0.09	100.01	48.2	1135.9	45.3	91.4
08JAP501	BE-02	08SMB05	CPX 24	57	55.4	0.19	1.73	1.83	2.68	0.02	17.5	19.1	1.44	0.04	99.88	47.7	1158.9	44.0	92.1
08JAP501	BE-02	08SMB05	CPX 25	58	55.3	0.19	1.69	2.34	2.75	0.01	17.2	18.8	1.42	0.08	99.7	46.9	1201.8	44.0	91.8
08JAP501	BE-02	08SMB05	CPX 26	59	55	0.21	1.68	2.05	2.78	0.07	17.2	19.3	1.37	0.09	99.77	45.0	1115.6	44.7	91.7
08JAP501	BE-02	08SMB05	CPX 27	60	54.7	0.1	1.33	1.11	2.57	0.08	17.8	21.3	0.95	0.09	99.97	45.3	1005.1	46.3	92.5
08JAP501	BE-02	08SMB05	CPX 28	61	55.1	0.21	1.27	1.26	2.25	0.04	17.5	21.3	1	0.04	99.97	45.6	1012.1	46.7	93.3
08JAP501	BE-02	08SMB05	CPX 29	62	54.6	0.09	1.36	1.15	2.37	0.03	17.8	21.5	0.97	0.1	99.9	44.0	980.3	46.5	93.0
08JAP501	BE-02	08SMB05	CPX 30	63	55.3	0.26	1.48	1.97	2.23	0.11	17	20.3	1.18	0.04	99.87	43.6	1081.3	46.2	93.1
08JAP701	BE-02	08SMB07	CPX 6	66	54.6	0	0.76	0.95	2.44	0.04	18.1	22	0.8	0.06	99.75	53.9	947.5	46.6	93.0
08JAP701	BE-02	08SMB07	CPX 7	67	54.7	0.1	1.65	1.33	2.25	0.07	17.5	21	1.47	0.04	100.08	44.8	926.1	46.3	93.3
08JAP601	BE-03	08SMB06	CPX 1	64	55.2	0.26	1.79	1.6	2.26	0.11	17.1	20.3	1.75	0.03	100.44	46.8	948.4	46.1	93.1
08JAP601	BE-03	08SMB06	CPX 2	65	55.3	0.14	1.81	1.58	1.93	0.06	17	21	1.65	0.04	100.48	42.5	892.9	47.0	94.0
				Min	**52.4**	**0**	**0.21**	**0.66**	**1.93**	**0**	**15.4**	**18**	**0.26**	**0**	**99.62**	**35.8**	**492.8**	**40.6**	**87.8**
				Max	**55.7**	**0.28**	**2.74**	**4.31**	**4.7**	**0.2**	**19.4**	**22.9**	**2.74**	**0.12**	**100.53**	**61.9**	**1294.1**	**51.2**	**94.0**
				Avg	**54.9**	**0.14**	**1.50**	**2.04**	**2.46**	**0.09**	**17.2**	**20.2**	**1.54**	**0.05**	**100.09**	**46.4**	**990.9**	**45.7**	**92.6**

Table 4 - Electron microprobe geochemical results of selected peridotitic garnets from the Smoky the Bear Property kimberlites.

