

**EVALUATION OF THE DIAMOND POTENTIAL OF GRIZZLY  
DIAMONDS LTD.'S BUFFALO HEAD HILLS PROPERTIES,  
NORTHERN ALBERTA**

**Approximate Property Location**

**Latitude: 56°, 31.5' N**

**Longitude: 115°, 42.0' W**

**Near The Town of Red Earth Creek,**

**120 km North of Slave Lake, North-Central Alberta (NTS 84B/11)**

**Completed By :**

**APEX Geoscience Ltd.**

**Suite 200, 9797 – 45 Avenue**

**Edmonton, Alberta, Canada**

**T6E 5V8**

**Completed For:**

**Grizzly Diamonds Ltd.**

**Comp 2, Site 17,**

**Peers, Alberta**

**T0E 1W0**

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## **LIST OF ABBREVIATIONS**

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

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

# **EVALUATION OF THE DIAMOND POTENTIAL OF GRIZZLY DIAMONDS LTD.'S BUFFALO HEAD HILLS PROPERTIES, NORTHERN ALBERTA**

## **SUMMARY**

APEX Geoscience Ltd. (APEX) was retained during April 2004 as consultants by Grizzly Diamonds Ltd. (Grizzly) to compile all existing geological, geophysical and geochemical data for Grizzly's Buffalo Head Hills diamond properties and to prepare an independent evaluation of the potential of the properties to host diamondiferous kimberlites.

Grizzly owns an undivided 90% interest in three separate properties in the Buffalo Head Hills. Grizzly's properties, comprised of the Grand Cub Aidan, the White Bear and the Smoky The Bear properties are all located in the Buffalo Head Hills covering portions of Townships 87 to 90, Ranges 7 to 19, and Townships 96 to 98, Ranges 10 to 14 west of the 5<sup>th</sup> meridian. Grizzly's Buffalo Head Hills properties encompass 40 mineral permits totaling approximately 338,000 hectares (835,000 acres) and are situated adjacent to Ashton Mining of Canada Inc.'s (Ashton) main Buffalo Head Hills property about 330 km northwest of Edmonton. Although diamond exploration at the property is still in the early stages, the potential for discovery of diamondiferous kimberlites on Grizzly's properties are considered high based upon the regional geological setting in conjunction with the positive results of exploration conducted to date. Grizzly has spent in excess of \$106,641 (not including GST) on exploration on these properties in the last year.

The regional setting for Grizzly's Buffalo Head Hills properties 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 magmas in the Buffalo Head Hills. The regional cratonic setting is also considered favourable for the formation and preservation of diamonds in the upper mantle and their transport to surface in kimberlitic magma during periodic tectonic activity associated with movement along the Peace River Arch. This has been confirmed with discovery of 38 kimberlite pipes, of which 26 are diamondiferous, in the Buffalo Head Hills area. At least three of the Buffalo Head Hills kimberlite pipes exist within 1.5 to 5 km of the northern boundary of Grizzly's Smoky The Bear diamond property.

To date, a number of diamond indicator minerals have been recovered from limited sampling of glacial outwash gravel, recent fluvial gravel and till on all three of Grizzly's Buffalo Head Hills diamond properties. The importance of these indicator minerals and potential source areas are unknown due to the presence of variable thicknesses of glacial drift and the poor sampling density. A number of samples collected from the Grand Cub Aidan property and immediately south by government agencies and industry have yielded significant numbers of indicator minerals including olivine, pyrope garnet, chromite and picroilmenite. All of these sample sites exist well north of the northernmost known Buffalo Head Hills kimberlite. Therefore there is a strong likelihood that undiscovered kimberlites

exist on or to the north of the Grand Cub Aidan property. The diamond potential of Grizzly's three properties cannot be fully assessed with the limited amount of sampling that has been conducted to date. However, it is expected that further systematic sampling will lead to a better understanding of the diamond potential of the properties.

A review of all the existing and available magnetic data for Grizzly's Buffalo Head Hills properties resulted in the identification of a number of magnetic anomalies that warrant follow-up exploration for kimberlites. In particular, anomaly TQ-108, within the southeast portion of the Smoky The Bear property, is most likely representative of a buried kimberlite. Other geophysical anomalies of interest from past exploration have been identified on both the Grand Cub Aidan and the Smoky The Bear properties. These anomalies in conjunction with the presence of nearby kimberlites indicate that portions of these properties are high priority target areas for kimberlite exploration.

During April 2004, an airborne magnetic survey was conducted over Grizzly's White Bear property. The data was reviewed on a line by line profile basis to look for high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features such as kimberlites. A total of 23 priority 1 and 32 priority 2 magnetic anomalies were identified in the dataset and are prospective for kimberlites and require follow-up exploration.

Based on these results, an aggressive follow-up property-scale exploration program is warranted for all three of Grizzly's Buffalo Head Hills properties including detailed sampling in conjunction with airborne and ground geophysical surveys, followed by drilling of high priority targets. A detailed structural interpretation that includes the acquisition and interpretation of RadarSat and digital elevation data should be completed in conjunction with the sampling program. An airborne geophysical survey utilizing magnetic and electromagnetic surveys should be conducted over all or a large portion of the Grand Cub Aidan property during the fall of 2004 based upon the recent successful discovery of kimberlites in the Buffalo Head Hills using electromagnetic methods.

For Grizzly's Buffalo Head Hills properties, future exploration should be conducted in three stages. **Stage 1** should consist of an aggressive late summer to fall sampling program for diamond indicator minerals with the planned collection of about 400 samples. The sampling program should be accompanied by or followed with a ground geophysical program and a detailed compilation leading to a structural interpretation. The estimated cost of the Stage 1 program is **\$600,000**, plus GST. **Stage 2** exploration should consist of a helicopter magnetic-electromagnetic survey or a fixed wing GEOTEM survey over all or a portion of the Grand Cub Aidan property in conjunction with pointed surveys over portions of the White Bear and Smoky The Bear property. The estimated cost to conduct the warranted airborne geophysical surveys is **\$1,000,000**, plus GST. A **Stage 3** exploration program should consist of a water well or reverse circulation drilling program of six kimberlite targets within Grizzly's three Buffalo Head Hills diamond properties. At least one high priority drill target, TQ108, is presently ready to drill. The development of other targets will depend upon the Stage 1 and 2 exploration programs. The estimated cost to conduct a six hole reverse circulation Stage 3 drilling program is **\$300,000** plus GST.

## **INTRODUCTION AND TERMS OF REFERENCE**

APEX Geoscience Ltd. (APEX) was retained during April 2004 as consultants by Grizzly Diamonds Ltd. (Grizzly) to compile all existing geological, geophysical and geochemical data for Grizzly's Buffalo Head Hills diamond properties and to prepare an independent evaluation of the potential of the properties to host diamondiferous kimberlites.

During March 2004, APEX was retained by Grizzly to oversee a fixed-wing airborne magnetic survey over one of Grizzly's Buffalo Head Hills properties named the White Bear Property. APEX was subsequently retained by Grizzly during late April to complete an independent review of the diamond potential of all of Grizzly's Buffalo Head Hills diamond properties. This qualifying report documents the results of the data review and exploration performed by Grizzly and others to date on the three Buffalo Head Hills properties. Mr. M.B. Dufresne, M.Sc., P.Geol., a Qualified Person, has visited all three Buffalo Head Hills properties on a number of occasions while performing exploration and scientific related work on behalf of the Alberta Geological Survey. Mr. Dufresne's most recent visits to the properties were during December, 2001 and November, 2003. To date, Grizzly has spent a total of \$139,893 (not including GST) on exploration on its Buffalo Head Hills properties during the last year (Appendix 1). In addition, Grizzly incurred a total cost of \$20,000 in restaking costs to maintain the properties (Appendix 1), yielding a direct acquisition cost of roughly \$0.06 per hectare (\$0.024 per acre).

## **DISCLAIMER**

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

## **PROPERTY DESCRIPTION AND LOCATION**

Grizzly Diamond Ltd.'s Buffalo Head Hills diamond properties, comprised of the Grand Cub Aidan, the White Bear and the Smoky The Bear properties are all located in the Buffalo Head Hills west and north of the town of Red Earth Creek in north-central Alberta, roughly covering portions of Townships 87 to 90, Ranges 7 to 19, and Townships 96 to 98, Ranges 10 to 14 west of the 5<sup>th</sup> meridian (Figures 1 and 2). Grizzly's Buffalo Head Hills diamond properties encompass 40 mineral permits totalling approximately 338,000 ha (835,000 acres) and are situated adjacent to Ashton Mining of Canada Inc.'s (Ashton) main



Buffalo Head Hills Property along the north and south flanks of the Buffalo Head Hills. The southernmost property is situated about 120 km (75 miles) north of the town of Slave Lake and 330 km (205 miles) northwest of Edmonton. The properties are located within 1:250,000 scale National Topographic System (NTS) map sheets 84B, 84C, 84F and 84G (Peerless Lake, Peace River, Bison Lake and Wadlin Lake Map Sheets) and, more specifically, 1:50,000 scale NTS map sheets 84B/10,11,12, 84C/9,10, 15, 84F/8, 9, 84G/5, 6 and F/12. A list of legal descriptions for the properties is provided in Table 1. Copies of the mineral permit agreements and the land titles search are included in Appendix 2.

The mineral permits are currently held in the name of Grizzly Gold Inc. and, Mrs P.D. Testo of Comp 2, Site 17, Peers, Alberta, and APEX Geoscience Ltd. of Suite 200, 9797 – 45<sup>th</sup> Avenue, Edmonton, Alberta (Table 1). An undivided 90% interest in all of the listed permits held by Grizzly Gold Inc. and Mrs. P.D. Testo have been sold to Grizzly Diamonds Ltd., the details of which are in an agreement included in Appendix 2. The mineral permits held by APEX Geoscience Ltd. were staked in trust on behalf of Grizzly Diamonds Ltd. and are part of the Grizzly Gold Inc. agreement with Grizzly Diamonds Ltd. APEX retains no interest in these mineral permits. Based upon a property title search, the mineral permits appear to be free of any encumbrances and are 100% owned by Grizzly Gold Inc., Mrs. P.D. Testo and APEX Geoscience Ltd. on behalf of Grizzly Diamonds Ltd. with no option and/or royalty agreements that the author is aware of in effect.

**TABLE 1**  
**LEGAL PERMIT DESCRIPTIONS\***

Permit Number*	Record Date*	Term Period*	Legal Description	Permit Holder*	Area (Ha)*
<b>White Bear Property</b>					
9302030046	20-Mar-2002	10 Years	5-16-087: 1; 2EP; 11; 12S Portion(s) lying outside woodland Cree Indian Reserve No. 226 NP; 13NEP; 14-36 Portion(s) lying outside Woodland Cree Indian Reserve No. 227.	**GGI/P.Testo	6657
9302030047	20-Mar-2002	10 Years	5-17-087: 5-8; 13-36	GGI/P.Testo	7168
9302030048	20-Mar-2002	10 Years	5-16-088: 2N; 3-6. 5-17-088: 1-7; 8W; 17W; 18; 19; 20W; 29W; 30; 31; 32W. 5-17-089: 5W; 6; 7; 8W; 17W; 18; 19; 20W; 29W; 30; 31; 32W. 5-17-090: 5W; 6; 7; 8W; 17W; 18; 19; 20W; 29W; 30; 31; 32W.	GGI/P.Testo	9216
9302030049	20-Mar-2002	10 Years	5-18-088: 1-36	GGI/P.Testo	9216
9302030050	20-Mar-2002	10 Years	5-18-089: 1-36	GGI/P.Testo	9216
9302030051	20-Mar-2002	10 Years	5-19-089: 1-36	GGI/P.Testo	9216
9302030052	20-Mar-2002	10 Years	5-18-090: 1-36	GGI/P.Testo	9216
9302030053	20-Mar-2002	10 Years	5-19-090: 1-36	GGI/P.Testo	9216
9302030096	20-Mar-2002	10 Years	5-18-087: 1-36	GGI/P.Testo	9216
9304010822	12-Jan-2004	10 Years	5-15-088: 1-36	Grizzly Gold Inc	9216
9304010823	12-Jan-2004	10 Years	5-16-088: 1;2S; 7-36	Grizzly Gold Inc	8064
9304010824	12-Jan-2004	10 Years	5-17-088: 8E; 9-16; 17E; 20E; 21-28; 29E; 32E; 33-36	Grizzly Gold Inc	5760

9304010825	12-Jan-2004	10 Years	5-17-089: 1-4; 5E; 8E; 9-16; 17E; 20E; 21-28; 29E; 32E; 33-36	Grizzly Gold Inc	6912
9304010826	12-Jan-2004	10 Years	5-17-090: 1-4; 5E; 8E; 9-16; 17E; 20E; 21-28; 29E; 32E; 33-36	Grizzly Gold Inc	6912
			<b>Property Subtotal</b>	<b>115,201.0</b>	<b>Ha</b>
<b>Smoky The Bear Property</b>					
9303031149	4-Mar-2003	10 Years	5-07-088: 1-36	Grizzly Gold Inc	9216
9303031150	4-Mar-2003	10 Years	5-08-088: 1-36	Grizzly Gold Inc	9216
9303031151	4-Mar-2003	10 Years	5-09-088: 1-36	Grizzly Gold Inc	9216
9303031152	4-Mar-2003	10 Years	5-10-088: 1-18; 23-26; 35; 36	Grizzly Gold Inc	6144
9303031153	4-Mar-2003	10 Years	5-11-088: 1-36	Grizzly Gold Inc	9216
9303031154	4-Mar-2003	10 Years	5-12-088: 1-36	Grizzly Gold Inc	9216
9303031155	4-Mar-2003	10 Years	5-13-088: 1-36	Grizzly Gold Inc	9216
9303031156	4-Mar-2003	10 Years	5-14-088: 1-36	Grizzly Gold Inc	9216
9303031157	4-Mar-2003	10 Years	5-07-089: 1-18. 5-08-089: 1-18	Grizzly Gold Inc	9216
9303031158	4-Mar-2003	10 Years	5-09-089: 1-18. 5-10-089: 1; 2; 11-14	Grizzly Gold Inc	6144
9303031159	4-Mar-2003	10 Years	5-14-089: 1-18	Grizzly Gold Inc	4608
			<b>Property Subtotal</b>	<b>90,624.0</b>	<b>Ha</b>
<b>Grand Cub Aidan Property</b>					
9304020499	26-Feb-2004	10 Years	5-10-098: 4-9; 16-21	APEX Geoscience	3072
9304020500	26-Feb-2004	10 Years	5-11-098: 1-36	APEX Geoscience	9216
9304020501	26-Feb-2004	10 Years	5-12-098: 1-36	APEX Geoscience	9216
9304020502	26-Feb-2004	10 Years	5-13-098: 1-36	APEX Geoscience	9216
9304020503	26-Feb-2004	10 Years	5-14-098: 1-36	APEX Geoscience	9216
9304020494	26-Feb-2004	10 Years	5-10-097: 1-36	APEX Geoscience	9216
9304020495	26-Feb-2004	10 Years	5-11-097: 1-36	APEX Geoscience	9216
9304020496	26-Feb-2004	10 Years	5-12-097: 1-36	APEX Geoscience	9216
9304020497	26-Feb-2004	10 Years	5-13-097: 1-36	APEX Geoscience	9216
9304020498	26-Feb-2004	10 Years	5-14-097: 1-36	APEX Geoscience	9216
9304020489	26-Feb-2004	10 Years	5-10-096: 1-36	APEX Geoscience	9216
9304020490	26-Feb-2004	10 Years	5-11-096: 1-36	APEX Geoscience	9216
9304020491	26-Feb-2004	10 Years	5-12-096: 1-36	APEX Geoscience	9216
9304020492	26-Feb-2004	10 Years	5-13-096: 1-36	APEX Geoscience	9216
9304020493	26-Feb-2004	10 Years	5-14-096: 1-36	APEX Geoscience	9216
			<b>Property Subtotal</b>	<b>132,096.0</b>	<b>Ha</b>
<b>40 Permits</b>			<b>GRAND TOTAL</b>	<b>337,921.0*</b>	<b>Ha</b>

\*Based upon a land titles search, \*\*GGI = Grizzly Gold Inc., a private company controlled by Mr. B. Testo

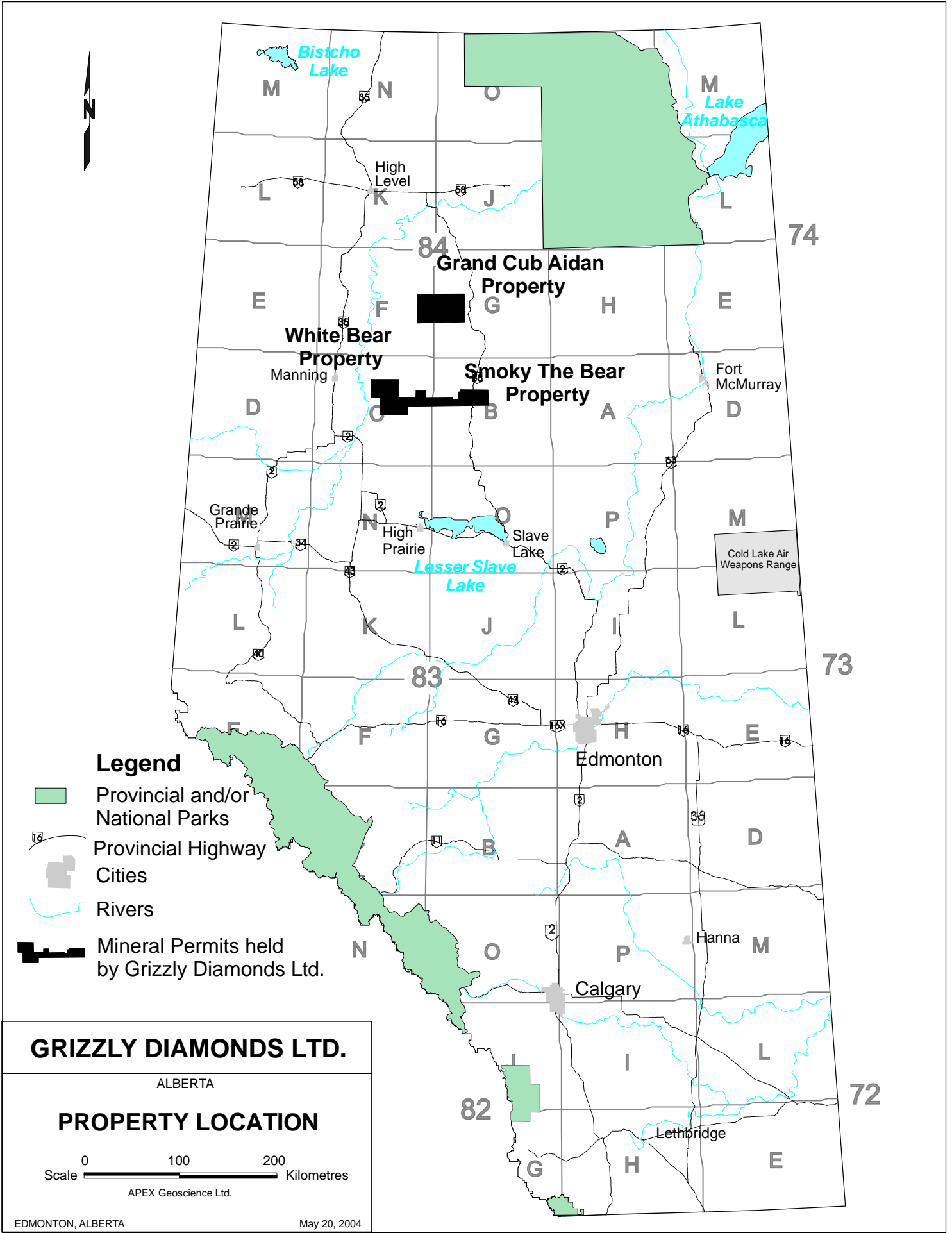
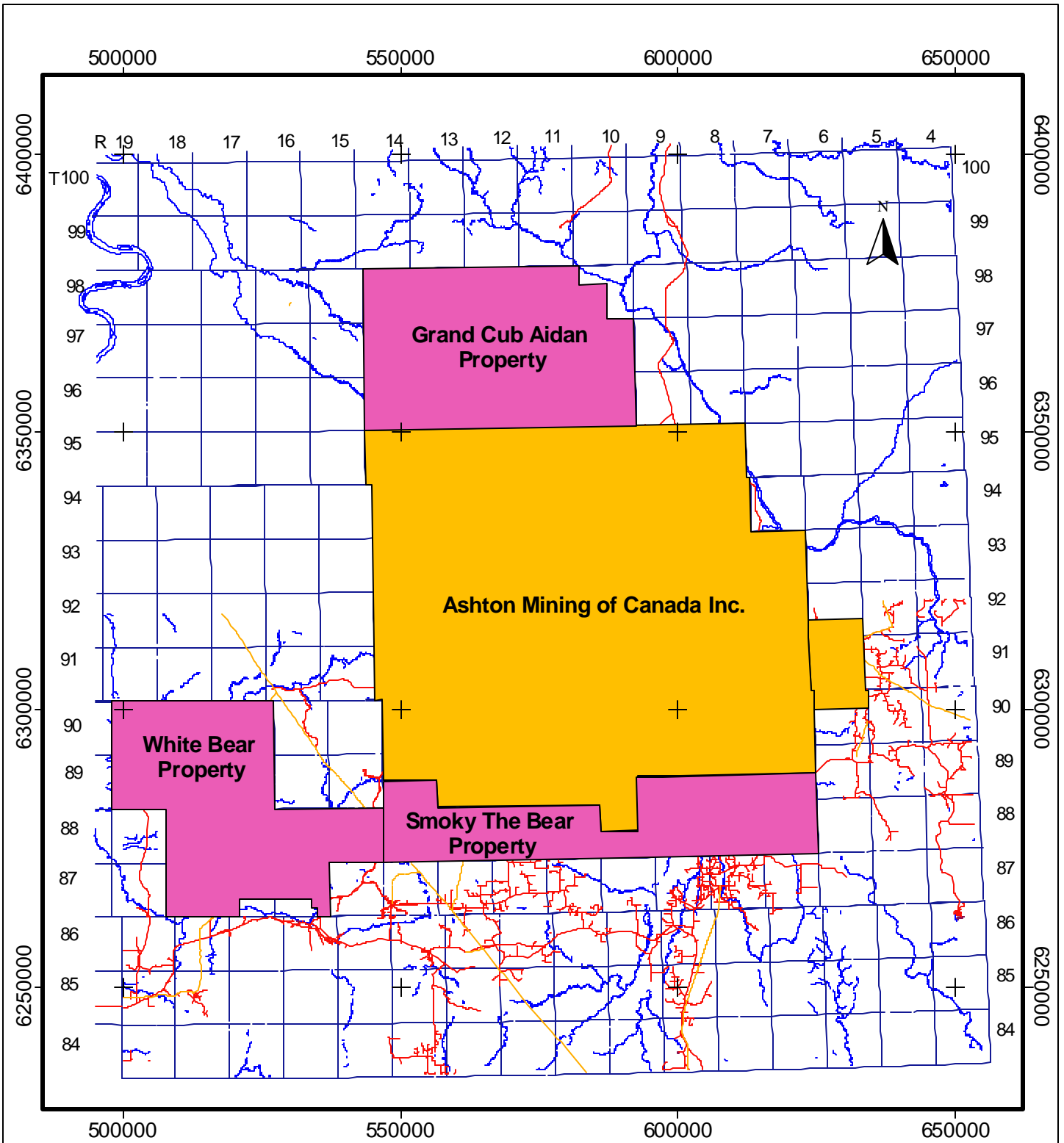



FIGURE 1.



- Legend:**
- Grizzly property claims
  - Ashton property claims
  - Pipelines
  - Roads
  - Pits
  - Township and Range
  - Major Drainage and Lakes

**GRIZZLY DIAMONDS LTD**

**Detailed Mineral  
Permit Claims**

10   0   10   20  
 km

SCALE 1:1000000  
 Zone 11 NAD 27  
 APEX Geoscience Ltd.

Edmonton, Alberta June 25, 2004

**FIGURE 2.**

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 Grizzly the exclusive right to explore for and develop economic deposits of minerals, including diamonds, within the boundaries of the permit. The exclusive right to explore is subject to ALBERTA REGULATION 66/93 of the Alberta Mines and Minerals Act and the contained Metallic and Industrial Minerals Regulations within the act. The Standard Terms and Conditions for the permits are described in detail on Alberta Energy's website at [http://www.qp.gov.ab.ca/Documents/REGS/1993\\_066.CFM](http://www.qp.gov.ab.ca/Documents/REGS/1993_066.CFM).

