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ASSESSMENT REPORT FOR FOR DIAMOND AND GOLD EXPLORATION ON THE SWAN HILLS PROPERTY, NORTH-CENTRAL ALBERTA METALLIC MINERAL PERMITS 9306050833 to 9306050836, 9302040008, 9302040010, 9302040012, 9302040014, 9302040016, 9302040018, 9302040020, 9305031137 to 9305031144, 9306011206 to 9306011239 to 9306011251 and 9306020546 to 9306020549

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SUMMARY

APEX Geoscience Ltd. (APEX) was retained during 2005 as consultants by Headwater Minerals Exploration and Development Ltd. (Headwater Minerals) to aid in project management and compile all existing geological, geophysical and geochemical data for Headwater Minerals Swan Hills Property, and to prepare an independent evaluation of the potential of the property to host diamondiferous kimberlites and gold deposits. Headwater Minerals owns an undivided 100% interest in the Swan Hills Property. This report is written as a Technical Report for the Swan Hills Property that is held by Headwater Minerals and is written to comply with standards set out in National Instrument 43-101 for the Canadian Securities Administration. As well, the reporting of diamond exploration results follows the Canadian Institute of Mining (CIM) 'Guidelines for the Reporting of Diamond Exploration Results'.

Headwater Minerals Swan Hills Property is located in north-central Alberta, Canada within the 1:250,000 scale National Topographic System (NTS) map areas 83J, 83K, 83N, and 83O, with its centre at about 116°16' longitude and 54°45' latitude. The property cover portions of Townships 63 to 71, Ranges 12 to 19 West of the 5th Meridian in legal Dominion Land Survey (DLS). The property covers approximately 612,335 hectares and consists of 69 contiguous metallic and industrial mineral permits: 9306050833 to 9306050836, 9302040008, 9302040010, 9302040012, 9302040014, 9302040016, 9302040018, 9302040020, 9305031137 to 9305031144, 9306011206 to 9306011239 to 9306011251, and 9306020546 to 9306020549. The Swan Hills Property has not been legally surveyed.

The regional setting for Headwater Minerals Swan Hills Property is considered favourable for the presence of diamondiferous kimberlites. The permits are underlain by Early Proterozoic to Archean basement of the Buffalo Head Craton. The local bedrock geology and the underlying Archean to Proterozoic crystalline basement in association with deep seated, penetrative structures, such as the Peace River Arch, likely provided a favourable environment for the ascent of kimberlitic magma in the Swan Hills area. 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 as well as other structures. This has been confirmed with discovery of 38 kimberlite pipes, of which 26 are diamondiferous, in the Buffalo Head Hills area 200 kilometres north of Headwater Minerals Swan Hills Property and the Mountain Lake Kimberlite about 60 km northwest of the Swan Hills Property.

During summer 2005, Headwater Minerals personnel collected 12 suction dredge samples, 5 till samples and 35 rock grab samples from within the Swan Hills permits. These samples were collected within the Goose River drainage area to follow up previous sampling by APEX Geoscience Ltd. (APEX) personnel and others that was successful in delineating a number of diamond indicator mineral and gold anomalies. The 17 suction dredge and till samples were sent to the Saskatchewan Research Council (SRC), Saskatoon, Saskatchewan, and were analysed for diamond indicator minerals (DIMs), particulate gold grains and trace metal geochemistry. Thirty seven rock grab samples were collected from ironstone and carbonate outcrops from 14 different

sites on the property and were sent to the SRC for geochemical analysis of gold and other trace elements.

Based on the diamond indicator mineral and geochemical and particulate gold results to date, favourable surface and basement geology and proximity to the Mountain Lake Kimberlite, further exploration is warranted for the Swan Hills Property. It is therefore recommended that a staged exploration program consisting of the following be completed: STAGE 1: Complete a fixed wing or helicopter based time-domain electromagnetic and magnetic geophysical survey over the northwestern portion of the property, in particular the Lightbulb Lake Ridge area. The survey should be flown at a minimum line spacing of 150 to 200 meters (depending upon whether a helicopter or fixed wing system is used) with tie lines every 1 to 2 kilometres. An independent geophysicist should be on site during the bulk of airborne survey data acquisition to ensure quality control is maintained. In total about 9,000 line km's should be flown over the northwest portion of the property at an approximate price of $75/line kilometre plus mobilization and demobilization and an independent geophysicist. Stage 1 should be completed during summer and fall 2006 with an estimated cost of $725,000, plus GST; STAGE 2: 2a) complete gridding and ground geophysical surveying over those land based priority magnetic and electromagnetic targets from the airborne geophysical survey (20 grids total). The estimated cost of the Stage 2a program is $250,000, plus GST; a stage 2b diamond indicator and rock sampling program should be conducted during summer to fall 2006 in order to follow up certain DIM anomalies and gold targets that will not be covered by the 2006 airborne geophysical survey, the estimated cost to conduct a small Stage 2b sampling program is $200,000; and, STAGE 3: based on the results from the Stage 2 exploration, drill test 5 to 10 priority targets as part of a fall 2006 or winter 2006-2007 drill program. The drilling may include up to 10 drill holes designed to test high priority geophysical targets in close proximity to high priority diamond indicator mineral or gold anomalies. The estimated cost of the Stage 3 drilling program would likely be between $250,000 and $750,000 (not including GST) depending upon the number of drillholes and the exact location of the drillholes due to vast differences in ease of access in certain areas. The exact scope and budget for the Stage 2 and 3 programs will be necessarily dependent upon the results of the Stage 1 airborne geophysical survey, although in all likelihood there will be a number of geophysical targets identified in the airborne survey that will need to be follow up surveyed using ground geophysical techniques. The recommended Stage 2b sampling program would be independent of the results of the 2006 airborne survey.

The approximate budget to complete stages 1 and 2 of the recommended exploration program is about $1,175,000 excluding a provision for GST.

INTRODUCTION AND TERMS OF REFERENCE

APEX Geoscience Ltd. (APEX) was retained during 2005 as consultants by Headwater Minerals Exploration and Development Ltd. (Headwater Minerals) to aid in project management and compile all existing geological, geophysical and geochemical data for Headwater Minerals Swan Hills Property, and to prepare an independent evaluation of the potential of the property to host diamondiferous kimberlites and gold deposits. Headwater Minerals owns an undivided 100% interest in the Swan Hills Property. This report is written as a Technical Report for the Swan Hills Property that is held by Headwater Minerals and is written to comply with standards set out in National Instrument 43-101 for the Canadian Securities Administration. As well, the reporting of diamond exploration results follows the Canadian Institute of Mining (CIM) 'Guidelines for the Reporting of Diamond Exploration Results'.

APEX was retained during March 2006 as consultants to complete this independent technical report for the Swan Hills Property. Mr. Michael B. Dufresne, M.Sc., P.Geol., a principal of APEX, and independent and qualified person has defined in National Instrument 43-101, has conducted a number of property visits and managed a number of exploration programs throughout the Swan Hills Property area since 1998 on behalf of a number of companies including those vending the property into Headwater Minerals. During summer 1999, winter and fall 2000, 2001, fall 2002, and winter and fall 2003, APEX conducted exploration on the Swan Hills Property on behalf of Sovereign Mining and Exploration Ltd. (Sovereign) and 808685 Alberta Ltd. (808685). During summer 2005, Mr. Dufresne of APEX supervised the exploration on the Swan Hills Property conducted by Headwater Minerals personnel.

DISCLAIMER

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

PROPERTY DESCRIPTION AND LOCATION

The Swan Hills Property is located in north-central Alberta, within the 1:250,000 scale National Topographic System (NTS) map areas 83J, 83K, 83N, and 83O, with its centre at about 116° 16' longitude and 54° 45' latitude (Figure 1). The property covers

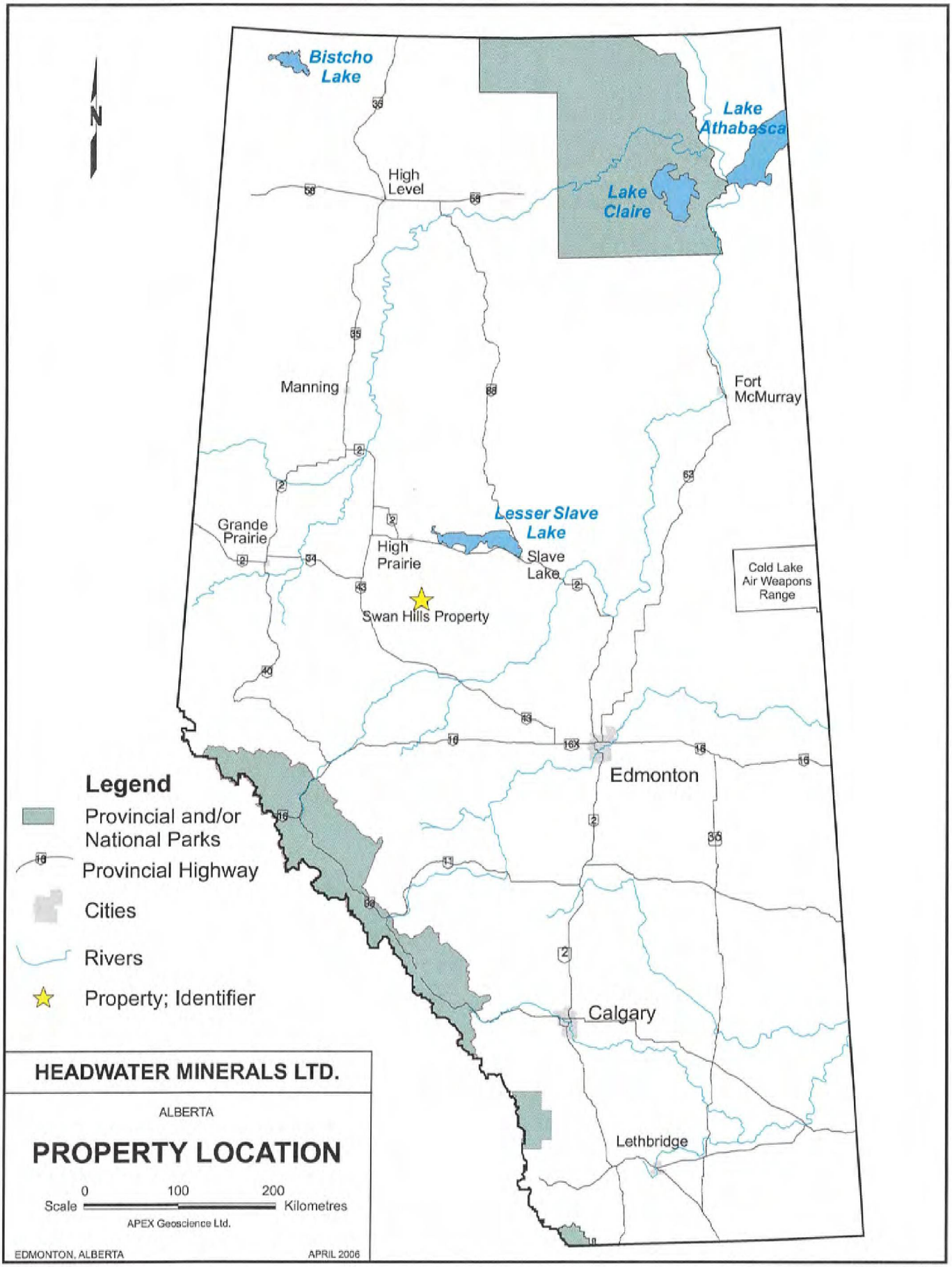

Bistcho Lake
Lake Athabasca
Lake Claire
High Level
Manning
Fort McMurray
Lesser Slave Lake
Grande Prairie
High Prairie
Slave Lake
Cold Lake Air Weapons Range
Swan Hills Property
Edmonton
Calgary
Lethbridge
Legend
Provincial and/or National Parks
Provincial Highway
Cities
Rivers
Property; Identifier
HEADWATER MINERALS LTD.
ALBERTA
PROPERTY LOCATION
0 100 200
Scale Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
APRIL 2006

FIGURE 1

portions of Townships 63 to 71, Ranges 12 to 19 West of the 5th Meridian in legal Dominion Land Survey (DLS). The properties covers approximately 612,535 ha (Figure 2) and consists of 69 contiguous metallic and industrial mineral permits (Table 1 and Appendix 1). The property has not been legally surveyed. A list of legal descriptions for the property is provided in Table 1. Copies of the mineral permit agreements and the land titles search are included in Appendix 1.

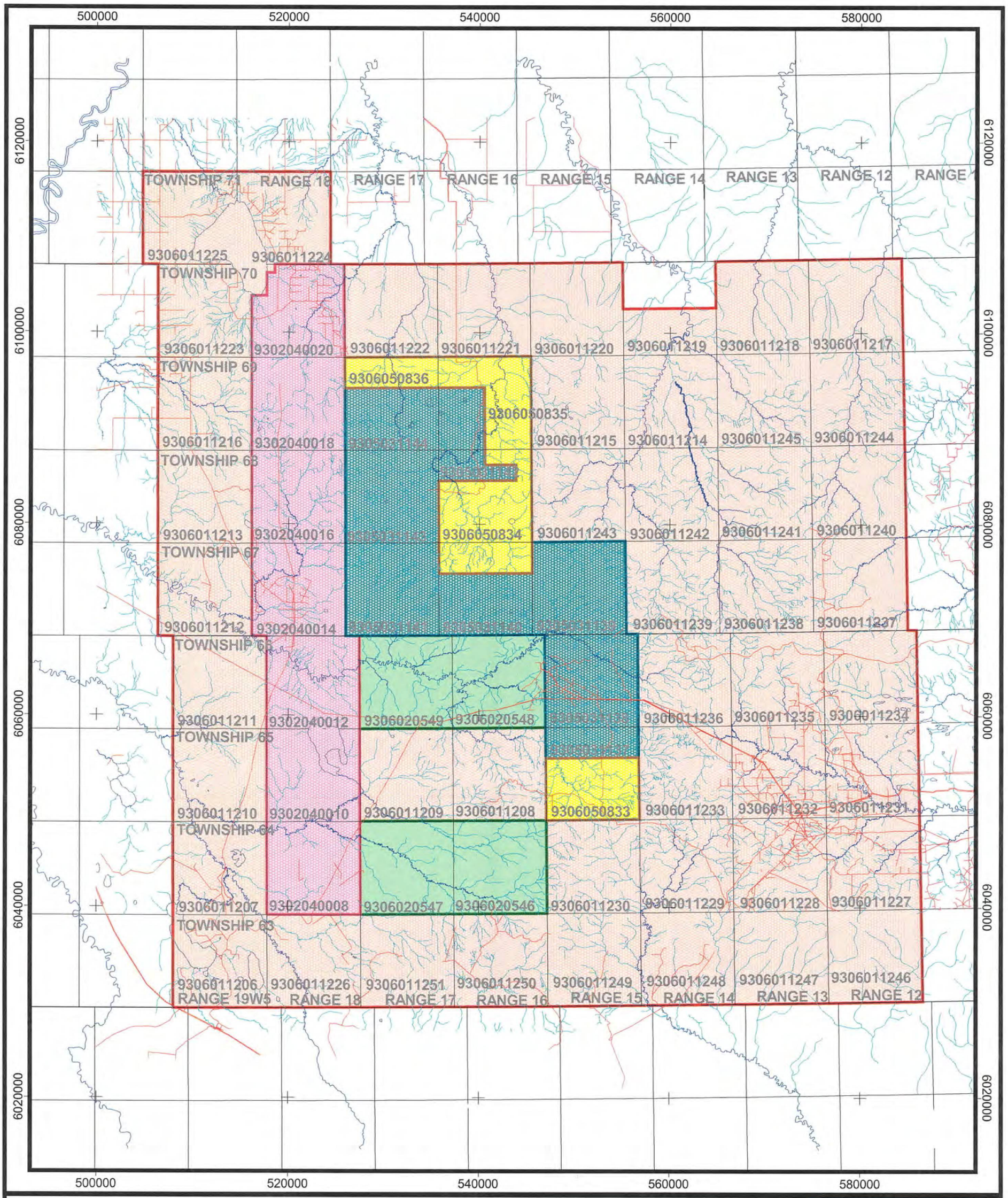
Headwater Minerals is a private company that was incorporated on October 18, 2005, and is wholly owned by 620516 Alberta Ltd. (620516). Headwater Minerals was created as a new holding company with the intent to become the 100% owner of the Swan Hills project. The project commenced in 1999 with 808685 Alberta Ltd. (808685) joint ventured with Sovereign. The initial land holding consisted of one township and one section known as the Light Bulb Lake and Mary's Lake properties respectively. By fall of 2000, 808685 had spent in excess of $230,000. The agreement had Sovereign as a 50% partner, liable for its full share of expenses but Sovereign did not contribute any funds. A verbal agreement was reached between 808685 and Sovereign to write the Sovereign interest down to a 2.5% net profit interest. Sovereign agreed although legal documents have never been filed to date. This is being actively addressed. The project continued from 2001 to 2005 with 808685 and 620516 solely funding the expenditures. 620516 originally had a 10% working interest in a joint venture with 808685. To date, approximately 1.4 million dollars have been spent by the joint venture. 620516 bought out 808685 on December 7, 2005 and has since placed its 100% interest in Headwater Minerals. The mineral claims are held in the name of Headwater Minerals and 620526 Alberta Ltd. (Table 1 and Figure 2).

TABLE 1. LEGAL PERMIT DESCRIPTIONS*

Permit Number*	Record Date*	Term Period*	Legal Description	Claim Holder*	Area (Ha)*
9306050834	5/16/2006	10 Years	5-16-067:25-36; 5-16-068:1-24	Headwater Minerals	9216
9306050835	5/16/2006	10 Years	5-16-068: 25,34-36; 5-16-069: 1-3, 10-15, 22-24	Headwater Minerals	4096
9306050833	5/16/2006	10 Years	5-15-065: 1-24	Headwater Minerals	6144
9306050836	5/16/2006	10 Years	5-16-069: 25-36; 5-17-069: 25-36	Headwater Minerals	6144
9302040008	4/02/2006	10 Years	5-18-064: 1-36	Headwater Minerals	9216
9302040010	4/02/2006	10 Years	5-18-065: 1-36	Headwater Minerals	9216
9302040012	4/02/2006	10 Years	5-18-066: 1-36	Headwater Minerals	9216
9302040014	4/02/2006	10 Years	5-18-067: 1-36	Headwater Minerals	9216
9302040016	4/02/2006	10 Years	5-18-068: 1-36	Headwater Minerals	9216
9302040018	4/02/2006	10 Years	5-18-069: 1-36	Headwater Minerals	9216
9302040020	4/02/2006	10 Years	5-18-70: 1-29, 32S, 32NE, 33-36	Headwater Minerals	8640
9305031137	3/21/2005	10 Years	5-15-065: 25-36	Headwater Minerals	3072
9305031138	3/21/2005	10 Years	5-15-066: 1-36	Headwater Minerals	9216
9305031139	3/21/2005	10 Years	5-15-067: 1-36	Headwater Minerals	9216
9305031140	3/21/2005	10 Years	5-16-067: 1-36	Headwater Minerals	9216
9305031141	3/21/2005	10 Years	5-17-067: 1-36	Headwater Minerals	9216
9305031142	3/21/2005	10 Years	5-16-068: 25, 34-36; 5-16-069: 1-3, 10-15, 22-24	Headwater Minerals	5120
9305031143	3/21/2005	10 Years	5-17-068: 1-36	Headwater Minerals	9216
9305031144	3/21/2005	10 Years	5-17-069: 1-36	Headwater Minerals	9216
9306011206	1/24/2006	10 Years	5-19-063: 1-36	Headwater Minerals	9179
9306011207	1/24/2006	10 Years	5-19-064: 1-36	Headwater Minerals	9216
9306011208	1/24/2006	10 Years	5-16-065: 1-36	Headwater Minerals	9216
9306011209	1/24/2006	10 Years	5-17-065: 1-36	Headwater Minerals	9216

Permit Number*	Record Date*	Term Period*	Legal Description	Claim Holder*	Area (Ha)*
9306011210	1/24/2006	10 Years	5-19-065: 1-36	Headwater Minerals	9216
9306011211	1/24/2006	10 Years	5-19-066: 1-36	Headwater Minerals	9216
9306011212	1/24/2006	10 Years	5-19-067: 1-36	Headwater Minerals	9216
9306011213	1/24/2006	10 Years	5-19-068: 1-36	Headwater Minerals	9216
9306011214	1/24/2006	10 Years	5-14-069: 1-36	Headwater Minerals	9216
9306011215	1/24/2006	10 Years	5-15-069: 1-36	Headwater Minerals	9216
9306011216	1/24/2006	10 Years	5-19-069: 1-36	Headwater Minerals	9216
9306011217	1/24/2006	10 Years	5-12-070: 1-36	Headwater Minerals	9216
9306011218	1/24/2006	10 Years	5-13-070: 1-36	Headwater Minerals	9216
9306011219	1/24/2006	10 Years	5-14-070: 1-36	Headwater Minerals	9216
9306011220	1/24/2006	10 Years	5-15-070: 1-36	Headwater Minerals	9216
9306011221	1/24/2006	10 Years	5-16-070: 1-36	Headwater Minerals	9216
9306011222	1/24/2006	10 Years	5-17-070: 1-36	Headwater Minerals	9216
9306011223	1/24/2006	10 Years	5-19-070: 1-36	Headwater Minerals	9216
9306011224	1/24/2006	10 Years	5-18-071: 1-36	Headwater Minerals	9216
9306011225	1/24/2006	10 Years	5-19-071: 1-36	Headwater Minerals	9216
9306011226	1/24/2006	10 Years	5-18-063: 1-36	Headwater Minerals	9216
9306011227	1/24/2006	10 Years	5-12-064: 1-36	Headwater Minerals	9216
9306011228	1/24/2006	10 Years	5-13-064: 1-36	Headwater Minerals	9216
9306011229	1/24/2006	10 Years	5-14-064: 1-36	Headwater Minerals	9216
9306011230	1/24/2006	10 Years	5-15-064: 1-36	Headwater Minerals	9216
9306011231	1/24/2006	10 Years	5-12-065: 1-36	Headwater Minerals	9216
9306011232	1/24/2006	10 Years	5-13-065: 1-36	Headwater Minerals	9216
9306011233	1/24/2006	10 Years	5-14-065: 1-36	Headwater Minerals	9216
9306011234	1/24/2006	10 Years	5-12-066: 1-36	Headwater Minerals	9216
9306011235	1/24/2006	10 Years	5-13-066: 1-28, 29S, 30S, 33-36	Headwater Minerals	8531
9306011236	1/24/2006	10 Years	5-14-066: 1-24, 25S, 26-35	Headwater Minerals	8905
9306011237	1/24/2006	10 Years	5-12-067: 1-36	Headwater Minerals	9216
9306011238	1/24/2006	10 Years	5-13-067: 1-5, 7-36	Headwater Minerals	8960
9306011239	1/24/2006	10 Years	5-14-067: 1-36	Headwater Minerals	9216
9306011240	1/24/2006	10 Years	5-14-067: 1-36	Headwater Minerals	9216
9306011241	1/24/2006	10 Years	5-14-067: 1-36	Headwater Minerals	9216
9306011242	1/24/2006	10 Years	5-14-067: 1-36	Headwater Minerals	9216
9306011243	1/24/2006	10 Years	5-14-067: 1-36	Headwater Minerals	9216
9306011244	1/24/2006	10 Years	5-12-069: 1-36	Headwater Minerals	9216
9306011245	1/24/2006	10 Years	5-13-069: 1-36	Headwater Minerals	9216
9306011246	1/24/2006	10 Years	5-12-063: 1-36	Headwater Minerals	9216
9306011247	1/24/2006	10 Years	5-13-063: 1-36	Headwater Minerals	9216
9306011248	1/24/2006	10 Years	5-14-063: 1-36	Headwater Minerals	9216
9306011249	1/24/2006	10 Years	5-15-063: 1-36	Headwater Minerals	9216
9306011250	1/24/2006	10 Years	5-16-063: 1-36	Headwater Minerals	9216
9306011251	1/24/2006	10 Years	5-17-063: 1-36	Headwater Minerals	9216
9306020546	2/22/2006	10 Years	5-16-064: 1-36	620516 Alberta Ltd.	9216
9306020547	2/22/2006	10 Years	5-17-064: 1-36	620516 Alberta Ltd.	9216
9306020548	2/22/2006	10 Years	5-16-066: 1-36	620516 Alberta Ltd.	9216
9306020549	2/22/2006	10 Years	5-17-066: 1-36	620516 Alberta Ltd.	9216
69 Permits	*Based upon a land titles search			**Total Area:**	**612,535**

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 metallic mineral permit gives Headwater Minerals the exclusive right to explore for and develop economic deposits of minerals, including diamonds and gold, within the boundaries of the permit. The exclusive right to explore is subject to ALBERTA REGULATION 213/98 of the Alberta Mines and Minerals Act and the contained Metallic and Industrial Minerals Regulations within the act. The Standard



Legend

- Headwater Minerals Metallic Mineral Permits Anniversary Date March 21st, 2005
- Headwater Minerals Metallic Mineral Permits Anniversary Date April 2nd, 2002
- Headwater Minerals Metallic Mineral Permits Anniversary Date May16, 2006
- Headwater Minerals Metallic Mineral Permits Anniversary Date January 21st, 2006
- Headwater Minerals (620516 Alberta Ltd.) Metallic Mineral Permits Anniversary Date February 22nd, 2006
- Township/Range
- Road
- Trails
- Major Drainage
- Minor Drainage

HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.

SWAN HILLS PROPERTY

PERMIT LOCATIONS

NTS 83K/9, 10, 15, 16, J/12, 13, O/4, N/1,2
UTM GRID ZONE 11 NAD 27

5 0 5 10Km

Scale 1:125,000

APEX Geoscience Ltd.

Edmonton, Alberta April 2007

FIGURE 2.

Terms and Conditions for the permits are described in detail on Alberta Energy's website at http://www.energy.gov.ab.ca/1224.asp.

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, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY

The property is situated in north-central Alberta and encompasses the northwest portion of the Swan Hills and is south of the town of High Prairie and Lesser Slave Lake. Relief generally comprises rolling hills and undulating plains. Elevation in the region varies from 620 m to 1524 m (2034 ft to 5000 ft) above sea level (asl), the highest elevation being the Swan Hills. Major topographic features in the region include Snipe, Meekwap, Iosegun and Raspberry lakes, as well as Goose, East Prairie, Wallace and Driftpile rivers. In addition to the numerous small lakes and ponds, much of the properties are covered by swamps, marshes and ferns. 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. Outcrop exposure is sparse (less than 3%) because of a blanket of glacial overburden.

The property is approximately 30 km's north of Whitecourt, approximately 28 km's south of High Prairie and 25 km's east of Valleyview, Alberta. The accessibility is year round via Provincial Highways 32, 43, 669 and 747, numerous forestry roads, cutlines and seismic lines, using four wheel drive vehicles, all terrain vehicles (ATV's) and/or snowmobiles (during winter). Due to excellent access, the property can be worked (explored) during all seasons.

Valleyview is the closest community with limited shopping, banking, supply facilities and support services (eg. groceries, motels, hardware stores). Whitecourt provides nearly all needed sources of equipment and repair, operating supplies and materials, support services, and transportation.