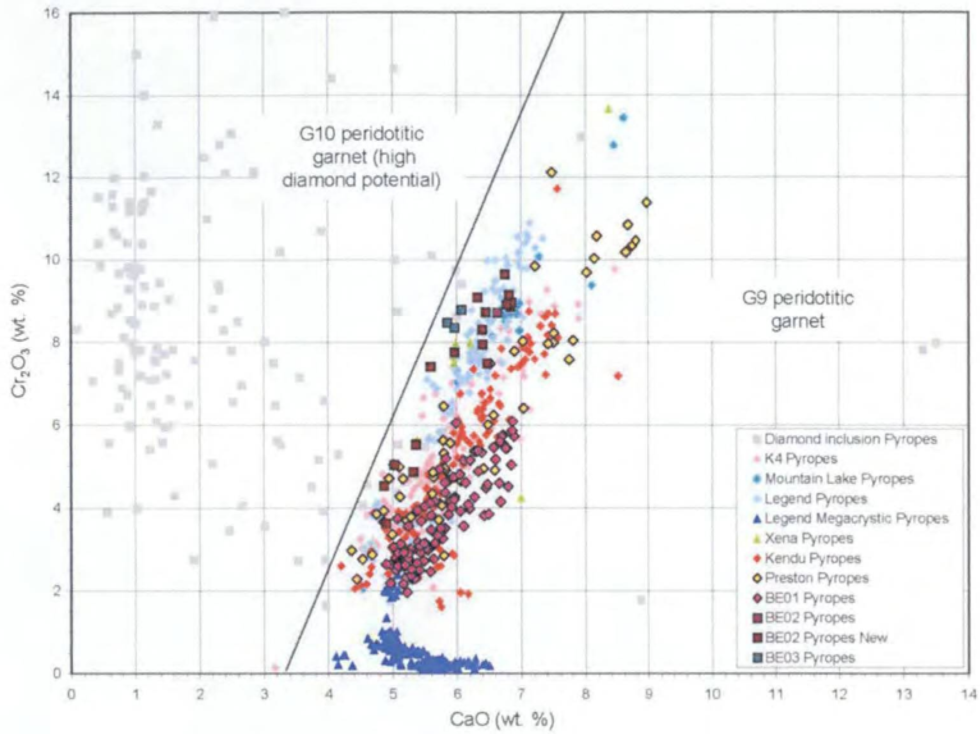
Sample	Kimberlite	Drillhole	Analysis	Grain#	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MgO	MnO	CaO	Total	Species	T_{Mn} (°C)	Ca-intercept
08TGP001	BE-01	08SMB002	3	1	41.34	0.00	21.02	4.61	7.8	18.51	0.49	6.13	99.9	G9	907.7	5.0
08TGP001	BE-01	08SMB002	4	3	41.18	0.00	20.91	4.52	8.52	17.96	0.55	6.8	100.44	G12	850.5	5.7
08TGP001	BE-01	08SMB002	5	4	41.87	0.55	20.47	3.56	7.08	20.85	0.22	5.24	99.84	G1	1552.1	4.4
08TGP001	BE-01	08SMB002	6	5	41.45	0.00	22.34	2.63	7.95	20.09	0.34	4.97	99.77	G9	1134.4	4.3
08TGP001	BE-01	08SMB002	7	6	41.31	0.00	19.98	5.55	7.65	18.36	0.43	6.72	100	G9	979.8	5.3
08TGP001	BE-01	08SMB002	8	7	41.6	0.00	21.65	4.15	7.36	19.76	0.4	5.65	100.57	G9	1023.7	4.6
08TGP001	BE-01	08SMB002	9	8	41.57	0.00	21.82	3.51	7.63	19.3	0.57	5.81	100.21	G9	833.9	4.9
08TGP001	BE-01	08SMB002	10	9	41.69	0.03	22.61	2.28	9.25	18.79	0.42	5.3	100.37	G9	993.7	4.7
08TGP001	BE-01	08SMB002	11	10	41.59	0.00	21.97	3.26	7.77	19.63	0.44	5.77	100.43	G9	966.5	5.0
08TGP001	BE-01	08SMB002	12	11	41.48	0.00	22.31	2.86	7.93	20.41	0.37	5.13	100.49	G9	1074.5	4.4
08TGP001	BE-01	08SMB002	13	12	41.7	0.00	21.85	3.39	7.72	19.55	0.53	5.74	100.48	G9	868.2	4.9
08TGP001	BE-01	08SMB002	14	13	41.74	0.00	22.39	2.92	8.2	19.21	0.54	5.43	100.43	G9	859.2	4.7
08TGP001	BE-01	08SMB002	15	14	41.73	0.43	19.75	5.19	6.7	20.69	0.17	5.82	100.48	G11	1941.4	4.5
08TGP001	BE-01	08SMB002	16	15	41.94	0.00	22.33	2.59	7.66	20.41	0.32	5.18	100.43	G9	1180.7	4.5
08TGP001	BE-01	08SMB002	17	16	41.29	0.00	21.38	4.17	8.15	18.85	0.5	5.89	100.23	G9	897.2	4.8
08TGP001	BE-01	08SMB002	18	17	42.11	0.00	22.43	2.64	7.62	20.31	0.37	4.9	100.38	G9	1074.5	4.2
08TGP001	BE-01	08SMB002	19	18	41.55	0.00	22.04	3.38	8.31	18.7	0.55	5.67	100.2	G9	850.5	4.8
08TGP001	BE-01	08SMB002	20	19	41.66	0.00	21.51	4.12	7.28	19.61	0.36	5.58	100.12	G9	1093.4	4.6
08TGP001	BE-01	08SMB002	21	20	40.62	0.00	20	6.09	7.7	18.27	0.36	6.87	99.91	G9	1093.4	5.3
08TGP001	BE-01	08SMB002	22	21	41.68	0.00	22.53	2.89	7.72	20.26	0.3	5.17	100.55	G9	1233.5	4.4
08TGP001	BE-01	08SMB002	23	22	41.48	0.02	22.6	2.31	8.95	18.99	0.4	5.2	99.95	G9	1023.7	4.6
08TGP001	BE-01	08SMB002	24	23	41.2	0.06	22.62	2.3	9.1	18.97	0.44	5.34	100.03	G9	966.5	4.8
08TGP001	BE-01	08SMB002	25	24	41.65	0.00	22.37	3.05	7.6	20.27	0.29	5.01	100.24	G9	1262.8	4.2
08TGP001	BE-01	08SMB002	26	25	40.77	0.00	20.6	5.34	7.67	18.72	0.48	6.38	99.96	G9	918.5	5.0
08TGP001	BE-01	08SMB002	27	26	41.31	0.00	21.03	4.26	7.94	18.83	0.54	6.27	100.18	G9	859.2	5.2
08TGP001	BE-01	08SMB002	28	27	41.16	0.00	21.69	3.84	8.44	18.85	0.57	5.86	100.41	G9	833.9	4.9
08TGP001	BE-01	08SMB002	29	28	41.68	0.00	22.27	2.78	7.55	20.06	0.4	5.24	99.98	G9	1023.7	4.5
08TGP001	BE-01	08SMB002	30	29	41.38	0.00	22.35	3.47	7.58	19.71	0.46	5.59	100.54	G9	941.5	4.7
08TGP001	BE-01	08SMB002	31	30	41.75	0.00	22.67	2.5	8.1	19.47	0.43	5.41	100.33	G9	979.8	4.8
08TGP001	BE-01	08SMB002	32	31	41.5	0.00	22.23	3.17	8.17	19.3	0.52	5.39	100.28	G9	877.5	4.6
08TGP001	BE-01	08SMB002	33	32	41.54	0.01	22.48	2.98	7.75	19.62	0.54	5.54	100.46	G9	859.2	4.8
08TGP001	BE-01	08SMB002	34	33	41.22	0.00	22.11	3.33	8.29	19.11	0.53	5.69	100.28	G9	868.2	4.9
08TGP001	BE-01	08SMB002	35	34	41.59	0.00	22.53	2.67	7.87	20.44	0.29	5.15	100.54	G9	1262.8	4.5
08TGP001	BE-01	08SMB002	36	36	41.1	0.00	21.46	4.27	7.73	19.12	0.51	5.96	100.15	G9	887.2	4.9
08TGP001	BE-01	08SMB002	37	37	41.36	0.00	21.48	3.82	7.87	18.42	0.52	6.42	99.89	G12	877.5	5.5
08TGP001	BE-01	08SMB002	38	38	41.34	0.00	22.54	2.46	8.88	19.01	0.49	5.58	100.3	G9	907.7	5.0
08TGP001	BE-01	08SMB002	39	39	41.59	0.00	22.35	2.9	7.53	20.34	0.31	5.1	100.12	G9	1206.2	4.4
08TGP001	BE-01	08SMB002	40	40	41.76	0.00	21.53	3.92	8.37	18.27	0.63	6.05	100.53	G9	789.9	5.1
08TGP001	BE-01	08SMB002	41	41	41.97	0.00	22.53	2.79	7.82	20.03	0.33	5.04	100.51	G9	1156.9	4.3
08TGP001	BE-01	08SMB002	42	42	41.59	0.00	22.09	3.56	8.04	18.58	0.5	6.1	100.46	G9	897.2	5.2
08TGP001	BE-01	08SMB002	43	43	41.17	0.00	20.09	5.44	7.28	18.48	0.47	6.78	99.71	G12	929.7	5.4
08TGP001	BE-01	08SMB002	44	44	41.57	0.03	22.95	2.18	9.3	18.79	0.5	4.96	100.28	G9	897.2	4.4
08TGP001	BE-01	08SMB002	45	45	41.27	0.00	20.68	5.17	7.94	17.99	0.42	6.6	100.07	G9	993.7	5.3
08TGP001	BE-01	08SMB002	46	46	41.25	0.00	20.51	5.04	7.94	17.85	0.49	6.85	99.93	G12	907.7	5.6
08TGP001	BE-01	08SMB002	47	47	41.48	0.00	21.62	3.98	7.86	18.88	0.51	6.19	100.52	G9	887.2	5.2
08TGP001	BE-01	08SMB002	48	48	41.16	0.00	20.86	5.14	7.54	18.9	0.49	6.1	100.19	G9	907.7	4.8
08TGP001	BE-01	08SMB002	49	49	42.25	0.00	22.47	2.59	7.57	19.94	0.31	5.09	100.22	G9	1206.2	4.4
08TGP001	BE-01	08SMB002	50	50	41.77	0.00	22.05	3.12	8.41	18.71	0.62	5.64	100.32	G9	796.7	4.9
08TGP001	BE-01	08SMB002	51	51	41.28	0.00	20.32	5.73	7.2	18.39	0.59	6.7	100.21	G9	818.3	5.3
08TGP001	BE-01	08SMB002	52	52	41.67	0.00	22.22	3.74	7.36	19.96	0.38	5.07	100.4	G9	1056.7	4.1
08TGP001	BE-01	08SMB002	53	53	41.51	0.00	23.03	2.16	9.22	18.55	0.6	5.16	100.23	G9	810.9	4.6
08TGP001	BE-01	08SMB002	54	54	41.72	0.00	22.51	3.03	7.64	19.38	0.54	5.51	100.33	G9	859.2	4.8
08TGP001	BE-01	08SMB002	55	55	41.36	0.00	20.03	5.73	7.67	18.17	0.47	6.89	100.32	G12	929.7	5.5
08TGP001	BE-01	08SMB002	56	56	41.41	0.00	20.96	4.6	8.67	17.45	0.57	6.66	100.32	G12	833.9	5.5
08TGP001	BE-01	08SMB002	57	57	41.55	0.00	21.33	4.03	7.73	19.5	0.32	5.49	99.95	G9	1180.7	4.5
08TGP001	BE-01	08SMB002	58	58	41.8	0.00	22.56	3.01	7.82	19.45	0.56	5.27	100.47	G9	842.0	4.5
08TGP001	BE-01	08SMB002	59	59	41.89	0.00	22.54	3.13	7.44	19.75	0.57	5.12	100.44	G9	833.9	4.3
08TGP001	BE-01	08SMB002	60	60	41.3	0.00	19.96	5.87	7.6	18.04	0.45	6.86	100.08	G9	953.7	5.4
08TGP001	BE-01	08SMB002	61	61	41.59	0.00	21.61	3.68	7.72	19.18	0.56	5.44	99.78	G9	842.0	4.5
08TGP001	BE-01	08SMB002	62	62	41.35	0.00	20.86	5.15	7.93	18.46	0.55	6.2	100.5	G9	850.5	4.9
08TGP001	BE-01	08SMB002	63	63	41.34	0.00	20.76	4.88	7.69	18.66	0.5	6.33	100.16	G9	897.2	5.1
08TGP001	BE-01	08SMB002	64	64	41.65	0.01	21	4.66	7.91	18.79	0.45	5.87	100.34	G9	953.7	4.7

Table 4 - Electron microprobe geochemical results of selected peridotitic garnets from the Smoky the Bear Property kimberlites.