A permit holder shall spend or cause to be spent with respect to the location of his mineral permit on assessment work an amount equal to \$5 for each hectare in the location during the first two year period; an amount equal to \$10 per hectare for each of the second and third two year periods; and an amount equal to \$15 per hectare for each of the fourth and fifth two year periods. Mineral permits may be grouped and excess expenditures may be carried into the next two year period.

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

## **ACCESSIBILITY, CLIMATE AND LOCAL RESOURCES**

The Buffalo Head Hills properties may be accessed via Provincial Highways 88 and 686, all weather and dry weather gravel roads, cart trails and seismic lines. Most portions of the three mineral permit areas may be accessed by four-wheel drive vehicles or all terrain vehicles (ATV's) during the summer and winter months. Accommodation, food, fuel, and supplies are best obtained in the towns of Red Earth Creek, Peace River and Slave Lake.

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

## **HISTORY: PREVIOUS EXPLORATION**

### **Previous Exploration Buffalo Head Hills Region**

Previous exploration in the Buffalo Head Hills region has focussed primarily on the search for hydrocarbon and aggregate deposits and the determination of hydrogeological and geothermal regimes (Hackbarth and Nastasa, 1979; Mandryk and Richardson, 1988; Bachu *et al.*, 1993; Edwards *et al.*, 1994). Only recently has the focus of exploration been redirected towards diamonds (Dufresne *et al.*, 1996).

The Buffalo Head Hill region is well known for its wealth of energy resources. The primary established reserves are  $47,196.4 \times 10^3 \text{ m}^3$  of oil in 12 conventional fields and  $808 \times 10^6 \text{ m}^3$  of gas in 3 fields (Eccles *et al.*, 2001). The geology of the Utikuma Lake Keg River Sandstone A and Red Earth Granite Wash A oil pools, the largest pools in the area, was outlined by Angus *et al.* (1989), who suggested that the pools are hosted by Granite Wash sandstone reservoirs. The Granite Wash Formation is composed of interbedded sandstone, siltstone, and shale, with minor amounts of dolostone and anhydrite (Greenwalt, 1956), and is thought to resemble a diachronous basal nonmarine to shallow marine clastic unit deposited farther from the Peace River Arch (Grayston *et al.*, 1964). The oil is trapped in Granite Wash sandstone reservoirs that pinch out against or drape over numerous paleotopographic features on the Precambrian surface and are sealed by the overlying Muskeg Formation anhydrite.

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

The first strong indication that the region could host diamondiferous kimberlites came during September 1995, from sampling conducted by the Alberta Geological Survey (AGS). A single sample from a road cut yielded 152 possible pyrope garnets from 25 kg (60 lbs) of dark greyish brown, silty clay till. The sample was collected from a site about 45 km (28 miles) northwest of Red Earth Creek and about 18 km (11 miles) north of Grizzly's Smoky the Bear property (Fenton and Pawlowicz, 1997). A total of 35 garnet grains were analyzed by electron microprobe; 27 were classified as Group 9 (G9) garnets according to Gurney's (1984) CaO versus  $\text{Cr}_2\text{O}_3$  discrimination scatter plot. The same site was resampled in August 1996 and yielded 176 possible pyrope garnets, thus duplicating the high number of pyrope garnets initially recovered by the AGS (Pawlowicz *et al.*, 1998a). Based on later work conducted by the Buffalo Head Hills Joint Venture (BHHJV), a joint

venture between Ashton Mining of Canada Inc. (Ashton), Alberta Energy Company (AEC) and Pure Gold Minerals Inc. (Pure Gold), it was determined that this till site is less than one kilometre (0.6 miles) southwest of the K4 Kimberlite. A number of other government surface and auger drillhole samples have also yielded high counts of Diamond Indicator Minerals (DIMs) in the Buffalo Head Hills (Pawlowicz *et al.*, 1998a,b; Eccles *et al.*, 2001).

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

In January 1997, Ashton announced a drill program to test 10 isolated geophysical anomalies in the Buffalo Head Hills area, approximately 35 to 45 km (21 to 27 miles) northwest of the town of Red Earth Creek. The initial 2 drillholes, located on anomalies identified as 7B and 7C, penetrated olivine-dominated fragmental and tuffaceous volcanic materials underlying glacial overburden at depths of 34.0 m (111.5 ft) and 36.6 m (120 ft), respectively. The rock types were interpreted by Ashton to represent kimberlite pipes (diatremes) that intruded from the basement through a thick column of overlying younger sedimentary rocks to the preglacial surface (Ashton Mining of Canada Inc., 1997a). Petrographic studies of core from K7B and K7C confirmed that the drillholes intersected kimberlites and yielded indicator minerals such as chromite, eclogitic garnet and peridotitic garnet (Ashton Mining of Canada Inc., 1997b). By March 1997, a total of 11 kimberlites within a 100 km<sup>2</sup> area (36 square miles) had been discovered, 10 by drilling and 1 by bulldozer, including kimberlites K2, K4A, K4B, K4C, K5A, K5B, K6, K7A, K7B, K7C, and K14 (Ashton Mining of Canada Inc., 1997c). The first microdiamond analyses of samples collected from kimberlites K2, K4, and K14 were released in April 1997 and confirmed that the pipes are diamondiferous; more significantly, 3 samples totalling 152.5 kg (387 lbs) from kimberlite K14 yielded significant numbers of diamonds, including 139 microdiamonds and 11 macrodiamonds (Ashton Mining of Canada Inc., 1997d). Mineralogical analysis of indicator minerals from the Buffalo Head Hills kimberlites indicates that although they are not abundant, a significant number of favourable G10 pyrope garnets, some with exceptionally high chromium contents (up to 17.8 wt% Cr<sub>2</sub>O<sub>3</sub>), along with abundant diamond inclusion quality chromites, have been obtained from several of the kimberlites in the central and northern portion of the cluster (Carlson *et al.*, 1999; Hood and McCandless, 2003). In addition, a large number of the kimberlites yield euhedral to subhedral xenocrystic (mantle derived) garnet and clinopyroxene suggesting that resorption has been limited, therefore, the potential to preserve any carried diamonds may be considered high (Carlson *et al.*, 1999). These results ushered in a new era in the history of resource development in Alberta.

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

### **Previous Exploration Grizzly's Buffalo Head Hills Properties**

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

Exploration by the BHHJV commenced on the Loon Lake property during the spring of 1998. Between April 29 and June 12, 1998, a fixed-wing HRAM survey was flown by Sanders, using a Cessna 402B aircraft and a flight line spacing of 250 m (820 ft). In total, 24,650 line-kms (14,790 miles) of fixed-wing magnetic data were captured by Sanders for the joint venture's Loon Lake block. Part of this survey was conducted over Grizzly's current White Bear property as part of the Loon Lake block survey (Skelton and Bursey, 1999; Skelton and Willis, 2001). Subsequently, high priority magnetic targets, believed to be kimberlite, were chosen by Ashton and were follow up surveyed with 100 m (325 ft) line-spaced helicopter magnetic surveys by High-Sense during the summer of 1998 and 1999 (Skelton and Bursey, 1999; Skelton and Willis, 2001). A total of 13 blocks, encompassing



21 magnetic targets and 802.7 line-km (482 line-miles) of data were flown during the fall program. At least one of these survey blocks yielding one magnetic target presently exists within Grizzly's White Bear property. The remaining survey blocks are presently over lands retained by the BHHJV or lands that have been dropped by the joint venture and have been recently staked by competitors.

Exploration on the Muddy River block commenced during the spring of 1998 with a fixed wing HRAM survey flown by Sanders (Skelton and Bursey, 1999; Skelton and Willis, 2001). A large portion of this survey was conducted over Grizzly's Grand Cub Aidan property. In addition, at least seven helicopter magnetic surveys and eight ground geophysical surveys were conducted on ground now part of Grizzly's Grand Cub Aidan property (Skelton and Bursey, 1999; Skelton and Willis, 2001). A number of these surveys have yielded geophysical anomalies that warrant follow-up exploration. Exploration was also conducted by Monopros Limited (Monopros) on behalf of Troymin Resources Ltd. (Troymin) over the southern portion (T96, R10-14) of Grizzly's Grand Cub Aidan property during 1997 to 1999 (Wood, 1999). A number of priority geophysical anomalies and diamond indicator mineral anomalies of interest were identified on and in the vicinity of the Grand Cub Aidan property. Many of the anomalies were not followed up. Wood (1999) reports the presence of a large number of anomalous stream sediment samples with up to 137 and 66 kimberlite indicator minerals in two separate drainages along the southern boundary of the Grand Cub Aidan property. Although the bulk of the kimberlite indicator minerals recovered by Monopros were chromite and ilmenite with a few pyrope garnets, Wood (1999) suggests that the grains are likely locally derived due to thin overburden and the limited drainage basin that most of the indicator was recovered from. Wood (1999) also suggests that a number of geophysical anomalies detected on the property could be kimberlites and be responsible for the indicator minerals in the drainages. The vast majority of these targets were not ground surveyed or drill tested.

Exploration and drilling during 1997 to 1999 by the BHHJV has resulted in the discovery of no less than 10 kimberlites less than 15 km north of the northern property boundary of Grizzly's Smoky The Bear property, and no less than 3 of the 10 kimberlites within 5 km of the northern boundary (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). Confirmed kimberlites K1 and K160, discovered by the joint venture on their main Buffalo Head Hills block during 1997 and 1998, exist approximately 2.2 km (about 1.3 miles) and 1.6 km (1 mile) north of the central portion of the Smoky The Bear property. At least one suspected kimberlite, magnetic anomaly TQ108, exists on Grizzly's Smoky The Bear property in the southeast corner of the property (Skelton and Bursey, 1998 and 1999). The BHHJV attempted to drill magnetic anomaly TQ108, which has a signature almost identical to a number of the Buffalo Head Hills kimberlites and were unsuccessful in penetrating the overburden due to wet flowing sand. The drillhole reached a maximum depth of 91m before it was abandoned (Skelton and Bursey, 1999; Skelton and Willis, 2001)

The BHHJV has performed a number of diamond indicator mineral surveys for which data is available from assessment records (Skelton and Bursey, 1998 and 1999; Skelton and Willis 2001). In general, diamond indicator mineral data (picked minerals only) are

present in assessment records for areas covered formerly by the BHHJV's Loon Lake, Muddy River, Birch Mountain, Caribou Mountain, Athabasca, Rabbit Lake and Whitemud blocks. A number of the samples, some of which yielded indicator minerals, were collected on ground now part of Grizzly's Grand Cub Aidan and White Bear properties. No indicator mineral results are reported for the BHHJV's main Buffalo Head Hills block in the assessment records, therefore no BHHJV data is available for Grizzly's Smoky The Bear property. The BHHJV collected approximately 11 samples from the White Bear property, 4 samples from the Grand Cub Aidan property and an unknown amount of samples from the Smoky The Bear property. At least five diamond indicator samples were collected from the BHHJV's Loon Lake block and are less than 10 km south of and down-ice of the Smoky The Bear property (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). In the available assessment reports, no mineral chemistry is available for the Ashton samples. However, recent papers by Carlson *et al.* (1999), Aulbach *et al.* (2003), Creighton and Eccles (2003), Davies *et al.* (2003) and Hood and McCandless (2003), indicate that the indicator mineral assemblage for the Buffalo Head Hills kimberlites is dominated by xenocrystic olivine with lesser amounts of pyrope garnet, chromite, eclogitic garnet, chromium diopside, titanian pyrope, picroilmenite and phlogopite. Carlson *et al.* (1999) and Hood and McCandless (2003) indicate that although Gurney G10 pyrope garnets and high chromium chromites, which are often associated with diamonds, are present in a number of kimberlites and regionally in the Buffalo Head Hills, to date, there is no direct association of these minerals in kimberlites with better diamond counts. In addition, Hood and McCandless (2003) indicate that some of the highly diamondiferous kimberlites such as K252 and K6 contain relatively few xenocrystic indicator minerals, while some kimberlite with abundant mantle xenocrysts such as K2 and K95 are only weakly diamondiferous. Carlson *et al.* (1999) and Hood and McCandless (2003) indicate that the northern cluster of kimberlites tend to be more diamondiferous and yield a number of pyrope garnets and chromites that yield very high concentrations of chromium, in the case of pyrope garnets from 16 to 18 weight percent (wt.%) Cr<sub>2</sub>O<sub>3</sub>. In addition, the northern cluster of kimberlites yield few titanian pyrope garnets and low concentrations of picroilmenite, and when picroilmenite is present, it usually contains low concentrations of niobium. In contrast, the southern cluster of kimberlites yield lower chromium pyrope garnets often with high concentrations of calcium, in some cases likely derived from wehrlite, high titanian pyrope garnets, chromites with lower overall chromium concentrations, picroilmenites with high concentrations of niobium and few if any eclogitic garnets (Carlson *et al.*, 1999; Hood and McCandless, 2003). Davies *et al.* (2003), indicates that diamond inclusions in diamonds studied from the K10 and K14 kimberlites consist of roughly equal amounts of peridotitic and eclogitic suite of inclusions, with the peridotitic inclusions indicative of both harzburgite and lherzolite derivation. Davies *et al.* (2003), also point out the presence of rare ferropericase and marjorite in some of the diamonds, which are generally indicative of ultradeep mineral assemblages and diamonds formed at depths greater than 400 km. Eccles *et al.* (2003), suggest that the most highly diamondiferous Buffalo Hills kimberlites tend to be the more primitive kimberlites with the highest amount of olivine (indicated by overall bulk magnesium number) and the highest concentrations of chromium and nickel, in conjunction with the lowest concentrations of titanium, niobium, silicon and aluminum.

Based upon assessment records (Skelton and Bursey, 1998 and 1999; Skelton and

Willis, 2001), and the author's knowledge of exploration costs in Alberta, approximately \$1,655,000 was spent by the BHHJV on exploration for kimberlites on Grizzly's Grand Cub Aidan, White Bear and Smoky The Bear properties. A large portion of this expenditure was incurred on the Smoky The Bear property (\$1,297,500) with smaller expenditures on the White Bear (\$133,500) and Grand Cub Aidan properties (\$224,000). These costs are based upon assuming an overall cost of \$10 per line-km for fixed wing magnetic surveys, \$10,000 per 1 km<sup>2</sup> helicopter or ground geophysics grid and about \$1,000 per indicator mineral sample. Ground truthing of a number of prospective magnetic anomalies identified from Ashton's recently released assessment reports (Skelton and Bursey, 1999; Skelton and Willis, 2001) indicates that further work was warranted and recommended by the joint venture, however, assessment requirements and a lack of adequate expenditures forced the BHHJV to drop large portions of the lands surrounding their main Buffalo Head Hills block.

### **Government Diamond Indicator Mineral And Other Scientific Surveys**

Diamond indicator mineral studies in the search for kimberlites were first conducted in the region by the AGS in 1993 (Fenton *et al.*, 1994; Dufresne *et al.*, 1996). This initial survey and all of the early reconnaissance work prior to the discovery of the Buffalo Head Hills kimberlites are reviewed in Dufresne *et al.* (1996). The Buffalo Head Hills area yielded a few diamond indicator minerals within the "Wabasca River Trend", which was defined as a northerly belt of sites yielding anomalous diamond indicator minerals centered around the Wabasca and Loon rivers in the vicinity of Red Earth Creek (Dufresne *et al.*, 1996). The first indication that the region may host diamondiferous kimberlites came from sampling conducted by the AGS during September 1995, when a single till sample from a road cut in close proximity to the BHHJV's K4 Kimberlite yielded 152 possible pyrope garnets (Fenton and Pawlowicz, 1997). A number of surveys have been conducted in the region since then (Fenton and Pawlowicz, 1998a,b; Pawlowicz *et al.*, 1998a,b; Pawlowicz and Fenton, 2001), with varying degrees of success since the initial 1993 survey. A recent multidisciplinary study included the collection of 338 samples in the Peerless Lake, Peace River, Bison Lake and Wadlin Lake Map areas (NTS84B, 84C, 84F and 84G) by Eccles *et al.* (2001) and by Friske *et al.* (2003). These surveys have resulted in the discovery of a number of diamond indicator mineral anomalies that potentially indicate the presence of a number of undiscovered kimberlites in the region.

### **DEPOSIT MODEL: DIAMONIFEROUS 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.

## **Kimberlites**

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

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

## **Diamond Indicator Minerals**

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

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

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

### **Exploration**

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

erupts on surface, there is often a detectable change in the geophysical signature or anomalous magnetic or resistivity response over the kimberlite diatreme. When the data are contoured the anomalous results often occur as a circular or oval anomaly outlining the surface or near surface expression of the diatreme.

The effectiveness of geophysical methods in kimberlite exploration is dependent on the assumption that the difference between the geophysical signature of the hosting rock unit and a potential kimberlite is significant enough to be recognised by the geophysical techniques available. There are many examples of economic kimberlites that produce very subtle, unrecognisable geophysical responses as well as non kimberlite geologic features and man made structures (referred to as “cultural interference”) such as oil wells, fences, bridges, buildings which can produce kimberlite like anomalies. In addition, in areas of thick overburden, such as the Buffalo Head Hills region, sand and gravel with water and placer accumulations of heavy oxide minerals, can yield both magnetic and EM anomalies that are easily confused with those due to kimberlite. For these reasons, it is extremely important that other information such as DIM surveys be used in tandem with geophysical evidence to confirm whether there is other information to support the presence of a kimberlite pipe (Fipke *et al.*, 1995).

## **GEOLOGICAL SETTING**

### **Precambrian Geology**

Grizzly Diamond Ltd.’s Buffalo Head Hills mineral permits lie near the northeastern to eastern edge of the Western Canadian Sedimentary basin within the central segments of the Peace River Arch (Figure 3). Precambrian rocks are not exposed within the Buffalo Head Hills region. The basement underlying the Peace River Arch (PRA) is comprised of several terranes, including the Buffalo Head and the Chinchaga, both of which were accreted between 1.8 and 2.4 billion years (Ga) ago and collectively form the Buffalo Head Craton (Ross *et al.*, 1991, 1998). Due to their relatively stable history since accretion, the Buffalo Head and Chinchaga terranes (Figure 3), have been and are currently the focus of extensive diamond exploration in northern Alberta. Ashton along with EnCana and Pure Gold have discovered at least 38 kimberlite pipes proximal to the center of the proposed Buffalo Head Craton (Figure 4). To date, a total of 26 of the 38 kimberlites discovered by the joint venture in the Buffalo Head Hills region have yielded diamonds. All 38 kimberlite pipes exist from about 1.6 km (1 mile) to a maximum distance of 50 km (30 miles) from the boundary of Grizzly’s Buffalo Head Hills properties (Figures 3 and 4).

Grizzly’s Buffalo Head Hills properties are underlain by basement comprised of the Buffalo Head Terrane (BHT). The BHT is an area of high positive magnetic relief with a north to northeasterly fabric (Villeneuve *et al.*, 1993). The diamondiferous Buffalo Head Hills Kimberlites and Grizzly’s properties lie near the geographic center of the Buffalo Head Craton (Figure 4). Part of the Churchill Structural Province (Rae Subprovince), the Buffalo Head Craton may represent either Archean crust that has been thermally reworked during the Hudsonian (Proterozoic) Orogeny (Burwash *et al.*, 1962; Burwash and Culbert, 1976;

Burwash *et al.*, 1994) or an accreted Early Proterozoic terrane that may or may not have an Archean component (Ross and Stephenson, 1989; Ross *et al.*, 1991; Villeneuve *et al.*, 1993). Precambrian rocks intersected in drill core from the BHT comprise felsic to intermediate metaplutonic rocks, felsic metavolcanic rocks and high-grade gneisses (Villeneuve *et al.*, 1993). Even though Hood and McCandless (2003) suggest that the paucity of subcalcic pyrope garnets in the Buffalo Head Hills is consistent with Proterozoic crust and mantle, recent work by Aulbach *et al.* (2003), indicates that a number of geochemical aspects of the xenoliths from the kimberlites is indicative of the presence of Archean mantle beneath the Buffalo Head Terrane which was likely reworked during Proterozoic crust formation from 2.3 to 2.0 Ga. Seismic refraction and reflection studies indicate that the crust beneath the Buffalo Head Craton is likely between 35 to 40 km (21 to 24 miles) thick, a trait favourable for the formation and preservation of diamonds in the upper mantle (Dufresne *et al.*, 1996). The favourable nature of the Buffalo Head Craton has been confirmed by the discovery of 26 diamondiferous kimberlite pipes near the center of the craton.

### **Phanerozoic Geology**

Overlying the basement in the Buffalo Head Hills region is a thick sequence of Phanerozoic rocks comprised mainly of Cretaceous sandstones and shales near surface and Mississippian to Devonian carbonates and salts at depth (Glass, 1990). Bedrock exposure within the permit block is limited primarily to river and stream cuts and topographic highs. Table 2 shows the upper units found in the region. Further information pertaining to the distribution and character of these and older units can be obtained from well log data in government databases and various geological and hydrogeological reports (Green *et al.*, 1970; Tokarsky, 1972; Vogwill, 1978; Ceroici, 1979; Glass, 1990; Mossop and Shetson, 1994).

Underlying the near surface Cretaceous units in the Buffalo Head Hills area is a thick succession of Devonian to Mississippian carbonates, calcareous shales and salt horizons (Mossop and Shetson, 1994). Several of the Devonian carbonate units are part of the Grosmont Reef Complex, a large structure that extends in a northwesterly direction from east of Lesser Slave Lake to the N.W.T. (Bloy and Hadley, 1989). The Grosmont Reef Complex is likely the result of tectonic uplift along this trend during the Devonian. This structure, in conjunction with the PRA, may have played a significant role in the localization of faults and other structures that could have provided favourable pathways for kimberlite volcanism.

In general, the Cretaceous strata underlying Grizzly's Buffalo Head Hills properties is composed of alternating units of marine and nonmarine sandstones, shales, siltstones, mudstones and bentonites. The oldest documented units exposed in the permit area belong to the Shaftesbury Formation, a sequence of Upper Cretaceous shales. However, older units from the base of the Fort St. John Group, such as the Peace River and Loon River formations, may be exposed in river and stream cuts.

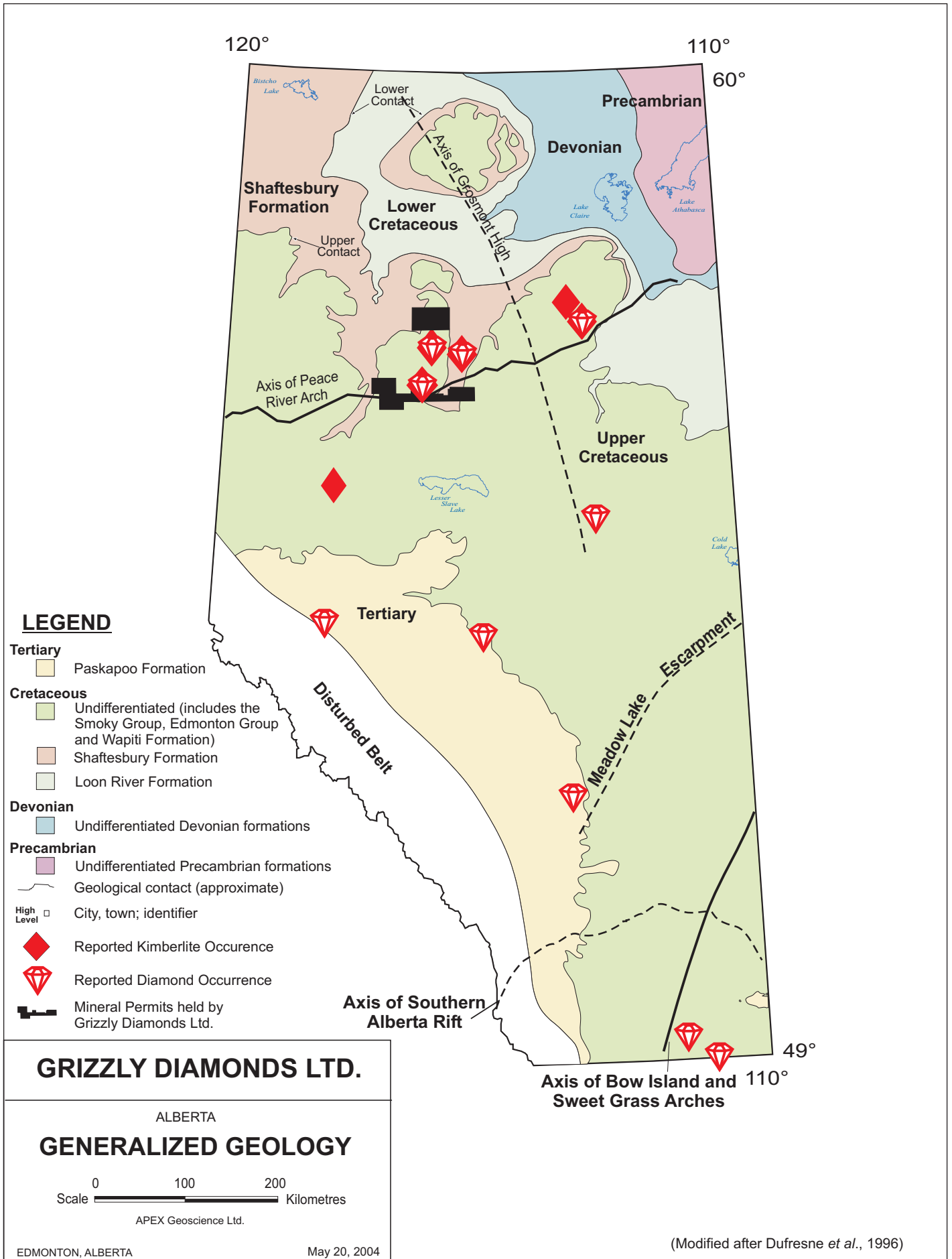


FIGURE 3.