HISTORY

During the summer of 1997, Teuton Resource Corp. (Teuton) conducted a reconnaissance till sampling program on their Swan Hills mineral permits, of which a portion of it is currently included in Headwater Minerals' Swan Hills property (Kruchkowski, 2000). During the spring of 1998, Spectra Exploration Geoscience Corp. (Spectra) flew a high-resolution airborne magnetic (HRAM) survey on Teuton's mineral permits (Kruchkowski, 2000). The airborne survey was then reviewed and interpreted by APEX, on behalf of Teuton (Dufresne and Chin, 1998). Then in late 1998, Teuton conducted ground geophysics on seven high priority magnetic anomalies that were picked and prioritised by APEX personnel (Kruchkowski, 2000). Teuton has since relinquished all of its land holdings in the region.

The first field visit to Headwater Minerals Swan Hills Property by APEX personnel, which at that time only included the Lightbulb Lake and Marie's Creek permits, was conducted during the fall of 1998 (Chin, 1998). During March of 1999, a high-resolution airborne magnetic (HRAM) survey, flown at a drape altitude of 100 m above surface with east-west traverse lines at a spacing of 100 m and north-south control lines every 1000 m, was flown over the Lightbulb Lake permit. The survey was completed by Spectra and covered the Lightbulb Lake and Marie's Creek permits (Spectra, 1999). The data collected from the HRAM survey was reviewed by APEX and interpreted for magnetic anomalies potentially indicative of kimberlites or related intrusions (Dufresne and Copeland, 2000). Magnetic anomalies were chosen and rated based upon similar magnetic characteristics to those of Ashton's Buffalo Head Hills Kimberlites, Monopros Ltd.'s Mountain Lake Kimberlite and other kimberlites or associated intrusive rocks in the Western Canada Sedimentary Basin of Alberta and Saskatchewan. A total of ten airborne magnetic anomalies from within the Lightbulb Lake permit were initially selected and ranked for follow-up exploration, based on anomaly intensity, anomaly shape, noise levels and presence of topographic features or culture (Chin, 1999; Dufresne and Copeland, 2000). Of these ten anomalies, four were classified as moderate priority and six as low priority anomalies. With further review of the data, a number of other low to moderate priority anomalies were added. In addition, the HRAM data yielded a prominent east to slightly east-northeast trending magnetic lineament corresponding to a prominent ridge along the southern boundary of the Lightbulb Lake permit (Dufresne and Copeland, 2000).

During June and September of 1999, APEX conducted systematic till, soil, stream and rock grab sampling on behalf of Sovereign within the Lightbulb Lake and Marie's Creek permits. A total of 21 till samples, approximately 25 kg each, were collected down-ice of magnetic anomalies and along the southern boundary of the permit areas. A total of 47 stream silt and 47 screened heavy mineral concentrate (HMC) samples, each about 10 kg, were collected from regions proximal to airborne magnetic anomalies for diamond indicator minerals (DIMs), particulate gold grains and trace metal geochemistry. One hundred and fourteen soil samples were collected over or across three of the discreet aeromagnetic anomalies and at the southwest trending magnetic lineament at the south end of the Lightbulb Lake permit. Finally, a total of 13

rock grab samples were collected from areas of outcropping Cretaceous sedimentary rocks. All the samples, with the exception of the soil samples, were sent to the Saskatchewan Research Council (SRC) in Saskatoon, Saskatchewan for a variety of analyses. The soil samples were processed and analyzed by Activation Laboratories Ltd. (Activation) in Ancaster, Ontario (Dufresne and Copeland, 2000).

The sampling conducted between June and September 1999, resulted in the discovery of a large number of DIM anomalies on the Lightbulb Lake permit, the majority of which were comprised of chromites (Dufresne and Copeland, 2000). Diamond indicator mineral analysis of till and stream HMC samples from the Lightbulb Lake and Marie's Creek permit areas yielded widespread high magnesium chromites that are often associated with kimberlites or related intrusions. Only 8 of 51 HMC samples did not yield chromites, and it was estimated that more than 30 of the samples would contain greater than 10 chromites if the concentrates were fully picked. Dufresne and Copeland (2000) indicate that of the chromites that were recovered within the Lightbulb Lake permit area, only a few might be truly diagnostic of kimberlite or lamproite volcanism. Fipke *et al.* (1995) indicate that only chromites with greater than 40 weight percent (wt%) Cr_2O_3 and greater than 2 wt% TiO_2 are unique to kimberlites and lamproites. Dufresne and Copeland (2000) indicate that a large number of the Lightbulb Lake chromites are similar in character to mantle derived chromites with high Cr, high Mg and low Ti. In fact they suggest that several of the chromites recovered compare favourably to the high Cr and high Mg chromites that are found as inclusions in diamonds (the diamond inclusion field). Therefore, Dufresne and Copeland (2000) concluded that it is possible that some of the chromites may be derived from mantle that was formed within the diamond stability field and may have contained diamonds. However, they concluded also that similar to the magmatic chromites, the source of the mantle chromites is not easily identifiable based upon the widespread distribution of the chromites and the lack of associated abundant silicate indicator minerals such as pyrope garnet, chrome diopside and olivine. Chromites tend to be the longest surviving of the suite of DIMs and can be preserved through multiple periods of recycling, travelling large distances in river, delta and beach systems. The silicate DIMs tend to not survive multiple cycles of erosion or large distances of travel and are a better indication of proximity to source.

Dufresne and Copeland (2000) point out that large numbers of chromites have been encountered in the foothills region of western Alberta but almost exclusively restricted to areas of Upper Cretaceous sedimentary rocks and areas influenced by Cordilleran glacial events. This is the first known occurrence of large volumes of chromites that have been encountered well east of the Foothills in an area dominantly influenced by Continental glaciation. Dufresne and Copeland concluded that based upon the widespread distribution of the chromites recovered from the till and HMC samples, it is likely that the chromites are derived from either the Cretaceous Wapiti Formation or from the pre-glacial Swan Hills gravels that cap many of the upland areas within the Swan Hills. Most of the pre-glacial gravel deposits have largely escaped or have been only moderately affected by glaciation. Chromites contained within the Cretaceous Wapiti Formation or within the Swan Hills gravels could be originally

sourced either locally from kimberlites or related intrusions, which could exist in the region or are some distance away, or through recycling of sedimentary successions from the Rocky Mountains. Because of the distance involved to recycle chromites from intrusions in the Rocky Mountains, derivation from more local source areas is the more favoured alternative.

As well as the DIM anomalies, particulate and geochemical gold anomalies as well as a few pathfinder element anomalies were discovered with no clear indication of either kimberlites, sulphides or alteration zones on the Lightbulb Lake permit (Dufresne and Copeland, 2000). Heavy mineral concentrate samples, recovered from the southwest corner of the Lightbulb Lake permit and draining a prominent ridge, yielded the highest number of particulate gold grains encountered by APEX geologists in Alberta sampling programs to date. A number of 3 to 5 kg HMC samples from the area yielded counts ranging from 400 up to about 1,200 particulate gold grains. Soil geochemical anomalies were encountered on several of the grids overlying airborne magnetic anomalies and along profiles across the upland ridge along the southern boundary of the permit area. Further overburden and bedrock sampling was recommended to clarify the relationship between soil geochemical anomalies and the magnetic anomalies. It was further recommended that additional tightly spaced and systematic soil sampling be done to outline areas of mineralization underlying the southern ridge (Dufresne and Copeland, 2000).

Despite the limited number of rock samples collected during reconnaissance sampling, a few samples yielded anomalous concentrations of elements such as arsenic (As), antimony (Sb) and tellurium (Te) (Dufresne and Copeland, 2000). Other geochemical results of interest include the discovery of ironstone with up to 52.2 wt% total Fe as Fe_2O_3 along the southwest trending ridge at the south end of the Lightbulb Lake permit (Dufresne and Copeland, 2000). Because of the scarcity of outcrop and the present limitation in the understanding of the stratigraphy underlying the permit area, it was recommended that some form of cost effective drilling be performed to collect further bedrock samples in order to determine the source and the origin of the ironstone and gold. None of the rock samples collected to date indicated derivation from a kimberlitic or mantle parent (Dufresne and Copeland, 2000).

Detailed ground geophysical surveying over selected priority airborne magnetic anomalies within the properties was conducted during January 2000 by APEX. Four grids with 100 m line spacing were constructed with station readings taken every 25 m. The surveyed grids totalled 3 line-km over an area of approximately 500 m squared. The magnetic surveys over anomalies A6 and A20 were successful in delineating two of the airborne magnetic anomalies, although none were attributed to kimberlite diatremes (Dufresne and Copeland, 2000). Further work was recommended for the two magnetic anomalies.

Exploration within the Swan Hills property during the fall of 2000 consisted mostly of regional till, stream and rock grab sampling as the number of mineral permits were increased, emphasis was placed on certain areas for sampling based on: (1) previously

unsampled areas; (2) existing geochemical anomalies; (3) existing DIM anomalies; (4) existing HRAM anomalies from data reviewed in publicly available assessment reports; and (5) geologically favourable areas. Consequently, sampling was targeted primarily along the Goose River, Atikkamek Creek, Wallace River and West Prairie River drainage systems (Dufresne and Kim, 2002). Follow-up exploration was conducted during the fall of 2001, as recommended from the outcome of the 2000 sampling program. This included semi-detailed to reconnaissance HMC and stream silt sampling near anomalous samples sites identified from the 2000 fall exploration; in particular, a number of the tributaries near the headwaters of the Goose River and Atikkamek Creek (Dufresne and Kim, 2002). A total of 220 samples were collected during the 2000 and 2001 exploration programs (131 and 89 samples, respectively), which consisted of HMC, rock grab, stream silt and till samples (Dufresne and Kim, 2002).

Two drilling programs were conducted on the Swan Hills property during March 2000 and February 2001. The 2000 drilling, completed by Canadian Geological Drilling Ltd. (Canadian Geological), consisted of auger and hollow-stem auger drilling, as well as one backhoe excavation. The locations for the auger drill holes were chosen based upon their location with respect to magnetic targets A3, A20, the ridge at the southwest portion of the Lightbulb Lake permit and the ease of accessibility (Dufresne and Kim, 2002).

Aggressive Diamond Drilling Ltd. (Aggressive Drilling) conducted the 2001 drilling program, which consisted of diamond drilling magnetic anomaly A3, one of the higher priority magnetic anomalies from the 1999 Spectra HRAM survey that was ground geophysically surveyed (Dufresne and Copeland, 2000), and the prominent easterly trending ridge located in the southern portion of the Lightbulb Lake permit (9397120049) and the northern portion of permit 9300070004 (Dufresne and Kim, 2002). This ridge was targeted based upon the large number of DIM's and particulate gold grains that obtained in HMC samples collected from immature creeks draining the ridge.

The 2000 and 2001 sampling programs, which were composed of semi-detailed to reconnaissance stream sediment sampling across the Swan Hills property, resulted in the identification of several new kimberlite indicator mineral grain anomalies across the western half of the Swan Hills Property (Dufresne and Kim, 2002). The diamond indicator results for the 220 samples collected from the Swan Hills property during the 2000 and 2001 sampling programs resulted in the delineation of four main anomalous drainage areas containing diamond indicator minerals, comprised principally of one or more of pyrope garnet, eclogitic garnet, chrome diopside or picroilmenite: (1) Goose River; (2) Atikkamek Creek; (3) West Prairie River; and (4) Wallace and East Prairie Rivers (Dufresne and Kim, 2002). Regional sampling from both the 2000 and 2001 exploration programs yielded a total of 27 pyrope garnets, 11 chrome diopsides, 6 eclogitic garnets and 2 olivines, 11 chrome grossular garnets, 8 picroilmenites and 707 chromites. Overall, it is quite evident that chromite is abundant and widespread throughout the Swan Hills property with less than 10 samples yielding no chromites. The picroilmenites are much less abundant and they show a strong correlation to samples and/or drainages that also yield either pyrope garnets, eclogitic garnets or

chrome diopsides (Dufresne and Kim, 2002). The maximum number of chromites that were microprobe confirmed for one sample is 62 grains in sample 0ANH002 (Dufresne and Kim, 2002). However, it should be noted that in most cases only a small portion of the oxide concentrate for most samples was picked for possible chromites and that if the entire oxide concentrate had been picked for all of the anomalous samples that many of the samples would likely have yielded hundreds of chromites. A large number of pyrope garnets were recovered from a number of creeks in the vicinity of the Goose River with several samples yielding multiple, large pyrope grains up to a maximum of 4 grains in sample 0WAH103. Several of these samples also yielded picroilmenites, chrome diopsides and eclogitic garnets (Dufresne and Kim, 2002).

Although a few indicator minerals were recovered from the Atikkamek Creek area, the best results were obtained from samples collected along tributaries to the Goose River to the south and southwest of the Lightbulb Lake permit. The highlight of the 2000 and 2001 exploration programs was the delineation of multiple samples yielding pyrope garnets accompanied by picroilmenites in two previously unsampled or poorly sampled drainages to the southwest of the Lightbulb Lake permit in Township 67, Ranges 17 and18 (Dufresne and Kim, 2002). A couple of the pyrope garnets were identified with partial orange peel texture and/or partial kelyphyte rim, often used as an indication of relative proximity to source. The bulk of the important silicate diamond indicators that are likely indicative of kimberlite are concentrated along the western portion of the property, especially in the area of the Goose River. The pyrope garnets have an apparent trend in a roughly west-northwest to east-southeast direction (Dufresne and kim, 2002); furthermore, they plot approximately along the same trend as the flanks of the Total Field magnetic high, likely a result of Proterozoic or Archean basement, on the Total Field Magnetics. Dufresne and Kim (2002) suggested that the Goose River and to the west and northwest of the Goose River require follow-up exploration including sampling. They also indicated that three other drainages require a small amount of follow-up sampling based upon the 2000 and 2001 sampling results including the headwaters of Atikkamek Creek in Township 64, Range 16, a tributary to the Wallace River in Township 67, Range 15 and a tributary to the East Prairie River in Township 68, Range 14. All three areas have yielded pyrope garnets with two of the drainages also yielding picroilmenites (Dufresne and Kim, 2002).

The airborne magnetic survey from the Lightbulb Lake property and a publicly available assessment report filed by Teuton Resources Ltd. for the Swan Hills were reviewed in detail during the 2000 and 2001 exploration programs. Several interesting magnetic anomalies in proximity to drainages yielding important diamond indicator minerals were identified in Township 65, Range 15, Township 66, Ranges 15 and 16, and Township 67, Range 15 (Dufresne and Kim, 2002).

Dufresne and Kim (2002) indicate that the 2000 and 2001 gold sampling programs yielded a few interesting geographic patterns. A total of 6 samples from the 2000 and 2001 sampling programs yielded greater 59 gold grains (95^{th} percentile) up to a maximum of 171 grains. The average total gold count was 18 grains, with the highest total gold grain count of 171 grains in sample 0WAH113. The bulk of the anomalous

samples are concentrated in the west-central portion of the Swan Hills property centered around the Goose River and in the vicinity of the prominent ridge along the south boundary of the Lightbulb Lake permit (Dufresne and Kim, 2002). A few anomalous samples were also identified from Atikkamek Creek near the southwest corner of the property.

Dufresne and Kim (2002) suggested that the eastern half of the property yields most of the samples with the lowest gold grain counts and the lowest calculated concentrations of gold. The eastern half of the property area represents the highest topographic portion of the property and is predominantly capped by the Swan Hills Tertiary gravels. The high gold counts and high estimated concentrations of gold for samples collected from the western half of the property are the most spectacular gold results that we have seen for Alberta with perhaps the only exception being the North Saskatchewan River from Rocky Mountain House to Edmonton. If much of the gold in the western portion of the property was derived from the erosion and reworking of the Swan Hills Tertiary gravels it would be expected to see somewhat higher gold grain counts and concentrations in the eastern half of the property in close proximity to the Swan Hills gravels. This may suggest that there is some contribution to the present day streams from local bedrock sources including placer gold in Cretaceous to Early Tertiary sandstones or vein to replacement type gold introduced into the local bedrock from hydrothermal processes. Some of the rough calculated concentrations obtained from samples along the Goose River approach the concentrations required for gold placer operations, which generally require a minimum cutoff from 200 to 500 ppb gold. However, one must keep in mind that the gold found in the Swan Hills is quite fine-grained relative to normal placer type operations, hence recovery would be an issue. The Goose River and Atikkamek Creek represent much better potential placer gold targets than the ridge area along the southwestern limit of the Lightbulb Lake property based upon the size of the drainages and the volume of gravels associated with each of these two drainages. In particular, the Goose River gravels yield as high, if not higher, estimated concentrations of gold as the samples from the south portion of the Lightbulb Lake property.

The 2000 drilling program was comprised 17 auger holes and 5 hollow-stem auger holes (Appendix 5). One or two bags of cuttings from each of the auger drill holes (samples OAH-01 to OAH-17) were sent to the SRC for standard diamond indicator analysis. The core from the hollow-stem auger drill holes (SAH-001 to SAH-005) was logged, sampled and also sent to the SRC for standard diamond indicator analysis (Dufresne and Kim, 2002). A total of 132 diamond indicator minerals were recovered from the 2000 drill samples, however, it most if not all of the indicator minerals recovered were derived from overburden or surficial sediments rather than the local Cretaceous bedrock.

Two diamond drill holes (DDH-A3-01 and DDH-SR-01) were completed within the Swan Hills property in 2001 (Dufresne and Kim, 2002). DDH-A3-01 resulted in 538 feet of core, having drilled tested the magnetic anomaly A3 identified during the January 2000 ground geophysical survey (Dufresne and Copeland, 2000). DDH-SR-01 was

drilled in the southwest portion of the Lightbulb Lake permit 9397120049, on a ridge where the drainages containing multiple diamond indicator minerals originated (Dufresne and Kim, 2002). The drill core from both drill holes was logged, sampled and sent to the SRC for standard diamond indicator and gold analysis, but the results have not been reported to date.

Based upon the results of the 2000 and 2001 exploration programs, follow-up kimberlite exploration was strongly recommended by Dufresne and Kim (2002). Sampling, prospecting and the acquisition of existing and/or new airborne geophysical data for the western portion of the property, particularly west of the Lightbulb Lake permit, was recommended. After all of the airborne geophysical survey data is acquired, ground geophysical surveys were recommended in order to identify drill collars for potential kimberlite targets prior to drill testing.

Exploration within the Swan Hills Property during the fall of 2002 involved regional till, stream (including pan heavy mineral concentrate [HMC], suction dredge and silt sampling), beach and rock grab sampling conducted by APEX, along with prospecting by Sovereign. Sampling was targeted primarily along the Goose River, Golden Creek, MacGowan Creek, West Prairie River and Atikkamek Creek drainage systems, as well as in the vicinity of Snipe Lake and Iosegun Lake (Dufresne, 2005). Follow-up exploration was conducted during the fall of 2003, as recommended from the outcome of the 2002 sampling program. This included semi-detailed to reconnaissance HMC and till sampling near anomalous samples sites identified from the 2002 fall exploration; in particular, lines of till samples were constructed across the ridges near the headwaters of the Goose River (the Lightbulb Lake Ridge) and Atikkamek Creek (Atikkamek Ridge). Prospecting was conducted by Sovereign as well (Dufresne, 2005).

Detailed ground geophysical surveying over three selected priority airborne magnetic anomalies within the properties was conducted during fall 2002 by APEX. Two grids with 100 m line spacing were constructed with station readings taken every 25 m. The surveyed grids totalled 12.26 line-km over an area of approximately 62 km squared. High intensity spike like magnetic anomalies coincident with burnt coal rich horizons were observed at target SB5 (Anomaly 31). Little or no magnetic anomaly was detected in the survey over anomaly CS6-7 (Dufresne, 2005).

A trenching program was conducted on the Swan Hills property between December 12 and 14, 2003. The trenching was completed by Williscroft Brothers Construction Ltd. (Williscroft) using a tracked 270 backhoe for excavating. A total of seven pits ranging from 14 to 22 feet in depth were excavated. The trenching program was initiated to obtain bedrock and basal till samples for diamond, gold and bentonite analyses. The locations for the trenches were chosen based prior work that had identified anomalously thick bentonites in outcrop (Dufresne, 2005).

A total of 326 samples were collected during the 2002 and 2003 diamond and gold exploration programs (89 and 237 samples, respectively), and were concentrated on the newly staked permits in the Sakwatamau River to Iosegun Lake area and the

Meekwap Lake to Snipe Lake area. A total of 40 regional HMC creek samples, 7 HMC suction dredge samples, 4 HMC beach samples, 31 stream silt samples and 7 rock samples were collected during the fall 2002 program. During 2003, a significant amount of follow-up till sampling was conducted in the Lightbulb Lake Ridge area in order to look at the potential for concentrations of diamond indicator minerals and gold grains contained within deposits of till along the ridge. A total of 163 till samples, 30 composite drill cuttings samples, 13 HMC stream samples and 31 rock grab samples from excavated trenches were collected (Dufresne, 2005).

The 2002 creek sampling program yielded a number of high quality diamond indicator anomalies in creeks north of the Goose River draining the Lightbulb Lake Ridge that trends northwest from south of Lightbulb Lake all the way to Snipe Lake a distance of more than 50 km. This area is considered a high priority target for follow-up kimberlite exploration based upon the results of the 2002 and prior sampling programs. The 2002 program yielded a total of 18 creek sites draining the Lightbulb Lake Ridge that yielded at least one silicate indicator mineral, and in a number of cases multiple grains, indicative of kimberlite.

The 2002 sampling in the Lightbulb Lake Ridge area also yielded a number of significant milestone geochemical results in this high priority target area. A total of 4 borderline G10 pyrope garnets, with two of the garnets yielding 11 and 12 wt% Cr_2O_3, were from samples collected during the 2002 program. The G10 pyrope garnets represent a very distinct and different population of garnets then the G9 pyrope garnets that have been recovered in the past. The high Cr, low Ti G10 pyrope garnets can be diagnostic of potentially diamond bearing high-pressure peridotite mantle that was sampled and brought to surface by kimberlites in the region. Two of the G10 pyrope garnets, including one of the high Cr grains, were obtained from beach sand collected from the east shore of Snipe Lake along with a G9 pyrope garnet. The other high Cr G10 pyrope garnet was obtained from a creek draining into the Goose River, along with a high Cr chrome diopside in Township 67, Range 19. The high Cr chrome diopside is also most likely derived from peridotitic mantle via kimberlite.

Samples collected during 2002 from the Lightbulb Lake Ridge area also yielded a significant population of true low Fe eclogitic garnets that were likely derived from eclogitic mantle brought to surface in kimberlites. A total of 11 eclogitic garnets were recovered from 6 separate samples with a range in Fe ranging from 10.57 wt% up to 20.08 wt% total Fe as Fe_2O_3. At least one of the eclogitic garnets also yields elevated Na with 0.06 wt% Na_2O. Concentrations of Na_2O greater than 0.07 wt% in eclogitic garnets are often associated with high-pressure eclogitic mantle derived from the diamond stability field. All of the samples containing eclogitic garnets were collected from drainages draining the Lightbulb Lake Ridge. In addition, all of these samples also yielded at least one or more other kimberlitic minerals such as pyrope garnet or picroilmenite. A few eclogitic garnets had been recovered during prior sampling programs but only one grain of the quality exhibited by those recovered during the 2002 program was recovered during prior sampling programs.

The 2002 sampling program also yielded two sample sites with one and two kimberlitic picroilmenites, respectively, draining the southwest flank of the Lightbulb Lake Ridge from or near the Goose River. The sample that yielded the two kimberlitic picroilmenites also yielded a number of chromites, one of which contains greater than 60 wt% Cr_2O_3, and a second that contains 59.75 wt% Cr_2O_3, therefore both potentially derived from the diamond stability field for chromite-bearing peridotite mantle. Almost all of the creek sites draining the Lightbulb Lake Ridge in the vicinity of the Lightbulb Lake permit and the Goose River yield a number of chromites. A number of high Ti and high Cr kimberlitic chromites were recovered from the Lightbulb Lake Ridge area during the 2002 sampling program. Interestingly, samples collected from drainages further to the northwest in the vicinity of Snipe Lake yielded few if any chromites, however, a number of the samples yielded anomalous silicate indicator minerals. The reason for this is unclear, however it could be related to a change in the tertiary sedimentary environment responsible for the chromites and it may help to confirm that the bulk of the chromites being recovered in the Swan Hills are not likely derived from kimberlite intrusions and/or that they represent several cycles of erosion and are not related to the silicate indicator mineral assemblage that is being recovered.

The 2003 HMC creek sampling program yielded similar results to the 2002 sample results. A total of 6 HMC creek samples collected from the Lightbulb Lake Ridge area yielded at least 1 picked diamond indicator mineral up to a maximum of 12 DIMs, and 5 samples actually yielded silicate DIMs up to a maximum of 10 grains. The highest picked grain count occurred in sample 03AMH002, which contains 2 pyrope garnets, 2 chrome diopsides, 6 olivine and 2 picroilmenite grains and occurs along the Lightbulb Lake Ridge. The four samples that are north of the property all contain at least 3 picked diamond indicator mineral up to a maximum of 8 DIMs, and 3 samples actually yielded silicate DIMs up to a maximum of 5 grains. Although microprobe results have not been received for the 2003 HMC samples to date, it is evident that the number of indicator minerals recovered from the samples in the Lightbulb Lake Ridge area is consistent with the microprobe results from previous years.

A total of 30 composite drill cuttings samples collected in 2003 east of the Lightbulb Lake Ridge were analysed for possible diamond indicator minerals. Sample D0301-008 contained 2 chromites, and is the only sample that recovered any grains.

In order to test the possibility that a large number of the highly favourable diamond indicator minerals recovered to date from the Lightbulb Lake area are being derived from a blanket of till overlying the ridge, a till sampling program was conducted during 2003. A total of 131 till samples were collected in five till lines across the Lightbulb Lake Ridge and northwest of Snipe Lake to test for indicator minerals in the till. A total of 17 till samples, from all 5 till lines, yielded at least 1 confirmed diamond indicator mineral up to a maximum of 4 DIMs, however, only 8 samples actually yielded silicate DIMs up to a maximum of 3 grains. Sampling yielded a total of 7 pyrope garnets, 4 chrome diopsides, 5 olivines, 2 picroilmenites and 12 chromites. Till sample 03NVT-032 yielded one picroilmenite, which contains 9.43 wt% MgO, and one chrome diopside, which contains 1.83 wt% Cr_2O_3, and is most likely derived from a kimberlite. Till sample

03NVT-006 contains one ilmenite which contains 11.87 wt% MgO, and is most likely derived from a kimberlite. Till sample 03NVT-015 contains a chromite which contains 60.1 wt% Cr_2O_3 and 15.78 wt% MgO, and compares favourably to the high Cr and high Mg chromites that are found as inclusions in diamonds (the diamond inclusion field), and may be derived from mantle that was formed within the diamond stability field and may have contained diamonds. It is evident that the sparse number of indicator minerals recovered from till samples in the Lightbulb Lake Ridge area may potentially indicate that the large numbers of indicator minerals being recovered from drainages surrounding the ridge are locally derived from buried kimberlites (Appendix 2).

One sample collected from the Meekwap Lake area during the 2002 sampling program yielded a pyrope garnet. This sample adds to a number of anomalous samples collected from along the Goose River that have yielded indicator minerals that could be shedding from the Meekwap Lake area. A compilation of prior sampling data from Ashton also indicates the presence of olivine in a couple of till sample sites in the vicinity of the Meekwap Lake area. However, it should be noted that the Ashton diamond indicator data represents picked and not microprobe confirmed data.