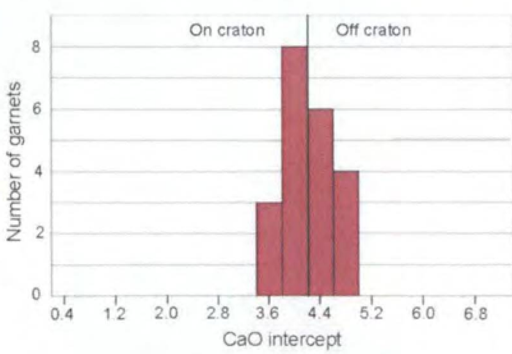
08TGP001	BE-01	08SMB002	65	65	41.69	0.00	22.38	2.91	7.73	19.9	0.37	5.08	100.06	G9	1074.5	4.4
08TGP001	BE-01	08SMB002	66	66	42.24	0.00	22.98	1.96	8.12	19.23	0.54	5.22	100.29	G9	859.2	4.7
08TGP001	BE-01	08SMB002	67	67	41.24	0.00	21.18	4.48	7.77	18.67	0.47	6.45	100.26	G9	929.7	5.3
08TGP001	BE-01	08SMB002	68	68	41.34	0.00	20.38	5.6	7.66	18.06	0.42	6.67	100.13	G9	993.7	5.3
08TGP001	BE-01	08SMB002	69	69	41.33	0.00	20.41	5.46	7.66	18.43	0.47	6.57	100.33	G9	929.7	5.2
08TGP001	BE-01	08SMB002	70	70	41.51	0.00	21.12	4.74	8.03	18.65	0.37	5.94	100.36	G9	1074.5	4.8
08TGP001	BE-01	08SMB002	71	71	41.35	0.00	21.43	4.08	7.78	18.41	0.54	6.17	99.76	G9	859.2	5.2
08TGP001	BE-01	08SMB002	72	72	41.7	0.00	21.33	3.82	7.64	19.41	0.4	5.59	99.89	G9	1023.7	4.6
08TGP001	BE-01	08SMB002	73	73	41.31	0.00	20.71	4.61	7.94	18.95	0.44	5.81	99.77	G9	966.5	4.7
08TGP001	BE-01	08SMB002	74	74	41.54	0.00	22.86	2.36	8.34	19.09	0.45	5.28	99.92	G9	953.7	4.7
08TGP001	BE-01	08SMB002	75	77	41.87	0.00	22.5	2.72	7.94	19.49	0.55	5.48	100.55	G9	850.5	4.8
08TGP001	BE-01	08SMB002	76	78	41.41	0.00	21.45	3.85	8.78	18.08	0.44	6.49	100.5	G12	966.5	5.5
08TGP001	BE-01	08SMB002	77	79	41.62	0.00	21.19	4.15	8.57	17.57	0.59	6.68	100.37	G12	818.3	5.6
08TGP001	BE-01	08SMB002	78	80	42.22	0.00	22.1	2.77	7.67	19.47	0.46	5.63	100.32	G9	941.5	4.9
08TGP001	BE-01	08SMB002	79	81	42.14	0.08	19.16	6.05	6.57	20.16	0.33	5.98	100.47	G9	1156.9	4.5
08TGP001	BE-01	08SMB002	80	82	41.85	0.01	22.39	2.67	7.73	19.88	0.36	5.08	99.97	G9	1093.4	4.4
08TGP001	BE-01	08SMB002	81	83	40.99	0.09	20.2	5.38	7.96	18.55	0.36	6.32	99.85	G9	1093.4	5.0
08TGP001	BE-01	08SMB002	82	84	41.94	0.00	22.77	2.49	7.64	20.09	0.38	5.05	100.36	G9	1056.7	4.4
08TGP001	BE-01	08SMB002	83	85	41.61	0.00	21.29	4.37	7.55	19.02	0.47	5.81	100.12	G9	929.7	4.7
08TGP001	BE-01	08SMB002	84	86	41.95	0.00	22	3.15	8.33	18.92	0.49	5.65	100.49	G9	907.7	4.9
08TGP001	BE-01	08SMB002	85	87	41.41	0.02	20.98	4.81	7.97	18.87	0.44	6.04	100.54	G9	966.5	4.8
08TGP001	BE-01	08SMB002	86	88	41.34	0.01	21.15	4.57	7.68	18.65	0.48	6.47	100.35	G9	918.5	5.3
08TGP001	BE-01	08SMB002	87	89	41.88	0.00	21.45	4.2	7.57	19.14	0.35	5.95	100.54	G9	1113.3	4.9
08TGP001	BE-01	08SMB002	88	90	41.57	0.00	22.61	2.9	8.43	19.25	0.46	5.25	100.47	G9	941.5	4.5
08TGP001	BE-01	08SMB002	89	91	41.36	0.00	22.31	3.08	7.81	19.27	0.53	5.42	99.78	G9	868.2	4.7
08TGP001	BE-01	08SMB002	90	93	41.81	0.00	22.3	3.15	8.26	19.06	0.49	5.5	100.57	G9	907.7	4.7
08TGP001	BE-01	08SMB002	91	94	41.77	0.00	22.38	2.92	7.9	19.67	0.51	5.17	100.32	G9	887.2	4.4
08TGP001	BE-01	08SMB002	92	95	41.42	0.00	21.89	3.51	7.76	19.4	0.47	5.74	100.19	G9	929.7	4.9
08TGP001	BE-01	08SMB002	93	97	41.77	0.00	21.67	4.02	7.25	18.84	0.45	5.91	99.91	G9	953.7	4.9
08TGP001	BE-01	08SMB002	94	98	41.4	0.01	21.03	4.94	7.29	19.77	0.33	5.73	100.5	G9	1156.9	4.5
08TGP001	BE-01	08SMB002	95	99	41.11	0.00	20.54	5.44	7.43	18.64	0.53	6.76	100.45	G0	868.2	5.4
08TGP001	BE-01	08SMB002	96	100	41.87	0.00	22.6	2.67	8.03	19.25	0.57	5.37	100.36	G9	833.9	4.7
08TGP001	BE-01	08SMB002	97	101	41.49	0.00	22.56	2.6	7.8	20	0.37	5.08	99.9	G9	1074.5	4.4
08TGP001	BE-01	08SMB002	98	102	41.7	0.00	22.04	3.14	8.15	19.25	0.57	5.48	100.33	G9	833.9	4.7
08TGP001	BE-01	08SMB002	99	103	41.49	0.00	21.21	3.94	7.54	20.01	0.54	5.38	100.11	G9	859.2	4.4
08TGP001	BE-01	08SMB002	100	104	41.71	0.00	22.67	2.62	7.59	19.86	0.26	5.19	99.9	G9	1365.5	4.5
08TGP001	BE-01	08SMB002	101	105	41.99	0.00	22.74	2.52	8.33	19.06	0.45	5.29	100.38	G9	953.7	4.7
				Min	**40.62**	**0**	**19.16**	**1.96**	**6.57**	**17.45**	**0.17**	**4.9**	**99.71**		**789.9**	**4.1**
				Max	**42.25**	**0.55**	**23.03**	**6.09**	**9.3**	**20.85**	**0.63**	**6.89**	**100.57**		**1941.4**	**5.7**
				Avg	**41.5487**	**0.01374**	**21.6737**	**3.74485**	**7.88778**	**19.1608**	**0.45485**	**5.75303**	**100.2374747**		**978.9**	**4.8**