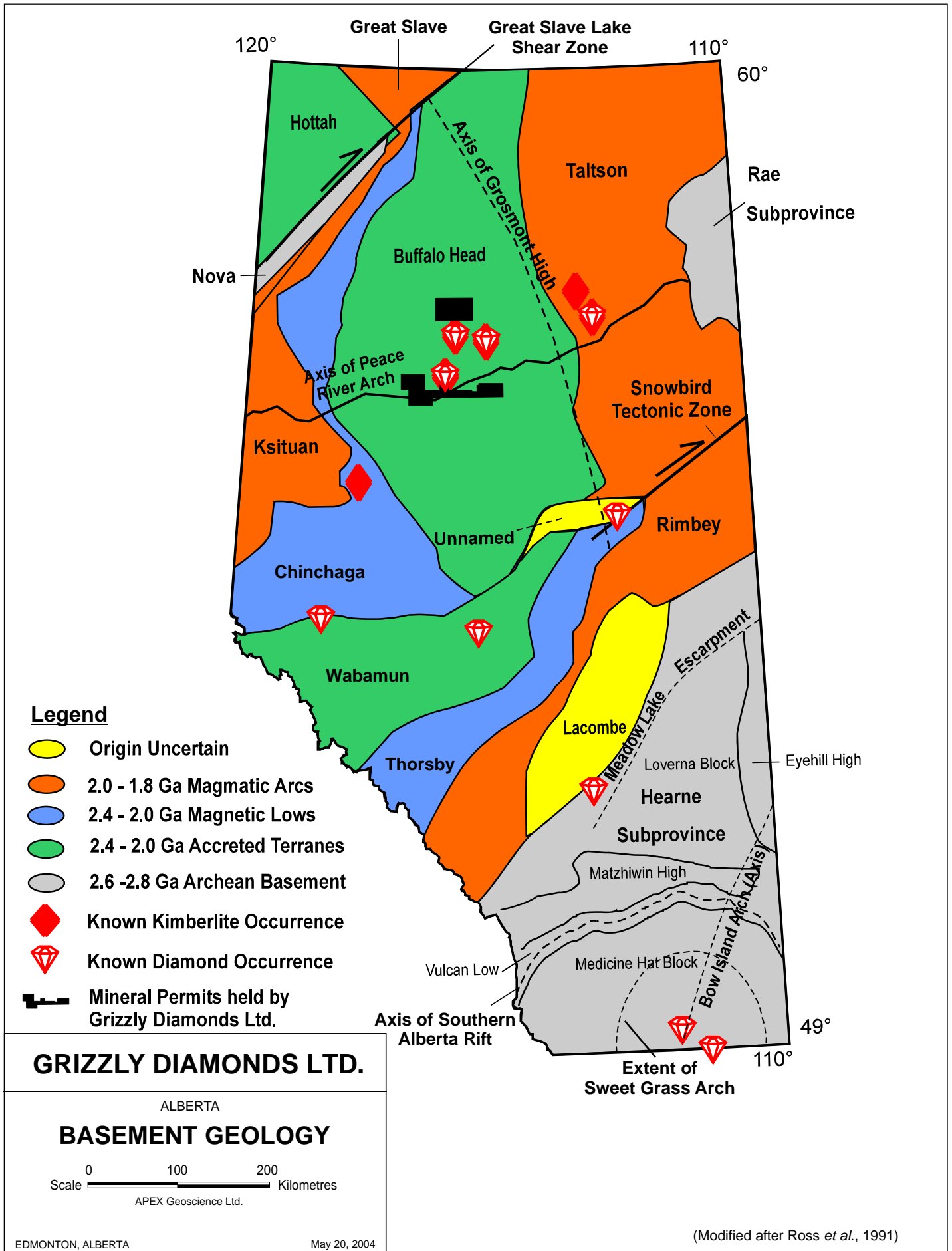


FIGURE 4.

**TABLE 2**  
**GENERALIZED STRATIGRAPHY**  
**BUFFALO HEAD HILLS REGION**

SYSTEM	GROUP	FORMATION	AGE* (MA)	DOMINANT LITHOLOGY
PLEISTOCENE			Recent	Glacial till and associated sediments
TERTIARY			6.5 to Recent	Preglacial sand and gravels
UPPER CRETACEOUS	Smoky	Kaskapau	88 to 92	Shale, silty-shale and ironstone; includes the Second White Specks unit
		Dunvegan	92 to 95	Sandstone and siltstone
	Fort St. John	Shaftesbury	95 to 98	Shale, bentonites, Fish-Scale Member
LOWER CRETACEOUS	Fort St. John	Peace River	>98 to <105	Quartzose and glauconitic sandstones and silty shale.
		Loon River	98 to 105	Shale, siltstone and glauconitic sandstone

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

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

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

The Shaftesbury Formation is lower Upper Cretaceous in age and is comprised of marine shales with fish-scale bearing silts, thin bentonitic streaks and ironstones. The upper contact is conformable and transitional with the Dunvegan Formation. The Shaftesbury Formation may be exposed along river and stream cuts. Evidence of extensive volcanism during deposition of the Shaftesbury Formation exists in the form of numerous bentonitic horizons throughout the formation, especially within and near the Fish Scales horizon (Leckie *et al.*, 1992; Bloch *et al.*, 1993). The deposition of the Shaftesbury Formation is also chronologically correlative with the deposition of the Crowsnest Formation volcanics of southwest Alberta (Olson *et al.*, 1994; Dufresne *et al.*, 1995) and with kimberlitic volcanism near Fort à la Corne in Saskatchewan (Lehnert –Thiel *et al.*, 1992; Scott Smith *et al.*, 1994). In many cases, the Ashton kimberlite pipes contain extensive volumes of Cretaceous mudstone, most of which is likely derived from the Shaftesbury Formation.

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

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

### **Structural Geology**

In north-central Alberta, the PRA is a region where the younger Phanerozoic rocks, which overlie the Precambrian basement, have undergone periodic vertical and, possibly, compressive deformation from the Proterozoic into Tertiary time (Cant, 1988; O’Connell *et al.*, 1990; Dufresne *et al.*, 1995, 1996). This pattern of long-lived, periodic uplift and

subsidence has imposed a structural control on the deposition patterns of the Phanerozoic strata in northern Alberta. In addition, this periodic movement has resulted in a rectilinear pattern of faults that not only is responsible for structurally controlled oil and gas pools, but may have provided potential pathways for later deep-seated intrusive kimberlitic magmas. Eccles *et al.* (2000) show that several of the Buffalo Head Hills kimberlites occur at the intersection of north and east-northeast trending lineaments likely related to underlying faults that have been reactivated during periodic tectonic activity associated with the Peace River Arch. Eccles *et al.* (2000) used a combination of very detailed digital elevation data and RadarSat data to identify the intersecting lineaments.

During the mid-Cretaceous and Early Tertiary, compressive deformation occurred as a result of the orogenic event that eventually led to the formation of the Rocky Mountains. The PRA was emergent during this period resulting in the reactivation of many prominent basement faults. The Phanerozoic rocks beneath the Red Earth Creek region lie along the axis of the PRA, and are underlain by and proximal to basement faults related to the Grosmont Reef Complex, which formed over the Grosmont High (Bloy and Hadley, 1989; Dufresne *et al.*, 1996). There is strong evidence that basement faults that have manifested themselves in the overlying Phanerozoic sedimentary succession may have controlled the emplacement of the Buffalo Head Hills kimberlites proximal to Grizzly's Buffalo Head Hills properties (Dufresne *et al.*, 1996; Leckie *et al.*, 1997; Eccles *et al.*, 2000). Similar structures observed on Grizzly's Buffalo Head Hills properties could have resulted from tectonic activity associated with movement along the PRA or the Grosmont High and therefore could have provided pathways for kimberlitic volcanism.

### **Quaternary Geology**

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

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

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

Glacial ice is believed to have receded from the BHH region between 15,000 and 10,000 years ago. After the final glacial retreat, lacustrine clays and silts were deposited in low-lying regions along with organic sediments. Rivers previously re-routed due to glaciation, re-established easterly to northeasterly drainage regimes similar to that of the pre-Pleistocene. Extensive colluvial and alluvial sediments accompanied post-glacial river and stream incision.

## **2004 EXPLORATION**

APEX was retained during spring, 2004 by Grizzly to compile all the available geological, geophysical and mineralogical data for the Grand Cub Aidan, White Bear and Smoky The Bear diamond properties and evaluate the potential of the properties to host kimberlites and, possibly, diamonds. Based upon the recommendations that resulted from the data compilation and review, a program of fixed-wing airborne geophysics was initiated and completed over the White Bear property during April, 2004 (Evans, 2004; Appendix 3).

### **Review Of Existing Geological, Geophysical And Mineralogical Data**

During March to May, 2004, personnel from APEX reviewed and compiled the following data: (1) the detailed fixed-wing, helicopter and ground geophysical data from a number of the BHHJV's assessment reports (Skelton and Bursey, 1998, 1999; Skelton and Willis, 2001; Willis and Skelton, 2002), (2) the 600 m (2,000 ft) line spaced proprietary

Utikuma magnetic data covering much of the Buffalo Head Hills region, (3) all available public and proprietary diamond indicator mineral data for samples collected on and down ice of Grizzly's three Buffalo Head Hills diamond properties, and (4) all available public and proprietary petroleum, hydrogeological and other types of well data in order to construct a drift thickness picture for the Buffalo Head Hills region.

Exploration and drilling during 1997 to 2001 by the BHHJV has resulted in the discovery of no less than 10 kimberlites less than 15 km from the northern property boundary of Grizzly's Smoky The Bear property, and no less than 3 of the 10 kimberlites within 5 km of the northern boundary (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). Confirmed kimberlite K160, discovered by the BHHJV on their main Buffalo Head Hills block during 1999, exists approximately 1.5 km (about 1 mile) north of the central portion of the Smoky The Bear property. Ashton (2001a) have recently reported that a 22.8 tonne mini-bulk sample collected from the K252 Kimberlite (which is located approximately 21 km or 13 miles north of Grizzly's Smoky The Bear property) has yielded a grade of 55 carats per hundred tonnes (cpht), demonstrating the economic potential of the Buffalo Head Hills kimberlites.

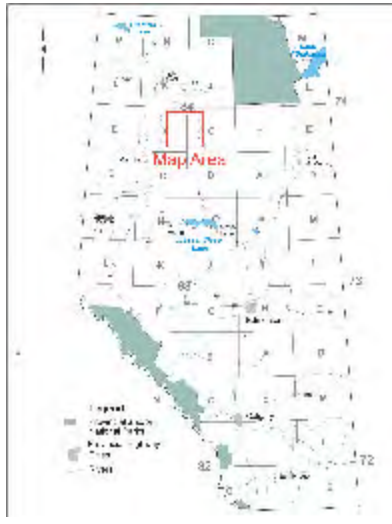
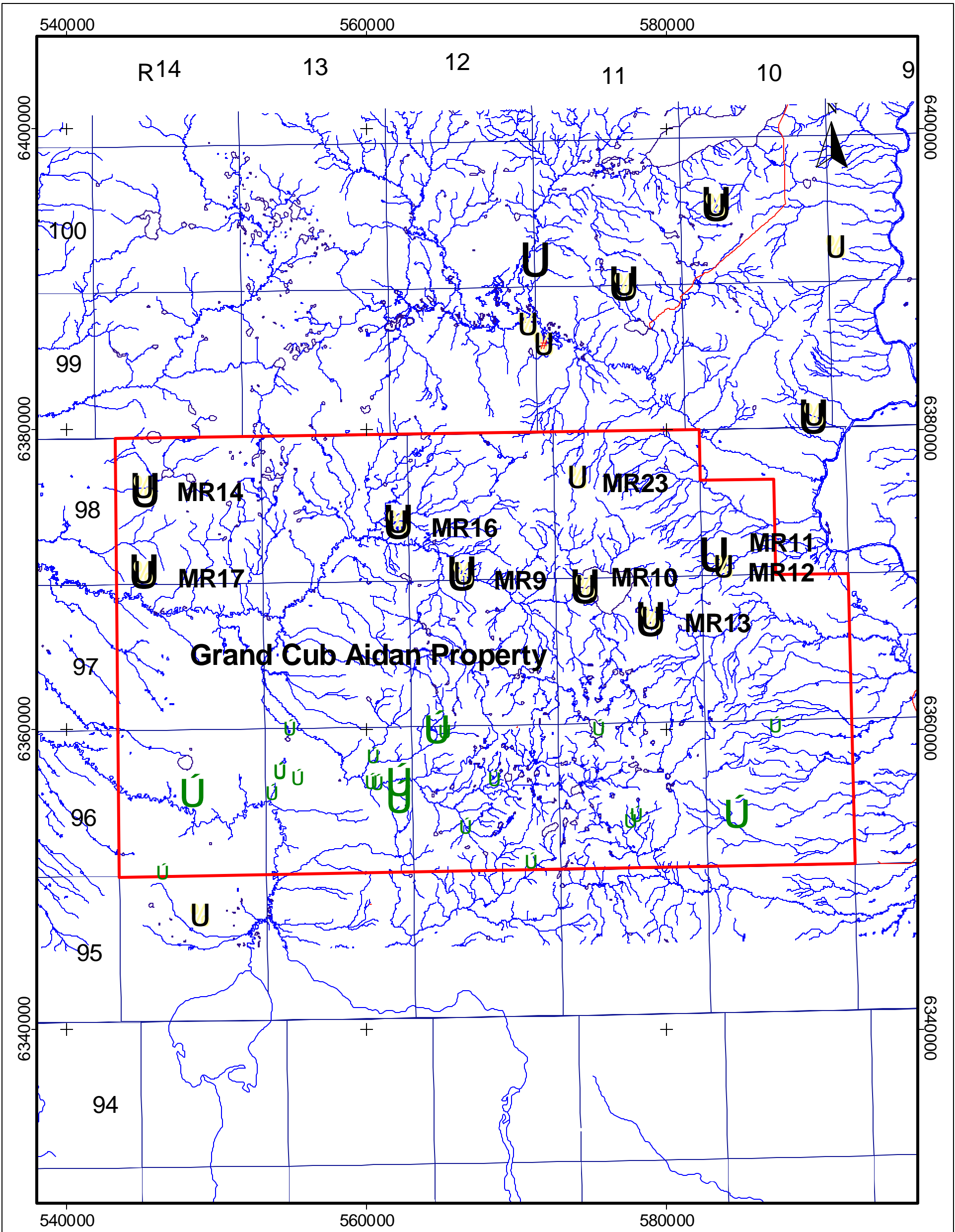
### **Publicly Available Geophysical Data**

The bulk of the review was focussed on the available magnetic data in order to evaluate whether any untested quality magnetic targets that warrant follow-up exploration could be identified. Detailed helicopter, fixed wing or ground based geophysical grids that Ashton has completed to date as part of prior assessment work but that are now on Grizzly's Buffalo Head Hills properties are shown on Figures 5 and 6. In addition, Troymin and Monopros (Wood, 1999) identified at least 22 priority 1 and 2 magnetic anomalies on the Bison Lake block townships that now represent the southernmost five townships of Grizzly's Grand Cub Aidan property. These anomalies are listed in Appendix 4 and are shown on Figure 5.

Ashton identified two tier 1 strongly magnetic circular anomalies during 1998 or 1999 on their Loon Lake block, anomalies LL-07 and LL-08 (Skelton and Willis, 2001). These magnetic anomalies are both characterized as circular anomalies roughly 200 to 300 m (650 to 1,000 ft) in diameter and 100 to 200 nanoteslas (nT) in magnetic amplitude with ground geophysical surveys. Both anomalies yielded kimberlites (both of which the BHHJV retain today), LL-07 at a depth of 114 m (374 ft) below surface and LL-08 at a depth of about 75 m (246 ft) below surface. These two kimberlites yield magnetic anomalies comparable to the three or four of the highest strength anomalies associated with kimberlites K4, K5, K7 and K19 on the main Buffalo Head Hills block. Anomaly TQ-108 in the southeast corner of Grizzly's Smoky The Bear property is almost an identical magnetic anomaly to LL-07 and LL-08 and is likely the result of a buried kimberlite. Ashton attempted to drill magnetic anomaly TQ108 during 1998 and were unsuccessful in penetrating the overburden below 91 m due to wet flowing sand. A different drilling technique will have to be employed, such as using a water well drilling rig and employing significant lengths of casing, in order to test this target with any chance of success.

To date, of the highly magnetic kimberlites that the BHHJV has drilled, only K5 yielded more than five microdiamonds and was mini-bulk sampled. The better diamond counts have come from the less magnetic kimberlite pipes including K91 and K252. The K252, which exists 500 m northwest of the highly magnetic K6 Kimberlite, is not visible on any of the airborne magnetic survey data and was found by the BHHJV by using gravity and EM techniques (Mr. B. Clements, *personal communication*, 2002; Willis and Skelton, 2002). Some scientific literature, particularly from Russia, indicates that many of the producing diamondiferous kimberlites in Russia are associated with only weak to non-existent magnetic signatures, and that the highly magnetic kimberlites tend to yield sub-economic concentrations of diamonds. The Russians suggest that the highly magnetic kimberlites are indicative of what was a highly oxidized kimberlitic magma, which in turn would result in absorption and destruction of any contained diamonds during ascent of the kimberlitic magma. The draw back of exploring for the tier 2 to 4 magnetic strength anomalies is that the success ratio for the discovery of kimberlites drops off dramatically with the lower amplitude magnetic anomalies. The drop in success ratio can be mitigated if a number of good quality tier 2 or tier 3 strength magnetic anomalies can be identified that hold together with ground geophysics or with other techniques such as electromagnetic or gravity surveys. In the end, these lower amplitude anomalies may yield a better opportunity for diamonds than the high amplitude tier 1 magnetic kimberlites hence justifying the added risk.

A review of all of the existing BHHJV fixed-wing magnetic data yields a few magnetic anomalies on Grizzly's Buffalo Head Hills properties, which is most likely the result of the quality of data in the assessment records as opposed to a lack of anomalies. The fixed wing magnetic data provided by the BHHJV in its assessment reports consists of coarse 5 to 10 nT contoured total magnetic field large scale maps for which only the most highly magnetic kimberlites such as LL-07 and LL-08 are visible. As an example, no significant magnetic anomalies are visible on the magnetic maps for the BHHJV's Loon Lake block where it overlaps the White Bear property, yet a large number of significant anomalies are visible on Grizzly's recent White Bear property magnetic survey. It appears that only a few closely spaced helicopter or ground geophysical surveys appear to have been completed by the BHHJV over Grizzly's Buffalo Head Hills properties, in particular, three large grids and a couple of small grids over the Smoky The Bear property, one grid over the White Bear property and seven grids over the Grand Cub Aidan property (Figures 5 and 6). It should also be noted that Ashton on behalf of the BHHJV has recently restaked roughly eight townships of their former Loon Lake block to the south of and adjoining Grizzly's Smoky The Bear property. This supports the observation that the BHHJV was forced to relinquish land before they had completed exploration due to assessment requirements. The BHHJV's helicopter magnetic surveys over the Smoky The Bear property yield a number of magnetic anomalies ranging in priority from high priority down to very low priority. A total of 31 magnetic anomalies exist on Grizzly's Smoky The Bear property based upon the work of the BHHJV (Skelton and Bursey, 1998 and 1999). Based upon the follow-up helicopter magnetic-electromagnetic surveys that the BHHJV performed, a few of the magnetic anomalies on the Smoky The Bear property rank as priority 1 and priority 2 anomalies for kimberlite exploration. In particular, magnetic anomaly TQ108 is a four line 300 to 400 m diameter circular magnetic anomaly that is almost identical in



- Legend:**
- Monopros geophysical anomalies:
    - 1st priority
    - 2nd priority
  - Ashton drilling, 1998-2000
  - Ashton airborne mag locations
  - Ashton ground mag locations
  - Grizzly property claim
  - Pipeline
  - Roads
  - Township and Range
  - Drainage and Lakes

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**Prior Geophysical  
Grids and Drillholes,  
Grand Cub Aidan Property**

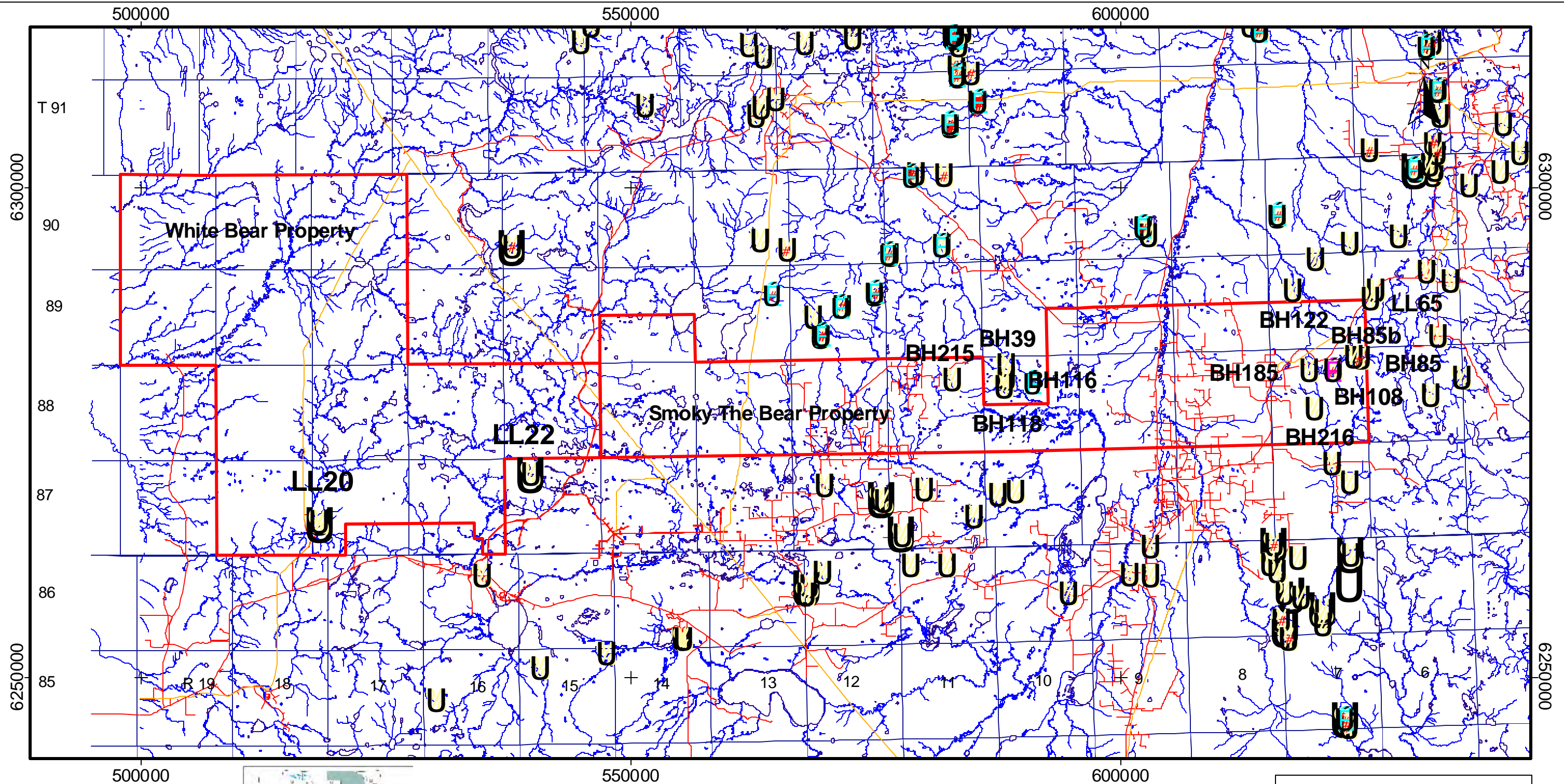
5      0      5      10 Kilometers

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Zone 11 NAD 27  
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Edmonton, Alberta June 25, 2004

FIGURE 5.