A third area within the Swan Hills permits has yielded a number of indicator minerals during the 2002 sampling program and requires follow-up exploration. The anomalous area is located near the south end of the property between Iosegun Lake and the Sakwatamau River. The area can be divided into two distinct geographic domains with the swampy lowlands in the vicinity of Iosegun Lake and the better-drained uplands forming a ridge (Atikkamek Ridge) that divides the headwaters of Atikkamek Creek from the Sakwatamau River. The anomalous samples in the Iosegun Lake area are comprised of one creek sample from the Iosegun River that yielded two pyrope garnets and a second sample site in a tributary to the Iosegun River that yielded three chromites, one of which contains almost 3 wt% TiO_2 and 44.26 wt% Cr_2O_3, and is most likely derived from a kimberlite. In addition, prior till sampling by Ashton to the southeast of the area indicates the possible presence of olivines, picroilmenites, eclogitic garnets and kimberlitic chromites in till that is potentially down ice of the area. For the most part, the till is thought to be relatively thin in the region. Hence, the Ashton results could indicate a potential kimberlite source in the vicinity of the Iosegun Lake and Iosegun River area.

Sampling of Atikkamek Creek, the Sakwatamau River and their tributaries indicate that the northeast-southwest trending ridge that divides the two drainages is a strong candidate for the presence of possible kimberlites. A number of samples collected from drainages along the ridge have yielded pyrope garnets, olivine, picroilmenites and kimberlitic chromites. One sample, 02CPH002 from the Sakwatamau River, yielded three chromites, one of which is cored by a grain of forsteritic (high Mg) olivine and could be considered a kimberlite fragment. The potential for the presence of kimberlites is considered moderate to high for the Atikkamek Ridge area, however, the diamond potential is considered lower than the Lightbulb Lake Ridge area due to a lack of definitive indicator grains that indicate the presence of mantle that could have been derived from the diamond stability field. It

should be noted however, that the area has seen far less sampling than the Lightbulb Lake Ridge area and therefore warrants further exploration. Follow-up work during 2003 resulted in the collection of 27 till samples in the Attikamek Creek Ridge area of which only two of the samples yielded probe confirmed DIMs. The distinct lack of significant numbers of indicator minerals in the till samples may also point to a local source such as buried kimberlite for the DIMs that have been recovered to date in the Attikamek drainages.

Standard heavy mineral creek sampling during the 2002 and 2003 exploration program has confirmed that the highest gold concentrations, including number of grains and calculated gold concentrations, are centered on the southeast portion of the Lightbulb Lake Ridge and the Goose River immediately south of the Lightbulb Lake Ridge. The largest number of gold grains recovered from the 2002 sampling program was 29 in a sample collected from a tributary to the Sakwatamau River at the south border of the property, and 21 grains in a sample collected from the headwaters of the West Prairie River. The largest calculated concentration of gold was 54 ppb for a sample collected from a south-draining tributary to the Goose River along the south side of the Lightbulb Lake Ridge. A number of samples collected from the Lightbulb Lake Ridge area yield calculated gold concentrations of 20 up to 54 ppb. The 2003 heavy mineral creek sampling did not yield high gold concentrations. The largest number of gold grains recovered from the 2003 sampling program was 15 in a sample collected from the Sweathouse Creek at the west border of the property. The largest calculated concentration of gold was 26.6 ppb for a sample collected north of the property. A number of samples collected from the Lightbulb Lake Ridge area yield calculated gold concentrations of 1.8 up to 6.7 ppb.

The Lightbulb Lake Ridge area represents one of the largest and strongest gold in drainage anomalies in Alberta. Based upon the amount of gold found in a number of immature upland drainages it is highly likely that some of the gold sourcing from the Lightbulb Lake Ridge drainages could be related to a bedrock source. In order to aid in determining whether any of the Lightbulb Lake Ridge results could indicate a bedrock source for gold, a suction dredge sampling protocol was employed based upon the recommendations of Mr. Alex Burton. A total of seven samples were collected using a pump with attached suction hose connected to a small sluice box and running about a 0.5 to 1 m^3 sample of gravel through the sluice until the riffles and carpet were filled. The carpet concentrates were then screened at 140 mesh (0.1mm) in order to create a +0.1mm and –0.1mm concentrate, which were both then fire assayed for gold. The theory is that placer gold traps will yield high concentrations of gold in both the +0.1mm and –0.1mm size fractions. Gold lodes will tend to yield high concentrations of gold in the fine fraction and little or no gold in the coarse size fraction. The critical data is the relative distribution of gold in the two fractions not the absolute concentration. The actual grade of the drainage sites is not critical and has not been back calculated as neither weight nor volume was recorded for each of the sluice sample sites. Six samples were collected from drainages around the Lightbulb Lake Ridge. Three of the samples yielded high concentrations of gold in the fine size fraction and low concentrations of gold in the coarse size fraction, including the original anomalous

sample site at the headwaters of the West Prairie River, suggesting that the potential is perhaps high that there are multiple lode gold sources in the Lightbulb Lake Ridge area.

The drill tailings sampling in the 2003 exploration program east of the Lightbulb lake Ridge yield small gold grain counts. Three samples recovered between 1 to 3 gold grains with calculated gold concentrations up to 1.8 ppb.

Based upon the results of the 2002 and 2003 exploration programs, a follow-up kimberlite exploration program was strongly recommended by Dufresne (2005). A helicopter or fixed wing Geotem magnetic and electromagnetic survey flown over a portion of the Lightbulb Lake Ridge area was recommended, as well as the purchase of existing available magnetic data be acquired for the region outside of the existing Swan Hills magnetic survey. As well, a follow-up detailed creek and till sampling over the Lightbulb Lake Ridge and further reconnaissance sampling for diamond indicator minerals in the losegun Lake and Atikkamek Ridge areas was recommended.

GEOLOGICAL SETTING

Precambrian

The Swan Hills property lies near the centre of the Western Canada Sedimentary Basin within the southern segments of the Peace River Arch (PRA). Precambrian rocks are not exposed within the permit areas. The basement underlying the PRA comprises several terranes including the Buffalo Head and the Chinchaga Low (Figure 3), both of which are thought to have been accreted to the western edge of North America between 1.8 and 2.4 billion years (Ga) ago and collectively form the Buffalo Head Craton (Ross *et al.*, 1991, 1998). Due to the presence of thick crust, potentially Archean protolith and their relatively stable history since accretion, the Buffalo Head and Chinchaga terranes are currently the focus of extensive diamond exploration in northern Alberta.

The area underlying the permits straddles the boundary between two basement terranes, the Buffalo Head Terrane (BHT) to the east and the Chinchaga Low to the west (Figure 3). The BHT is an area of high positive magnetic relief with a north to northeasterly trending fabric (Villeneuve *et al.,* 1993). Ashton Mining of Canada Inc.'s (Ashton) diamondiferous kimberlites are underlain by basement of the BHT. Part of the Churchill Structural Province (Rae Subprovince), the BHT 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 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).

The Chinchaga Low is a prominent, curvilinear, westward convex aeromagnetic low, which is concordant with the outline of the BHT to the east (Villeneuve *et al.*, 1993).

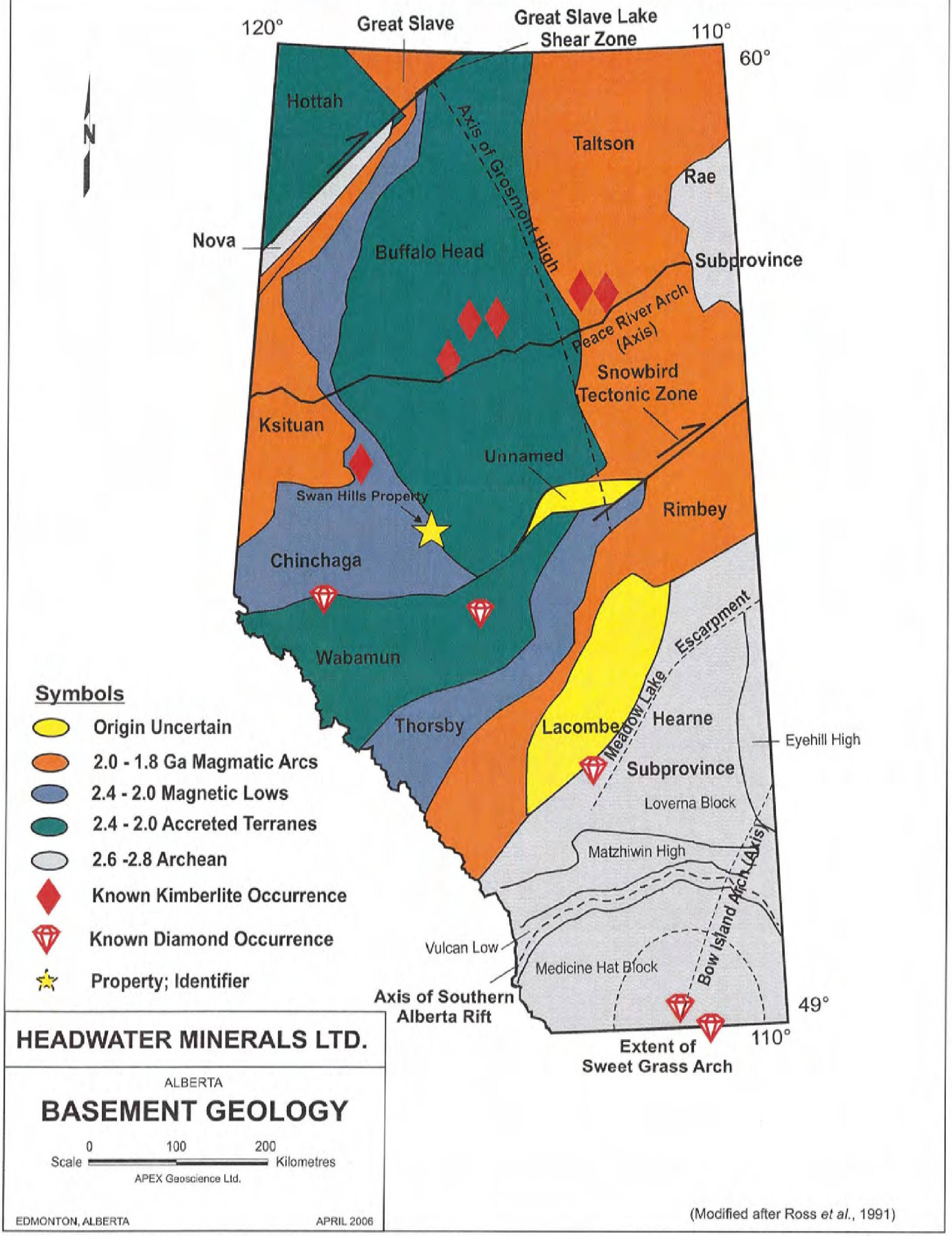

120°
Great Slave
Great Slave Lake Shear Zone
110°
60°
N
Hottah
Axis of Grosmont High
Taltson
Rae
Nova
Buffalo Head
Subprovince
Peace River Arch (Axis)
Snowbird Tectonic Zone
Ksituan
Unnamed
Swan Hills Property
Rimbey
Chinchaga
Wabamun
Escarpment
Meadow Lake
Thorsby
Lacombe
Hearne
Eyehill High
Subprovince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

Figure 3

Drill core taken from the basement in the region comprise metaplutonic and metasedimentary gneisses of comparable age to that of the BHT. In comparison to the BHT, the Chinchaga Low appears to be devoid of either an aeromagnetic or gravity gradient fabric. The boundaries of the Chinchaga Low show no gravity gradient from the surrounding terranes.

The presence of numerous eclogitic garnets, eclogitic pyroxenes and chromium-bearing corundums in association with kimberlites or related intrusions in northern Alberta may indicate the presence of a significant volume of accreted and subducted oceanic basalt and sedimentary protolith in the lower crust and/or upper mantle beneath the BHT and the Chinchaga Low. Seismic refraction and reflection studies indicate that the crust in the Iosegun Lake region is likely between 35 to 40 km thick, a trait favourable for the formation and preservation of diamonds in the upper mantle (Dufresne *et al.,* 1996).

Phanerozoic

Overlying the basement in the Swan 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 exposures within the permit block are common along river and stream cuts and topographic highs. Further information pertaining to the distribution and character of these and older Phanerozoic-aged units can be obtained from well log data in government databases and various geological and hydrogeological reports (Green *et al.*, 1970; Tokarsky, 1977; Glass, 1990; Mossop and Shetson, 1994).

Underlying the near surface Cretaceous units in the 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 form the Swan Hills Reef Complex, which may be related to the Grosmont Reef Complex, a large structure that extends in a northwesterly direction from east of Lesser Slave Lake to the N.W.T. (Bloy and Hadley, 1989). Both the Grosmont and the Swan Hills Reef complexes are likely the result of tectonic uplift or down warping along large-scale arches or rifts during the Devonian. These structures, 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.

The Cretaceous strata underlying Sovereign's permits are composed of alternating units of marine and nonmarine sandstones, shales, siltstones, mudstones and bentonites (Figure 4). The regional stratigraphy of the Swan Hills area is summarized in Table 2. The oldest documented units exposed in the permit area belong to the Wapiti Formation, a sequence of Upper Cretaceous sandstones with minor siltstones and conglomerates. It is possible that older units from the top of the Smoky Group may be exposed locally along the West Prairie River.

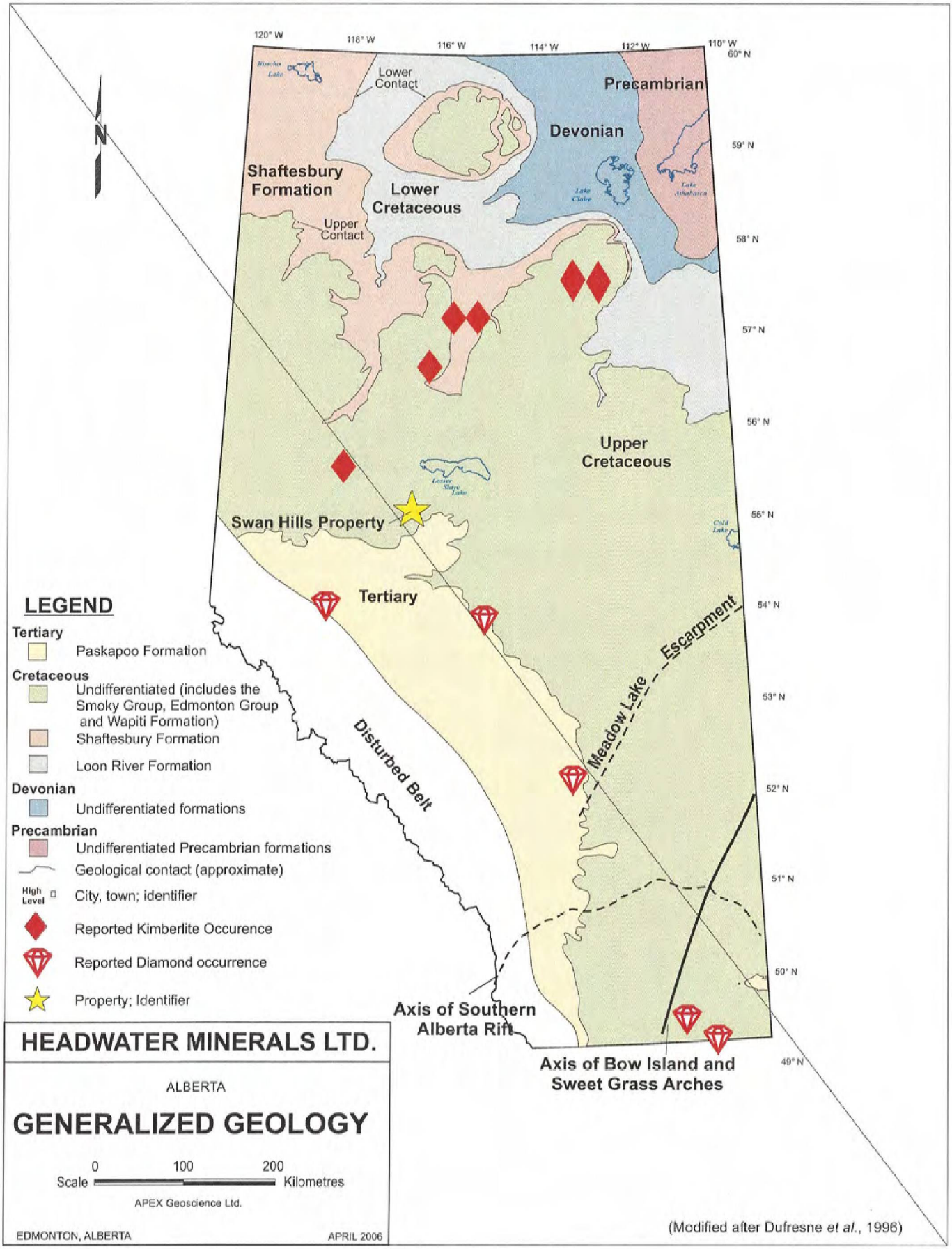

120° W
118° W
116° W
114° W
112° W
110° W
60° N
59° N
58° N
57° N
56° N
55° N
54° N
53° N
52° N
51° N
50° N
49° N
N
Lower Contact
Precambrian
Devonian
Shaftesbury Formation
Lower Cretaceous
Upper Contact
Upper Cretaceous
Swan Hills Property
Tertiary
Escarpment
Meadow Lake
Disturbed Belt
Axis of Southern Alberta Rift
Axis of Bow Island and Sweet Grass Arches
LEGEND
Tertiary
Paskapoo Formation
Cretaceous
Undifferentiated (includes the Smoky Group, Edmonton Group and Wapiti Formation)
Shaftesbury Formation
Loon River Formation
Devonian
Undifferentiated formations
Precambrian
Undifferentiated Precambrian formations
Geological contact (approximate)
High Level
City, town; identifier
Reported Kimberlite Occurence
Reported Diamond occurrence
Property; Identifier
HEADWATER MINERALS LTD.
ALBERTA
GENERALIZED GEOLOGY
0 100 200
Scale Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
APRIL 2006
(Modified after Dufresne et al., 1996)

Figure 4

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, where the Dunvegan Formation is present. 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 chronologically correlative with the deposition of the Crowsnest Formation volcanics of southwest Alberta (Olson *et al.*, 1994; Dufresne *et al.*, 1995) and with kimberlitic volcanism near Fort à la Corne in Saskatchewan (Lehnert -Thiel *et al.*, 1992; Scott Smith *et al.*, 1994).

TABLE 2
REGIONAL STRATIGRAPHY FOR THE SWAN HILLS AREA

SYSTEM	GROUP	FORMATION	AGE* (MA)	DOMINANT LITHOLOGY
Pleistocene			Recent	Glacial till and associated sediments.
Tertiary			6.5 to Recent	Pre-glacial sand and gravel.
Upper Cretaceous		Wapiti	70 to 80	Sandstones and minor siltstone with conglomerates.
	Smoky	Puskwaskau	75 to 86	Thinly bedded dark marine shales, ironstone, First White Specks.
		Badheart	86 to 88	Sandstone.
		Kaskapau	88 to 92	Marine fossiliferous shale, Second White Specks.
		Dunvegan	92 to 95	Marine, non-marine and deltaic sandstones.
	Fort St. John	Shaftesbury	95 to 98	Friable dark marine shales with bentonitic layers; Fish Scale Zone.

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

Deltaic to marine, feldspathic sandstones, silty shales and laminated carbonaceous siltstones characterize the Dunvegan Formation. The unit is overlain conformably by shales of the Kaskapau Formation of the Smoky Group. It should be noted that the Ashton pipes exist just above or near the contact between the Kaskapau and the Dunvegan formations (Dufresne *et al.*, 1995).

The Smoky Group is Upper Cretaceous in age and is comprised of thinly bedded, marine, silty shale with occasional ironstone and claystone nodules and thin bentonite streaks. The group is divided into three formations: (a) a lower shale unit, Kaskapau,

which includes the Second White Specks marker unit (SWS); (b) a middle sandstone, named the Badheart; and, (c) an upper shale, Puskwaskau, which contains the First White Specks marker unit. 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, if present, will be limited to river and stream cuts. There is strong evidence of volcanism associated within the depositional time span of the Smoky Group in the vicinity of the PRA (Auston, 1998; Carlson *et al.*, 1998). Ashton's recently discovered Buffalo Head Hills kimberlites yield emplacement ages of 86 to 88 Ma (Auston, 1998; Carlson *et al.*, 1998). In addition, kimberlites discovered in the Birch Mountains by Kennecott Canada Exploration Inc. (Kennecott) in a joint venture with Montello Resources Ltd. (Montello) and Redwood Resources Inc. (Redwood) is reported to yield emplacement ages of about 82 Ma. These volcanic events would have taken place during deposition of the Smoky Group sedimentary succession.

The youngest unit underlying the Swan Hills mineral permits is the Late Campanian to Early Paleocene Wapiti Formation (Figure 4). The Wapiti Formation is primarily composed of medium to coarse-grained, feldspathic, argillaceous to carbonaceous sandstones interbedded with siltstones and silty shale (Chu, 1978; Glass, 1990). Thin and laterally discontinuous coal seams may be present. In addition, some of the sandstones and shales may be bentonitic. The Wapiti Formation in this region is thick, often exceeding several hundred metres. Outcropping Wapiti Formation is common along river and stream cuts and on topographic highs throughout the property. The Wapiti Formation is of particular exploration interest in this area because of its chronological and stratigraphic relationship to the Mountain Lake Kimberlite, located about 75 km west of High Prairie (Dufresne and Copeland, 2000). Although, the Mountain Lake Kimberlite is reported to be highly altered and poorly diamondiferous (Leckie *et al.*, 1997), its presence in the Wapiti Formation with an intrusion date of somewhere between 69 and 75 Ma is significant as it indicates the presence of kimberlitic magmatism coeval with the deposition of Wapiti Formation sediments. An age of 70 Ma has also been reported for one of Montello-Kennecott kimberlites in the Birch Mountains. If kimberlites of similar age to the Mountain Lake Kimberlite exist within the Swan Hills mineral permits they would be relatively near surface.

Late Tertiary – Quaternary

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 losegun Lake region, had reached a mature stage of erosion. The Swan Hills drained into large, broad, northeasterly flowing paleochannels and their tributaries northwest of the region (Dufresne *et al.*, 1996). Fluvial sand and gravel was deposited pre-glacially in these channels. The exact age of these channels is uncertain.

Several of the topographic highs in the Swan Hills region are capped by pre-glacial gravel deposits of probable Late Tertiary age (Klassen, 1989). The exact age of the unit is uncertain due to a scarcity of data. Containing no evidence of glacial origin,

this unit is comprised of fine to coarse-grained sand and quartzite pebble-gravel derived from the Cordillera. Typically thin, less than 10 m, and discontinuous, the sand and gravel unit may be remnants resulting from erosion and river incision associated with uplift of the PRA or some other local tectonic feature underlying the Swan Hills.

During the Pleistocene, multiple southwesterly and southerly glacial advances of the Laurentide Ice Sheet across the region resulted in the deposition of ground moraine and associated sediments in northern Alberta (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 Swan Hills property appear to be topographically controlled, following the contours of the Swan Hills. It is uncertain whether thick continental ice covered the Swan Hills completely. The presence of Tertiary gravels at topographic highs within the Swan Hills just east of the permit areas, the thinness of the drift cover, and the lack of glacial erosional features such grooves or flutes may indicate that glacial erosion was not as prevalent or strong as initially anticipated. Hummocky supraglacial and meltout till plains with associated small, localized organic deposits are prevalent in depressional areas and at lower elevations in the Swan Hills region.

Glacial ice is believed to have receded from the area 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. Drainage regimes previously re-routed due to glaciation, re-established drainage patterns similar to that of the pre-Pleistocene. Alluvial deposits in the form of channel bars and floodplains are present along portions of the West Prairie River. Extensive colluvial sediments accompanied post-glacial river and stream incision.

The majority of the Swan Hills property is covered by drift of variable thickness, ranging from a discontinuous veneer to less than 15 m (Pawlowicz and Fenton, 1995a,b). Bedrock may be exposed locally, in areas of higher topographic relief. Unfortunately, local drift thickness for the properties cannot be easily delineated due to the scarcity of publicly available hydrogeological 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 (Mossop and Shetson, 1994; Pawlowicz and Fenton, 1995a,b; Dufresne *et al.*, 1996).

Structural Geology

In north-central Alberta, the PRA is a region where the younger Phanerozoic and Cenozoic 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, and to a lesser extent the Cenozoic, 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.

There is a well-documented northwest trending δO^{18} alteration feature in the basement rocks beneath the Swan Hills property near or along the eastern boundary of the Chinchaga Low (Muehlenbachs *et al.*, 1993 and 1994). This feature lies in close proximity to the properties and potentially may indicate that an important deep-seated structure may underlie the properties. This type of a structure, as evidenced by the presence of the Mountain Lake Kimberlite near or along the western edge of the Chinchaga Low and several of the Buffalo Head Hills Kimberlites along the western edge of the Grosmont High, may have played a critical role in determining whether kimberlites reached surface in the vicinity of the properties during the Phanerozoic.

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 Swan Hills property lie along the southern edge of the PRA and are underlain by and proximal to basement faults that may also be related to the Swan Hills Reef Complex (Bloy and Hadley, 1989; Dufresne *et al.*, 1996). There is strong evidence that basement faults manifested in the overlying Phanerozoic sedimentary succession may have controlled the emplacement of the Mountain Lake Kimberlite and the Buffalo Head Hills Kimberlites northwest and north of the properties (Dufresne *et al.*, 1996; Leckie *et al.*, 1997). It is unclear whether the kimberlites discovered to date show any spatial relationship to structures in the underlying basement and/or Phanerozoic succession. However, structures observed proximal to the two properties resulting from tectonic activity associated with movement along the PRA or even along contacts between different basement terranes could be pathways for kimberlitic volcanism.

DEPOSIT TYPE

Kimberlites

To understand the significance of diamond indicator minerals (DIMs), it is important to understand the type of igneous rocks from which primary diamond deposits are mined. The most common rock type from which diamonds are mined are kimberlites and, to a lesser extent, lamproites and orangeites. Diamond indicator minerals (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.

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).

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

Diamond indicator minerals (DIMs) include minerals that have crystallised directly from a kimberlitic magma (phenocrysts), or mantle derived minerals (xenocrysts) that have been incorporated into the kimberlitic magma as it ascends to the earth's surface. Examples of DIMs are picroilmenite, titanium and magnesium rich chromite, chrome diopside, magnesium rich olivine, pyropic and eclogitic garnets. Varieties of garnet

include G1, G2, G9, G10, G11, G12 pyropes as defined by Dawson and Stephens (1975), G9 and G10 pyropes as defined by Gurney (1984) and Gurney and Moore (1993) and G3, G4, G5, and G6 eclogitic garnets as defined by Dawson and Stephens (1975). From this paragraph on, reference to G1, G2, G3, G4, G5, G6, G11 and G12 pyrope garnets refers to Dawson and Stephens' (1975) classification and G9 and G10 refers to Gurney's (1984) G9 and G10 pyrope garnets of lherzolitic and harzburgitic origin, respectively.

DIMs are used not only to assess the presence of kimberlites in regional exploration programs but also to assess whether the kimberlites have the potential to contain diamonds. There are a limited variety of DIMs from which information pertaining to the diamond bearing potential of the host kimberlite can be gained. Typically, these are DIMs that 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.