Sample	Kimberlite	Drillhole	Analysis	Grain#	SiO_2	TiO_2	Al_2O_3	Cr_2O_3	FeO	MgO	MnO	CaO	Total	Species	T_{Mn} (°C)	Ca-intercept
08TGP002	BE-02	08SMB003	2	1	41.4	0.00	16.96	8.72	6.27	19.5	0.3	6.63	99.78	G9	1233.5	4.5
08JAP501	BE-02	08SMB05	1	PYR 1	41.11	0.10	17.97	7.95	6.85	19.52	0.26	6.4	100.16	G9	1365.5	4.4
08JAP501	BE-02	08SMB05	2	PYR 3	40.98	0.06	17.25	8.85	6.88	18.79	0.31	6.84	99.96	G9	1206.2	4.6
08JAP501	BE-02	08SMB05	3	PYR 4	41.42	0.09	18.1	7.76	6.54	19.68	0.35	5.96	99.9	G9	1113.3	4.0
08JAP501	BE-02	08SMB05	4	PYR 5	41.15	0.05	16.95	8.97	6.57	19.23	0.42	6.86	100.2	G9	993.7	4.6
08JAP501	BE-02	08SMB05	5	PYR 6	41.55	0.17	18.61	7.41	6.43	20.32	0.34	5.59	100.42	G9	1134.4	3.7
08JAP501	BE-02	08SMB05	6	PYR 7	41.41	0.07	17.86	7.49	6.83	19.65	0.41	6.47	100.19	G9	1008.3	4.6
08JAP501	BE-02	08SMB05	7	PYR 1	41.93	0.16	20.34	5.04	7.57	20.08	0.4	5.03	100.55	G9	1023.7	3.8
08JAP501	BE-02	08SMB05	8	PYR 2	41.63	0.06	21.47	3.62	7.53	20.4	0.29	4.9	99.9	G9	1262.8	4.0
08JAP501	BE-02	08SMB05	9	PYR 1	40.56	0.09	16.59	9.15	7.27	18.96	0.36	6.82	99.8	G9	1093.4	4.5
08JAP501	BE-02	08SMB05	10	PYR 2	40.84	0.49	17.25	8.73	7.19	18.94	0.39	6.45	100.28	G11	1039.8	4.3
08JAP501	BE-02	08SMB05	11	PYR 1	41.75	0.07	19.41	5.53	7.14	20.53	0.35	5.36	100.14	G9	1113.3	4.0
08JAP501	BE-02	08SMB05	12	PYR 1	40.88	0.30	20.31	4.87	6.91	21.55	0.34	5.32	100.48	G9	1134.4	4.1
08JAP701	BE-02	08SMB07	16	PYR 1	40.71	0.29	16.14	9.65	6.83	19.42	0.34	6.75	100.13	G9	1134.4	4.3
08JAP701	BE-02	08SMB07	17	PYR 2	41.18	0.34	16.73	8.31	6.45	20.07	0.28	6.39	99.75	G9	1294.4	4.3
08JAP701	BE-02	08SMB07	18	PYR 3	41.14	0.29	20.55	4.53	7.27	21.04	0.36	4.87	100.05	G9	1093.4	3.7
08JAP701	BE-02	08SMB07	19	PYR 4	41.27	0.32	16.56	9.09	6.35	20.29	0.33	6.32	100.53	G9	1156.9	4.0
08JAP701	BE-02	08SMB07	20	PYR 5	41.38	0.03	16.83	8.92	6.5	19.41	0.4	6.78	100.25	G9	1023.7	4.6
08JAP601	BE-03	08SMB06	13	PYR 1	41.16	0.27	17.33	8.48	6.55	20.6	0.32	5.85	100.56	G9	1180.7	3.7
08JAP601	BE-03	08SMB06	14	PYR 2	41.01	0.27	17.32	8.36	6.39	20.48	0.32	5.96	100.11	G9	1180.7	3.9
08JAP601	BE-03	08SMB06	15	PYR 3	41.25	0.27	16.95	8.79	6.37	20.62	0.28	6.07	100.6	G9	1294.4	3.9
				Min	40.56	0	16.14	3.62	6.27	18.79	0.26	4.87	99.75		993.7	3.7
				Max	41.93	0.49	21.47	9.65	7.57	21.55	0.42	6.86	100.6		1365.5	4.6
				Avg	41.2243	0.18048	17.9752	7.62952	6.79476	19.9562	0.34048	6.07714	100.1780952		1146.7	4.2

A) CaO versus Cr_2O_3 for peridotitic garnet from the BE bodies in comparison to other Alberta ultramafic rocks.



B) CaO intercept frequency plot for peridotitic garnet from BE-02 and BE-03.



C) CaO intercept frequency plot for peridotitic garnet from BE-01.

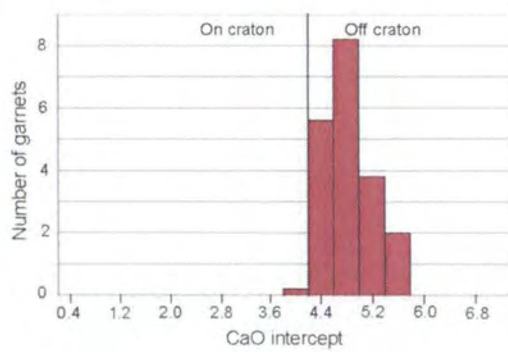
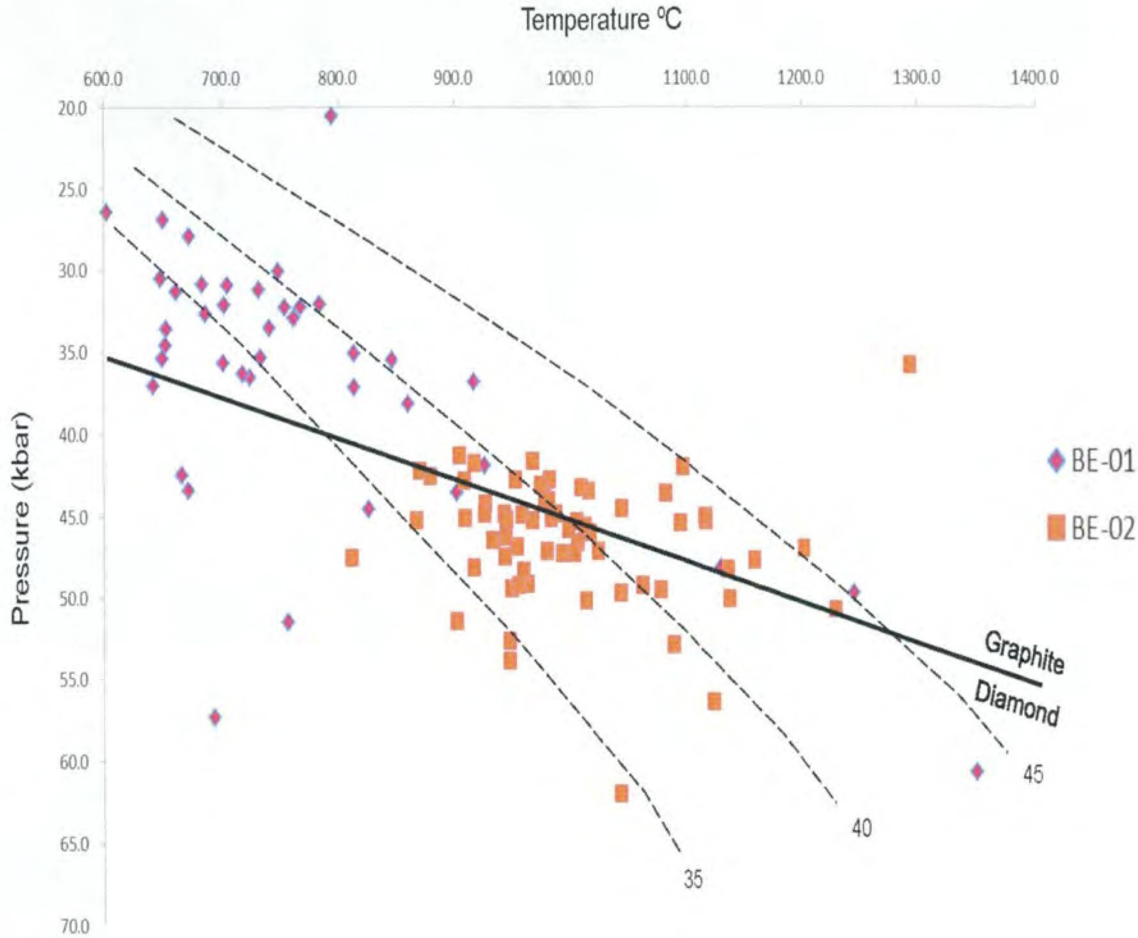