**Legend:**

- # Ashton drilling, 1998-2000
- U Ashton airborne mag locations
- U Ashton ground mag locations
- Grizzly property claim
- Pipeline
- Roads
- Township and Range
- Drainage and Lakes
- U Ashton kimberlites
- U Potential kimberlite

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Prior Geophysical Grids  
and Drillholes, White Bear and  
Smoky The Bear Properties

5 0 5 10 15 km

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Zone 11 NAD 27  
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FIGURE 6.

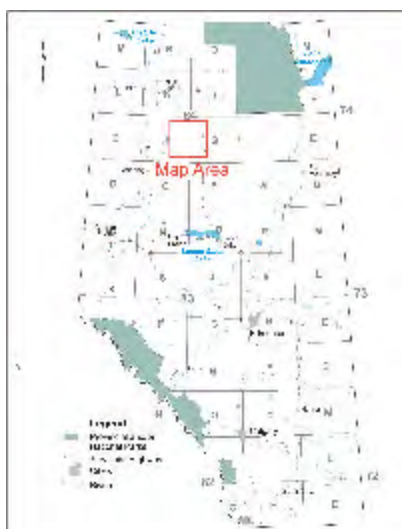
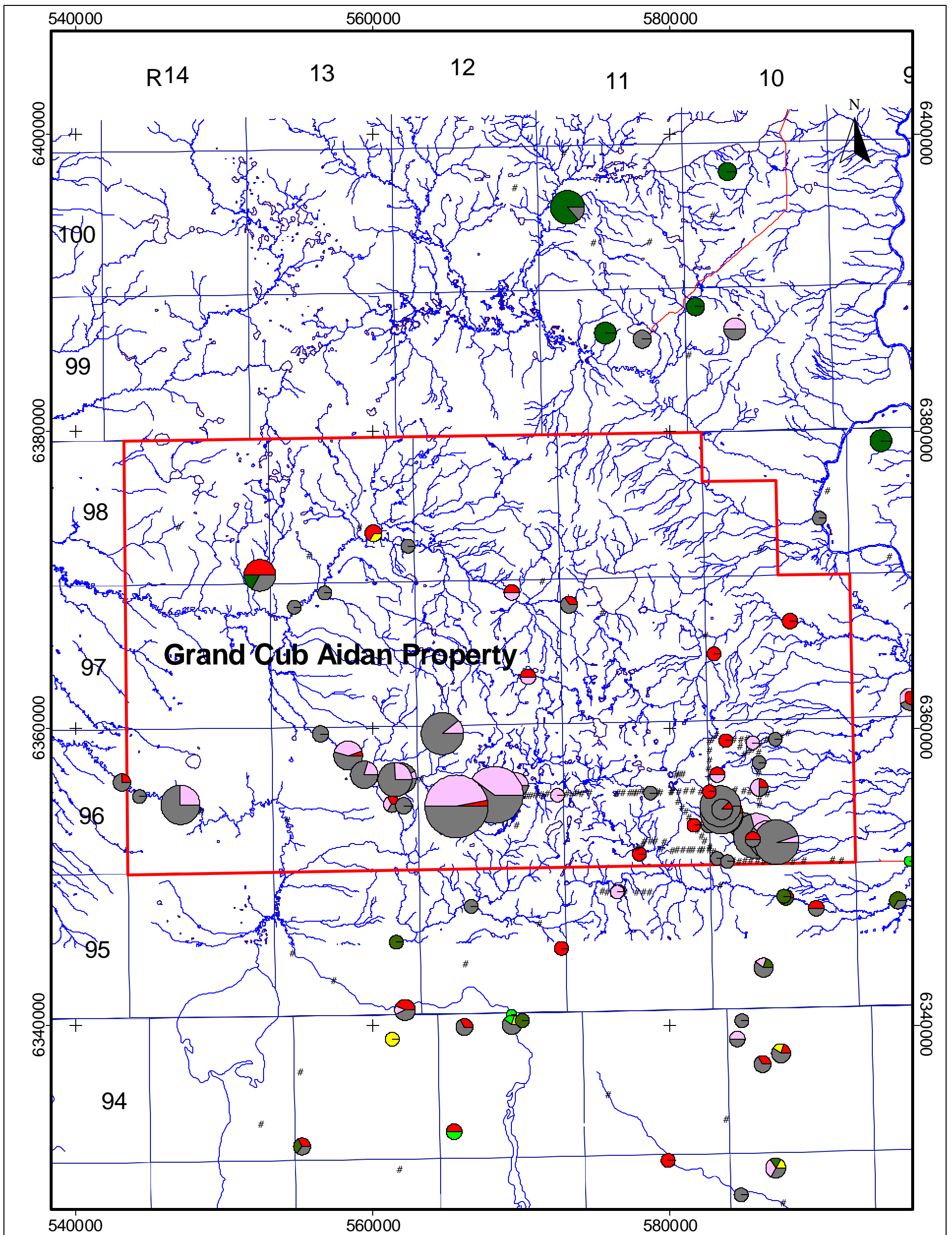
signature to anomalies LL-07 and LL-08 and is most likely a buried kimberlite (Figure 6). Ashton attempted to drill the anomaly during 1998 and was unsuccessful in penetrating the overburden due to wet flowing sand. The drillhole reached a maximum depth of 91m before it was abandoned (Skelton and Bursey, 1999; Skelton and Willis, 2001). The BHHJV helicopter grids over the Smoky The Bear property yield a number of other magnetic and electromagnetic anomalies of interest. All of these anomalies warrant a ground check followed by ground geophysical surveying if the anomaly is unexplained by culture or was not recently drill tested by the BHHJV.

A single magnetic anomaly was identified with a helicopter magnetic survey on the White Bear property (Figure 6). No apparent ground geophysical grids have been completed. However, a number of additional prospective magnetic anomalies have been identified with Grizzly's recent White Bear magnetic survey and these are discussed below. The BHHJV completed at least seven helicopter magnetic surveys and eight ground geophysical surveys over ground now part of Grizzly's Grand Cub Aidan property (Skelton and Bursey, 1999; Skelton and Willis, 2001). Although the helicopter data was not immediately available, a few of the ground geophysical surveys have yielded geophysical anomalies that warrant follow-up exploration (Skelton and Bursey, 1999; Skelton and Willis, 2001).

### **Prior Government And Industry Diamond Indicator Mineral Sampling**

Recent surface sampling in the Peerless Lake and Wadlin Lake map sheets (NTS84B and 84G) by the AGS and GSC has resulted in the collection of 37 samples from the Grand Cub Aidan and Smoky The Bear properties for diamond indicator mineral analysis (Eccles *et al.*, 2001 and Friske *et al.*, 2003). In addition, more than 60 samples were collected by Eccles *et al.* (2001) and Friske *et al.* (2003) within 20 km (12 miles) of and down-ice (south to southwest) of these two properties (Figures 7 and 8). Microprobe chemistry for individual mineral grains is available for all of the government data. Assessment records indicate that the BHHJV also conducted limited DIM sampling on the Grand Cub Aidan property (4 samples) and the White Bear property (8 samples) during 1997 to 1999 (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). Picked DIM data is available for these samples but no microprobe data is available. It also appears that Ashton collected about 35 DIM samples on the Smoky The Bear property but the bulk of this data is still confidential. Monopros appears to have collected about 182 DIM samples within or immediately down-ice of the Grand Cub Aidan property (Figures 7 and 8). Picked indicator mineral results are available for these samples but no microprobe data for individual mineral grains is available.

In summary, a large number of the samples collected from within the boundaries of or down-ice of Grizzly's Buffalo Head Hills properties have yielded a large number of anomalous samples with indicator minerals (Figures 7 and 8). Predominant ice-direction was from north to south, in particular for the Grand Cub Aidan and the Smoky The Bear Properties (Pawlowicz and Fenton, 1995,a,b, [*in press*]a, [*in press*]b; Fenton *et al.*, 2003a,b,c; Paulen *et al.*, 2003). Ice direction for the White Bear property was from north to south and from northwest to southeast with a lobe of ice coming out of the Peace River



**Legend:**

**Diamond Indicator Minerals**

- Peridotite garnet
- Eclogitic garnet
- Forsteritic olivine
- Chrome diopside
- Picroilmenite
- Chromite
- # sample locations, no indicator minerals
- Grizzly property claim
- Road
- Township and Range
- Drainage and Lakes

\*Size of pie chart is proportional to the number of indicator minerals

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**Diamond Indicator Minerals  
Grand Cub Aidan Property**

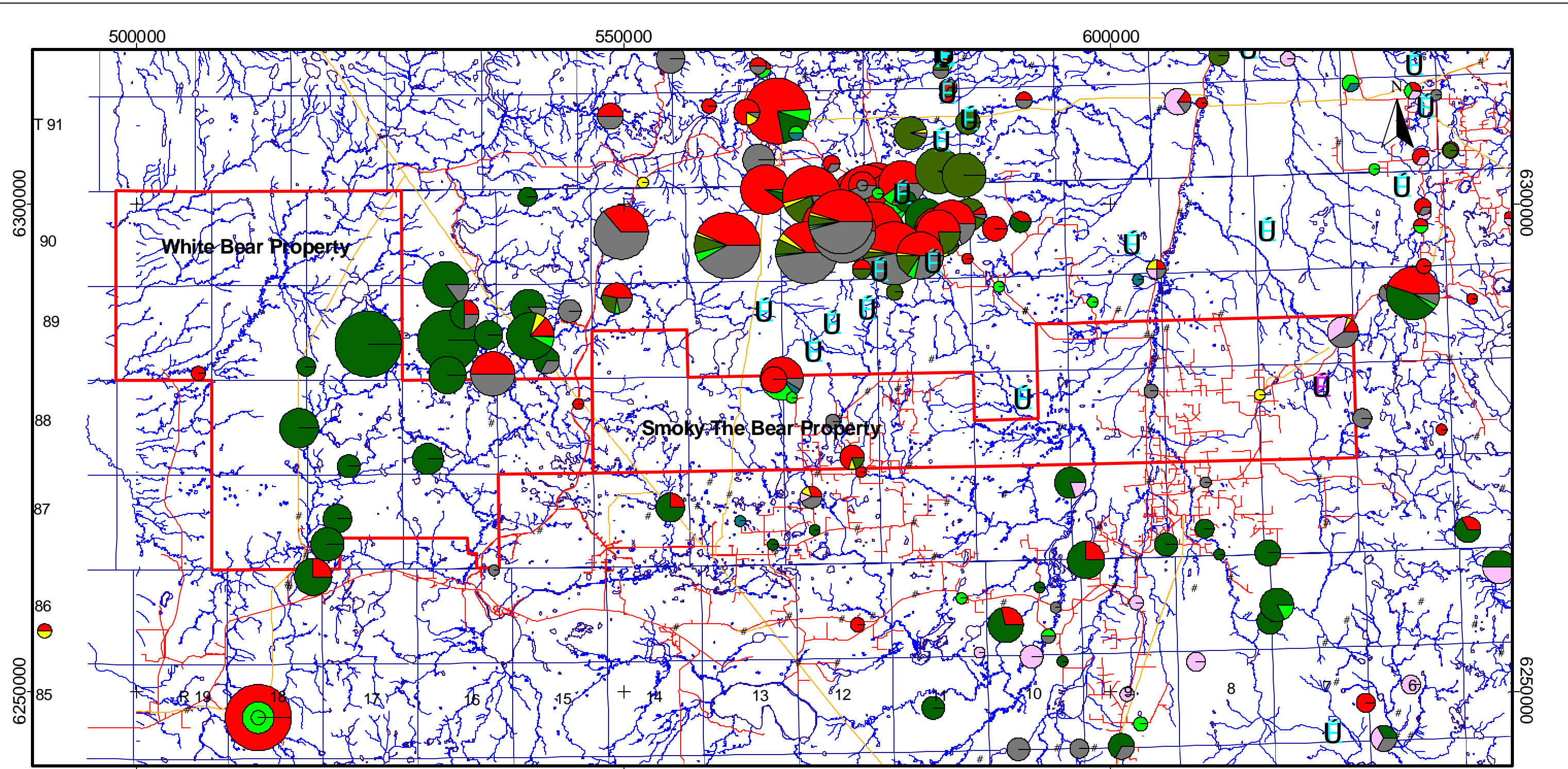


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June 25, 2004

FIGURE 7.



**Legend:**

**Diamond Indicator Minerals:**

- Peridotitic garnet
- Eclogitic garnet
- Forsteritic olivine
- Chrome diopside
- Picroilmenite
- Chromite
- Eclogitic Clinopyroxene
- # Sample locations, no indicator minerals

- Possible Kimberlites
- Ashton Kimberlite
- Grizzly property claims
- Pipelines
- Road
- Township and Range
- Drainage and Lakes

\*Size of pie chart is proportional to the number of indicator minerals



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**Diamond Indicator Minerals,  
White Bear and  
Smoky The Bear Properties**

5 0 5 10 15 km

SCALE 1:400000  
Zone 11 NAD 27  
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FIGURE 8.

valley and flowing southeast to almost easterly around the southwest portion of the Buffalo Head Hills (Pawlowicz and Fenton, 1995,a,b, [*in press*]a, [*in press*]b; Fenton *et al.*, 2003a,b,c; Paulen *et al.*, 2003). Indicator results for samples from all three Grizzly properties are highly anomalous in terms of the number of samples with indicator minerals and the number of indicator minerals in some of the samples. The sample results to date are suggestive of the presence of possible kimberlites on all three properties.

The DIM sampling that has been conducted to date works out to about one sample per 15 square kilometres or about 6 samples per township with the vast majority of the samples collected by Monopros in the southernmost five townships of the Grand Cub Aidan property (Figures 7 and 8). Several of the kimberlites on the BHHJV's Buffalo Head Hills block yield strong DIM anomalies down-ice or down drainage from kimberlites (within about 5 to 10 km), however, the drift thickness in the area of the indicator mineral anomalies ranges from less than 10 m up to about 70 m (Figure 8). Most of the joint venture's kimberlites in areas of deeper drift appear to yield sporadic amounts of DIM's in the tills down-ice of the kimberlites. The drift thickness on Grizzly's Buffalo Head Hills properties likely ranges from a minimum of 10 m to more than 150 in some areas underlain by preglacial channels. In addition, the drift likely consists of multiple till sheets. The behaviour and dispersion patterns of indicator minerals derived from deeply buried kimberlites is poorly understood in areas of thick drift and multiple till sheets. However, It should be noted that a number of the creeks within 5 to 10 km (6 miles), and on rare occasion up to 20 km (12 miles), of nearby kimberlites yield stream sediment sample sites with multiple DIMs (Figure 8).

Based upon the results of indicator minerals sampling conducted to date a few important observations can be made. On the Grand Cub Aidan property, the sampling conducted by the AGS and GSC in combination with Monopros has yielded a significant number of samples with anomalous amounts of indicator minerals, in some cases more than a hundred grains (Figure 7). These highly anomalous sample results are indicative of undiscovered kimberlites as these samples have all been collected north of the northernmost known Buffalo Head Hills kimberlite. In addition, the mineralogy seen in these samples with abundant picroilmenite is significantly different than the results of DIM sampling down-ice of the Buffalo Head Hills kimberlites, which are reported to be picroilmenite poor kimberlites (Carlson *et al.*, 1999; Aulbach *et al.*, 2003; Creighton and Eccles, 2003; Davies *et al.*, 2003; Hood and McCandless, 2003). This further supports the conclusion that undiscovered kimberlites remain to be discovered in the north portion of the Buffalo Head Hills beyond the kimberlites that have been discovered to date (potentially on Grizzly's Grand Cub Aidan property) and that these kimberlites are likely different mineralogically to the kimberlites found to date.

A number of indicator mineral rich samples were recovered by Ashton from the White Bear property (Figure 8). Skelton and Bursey (1999) and Skelton and Willis (2001) conclude that the indicator minerals are likely derived from the Buffalo Head Hills kimberlites that have discovered on the BHHJV's main property. However, ice direction for the White Bear property was from north to south and from northwest to southeast with a lobe of ice coming out of the Peace River valley and flowing southeast to almost easterly

around the southwest portion of the Buffalo Head Hills (Pawlowicz and Fenton, 1995,a,b, [in press]a, [in press]b; Fenton *et al.*, 2003a,b,c; Paulen *et al.*, 2003). This indicates that the indicator minerals found in samples collected from the White Bear property were most likely not derived from the known Buffalo Head Hills kimberlites. In addition, the indicators discovered to date are olivine rich with only a few pyrope garnets. The plume of indicator minerals coming from the main cluster of kimberlites in the Buffalo Head Hills looks to be pyrope and chromite rich hence the White Bear property samples show a difference mineralogically, supporting a conclusion that undiscovered kimberlites may exist on the White Bear property or to the north or northwest of the White Bear property.

Although only a few government sample indicator results are available from the Smoky The Bear property, there appear to be a significant plume of anomalous samples down-ice of the eastern half of the Smoky The Bear property (Figure 8). The indicator minerals recovered are predominantly olivine, picroilmenite, chromite and minor pyrope garnet. The assemblage is distinct spatially and mineralogically from the indicator plume associated with the Buffalo Head Hills kimberlites and is highly suggestive that undiscovered kimberlites may exist in the eastern portion of the Grizzly's Smoky The Bear property. This conclusion is supported by the presence of geophysical anomaly TQ108 in the southeast portion of the Smoky The Bear property, which is most likely a result of a kimberlite (Skelton and Willis, 2001).

### **2004 Airborne Magnetic Survey White Bear Property**

During March 2004, a high-resolution airborne magnetic (HRAM) survey was commissioned for Grizzly's White Bear property in order to satisfy assessment requirements and to identify potential targets for future fieldwork at the property. The HRAM survey was conducted at the White Bear Project out of the town of Peace River between April 5 and April 27, 2004 (Evans, 2004; Appendix 3). The survey was conducted using a 60 meter drape mode elevation, 150 meter spaced line intervals and with data sample stations at 7 meters along the lines. Tie lines were spaced at 1000 meters. A high sensitivity base magnetic station recorded the diurnal activity throughout the survey and a base GPS station was used to correct range errors in the GPS flight path recovery. The survey was carried out using a Piper Navajo PA-31 aircraft, configured with a specially designed rigid-mount tail boom for geophysical survey operations. The aircraft is equipped with a high sensitivity magnetometer and a full on-board real time compensation recording computer, and related equipment. It is a single engine aircraft with full avionics, including real time differential 3D GPS navigation. The aircraft has been modified to conduct airborne geophysical surveys. Considerable effort has been made to remove all ferruginous materials near the sensor and to ensure that the aircraft electrical systems do not create any noise. Airborne recorded data included total field magnetic data, radar altimeter and all attendant GPS data. The magnetic data were processed, gridded and provided on CD-ROM.

The survey area exists in the southwest portion of the Buffalo Head Hills region, approximately 50 kilometres northeast of the town of Peace River, Alberta. The survey was

conducted over all but one of the White Bear property permits and included 8,364 line kilometres of survey data (Figures 9 and 10). The area of the survey is shown on Figures 9 and 10 and in an operational report (Evans, 2004; Appendix 3).

APEX conducted a thorough review of the airborne magnetic data during May, 2004. The data was contoured using Geosoft Oasis Montaj 5.1.6 and ERMapper 6.3. Using Geosoft, the data was reviewed on a line by line profile basis to look for high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features such as kimberlites. A large number of interesting high frequency magnetic anomalies (greater than 300) was identified during the review of the data (Figures 9 and 10; Appendix 4). A total of 23 priority 1 and 32 priority 2 magnetic anomalies were identified in the dataset and are prospective for kimberlites (Figures 9 and 10; Appendix 4). Screen dumps of the magnetic profile for each of the priority 1 and 2 anomalies are provided in Appendix 4. In summary, a large number of magnetic anomalies are present in the survey that are the result of man-made culture or are part of linear arrays that are most likely related to magnetic sands in the overburden. The anomalies most likely related to man-made culture commonly yield very sharp spike like peaks often with an associated adjacent magnetic low on the maps termed a dipole anomaly. A number of these types of anomalies have been identified and have been placed in the lower priority rankings (Figures 9 and 10; Appendix 4). Magnetic anomalies that are part of linear and sinusoidal arrays are generally related to placer accumulations of magnetite in the overburden and, therefore, these anomalies have also been ranked in the lower priority rankings. Priority 1 and 2 anomalies represent isolated high frequency magnetic anomalies that are likely related to near surface geological features and require follow-up exploration.

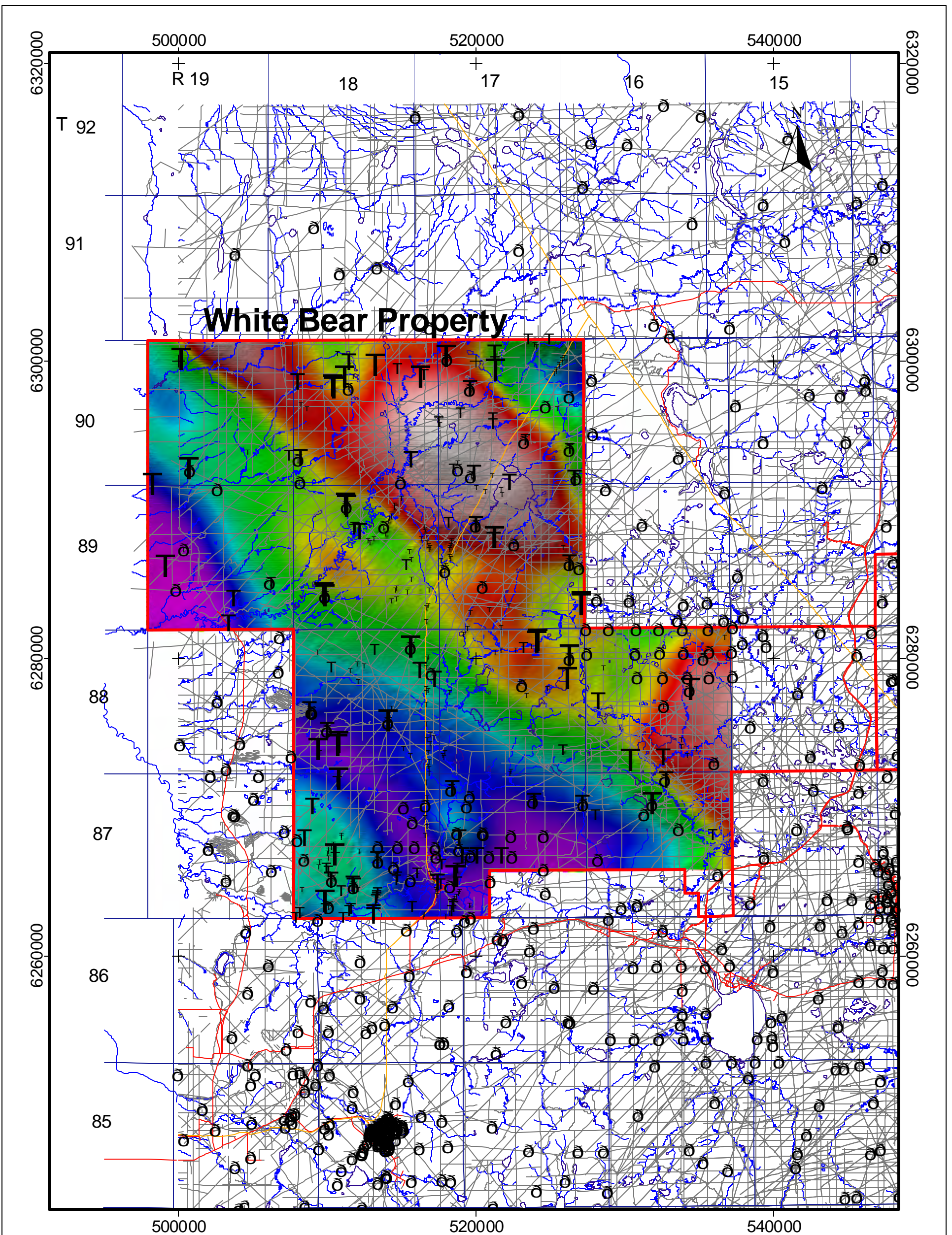
Based upon the review of the 2004 HRAM survey for the White Bear property, a large number of unexplained high priority (priority 1 and 2) magnetic anomalies exist on the property. These anomalies require ground checking for man-made culture. If these anomalies remain unexplained after ground truthing, then ground geophysical surveys should be considered as part of the next phase of exploration along with diamond indicator mineral sampling.