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

The effectiveness of geophysical methods in kimberlite exploration is dependent on the assumption that the difference between the geophysical signature of the hosting rock unit and a potential kimberlite is significant enough to be recognised by the geophysical techniques available. There are many examples of economic kimberlites that produce very subtle, unrecognisable geophysical responses as well as non kimberlite geologic features and man made structures (referred to as "cultural interference") such as oil wells, fences, bridges, buildings which can produce kimberlite like anomalies. In addition, in areas of thick overburden, such as the Buffalo Head Hills region, sand and gravel with water and placer accumulations of heavy oxide minerals, can yield both 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).

Gold

In the Swan Hills area, the dominant type of gold found to date is placer gold indicating that alluvial placer gold is a potential deposit type for the area. Based upon the presence of gold in immature drainages, there is a strong likelihood that there are bedrock sourced lode gold present in the area. Headwater Minerals Swan Hills Property is underlain by clastic sedimentary with minor shallow water limestone horizons. Based upon the type of bedrock present and the mode of occurrence of gold quartz-vein hosted to replacement-type sedimentary hosted gold deposits are a potential target within the Swan Hills Property, as are placer deposits within the Late Cretaceous to Early Tertiary sandstones. In terms of potential economic concentrations of placer gold in the modern day drainages, the potential for any kind of volume of gravel host material is somewhat restricted in the uplands area in the vicinity of the Lightbulb Lake Ridge. The Goose River and associated tributaries draining the Lightbulb Lake Ridge represent the best potential targets for placer gold based upon the size of the drainages and the volume of gravels associated with these drainages. However, Late Cretaceous to Early Tertiay bedrock within the Lightbulb Lake Ridge also represents a potential placer target.

MINERALIZATION

To date no kimberlites or gold deposits have been identified on the Swan Hills Property. The Mountain Lake Kimberlite exists approximately 60 km to the northwest.

EXPLORATION

During summer 2005, Headwater Minerals personnel collected 12 suction dredge samples, 5 till samples and 35 rock grab samples within the Swan Hills permits (Figure 5; Appendix 3). These samples were collected from the Goose River area following up

previous work, which had identified a number of diamond indicator mineral anomalies and gold anomalies.

The 17 suction dredge and till samples were collected from along the Goose River and in tributaries of the Goose River and were analysed for diamond indicator minerals (DIMs), particulate gold grains and trace metal geochemistry. The complete results for visual picking for DIMs and particulate gold for these samples are in appendices 4a and 4b and can be seen on figure's 6, 7 and 8. A summary table of calculated gold values for samples from 1999 to 2005 is listed in appendix 4c. Electron microprobe analysis of the picked DIMs is currently underway with results pending.

The suction dredge and till samples that were collected were analysed for diamond indicator minerals with the initial picking results in appendix 4a. A total of 7 suction dredge and 2 till samples yielded at least 1 picked diamond indicator mineral up to a maximum of 18 DIMs. The four suction dredge samples and 1 till sample actually yielded a maximum of 1 silicate DIMs. Although most of the grains occur in the central part of the Goose River, suction dredge sample CDJ0429-H19 contained the highest grain counts with 1 pyrope garnet and 17 chromite grains that were recovered from a tributary north of the Goose River.

The suction dredge and till sampling during the 2005 exploration program has confirmed that high gold concentrations, including number of particulate grains and calculated gold concentrations occur along the Goose River. Thirteen of the 17 samples yielded particulate gold grains. The largest number of gold grains recovered from the 2005 sampling program was 140 in a sample collected from the Goose River, and 83 grains in a sample collected west on the Goose River. The largest calculated concentration of gold was 394.5 ppb for a sample collected from the Goose River. A number of samples collected from the Lightbulb Lake Ridge area yield calculated gold concentrations of 19.2 up to 103.5 ppb.

Thirty-five grab samples comprising approximately 2 kilograms (kg) each of rock were collected from carbonate outcrops from 14 different sites on the property and underwent geochemical and metallurgical processing for gold. The gold values in the samples ranged from 0.03 grams gold per tonne (g Au/t) up to 0.062 g Au/t (Figure 9). None of the rocks contained anomalous values of gold. The complete geochemical results for the rock samples are in Appendix 4d.

EXPENDITURES

During 2005 to 2007, Headwater reports a total exploration expenditure of $219,567.46, excluding GST (Appendix 5). The bulk of the expenditure was focussed on prospecting and sampling across the Swan Hills Property. A total of $45,389.68 was spent by Headwater on subcontract geological and laboratory services (Appendix 5) including APEX and the Saskatchewan Research Council (SRC).

500000 520000 540000 560000 580000 600000

6120000 6100000 6080000 6060000 6040000

N W E S

Legend

Headwater Minerals Permits

Headwater Mineral Permit

Diamond Indicator Sample Locations

Total Indicators

21

- Chrome Diopside
- Eclogitic Garnet
- Cr-Grossular
- Pyrope Garnet
- Olivine
- Picroilimenite
- Chromite
- × Sample Sites, No Results Found
- Roads
- lakes
- Drainage

Nad27 Zone 11

HEADWATER MINERALS LTD.

Swan Hills Property

1999-2005 TOTAL DIAMOND INDICATOR RESULTS

0 10 20
Kilometers

Scale 1:400000

Alberta, Canada

APEX Geoscience Ltd.

Edmonton, Alberta April 2006

Figure 6

500000 520000 540000 560000 580000 600000

6120000 6100000 6080000 6060000 6040000

N W E S

Legend

Headwater Minerals Permits

Headwater Mineral Permit

Diamond Indicator Sample Locations

Total Silicates

7.1

Chrome Diopside

Eclogitic Garnet

Cr-Grossular

Pyrope Garnet

Olivine

× Sample Site, no results found

Roads

lakes

Drainage

Nad27 Zone 11

HEADWATER MINERALS LTD.

Swan Hills Property

1999-2005 SILICATE DIAMOND INDICATOR RESULTS

0 10 20
Kilometers

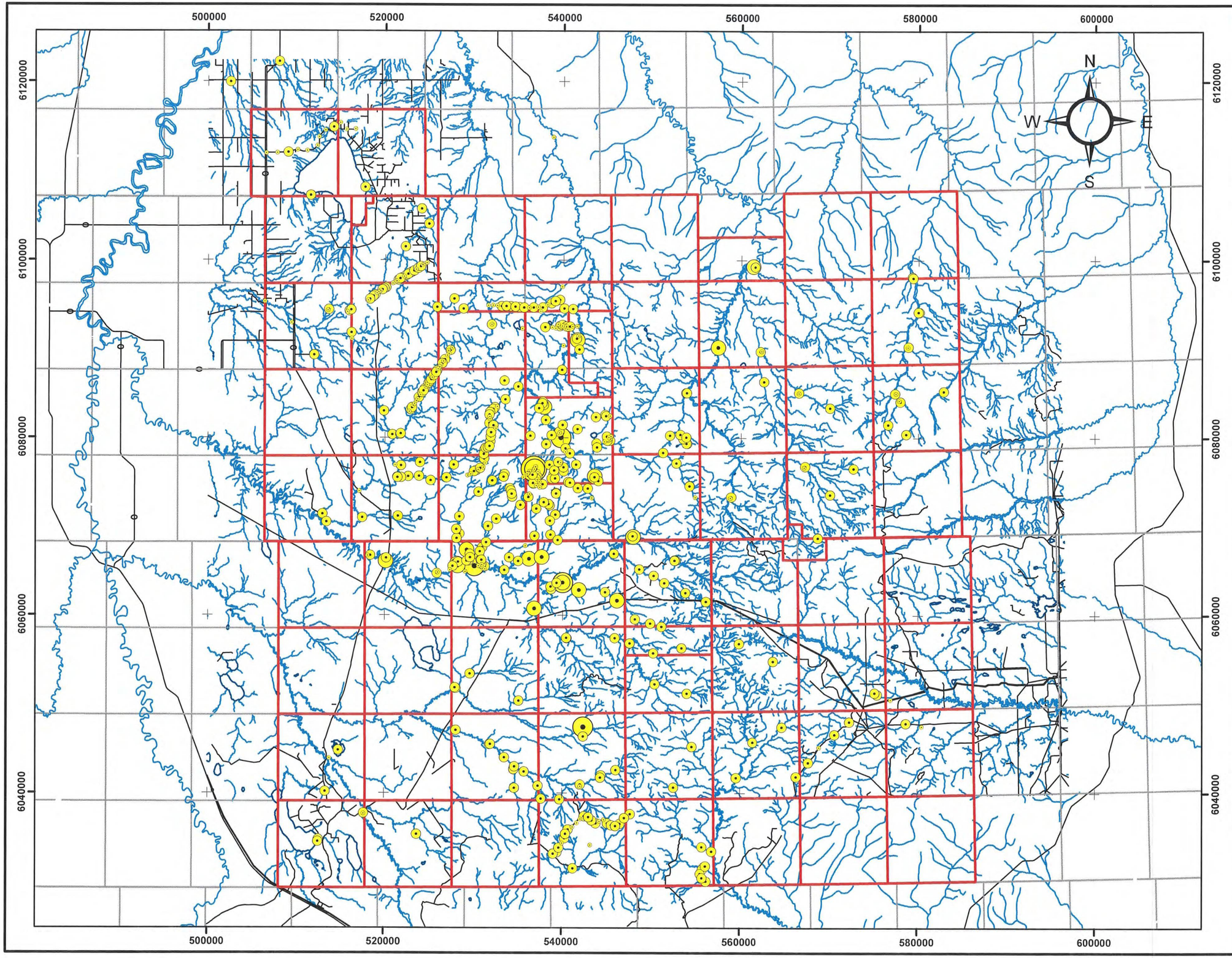
Scale 1:400000

Alberta, Canada

APEX Geoscience Ltd.

Edmonton, Alberta April 2006

Figure 7



Legend

Headwater Mineral Permits

1999-2005 Gold Grain Sample Locations

Estimated Grains

- 0
- 1 - 49
- 50 - 99
- 100 - 499
- 500 - 1250

Roads

lakes

Drainage

Nad27 Zone 11

HEADWATER MINERALS LTD.

Swan Hills Property

1999- 2005 PICKED GOLD GRAIN RESULTS

0 10 20

Kilometers

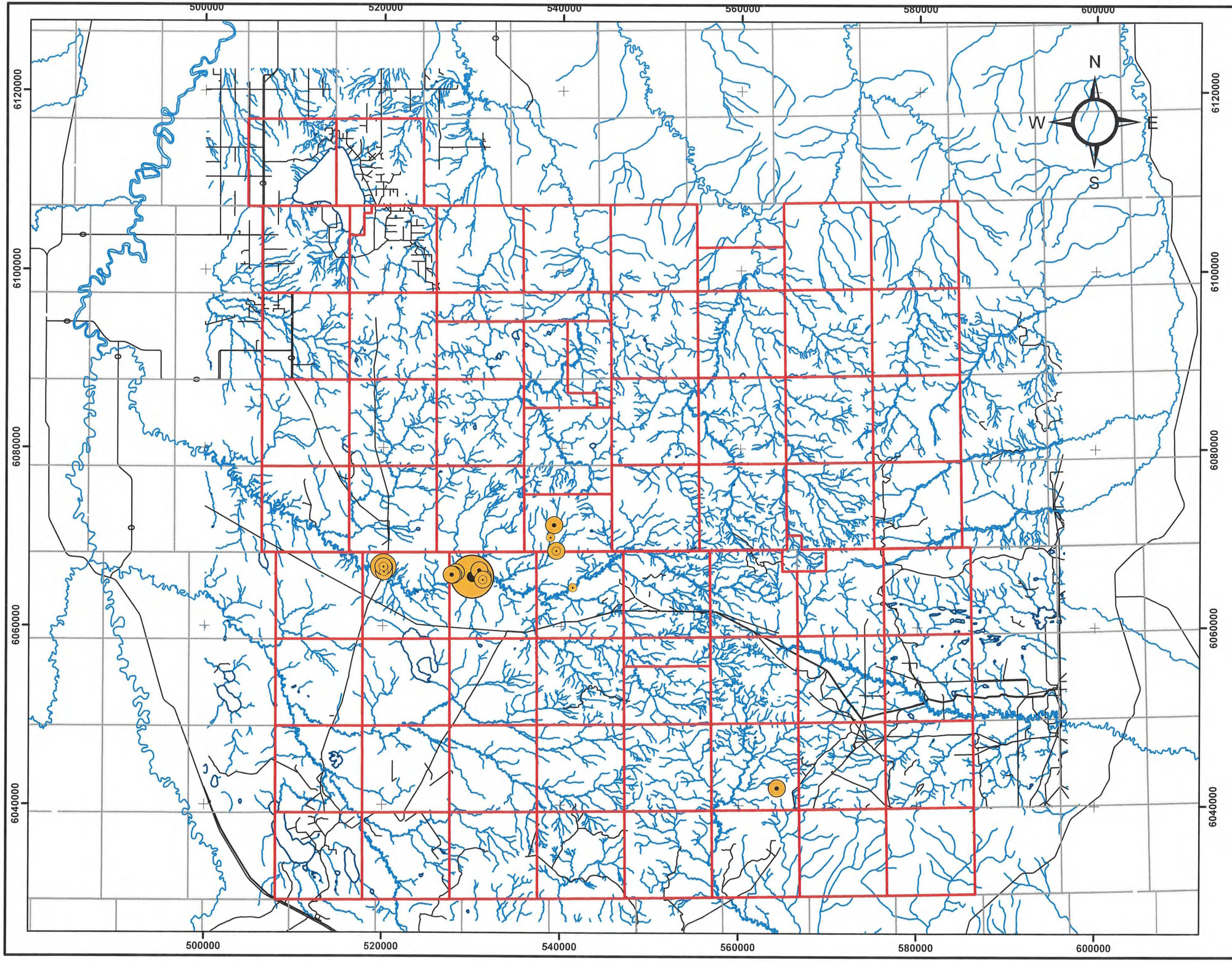
Scale 1:400000

Alberta, Canada

APEX Geoscience Ltd.

Edmonton, Alberta April 2006

Figure 8



Legend

Headwater Mineral Permit

2005 Rock Samples Gold Results

Au ppb

- 1- 9
- 10 - 19
- 20 - 29
- 30 - 39
- 40 - 65

Roads

lakes

Drainage

Nad27 Zone 11

HEADWATER MINERALS LTD.

Swan Hills Property

2005 ROCK GRAB GOLD ANOMALY SUMMARY

0 10 20

Kilometers

Scale 1:400000

Alberta, Canada

APEX Geoscience Ltd.

Edmonton, Alberta April 2006

Figure 9

SAMPLING METHOD AND APPROACH

This section describes the sampling methodology used in the collection of all suction dredge, till and rock samples by APEX personnel during past exploration and by Headwater Minerals personnel during the 2005 exploration program.

Suction Dredge Sampling

A total of 12 suction dredge samples were collected by Headwater Minerals during the 2005 exploration program. The samples were collected by using a pump with attached suction hose connected to a small sluice box and running about a 0.5 to 1 m^3 sample of gravel through the sluice until the riffles and carpet were filled. Sample locations were determined by hand-held global positioning system (GPS) set to report locations in UTM coordinates using North American Datum established 1927 (NAD 27) and UTM zone 11. Sample sizes ranged from 1.5 to 18.25 kilograms and samples were collected in plastic pails and labelled. The sample pails were sealed and shipped to the Saskatchewan Research Council (SRC) Laboratory in Saskatoon, Saskatchewan. For details of the sampling methodology and approach for prior samples refer to Dufresne (2005), Dufresne and Kim (2002) and Dufresne and Copeland (2000).

Till Sampling

Five till samples were collected by Headwater Minerals during the 2005 summer program. Each sample site was marked using a wood lath ground with attached aluminium sample tags. Sample locations were determined by hand-held GPS set to report locations in UTM coordinates using NAD 27 and UTM zone 11. Sample sizes ranged from 5.15 to 9.3 kilograms and samples were collected in clear plastic sample bags which were double bagged using a poly woven rice bag for added support. The sample identifiers were written on the outside of each bag (on both sides) and part of the till sample card was placed in the bag with the sample number written on it. The sample bags were closed using zip ties. The samples were then placed within a sealed poly woven rice bags, for shipping, to the SRC Laboratory in Saskatoon, Saskatchewan. For the sampling methodology and approach for prior samples refer to Dufresne (2005), Dufresne and Kim (2002) and Dufresne and Copeland (2000).

Surface Rock Sampling

All rock samples that were collected by Headwater Minerals were marked at each sample site using orange arctic grade flagging. Sample locations were determined by hand-held GPS set to report locations in UTM coordinates using NAD 27 and UTM zone 11. Sample sizes were, in general, 2 kilograms and samples were collected in clear plastic sample bags. The sample identifiers were written on the outside of each bag (on both sides). A sample tag marked with the appropriate sample number was placed inside each sample bag. The sample bags were closed using zip ties. Rock grab samples were collected from ironstone and carbonate outcrops. Only fresh, unweathered samples were selected to ensure the maximum quality of results. The

samples were then placed within a sealed poly woven (rice) bag. The samples were shipped to the SRC Laboratory in Saskatoon, Saskatchewan. For the sampling methodology and approach for prior samples refer to Dufresne (2005), Dufresne and Kim (2002) and Dufresne and Copeland (2000).

SAMPLE PREPARATION, ANALYSES AND SECURITY

All prior samples collected by APEX personnel were in general shipped to the SRC directly and were usually security sealed with unique numeric security tags. In some cases, a few samples were collected by APEX personnel and were then transferred to Headwater Minerals personnel for direct transportation to the SRC. In all cases, care was taken by the SRC to review the integrity of the sample bags and tags to insure the samples had not been compromised.

The rock and till samples collected by Headwater Minerals personnel during 2005 were placed into sealed plastic bags and then into a sealed poly woven (rice) bag and placed into a pails for shipment to the SRC immediately following collection. The suction dredge samples were placed into sealed plastic pails for shipment to the SRC immediately following collection. All the suction dredge and till samples were sent to the SRC, Saskatoon, Saskatchewan for diamond indicator minerals (DIMs) analysis, particulate gold grain analysis and trace metal geochemistry. All the rock samples were sent to the SRC for geochemical gold analysis, trace-element geochemistry and whole rock geochemistry. The samples were shipped by Headwater Minerals personnel using an insured courier. The SRC reported nothing unusual with respect to the samples shipped by Headwater Minerals personnel, once the shipments were received. The authors did not have control over the collection or shipping of the 2005 samples and therefore can not personally verify what happened to the samples during collection, transport and shipping to the time they were received at SRC. However, the author has no reason to believe that the security of the samples was compromised.

Sample Preparation

Rock samples were dried overnight at 80° C, then crushed to 60% <2mm and approximately a 500 g sub sample was riffled out. The riffled sub sample was then ground to a pulp (90% <106 micron) in a chrome steel grinding mill.

A 500 g sub sample was extracted from each till sample for geochemical analysis and was dried at 80° C overnight. The remaining sample was used for particulate gold grain and DIM analysis. The 500 g sub sample was dried in similar fashion to the rock samples, was broken up using a mortar and pestal and sieved at ±180 microns. The <180 micron fraction was used for geochemical analysis including fire assay for gold and trace-element ICP (inductively coupled plasma) analysis.

Geochemical Analysis

Trace element analysis is achieved using wet chemical methods for both rock samples and the clay fraction of the till samples. The samples were digested using a combination of aqua regia and multi-acid digestion coupled with ICP analysis. The aqua regia partial digestion technique utilizes a 0.5 g aliquot of sample pulp digested in a 2 ml mixture of 1:3 concentrated HNO_3 and HCl acids for 1 hour at 95°C then diluted to 15 ml with de-ionized water, shaken and analyzed by ICP (using a Perkin Elmer Optima 3000 DV) yielding the detection limits listed below.

Element	Detection Limit ppm	Element	Detection Limit ppm
Ag	0.1	Ni	0.2
As	0.2	Pb	0.2
Bi	0.2	Sb	0.2
Co	0.2	Se	0.2
Cu	0.2	Te	0.2
Ge	0.2	U	1
Hg	0.2	V	0.2
Mo	0.2	Zn	0.2

The total digestion analysis utilizes a 0.125 g aliquot of sample pulp digested in a mixture of 7 ml of concentrated HF, 2 ml of concentrated HNO_3, 0.5 ml of concentrated $HClO_4$ at 90°C until dry. The residue is dissolved in 15 ml of 5% HNO_3 and analyzed by ICP (Perkin Elmer Optima 3000DV) yielding the detection limits listed below.

Element	Detection Limit	Element	Detection Limit
Ag	0.2 ppm	MnO	0.001 wt%
Al_2O_3	0.01 wt%	Mo	1 ppm
Ba	1 ppm	Na_2O	0.01 wt%
Be	0.1 ppm	Nb	1 ppm
CaO	0.01 wt%	Nd	1 ppm
Cd	0.2 ppm	Ni	1 ppm
Ce	1 ppm	P_2O_5	0.001 wt%
Co	1 ppm	Pb	1 ppm
Cr	1 ppm	Pr	1 ppm
Cu	1 ppm	Sc	1 ppm
Dy	0.2 ppm	Sm	0.5 ppm
Er	0.2 ppm	Sn	1 ppm
Eu	0.2 ppm	Sr	1 ppm
Fe_2O_3	0.01 wt%	Ta	1 ppm
Ga	1 ppm	Tb	0.3 ppm
Gd	0.5 ppm	Th	1 ppm
Hf	0.5 ppm	TiO_2	0.001 wt%
Ho	0.4 ppm	V	1 ppm
K_2O	0.002 wt%	W	1 ppm
La	1 ppm	Y	1 ppm
Li	1 ppm	Yb	0.1 ppm

Lu	0.1 ppm	Zn	1 ppm
MgO	0.001 wt%	Zr	1 ppm

The SRC employed quality control measures including size screening of sample fractions, the analysis of blanks and standards along with replicates of selected samples. Not standards or blanks were incorporated by either Headwater Minerals personnel or APEX personnel.

Fire Assay Gold

The SRC employs a 30 g aliquot of rock pulp or till clay fraction (<180 microns) for fire assaying using standard lead collection methods. After the lead is removed during oxidation, the resulting precious metal bead or prill is then dissolved in aqua regia and analyzed by ICP (Perkin Elmer Optima 5300DV) for gold with a detection limit of 2 ppb. The SRC utilized blanks, standards and replicates with all samples.

Based on the author's prior exploration experience, samples containing greater than 0.5 g/t Au are considered 'anomalous' and those samples which contain between 0.10 g/t Au and 0.5 g/t Au are 'possibly anomalous'. Anomalous rock samples which contain greater than 0.5 g/t Au should, wherever possible, be followed up to determine if they are associated with important gold-bearing zones. Rock samples that assay 0.10 to 0.5 g/t Au may warrant follow-up exploration depending on: (a) whether there are other possibly anomalous samples in their vicinity, (b) favourable geology, and (c) the logistical ease of re-visiting the sample site.

Gold Grain Analysis

Till and suction dredge samples collected by Headwater Minerals personnel were submitted for particulate gold grain analysis. The samples to be processed were weighed prior to any processing. Samples were dispersed in a dilute solution of calgon to ensure all gold grains were free of adhering soil particles. Samples were screened at 1.70 mm and then processed through a Knelson Concentrator. The Knelson concentrate was then processed over a Mozley superpanner and a heavy mineral gold grain concentrate produced. The gold grain concentrate was then examined under a microscope for particulate gold. The gold grains were then counted, sized and described and the weight in µg was estimated based on the size. All residual material from all phases of processing was captured and then recombined and processed for DIMs. It was not possible to analyze blanks QC samples or standards for this method.

Diamond Indicator Mineral Processing and Analysis

At the SRC lab, in order to recover heavy mineral concentrates, weighed samples are wet sieved into 2 fractions: <1 mm to >0.5mm; <0.5mm to >0.25mm, using vibrascreens. The minus 0.25mm material and >1mm material is stored. The fractions are put through a permaroll to separate non-magnetic from para-magnetic mineral grains. Heavy liquid separation (tetrabromoethane (TBE) specific gravity 2.96 and

methylene iodide (MI), specific gravity 3.3) is used to further concentrate heavy minerals. The heavy mineral concentrate undergoes ferromagnetic separation using a hand magnet to obtain magnetic and nonmagnetic fractions. Samples are then passed through a Frantz to obtain the final concentrates for diamond indicator mineral picking. Samples are currently undergoing microprobe analyses at the SRC.

DATA VERIFICATION

The suction dredge and till samples collected during 2005 by Headwater Minerals personnel were shipped by company truck to the SRC. The rock grab samples were placed in pails with security seals when shipped to the SRC. The SRC reports that the samples had no evidence of tampering. Although the authors did not have control over the 2005 samples, the authors has no reason to believe any of the suction dredge, till or rock grab samples have been compromised.

Internal geochemical reference materials (standards) were included for analysis by the SRC with the rocks collected during the 2005 and prior exploration programs as a matter of standard procedure. No issues with respect to the quality of the analyses conducted by the SRC forthe 2005 or prior rock samples were identified.

The Saskatchewan Research Council (an ISO 9002 registered company) performed standard quality assurance/ quality control (QA/QC) procedures with respect to the rock samples that were sent for analysis. SRC routinely analyzes analytical blank and standard samples. The data for all of these standard analyses were found to be within acceptable limits. Due to the limited nature and budget of the property visit/ exploration program (i.e. prospecting), and the limited number of samples collected, a rigorous quality assurance and quality control (QA/QC) program was not warranted. No blank samples or standard samples were sent to the ISRC for analysis by Headwater Minerals personnel. As well, no field duplicate samples were submitted for assay. Samples do, however, have similar results to those collected by others. When managing ongoing exploration programs up to 20 per cent of all samples should be check assayed and analytical standards and field duplicates should be analyzed regularly to ensure quality assurance and quality control. In future, it is strongly recommended that standards and blanks be included with all sample shipments for both the rock samples to be analysed for gold and trace elements and for the DIM samples.

ADJACENT PROPERTIES

There are no contiguous mineral permits adjacent to the Headwater Mineral's Swan Hills properties with important kimberlite or gold disocveries, however the Mountain Lake Kimberlite lies approximately 60 km northwest of the Headwater Minerals Swan Hills property and there are at least two major diamond exploration programs operating in the southern portion of the Buffalo Head Hills in close proximity to the Swan Hills. The diamond programs are both located in the Buffalo Head Hills region,

north of the Swan Hills area. Current diamond exploration in the Buffalo Head Hill region is being conducted by Ashton Mining of Canada Inc. and Grizzly Diamonds Ltd. The Mountain Lake Kimberlite is currently held by Brazalta Resources Corp. and represents the only kimberlite found in the region to date.

The Ashton Buffalo head Hills properties are located approximately 240 kilometres north of the Swam Hills area. Since late 1996, Ashton and its joint venture partners have evaluated more than 10 million hectares on their Buffalo Head Hills properties and found success through the discovery of 38 kimberlites. Twenty-six of the kimberlites have been found to be diamondiferous and seven have been mini-bulk sampled for diamonds. The mini-bulk and bulk samples have returned diamond contents that range from 3.5 up to 55 carats per hundred tonnes. Ashton's K252 kimberlite yielded 12.54 carats of diamonds from a 22.8 tonne mini-bulk collected in 2001 yielding and overall diamond grade of 55 carats per hundred tonnes. Although this is the highest diamond content recorded for any kimberlite discovered in Alberta, the K252 kimberlite is considered too small to be economic and is overlain by up to 70 m of overburden. Ashton and its joint venture partners have recently utilized EM and gravity geophysical surveys that have resulted in the discovery of the diamondiferous kimberlites K296 and K300 in early 2003 (Ashton Mining of Canada Inc. website).