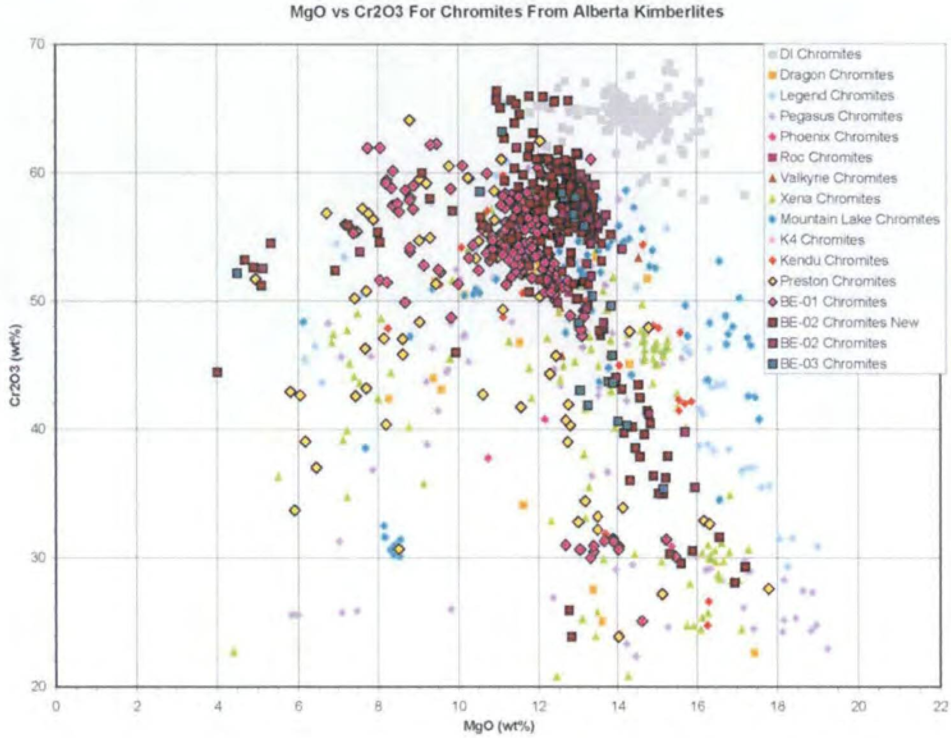
Figure 7 - CaO versus Cr_2O_3 and CaO intercept frequency plots for peridotitic garnet



Pressure-temperature diagram for clinopyroxene based on the thermobarometer of Nimis and Taylor (2000). Geotherms (in mW/m2, dashed lines) from Pollack and Chapman (1977). Diamond-graphite equilibrium (solid dark line) from Kennedy and Kennedy (1976).

Figure 8 - Pressure-temperature diagram for clinopyroxene analysis

A)



B)

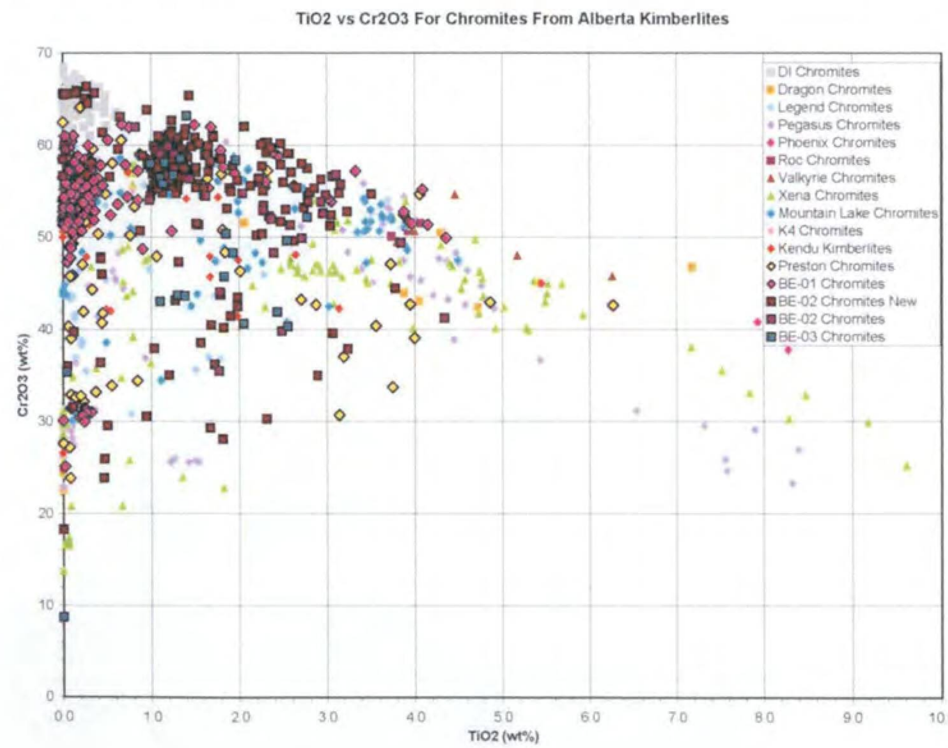


Figure 9 - MgO and TiO_2 versus Cr_2O_3 for chromium spinel

Spring 2011 Ground Geophysics Program

Between March and April of 2011, APEX Geoscience Ltd. ("APEX") conducted a ground geophysical exploration program that consisted of a ground magnetometer survey over the known BM-03 and BM-16 kimberlites. These two kimberlites were originally discovered by the BHHJV, but were tested only with a single drillhole into each intrustion. The Grizzly spring program followed incentive put forth by the suspicion that the narrow intersected zone of the BM-16 kimberlite (0.8 m) might have intersected the edge of the intrusion rather than the main body, and that the possibility that the kimberlite may in fact be diamondiferous exists despite Ashton's previously null results (B. Clements, 2002). A total of 290 man hours of surveying was completed during this program, resulting in 14.8 line kilometres.

The survey grid was first planned with a Garmin®60Cx handheld GPS and was then gridded and surveyed by 2 or more people using GPS, compass and mobile walking magnetometers. The initial person would locate the end of each line using the GPS and then, using the GPS and compass, would break a trail in the snow along the grid lines. The person operating the magnetometer would then use the trail in the snow as a guide to ensure a straight and accurate line was followed. Grid lines were primarily oriented north-south and were spaced at 50 meters. A series of 9 lines oriented east-west and spaced at 50m perpendicular to the north-south grid provided a high resolution survey over the BM-16 kimberlite and allowed for internal consistency of the data to be evaluated. Data readings are collected by a GSM-19W walking magnetometer (GSM-19W) at a reading frequency of 2 seconds. The magnetometer operators are required to be void of any excess magnetically susceptible materials, such as keys, change or steel-toed boots, in order to minimize the noise levels in the magnetic field readings.