### **ADJACENT PROPERTIES**

**Much of the prior exploration that has been conducted by other companies on or adjacent to Grizzly's properties has not been verified. However, the majority of the work conducted by Ashton was conducted by Qualified Professionals. The past work, including the discovery of kimberlites on the adjacent properties, may not indicate that kimberlites will be present on Grizzly's properties.**

### **EXPLORATION EXPENDITURES**

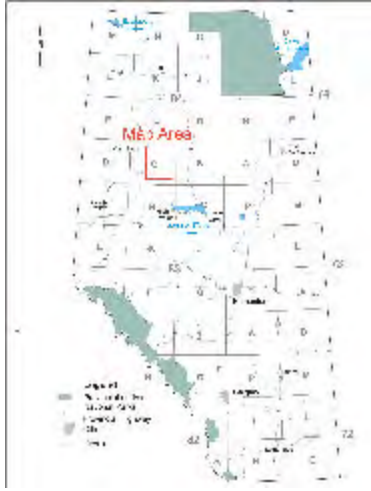
Grizzly Diamonds Ltd. reports property related exploration expenditures of \$106,641, plus GST, for the airborne geophysical survey performed over the White bear property (Appendix 1). Grizzly reports that the direct acquisition costs for restaking some the Buffalo Head Hills properties were on the order of \$20,000, (Appendix 1).



**White Bear Property**

**Legend:**

- T 1st priority
- T 2nd priority
- T 3rd priority
- T lowest priority
- wells
- Grizzly property claim
- Pipelines
- Road
- Township and Range
- Cutlines
- Drainage and Lakes



**GRIZZLY DIAMONDS LTD**

**Airborne Geophysics,  
Total Field Magnetics,  
White Bear Property**

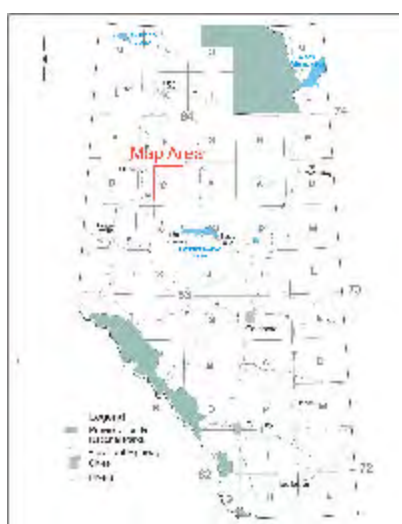
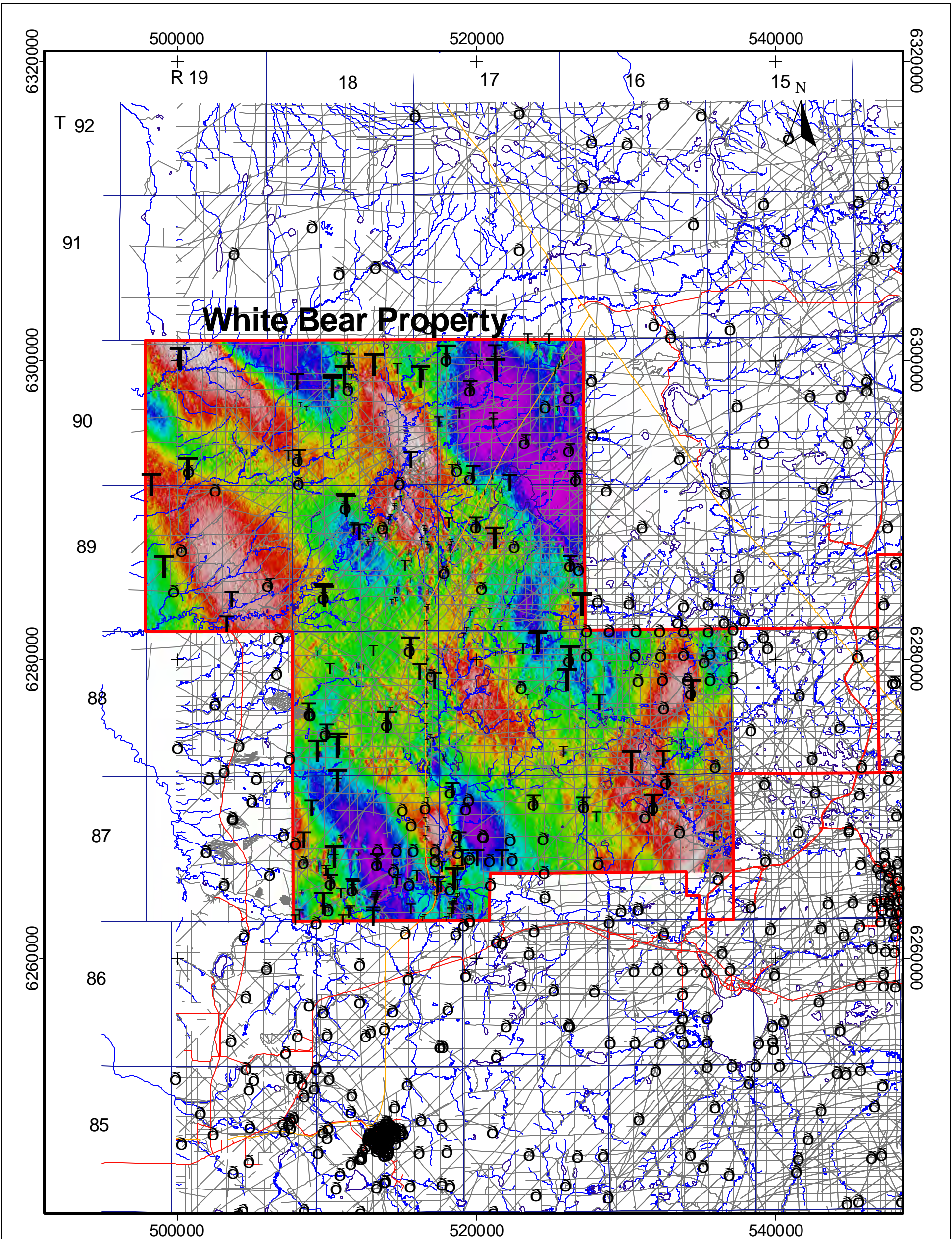
5 0 5 10 km

SCALE 1:250000  
Zone 11 NAD 27  
APEX Geoscience Ltd.

Edmonton, Alberta June 25, 2004

FIGURE 9.





- Legend:**
- T 1st priority
  - T 2nd priority
  - T 3rd priority
  - T lowest priority
  - wells
  - Grizzly property claim
  - Pipelines
  - Road
  - Township and Range
  - Cutlines
  - Drainage and Lakes

**GRIZZLY DIAMONDS LTD**

**Airborne Geophysics,  
Calculated Horizontal Gradient,  
White Bear Property**

5 0 5 10 km

SCALE 1:250000  
Zone 11 NAD 27  
APEX Geoscience Ltd.

Edmonton, Alberta June 25, 2004

FIGURE 10.

Based upon assessment records and the author's knowledge of exploration costs in Alberta, approximately \$1,655,000 was spent on exploration for kimberlites on Grizzly's Grand Cub Aidan, White Bear and Smoky The Bear properties by the BHHJV (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). A large portion of this expenditure was incurred on Grizzly's Smoky The Bear property (\$1,297,500) with smaller expenditures on the White Bear (\$133,500) and Grand Cub Aidan properties (\$224,000). Much of the data provided in the assessment reports by the BHHJV has been reviewed and is useable for future exploration. Monopros reports total exploration expenditures for its Troymin option of \$951,327.28 for 28 permits (townships) during 1998 and 1999. Based upon regional airborne geophysical surveys and indicator sampling as the main cost base, this represent an expenditure of about \$34,000 per township and, therefore, about \$170,000 for the southern portion of Grizzly's Grand Cub Aidan property. Much of the data recovered from the Monopros assessment report is useable for future exploration. This brings the total past estimated exploration expenditures for Grizzly's Buffalo Head Hills properties since early 1998 to about \$1,825,000.

## **CONCLUSIONS AND DISCUSSION**

The regional setting for Grizzly's Buffalo Head Hills diamond properties is considered highly favourable for the presence of diamondiferous kimberlites. The permits are predominantly underlain by Early Proterozoic to Archean basement of the Buffalo Head Craton. The local bedrock geology and the underlying Archean and Proterozoic crystalline basement in association with Phanerozoic structures, such as the Peace River Arch, likely provided a favourable environment for the formation and ascent of kimberlitic magmas in the Buffalo Head Hills area. This regional geological and structural setting is also considered favourable for the formation of kimberlitic magma in the upper mantle and its ascent to surface during periodic tectonic activity associated with movement along the Peace River Arch and the Grosmont High. Significant crustal thickness (35 to 40) underlying the area in combination with a number of important Gurney (1984) G10 subcalcic pyrope garnets are a strong indication that the area was underlain by upper mantle suitable for the formation and preservation of diamonds. This is confirmed with the discovery of at least 26 diamondiferous kimberlite pipes to date in the Buffalo Head Hills area by the BHHJV. Exploration and drilling during 1997 to 2001 by the BHHJV has resulted in the discovery of no less than 10 kimberlites less than 15 km north of the northern property boundary of Grizzly's Smoky The Bear property, and no less than 3 of the 10 kimberlites within 5 km of the northern boundary (Skelton and Bursey, 1998 and 1999; Skelton and Willis, 2001). The highly diamondiferous K252 Kimberlite is located approximately 21 km north of Grizzly's Smoky The Bear property and has yielded a grade of 55 carats per hundred tonnes, demonstrating the economic potential of the Buffalo Head Hills kimberlites and the region.

Limited bedrock exposures have been observed and reported within the area due to presence of extensive glacial deposits. Local bedrock exposed in the area or intersected in near surface drilling is age correlative to bedrock in other parts of the Buffalo Head Hills that has been intruded by kimberlites. The glacial history for the Buffalo Head Hills region

is very complex with regions of thick glacial drift, extensive glacial gravel and evidence of extensive glacial tectonism. Drift thickness is known to range from less than 25 m (80 ft) to greater than 250 m (820 ft) with multiple layers of till and glacial outwash. The complex glacial deposits and glacial history can be a serious impediment to exploration for kimberlites. Future exploration programs for kimberlites and diamonds in the Buffalo Head Hills area should include a full compilation of the glacial deposits and drift thickness. Areas of thin drift and less glacial complexity should be the focus of any future exploration programs. Those areas underlain by thick drift in preglacial paleo-river channels should be omitted from future exploration.

To date, a number of diamond indicator minerals have been recovered from limited sampling of outwash glacial gravel, recent fluvial gravel and till on all of three of Grizzly's Buffalo Head Hills diamond properties. The importance of these indicator minerals and potential source areas are unknown due to the presence of variable drift thickness and the poor sampling density. However, a number of samples collected from the Grand Cub Aidan and immediately south of the Grand Cub Aidan property by the AGS, the GSC, Ashton and Monopros have yielded significant numbers of indicator minerals including olivine, pyrope garnet, chromite and picroilmenite. All of these sample sites exist well north of the northernmost known BHHJV kimberlite. Therefore there is a strong likelihood that undiscovered kimberlites exist on or to the north of the Grand Cub Aidan property. The diamond potential of the area cannot be fully assessed with the limited amount of sampling that has been conducted to date. It is expected that further systematic sampling will lead to a better understanding of the diamond potential of the properties.

A review of all the existing and available magnetic data for Grizzly's Buffalo Head Hills properties resulted in the identification of a number of magnetic anomalies that warrant follow-up exploration for kimberlites. In particular, anomaly TQ-108, within the southeast portion of the Smoky The Bear property, is most likely representative of a buried kimberlite.

Ashton tested the target to a depth of 91 m but encountered flowing wet sand and was unable to complete the drilling. This anomaly should be retested with a water well type reverse circulation drill rig in order to combat the wet flowing sand in overburden. Other geophysical anomalies of interest from past exploration have been identified on both the Grand Cub Aidan and the Smoky The Bear properties. These anomalies in conjunction with the presence of nearby kimberlites indicate that these properties are high priority target areas for kimberlite exploration.

During April 2004, a HRAM survey was conducted over Grizzly's White Bear property. Using Geosoft, the data was reviewed on a line by line profile basis to look for high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features such as kimberlites. A total of 23 priority 1 and 32 priority 2 magnetic anomalies were identified in the dataset and are prospective for kimberlites and require follow-up exploration. These anomalies all require ground checking for man-made culture. If these anomalies remain unexplained after ground truthing, then ground geophysical surveys should be considered as part of the next phase of exploration along with diamond indicator mineral sampling. At the same time, any of the geophysical anomalies considered prospective based upon past exploration by

Ashton and Monopros should also be ground checked and those that remain unexplained should be gridded and surveyed with ground geophysical techniques.

Based on these results, an aggressive follow-up property-scale exploration program is warranted for all three of Grizzly's Buffalo Head Hills properties including detailed sampling in conjunction with airborne and ground geophysical surveys, followed by drilling of high priority targets. The detailed sampling program should be planned for the upcoming summer and fall months and should include all three properties. Alternatively, an auger overburden drilling program for diamond indicator minerals could be commenced during late fall or early winter. In conjunction with the sampling program, a detailed structural interpretation that includes the acquisition and interpretation of RadarSat and digital elevation (DEM) data should be given strong consideration. RadarSat data in combination with detailed digital elevation data and airborne magnetic data shows a number of the Buffalo Head Hills kimberlites at the intersections of lineaments (Eccles *et al.*, 2000). An airborne geophysical survey should be conducted over the entire Grand Cub Aidan property during the fall of 2004. In light of the overall thin overburden, the large numbers of indicator minerals and the success the BHHJV has had the last two years with finding kimberlites using EM methods, a helicopter magnetic-EM survey or the fixed-wing GEOTEM system should be considered for the property.

For existing targets identified out of previous exploration programs over the Grand Cub Aidan and Smoky the Bear properties, as well as for newly identified geophysical targets at the White Bear property, a detailed ground geophysical program followed by drill testing should be considered during next winter after all of the targets have been ground checked. Consideration should also be given to testing some of the targets prior to drilling using deep penetrating electromagnetic techniques and/or gravity, based upon new discoveries of additional kimberlites using these techniques by the BHHJV.

## **RECOMMENDATIONS**

Based upon the favourable regional geological setting and the positive results of exploration conducted to date within Grizzly's Buffalo Head hills diamond properties, an aggressive, systematic follow-up exploration program, including diamond indicator mineral sampling, airborne and ground geophysical surveys and drilling, is warranted to search for diamondiferous kimberlites.

The potential for discovery of diamondiferous kimberlites within Grizzly's Buffalo Head Hills diamond properties is considered high based upon the regional geological setting in conjunction with the positive results of limited diamond indicator mineral sampling and, the presence of medium to high priority airborne and ground magnetic targets.

For Grizzly's Buffalo Head Hills properties, future exploration should be conducted in three stages (Table 3) and consist of the following:

**Stage 1:** Conduct an aggressive late summer to fall sampling program for diamond indicator minerals with the planned collection of about 400 samples. The sampling program should be accompanied by or followed with a ground geophysical program to evaluate the existing medium to high priority geophysical anomalies. In addition, a compilation of all available indicator sampling data in conjunction with RadarSat, DEM and airborne geophysical data leading to a structural interpretation should be completed for all three properties. The estimated cost of the Stage 1 program including the data compilation, fieldwork, sampling, data collection, processing and interpretation is **\$600,000**, plus GST (Table 3).

**TABLE 3**  
**RECOMMENDED 2004-2005 PROGRAM AND BUDGET**  
**BUFFALO HEAD HILLS PROPERTIES**

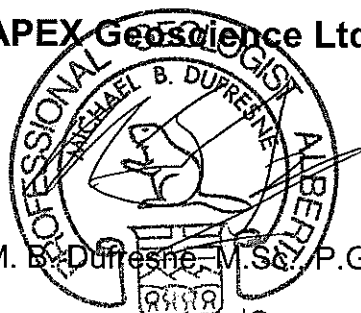
ITEM	DESCRIPTION	COST
<b>Stage 1</b>		
1	Full data compilation and structural interpretation; including LandSat, RadarSat, DEM and available all geophysical data	\$30,000
2	Ground truthing existing geophysical anomalies (\$20,000) and 15 ground geophysical surveys at \$10,000 per target	\$170,000
3	Collection of 400 till samples (@\$1000/sample all-up; Includes accommodation, travel, taxis, camp and field equipment and supplies, analytical, sample freight, etc.)	\$400,000
<b><u>Total Stage 1 Project Costs, Excluding GST</u></b>		<b>\$600,000</b>
<b>Stage 2</b>		
1	Helicopter magnetic-electromagnetic survey of about 8500 line-km over Grand Cub Aidan property at all up cost of about \$100 per line-km including fuel, accommodation, processing etc.	\$850,000
2	Helicopter and/or ground geophysical surveys over additional targets identified during stage 1 work and during stage 2 helicopter survey	\$150,000
<b><u>Total Stage 2 Project Costs, Excluding GST</u></b>		<b>\$1,000,000</b>
<b><u>Total Stage 1 and 2 Project Costs, Excluding GST</u></b>		<b>\$1,600,000</b>
<b>Stage 3</b>		
1	Conduct a six hole reverse circulation drilling program at an estimated cost of \$50,000 per drillhole; if six holes are not drilled cost per drillhole will increase	\$300,000
<b><u>Total Stages 1, 2 and 3 Project Costs, Excluding GST</u></b>		<b>\$1,900,000</b>

- Stage 2:** Conduct a helicopter magnetic-electromagnetic survey or a fixed wing GEOTEM survey over all or a portion of the Grand Cub Aidan property in conjunction with pointed surveys over portions of the White Bear and Smoky The Bear property. The estimated cost to conduct the warranted airborne geophysical surveys is **\$1,000,000**, plus GST (Table 3).
- Stage 3:** Conduct a water well or reverse circulation drilling program of six kimberlite targets within Grizzly's three Buffalo Head Hills diamond properties. At least one high priority drill target, TQ108, is presently ready to drill. The development of other targets will depend upon the Stage 1 and 2 exploration programs. The estimated cost to conduct a six hole reverse circulation Stage 3 drilling program is **\$300,000** plus GST (Table 3).

The total estimated cost of the recommended first two stages of exploration for Grizzly Diamonds Ltd.'s Buffalo Head Hills properties, not including any drilling, is **\$1,600,000**, plus GST.

<p><b>PERMIT TO PRACTICE</b> APEX Geoscience Ltd.</p> <p>Signature <u><i>M.B. Dupresne</i></u> Date <u>June 25, 2004</u></p> <p>PERMIT NUMBER: P-5824</p> <p>The Association of Professional Engineers, Geologists and Geophysicists of Alberta</p>
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**APEX Geoscience Ltd.**



M. B. Dupresne, M.Sc., P.Geol.

*Frank Kupsch*

B. G. Kupsch, M.Sc., Geol. I. T.

June 20, 2004  
Edmonton, Alberta, Canada

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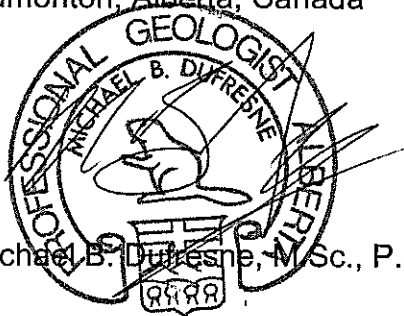
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**CERTIFICATE of AUTHOR**

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

1. I am President of:                   APEX Geoscience Ltd.  
Suite 200, 9797 – 45th Avenue  
Edmonton, Alberta T6E 5V8  
Phone: 780-439-5380  
Fax: 780-433-1336.
2. I graduated with a B.Sc. Degree in Geology from the University of North Carolina at Wilmington in 1983 and with a M.Sc. Degree in Economic Geology from the University of Alberta in 1987.
3. I am and have been registered as a Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta since 1989.
4. I have worked as a geologist for a total of 20 years since my graduation from university.
5. I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.
6. I am responsible for, or directly supervised, the preparation of all sections of the Technical Report titled “**Evaluation of the Diamond Potential of Grizzly Diamonds Ltd.’s Buffalo Head Hills Properties, Northern Alberta**”, and dated June 20th, 2004 (the “Technical Report”). I have visited the properties on several occasions with the last visit during November, 2003.
7. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
8. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 20th Day of June, 2004.  
Edmonton, Alberta, Canada



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

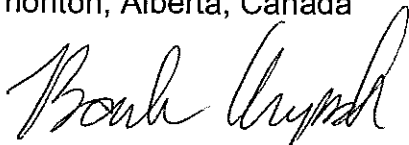


**CERTIFICATE of AUTHOR**

I, Barbara G. Kupsch, M.Sc., do hereby certify that:

1. I graduated with a B.Sc. Degree in Geology from the University of Alberta at Edmonton in 2001 and with a M.Sc. Degree in Geology from the University of Alberta in 2003.
2. I am and have been registered as a Geologist In Training with the Association of Professional Engineers, Geologists and Geophysicists of Alberta since 2001.
3. I have worked as a geologist for a total of 3 months since my graduation from university.
5. I assisted in the preparation of all sections of the Technical Report titled **“Evaluation of the Diamond Potential of Grizzly Diamonds Ltd.’s Buffalo Head Hills Properties, Northern Alberta”**, and dated June 20th, 2004 (the “Technical Report”). I have not visited the properties in question.
6. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
7. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
8. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
9. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 20th Day of June, 2004.  
Edmonton, Alberta, Canada



Barbara G. Kupsch, M.Sc., Geol. I. T.

Alberta Securities Commission  
4th Floor, 300 – 5th Avenue S.W.  
Calgary, Alberta T2P 3C4

British Columbia Securities Commission  
701 West Georgia Street  
P.O. Box 10142, Pacific Centre  
Vancouver, B.C. V7Y 1L2

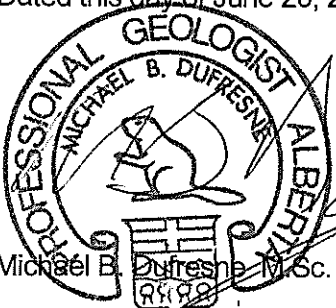
TSX Venture Exchange  
Vancouver Office  
P.O. Box 11633  
#2700, 650 West Georgia Street  
Vancouver, B.C., V6B 4N9

Consent of Professional (Qualified Person)

Re: Grizzly Diamonds Ltd.

1. I, Michael B. Dufresne of APEX Geoscience Ltd, Edmonton, Alberta, have prepared and supervised the preparation of the report entitled "Evaluation of the Diamond Potential of Grizzly Diamonds Ltd.'s Buffalo Head Hills Properties, Northern Alberta", (the Report). The Report was completed on behalf of Grizzly Diamonds Ltd., dated June 20th, 2004 for the purposes of raising capital;
2. I do not own nor do I expect to receive any interest (direct, indirect or contingent) in the properties described in the Report, nor in the securities of the Issuer in respect of services rendered in the preparation of the Report. I may inadvertently and without my knowledge be the owner of any publicly traded security through participation in mutual funds over whose portfolios I have no control over;
3. I hereby consent to the use of the name of Micheal B. Dufresne, M.Sc., P.Geol. and/or APEX Geoscience Ltd. and to the use of and references to the Report;
4. I hereby consent to the filing of the Report in the public files with the Securities Commissions of British Columbia and Alberta, copying of the report and to their use for obtaining required regulatory acceptance or approvals in connection with the property which is the subject matter of the Report.