Grizzly Diamonds Ltd. owns eight properties in the Buffalo Head Hills region, which surround Ashton's Buffalo Head Hills properties and comprise approximately 850,000 hectares (Metallic and Industrial Minerals Map, Alberta Energy Website, April 2006). To date no kimberlites have been found on Grizzlys properties, although samples have revealed significant numbers of indicator minerals such as olivine, chrome diopside, pyrope garnet, chromite and picroilmenite. Aeromagnetic surveys conducted on Grizzlys Smoky The Bear Property in 2004 identified of a number of magnetic anomalies that require follow-up exploration for kimberlites, in particular, anomaly TQ-108, which is thought to represent a buried kimberlite. In 2005, an 11,500 line-km high resolution aeromagnetic survey was flown over Grizzlys Grand Cub Aidan Property and a 3,800 line-km GEOTEM survey is scheduled for spring 2006 on the Preston Upon Wolverine Property (Grizzly diamond Ltd. Press Release December 19, 2005).

INTERPRETATION AND CONCLUSIONS

The 2005 diamond indicator sampling confirmed and extended a high quality diamond indicator anomaly from the anomalous ridge area south of Lightbulb Lake and north of the Goose River (known from previously sampling) to as far northwest as Snipe Lake. The 2002 to 2005 creek sampling program yielded a number of high quality diamond indicator anomalies along the Goose River and in creeks north of the Goose River draining the Lightbulb Lake Ridge that trends northwest from south of Lightbulb Lake all the way to Snipe Lake a distance of more than 50 km. Based upon the results of the previous sampling programs, the Lightbulb Lake Ridge area should be considered a high priority target area for the presence of kimberlites and follow-up

exploration. The 2002 sampling program, with the recovery of a few borderline but high Cr G10 pyrope garnets, a few high Cr chromites and a number of excellent chemistry eclogitic garnets, also demonstrates that the Lightbulb Lake Ridge area may have at least moderate potential for diamondiferous kimberlites. It is evident from the till sample results that the sparse number of indicator minerals recovered from till samples in the Lightbulb Lake Ridge area may potentially indicate that the large numbers of indicator minerals being recovered from drainages surrounding the ridge are locally derived from buried kimberlites.

Sampling of Atikkamek Creek, the Sakwatamau River and their tributaries indicate that the northeast-southwest trending ridge that divides the two drainages is a strong candidate for the presence of possible kimberlites. The distinct lack of significant numbers of indicator minerals in the till samples may also point to a local source such as buried kimberlite for the DIMs that have been recovered to date in the Attikamek drainages.

In addition, the 2002, 2003 and 2005 sampling combined with the results of previous work by Ashton Mining of Canada Inc. has resulted in the identification of other lower priority anomalous areas including the Meekwap Lake area, and an area from Iosegun Lake east to the headwaters of Atikkamek Creek, bounded by the Sakwatamau River. Work by Ashton has also resulted in the identification of a number of other potentially anomalous areas yielding possible olivine including north of the Swan Hills permits in the vicinity of the West and East Prairie rivers, and east-southeast of the Swan Hills permits in the vicinity of Highway 32 and the Freeman River.

Although gold has been found in almost every sample across the Swan Hills property, the eastern half of the property yields most of the samples with the lowest gold grain counts and the lowest calculated concentrations of gold. The eastern half of the property area represents the highest topographic portion of the property and is predominantly capped by the Swan Hills Tertiary gravels. The high gold counts and high estimated concentrations of gold for samples collected from the western half of the property are some of the most spectacular gold results that have been obtained by APEX personnel in Alberta with perhaps the only exception being the North Saskatchewan River from Rocky Mountain House to Edmonton. If much of the gold in the western portion of the property was derived from the erosion and reworking of the Swan Hills Tertiary gravels it would be expected to see somewhat higher gold grain counts and concentrations in the eastern half of the property in close proximity to the Swan Hills gravels. This may suggest that there is some contribution to the present day streams from local bedrock sources including placer gold in Cretaceous to Early Tertiary sandstones or vein to replacement type gold introduced into the local bedrock from hydrothermal processes. Some of the rough calculated concentrations obtained from samples along the Goose River approach the concentrations required for gold placer operations, which generally require a minimum cutoff from 200 to 500 ppb gold. However, one must keep in mind that the gold found in the Swan Hills is quite fine-grained relative to normal placer type deposits, hence recovery could be an issue.

RECOMMENDATIONS

Based on the diamond indicator mineral and geochemical and particulate gold results to date, favourable surface and basement geology and proximity to the Mountain Lake Kimberlite, further diamond and gold exploration is warranted for the Swan Hills Property. It is therefore recommended that a staged exploration program consisting of the following be completed: STAGE 1: Complete a fixed wing or helicopter based time-domain electromagnetic and magnetic geophysical survey over the northwestern portion of the property, in particular the Lightbulb Lake Ridge area. The survey should be flown at a minimum line spacing of 150 to 200 meters (depending upon whether a helicopter or fixed wing system is used) with tie lines every 1 to 2 kilometres. An independent geophysicist should be on site during the bulk of airborne survey data acquisition to ensure quality control is maintained. In total about 9,000 line km's should be flown over the northwest portion of the property at an approximate price of $75/line kilometre plus mobilization and demobilization and an independent geophysicist. Stage 1 should be completed during summer and fall 2006 with an estimated cost of $725,000, plus GST (Table 3); STAGE 2: 2a) complete gridding and ground geophysical surveying over those land based priority magnetic and electromagnetic targets from the airborne geophysical survey (20 grids total). The estimated cost of the Stage 2a program is $250,000, plus GST (Table 3); a stage 2b diamond indicator and rock sampling program should be conducted during summer to fall 2006 in order to follow up certain existing DIM anomalies gold targets that will not be covered by the 2006 airborne geophysical survey, the estimated cost to conduct a small Stage 2b sampling program is $200,000 (Table 3); and, STAGE 3: based on the results from the Stage 2 exploration, drill test 5 to 10 priority targets as part of a fall 2006 or winter 2006-2007 drill program. The drilling may include up to 10 drill holes designed to test high priority geophysical targets in close proximity to high priority diamond indicator mineral or gold anomalies. The estimated cost of the Stage 3 drilling program would likely be between $250,000 and $750,000 (plus GST) depending upon the number of drillholes and the exact location of the drillholes due to vast differences in ease of access in certain areas. The exact scope and budget for the Stage 2 and 3 programs will be necessarily dependent upon the results of the Stage 1 airborne geophysical survey, although in all likelihood there will be a number of geophysical targets identified in the airborne survey that will need to be follow up surveyed using ground geophysical techniques. The recommended Stage 2b sampling program would be independent of the results of the 2006 airborne geophysical survey.

The approximate budget to complete stages 1 and 2 of the recommended exploration program is about $1,175,000 excluding a provision for GST.

TABLE 3
BUDGET FOR PROPOSED STAGED EXPLORATION, SWAN HILLS PROPERTY

Budget Item	Estimated Cost
STAGE 1 - AIRBORNE GEOPHYSICS	
Airborne Geophysical Survey (~150 – 200 m spaced lines; magnetics and electromagnetics; 9,000 line kilometres @$75/km plus mob./demob.)	$700,000
On site quality control by an independent geophysicist	$25,000
STAGE 2a – GROUND GEOPHYSICAL SURVEYS	
Ground Geophysical Surveying (20 grids @ $10,000/grid)	$200,000
Mobilization, Fuel, Equipment, Rentals etc	$50,000
STAGE 2b – DIM and GOLD SAMPLING PROGRAM	
Collection and analysis of 150 DIM samples @ 1000/sample	$150,000
Collection and analysis of about 50 samples for Au and trace element analysis @ $100 per sample	$50,000
Total Project Costs STAGES 1 and 2, Excluding GST	**$1,175,000**
STAGE 3 – DRILLING PROGRAM*	
Drill test about 10 targets at about 150 m per target at a cost of about $350 per m plus about $50,000 mob/demob	**$575,000**
Total Project Costs STAGES 1 to 3*, Excluding GST	**$1,175,000**
**Exact program and cost will be dependent upon the results of the Stages 1 and 2 Exploration*	

PERMIT TO PRACTICE
APEX GEOSCIENCE LTD.
Signature
Date April 26, 2007
PERMIT NUMBER: P 467
The Association of Professional Engineers, Geologists and Geophysicists of the NWT / NU

APEX Geoscience Ltd.

PROFESSIONAL GEOLOGIST ALBERTA
MICHAEL B. DUFRESNE

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

Edmonton, Alberta
April, 2007

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CERTIFICATE of AUTHOR

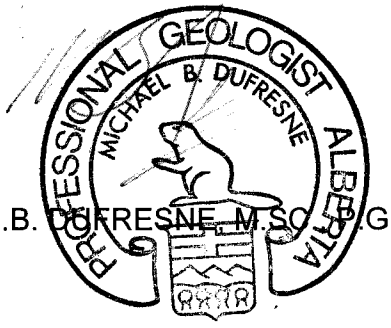
I, M.B. DUFRESNE OF 267 BURTON ROAD, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF NORTH CAROLINA AT WILMINGTON WITH A B.SC. DEGREE IN GEOLOGY (1983) AND A GRADUATE OF THE UNIVERSITY OF ALBERTA WITH A M.SC. DEGREE IN ECONOMIC GEOLOGY (1987). I AM REGISTERED AS A PROFESSIONAL GEOLOGIST WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF ALBERTA.

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

I CURRENTLY DO NOT HAVE AN INTEREST IN HEADWATER MINERALS EXPLORATION AND DEVELOPMENT LTD. APEX GEOSCIENCE LTD. HAS NO INTEREST, DIRECT OR INDIRECT, IN THE PROPERTIES, OR SECURITIES OF HEADWATER MINERALDS, NOR DOES IT EXPECT TO RECEIVE SUCH INTEREST.

THIS REPORT ENTITLED "**ASSESSMENT REPORT FOR FOR DIAMOND AND GOLD EXPLORATION ON THE SWAN HILLS PROPERTY, NORTH-CENTRAL ALBERTA METALLIC MINERAL PERMITS 9306050833 to 9306050836, 9302040008, 9302040010, 9302040012, 9302040014, 9302040016, 9302040018, 9302040020, 9305031137 to 9305031144, 9306011206 to 9306011239 to 9306011251 and 9306020546 to 93060205493**" IS BASED UPON THE STUDY OF PUBLISHED AND UNPUBLISHED DATA AND FIELD EXAMINATIONS CONDUCTED THEREON.

I HEREBY GRANT HEADWATER MINERALS EXPLORATION AND DEVELOPMENT LTD. OF RED DEER, ALBERTA, PERMISSION TO USE THIS REPORT AS AN ASSESSMENT REPORT FOR THE SWAN HILLS PROPERTY AS WELL FOR PROSPECTUS OR AIF FILINGS FOR THE PURPOSE OF CORPORATE FINANCING.



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

APRIL, 2007
EDMONTON, ALBERTA

Appendix 1
Mineral Permits

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:23:24 AM

Agreement Number: 093 9306011225

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19-071: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:17:33 AM

Agreement Number: 093 9306011247

Status: ACTIVE
Agreement Area: 9216

Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13-063: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:17:01 AM

Agreement Number: 093 9306011248

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14-063: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:16:24 AM

Agreement Number: 093 9306011249

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-063: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:15:53 AM

Agreement Number: 093 9306011250

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-063: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:15:23 AM

Agreement Number: 093 9306011251

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-063: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:14:55 AM

Agreement Number: 093 9306011226

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-063: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:14:27 AM

Agreement Number: 093 9306011206

Status: ACTIVE
Agreement Area: 9179
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19-063: 01-20;21N,SEP
PORTION(S) LYING OUTSIDE IOSEGUN LAKE PROVINCIAL RECREATION AREA.

5-19-063: 21SW;22-36
METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:13:56 AM

Agreement Number: 093 9306011227

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:13:24 AM

Agreement Number: 093 9306011228

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:12:57 AM

Agreement Number: 093 9306011229

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:12:24 AM

Agreement Number: 093 9306011230

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:10:02 AM

Agreement Number: 093 9306020546

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-02-22
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8081120
Client Name: 620516 ALBERTA LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:09:08 AM

Agreement Number: 093 9306020547

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-02-22
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8081120
Client Name: 620516 ALBERTA LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:08:38 AM

Agreement Number: 093 9302040008

Status: ACTIVE
Agreement Area: 9216
Term Date: 2002-04-02
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:08:06 AM

Agreement Number: 093 9306011207

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19-064: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:07:38 AM

Agreement Number: 093 9306011231

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:07:07 AM

Agreement Number: 093 9306011232

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:06:36 AM

Agreement Number: 093 9306011233

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:06:11 AM

Agreement Number: 093 9306050833

Status: ACTIVE
Agreement Area: 6144
Term Date: 2006-05-16
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-065: 01-24

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:05:34 AM

Agreement Number: 093 9305031137

Status: ACTIVE
Agreement Area: 3072
Term Date: 2005-03-21
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-065: 25-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:04:54 AM

Agreement Number: 093 9306011208

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:04:26 AM

Agreement Number: 093 9306011209

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:03:59 AM

Agreement Number: 093 9302040010

Status: ACTIVE
Agreement Area: 9216
Term Date: 2002-04-02
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:03:11 AM

Agreement Number: 093 9306011210

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19-065: 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:02:39 AM

Agreement Number: 093 9306011234

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12-066: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:02:12 AM

Agreement Number: 093 9306011235

Status: ACTIVE
Agreement Area: 8531
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13-066: 01-28;29S,NP
PORTION(S) LYING OUTSIDE GOOSE MOUNTAIN ECOLOGICAL RESERVE.

5-13-066: 30S,NP
PORTION(S) LYING OUTSIDE GOOSE MOUNTAIN ECOLOGICAL RESERVE.

5-13-066: 32SEP
PORTION(S) LYING OUTSIDE GOOSE MOUNTAIN ECOLOGICAL RESERVE.

5-13-066: 33-36
METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:01:33 AM

Agreement Number: 093 9306011236

Status: ACTIVE
Agreement Area: 8905
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14-066: 01-24;25S,NP
PORTION(S) LYING OUTSIDE GOOSE MOUNTAIN ECOLOGICAL RESERVE.

5-14-066: 26-35
METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:00:50 AM

Agreement Number: 093 9305031138

Status: ACTIVE
Agreement Area: 9216
Term Date: 2005-03-21
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-066: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:00:21 AM

Agreement Number: 093 9306020548

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-02-22
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8081120
Client Name: 620516 ALBERTA LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-066: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:59:37 AM

Agreement Number: 093 9306020549

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-02-22
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8081120
Client Name: 620516 ALBERTA LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-066: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:59:09 AM

Agreement Number: 093 9302040012

Status: ACTIVE
Agreement Area: 9216
Term Date: 2002-04-02
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-066: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:58:35 AM

Agreement Number: 093 9306011211

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19066: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:57:32 AM

Agreement Number: 093 9306011237

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12-067: 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:57:05 AM

Agreement Number: 093 9306011238

Status: ACTIVE
Agreement Area: 8960
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13-067: 01-05;07-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:56:37 AM

Agreement Number: 093 9306011239

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14067 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:55:54 AM

Agreement Number: 093 9305031139

Status: ACTIVE
Agreement Area: 9216
Term Date: 2005-03-21
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-067: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:55:25 AM

Agreement Number: 093 9305031140

Status: ACTIVE
Agreement Area: 6144
Term Date: 2005-03-21
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-067 01-24

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:54:13 AM

Agreement Number: 093 9305031141

Status: ACTIVE
Term Date: 2005-03-21
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-067: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:53:40 AM

Agreement Number: 093 9302040014

Status: ACTIVE
Agreement Area: 9216
Term Date: 2002-04-02
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-067 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:53:07 AM

Agreement Number: 093 9306011212

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19067: 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:50:16 AM

Agreement Number: 093 9306011240

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12068: 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:49:31 AM

Agreement Number: 093 9306011241

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13068 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:48:48 AM

Agreement Number: 093 9306011242

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14068: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:48:16 AM

Agreement Number: 093 9306011243

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-068 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:47:31 AM

Agreement Number: 093 9306050834

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-05-16
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-067 25-36
5-16-068: 01-24

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:46:34 AM

Agreement Number: 093 9305031143

Status: ACTIVE
Agreement Area: 9216
Term Date: 2005-03-21
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-068 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:45:42 AM

Agreement Number: 093 9302040016

Status: ACTIVE
Agreement Area: 9216

Term Date: 2002-04-02
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-068: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:45:13 AM

Agreement Number: 093 9306011213

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19068 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:44:45 AM

Agreement Number: 093 9306011244

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12069: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:44:09 AM

Agreement Number: 093 9306011245

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13069 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:43:32 AM

Agreement Number: 093 9306011214

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14069: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:42:44 AM

Agreement Number: 093 9306011215

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-069 01-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:42:13 AM

Agreement Number: 093 9306050835

Status: ACTIVE
Term Date: 2006-05-16
Agreement Area: 4096
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-068: 25;34-36
5-16-069: 01-03;10-15;22-24

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:41:29 AM

Agreement Number: 093 9305031142

Status: ACTIVE
Term Date: 2005-03-21
Agreement Area: 5120
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-068: 26-33
5-16-069: 04-09;16-21

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:40:59 AM

Agreement Number: 093 9306050836

Status: ACTIVE
Agreement Area: 6144
Term Date: 2006-05-16
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-069 25-36
5-17-069 25-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:40:20 AM

Agreement Number: 093 9305031144

Status: ACTIVE
Agreement Area: 6144
Term Date: 2005-03-21
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17069: 01-24

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:39:51 AM

Agreement Number: 093 9306050836

Status: ACTIVE
Agreement Area: 6144
Term Date: 2006-05-16
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-069: 25-36
5-17-069: 25-36

METALLIC AND INDUSTRIAL MINERALS

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:38:55 AM

Agreement Number: 093 9302040018

Status: ACTIVE
Agreement Area: 9216
Term Date: 2002-04-02
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18-069: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:38:02 AM

Agreement Number: 093 9306011216

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19069 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:37:35 AM

Agreement Number: 093 9306011217

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12070: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:37:09 AM

Agreement Number: 093 9306011218

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-13070: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:30:49 AM

Agreement Number: 093 9306011219

Status: ACTIVE
Agreement Area: 4608
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-14070: 01-18

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:28:57 AM

Agreement Number: 093 9306011220

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-15-070: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:28:11 AM

Agreement Number: 093 9306011221

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-16-070: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:27:33 AM

Agreement Number: 093 9306011222

Status: ACTIVE
Term Date: 2006-01-24
Agreement Area: 9216
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-17-070: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:27:00 AM

Agreement Number: 093 9302040020

Status: ACTIVE
Term Date: 2002-04-02
Agreement Area: 8640
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18070: 01-29;32S,NE;33-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:26:09 AM

Agreement Number: 093 9306011223

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-19070: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 10:25:20 AM

Agreement Number: 093 9306011224

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-18071: 01-36

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: April 19, 2007 11:18:00 AM

Agreement Number: 093 9306011246

Status: ACTIVE
Agreement Area: 9216
Term Date: 2006-01-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8082389
Client Name: HEADWATER MINERAL EXPLORATION & DEVELOPMENT LTD.
Address: 14 RUTTAN CLOSE
RED DEER, AB
CANADA T4P 3T1

LAND / ZONE DESCRIPTION

5-12063 01-36

METALLIC AND INDUSTRIAL MINERALS

Appendix 2
2003 Till Probe Diamond Indicator Results

Oxide	Percent				**OT04-61 garnet/clinopyroxene**										
Pt#	SiO2	TiO2	Al2O3	Cr2O3	FeO	MgO	MnO	CaO	Na2O	K2O	Total	X(mm)	Y(mm)		
1	40.86	0.0419	18.01	7.8	8.3	16.31	0.5629	7.49	0.0015	0	99.37	37.4802	35.7207		03NVT-032 #1 pyrope
2	41.55	0.1194	18.31	7.11	8.36	17.74	0.4605	6.7	0.0129	0	100.36	36.9335	35.8707		03NVT-032 pyrope
3	52.85	0.1903	5.09	1.8277	2.5065	15.75	0.0923	19.67	1.618	0.0015	99.6	36.1057	36.7647		03NVT-032 Cr diop
4	40.59	0.0399	15.51	10.44	7.92	16.08	0.5788	9.05	0	0	100.21	49.0247	41.1937		03NVT-034 pyrope
5	41.36	0.0357	18.47	6.64	8.59	17.53	0.4918	6.69	0.0185	0	99.83	37.8935	41.1432		03NVT-059 pyrope
6	42.41	0.0684	21.18	2.3595	9.41	18.19	0.4757	5.25	0.0276	0	99.38	41.918	47.959		03NVT-067 #1 pyrope
7	56.04	0.0327	2.6989	1.2628	5.99	19.06	0.3356	12.92	0.8016	0.0457	99.21	41.0667	47.5407		03NVT-067 #2 Cr diop
8	42.31	0.0711	19.94	5.51	7.44	18.55	0.3549	6.22	0.0215	0	100.43	38.651	61.976		03NVT-082 #1 pyrope
9	42.32	0.0952	21.31	3.21	8.62	18.96	0.4092	4.8	0.0445	0	99.78	38.63	62.64		03NVT-082 #3 pyrope
10	53.83	0.0129	1.3741	0.8144	3.64	16.13	0.1084	22.4	0.8	0	99.11	42.4515	65.3115		03NVT-135 #1 Cr diop
11	53.54	0	0.9152	0.5602	3.58	16.42	0.154	23	0.4916	0.0129	98.68	41.808	65.6927		03NVT-135 #2 Cr diop
	50.33	0	7.6	0.9539	4.73	17.2	0.1735	17.34	0.8671	0.0125	99.2	42.7072	3.2035		Smithsonian Cr augite
	41.77	0.8736	21	0.7693	10.73	18.52	0.3493	4.97	0.0814	0	99.07	46.0635	4.4327		Stag garnet
Weight	Percent														
Pt#	Si	Ti	Al	Cr	Fe	Mg	Mn	Ca	Na	K	O	Total	X(mm)	Y(mm)	
1	19.1	0.0251	9.53	5.34	6.45	9.84	0.4359	5.35	0.0011	0	43.3	99.37	37.4802	35.7207	03NVT-032 #1 pyrope
2	19.42	0.0716	9.69	4.86	6.5	10.7	0.3567	4.79	0.0096	0	43.96	100.36	36.9335	35.8707	03NVT-032 pyrope
3	24.71	0.1141	2.695	1.2505	1.9483	9.5	0.0715	14.06	1.2003	0.0013	44.06	99.6	36.1057	36.7647	03NVT-032 Cr diop
4	18.97	0.0239	8.21	7.14	6.15	9.7	0.4482	6.47	0	0	43.09	100.21	49.0247	41.1937	03NVT-034 pyrope
5	19.33	0.0214	9.77	4.54	6.68	10.57	0.3809	4.78	0.0137	0	43.73	99.83	37.8935	41.1432	03NVT-059 pyrope
6	19.82	0.041	11.21	1.6144	7.32	10.97	0.3684	3.75	0.0205	0	44.26	99.38	41.918	47.959	03NVT-067 #1 pyrope
7	26.19	0.0196	1.4284	0.864	4.66	11.5	0.2599	9.25	0.5947	0.0379	44.52	99.21	41.0667	47.5407	03NVT-067 #2 Cr diop
8	19.78	0.0426	10.55	3.77	5.78	11.19	0.2748	4.45	0.0159	0	44.57	100.43	38.651	61.976	03NVT-082 #1 pyrope
9	19.78	0.0571	11.28	2.1996	6.7	11.44	0.3169	3.43	0.033	0	44.54	99.78	38.63	62.64	03NVT-082 #3 pyrope
10	25.16	0.0077	0.7272	0.5572	2.8297	9.73	0.084	16.01	0.5935	0	43.41	99.11	42.4515	65.3115	03NVT-135 #1 Cr diop
11	25.03	0	0.4843	0.3833	2.786	9.9	0.1192	16.44	0.3647	0.0107	43.16	98.68	41.808	65.6927	03NVT-135 #2 Cr diop
16	23.53	0	4.02	0.6527	3.68	10.37	0.1344	12.39	0.6432	0.0104	43.77	99.2	42.7072	3.2035	Smithsonian Cr augite
	19.52	0.5237	11.11	0.5264	8.34	11.17	0.2705	3.55	0.0604	0	43.98	99.07	46.0635	4.4327	Stag garnet

Oxide	Percent				**OT04-61 olivines**										
Pt#	SiO2	TiO2	Al2O3	Cr2O3	FeO	MgO	MnO	NiO	CaO	Na2O	Total	X(mm)	Y(mm)		
1	41.18	0	0	0.0161	8.27	49.51	0.1211	0.3806	0.0333	0.0087	99.52	36.8197	46.5267		03NVT-073 #1 olivine
2	40.73	0	0.0289	0.1221	8.02	50.08	0.1341	0.3821	0.0471	0.0146	99.55	35.9955	45.8305		03NVT-073 #3 olivine
3	40.72	0.0203	0.0145	0.0757	8.21	50.07	0.1352	0.4366	0.0608	0.0234	99.76	47.8042	65.53		03NVT-115 #1 olivine
4	40.56	0.0219	0.0031	0.004	9.71	49.07	0.1116	0.4134	0.0192	0.0147	99.93	47.4162	65.9755		03NVT-115 #2 olivine
5	39.93	0	0.0161	0	15.06	44.25	0.1434	0.1285	0.0356	0.0218	99.59	41.4755	66.5167		03NVT-135 #3 olivine
Weight	Percent														
Pt#	Si	Ti	Al	Cr	Fe	Mg	Mn	Ni	Ca	Na	O	Total	X(mm)	Y(mm)	
1	19.25	0	0	0.011	6.43	29.86	0.0938	0.2991	0.0238	0.0065	43.54	99.52	36.8197	46.5267	03NVT-073 #1 olivine
2	19.04	0	0.0153	0.0835	6.23	30.2	0.1038	0.3003	0.0336	0.0108	43.53	99.55	35.9955	45.8305	03NVT-073 #3 olivine
3	19.04	0.0122	0.0077	0.0518	6.38	30.2	0.1047	0.3431	0.0434	0.0173	43.56	99.76	47.8042	65.53	03NVT-115 #1 olivine
4	18.96	0.0131	0.0017	0.0027	7.55	29.6	0.0864	0.3249	0.0137	0.0109	43.47	99.93	47.4162	65.9755	03NVT-115 #2 olivine
5	18.66	0	0.0085	0	11.71	26.69	0.111	0.1009	0.0254	0.0162	42.27	99.59	41.4755	66.5167	03NVT-135 #3 olivine