Total field magnetic data measured by the GSM-19 at the surface of the Earth is the vector sum of three sources: the Earth's main field generated by the dynamo action in the outer core, the external field generated in space in the magnetosphere, and the crustal field from remnant magnetization above the Curie depth. The Earth's main field accounts for 96-98% of the total field reading, while the external field and crustal field each account for 1-2% of the total field reading. The earth's magnetic field is not constant due to secular variation of the main field and diurnal variation of the external field; therefore correction of total field data is necessary to remove effects of temporal fluctuations in the earth's magnetic field. During collection of ground magnetic data, a stationary base magnetometer was set up at a location off the survey grid to allow diurnal correction of survey data. Both the mobile and base station magnetometers were time synchronized to UTC and set to collect survey readings every 3 seconds. This ensured that the time of each mobile magnetometer reading corresponds with the collection of a reading by the base station magnetometer. At the end of each day, the base station data was examined for high frequency and high amplitude variations which could compromise the survey data. If the diurnal variation of the magnetic field was smooth, it was assumed the diurnal variation of the magnetic field was uniform over the survey grid and base station. The base station data was then used to correct the mobile magnetometer data by removing diurnal fluctuations in the following manner:

$$B_{t1} - D = C_{t1}$$
$$M_t - C_{t1} = M_{t1\ corrected}$$

Where: B_{t1} = base magnetometer reading "B" at time t_1
D = base magnetometer datum = 58,000 nT
C_{t1} = Diurnal Correction "C" at time t_1
M_t = mobile magnetometer reading "M" at time t_1
$M_{t1\ corrected}$ = corrected mobile magnetometer reading

When a single survey is completed over multiple days, or multiple walking magnetometers are used, a second manipulation of the survey data, termed levelling, is required before merging the data files. Levelling eliminates the different ambient magnetic fields of operators, which may vary daily and from one operator to the next. To facilitate levelling, field measurements are taken on an overlap line of at least 400 metres in length each day by all magnetometer operators. After diurnal corrections are applied, a station's total magnetic field value differs from one data set to the next due to the different ambient magnetic fields of the operators. The differences between overlap station readings yield similar values, and the average of these differences produces a correction factor that can be applied to one of the data sets. It is important to realize that the absolute value of each magnetic reading is less important than the magnitude of the anomaly. In other words, the correction factor (be it positive or negative) can be subtracted from one data set or added to a second data set and in fact has no effect on the magnitude of the anomaly. In practice, the correction factor is many orders of magnitude less than a given magnetic reading.

An overview of the GSM-19 magnetometers used during the spring 2011 ground geophysical exploration is presented in Appendix 2c.

Ground Geophysical Grid and Anomaly Summaries

A summary of the grid outline completed on the Smoky the Bear Claim Blocks in the spring 2011 ground geophysical program is listed in Table 7 and shown on Figure 10. Raw and corrected ground magnetics geophysical data is provided in Appendix 2a. Gridded and contoured ground data are provided as maps in Appendix 2b.

Table 7: Smoky the Bear Ground Geophysical Grid Summary

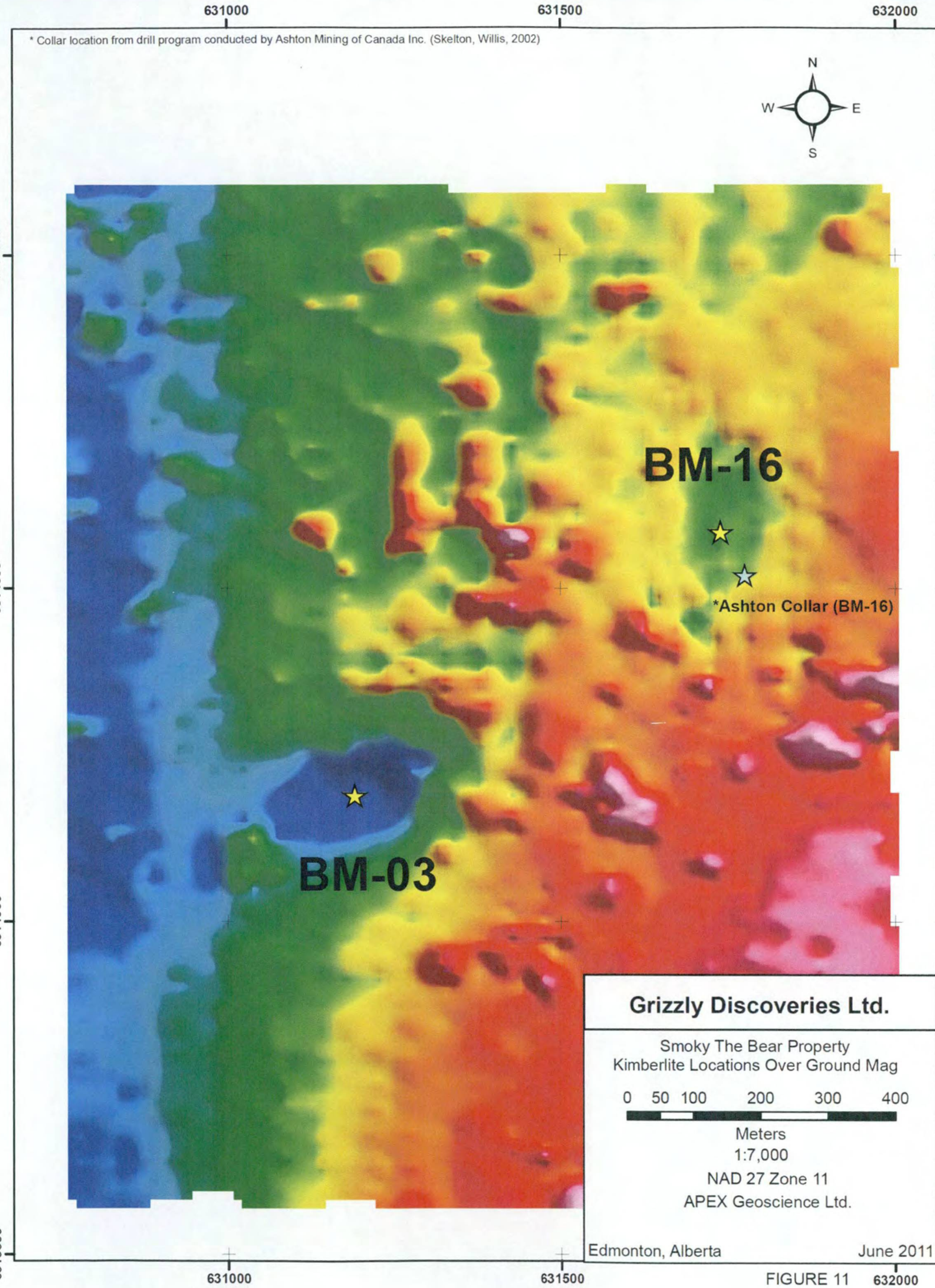
Target ID	Easting NAD27_zone11	Northing NAD27_zone 11	Total Line (km)	Grid Dimension (m)
BM-03	631219	6314208	14.8	1500 x 1500
BM-16	631489	6314612		

Target Area BM-03

The BM-03 kimberlite is represented in the ground magnetic data as an east-west orientated slightly elongated circular mag low region anomalous to its surrounding perimeter by approximately 35nT (Figure 11). The anomaly shows the kimberlite to be approximately 150 m x 250 m.

Target Area BM-16

The BM-16 kimberlite is represented in the ground magnetic data as a north-south orientated slightly elongated circular mag low region anomalous to its surrounding perimeter by approximately 15nT (Figure 11). It was proposed that the narrow zone of the BM-16 kimberlite intersected by Ashton (0.8 m of kimberlite) resulted from Ashton drilling the edge of the intrusion rather than the main body. The narrow kimberlite zone is possibly because Ashton's drill collar was based on the original airborne geophysical survey over the area, or on a ground magnetic survey that was erroneously orientated in the same north-trending direction as the BM-16 intrusion. To prevent a similar circumstance, a series of east-west orientated lines were surveyed over the BM-16 anomaly once located in the initial north-south orientated survey. This new data shows that the actual center of the BM-16 intrusion is located to the northwest of Ashton's original drill collar, thus confirming that they situated their BM-16 collar at the edge of the intrusion. The anomaly shows the kimberlite to be approximately 230 m x 160 m.