Dated this day of June 20, 2004



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

**APPENDIX 1**

**Appendix 1 - Grizzly Diamonds Ltd.**  
**Expenditures**  
**January through June 2004**

<b>Type</b>	<b>Date</b>	<b>Num</b>	<b>Name</b>	<b>Memo</b>	<b>Account</b>	<b>Amount</b>
Bill	03/05/2004	Staking	Grizzly Gold Inc.	Staking costs paid back to Grizzly Gold	Staking	20,000.00
Bill	04/07/2004	FFA04-017	Firefly Aviation Ltd.	35% of HRAM Survey	Geophysics	38,823.75
Bill	04/07/2004	FA04-018	Firefly Aviation Ltd.	Second Payment 40% of HRAM Survey	Geophysics	44,370.00
Bill	05/03/2004	FFA04-022	Firefly Aviation Ltd.	Last Firefly Invoice	Geophysics	23,447.25
						<b><u>126,641.00</u></b>

**APPENDIX 2**

## **PURCHASE AND SALE AGREEMENT**

**THIS AGREEMENT** made the 15th day of March, 2004

**BETWEEN:**

GRIZZLY GOLD INC.  
Comp. 2, Site 17  
Peers, Alberta  
T0E 1W0

("Grizzly Gold")

**OF THE FIRST PART**

**AND:**

GRIZZLY DIAMONDS LTD., a company duly  
Incorporated pursuant to the laws of the Province of Alberta  
and having an office at Suite 220, 9797 – 45<sup>th</sup> Avenue,  
Edmonton, Alberta, T6E 5V8

("Grizzly Diamonds")

**OF THE SECOND PART**

**WHEREAS:**

A. Grizzly Gold is the beneficial recorded owner of a 100% interest in the property, that is, certain metallic and industrial mineral permits situated in the Province of Alberta, Canada, more particularly described in Schedule "A" attached hereto (the "Property");

B. Grizzly Gold has agreed to sell to Grizzly Diamonds a 90% interest in and to the Property as defined in Schedule "A".

**NOW THEREFORE IT IS AGREED:**

**1 DEFINITIONS**

1.1 For the purpose of this Agreement, in addition to the terms defined above, the following words and phrases shall have the following meanings, namely:

- a) "**Agreement**" means this Agreement and all Scheduled attached hereto;

- b) **“Common Shares”** means shares in the capital stock of Grizzly Diamonds, as presently constituted;
- c) **“Effective Date”** means the date which this agreement is signed by both Grizzly Gold and Grizzly Diamonds;
- d) **“Property”** means the mineral claims described in Schedule “A” hereto, and all mining leases and other mining interests derived from the concessions or claims and includes any surface rights;
- e) **“Property Rights”** means all licenses, permits, easements, rights-of-way, certificates and other approvals obtained by either of the parties either before or after the date of this Agreement and necessary for the development of the Property, or for the purpose of placing the Property into production or continuing production therefrom;
- f) **“Sale Period”** means the period during the term of this agreement from the date hereof to and including the date that of completion of this purchase and sale agreement; and

## **2. TERMS OF PURCHASE**

2.1 Grizzly Gold hereby sells to Grizzly Diamonds, subject to the terms of this Agreement, a 90% interest in the Property, free and clear of all charges, encumbrances and claims in exchange for the following:

- a. In exchange for the 90% interest in the Property, Grizzly Diamonds Shall issue to Grizzly Gold 2,710,000 Common Shares (67,750 shares per township).
- b. Grizzly Gold will retain a 10% carried interest in the Property to production.
- c. Grizzly Gold will be reimbursed all property acquisition costs, which are anticipated to be about \$500 per township for the estimated 40 townships.
- d. Upon a positive feasibility study issued with respect to the establishment of a mine on the Property, Grizzly Diamonds shall have 60 days to acquire up to an additional 5% or any portion thereof in the Property from Grizzly Gold at and for the consideration of \$1,000,000 cash per each additional 1% interest up to a maximum additional interest of 5% or \$5,000,000 cash.

2.2 The Sale will be considered completed provided Grizzly Diamonds has satisfied the requirements of subsections 2.1 (a) to (d).

3 **TRANSFER OF TITLE**

3.1 Within 30 days after the close of this Agreement, Grizzly Gold shall transfer title of the Property into the name of Grizzly Diamonds.

4 **OBLIGATIONS OF GRIZZLY DIAMONDS ON INCOMPLETION**

4.1 If the Sale is not completed for whatever reason, pursuant to Section 2.1, Grizzly Diamonds shall:

- a) deliver to Grizzly Gold, within 90 days of its written request, copies of all reports, maps, assay results and other relevant technical data compiled by or in the possession of Grizzly Diamonds with respect to the Property and not previously furnished to Grizzly Gold;
- b) upon written notice from Grizzly Gold, remove all materials, supplies and equipment from the Property, provided, however, that Grizzly Gold may retain, or at the cost of Grizzly Diamonds, dispose of any such materials, supplied or equipment not removed from the Property within 180 days or such notice of Grizzly Diamonds; and
- c) do such further acts and execute such further documents as may be necessary to transfer title of the Property to Grizzly Gold.

5 **REPRESENTATIONS AND WARRANTIES OF GRIZZLY GOLD**

5.1 Grizzly Gold represents and warrants to Grizzly Diamonds that:

- a) it has duly obtained all necessary authorizations for the execution of this Agreement and for the performance of this Agreement, and the consummation of the transactions herein contemplated will not conflict with or result in any breach of any covenants or agreements contained in any agreement or other instrument whatsoever to which Grizzly Gold is a party or by which it is bound or to which it or the Property may be subject;
- b) it is the beneficial and recorded or registered owner of the Property free and clear of all liens, charges and claims of others, and no taxes or rentals are due in respect thereof;
- c) the Property has been duly and validly located and recorded pursuant to the laws of jurisdiction in which the Property is situated and is in good standing to the date hereof; and



- d) there is no adverse claim or challenge against or to the ownership of or title to the Property, nor to the knowledge of Grizzly Gold is there any basis therefore, and there are no outstanding agreements or options to acquire or purchase the Property or any portion thereof and no person other than Grizzly Gold pursuant to the provisions hereof, has any royalty or other interest whatsoever in production from the Property.

5.2 The representations and warranties contained in subsection 5.1 shall survive the execution of this Agreement and are provided for the exclusive benefit to Grizzly Diamonds. A breach of any one or more thereof may be waived by Grizzly Diamonds in whole or in part at any time without prejudice to its rights in respect of any other breach of the same or any other representation or warranty.

## 6 **TRANSFERS**

6.1 Grizzly Diamonds may at any time and from time to time either during the Option Period or thereafter, sell, transfer or otherwise dispose of all or any portion of its interest in and to the Property and this Agreement provided that any purchaser, grantee or transferee of any such interest shall have first delivered to Grizzly Gold its agreement related to the Agreement and to the Property, containing:

- a) a covenant by such transferee to perform all the obligations required of Grizzly Diamonds under this Agreement, to the extent of the interest to be acquired by the transferee from Grizzly Diamonds, as if this Agreement had been originally executed jointly by Grizzly Diamonds and such transferee as joint and several obligors making joint and several covenants; and
- b) a provision subjecting any further sale, transfer or other disposition of such interest in the Property and this Agreement or any portion thereof to the restrictions contained in this section.

6.2 No assignment by Grizzly Diamonds of any interest less than its entire interest in this Agreement and in the Property shall, as between Grizzly Diamonds and Grizzly Gold discharge it from any of its obligations hereunder, but upon the transfer by Grizzly Diamonds of the entire interest at the time held by it in this Agreement (whether to one or more transferees and whether in one or in a number of successive transfers), Grizzly Diamonds shall be deemed to be discharged from all obligations hereunder save and except for the fulfillment of contractual commitments accrued during prior to the date on which Grizzly Diamonds shall have no further interest in this Agreement.

## 7 **DEFAULT**

7.1 Notwithstanding any other provision in this Agreement, if at any time during the Sale Period Grizzly Diamonds fails to perform any obligations required to be performed

hereunder or is in breach of a representation or warranty given herein, which failure or breach materially interferes with the implementation of this Agreement, Grizzly Gold may terminate this Agreement, but only if:

- a) it shall have the first given to Grizzly Diamonds a notice of default containing particulars of the obligations which Grizzly Diamonds has not performed, or the warranty breached; and
- b) Grizzly Diamonds has not, within 30 days following delivery of such notice of default, cured such default or commenced proceedings to cure such default by appropriate payment or performance (Grizzly Diamonds hereby agreeing that should it so commence to cure any default it will prosecute the same to completion without undue delay).

7.2 Should Grizzly Diamonds fail to comply with the provisions of Section 7.1(b), Grizzly Gold may thereafter terminate this Agreement, and the provisions of Section 4 shall then be applicable.

## 8 **FORCE MAJEURE**

8.1 If Grizzly Diamonds is at any time, either during the Sale Period or thereafter, prevented or delayed in complying with any provisions of this Agreement by reason of strikes, lock-outs, labour shortages, power shortages, fuel shortages, fires, wars, acts of God, governmental regulations restricting normal operations, shipping delays or any other reason or reasons (other than lack of funds) beyond the control of Grizzly Diamonds or Grizzly Diamonds, as the case may be, the time limited for the performance by Grizzly Diamonds or Grizzly Diamonds of its obligations hereunder shall be extended by a period of time equal in length to the period of each such prevention or delay.

8.2 Grizzly Diamonds shall give prompt notice to Grizzly Gold of each event of force majeure under Subsection 8.1 and upon cessation of such event shall furnish Grizzly Gold with notice to that effect together with particulars of the number of days by which the obligations of Grizzly Diamonds have been extended by virtue of such event of force majeure and all preceding events of force.

## 9 **NOTICES**

9.1 Any notice under this Agreement shall be given in writing and either delivered, telecopied or mailed by prepaid registered post to the party to receive such notice at the address or telecopy numbers indicated below:

to Grizzly Gold:

Grizzly Gold Gold Inc.  
Comp. 2, Site 7,

Peers, Alberta T0E 1W0  
Fax: 780-693-2572

Attention: Brian Testo

to Grizzly Diamonds:

Grizzly Diamonds Ltd.  
Suite 220 – 9797 45 Ave  
Edmonton, Alberta T6E 5V8  
Fax: 780-433-1336

Attention: Norman Eaton

with a copy to:

Miller Thomson  
700 – 9<sup>th</sup> Ave SW 30<sup>th</sup> Floor  
Calgary, Alberta T2P 3V4  
Fax: 403-262-0007

Attention: Debra Poon

or such other address or telecopy number as such party may hereafter designate by notice in writing to the other parties. If a notice is delivered, it shall be effective from the date of delivery; if such notice is telecopied (with receipt confirmed), it shall be effective on the business day following the date such notice is telecopied; if such notice is sent by mail, it shall be effective four business days following the date of mailing, excluding all days when normal mail service is interrupted.

## **10 RELATIONSHIP OF PARTIES**

10.1 Nothing contained in this Agreement shall, except to the extent specifically authorized hereunder, be deemed to constitute either party a partner, agent or legal representative of the other party.

## **11 OPPORTUNITY TO BE REPRESENTED**

11.1 Each of the parties to this Agreement acknowledge that, in making the decision whether to enter into this Agreement, each had sufficient opportunity to consult with legal counsel, and each decided, independently, whether to do so.

12     **HEADING AND PARAGRAPH NUMBERS**

12.1    The heading and paragraph numbers appearing in this Agreement or any schedule hereto are inserted for convenience of reference only and shall not in any way affect the construction or interpretation of this Agreement.

13     **TIME OF THE ESSENCE**

13.1    Time shall be of the essence for this Agreement.

14     **FURTHER ASSURANCES**

14.1    The parties shall promptly execute or cause to be executed all documents, deeds, conveyances and other instruments of further assurance which may be reasonably necessary or advisable to carry out fully the intent of this Agreement or to record wherever appropriate the respective interest from time to time of the parties in the Property.

15     **ENTIRE AGREEMENT**

15.1    Any Agreement shall supersede and replace any other agreement or arrangement, whether oral or written, heretofore existing between the parties in respect of the subject matter of this Agreement.

16     **SUCCESSORS AND ASSIGNS**

16.1    This Agreement shall enure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.

17     **WAIVER**

17.1    No consent or waiver expressed or implied by any party in respect of any breach or default by any other in the performance by such other of its obligations hereunder shall be deemed or construed to be a consent to or waiver of any other breach or default.

18     **NUMBER AND GENDER**

18.1    It is agreed that unless the context of this Agreement requires otherwise, the singular number shall include the plural and vice versa, the number of the verb shall be construed as agreeing with the word so substituted, words importing the masculine gender shall include the feminine and neuter genders, and word importing persons shall include firms and corporations and vice versa.



**SCHEDULE "A"**

Description of the Property

**Grand Cub Aidan Permits**



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020489**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%



APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020489

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-10-096: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020489

**NOTICE TO PERMITTEE**

LAND DESCRIPTION

5-10-096: 36NP,SEP

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING

FORESTER

DEPT. OF SUSTAINABLE RESOURCE DEV

SLAVE LAKE OFFICE - LAND AND FOREST SERVICE

PO BOX 390

SLAVE LAKE AB TOG 2A0

(780) 849-7400



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020490**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020490

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-11-096: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020491**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

- 4 -

APPENDIX

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METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020491

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-12-096: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020492**

**Term Commencement Date:** February 26, 2004

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100.0000000%

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9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

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METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL





**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020493**

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100.0000000%

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9216 HECTARES

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5-14-096: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020494**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

- 4 -

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020494

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-10-097: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020494

**NOTICE TO PERMITTEE**

LAND DESCRIPTION

5-10-097: 1N, SE, SWP; 2NEP; 11SEP, NWP, NE; 12; 13; 14E, WP; 23SP, NEP; 24S, NP;  
25SEP

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

RALPH WOODS  
LAND MANAGEMENT FORESTER  
DEPT. OF SUSTAINABLE RESOURCE DEV  
PEACE RIVER OFFICE - LAND AND FOREST SERVICE  
9621 96 AVE FLOOR MAIN  
PEACE RIVER AB T8S 1T4 (780) 624-6331



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020495**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020495

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-11-097: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020496**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%



APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020496

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-12-097: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9304020497

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020497

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-13-097: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020498**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020498

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-14-097: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9304020499

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020499

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

3072 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-10-098: 4-9;16-21

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9304020500

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%



APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020500

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-11-098: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020501**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020501

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-12-098: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9304020502

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020502

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-13-098: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304020503**

**Term Commencement Date:** February 26, 2004

**Permittee:**

APEX GEOSCIENCE LTD.

100.0000000%

- 4 -

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304020503

TERM COMMENCEMENT DATE:

FEBRUARY 26, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-14-098: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

## **White Bear Permits**





METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9302030046

Term Commencement Date: March 20, 2002

Permittee:

GRIZZLY GOLD INC

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030046

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

6,657 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-16-087: 1;2EP;11;12S

PORTION(S) LYING OUTSIDE WOODLAND CREE INDIAN RESERVE NO. 226.  
NP;13NEP;14-36

PORTION(S) LYING OUTSIDE WOODLAND CREE INDIAN RESERVE NO. 227.

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9302030047

Term Commencement Date: March 20, 2002

Permittee:

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030047

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

7,168 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-17-087: 5-8;13-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9302030048**

**Term Commencement Date:** March 20, 2002

**Permittee:**

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030048

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-16-088: 2N;3-6

5-17-088: 1-7;8W;17W;18;19;20W;29W;30;31;32W

5-17-089: 5W;6;7;8W;17W;18;19;20W;29W;30;31;32W

5-17-090: 5W;6;7;8W;17W;18;19;20W;29W;30;31;32W

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9302030049**

**Term Commencement Date:** March 20, 2002

**Permittee:**

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030049

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-18-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL





**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9302030050**

**Term Commencement Date:** March 20, 2002

**Permittee:**

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

- 4 -

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030050

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-18-089: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9302030051**

**Term Commencement Date:** March 20, 2002

**Permittee:**

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030051

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-19-089: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9302030052

Term Commencement Date: March 20, 2002

Permittee:

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030052

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-18-090: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9302030053**

**Term Commencement Date:** March 20, 2002

**Permittee:**

GRIZZLY GOLD INC

50.0000000%  
Undivided Interest

PATRICIA DARLENE TESTO

50.0000000%  
Undivided Interest

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030053

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-19-090: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL





**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9302030096**

**Term Commencement Date:** March 20, 2002

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9302030096

TERM COMMENCEMENT DATE:

MARCH 20, 2002

AGGREGATE AREA:

9,216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-18-087: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304010822**

**Term Commencement Date:** January 12, 2004

**Permittee:**

GRIZZLY GOLD INC.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010822

TERM COMMENCEMENT DATE:

JANUARY 12, 2004

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-15-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304010823**

**Term Commencement Date:** January 12, 2004

**Permittee:**

GRIZZLY GOLD INC.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010823

TERM COMMENCEMENT DATE:

JANUARY 12, 2004

AGGREGATE AREA:

8064 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-16-088: 1;2S;7-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304010824**

**Term Commencement Date:** January 12, 2004

**Permittee:**

GRIZZLY GOLD INC.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010824

TERM COMMENCEMENT DATE:

JANUARY 12, 2004

AGGREGATE AREA:

5760 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-17-088: 8E;9-16;17E;20E;21-28;29E;32E;33-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL





**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304010825**

**Term Commencement Date:** January 12, 2004

**Permittee:**

GRIZZLY GOLD INC.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010825

TERM COMMENCEMENT DATE:

JANUARY 12, 2004

AGGREGATE AREA:

6912 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-17-089: 1-4;5E;8E;9-16;17E;20E;21-28;29E;32E;33-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010825

NOTICE TO PERMITTEE

LAND DESCRIPTION

5-17-089: 13EP;24SEP;27NEP;33SP,NWP,NE;34SP,NW,NEP

IS/ARE WITHIN AN IMPORTANT TRUMPETER SWAN HABITAT.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

MARK HECKBERT  
WILDLIFE BIOLOGIST  
DEPT. OF SUSTAINABLE RESOURCE DEV  
HIGH PRAIRIE OFFICE - FISH AND WILDLIFE  
PROVINCIAL BUILDING  
5226 53 AVE  
PO BOX 1500  
HIGH PRAIRIE AB T0G 1E0 (780) 523-6520



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9304010826**

**Term Commencement Date:** January 12, 2004

**Permittee:**

GRIZZLY GOLD INC.

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010826

TERM COMMENCEMENT DATE:

JANUARY 12, 2004

AGGREGATE AREA:

6912 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-17-090: 1-4;5E;8E;9-16;17E;20E;21-28;29E;32E;33-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9304010826

NOTICE TO PERMITTEE

LAND DESCRIPTION

5-17-090: 3SP;4SP

IS/ARE WITHIN AN IMPORTANT TRUMPETER SWAN HABITAT.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

MARK HECKBERT  
WILDLIFE BIOLOGIST  
DEPT. OF SUSTAINABLE RESOURCE DEV  
HIGH PRAIRIE OFFICE - FISH AND WILDLIFE  
PROVINCIAL BUILDING  
5226 53 AVE  
PO BOX 1500  
HIGH PRAIRIE AB T0G 1E0 (780) 523-6520

## **Smoky The Bear Permits**



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031149**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%



APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031149

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-07-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031149

NOTICE TO PERMITTEE

LAND DESCRIPTION

5-07-088: 1-5;6NP,SE,SWP;7EP;8S,NWP,NE;9-16;17NP,SE,SWP;20EP;21S,NWP,NE;22-  
27;  
28SP,NEP;33SEP;34E,WP;35;36

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING  
FORESTER  
DEPT. OF SUSTAINABLE RESOURCE DEV  
SLAVE LAKE OFFICE - LAND AND FOREST SERVICE  
PO BOX 390  
SLAVE LAKE AB TOG 2A0 (780) 849-7400



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031150**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031150

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-08-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031150

NOTICE TO PERMITTEE

LAND DESCRIPTION

5-08-088: 5NWP;6SP,NW,NEP;7;8SP,NW,NEP;16WP;17N,SEP,SW;18-  
20;21SWP,NW,NEP;27NWP;  
28EP,W;29-33;34WP

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING  
FORESTER  
DEPT. OF SUSTAINABLE RESOURCE DEV  
SLAVE LAKE OFFICE - LAND AND FOREST SERVICE  
PO BOX 390  
SLAVE LAKE AB TOG 2A0 (780) 849-7400



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031151**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031151

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-09-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031151

**NOTICE TO PERMITTEE**

LAND DESCRIPTION

5-09-088: 1-4;5EP;8E,WP;9-16;17E,WP;18NEP;19EP;20-29;30SEP,NWP,NE;31E,WP;32-36

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING  
FORESTER  
DEPT. OF SUSTAINABLE RESOURCE DEV  
SLAVE LAKE OFFICE - LAND AND FOREST SERVICE  
PO BOX 390  
SLAVE LAKE AB TOG 2A0 (780) 849-7400





**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031152**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031152

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

6144 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-10-088: 1-18;23-26;35;36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031153**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

- 4 -

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031153

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-11-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031154**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031154

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-12-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031155**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

- 4 -

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031155

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-13-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL





**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031156**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031156

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-14-088: 1-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031157**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031157

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

9216 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-07-089: 1-18

5-08-089: 1-18

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031157

NOTICE TO PERMITTEE

ONE OF TWO

LAND DESCRIPTION

5-07-089: 1;2S,NWP,NE;3EP;11E,WP;12;13;14SP,NEP

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING  
FORESTER  
DEPT. OF SUSTAINABLE RESOURCE DEV  
SLAVE LAKE OFFICE - LAND AND FOREST SERVICE  
PO BOX 390  
SLAVE LAKE AB TOG 2A0 (780) 849-7400

TWO OF TWO

LAND DESCRIPTION

5-08-089: 3EP,W;4-9;10N,SEP,SW;11NWP;14SWP,NW,NEP;15-18

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING  
FORESTER  
DEPT. OF SUSTAINABLE RESOURCE DEV  
SLAVE LAKE OFFICE - LAND AND FOREST SERVICE  
PO BOX 390  
SLAVE LAKE AB TOG 2A0 (780) 849-7400



**METALLIC AND INDUSTRIAL MINERALS PERMIT**

**NO. 9303031158**

**Term Commencement Date:** March 04, 2003

**Permittee:**

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031158

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

6144 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-09-089: 1-18

5-10-089: 1;2;11-14

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031158

**NOTICE TO PERMITTEE**

LAND DESCRIPTION

5-09-089: 1-5;6E,WP;7-18

5-10-089: 1NEP;12EP;13EP

IS/ARE WITHIN AN IMPORTANT CARIBOU RANGE.

SURFACE ACCESS IS SUBJECT TO SPECIFIC RESTRICTIONS

FOR FURTHER INFORMATION, PLEASE CONTACT:

DAVE LAING

FORESTER

DEPT. OF SUSTAINABLE RESOURCE DEV

SLAVE LAKE OFFICE - LAND AND FOREST SERVICE

PO BOX 390

SLAVE LAKE AB TOG 2A0

(780) 849-7400





METALLIC AND INDUSTRIAL MINERALS PERMIT

NO. 9303031159

Term Commencement Date: March 04, 2003

Permittee:

GRIZZLY GOLD INC

100.0000000%

APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9303031159

TERM COMMENCEMENT DATE:

MARCH 04, 2003

AGGREGATE AREA:

4608 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

5-14-089: 1-18

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

**APPENDIX 3**

**WHITE BEAR PROJECT  
PEACE RIVER AREA, ALBERTA**

**HIGH RESOLUTION AEROMAGNETIC  
SURVEY (HRAM)  
LOGISTICAL REPORT**

**For**

**GRIZZLY DIAMOND INC.**

**May 2004**

**By**

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

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## 1.0 INTRODUCTION

This report describes the specifications and operations of an airborne geophysical survey carried out for Grizzly Diamond Inc. by Firefly Aviation Ltd., during April of 2004. The Firefly Aviation Ltd. Offices are located at Springbank Airport, 208C Avro Lane, Calgary, Alberta T3Z 3S5. Telephone (403) 246-8083, fax (403) 202-1493.

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

To achieve this purpose, the survey area was systematically traversed by an aircraft carrying geophysical instruments along parallel flight lines (traverses) spaced 150 meters apart in a north south alignment. Tie lines were flown normal to the traverses spaced at 1000 meters. The nominal flying height was a best-fit draped 60 meters above the terrain surface. During April 2004 the total number of line kilometres flown and accepted are 8,364 km.

## 2.0 SURVEY AREA

The survey area is located in Buffalo Head Hills area, approximately 50 kilometres northeast of the town of Peace River, Alberta. The survey was conducted over an area as defined by Grizzly Diamond Inc. The area of the survey is illustrated on the survey area map included in the appendices of this report.

## 3.0 EQUIPMENT SPECIFICATIONS

### 3.1 AIRCRAFT

The survey was carried out using a Piper Navajo PA-31 aircraft, registration C-FOOO, configured with a specially designed rigid-mount tail boom for geophysical survey operations. The aircraft is equipped with a high sensitivity magnetometer and a full on-board real time compensation recording computer, and related equipment. It is a single engine aircraft with full avionics, including real time differential 3D GPS navigation.

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

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

TYPE	R/N	TSOH HOURS	FUEL CAPACITY	CRUISE (kts)	SURVEY ENDURANCE
Piper PA-31	C-FOOO	Left Eng ~1081 hrs Right Eng ~1081 hrs	244 gallons, AVGAS 100/130	165 knots Survey: 150 kts	7.0 hours
Normal Climb/Descent Gradient			1,000 FPM **		
Survey Fuel Consumption			~ 35.0 gph		

\* TSOH = Time Since Overhaul

\*\* This is best rate of climb at SL at gross weight as indicated in the PA-31 pilots' operating manual; short duration rate of climb is much higher, dependent on outside temperature.