Oxide	Percent			**Project OT04-61 oxides**								
Pt#	SiO2	TiO2	Al2O3	Cr2O3	FeO	MgO	MnO	NiO	ZnO	Total		
1	0.0181	49.08	0.3216	0.3132	37.38	11.87	0.247	0.0805	0	99.31		03NVT-006 #1 ilme
2	0.0319	1.3188	15.11	46.01	24.48	13.12	0.2861	0.202	0.1057	100.67		03NVT-014 chro
3	0.0061	0.1225	8.22	60.05	14.95	15.78	0.2803	0.2075	0.029	99.65		03NVT-015 chro
4	0.0208	0.1271	17.56	51.4	16.88	13.59	0.3954	0.0662	0.0625	100.1		03NVT-016 chro
5	0.041	0.4305	35.28	29.62	15.39	18.41	0.2022	0.1738	0.065	99.61		03NVT-017 chro
6	0.0373	47.28	0.1221	1.0401	39.93	9.43	0.2926	0.0508	0	98.18		03NVT-032 #3 ilme
7	0.0149	0.1901	7.21	57.52	18.13	16.49	0.2736	0.1807	0	100.01		03NVT-034 chro
8	0.0305	1.301	12.59	48.98	21.01	14.47	0.3383	0.155	0.0688	98.95		03NVT-055 chro
9	0.0349	1.235	22.29	37.65	22.93	15.33	0.2094	0.2453	0.0598	99.98		03NVT-061 #1 chro
10	0.0424	0.5014	39.84	24.6	15.36	19.36	0.1863	0.2223	0.0589	100.17		03NVT-061 #2 chro
11	0.0133	0.1785	14.21	53.01	15.28	16.65	0.2549	0.1878	0.0126	99.81		03NVT-061 #3 chro
12	0.0183	0	28.77	38.39	18.49	13.6	0.2338	0.0851	0.2871	99.86		03NVT-061 chro
13	0.0271	1.1935	15.59	46.17	20.98	15.16	0.2197	0.2751	0.0918	99.71		03NVT-084 chro
14	0.0117	0	9.85	53.39	27.86	7.21	0.4817	0	0.3354	99.14		03NVT-148 chro
Weight	Percent											
Pt#	Si	Ti	Al	Cr	Fe	Mg	Mn	Ni	Zn	O	Total	
1	0.0085	29.42	0.1702	0.2143	29.06	7.16	0.1913	0.0633	0	33.02	99.31	03NVT-006 #1 ilme
2	0.0149	0.7906	8	31.48	19.03	7.91	0.2215	0.1588	0.0849	32.98	100.67	03NVT-014 chro
3	0.0029	0.0734	4.35	41.09	11.62	9.52	0.2171	0.163	0.0233	32.59	99.65	03NVT-015 chro
4	0.0097	0.0762	9.29	35.17	13.12	8.2	0.3063	0.0521	0.0502	33.83	100.1	03NVT-016 chro
5	0.0192	0.2581	18.67	20.26	11.97	11.1	0.1566	0.1366	0.0522	36.98	99.61	03NVT-017 chro
6	0.0174	28.34	0.0646	0.7116	31.04	5.69	0.2266	0.0399	0	32.05	98.18	03NVT-032 #3 ilme
7	0.007	0.1139	3.82	39.36	14.09	9.94	0.2119	0.142	0	32.33	100.01	03NVT-034 chro
8	0.0143	0.78	6.66	33.51	16.33	8.73	0.262	0.1218	0.0553	32.48	98.95	03NVT-055 chro
9	0.0163	0.7404	11.79	25.76	17.83	9.24	0.1622	0.1928	0.0481	34.2	99.98	03NVT-061 #1 chro
10	0.0198	0.3006	21.09	16.83	11.94	11.68	0.1443	0.1747	0.0473	37.95	100.17	03NVT-061 #2 chro
11	0.0062	0.107	7.52	36.27	11.88	10.04	0.1974	0.1476	0.0101	33.62	99.81	03NVT-061 #3 chro
12	0.0085	0	15.23	26.26	14.37	8.2	0.1811	0.0669	0.2306	35.31	99.86	03NVT-061 chro
13	0.0127	0.7155	8.25	31.59	16.31	9.14	0.1701	0.2162	0.0737	33.23	99.71	03NVT-084 chro
14	0.0055	0	5.21	36.53	21.66	4.35	0.3731	0	0.2695	30.74	99.14	03NVT-148 chro

Appendix 3
2005 Suction Dredge, Pan Concentrate, Till and Rock Grab Sample Locations

Appendix 3
2005 Suction Dredge, Pan Concentrate, Till and Rock Grab Sampling

Sample Number	Easting (NAD27, zone 11)	Northing (NAD 27, zone 11)	Sample Type
2003 Samples - Results Received During Period			
D-03-01-001	541598	6092573	Drill Tailings (Till) Composite
D-03-01-002	541499	6092576	Drill Tailings (Till) Composite
D-03-01-003	541310	6092572	Drill Tailings (Till) Composite
D-03-01-004	541098	6092568	Drill Tailings (Till) Composite
D-03-01-005	541004	6092552	Drill Tailings (Till) Composite
D-03-01-006	540706	6092543	Drill Tailings (Till) Composite
D-03-01-007	540517	6092533	Drill Tailings (Till) Composite
D-03-01-008	540417	6092535	Drill Tailings (Till) Composite
D-03-01-009	540309	6092532	Drill Tailings (Till) Composite
D-03-01-010	540190	6092521	Drill Tailings (Till) Composite
D-03-01-011	540045	6092496	Drill Tailings (Till) Composite
D-03-01-012	539450	6092487	Drill Tailings (Till) Composite
D-03-01-013	538723	6092451	Drill Tailings (Till) Composite
D-03-01-014	538020	6092428	Drill Tailings (Till) Composite
D-03-01-015	539112	6092349	Drill Tailings (Till) Composite
D-03-01-016	538640	6091595	Drill Tailings (Till) Composite
D-03-01-017	539388	6092790	Drill Tailings (Till) Composite
D-03-01-018	539709	6093287	Drill Tailings (Till) Composite
D-03-01-019	541687	6091474	Drill Tailings (Till) Composite
D-03-01-020	541015	6091900	Drill Tailings (Till) Composite
D-03-01-021	540449	6092234	Drill Tailings (Till) Composite
D-03-01-022	540068	6092459	Drill Tailings (Till) Composite
D-03-02-001	535357	6092314	Drill Tailings (Till) Composite
D-03-02-002	535371	6092303	Drill Tailings (Till) Composite
D-03-02-003	537721	6092418	Drill Tailings (Till) Composite
D-03-02-004	537418	6094251	Drill Tailings (Till) Composite
D-03-02-005	537895	6093899	Drill Tailings (Till) Composite
D-03-02-006	539183	6092997	Drill Tailings (Till) Composite
D-03-02-007	539566	6092765	Drill Tailings (Till) Composite
D-03-02-008	539854	6092601	Drill Tailings (Till) Composite
03AMH001	528740	6094548	Pan Concentrate (HMC)
03AMH002	527696	6095668	Pan Concentrate (HMC)
03AMH003	508037	6132106	Pan Concentrate (HMC)
03AMH004	502498	6119965	Pan Concentrate (HMC)
03AMH005	508000	6122246	Pan Concentrate (HMC)
03AMH006	541042	6094509	Pan Concentrate (HMC)
03AMH007	539984	6090395	Pan Concentrate (HMC)
03AMH008	539843	6097006	Pan Concentrate (HMC)
03AMH009	538813	6113789	Pan Concentrate (HMC)
03AMH010	511968	6089325	Pan Concentrate (HMC)
03AMH011	525786	6094728	Pan Concentrate (HMC)
03AMH012	516164	6091847	Pan Concentrate (HMC)
03AMH013	516201	6091156	Pan Concentrate (HMC)
P-03-01-001	539788	6092519	Rock Grab
P-03-01-002	539788	6092519	Rock Grab
P-03-01-003	539788	6092519	Rock Grab
P-03-02-001	539573	6092586	Rock Grab
P-03-02-002	539573	6092586	Rock Grab
P-03-02-003	539573	6092586	Rock Grab
P-03-02-004	539573	6092586	Rock Grab
P-03-02-005	539573	6092586	Rock Grab
P-03-02-006	539573	6092586	Rock Grab
P-03-03-001	540025	6092638	Rock Grab

Appendix 3
2005 Suction Dredge, Pan Concentrate, Till and Rock Grab Sampling

Sample Number	Easting (NAD27, zone 11)	Northing (NAD 27, zone 11)	Sample Type
P-03-03-002	540025	6092638	Rock Grab
P-03-03-003	540025	6092638	Rock Grab
P-03-03-004	540025	6092638	Rock Grab
P-03-04-001	539937	6092710	Rock Grab
P-03-04-002	539937	6092710	Rock Grab
P-03-04-003	539937	6092710	Rock Grab
P-03-05-001	539847	6092717	Rock Grab
P-03-06-001	540313	6092565	Rock Grab
P-03-06-002	540313	6092565	Rock Grab
P-03-06-003	540313	6092565	Rock Grab
P-03-06-004	540313	6092565	Rock Grab
P-03-07-001	539946	6092559	Rock Grab
P-03-07-002	539946	6092559	Rock Grab
P-03-07-003	539946	6092559	Rock Grab
P-03-07-004	539946	6092559	Rock Grab
P-03-07-005	539946	6092559	Rock Grab
T-03-01-001	539942	6092544	Rock Grab
T-03-01-002	539942	6092544	Rock Grab
T-03-01-003	539942	6092544	Rock Grab
T-03-01-004	539942	6092544	Rock Grab
T-03-01-005	539942	6092544	Rock Grab
2005 - 2006 Samples - Results Received During Period			
CDJ0428-H16	528204	6066005	suction dredge
CDJ0428-H17	529542	6066513	suction dredge
CDJ0429-H18	538517	6070635	suction dredge
CDJ0429-H19	539149	6071352	suction dredge
CDJ040924-H21	539393	6068479	suction dredge
BCDJ041003-H22	530030	6065543	suction dredge
CDJ041004-H24	520094	6066094	suction dredge
CDJ041005-H25	531196	6065496	suction dredge
CDJ041005-H26	530820	6066232	suction dredge
CDJ041102-H28	520155	6066435	till
CDJ041107-H31	518358	6066738	suction dredge
CDJ041120-H34	527594	6065537	till
CDJ041120-H35	527286	6065104	till
CDJ041121-H36	531206	6065199	till
CDJ041121-H37	530871	6065690	suction dredge
CDJ041121-H38	530491	6065559	till
CDJ041128-H40	539289	6063632	suction dredge
CDJ0428-P16	528204	6066005	Rock Grab
CDJ0429-P19-1	539149	6071352	Rock Grab
CDJ0429-P19-2	539149	6071352	Rock Grab
CDJ040924-P20	538751	6069980	Rock Grab
CDJ040924-P21	539393	6068479	Rock Grab
CDJ040924-P21-13/P21-14	539393	6068479	Rock Grab
BCDJ041003-P22	530030	6065543	Rock Grab
CDJ041005-P25	531196	6065496	Rock Grab
CDJ041005-P26	530820	6066232	Rock Grab
CDJ041102-P27-1	520093	6066084	Rock Grab
CDJ041102-P27-2	520093	6066084	Rock Grab
CDJ041102-P27-4	520093	6066084	Rock Grab
CDJ041102-P27-5	520093	6066084	Rock Grab
CDJ041102-P27-6	520093	6066084	Rock Grab
CDJ041102-P27-7	520093	6066084	Rock Grab

Appendix 3
2005 Suction Dredge, Pan Concentrate, Till and Rock Grab Sampling

Sample Number	Easting (NAD27, zone 11)	Northing (NAD 27, zone 11)	Sample Type
CDJ041102-P27-9	520093	6066084	Rock Grab
CDJ041102-P27-10	520093	6066084	Rock Grab
CDJ041102-P29-1	520095	6066548	Rock Grab
CDJ041102-P29-2	520095	6066548	Rock Grab
CDJ041102-P30	520030	6066629	Rock Grab
CDJ041102-P30-2	520030	6066629	Rock Grab
CDJ041102-P30-3	520030	6066629	Rock Grab
CDJ041102-P30-4	520030	6066629	Rock Grab
CDJ041102-P30-5	520030	6066629	Rock Grab
CDJ041102-P30-6/8/9	520030	6066629	Rock Grab
CDJ041102-P30-7	520030	6066629	Rock Grab
CDJ041120-P32-1/P32-2	527894	6065734	Rock Grab
CDJ041120-P33-1	527721	6065740	Rock Grab
CDJ041121-P36	531206	6065199	Rock Grab
CDJ041121-P36-1	531206	6065199	Rock Grab
CDJ041121-P36-2	531206	6065199	Rock Grab
CDJ041121-P36-3	531206	6065199	Rock Grab
CDJ041121-P36-4	531206	6065199	Rock Grab
CDJ041128-P39	541247	6064370	Rock Grab
CL0041201-P50	564322	6041934	Rock Grab

Appendix 4a
2003 and 2005 Diamond Indicator Results

SRC Geoanalytical Laboratories
125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8
Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca

Sovereign Mining
Attention: Neil Torry
PO #/Project:
Samples: 167

Report No: 05-452
Date: August 18, 2005

Kimberlite Indicator Minerals

Column Header Details

Original Sample Weight in kilograms (SWT)
Mid Fraction -1.00+0.25MM Wet Weight in grams (MWT)
Permroll Magnetic Dry Weight in grams (PRM)
Tetrabromoethane SG 2.96 Sinks Weight in grams (TBE)
Methylene Iodide SG 3.30 Sinks Weight in grams (MIS)

Methylene Iodide SG 3.30 Float Weight in grams (MIF)
Ferro Mags -1.00+0.25mm Weight in grams (FM)
Frantz Lowers -1.00+0.25mm Weight in grams (LW)
Frantz Upper -1.00+0.25mm Weight in grams (UP)
Pyrope Peridotitic Grains +0.5mm in Counts (Pyr-p +)

Pyrope Peridotitic Grains -0.5mm in Counts (Pyr-p -)
Pyrope Eclogitic Grains +0.5mm in Counts (Pyr-e +)
Pyrope Eclogitic Grains -0.5mm in Counts (Pyr-e -)
Chrome-Diopside Grains +0.5mm in Counts (Chr D +)
Chrome-Diopside Grains -0.5mm in Counts (Chr D -)

Olivine Grains +0.5mm in Counts (Olv +)
Olivine Grains -0.5mm in Counts (Olv -)
Lower Fraction +0.5 Observed Weight in grams (LW+Obs)
Lower Fraction +0.5 Observed Weight in % (LW+)
Lower Fraction -0.5 Observed Weight in grams (LW-Obs)

Lower Fraction -0.5 Observed Weight in % (LW-)
Lower Fraction Total Observed Weight in grams (LWT Obs)
Lower Fraction Total Observed Weight in % (LWT)
Picroilmenite Grains +0.5mm in Counts (Picroilm+)
Picroilmenite Grains -0.5mm in Counts (Picroilm-)

Chromite Grains +0.5mm in Counts (Chr +)
Chromite Grains -0.5mm in Counts (Chr -)
Upper Fraction +0.5 Observed Weight in grams (UP+Obs)
Upper Fraction +0.5 Observed Weight in % (UP+)
Upper Fraction -0.5 Observed Weight in grams (UP-Obs)

Upper Fraction -0.5 Observed Weight in % (UP-)
Upper Fraction Total Observed Weight in grams (UPT Obs)
Upper Fraction Total Observed Weight in % (UPT)
Other Indicator Grains in Counts (Others)

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Sovereign Mining
Attention: Neil Torry
PO #/Project:
Samples: 167

Report No: 05-452
Date: August 18, 2005

Kimberlite Indicator Minerals

Sample Number	SWT kg	MWT g	PRM g	TBE g	MIS g	MIF g	FM g	LW g	UP g	Pyr-p + Counts	Pyr-p - Counts	Pyr-e + Counts	Pyr-e - Counts	Chr D + Counts
ACD-03100H-13	2.20	455	49	49.00	9.20	40.85	1.10	0.57	7.51	0	0	0	0	0
ACD-03100H-14	1.20	272	56	56.00	3.90	53.52	0.16	0.14	3.57	0	0	0	0	0
ACD-03100H-15	0.35	48	48	48.00	1.36	47.28	0.11	1.25	N/R	0	0	0	0	0
AMH-001	6.82	3031	276	20.41	9.17	11.19	0.55	1.00	7.59	0	0	0	0	0
AMH-002	4.13	2574	191	59.90	31.80	28.15	2.60	5.18	24.07	1	1	0	0	0
AMH-003	6.67	4368	238	60.29	24.26	36.02	1.74	4.26	18.34	0	0	0	0	0
AMH-004	11.68	3971	260	59.74	27.51	33.07	2.11	3.85	21.59	0	0	0	0	0
AMH-005	4.72	2921	146	42.62	23.35	19.38	1.44	2.79	19.15	1	1	0	0	0
AMH-006	3.30	1847	189	36.02	17.49	18.74	1.19	3.30	13.06	0	0	0	0	0
AMH-007	14.75	9095	748	22.11	5.24	16.75	0.31	1.05	3.86	0	0	0	0	0
AMH-008	13.53	3874	320	98.82	48.42	49.75	2.86	8.26	37.37	1	1	0	0	0
AMH-009	16.39	9270	765	69.36	20.84	48.22	1.02	2.84	17.10	0	0	0	0	0
AMH-010	9.05	3691	372	58.92	36.96	21.15	2.73	3.60	30.67	0	1	0	0	0
AMH-011	6.85	3789	325	14.30	3.94	10.26	0.23	0.80	2.90	0	0	0	0	0
AMH-012	4.62	2483	237	59.57	39.56	19.60	1.99	6.20	31.42	0	0	0	0	0
AMH-013	4.22	2632	233	62.64	39.08	23.09	2.82	10.59	25.73	0	0	0	0	0
BCDJ041003H-22	3.54	1095	211	37.82	28.07	9.59	3.34	3.43	21.34	0	1	0	0	0
CD0307H-05	1.25	58	60	60.18	0.54	61.14	N/R	0.54	N/R	0	0	0	0	0
CD0307H-06	3.15	803	243	17.25	11.19	6.01	0.22	4.19	6.80	0	0	0	0	0
CDBB0309H-09	7.80	1159	188	39.35	18.34	20.26	0.64	2.95	14.96	0	0	0	0	0
CDBB0309H-09B	9.30	737	174	27.45	14.50	12.90	0.38	1.38	12.81	0	0	0	0	0
CDBB0309H-10	4.60	775	122	14.26	8.78	5.40	0.20	1.32	7.26	0	0	0	0	0
CDJ0308H-08	2.40	348	101	8.31	4.50	3.72	0.11	1.07	3.31	0	0	0	0	0
CDJ1004H-24	8.55	2066	335	51.89	31.69	19.94	2.78	3.79	25.18	0	0	0	0	0
CDJ1107H-31	6.25	2526	431	23.87	8.78	15.21	0.34	1.20	7.26	0	0	0	0	0
CDJ0428H-16	5.30	1087	215	21.35	13.30	7.96	1.05	1.89	10.37	0	0	0	0	0
CDJ0428H-17	2.10	693	92	92.85	16.03	76.72	1.25	1.73	13.05	0	0	0	0	0
CDJ0429H-18	2.65	531	74	74.36	6.44	67.93	0.42	0.65	5.36	0	0	0	0	0
CDJ0429H-19	3.85	679	119	18.85	13.26	5.57	1.19	1.17	10.89	0	1	0	0	0
CDJ04924H-21	7.70	44	44	44.00	0.27	43.69	N/R	0.27	N/R	0	0	0	0	0
CDJ041005H-25	5.45	730	161	35.72	24.23	11.30	2.32	3.07	18.80	0	0	0	0	0
CDJ041005H-26	3.00	79	82	82.16	0.02	83.54	N/R	0.02	N/R	0	0	0	0	0
CDJ041102H-27	18.25	488	311	8.71	2.50	6.16	0.17	1.03	1.25	0	0	0	0	0
CDJ041102H-28	5.45	1553	198	10.58	5.01	5.57	0.16	0.79	4.05	0	0	0	0	0
CDJ041102H-37	4.85	1015	280	4.32	2.55	1.76	0.20	0.26	2.07	0	0	0	0	0
CDJ041120H-34	6.70	2908	530	13.30	2.87	10.40	0.12	0.64	2.10	0	0	0	0	0
CDJ041120H-35	8.50	3349	452	14.88	4.11	10.64	0.19	0.98	2.93	0	0	0	0	0
CDJ041120H-35B	5.80	562	389	0.80	0.23	0.56	N/R	0.23	N/R	0	0	0	0	0
CDJ041121H-36	9.30	646	125	25.74	11.00	14.55	0.44	1.15	9.38	0	0	0	0	0
CDJ041121H-37	1.50	395	118	0.25	0.03	0.22	N/R	0.03	N/R	0	0	0	0	0

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Kimberlite Indicator Minerals

Sample Number	SWT kg	MWT g	PRM g	TBE g	MIS g	MIF g	FM g	LW g	UP g	Pyr-p + Counts	Pyr-p - Counts	Pyr-e + Counts	Pyr-e - Counts	Chr D + Counts
CDJ041121H-38	5.15	1609	388	12.88	2.78	10.46	0.10	0.96	1.64	0	0	0	0	0
CDJ041128H-40	4.25	617	166	7.49	1.53	5.82	0.13	0.29	1.09	0	0	0	0	0
D0301-001	5.90	429	38	38.44	1.58	37.05	0.40	0.27	0.89	0	0	0	0	0
D0301-002	9.85	563	40	40.29	1.38	38.97	0.11	0.24	1.01	0	0	0	0	0
D0301-005	13.55	784	111	10.43	2.87	7.39	0.23	0.56	2.02	0	0	0	0	0
D0301-006	13.90	1241	278	6.28	2.67	3.57	0.15	0.18	2.32	0	0	0	0	0
D0301-007	16.30	958	156	14.67	5.86	8.97	0.62	1.10	4.06	0	0	0	0	0
D0301-008	16.25	1996	350	39.82	35.47	4.40	0.37	0.21	34.78	0	0	0	0	0
D0301-011	9.60	266	164	2.03	1.07	0.95	N/R	1.07	N/R	0	0	0	0	0
D0301-013	10.45	387	75	74.59	2.32	74.56	0.09	0.23	1.97	0	0	0	0	0
D0301-015	14.10	959	179	6.49	2.27	4.21	0.24	0.35	1.65	0	0	0	0	0
D0301-017	19.00	618	118	16.19	6.52	9.71	0.15	0.47	5.84	0	0	0	0	0
D0301-019	11.10	1290	209	5.51	1.44	4.05	0.09	0.15	1.18	0	0	0	0	0
D0301-021	14.95	573	72	72.01	2.65	70.05	0.35	0.43	1.82	0	0	0	0	0
D0302-001	5.55	350	46	45.69	3.21	42.60	0.51	0.16	2.49	0	0	0	0	0
D0302-002	7.95	698	88	88.31	1.59	87.30	0.12	0.22	1.22	0	0	0	0	0
D0302-004	23.95	2392	293	18.74	6.96	11.87	0.53	1.31	5.05	0	0	0	0	0
D0302-008	14.20	199	138	4.44	0.82	3.70	N/R	0.81	N/R	0	0	0	0	0

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Kimberlite Indicator Minerals

Sample Number	Chr D - Counts	Olv + Counts	Olv - Counts	LW+Obs g	LW+ %	LW-Obs g	LW- %	LWT Obs g	LWT %	Picroilm+ Counts	Picroilm- Counts	Chr + Counts	Chr - Counts	UP+Obs g
ACD-03100H-13	0	0	0	N/R	N/R	N/R	N/R	0.53	100	0	0	0	0	N/R
ACD-03100H-14	0	0	0	N/R	N/R	N/R	N/R	0.13	100	0	1	0	1	N/R
ACD-03100H-15	0	0	0	N/R	N/R	N/R	N/R	1.19	100	0	0	0	1	N/R
AMH-001	0	0	0	N/R	N/R	0.89	100	0.89	100	0	0	0	1	1.49
AMH-002	2	1	5	2.44	100	2.51	100	4.95	100	0	2	0	0	10.92
AMH-003	0	1	1	2.55	100	1.51	100	4.06	100	1	0	0	2	9.22
AMH-004	0	0	0	1.31	100	1.70	100	3.01	100	0	2	0	5	8.41
AMH-005	0	2	1	1.11	100	1.48	100	2.59	100	1	1	0	1	6.52
AMH-006	0	1	0	1.24	100	1.80	100	3.04	100	0	0	0	0	4.96
AMH-007	0	0	0	0.23	100	0.61	100	0.84	100	0	0	0	0	0.56
AMH-008	0	0	0	4.28	100	3.57	100	7.85	100	0	2	0	1	18.24
AMH-009	0	1	0	1.07	100	1.42	100	2.49	100	0	2	0	0	4.53
AMH-010	1	0	1	1.22	100	1.96	100	3.18	100	0	0	0	3	6.72
AMH-011	0	0	0	0.25	100	0.46	100	0.71	100	0	0	0	0	0.57
AMH-012	0	0	0	2.59	100	3.21	100	5.80	100	0	0	0	0	14.00
AMH-013	0	1	0	4.97	100	4.97	100	9.94	100	1	0	0	0	9.58
BCDJ041003H-22	0	0	0	1.08	100	1.82	100	2.90	100	0	0	0	0	5.81
CD0307H-05	0	0	0	N/R	N/R	N/R	N/R	0.46	100	0	0	0	0	N/R
CD0307H-06	0	0	0	0.56	100	3.00	100	3.56	100	0	0	0	2	0.65
CDBB0309H-09	0	0	0	1.55	100	0.71	100	2.26	100	0	0	0	2	8.00
CDBB0309H-09B	0	0	0	0.62	100	0.65	100	1.27	100	0	0	0	1	7.07
CDBB0309H-10	0	0	0	0.28	100	0.91	100	1.19	100	0	0	0	0	1.69
CDJ0308H-08	0	0	0	N/R	N/R	0.74	100	0.74	100	0	0	0	0	N/R
CDJ1004H-24	0	0	0	1.36	100	1.95	100	3.31	100	0	1	0	5	8.09
CDJ1107H-31	0	0	0	0.24	100	0.85	100	1.09	100	0	0	0	0	1.38
CDJ0428H-16	0	0	1	0.48	100	1.15	100	1.63	100	0	0	0	1	2.78
CDJ0428H-17	0	0	0	0.46	100	1.12	100	1.58	100	0	0	0	1	3.30
CDJ0429H-18	0	0	0	0.13	100	0.43	100	0.56	100	0	0	0	2	1.37
CDJ0429H-19	0	0	0	N/R	N/R	1.03	100	1.03	100	0	0	0	17	3.96
CDJ04924H-21	0	0	0	0.08	100	0.16	100	0.24	100	0	0	0	0	N/R
CDJ041005H-25	0	1	0	1.63	100	1.23	100	2.86	100	0	0	3	9	10.16
CDJ041005H-26	0	0	0	0.01	100	0.01	100	0.02	100	0	0	0	0	N/R
CDJ041102H-27	0	0	0	0.58	100	0.41	100	0.99	100	0	0	0	0	0.55
CDJ041102H-28	0	0	0	0.15	100	0.45	100	0.60	100	0	0	0	0	0.69
CDJ041102H-37	0	0	0	0.07	100	0.14	100	0.21	100	0	0	0	0	0.91
CDJ041120H-34	0	0	0	0.14	100	0.43	100	0.57	100	0	0	0	0	0.34
CDJ041120H-35	0	0	0	0.23	100	0.64	100	0.87	100	0	0	0	1	0.40
CDJ041120H-35B	0	0	0	0.09	100	0.15	100	0.24	100	0	0	0	0	N/R
CDJ041121H-36	1	0	0	0.54	100	0.52	100	1.06	100	0	0	0	1	4.70
CDJ041121H-37	0	0	0	0.01	100	0.01	100	0.02	100	0	0	0	0	N/R

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Kimberlite Indicator Minerals