Grizzly Discoveries Ltd.

Smoky The Bear Property
Kimberlite Locations Over Ground Mag

APEX Geoscience Ltd.

Edmonton, Alberta

June 2011

FIGURE 11

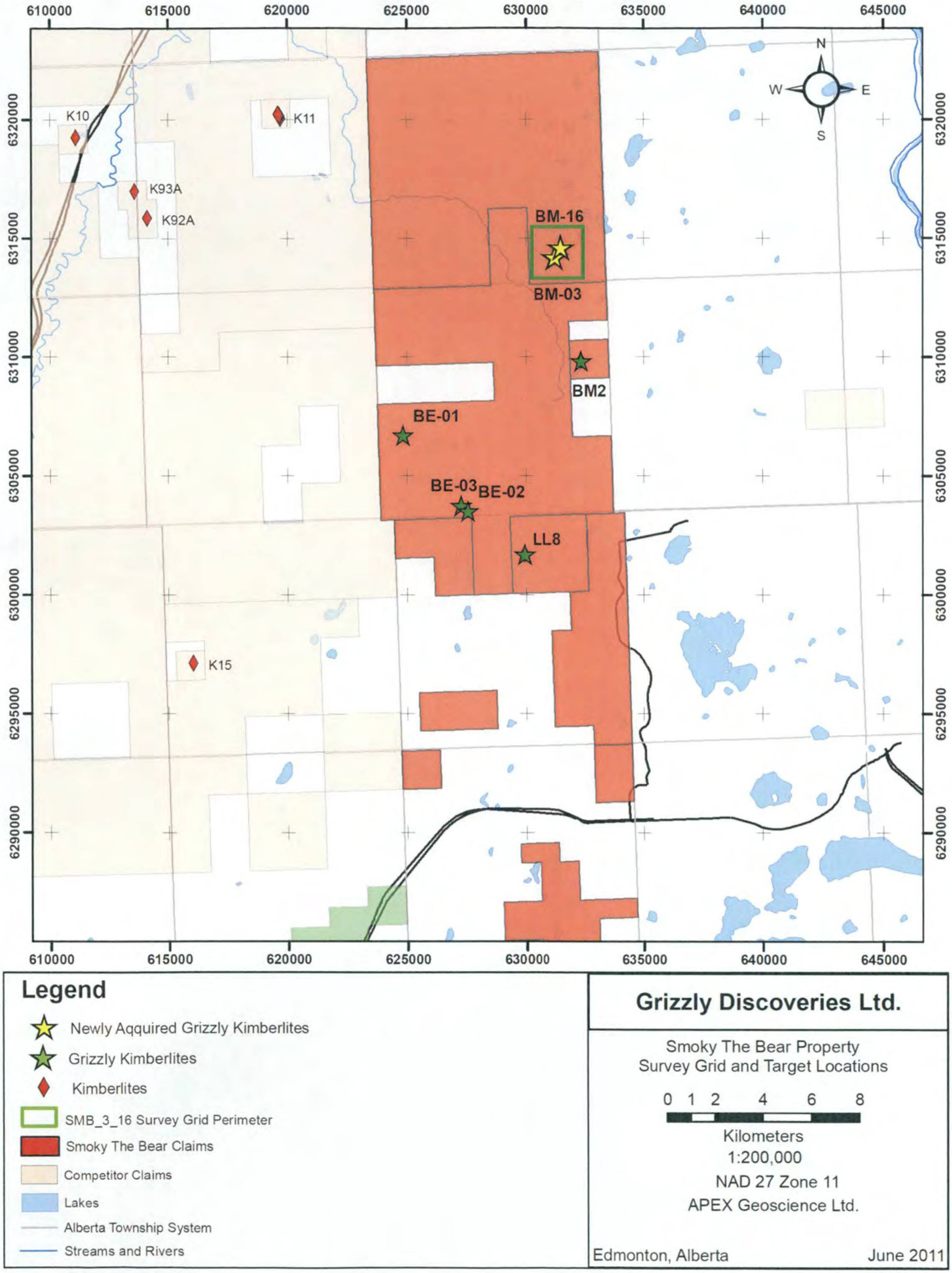

K10
K11
K93A
K92A
K15
BM-16
BM-03
BM2
BE-01
BE-03
BE-02
LL8
N
S
E
W
Legend
Newly Aqquired Grizzly Kimberlites
Grizzly Kimberlites
Kimberlites
SMB_3_16 Survey Grid Perimeter
Smoky The Bear Claims
Competitor Claims
Lakes
Alberta Township System
Streams and Rivers
Grizzly Discoveries Ltd.
Smoky The Bear Property
Survey Grid and Target Locations
0 1 2 4 6 8
Kilometers
1:200,000
NAD 27 Zone 11
APEX Geoscience Ltd.
Edmonton, Alberta
June 2011

FIGURE 10

ADJACENT PROPERTIES

Exploration that has been conducted by other companies adjacent to Grizzly's properties prior to 2007 is discussed in the History section.

The 2007 exploration program performed by the BHHJV (at that time Stornoway Diamond Corporation was the operator) consisted of a kimberlite sampling as well as 2,210 metres of "definition-style" diamond drilling from 23 holes on the K14-BH225-K91 kimberlite corridor and the K6 kimberlite. An aggregate of 480 tonnes of kimberlite was recovered from K14 and K6 (Diamondex Resources Ltd. Press November 29, 2007). The bulk sample was processed at the Shore Gold processing facility through Dense Media Separation, X-ray Flowsort and grease table recovery. The concentrates were sorted at an independent laboratory for diamond recovery. The samples from K-14 returned an average grade of 8.11 carats per hundred tons (cpht) and the sample from K6 returned a grade of 7.02cpht. The results are presented in Table 8 (Diamondex Resources Ltd. Press October 15, 2008).

Table 8: K14 and K6 Bulk Sample Diamond Results *.

Batch	Dry Metric Tonnes	Total Stones	Total Carats	CPHT	Largest Stone (ct)
BHH-K14-Pit 1	43.56	45	3.20885	7.37	0.9
BHH-K14-Pit 2	45.22	70	3.9746	8.79	0.38
BHH-K14-Pit 3	48.22	24	3.94695	8.18	0.71
BHH-K6-Pit 1	231.89	85	16.2853	7.02	1.07
	368.89	**224**	**27.416**		

*Diamondex Resources Ltd. Press October 15, 2008

The aim of the 2008 exploration program for the BHHJV was to drill test the best kimberlite pipes (discovered to date) with sufficient density to allow for the identification of distinct kimberlite phases and key characteristics, which will permit the construction of more accurate geological models; the resulting models provide vital information to determine which pipes warrant bulk sampling during follow-up campaigns and direction as to how the varying lithologies should be tested for viable resource estimates. The program commenced in the February 2008 and to date, a total of 41 drill holes have been completed on the K14, K252 and K6 kimberlite for a combined total of 6,818 metres. A total of 22 holes were drilled into the K14 kimberlite (20 holes intersected kimberlite) in a grid pattern. Detailed core logging identified 6 distinctive eruptive phases and allowed for the development of a preliminary 3 dimensional model. Further drilling along the southern edge of the kimberlite is required to further delineate the body. Six drill holes were completed at the K252 kimberlite totalling 1,203m. Interpretation and results are pending. A grid of 13, of the planned 22, drill holes has been completed at the K6 kimberlite to delineate the 700m long geophysical anomaly. Drilling is expected to resume after winter freeze-up (Diamondex Resources Ltd. Press October 15, 2008).

EXPLORATION EXPENDITURES

Between 2009 and 2011, DIM sample result analysis and a ground geophysics program was conducted on the Smoky the Bear mineral permits within Grizzly's Buffalo Head Hills property. A total of CDN$67,240.07 (not including GST or the allowed 10% Administration Overhead) was spent on exploration during the period. A summary of exploration costs and a detailed expense report is provided in Appendix 1.