### 3.2 AIRBORNE GEOPHYSICAL EQUIPMENT

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

Cesium Vapor Magnetometer:

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

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

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

Radar Altimeter:

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

Differential 3D GPS Receiver

Manufacturer	Trimble and Novatel OEM3
Model	AgGPS 132
Serial Number	0224006957
Type	Continuous tracking, L1 frequency, C/A code (SPS), 12 channel (independent)
Position Sensitivity	once per second

---

Accuracy	position (SA implemented) 100 meters, position (no SA) 30 m, velocity 0.1 knot, time recovery 1 pps, 100 nsec pulse width
Data Recording	all GPS data and positional data logged by Picodas Unit

Navigation Interface (with pilot and operator readouts):

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

Data Acquisition System :

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

Magnetometer Processor

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

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

Magnetic Compensation System:

Manufacturer	RMS Instruments
Model	AADCII
Operating System	MS-DOS
Inputs	1 to 4 high sensitivity magnetometers
Input Frequency Range	70khz to 350khz
Magnetic Field Range	20,000 to 100,000 nT
Front End Counter	100 MHz



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Resolution	1 pT
Compensation Perf.	Improvement ratio 10 to 20 typical for total field
Accuracy of Compens.	0.035 nT standard deviation for the entire aircraft flight envelope in the bandwidth 0 to 1 hz typical
Data Output Rate	10 hz maximum
Internal System Noise	less than 1 pT
Vector Magnetometer	3-Axis Fluxgate over sampled, 16 bit resolution
Outputs	3 Serial RS232C ports, max rate 19.2 Kbaud Magnetometer data output Direct Interface with GR33A Parallel output port, 16 bit with full handshaking 4 Analog outputs with 12 bit resolution.

Power Supplies:

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

### 3.3 MAGNETOMETER BASE STATION

High sensitivity base station data are provided by a cesium vapor magnetometer, data logging onto a dedicated PC module.

Magnetic Sensor:

Scintrex Ltd. Smartmag Cesium

Magnetic Processor:

Manufacturer	Scintrex Ltd.
Model	SM-2
Input Range	15,000 - 100,000 nT
Resolution	0.01 nT
Bandwidth	0.7, 1 or 2 Hz
Input Signal	TTL, CMOS, Open collector compatible or sine wave with decoupler
Input Impedance	TTL>1K Ohm

Logging Software:

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

### 3.4 GPS BASE STATION

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

Manufacturer	Novatel
Model	Novatel OEM2 Card
Type	Continuous tracking, L1 frequency, C/A code (SPS), 10 channel
Position Update	once per second

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Accuracy	with SA implemented 100 meters, no SA 30 meters, velocity 0.1 knot, time recovery 1 pps, 100 nsec pulse width
Data Recording	all GPS raw and positional data logged by PC based data logger

#### **4.0 SURVEY SPECIFICATIONS**

##### **4.1 LINES AND DATA**

Survey area coverage	A total of 8,364 survey line kilometers were collected.
Traverse Line Direction	270 and 090 degrees true azimuth.
Line Interval	150 m
Tie Line Interval	1000 m flown orthogonal to survey lines.
Terrain Clearance	60 meters drape mode.
Average ground speed	75 meters/second
Data point interval:	Magnetic: 7.5 meters relative ground spacing per sample point.

##### **4.2 TOLERANCES**

- a) Line spacing: At no point did the traverse or control lines deviate more than 50% of the designated flight line spacing over a period of one kilometer of line flown.
- b) Terrain clearance: All flight lines were within tolerance of the planned drape surface.
- c) Diurnal magnetic variation: As per spec, with data not acquired during magnetic storms or short term disturbances which exceeded survey spec.
- d) Missing data: Any lines with channels or portions of channels missing from the database were reflown.

##### **4.3 NAVIGATION AND RECOVERY**

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

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

##### **4.4 OPERATIONAL LOGISTICS**

The main base of operations for the White Bear Project HRAM survey was the community of Peace River (CYPE). The base station magnetometer and GPS equipment were located in a magnetically quiet location at the airport.

Fuel for the aircraft was purchased on site from the local bulk fuel dealer. Accommodations for the field crew were secured in Peace River.

The field crew consisted of:  
Dave Fenwick – Survey Pilot  
Travis Reed – Equipment Operator  
Matt Johnston – Field Data Processor

The processing crew was: Bruce Evans – Project Manager

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Jeremy Weber – Senior Processor, Quality Control

Field operations were conducted at the White Bear Project between April 5 and April 27, 2004. The aircraft and crew mobilized to the project on April 5, 2004, and conducted initial calibration and compensation flights the same day. The aircraft and crew demobilized from the project on April 28, 2004 and arrived back at the Calgary base the same day. The final acquisition flight was completed on April 27, 2004. There were a total of 10 accepted survey flights, including ferry and survey flights, compensation, and reflights. Unacceptable mission data flights are not included in this total.

## 5.0 DATA PROCESSING

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

The processing procedure during the survey consisted of the following:

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

## 5.1 DATA PRODUCTS

For the purposes of the Grizzly Diamond Inc. White Bear Project Firefly has been contracted to provide a complete data set which includes final micro-leveling, processing and plotting. Plotted products include a) Total Magnetic Intensity b) Calculated 1<sup>st</sup> Vertical Derivative and c) Flightpath.

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

## 6.0 SUMMARY

An airborne high sensitivity, high-resolution magnetic survey has been carried out at 60 meter drap mode elevation, 150 meter line intervals and with data sample stations at 7 meters along the lines. Tie lines were

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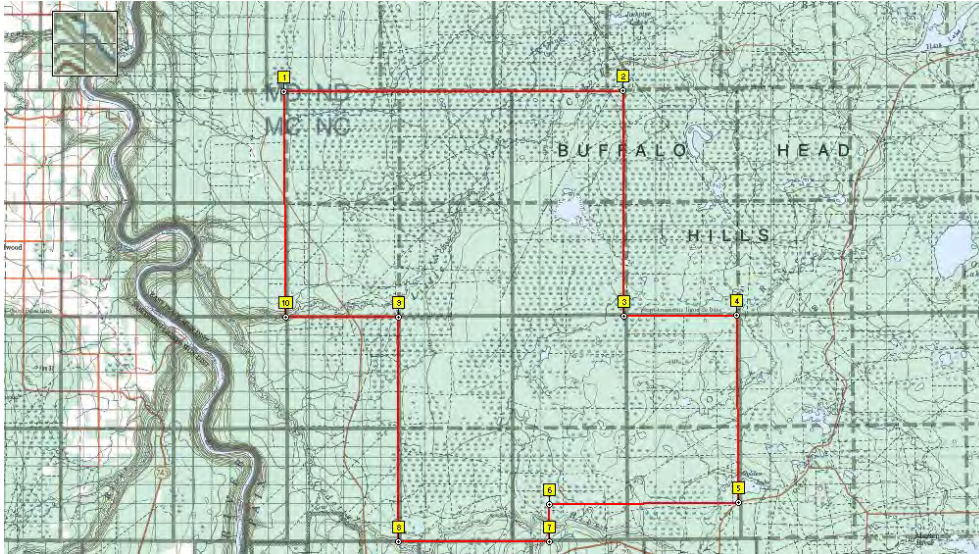
spaced at 1000 meters. A high sensitivity base magnetic station recorded the diurnal activity throughout the survey and a base GPS station was used to correct range errors in the GPS flight path recovery. Airborne recorded data included one fully compensated magnetometer located in a tail boom mounted pod, radar altimeter and all attendant GPS data. The magnetic data have been processed, gridded and provided on CD-ROM.

FIREFLY AVIATION LTD.

Bruce T. Evans, P.Geol.  
30 May 2004

# APPENDIX

## White Bear Project Location



<b>POINT</b>	<b>Easting</b>	<b>Northing</b>
1	497856	6301362
2	527162	6301445
3	527288	6282001
4	537064	6282075
5	537204	6265876
6	520849	6265768
7	520865	6262552
8	507734	6262482
9	507736	6281917
10	497960	6281908

NAD 27 Zone 11 Clark 1866

**APPENDIX 4**

**APPENDIX 4 - AIRBORNE GEOPHYSICAL ANOMALIES**  
**GRIZZLY DIAMONDS LTD.**  
**WHITE BEAR PROPERTY**

TARGET ID	UTM (EAST)	UTM (NORTH)	Amp (nT)	LINE	COMMENTS	PRIORITY
5	517420.45	6264907.65	20	170	close proximity to a pipeline, steeply sho	1
28	518856.95	6267906.6	20	370	medium pointed peak, culture?	1
35	509022.68	6270014.52	20	510	well formed to sharp,culture?	1
37	527126.18	6270164.18	20	520	close proximity to a well, pointed peak, c	1
40	518380.74	6271214.34	15	590	close proximity to a well, sharp peak,	1
61	509381.99	6273769.75	20	760	sharp peak.culture?2 line anomaly	1
53	532538.05	6273322.11	25	730	sharp peak	1
68	510790.56	6274217.77	5	790	poss. Mag low, 2 line anomaly	1
73	509975.84	6275112.14	30	850	close proximity to a well, very well forme	1
77	508812.06	6276460.8	20	940	close proximity to a well, well formed, cu	1
85	534426.4	6277817.32	18	1030	close proximity to a well, shouldered pea	1
120	503338	6282307.2	22	1330	shouldered well formed, culture?	1
130	503675.3	6283960.84	13	1440	shouldered, culture or kimber?	1
148	526284.66	6286364.56	25	1600	close proximity to a well, sharp peak, cul	1
181	519992.8	6288903.4	20	1770	close proximity to a well, sharp peak, cul	1
186	511311.9	6290115.22	13	1850	close proximity to a well, well formed, 2li	1
261	500706.4	6292658.1	10	2020	well formed peak, ?	1
281	519612.28	6298045.98	18	2380	close proximity to a well, sharper peak, p	1
282	510394.1	6298218.9	15	2390	2liner cont. very nice	1
284	508029.43	6298516.72	15	2410	sharp peak, poss. Culture	1
291	521306.95	6299259.15	5	2460	steeply shouldered, interesting	1
297	511458.9	6299861.2	20	2500	sharp peak, poss. Culture	1
304	521245.46	6300466.56	10	2540	sharp peak, poss. Culture?	1
3	509830.06	6263562.35	10	80	broad peak, nice	2
20	510508.3	6266715.55	10	290	well formed, 2 line anomaly,wb-20	2
36	531819.34	6270162.28	8	520	close proximity to a well, well formed wit	2
43	510752.76	6271807.46	7	630	small, well formed 2 line anomaly	2
19	521724.14	6266714.82	10	290	shouldered, nice peak, culture?	2
26	508464.78	626784.7	7	370	sharp peak, culture?	2
38	523860.14	6270312.12	15	530	close proximity to a well, sharp peak, cul	2
44	532756.66	6271810.24	5	630	close proximity to a well, sharp peak wit	2
75	514074.5	6275708.4	10	890	close proximity to a well, well formed, nic	2
81	528176.65	6277056.87	7	980	broad, well formed, maybe culture?	2
94	516242.14	6279164.53	8	1120	pointed peak, poss. Culture	2
104	526264.26	6280054.61	8	1180	close proximity to a well, 2nd part of 2lin	2
111	515623.31	6280664.61	7	1220	close proximity to a well, well formed, int	2
114	524117.36	6280959.55	7	1240	shouldered peak,2liner or linear?	2
128	527053.22	6283665.9	12	1420	2liner, a real beauty	2
132	509865.95	6284115.5	5	1450	close proximity to a well, 2liner very nice	2
145	499151.3	6286067.95	10	1580	well formed peak, poss. Geological	2
166	521189.58	6287863.65	10	1700	sharp peak, poss. Culture	2
174	512164.75	6288458.57	10	1740	interesting, but near lots culture	2
195	498273.04	6291606.54	8	1950	sharp to well formed peak. ?	2
196	522233.6	6291759.9	7	1960	sharp peak, shoulder,culture?	2
198	526611.4	6292062.7	5	1980	close proximity to a well, sharp peak,cou	2
235	511717.53	6264749.14	10	160	sharp peak	2
238	510270.94	6265061.09	20	180	close proximity to a well, sharp peak, cul	2
252	520051.07	6266709.9	7	290	sharp peak, culture?	2
260	519827.98	6292359.36	5	2000	close proximity to a well, 2liner, poss. Cu	2
265	515618.35	6293265.77	10	2060	steeply shouldered, culture?	2
266	508167.24	6293415.97	15	2070	interesting, but poss. Culture	2
285	516305.18	6298808.22	7	2430	well formed peak, interesting	2
294	513204.62	6299564.76	10	2480	shouldered peak, a beauty?	2
301	500186.4	6300007	3	2510	small,shouldered,poss.interesting	2



**APPENDIX 4 - AIRBORNE GEOPHYSICAL ANOMALIES**  
**GRIZZLY DIAMONDS LTD.**  
**WHITE BEAR PROPERTY**

TARGET ID	UTM (EAST)	UTM (NORTH)	Amp (nT)	LINE	COMMENTS	PRIORITY
302	518015.46	6300168.62	8	2520	close proximity to a well, very well forme	2
16	513388	6266405.8	20	270	close proximity to a well, very sharp, cult	3
51	530364.51	6273016.26	7	710	well formed w/shoulder, of interest	3
66	510738.46	6274065	5	780	possible mag low	3
91	517196.49	6278561.31	5	1080	jagged, culture?	3
92	526109.8	6278560.8	3	1080	wee anomaly but interesting	3
115	524173.46	6281108.28	7	1250	shouldered, maybe 2liner?	3
125	527096.8	6283514.7	10	1410	well formed, 2liner, interesting	3
133	509776.84	6284259.36	5	1460	close proximity to a well, 2liner continued	3
169	521232.1	6288008	5	1710	sharper peak, 2 liner, potential	3
189	511272.14	6290255.78	4	1860	close proximity to a well, 2liner small, we	3
204	513086.32	6262664.08	5	20	shouldered, with sharp peak	3
207	513129.56	6262818.2	8	30	sharp, culture?	3
234	511762.03	6264639.64	35	150	close proximity to a well, very sharp, cult	3
241	518572.17	6265209.85	5	190	small peak but broad	3
254	519047.04	6266711.1	7	290	pointed peak, culture?	3
279	510421.09	6298069.39	10	2380	verywellformed, poss.geological!	3
286	511164.06	6298806.81	5	2430	small, broad peak, nice	3
4	513279.8	6263860.35	10	100	shouldered peak	3
6	514620.85	6265051.43	15	180	broad peak with shoulder	3
9	516013.88	6265515.2	8	210	round peak with shoulder	3
11	518720.8	6265811.18	15	230	broad peak, shouldered	3
12	509924.16	6265813.56	7	230	round peak	3
18	510493.95	6266559.8	4	280	small, well formed	3
29	535879.39	6268062.98	10	380	shouldered peak	3
34	527984.3	6269413.28	3	470	small shouldered peak	3
41	510666.61	6271656.33	4	620	small, well formed peak	3
62	525814.82	6273764.26	15	760	well formed to sharpish	3
98	510223.34	6279321.98	4	1130	smallish rounded peak	3
108	513147.64	6280524.86	4	1210	possible. Small dipole	3
112	523127.94	6280653.12	5	1220	rounded peak	3
139	506199	6285014.3	30	1510	close proximity to a well, sharp peak	3
147	515261.66	6286200.59	4	1590	small pointed peak	3
177	511790.72	6288613.01	10	1750	well formed shouldered peak	3
178	511861.98	6288755.96	5	1760	broad peak	3
182	518156.64	6289068.31	5	1780	shouldered peak with flat top	3
200	507884.95	6262512.6	15	10	very broad, plateau	3
201	511037.93	6262509.13	4	10	broad, dirty	3
208	508140.14	6262818.56	10	30	shouldered	3
209	511471	6262960.7	5	40	shouldered	3
210	518316.4	6262957.16	7	40	broad	3
212	511573.68	6263106.64	8	50	small shoulder	3
213	509863.26	6263121.58	5	50	small peak	3
214	518466.2	6263259.9	10	60	broad peak with shoulder	3
215	515649.7	6263258.4	5	60	sharp peak, with shoulder	3
218	518425.72	6263409.39	10	70	broad peak	3
220	513214.85	6263730.16	8	90	small peak with shoulder	3
223	513314.44	6263988.18	15	110	shouldered	3
227	513384.75	6264174.1	10	120	very steep shoulder	3
230	510924.15	6264310.39	8	130	broad	3
236	517618.66	6264755.14	5	160	round peak, small	3
237	518745.72	6264926.22	7	170	round peak	3
240	514690.46	6265214.14	8	190	rounded peak with shoulder	3
245	510040.87	6265657.2	8	220	jagged peak	3
248	517690	6266113.06	4	250	small, well formed, small shoulder	3
262	518442.56	6292663.48	5	2020	close proximity to a well, small, well form	3

**APPENDIX 4 - AIRBORNE GEOPHYSICAL ANOMALIES**  
**GRIZZLY DIAMONDS LTD.**  
**WHITE BEAR PROPERTY**

TARGET ID	UTM (EAST)	UTM (NORTH)	Amp (nT)	LINE	COMMENTS	PRIORITY
267	507425.82	6293567.93	5	2080	shouldered, small, sharp peak	3
269	526276.22	6294007.4	5	2110	close proximity to a well, steeply shouldered	3
270	523297.2	6294612	5	2150	close proximity to a well, shouldered peak	3
271	521101.2	6295663.68	8	2220	shoulder steep, low vis on airborne	3
273	517478	6295813.85	5	2230	well formed, low vis. On airborne	3
274	521123.62	6296108.48	5	2250	steeply shouldered peak	3
275	518893.85	6296408.33	5	2270	steeply shouldered peak	3
288	516453.6	6298963.2	4	2440	small, well formed peak	3
293	514684.36	6299415.12	8	2470	very broad peak	3
298	521239.84	6299864.68	5	2500	shouldered peak not vis. On airborne	3
308	524850	6301363.2	4	2600	small, well formed peak	3
309	523473.16	6301356.98	5	2600	round, shouldered peak	3
22	510056.98	6267014.64	8	310	broad peak, poss.channel	4
24	510268.6	6267314.01	10	330	well formed, poss.channel	4
25	510376.06	6267465.64	10	340	well formed, poss.channel	4
27	510920.8	6267932.8	10	370	shouldered peak, poss.channel	4
31	510881.51	6268065.25	5	380	well formed, poss.channel	4
45	522224.43	6272259.58	5	660	jagged peak, poss. Channel	4
47	522281.04	6272404.4	5	670	small well formed, channel system	4
54	517820.69	6273314.77	7	730	broad,plateau, poss. Channel	4
55	515537.17	6273460.08	5	740	broad peak, poss.channel	4
56	517759.4	6273464.08	5	740	well formed peak, poss. Channel	4
57	534155.32	6273445.56	7	740	likely channels	4
58	509455.92	6273631.43	7	750	well formed, poss. Culture	4
60	517888.78	6273614.71	5	750	well formed, poss. Channel	4
63	534743.52	6273905.74	5	770	well formed, poss. Channel	4
64	515072.56	6273912.38	7	770	roundish peak, maybe channel	4
65	533718.8	6274059.48	5	780	small well formed, channel system	4
69	533722.7	6274510.92	5	810	probable channel system	4
78	514272.95	6276603.6	5	950	small, possibly channel	4
82	523364.05	6277504.72	5	1010	smallish, rounded peak, poss.channel	4
87	524776.82	6277960.46	5	1040	jagged peak, poss. Channel	4
89	522902.08	6278254.54	7	1060	well formed peak, poss. Channel	4
90	512006.79	6278410.16	5	1070	rounded peak, channel?	4
95	511537.3	6279164.68	7	1120	rounded peak, channel?	4
99	512455.89	6279467.41	6	1140	rounded peak, channel?	4
106	521232.1	6280366.2	10	1200	jagged peak, poss. Channel	4
109	521651.04	6280510.88	5	1210	jagged peak, likely channel	4
110	522612.4	6280509.57	8	1210	well formed peak, poss. Channel	4
116	536650.24	6281411.5	4	1270	small, well developed, poss.channel	4
118	521609.3	6282023.8	5	1310	rounded peak, poss. Channel system	4
123	520860.08	6283216.06	5	1390	jagged peak, poss. Channel	4
129	514303.26	6283808.49	5	1430	rounded peak, poss. Channel system	4
131	514594.71	6283962.67	7	1440	probable channel system	4
134	515346.1	6284414	5	1470	rounded peak, prob channels	4
135	514532.73	6284551.5	5	1480	rounded peak, maybe a channel	4
140	515582.15	6285312.1	5	1530	probable channel system	4
151	515618.32	6286641.12	5	1620	pointed peak, poss. Channel	4
152	518207.6	6286782.5	5	1630	pointed peak, poss. Channel	4
153	515460.77	6287112.39	5	1650	well formed, likely channels	4
158	516862.84	6287402.38	5	1670	shouldered peak ,poss. Channels	4
159	525805.18	6287405.44	5	1670	shouldered peak ,poss. Channels	4
167	518298.14	6287868.96	5	1700	jaggy peak, likely channels	4
191	521720.17	6291004.98	5	1910	jagged peaks, poss. Channels	4
193	521629.6	6291315.42	5	1930	small, well formed,poss. Channels	4
202	517958.24	6262666.99	8	20	shouldered,on weak linear	4

**APPENDIX 4 - AIRBORNE GEOPHYSICAL ANOMALIES**  
**GRIZZLY DIAMONDS LTD.**  
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TARGET ID	UTM (EAST)	UTM (NORTH)	Amp (nT)	LINE	COMMENTS	PRIORITY
205	518167.9	6262816.3	5	30	shouldered, on weak linear	4
246	509409.76	6265964.9	4	240	small,well formed peak, channel?	4
249	509436.9	6266259.1	5	260	well formed, channel?	4
251	510060.6	6266568.52	5	280	round peak, channel system	4
256	509993.85	6266864.01	7	300	round peak, poss. Channel	4
258	510079.53	6267169.62	10	320	broad plateau, poss.channel	4
268	504594.31	6293853.73	5	2100	well formed peak, likely channels	4
272	517562.55	6295656.15	5	2220	rounded peak, poss. Channel system	4
277	508592.23	6296710.45	4	2290	small, well formed peak, poss.chan	4
278	508212.5	6297006.5	4	2310	small, well formed peak, poss.chan	4
10	518593.1	6265662.5	10	220	round, broad peak on linear	5
13	518754.52	6265955.59	7	240	shouldered peak,weak linear	5
14	519239.76	6266264.36	8	260	well formed, on weak linear	5
15	519237.1	6266407.15	7	270	shouldered, on linear	5
17	519059.08	6266570.98	5	280	very broad peak, on linear	5
21	518981.9	6267008.05	50	310	broad, pointed peak, on linear	5
84	518212.86	6277663.31	5	1020	shouldered peak, on strong linear	5
96	528513.96	6279305.56	8	1130	very broad peak, on linear	5
100	511971.49	6279614.95	5	1150	shouldered round peak on linear	5
107	509310.16	6280365.76	5	1200	shouldered peak on linear	5
113	523717	6280819.6	7	1231	well formed peak on linear	5
121	516637.56	6282465.21	15	1340	well developed peak on linear	5
126	522175.49	6283515.73	5	1410	pointed peak, on linear	5
137	514649.1	6284712.8	5	1490	broad peak, on weak linear	5
141	517651.72	6285598.45	20	1550	sharp peak on strong linear,culture	5
155	516819.81	6287261.72	5	1660	shouldered on strong linear	5
156	518195.73	6287260.81	5	1660	jagged peak on linear	5
161	518239.3	6287552.34	12	1680	broad, plateau, on linear	5
162	516779.7	6287558.16	7	1680	rounded peak on strong linear	5
163	512804.5	6287718.3	10	1690	jagged peak on linear	5
164	516667	6287708.66	5	1690	rounded peak on strong linear	5
165	518353.8	6287712.6	10	1690	well formed peak on linear	5
168	512728.51	6287865.07	8	1700	rounded peak on strong linear	5
170	516293.18	6288010.28	10	1710	shouldered peak on linear	5
175	516532.38	6288459.28	10	1740	shouldered peak, 2liner, linear?	5
176	516549.19	6288609.5	10	1750	shouldered peak, 2liner, linear?	5
180	516470.36	6288763.62	8	1760	rounded, shouldered peak on linear	5
194	519994	6291466.18	5	1940	smaller peak on linear	5
221	518446.22	6263697.24	10	90	broad peak on linear	5
222	518558.82	6263854.98	10	100	broad peak on linear	5
224	517302.13	6264009.41	5	110	sharp, on weak linear	5
225	518667.83	6264005.13	8	110	broad, on linear	5
226	518767.36	6264161.5	10	120	broad, on linear	5
228	518846.48	6264309.73	7	130	broad, on linear	5
242	515994.2	6265360.1	7	200	round peak with shoulder,on linear	5
247	519271.35	6266116.9	8	250	pointy,shouldered peak,weak linear	5
263	518734.66	6293110.94	5	2050	well formed, nice, on wk linear	5
276	525405.28	6296712.2	5	2290	shouldered peak on weak linear	5
280	511472.86	6298063.72	5	2380	well formed peak on linear	5
283	511383.94	6298205.24	5	2390	pointed peak on linear	5
287	511681.47	6298956.05	5	2440	shouldered peak on linear	5
289	525243.34	6299123.68	7	2450	steeply shouldered on str. Linear	5
290	525321.46	6299261.92	5	2460	steeply shouldered on str. Linear	5
305	510616.94	6300458.74	3	2540	small, well formed, on wk. Linear	5
306	523987.96	6300910.48	5	2570	broad peak on wk.linear	5
307	523880.72	6301059.7	5	2580	broad peak on wk.linear	5