Sample Number	Chr D - Counts	Olv + Counts	Olv - Counts	LW+Obs g	LW+ %	LW-Obs g	LW- %	LWT Obs g	LWT %	Picroilm+ Counts	Picroilm- Counts	Chr + Counts	Chr - Counts	UP+Obs g
CDJ041121H-38	0	0	0	0.59	100	0.35	100	0.94	100	0	0	0	0	0.89
CDJ041128H-40	0	0	0	0.09	100	0.17	100	0.26	100	0	0	0	0	0.30
D0301-001	0	0	0	0.07	100	0.14	100	0.21	100	0	0	0	0	0.31
D0301-002	0	0	0	0.05	100	0.14	100	0.19	100	0	0	0	0	0.31
D0301-005	0	0	0	0.17	100	0.35	100	0.52	100	0	0	0	0	0.65
D0301-006	0	0	0	0.03	100	0.05	100	0.08	100	0	0	0	0	0.95
D0301-007	0	0	0	0.43	100	0.58	100	1.01	100	0	0	0	0	1.14
D0301-008	0	0	0	0.05	100	0.13	100	0.18	100	0	0	0	2	14.04
D0301-011	0	0	0	0.23	100	0.50	100	0.73	100	0	0	0	0	N/R
D0301-013	0	0	0	0.06	100	0.13	100	0.19	100	0	0	0	0	0.86
D0301-015	0	0	0	0.10	100	0.21	100	0.31	100	0	0	0	0	0.41
D0301-017	0	0	0	0.12	100	0.23	100	0.35	100	0	0	0	0	2.72
D0301-019	0	0	0	0.04	100	0.08	100	0.12	100	0	0	0	0	0.32
D0301-021	0	0	0	0.19	100	0.17	100	0.36	100	0	0	0	0	0.67
D0302-001	0	0	0	0.05	100	0.10	100	0.15	100	0	0	0	0	1.00
D0302-002	0	0	0	0.06	100	0.12	100	0.18	100	0	0	0	0	0.44
D0302-004	0	0	0	0.38	100	0.50	100	0.88	100	0	0	0	0	1.16
D0302-008	0	0	0	0.33	100	0.44	100	0.77	100	0	0	0	0	N/R

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ACD-03100H-13	N/R	N/R	N/R	7.20	100	0
ACD-03100H-14	N/R	N/R	N/R	3.46	100	0
ACD-03100H-15	N/R	N/R	N/R	N/R	N/R	0
AMH-001	100	5.16	100	6.65	100	0
AMH-002	100	12.36	100	23.28	100	0
AMH-003	100	8.40	100	17.62	100	0
AMH-004	100	11.96	100	20.37	100	0
AMH-005	100	11.49	100	18.01	100	0
AMH-006	100	7.43	100	12.39	100	0
AMH-007	100	2.61	100	3.17	100	0
AMH-008	100	17.59	100	35.83	100	0
AMH-009	100	10.80	100	15.33	100	0
AMH-010	100	4.20	20	10.92	40	0
AMH-011	100	1.87	100	2.44	100	0
AMH-012	100	3.20	20	17.20	57	0
AMH-013	100	2.90	20	12.48	52	0
BCDJ041003H-22	100	2.64	20	8.45	44	0
CD0307H-05	N/R	N/R	N/R	N/R	N/R	0
CD0307H-06	100	4.95	100	5.60	100	0
CDBB0309H-09	100	5.34	100	13.34	100	0
CDBB0309H-09B	100	5.21	100	12.28	100	0
CDBB0309H-10	100	5.04	100	6.73	100	0
CDJ0308H-08	N/R	2.25	100	2.25	100	0
CDJ1004H-24	100	2.95	20	11.04	48	0
CDJ1107H-31	100	5.57	100	6.95	100	0
CDJ0428H-16	100	6.48	100	9.26	100	1
CDJ0428H-17	100	9.10	100	12.40	100	0
CDJ0429H-18	100	3.59	100	4.96	100	0
CDJ0429H-19	100	6.28	100	10.24	100	0
CDJ04924H-21	N/R	N/R	N/R	N/R	N/R	0
CDJ041005H-25	100	7.98	100	18.14	100	0
CDJ041005H-26	N/R	N/R	N/R	N/R	N/R	0
CDJ041102H-27	100	0.64	100	1.19	100	0
CDJ041102H-28	100	2.90	100	3.59	100	0
CDJ041102H-37	100	1.08	100	1.99	100	0
CDJ041120H-34	100	1.56	100	1.90	100	0
CDJ041120H-35	100	2.20	100	2.60	100	0
CDJ041120H-35B	N/R	N/R	N/R	N/R	N/R	0
CDJ041121H-36	100	4.30	100	9.00	100	0
CDJ041121H-37	N/R	N/R	N/R	N/R	N/R	0

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Sample Number	UP+ %	UP-Obs g	UP- %	UPT Obs g	UPT %	Others Counts
CDJ041121H-38	100	0.68	100	1.57	100	0
CDJ041128H-40	100	0.72	100	1.02	100	0
D0301-001	100	0.50	100	0.81	100	0
D0301-002	100	0.63	100	0.94	100	0
D0301-005	100	1.21	100	1.86	100	0
D0301-006	100	1.03	100	1.98	100	0
D0301-007	100	2.57	100	3.71	100	0
D0301-008	100	3.94	20	17.98	53	0
D0301-011	N/R	N/R	N/R	N/R	N/R	0
D0301-013	100	1.02	100	1.88	100	0
D0301-015	100	1.10	100	1.51	100	0
D0301-017	100	2.28	100	5.00	100	0
D0301-019	100	0.71	100	1.03	100	0
D0301-021	100	0.96	100	1.63	100	0
D0302-001	100	1.33	100	2.33	100	0
D0302-002	100	0.70	100	1.14	100	0
D0302-004	100	2.18	100	3.34	100	0
D0302-008	N/R	N/R	N/R	N/R	N/R	0

NA's in the UP+ or UP- weight columns indicate that the sample was too small to be frantzed. The total weight of that fraction is recorded in the LW+ or LW- columns.
All samples were observed for 2.5 hours only (1.5hrs-silicates; 1hr-oxides)in the 0.25 to 0.50mm fraction only.

KIM Dynamics

diamond exploration mineral services

Client: Carey Hay

REPORT ON THE PROCEDURE AND RESULTS OF THE TWO OBSERVED SAMPLES

Invoice 1

February 9, 2007

PROCEDURE

The two "raw" samples have been handed to Maja Kiridzija in KIM Dynamics Inc. by David Javorsky on February 7, 2007 in order to pick any kimberlitic indicator minerals.

Each sample was stored in two plastic vials, magnetic and non magnetic. Instead of instantly sending samples for heavy liquid separation, it was decided to start with removing all "dusty" (<0.25mm) and highly magnetic minerals (HM). The content from two plastic vials for each sample was combined and screened through 0.5mm, 0.4mm, 0.3mm and 0.25mm mesh size plastic screens. The high magnetic minerals have been removed by hand magnet and collected in separate bags named "HM". The "dusty" material left after screening through 0.25mm mesh size screen was collected into separate bag named "<0.25mm".

In order to save time and money, after screening two samples, the decision was made to observe them without sending to heavy liquid separation. Observed portions weighted less than 40g and mostly collected into coarse size fraction (+0.5mm) meaning that observation will take reasonable time. Sample material collected in plastic bags named "HM" and "<0.25mm" have not been observed because "HM" should not have any KIM and "<0.25" is not economical due to very fine size grains. Sample collected into 0.5mm, 0.4mm, 0.3mm and 0.25mm have been observed under binocular microscope in order to extract any possible kimberlitic indicator mineral.

On the mineral cards labeled "REJECTED" all grains picked out from the concentrates and rejected as kimberlitic or possible kimberlitic indicator minerals were collected

On the mineral cards labeled "KIM" are collected all possible KIMs.

On the mineral cards labeled "Background" some common mineral are collected and named for the reference sake.

The sample data sheets recorded all information on weights, kimberlitic indicator minerals and comments for each observed sample.

RESULTS

- Total of 55.5 g of sample size 0.25mm – 0.5mm have been observed. Total of 31. 4g of hand magnetic and 31.6 g of <0.25mm material have not been observed.

- Total of 6 possible kimberlitic chromites have been collected. Based on their morphologies, sharp octahedrons, lack of resorption and layered surfaces, collected chromites are most likely NOT from kimberlitic source. Keep in mind that large variety of rocks other than kimberlite or lamproite may contain chromite.

- In sample labeled "2" two small pieces of gold have been found and collected on the mineral card named "background".

- Based on the absence of pyrope garnet as the only certain kimberlitic indicator mineral and the vague kimberlitic features of the recorded chromite, it is most likely that observed samples are missing kimberlitic signature.

Maja Kiridzija, Mineralogist

#802-121 W. 15th Street N. Vancouver, B.C.V7M 1R8 Tel 604 980 7853 Fax 604 980 7851e-mail: kdynamics@shaw.ca

#	Samples	Observing weight (g)	Not observed hand magnet portion HM (g)	Not observed dust portion <0.25mm (g)	KIMBERLITIC INDICATOR MINERALS							Observing time (hrs)	Background mineralogy
					Peridotitic garnet	Eclogitic garnet	Picroilmenite	Chromite	Chrome diopside	Olivine	Total		
1	1	38.8	1.1	3.2							0	7.5	barite, pyrite
2	2	16.7	30.3	28.4				6			6	5.4	pyrite, barite, almandine and traces of gold!
TOTALS		55.5	31.4	31.6	0	0	0	6	0	0	6	12.9	

KIM Dynamics Inc.

The Results of the KIM Observation

Invoice No 1

Appendix 4b
2003 and 2005 Geochemical and Gold Grain Results

SRC Geoanalytical Laboratories
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Sovereign Mining
Attention: Neil Torry
PO #/Project:
Samples: 64

Report No: 05-452
Date: September 28, 2005

ICP6.3 Aqua Regia Digestion

Column Header Details

Silver in ppm (Ag)
Arsenic in ppm (As)
Bismuth in ppm (Bi)
Cobalt in ppm (Co)
Copper in ppm (Cu)

Germanium in ppm (Ge)
Mercury in ppm (Hg)
Molybdenum in ppm (Mo)
Nickel in ppm (Ni)
Lead in ppm (Pb)

Antimony in ppm (Sb)
Selenium in ppm (Se)
Tellurium in ppm (Te)
Uranium in ppm (U, ICP)
Vanadium in ppm (V)

Zinc in ppm (Zn)

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, ICP ppm	V ppm	Zn ppm
CG509/LS3	<0.1	9.2	0.5	39.8	52.4	0.7	<0.2	17.1	53.2	19.9	0.6	0.5	0.7	37.1	114	219
ACD-0310-H13 -180	<0.1	9.4	<0.2	17.0	8.6	0.2	<0.2	0.8	23.6	9.12	<0.2	<0.2	1.0	0.6	20.8	53.8
ACD-0310-H14 -180	<0.1	6.0	<0.2	8.8	8.2	0.2	<0.2	0.4	19.4	7.59	<0.2	<0.2	<0.2	<0.5	22.1	46.1
ACD-0310-H15 -180	3.5	4.8	<0.2	9.0	7.0	0.5	<0.2	0.3	18.8	8.62	<0.2	<0.2	<0.2	4.7	35.4	38.2
AMH-001 -180	<0.1	2.3	<0.2	4.1	4.0	<0.2	<0.2	<0.1	9.0	4.68	<0.2	<0.2	<0.2	<0.5	11.3	22.1
AMH-002-180	<0.1	6.1	<0.2	5.9	7.1	0.2	<0.2	0.6	12.4	6.05	<0.2	<0.2	<0.2	<0.5	15.1	28.4
AMH-003 -180	<0.1	7.8	<0.2	6.7	7.6	0.3	<0.2	0.5	15.5	6.44	<0.2	<0.2	0.6	<0.5	18.5	53.0
AMH-004 -180	<0.1	5.1	<0.2	4.9	8.1	0.2	<0.2	0.4	13.5	5.13	<0.2	<0.2	0.4	<0.5	13.4	34.2
AMH-005 -180	<0.1	4.1	<0.2	5.4	4.5	0.2	<0.2	0.2	12.7	4.75	<0.2	<0.2	<0.2	<0.5	17.5	26.2
AMH-006 -180	<0.1	13.6	<0.2	7.1	6.1	0.2	<0.2	0.4	14.4	6.21	<0.2	<0.2	0.3	<0.5	17.8	29.9
AMH-007 -180	<0.1	4.4	<0.2	9.0	6.2	0.2	<0.2	0.9	20.5	6.92	<0.2	<0.2	<0.2	<0.5	15.1	31.9
AMH-008 -180	0.1	8.3	<0.2	11.9	20.1	<0.2	<0.2	0.5	23.5	10.9	<0.2	<0.2	<0.2	0.6	15.0	53.3
AMH-009 -180	<0.1	5.0	<0.2	7.5	3.7	0.2	<0.2	1.1	18.2	4.91	<0.2	<0.2	<0.2	<0.5	14.5	30.7
AMH-010 -180	<0.1	4.5	<0.2	6.5	5.6	0.3	<0.2	0.1	14.7	5.05	<0.2	<0.2	<0.2	<0.5	19.7	36.0
AMH-011 -180	<0.1	5.1	<0.2	7.4	7.5	<0.2	<0.2	0.1	17.9	6.45	<0.2	<0.2	0.5	<0.5	14.5	32.2
AMH-012 -180	<0.1	6.5	<0.2	9.4	9.5	0.2	<0.2	0.4	17.2	7.66	<0.2	<0.2	<0.2	<0.5	16.8	40.4
AMH-013 -180	<0.1	6.8	<0.2	7.3	7.5	0.3	<0.2	0.6	20.3	6.85	<0.2	<0.2	<0.2	0.5	21.1	40.7
BCDJ041003H-22 -180	1.4	6.2	<0.2	7.1	6.1	0.7	<0.2	0.8	23.1	7.48	<0.2	<0.2	<0.2	1.1	40.8	38.9
CD0307H-05 -180	0.1	11.2	0.2	11.3	22.4	0.2	<0.2	0.5	34.1	13.0	<0.2	<0.2	<0.2	1.3	26.6	79.5
CD0307H-06 -180	0.1	8.5	<0.2	9.3	12.8	0.2	<0.2	0.6	20.7	14.6	<0.2	<0.2	<0.2	0.8	18.4	62.1

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Sovereign Mining
Attention: Neil Torry
PO #/Project:
Samples: 64

Report No: 05-452
Date: September 28, 2005

ICP6.3 Aqua Regia Digestion

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, ICP ppm	V ppm	Zn ppm
CG509/LS3	<0.1	10.2	0.6	42.2	53.1	0.5	<0.2	16.9	52.4	19.2	0.7	0.6	0.5	37.7	112	218
CDBB0309H-09 -180	<0.1	8.0	<0.2	14.6	13.8	0.4	<0.2	0.7	24.2	14.0	<0.2	<0.2	<0.2	1.1	23.8	58.9
CDBB0309H-09B -180	<0.1	7.0	<0.2	11.7	15.4	0.5	<0.2	0.5	26.3	9.13	<0.2	<0.2	<0.2	0.6	26.4	60.0
CDBB0309H-10 -180	0.3	8.5	<0.2	12.1	7.3	0.2	<0.2	0.2	18.4	10.7	<0.2	<0.2	<0.2	1.5	16.1	46.6
CDJ0308H-08 -180	<0.1	10.3	<0.2	11.4	13.5	<0.2	<0.2	1.0	29.0	15.0	<0.2	<0.2	<0.2	1.6	23.3	146
CDJ1004H-24 -180	0.2	10.2	<0.2	7.0	6.2	0.7	<0.2	0.7	16.9	5.94	<0.2	<0.2	<0.2	1.5	26.4	49.5
CDJ1007H-31 -180	<0.1	4.6	<0.2	8.5	10.0	0.2	<0.2	0.2	22.3	7.38	<0.2	0.2	<0.2	0.7	19.4	50.1
CDJ0428H-16 -180	<0.1	6.3	<0.2	4.5	7.8	0.4	<0.2	0.3	17.3	6.12	<0.2	<0.2	0.3	<0.5	26.5	41.4
CDJ0428H-17 -180	<0.1	6.4	<0.2	6.8	5.7	<0.2	<0.2	0.2	15.6	7.66	<0.2	<0.2	<0.2	<0.5	22.8	36.3
CDJ0429H-18 -180	<0.1	6.2	0.3	8.2	5.6	0.2	<0.2	0.3	15.6	8.72	<0.2	<0.2	<0.2	<0.5	14.2	33.4
CDJ0429H-19 -180	<0.1	6.8	0.3	6.1	8.7	0.3	<0.2	0.2	15.0	11.1	<0.2	<0.2	<0.2	0.7	16.6	33.5
CDJ04924H-21 -180	<0.1	5.7	<0.2	8.9	8.1	<0.2	<0.2	1.5	20.2	20.8	<0.2	<0.2	<0.2	4.5	8.9	42.7
CDJ041005H-25 -180	<0.1	5.9	<0.2	6.4	6.3	0.2	<0.2	0.2	18.6	5.81	<0.2	<0.2	0.3	0.8	18.8	42.2
CDJ041005H-26 -180	0.3	7.0	<0.2	24.2	46.4	0.3	<0.2	2.1	63.9	18.7	<0.2	1.4	<0.2	1.3	35.1	108
CDJ041102H-27 -180	<0.1	21.2	<0.2	11.6	8.3	0.8	<0.2	0.2	18.7	5.34	11.6	<0.2	1.1	4.3	35.6	44.4
CDJ041102H-28 -180	<0.1	8.4	<0.2	6.0	6.4	<0.2	<0.2	0.3	13.9	7.97	<0.2	<0.2	<0.2	<0.5	15.1	41.8
CDJ041102H-37 -180	<0.1	10.8	<0.2	4.7	10.9	0.2	<0.2	0.1	15.8	9.36	<0.2	<0.2	<0.2	1.1	20.6	52.5
CDJ041120H-34 -180	<0.1	52.9	<0.2	19.9	6.1	1.9	<0.2	3.1	34.6	12.1	<0.2	<0.2	<0.2	2.2	44.8	63.4
CDJ041120H-35 -180	<0.1	59.6	<0.2	16.2	15.5	2.2	<0.2	3.5	38.3	20.8	<0.2	1.4	0.4	4.9	79.1	93.2
AMH-001 -180 R	<0.1	2.6	<0.2	4.4	3.9	<0.2	<0.2	0.1	9.4	4.75	<0.2	<0.2	<0.2	<0.5	10.9	21.5
CG509/LS3	<0.1	9.7	0.5	41.3	52.2	0.4	<0.2	16.8	52.4	19.7	0.7	0.6	0.5	38.4	109	219
CDJ041120H-35B -180	0.2	8.6	<0.2	25.6	45.6	0.3	<0.2	2.8	51.5	16.2	<0.2	<0.2	<0.2	2.2	39.2	157
CDJ041121H-36 -180	0.1	7.0	<0.2	10.8	15.8	0.5	<0.2	0.6	30.6	10.6	<0.2	<0.2	0.6	1.4	25.8	74.4
CDJ041121H-37 -180	<0.1	9.4	<0.2	17.5	18.3	0.5	<0.2	1.4	42.4	4.67	<0.2	0.3	0.4	0.7	40.9	76.4
CDJ041121H-38 -180	<0.1	125	<0.2	29.5	13.7	3.7	<0.2	5.5	28.7	27.5	<0.2	<0.2	1.4	5.8	77.5	75.7
CDJ041128H-40 -180	<0.1	22.8	<0.2	34.6	22.6	2.8	<0.2	2.7	57.9	24.6	<0.2	<0.2	0.4	5.7	68.6	109
D0301-001 -180	0.1	7.4	<0.2	9.4	38.6	0.3	<0.2	0.8	27.7	196	<0.2	0.6	0.3	2.0	27.3	119
D0301-002 -180	0.1	9.3	<0.2	11.1	33.5	<0.2	<0.2	0.8	28.7	122	<0.2	<0.2	<0.2	1.8	21.0	100
D0301-005 -180	0.1	10.7	<0.2	7.3	26.4	0.2	<0.2	0.8	23.2	25.7	<0.2	<0.2	0.2	2.3	23.5	73.6
D0301-006 -180	<0.1	4.2	<0.2	4.8	7.8	<0.2	<0.2	0.3	13.8	15.8	<0.2	<0.2	<0.2	<0.5	9.0	39.8
D0301-007 -180	0.1	9.9	<0.2	10.3	28.4	0.2	<0.2	1.2	32.8	10.4	<0.2	<0.2	<0.2	1.2	25.5	74.9
D0301-008 -180	<0.1	6.0	<0.2	6.9	6.5	<0.2	<0.2	0.4	15.4	4.73	<0.2	<0.2	0.2	<0.5	11.5	35.3
D0301-011 -180	0.1	10.6	<0.2	10.0	28.6	0.2	<0.2	1.2	29.6	17.8	<0.2	<0.2	<0.2	2.9	19.5	80.6
D0301-013 -180	<0.1	6.5	<0.2	8.4	23.7	<0.2	<0.2	0.4	21.5	13.5	<0.2	<0.2	<0.2	1.9	17.4	69.1
D0301-015 -180	0.1	7.2	<0.2	7.1	31.1	0.2	<0.2	0.6	22.0	73.9	<0.2	<0.2	<0.2	1.9	21.3	72.6
D0301-017 -180	0.1	4.9	<0.2	10.9	22.6	0.3	<0.2	0.9	32.6	17.3	<0.2	<0.2	0.2	2.0	21.5	90.4
D0301-019 -180	<0.1	6.5	<0.2	7.0	8.1	<0.2	<0.2	0.3	17.7	18.9	<0.2	<0.2	<0.2	0.6	14.2	39.8
D0301-021 -180	<0.1	6.9	<0.2	9.5	23.3	<0.2	<0.2	0.3	26.8	24.1	<0.2	<0.2	<0.2	1.1	20.2	71.7
D0302-001 -180	0.1	6.9	<0.2	8.5	33.1	0.2	<0.2	0.8	27.2	159	<0.2	0.7	<0.2	1.4	25.7	101
D0302-002 -180	<0.1	7.8	<0.2	9.5	23.3	0.3	<0.2	0.8	27.9	17.2	<0.2	<0.2	0.6	1.7	26.7	73.9

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Attention: Neil Torry
PO #/Project:
Samples: 64

Report No: 05-452
Date: September 28, 2005

ICP6.3 Aqua Regia Digestion

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, ICP ppm	V ppm	Zn ppm
CG509/LS3	<0.1	9.2	0.4	40.4	53.7	0.5	<0.2	16.8	53.1	19.1	0.5	0.8	0.7	38.2	112	216
D0302-004 -180	0.1	7.7	<0.2	8.6	21.8	0.2	<0.2	0.7	26.6	11.9	<0.2	0.6	<0.2	1.4	25.5	70.7
D0302-008 -180	0.1	5.5	<0.2	7.9	25.7	0.3	<0.2	1.2	25.6	16.8	<0.2	<0.2	<0.2	3.0	26.2	71.4
D0301-006 -180 R	<0.1	5.2	<0.2	5.2	8.1	<0.2	<0.2	0.3	13.0	16.3	<0.2	<0.2	0.2	<0.5	9.3	37.5

Aqua Regia: A 0.5 g pulp is digested with 2.00 ml of 3:1 HCL:HNO3 for 1 hour at 95 C.
The standard is LS3.

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ICP6.3 Total Digestion

Column Header Details

Silver in ppm (Ag)
Aluminum in wt % (Al2O3)
Barium in ppm (Ba)
Berylium in ppm (Be)
Calcium in wt % (CaO)

Cadmium in ppm (Cd)
Cerium in ppm (Ce)
Cobalt in ppm (Co)
Chromium in ppm (Cr)
Copper in ppm (Cu)

Dysprnnosium in ppm (Dy)
Erbium in ppm (Er)
Europium in ppm (Eu)
Iron in wt % (Fe2O3)
Gallium in ppm (Ga)

Gadolinium in ppm (Gd)
Hafnium in ppm (Hf)
Holmium in ppm (Ho)
Potassium in wt % (K2O)
Lanthanum in ppm (La)

Lithium in ppm (Li)
Magnesium in wt % (MgO)
Manganese in wt % (MnO)
Molybdenum in ppm (Mo)
Sodium in wt % (Na2O)

Niobium in ppm (Nb)
Neodymium in ppm (Nd)
Nickel in ppm (Ni)
Phosphorus in wt % (P2O5)
Lead in ppm (Pb)

Praseodymium in ppm (Pr)
Scandium in ppm (Sc)
Samarium in ppm (Sm)
Tin in ppm (Sn)
Strontium in ppm (Sr)

Tantalum in ppm (Ta)
Terbium in ppm (Tb)
Thorium in ppm (Th)
Titanium in wt % (TiO2)
Uranium in ppm (U, ICP)

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Samples: 64

Report No: 05-452
Date: September 28, 2005

ICP6.3 Total Digestion

Column Header Details

Vanadium in ppm (V)
Tungsten in ppm (W)
Yttrium in ppm (Y)
Ytterbium in ppm (Yb)
Zinc in ppm (Zn)

Zirconium in ppm (Zr)