INTERPRETATION AND CONCLUSIONS

Grizzly Discoveries Inc. secured four additional kimberlites (BM-03, BM-02, BM-16, LL8) to their Smoky the Bear land package, which already includes diamondiferous kimberlites BE-01, BE-02 and BE-03. The four new intrusions were previously discovered by Ashton Mining of Canada Inc. (Ashton). Ashton originally reported drilling intersecting 35 m of kimberlite in BM-03 while BM-16 drilling intersected only a narrow 0.8 m zone of kimberlite. It was proposed that the narrow zone of the BM-16 kimberlite resulted from Ashton drilling the edge of the intrusion, possibly because the drill collar was based on the original airborne geophysical survey, or on a ground magnetic survey that was erroneously orientated in the same north-trending direction as the BM-16 intrusion. Regardless, the contention that the main portion of the BM-16 body was not intersected provided incentive for the work completed during the 2011 spring exploration program.

The spring 2011 survey was conducted with lines orientated in both east-west and north-south directions, and is representative of the true dimensions of BM-16. The data shows that the actual center of the BM-16 intrusion is located approximately 80 m to the northwest of Ashton's drill collar, thus confirming that Ashton situated their BM-16 collar at the edge of the intrusion (Figure 11). The actual drill collar of the Ashton drill hole was located by APEX field personnel confirming the coordinate location cited in Skelton and Willis (2002).

The magnetic anomalies of BM-03 and BM-16 suggest the kimberlite dimensions to be respectively 150 m x 250 m and 160 m x 230 m with associated magnetic anomalies of 35nT and 15nT. Previous exploration conducted on Grizzly's BE-01, BE-02 and BE-03 kimberlites imply that a correlation between lower magnetic strength and higher diamond content exists. This was shown as BE-01 was proven to be very weakly diamondiferous while having a stronger magnetic anomaly of 50nT. Kimberlites BE-02 and BE-03 boasted weaker anomalies of around 20nT, and both were described as significantly diamondiferous upon testing. This contention provides incentive for future sampling of both BM-03 and BM-16.

Analysis of the 2009 DIM sampling results of the mantle/lower crustal xenocrysts from the Smoky the Bear Property intrusions provide definitive evidence as to the diamond potential of these bodies. The BE-01 intrusion appears to have sampled or even originated in, mantle that is much shallower than the mantle sampled by BE-02, BE-03, and other diamondiferous bodies in the northern Alberta kimberlite province. Thus the diamond potential of the BE-01 body is low. In contrast, the BE-02 intrusion is clearly considered to be of high diamond potential, particularly when compared to other diamondiferous kimberlites in the Buffalo Head Hills field. The same conclusion is extended to the BE-03 body, which has the fewest analytical data in this dataset, but has xenocryst chemistry that appears to mimic BE-02. The following points support the contention that BE-02 (and BE-03) has diamond potential and merit follow-up exploration,

- high lherzolitic garnet Cr_2O_3 content similar to other diamondiferous kimberlites in the Buffalo Head Hills field;
- a low peridotitic garnet Ca-intercept of <4.3, which discriminates diamond-stable conditions in cratonic upper-mantle lithosphere;
- T_{Mn} peridotitic garnet temperatures (averaging 1147° C) and single grain clinopyroxene pressures (averaging 46 kbar) and temperatures (averaging 991° C and up to 1294° C) that fall within the diamond stability field; and
- high-Cr_2O_3 chromium-spinel in both the magmatic trend 1 and aluminomagnesian chromite populations consistent with diamondiferous-bearing mantle

Overall the use of ground magnetic surveying on the Smoky the Bear property was very successful. Both the BM-03 and BM-16 kimberlites exhibit coincident magnetic anomalies which clearly depict them from their surroundings. Possible future gravity or electromagnetic surveys could be used in conjunction with ground magnetic data to further accurately estimate the geometry of the kimberlite bodies, as well as possibly provide some insight to the intrusions' diamond content possibilities.

RECOMMENDATIONS

Diamond exploration on Grizzly's Smoky the Bear property is still in the intermediate stages, however the potential for discovery of further diamondiferous kimberlites is considered high based on the regional geological setting in conjunction with the positive results of exploration conducted to date. This was confirmed by the spring 2011 program, which culminated in the verification that one known and previously tested kimberlite on the Smoky the Bear Claim Blocks warrants further testing. During the spring 2011 exploration season Grizzly spent a total of CDN$67,240.07 (not including GST or the allowed 10% Administration Overhead) on exploration on their Smoky the Bear Property.

Future exploration at Grizzly's Smoky the Bear Property should be conducted in 4 stages:

Stage 1 should consist of diamond drilling of 1 to 3 holes in BM-16 to test for diamond content. The estimated cost for **Stage 1** is between **$125,000** to **$375,000**, plus GST.

Stage 2 should consist of a ground gravity survey over the BM-03 and BM-16 kimberlites. Ground gravity survey data in combination with the ground magnetic data ascertained during this 2011 spring program will provide further accuracy in estimating the geometry of the kimberlite bodies as well as provide means to test possible correlations between the kimberlites' diamond content and their gravitational signatures. The estimated cost of **Stage 2** is **$60,000**, plus GST.

Stage 3 should consist of a bulk sample of both the BE-02 and BE-03 kimberlites. The objective of this bulk sample is to assess the diamond potential of these kimberlites as well as to ascertain a better understanding of the geometry of the pipes. The bulk sample could be completed using either large diameter drilling or utilizing multiple drill holes with an estimated cost of between **$1,500,000** and **$2,700,000**, plus GST.

Stage 4 should consist of a 100 m to 150 m line-spaced airborne magnetic survey flown over the area surrounding the BE-02, BE-03, BM-03, and BM-16 kimberlites. Further magnetic surveying over the Smoky the Bear Property will provide the possibility of the discovery of new kimberlite intrusions. The estimated cost of **Stage 4** is approximately $**270,000** to **$510,000**, plus GST.

The total estimated cost of the recommended 4 stages of exploration for Grizzly's Smoky the Bear Property is between **$1,955,000** and **$3,645,000** plus GST.

APEX Geoscience Ltd.

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

July 12, 2011
Edmonton, Alberta

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CERTIFICATE OF AUTHOR

I, Michael B. Dufresne, residing at 267 Burton Rd., Edmonton, Alberta, Canada do hereby certify that:

1. I am a principal and President of APEX Geoscience Ltd. ("APEX"), Suite 200, 9797 – 45th Avenue, Edmonton, Alberta, Canada. I am the author of the report entitled: **"ASSESSMENT REPORT FOR GRIZZLY DIAMOND LTD.'S BUFFALO HEAD HILLS SMOKY THE BEAR PERMITS: 9305010838, 9306110741-42, 9309040392 and 9309050320-21"** dated June X, 2011, and am responsible for the preparation of the entire report.

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

3. I am a Professional Geologist registered with APEGGA (Association of Professional Engineers, Geologists and Geophysicists) and a 'Qualified Person' in relation to the subject matter of this report. I have worked as a consulting geologist for more than 20 years since my graduation from university and I have conducted and directed exploration programs, property examinations and evaluations for a number of commodities and deposit types.

4. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Buffalo Head Hills Permits or the securities of Grizzly Discoveries Inc.

5. To the best of my knowledge, I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the technical report, the omission to disclose which would make the technical report misleading.

6. I have read and understand National Instrument 43-101 and the Report has been prepared in compliance with the instrument. I am considered independent of the issuer as defined in Section 1.4.

7. I have visited the Property and directed exploration by APEX Geoscience Ltd. at the Property over the last five years on behalf of Grizzly Discoveries Inc.

PROFESSIONAL GEOLOGIST MICHAEL B. DUFRESNE ALBERTA

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

July 12, 2011
Edmonton, Alberta