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Date: September 28, 2005

ICP6.3 Total Digestion

Sample Number	Ag ppm	Al2O3 wt %	Ba ppm	Be ppm	CaO wt %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe2O3 wt %	Ga ppm	Gd ppm	Hf ppm
CG509/LS3	<0.2	11.9	943	1.6	2.80	0.4	76	12	217	4	2.4	1.4	1.2	3.21	17	3.4	5.5
ACD-0310-H13 -180	<0.2	8.04	761	1.0	1.48	0.4	39	19	34	10	3.4	1.3	0.9	4.42	10	2.3	2.9
ACD-0310-H14 -180	<0.2	11.8	915	1.4	2.22	0.3	84	15	57	12	3.2	2.2	1.2	5.37	16	3.4	2.7
ACD-0310-H15 -180	<0.2	9.25	670	1.5	1.84	1.2	202	41	154	20	6.8	6.3	2.1	15.3	12	7.0	8.4
AMH-001 -180	<0.2	8.37	713	0.9	1.30	0.2	72	10	27	7	2.1	1.4	0.9	2.38	10	3.3	3.1
AMH-002-180	0.2	6.36	591	0.7	1.26	0.2	34	6	36	9	2.1	1.3	0.7	3.50	9	2.1	2.9
AMH-003 -180	<0.2	7.28	848	0.8	1.54	<0.2	33	7	29	8	2.0	1.2	0.8	3.19	9	1.9	2.0
AMH-004 -180	0.2	7.09	689	0.7	1.70	0.4	36	5	26	10	2.0	1.1	0.7	2.36	10	2.3	3.0
AMH-005 -180	<0.2	5.73	542	0.6	1.13	<0.2	59	9	32	7	2.5	1.5	0.8	3.71	7	3.2	3.9
AMH-006 -180	<0.2	8.46	688	0.9	1.55	0.5	73	13	37	8	2.9	1.7	1.1	3.66	11	3.9	4.2
AMH-007 -180	<0.2	10.0	754	1.1	1.69	0.3	57	11	51	9	3.2	2.2	1.5	3.89	11	4.4	3.9
AMH-008 -180	0.3	12.5	835	1.4	1.90	0.7	45	12	53	21	3.0	1.7	1.1	4.61	15	2.8	3.2
AMH-009 -180	<0.2	6.73	707	0.7	1.32	<0.2	32	8	29	5	2.0	1.2	0.7	2.74	9	2.0	1.5
AMH-010 -180	<0.2	8.47	745	0.9	1.46	<0.2	67	7	38	8	2.6	1.6	1.0	4.76	10	3.2	3.7
AMH-011 -180	<0.2	9.11	706	0.9	1.31	<0.2	36	11	32	9	2.0	1.0	0.8	2.42	12	2.3	3.1
AMH-012 -180	<0.2	9.34	784	1.0	1.72	0.3	37	10	36	11	2.3	1.5	0.9	3.57	11	2.4	2.2
AMH-013 -180	<0.2	7.72	710	0.9	1.63	0.2	37	12	43	9	2.0	1.2	0.8	3.99	9	2.0	2.9
BCDJ041003H-22 -180	<0.2	8.02	894	1.1	2.14	1.1	124	21	149	13	5.8	4.1	1.9	10.7	12	5.6	8.7
CD0307H-05 -180	0.2	13.9	1040	1.6	2.17	0.3	54	11	63	23	3.2	1.8	1.1	4.92	19	3.1	3.0
CD0307H-06 -180	<0.2	14.8	1050	2.1	1.44	0.5	62	15	61	16	3.5	2.2	1.2	6.15	21	3.7	4.0
CG509/LS3	<0.2	11.7	902	1.5	2.67	0.3	74	8	198	4	2.4	1.4	1.1	3.25	16	3.3	4.3
CDBB0309H-09 -180	<0.2	13.2	920	1.5	1.38	0.3	45	14	68	15	2.9	1.5	1.0	4.56	18	2.6	3.0
CDBB0309H-09B -180	<0.2	13.1	875	1.4	1.64	0.6	82	17	65	18	3.6	2.1	1.4	5.28	16	4.0	2.5
CDBB0309H-10 -180	<0.2	11.3	848	1.3	1.42	0.6	79	12	39	10	2.6	1.4	1.1	4.64	14	3.1	4.5
CDJ0308H-08 -180	<0.2	13.6	1090	1.9	1.70	0.3	62	12	58	17	3.4	2.0	1.3	4.97	18	3.7	3.3
CDJ1004H-24 -180	0.2	7.42	1110	1.0	4.09	<0.2	57	11	57	8	2.4	1.4	1.1	7.24	11	2.1	2.5
CDJ1007H-31 -180	<0.2	11.5	963	1.3	1.76	0.6	52	8	46	12	2.4	1.4	1.0	3.41	15	2.6	2.5
CDJ0428H-16 -180	<0.2	9.63	902	1.2	2.21	1.3	78	21	90	16	5.4	3.9	1.7	9.02	11	4.4	8.2
CDJ0428H-17 -180	<0.2	8.41	782	0.9	1.58	0.5	69	13	67	8	3.2	2.1	1.3	5.58	11	3.7	5.4
CDJ0429H-18 -180	<0.2	10.0	749	1.1	1.47	<0.2	114	11	63	8	3.0	1.7	1.4	4.10	12	4.9	3.9
CDJ0429H-19 -180	<0.2	11.5	712	1.6	1.35	0.2	88	11	56	12	3.6	2.1	1.2	5.70	15	4.0	3.5
CDJ04924H-21 -180	0.2	16.8	750	1.3	2.24	<0.2	64	12	18	12	1.6	1.5	1.0	4.39	22	2.8	3.0
CDJ041005H-25 -180	<0.2	10.0	858	1.1	2.04	0.5	71	6	52	8	2.3	1.6	1.1	3.83	12	3.0	2.3
CDJ041005H-26 -180	0.3	14.7	1140	1.4	1.49	0.5	41	27	70	46	2.6	1.6	1.1	4.23	19	2.8	2.5
CDJ041102H-27 -180	0.3	7.97	606	0.9	20.8	<0.2	37	12	55	9	4.0	1.3	1.0	7.18	13	2.2	1.8
CDJ041102H-28 -180	<0.2	10.3	905	1.1	1.54	0.6	41	7	39	9	2.2	1.5	0.9	3.79	12	2.5	2.3
CDJ041102H-37 -180	<0.2	11.1	931	1.2	1.44	0.3	48	6	42	13	2.4	1.7	1.0	3.82	14	2.8	2.4
CDJ041120H-34 -180	0.3	10.1	1090	1.3	1.54	0.6	41	21	43	8	4.1	1.7	1.2	10.0	13	2.2	2.8
CDJ041120H-35 -180	0.2	10.5	1610	1.7	1.65	1.4	47	21	60	17	4.4	1.7	0.7	13.9	13	1.8	3.5
AMH-001 -180 R	0.2	8.22	688	0.8	1.24	0.2	69	10	28	6	1.9	1.3	0.7	2.27	10	2.5	3.4

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Sovereign Mining
Attention: Neil Torry
PO #/Project:
Samples: 64

Report No: 05-452
Date: September 28, 2005

ICP6.3 Total Digestion

Sample Number	Ag ppm	Al2O3 wt %	Ba ppm	Be ppm	CaO wt %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe2O3 wt %	Ga ppm	Gd ppm	Hf ppm
CG509/LS3	<0.2	11.4	958	1.5	2.83	<0.2	74	11	220	4	2.5	1.3	1.2	3.36	17	3.3	4.6
CDJ041120H-35B -180	0.2	14.4	1130	1.8	1.55	1.2	44	27	72	48	2.9	1.7	1.1	5.02	19	3.0	2.2
CDJ041121H-36 -180	0.2	11.7	1280	1.4	3.07	0.3	39	10	62	17	2.8	1.7	1.1	5.27	15	2.6	2.4
CDJ041121H-37 -180	<0.2	15.9	1890	1.3	3.72	1.6	31	18	97	20	2.7	1.3	1.1	4.36	19	2.3	2.1
CDJ041121H-38 -180	0.5	8.49	1150	1.9	1.57	1.6	50	30	33	15	5.1	1.9	0.6	20.3	10	1.7	2.8
CDJ041128H-40 -180	0.4	10.8	1000	2.3	1.42	0.9	57	45	54	23	6.5	2.3	0.8	15.5	14	2.6	3.3
D0301-001 -180	0.2	12.2	771	1.5	2.68	0.4	44	15	69	45	2.9	1.9	1.1	4.05	18	3.1	2.6
D0301-002 -180	0.3	14.1	833	1.6	2.26	0.3	45	12	62	38	3.0	2.0	1.1	4.14	20	3.2	2.5
D0301-005 -180	<0.2	14.0	1070	1.7	2.25	0.5	43	9	65	30	2.7	1.7	1.1	3.98	20	3.0	2.5
D0301-006 -180	<0.2	12.8	955	1.2	2.21	0.4	36	6	28	10	1.5	1.2	0.9	1.77	15	2.4	1.1
D0301-007 -180	0.2	14.3	899	1.5	1.91	0.7	38	14	69	30	2.6	1.7	1.1	3.87	18	2.8	2.1
D0301-008 -180	<0.2	12.3	1010	1.2	2.04	0.5	25	7	25	9	1.2	1.0	0.8	1.87	14	2.1	1.2
D0301-011 -180	0.2	15.1	979	1.9	3.03	0.9	52	13	59	32	3.0	1.9	1.1	5.19	21	3.2	3.3
D0301-013 -180	<0.2	15.8	964	1.6	2.32	0.5	42	12	64	29	2.8	1.7	1.1	3.95	20	2.9	2.5
D0301-015 -180	0.3	13.7	825	1.6	2.11	0.5	44	11	66	32	2.6	1.6	1.0	3.88	20	2.9	2.5
D0301-017 -180	<0.2	14.7	876	2.4	1.45	0.5	70	14	82	27	4.0	2.3	1.5	4.24	22	5.0	2.4
D0301-019 -180	<0.2	11.5	917	1.1	2.43	0.6	29	12	34	11	1.9	1.2	0.8	1.91	15	2.2	1.9
D0301-021 -180	0.2	13.2	897	1.4	1.96	0.8	40	10	63	27	2.7	1.7	1.0	3.87	17	2.9	2.3
D0302-001 -180	0.3	12.9	800	1.6	2.47	0.7	45	14	84	36	2.9	1.8	1.1	4.26	17	3.1	2.6
D0302-002 -180	0.2	12.5	856	1.5	2.41	0.4	43	12	66	26	2.7	1.7	1.1	4.01	18	3.2	2.2
CG509/LS3	<0.2	11.5	906	1.5	2.69	<0.2	70	9	209	4	2.4	1.4	1.1	3.25	14	3.2	4.6
D0302-004 -180	0.4	12.4	770	1.6	2.59	0.5	48	12	66	24	2.9	1.9	1.1	3.95	18	3.3	3.1
D0302-008 -180	0.3	15.1	899	1.9	3.12	0.3	50	13	59	29	3.0	1.9	1.1	5.21	21	3.1	3.1
D0301-006 -180 R	<0.2	12.5	926	1.1	2.21	0.4	34	7	31	10	1.6	1.3	0.9	1.76	15	2.4	1.8

Sovereign Mining
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Samples: 64

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Report No: 05-452
Date: September 28, 2005

ICP6.3 Total Digestion

Sample Number	Ho ppm	K2O wt %	La ppm	Li ppm	MgO wt %	MnO wt %	Mo ppm	Na2O wt %	Nb ppm	Nd ppm	Ni ppm	P2O5 wt %	Pb ppm	Pr ppm	Sc ppm	Sm ppm	Sn ppm
CG509/LS3	1.2	2.60	39	17	1.30	0.051	2	2.97	4	30	19	0.245	12	7	6	5.1	<1
ACD-0310-H13 -180	1.3	1.35	19	17	0.786	0.392	<1	1.22	7	15	29	0.136	15	3	5	3.2	<1
ACD-0310-H14 -180	1.3	1.85	49	21	1.14	0.120	<1	2.00	16	30	27	0.150	13	8	9	4.9	<1
ACD-0310-H15 -180	0.7	1.32	122	15	1.05	0.319	1	1.56	63	77	24	0.210	19	22	17	10.1	3
AMH-001 -180	0.7	1.45	43	13	0.485	0.045	<1	1.67	9	31	13	0.122	11	5	4	4.2	<1
AMH-002-180	1.3	1.11	18	11	0.593	0.082	<1	1.12	7	14	17	0.097	12	3	4	2.1	<1
AMH-003 -180	1.2	1.24	18	12	0.592	0.085	<1	1.35	7	13	18	0.109	11	3	4	2.5	<1
AMH-004 -180	0.9	1.33	19	13	0.694	0.053	<1	1.29	5	14	17	0.112	9	3	3	2.8	<1
AMH-005 -180	0.8	0.982	32	10	0.500	0.063	<1	1.09	12	24	15	0.115	11	5	5	3.6	<1
AMH-006 -180	0.9	1.36	39	13	0.628	0.098	<1	1.53	9	31	17	0.114	14	7	5	5.3	<1
AMH-007 -180	0.9	1.52	28	16	0.763	0.083	<1	1.82	16	30	23	0.121	14	6	7	6.7	<1
AMH-008 -180	1.5	1.90	23	19	1.09	0.140	<1	1.67	7	17	32	0.112	17	4	8	3.8	<1
AMH-009 -180	1.2	1.14	18	10	0.486	0.076	<1	1.36	6	13	17	0.100	10	2	4	1.8	<1
AMH-010 -180	0.9	1.35	44	13	0.601	0.090	<1	1.63	18	28	18	0.124	11	7	6	4.4	<1
AMH-011 -180	1.2	1.46	19	15	0.561	0.047	<1	1.53	6	14	21	0.104	12	3	5	2.3	<1
AMH-012 -180	1.4	1.52	19	16	0.788	0.073	<1	1.45	7	15	22	0.118	12	3	5	3.1	<1
AMH-013 -180	1.3	1.32	21	14	0.813	0.074	<1	1.29	8	14	21	0.123	11	3	5	2.6	<1
BCDJ041003H-22 -180	1.7	1.19	70	14	1.14	0.216	<1	1.35	42	52	28	0.176	16	13	12	7.3	<1
CD0307H-05 -180	1.5	2.29	30	32	1.67	0.153	<1	1.49	8	20	39	0.172	18	5	11	4.3	1
CD0307H-06 -180	1.1	1.94	32	29	1.38	0.118	<1	1.10	14	24	33	0.103	20	6	10	4.9	<1
CG509/LS3	1.2	2.48	38	16	1.27	0.050	2	2.83	4	28	18	0.235	11	6	6	4.9	<1
CDBB0309H-09 -180	1.4	2.30	23	23	1.11	0.209	<1	1.60	8	16	31	0.146	21	4	9	3.5	1
CDBB0309H-09B -180	1.1	2.19	46	23	1.20	0.168	<1	1.71	12	30	33	0.159	15	8	10	5.5	3
CDBB0309H-10 -180	0.9	1.49	44	18	0.805	0.142	<1	1.55	13	28	22	0.117	17	7	7	4.5	<1
CDJ0308H-08 -180	1.0	2.14	32	27	1.26	0.110	<1	1.51	11	24	34	0.141	24	6	9	4.9	<1
CDJ1004H-24 -180	1.4	1.64	33	21	2.25	0.173	<1	1.24	5	20	20	0.161	11	5	5	4.1	<1
CDJ1007H-31 -180	1.3	1.88	30	20	0.992	0.070	<1	1.85	7	19	30	0.131	13	4	6	3.6	<1
CDJ0428H-16 -180	1.3	1.53	44	17	1.07	0.183	<1	1.67	38	33	23	0.211	16	8	12	5.4	<1
CDJ0428H-17 -180	1.3	1.32	37	13	0.776	0.127	<1	1.49	18	29	22	0.124	12	7	8	4.7	2
CDJ0429H-18 -180	0.9	1.48	61	17	0.761	0.094	<1	1.56	13	45	21	0.110	15	10	6	6.5	<1
CDJ0429H-19 -180	1.1	1.34	50	20	0.844	0.157	<1	1.11	14	32	23	0.116	17	8	8	4.6	<1
CDJ04924H-21 -180	1.1	1.01	36	20	1.82	0.031	<1	1.62	12	21	32	0.166	27	5	4	4.1	<1
CDJ041005H-25 -180	0.8	1.66	41	16	0.953	0.098	<1	1.91	10	27	20	0.133	11	6	6	4.5	<1
CDJ041005H-26 -180	1.4	2.62	22	28	1.46	0.049	1	1.81	6	17	68	0.132	23	4	11	3.7	<1
CDJ041102H-27 -180	1.1	1.16	20	18	1.15	0.668	<1	1.36	4	11	19	0.150	6	4	13	5.5	<1
CDJ041102H-28 -180	1.4	1.68	23	17	0.692	0.069	<1	1.77	8	17	19	0.197	13	4	6	3.2	<1
CDJ041102H-37 -180	1.2	1.77	27	19	0.841	0.045	<1	1.71	8	19	21	0.192	14	4	7	3.6	<1
CDJ041120H-34 -180	1.7	1.59	20	16	0.788	0.369	3	1.78	8	15	38	0.300	18	5	7	3.4	<1
CDJ041120H-35 -180	1.6	1.50	22	19	0.943	0.288	3	1.19	8	14	40	0.384	24	6	8	3.5	<1
AMH-001 -180 R	0.7	1.39	39	12	0.471	0.043	<1	1.62	8	27	13	0.117	12	4	4	4.0	<1

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Samples: 64

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ICP6.3 Total Digestion

Sample Number	Ho ppm	K2O wt %	La ppm	Li ppm	MgO wt %	MnO wt %	Mo ppm	Na2O wt %	Nb ppm	Nd ppm	Ni ppm	P2O5 wt %	Pb ppm	Pr ppm	Sc ppm	Sm ppm	Sn ppm
CG509/LS3	1.1	2.62	38	17	1.28	0.052	2	2.99	4	29	16	0.242	10	6	6	5.0	4
CDJ041120H-35B -180	1.3	2.33	24	25	1.23	0.068	2	1.54	6	17	64	0.101	19	5	13	3.9	3
CDJ041121H-36 -180	1.3	1.95	21	23	1.25	0.120	<1	1.70	6	15	39	0.162	18	4	8	3.5	<1
CDJ041121H-37 -180	0.8	1.89	17	19	1.12	0.164	<1	3.09	4	12	46	0.221	11	3	13	3.2	<1
CDJ041121H-38 -180	1.6	1.23	24	14	0.700	0.275	5	1.03	9	14	33	0.592	33	7	6	3.8	<1
CDJ041128H-40 -180	1.6	1.52	24	21	0.965	0.631	2	1.00	6	16	68	0.289	27	6	10	4.2	<1
D0301-001 -180	1.2	1.98	24	38	1.51	0.056	<1	1.06	6	19	38	0.152	267	4	10	4.2	<1
D0301-002 -180	1.4	2.02	25	33	1.48	0.046	<1	1.54	6	18	37	0.123	140	4	11	4.0	<1
D0301-005 -180	1.3	1.86	24	32	1.46	0.050	<1	1.36	7	17	29	0.120	43	4	11	3.9	<1
D0301-006 -180	0.9	2.00	20	16	0.551	0.026	<1	2.74	5	14	23	0.076	16	3	4	3.0	<1
D0301-007 -180	1.3	2.06	21	27	1.33	0.049	<1	2.12	6	15	43	0.150	15	4	10	3.5	<1

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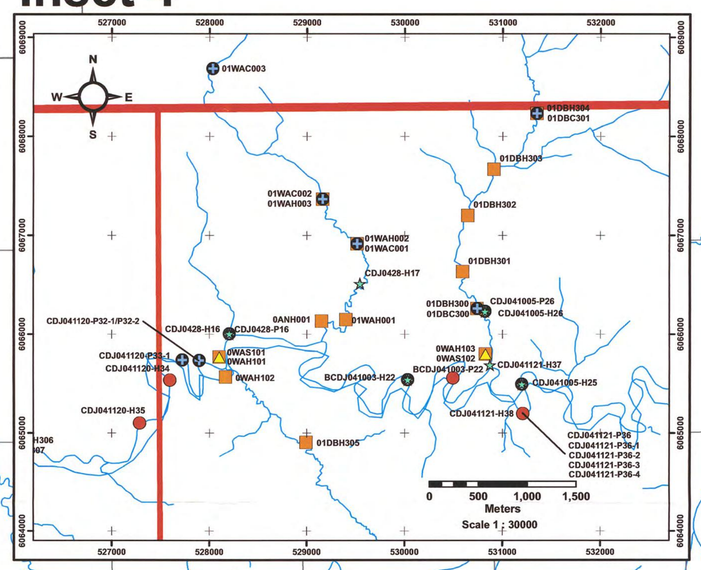
ICP6.3 Total Digestion

Sample Number	Sr ppm	Ta ppm	Tb ppm	Th ppm	TiO2 wt %	U, ICP ppm	V ppm	W ppm	Y ppm	Yb ppm	Zn ppm	Zr ppm
CG509/LS3	369	<1	<0.3	8	0.416	5	57	3	16	1.6	29	231
ACD-0310-H13 -180	187	1	<0.3	5	0.666	<2	78	<1	15	1.6	68	153
ACD-0310-H14 -180	290	<1	<0.3	9	1.69	<2	129	<1	22	2.4	72	141
ACD-0310-H15 -180	242	<1	0.4	20	7.88	6	398	<1	34	2.6	118	283
AMH-001 -180	234	<1	0.3	7	0.828	<2	65	<1	14	1.5	39	130
AMH-002-180	166	1	<0.3	4	0.740	<2	58	<1	13	1.5	42	120
AMH-003 -180	210	1	<0.3	4	0.658	<2	62	<1	13	1.4	58	71
AMH-004 -180	187	2	<0.3	4	0.519	<2	55	<1	12	1.4	48	121
AMH-005 -180	156	1	<0.3	7	1.22	<2	77	<1	16	1.7	37	167
AMH-006 -180	228	2	<0.3	9	0.924	<2	69	<1	17	1.7	61	180
AMH-007 -180	271	<1	0.4	8	1.44	<2	94	<1	21	2.2	54	154
AMH-008 -180	232	<1	<0.3	6	0.562	<2	92	<1	20	2.1	96	130
AMH-009 -180	204	<1	0.3	3	0.672	<2	52	<1	13	1.5	40	65
AMH-010 -180	236	2	<0.3	8	1.79	<2	106	<1	16	1.8	53	162
AMH-011 -180	225	2	0.4	5	0.586	<2	66	<1	13	1.4	46	108
AMH-012 -180	210	<1	<0.3	5	0.703	<2	75	<1	16	1.7	56	92
AMH-013 -180	184	2	<0.3	4	0.753	<2	75	<1	14	1.6	53	115
BCDJ041003H-22 -180	209	<1	0.4	16	4.61	3	249	<1	33	3.3	89	305
CD0307H-05 -180	241	<1	<0.3	8	0.724	2	120	<1	20	2.2	98	110
CD0307H-06 -180	200	<1	<0.3	10	0.916	<2	123	<1	25	2.6	116	153
CG509/LS3	350	<1	<0.3	8	0.400	6	55	4	16	1.6	31	207
CDBB0309H-09 -180	233	<1	<0.3	6	0.677	2	102	<1	16	1.8	80	107
CDBB0309H-09B -180	239	2	<0.3	8	1.04	<2	118	<1	23	2.4	80	103
CDBB0309H-10 -180	230	<1	<0.3	8	1.20	2	97	<1	16	1.9	69	199
CDJ0308H-08 -180	254	2	<0.3	8	0.821	2	110	<1	23	2.4	188	123
CDJ1004H-24 -180	190	<1	<0.3	9	0.651	2	68	<1	14	1.7	56	94
CDJ1007H-31 -180	280	<1	<0.3	6	0.728	<2	87	<1	16	1.7	66	93
CDJ0428H-16 -180	255	<1	0.9	11	4.06	3	218	<1	33	3.4	85	331
CDJ0428H-17 -180	225	<1	<0.3	8	2.06	<2	134	<1	21	2.5	63	192
CDJ0429H-18 -180	231	1	0.4	13	1.36	<2	98	<1	18	2.0	56	154
CDJ0429H-19 -180	167	<1	0.6	11	1.33	<2	113	<1	25	2.5	69	126
CDJ04924H-21 -180	294	<1	<0.3	16	0.415	5	40	<1	16	1.7	69	121
CDJ041005H-25 -180	286	1	<0.3	7	1.03	<2	87	<1	15	1.7	58	80
					0.643	2	128	<1	17	1.9	125	119

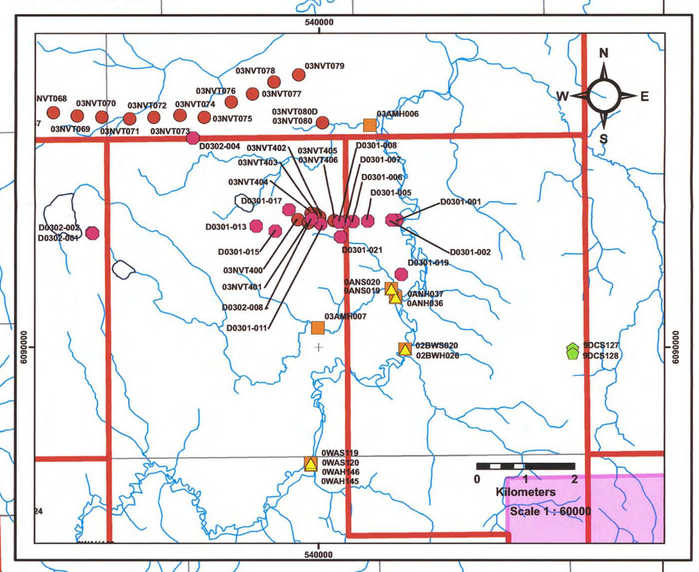
Appendix 5
2005-2007 Statement of Expenditures – Swan Hills Property

MIN20070009

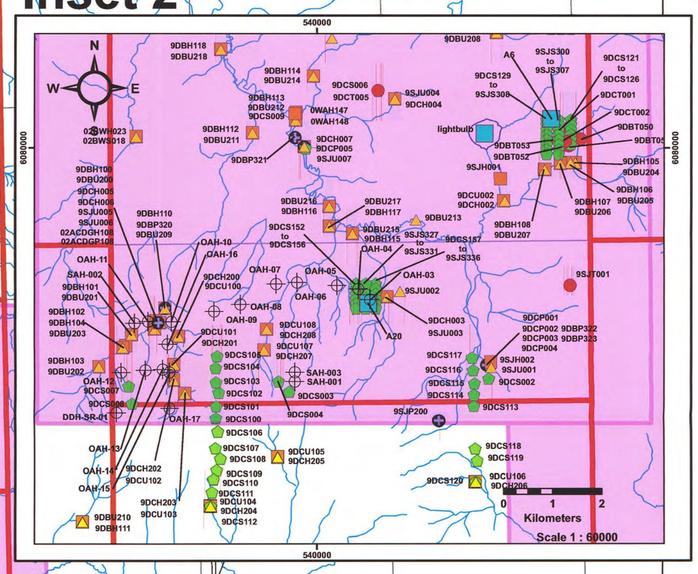
Inset 4



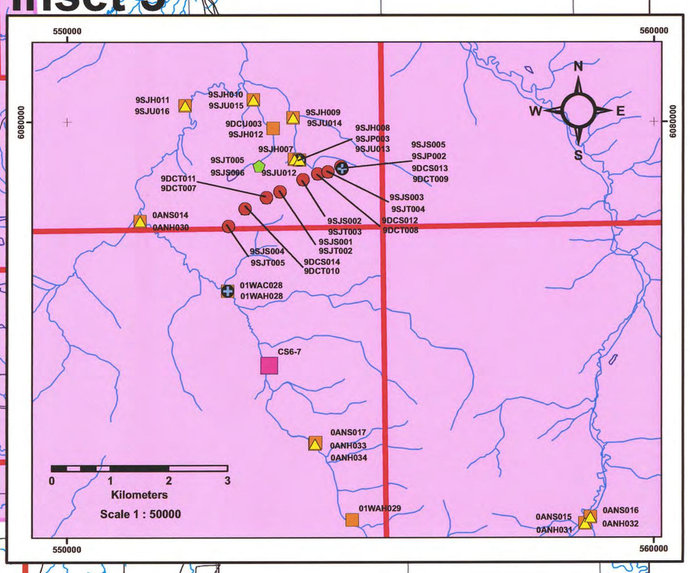
Inset 1



Inset 2



Inset 3



Legend

- Headwater Mineral Permit
- 9DBT050 — Till
- 0ANH025 — Heavy Mineral Concentrates
- 02BWS001 — Stream Silt
- 9SJP001 — Soil
- CDJ0428-H16 — Suction Dredge
- 02MDH101 — Beach
- 02BWP100 — Drill Tailings
- D0301-013 — Rock Grab
- OAH-01 — 2001 Drillhole Location; identifier
- Airborne Survey Coverage
- A3 — 2000 Ground Geophysical Grid Locations; identifier
- S5a — 2002 Ground Geophysical Grid Locations; identifier
- Township and Range
- Roads
- Drainage
- Lakes

PERMIT TO PRACTICE
APEX GEOSCIENCE LTD.
Signature
Date April 24, 2007
PERMIT NUMBER: P 467
The Association of Professional Engineers, Geologists and Geophysicists of the NWT / NU

PROFESSIONAL GEOLOGIST ALBERTA
CHRISTOPHER B. DURFEE

HEADWATER MINERALS LTD.

Swan Hills Property

1997-2005 SAMPLE LOCATIONS AND GEOPHYSICS

0 5 10 15
Kilometers
SCALE 1 : 150000
Nad27 Zone 11
Alberta, Canada
APEX Geoscience Ltd.

Edmonton, Alberta — April 2006

Figure 5