**APPENDIX 4 - AIRBORNE GEOPHYSICAL ANOMALIES**  
**GRIZZLY DIAMONDS LTD.**  
**WHITE BEAR PROPERTY**

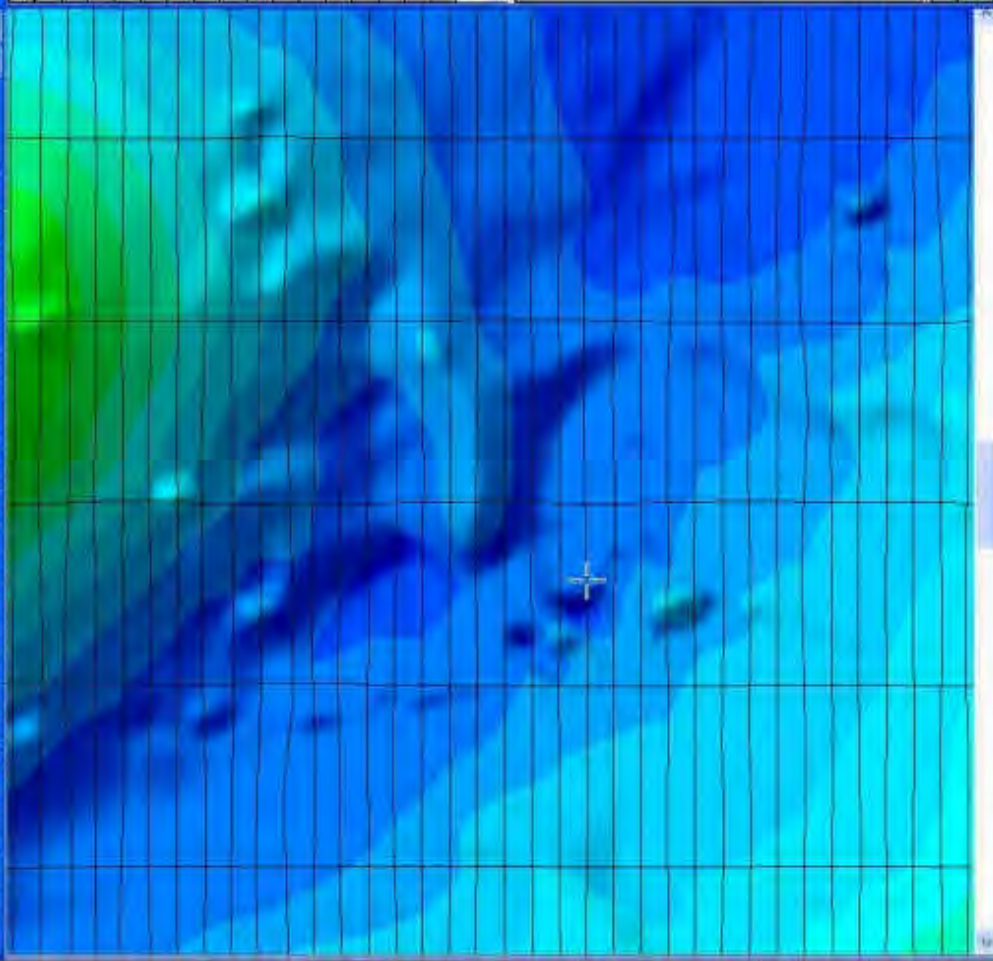
TARGET ID	UTM (EAST)	UTM (NORTH)	Amp (nT)	LINE	COMMENTS	PRIORITY
7	517091.63	6265209.83	15	190	right by pipeline, probable cause of anoma	6
23	517881.2	6267156.64	20	320	sharp peak, culture	6
30	516527.02	6268063.72	10	380	pipeline	6
32	516657.08	6268653.8	15	420	pipeline	6
33	516525.48	6269249.8	8	460	pipeline	6
39	516702.26	6270610.11	5	550	pipeline	6
42	516615.8	6271653.24	5	620	pipeline	6
46	516791.9	6272256.92	8	660	pipeline	6
48	516805.9	6272557.4	15	680	broad, pipeline	6
49	516707.18	6272696.72	8	690	pipeline, yet again	6
50	535958.26	6272863.18	10	700	right by a well, probable cause of anoma	6
52	516817.53	6273012.71	8	710	pipeline	6
59	516716.98	6273613	8	750	pipeline	6
67	516868.16	6274212.1	7	790	broad peak, probable culture	6
70	516704.79	6274514.01	5	810	pipeline	6
71	517120	6274658.75	10	820	probable culture	6
72	516901.91	6274820.44	8	830	probable culture	6
74	516622.48	6275562.58	8	880	likely pipeline	6
76	508927.08	6276303.01	5	930	right by a well, probable cause of anoma	6
79	532531.9	6276763.9	15	960	right by a well, probable cause of anoma	6
80	516608.69	6276911.24	3	970	right by pipeline, probable cause of anoma	6
83	516603.8	6277651	15	1020	maybe mag low, probable pipeline influe	6
86	516720.58	6277813.36	10	1030	pipeline	6
88	516592.52	6277965.6	7	1040	likely pipeline, with fake mag low?	6
93	516978.38	6278997.28	10	1110	sharp peak, likely culture	6
97	516634.27	6279310.99	7	1130	pointed peak, pipeline	6
101	526194.05	6279913.6	10	1170	right by a well, probable cause of anoma	6
102	535207.66	6279905.68	15	1170	right by a well, probable cause of anoma	6
103	516643.06	6279911.56	8	1170	pipeline	6
105	516707.21	6280065.38	20	1180	pipeline	6
117	519108.59	6281560.88	7	1281	shouldered peak, new pipeline	6
119	519364.2	6282007.32	7	1310	shouldered, pipeline	6
122	519590.5	6283053.95	7	1380	shouldered, pipeline	6
124	516632.8	6283361.6	5	1400	shouldered, chan or culture	6
127	516724.9	6283502.7	20	1410	right by pipeline, probable cause of anoma	6
136	516779.15	6284563.5	5	1480	likely culture	6
138	520364.94	6284862.56	25	1500	very sharp peak, culture.	6
142	517855.1	6285910.8	20	1570	sharp peak, culture	6
143	526905.58	6286065.94	15	1580	sharp peak, likely culture	6
144	517673.42	6286065.38	5	1580	broad peak, probable pipeline	6
146	517929	6286225.8	7	1590	right by pipeline, probable cause of anoma	6
149	517631.45	6286521.8	5	1610	jagged peak, culture	6
150	518278.01	6286663.58	5	1620	pointed peak, likely culture	6
154	500297.37	6287263.67	8	1660	right by a well, probable cause of anoma	6
157	518173.54	6287420.68	10	1670	broad peak on linear, culture	6
160	522506.26	6287558.54	5	1680	right by a well, probable cause of anoma	6
171	513101.42	6288013.86	5	1710	multiple peaks, likely culture	6
173	513902.4	6288309.89	10	1730	big mess of culture	6
179	513774.65	6288762.27	15	1760	sharp peak, very culture	6
183	514116.46	6289214.4	10	1790	pipeline	6
184	514153.78	6289367.99	10	1800	pipeline	6
185	514268	6289511.48	8	1810	pipeline	6
187	514501.84	6290116.68	10	1850	shouldered peak, pipeline	6
188	514500.63	6290261.19	8	1860	more pipeline	6
190	514920.4	6290712.6	5	1890	jaggy, pipeline	6
192	520546.7	6291152.57	8	1920	new linear likely culture,	6

**APPENDIX 4 - AIRBORNE GEOPHYSICAL ANOMALIES**  
**GRIZZLY DIAMONDS LTD.**  
**WHITE BEAR PROPERTY**

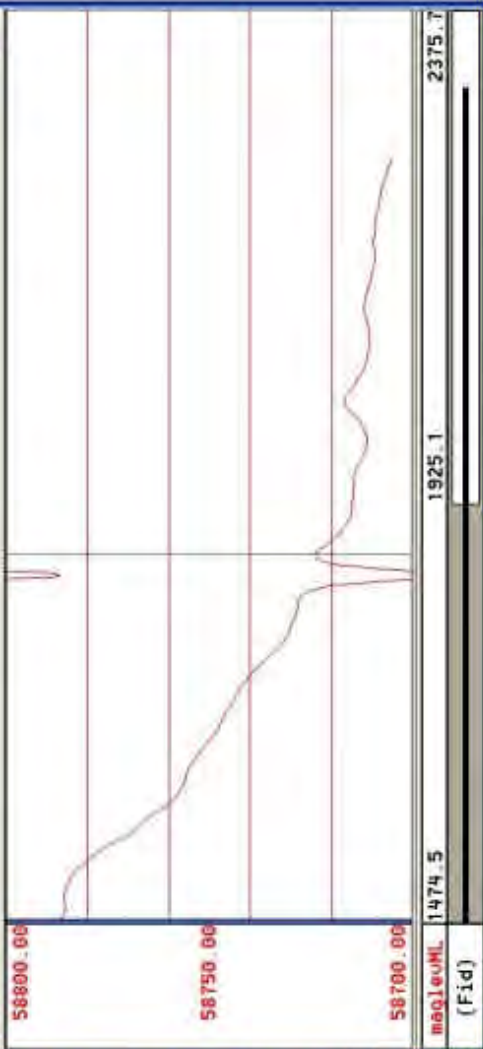
TARGET ID	UTM (EAST)	UTM (NORTH)	Amp (nT)	LINE	COMMENTS	PRIORITY
197	508081.25	6291762.7	20	1960	v. shrp peak on linear, likely culture	6
199	519683.36	6292211.73	50	1990	v. sharp peak, culture	6
203	516377.84	6262660.17	5	20	sharp, on weak linear	6
206	516471.55	6262811.4	3	30	sharp, on weak linear	6
211	518442.7	6263110.86	8	50	shouldered on linear	6
216	510066	6263260.48	10	60	right by a well, probable cause of anomaly	6
217	519547.06	6263409.02	40	70	ultra sharp spike, culture.	6
219	518411.55	6263561.95	10	80	round peak with shoulder, on linear	6
229	517332.69	6264318.51	10	130	right by pipeline, probable cause of anomaly	6
231	508263	6264463.48	12	140	sharp peak	6
232	512027.11	6264465.06	7	140	sharp peak	6
233	517295.14	6264465.62	40	140	very sharp peak, culture.	6
239	517115.74	6265061.72	25	180	right by pipeline, probable cause of anomaly	6
243	516873.2	6265511.6	5	210	sharp, culture	6
244	510054.18	6265515.56	10	210	broad peak, dirty	6
250	508435	6266416.42	40	270	right by a well, probable cause of anomaly	6
253	519518.98	6266707.24	35	290	very sharp, likely culture	6
255	517261.31	6266701.04	20	290	sharp peak, culture	6
257	512106.74	6267020.4	20	310	sharp peak, culture	6
259	521032	6292209.7	5	1990	fake mag low between culture?	6
264	508016.79	6293261.55	5	2060	right by a well, probable cause of anomaly	6
292	525317.37	6299418.81	5	2470	shouldered, jagged on likely culture	6
295	525518.15	6299561.39	5	2480	pointed peak on culture linear	6
296	525533.85	6299713.8	7	2490	jagged peak on cultural linear?	6
299	525750.17	6299866.89	8	2500	broad peak on culture linear	6
300	525712.25	6300018.88	8	2510	very likely culture	6
303	525905.53	6300161.81	7	2520	round peak on culture linear	6

**APPENDIX 4**

**ACTUAL SCREEN DUMPS OF PRIORITY 1 AND PRIORITY 2 MAGNETIC  
ANOMALIES ATTACHED TO HARDCOPY ONLY**



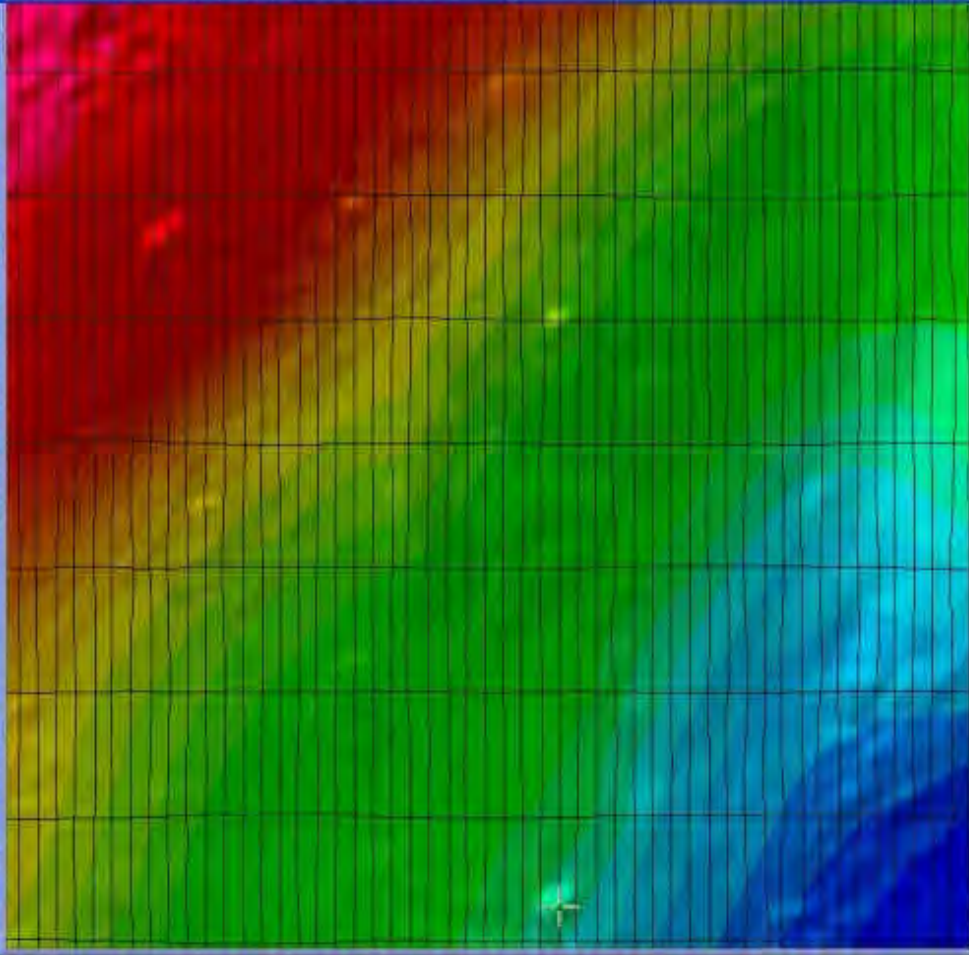
L170:2	x	y	u	v	galt	qtme	radar	sytime	diff4
1836.0	517429.22	6264907.88	633.52	64169.60	63.87	461856.00	0.0	0.0	
1837.0	517437.99	6264907.95	633.39	64169.70	64.66	461857.00	0.0	0.0	
1838.0	517446.76	6264908.10	633.26	64169.80	65.45	461858.00	0.0	0.0	
1839.0	517455.53	6264908.25	633.13	64169.90	66.25	461859.00	0.0	0.0	
1840.0	517464.30	6264908.40	633.00	64170.00	67.04	461860.00	-0.0	0.0	
1841.0	517473.06	6264908.58	632.91	64170.10	68.60	461861.00	0.0	0.0	
1842.0	517481.82	6264908.76	632.82	64170.20	70.16	461862.00	0.0	0.0	
1843.0	517490.58	6264908.94	632.73	64170.30	71.72	461863.00	0.0	0.0	
1844.0	517499.34	6264909.12	632.64	64170.40	73.28	461864.00	0.0	0.0	
1845.0	517508.10	6264909.30	632.55	64170.50	74.84	461865.00	-0.0	0.0	
1846.0	517516.86	6264909.48	632.46	64170.60	76.40	461866.00	0.0	0.0	
1847.0	517525.62	6264909.66	632.37	64170.70	77.96	461867.00	-0.0	0.0	
1848.0	517534.38	6264909.84	632.28	64170.80	79.52	461868.00	0.0	0.0	
1849.0	517543.14	6264910.02	632.19	64170.90	81.08	461869.00	0.0	0.0	
1850.0	517551.90	6264910.20	632.10	64171.00	82.64	461870.00	-0.0	0.0	
1851.0	517560.67	6264910.43	632.08	64171.10	82.91	461871.00	0.0	0.0	



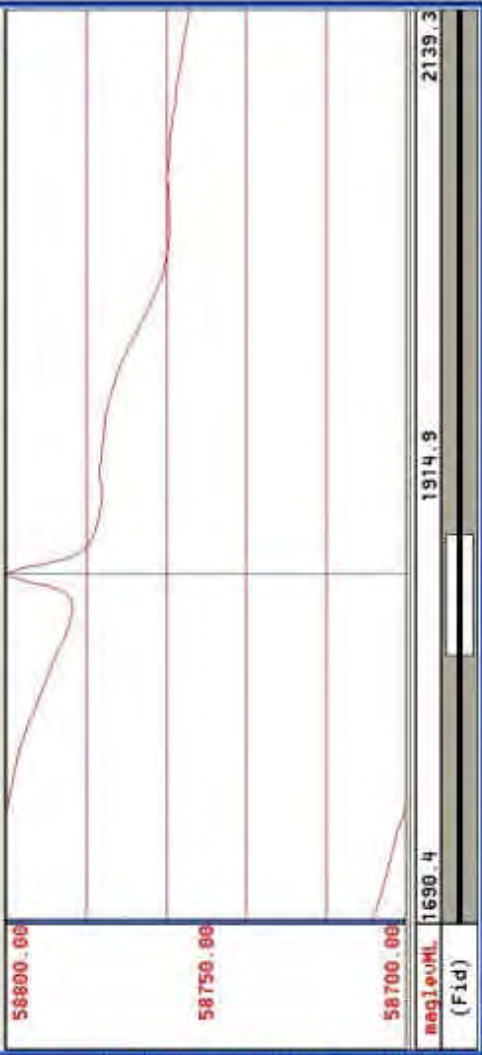






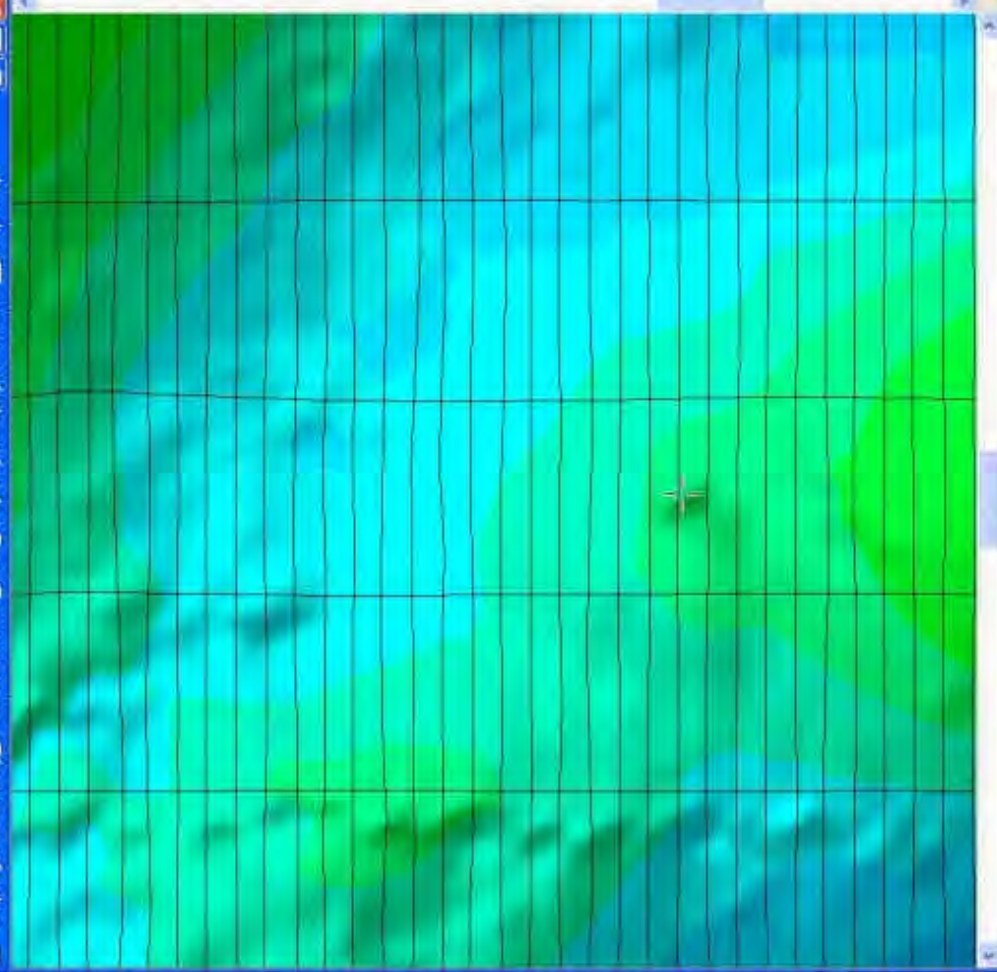


L520:3	x	y	galt	qtme	radar	sysstime	diff4
1847.0	527248.13	6270164.68	710.84	58454.70	59.07	404704.00	0.0
1848.0	527239.42	6270164.62	710.86	58454.80	60.88	404705.00	0.0
1849.0	527230.71	6270164.56	710.88	58454.90	62.70	404706.00	-0.0
1850.0	527222.00	6270164.50	710.90	58455.00	64.51	404707.00	0.0
1851.0	527213.29	6270164.47	710.92	58455.10	64.40	404708.00	0.0
1852.0	527204.58	6270164.44	710.94	58455.20	64.29	404709.00	0.0
1853.0	527195.87	6270164.41	710.96	58455.30	64.18	404710.00	-0.0
1854.0	527187.16	6270164.38	710.98	58455.40	64.07	404711.00	0.0
1855.0	527178.45	6270164.35	711.00	58455.50	63.96	404712.00	0.0
1856.0	527169.74	6270164.32	711.02	58455.60	63.85	404713.00	0.0
1857.0	527161.03	6270164.29	711.04	58455.70	63.74	404714.00	0.0
1858.0	527152.32	6270164.26	711.06	58455.80	63.63	404715.00	0.0
1859.0	527143.61	6270164.23	711.08	58455.90	63.52	404716.00	0.0
1860.0	527134.90	6270164.20	711.10	58456.00	63.41	404717.00	0.0
1861.0	527126.18	6270164.18	711.01	58456.10	63.34	404718.00	-0.0
1862.0	527117.46	6270164.16	710.92	58456.20	63.26	404719.00	0.0

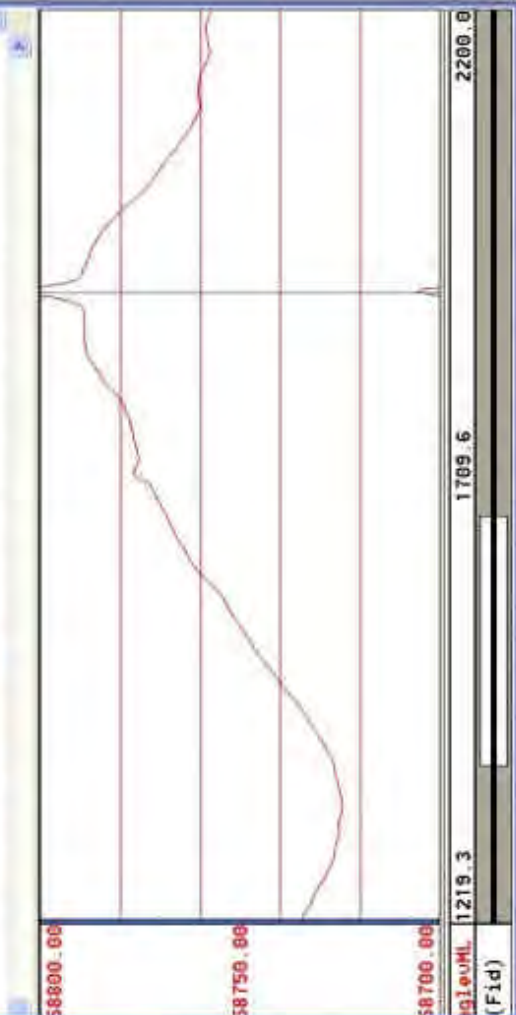


File Edit View Data Profile Map Coordinates Utility X-axis Y-axis and Mapping Data Window Help

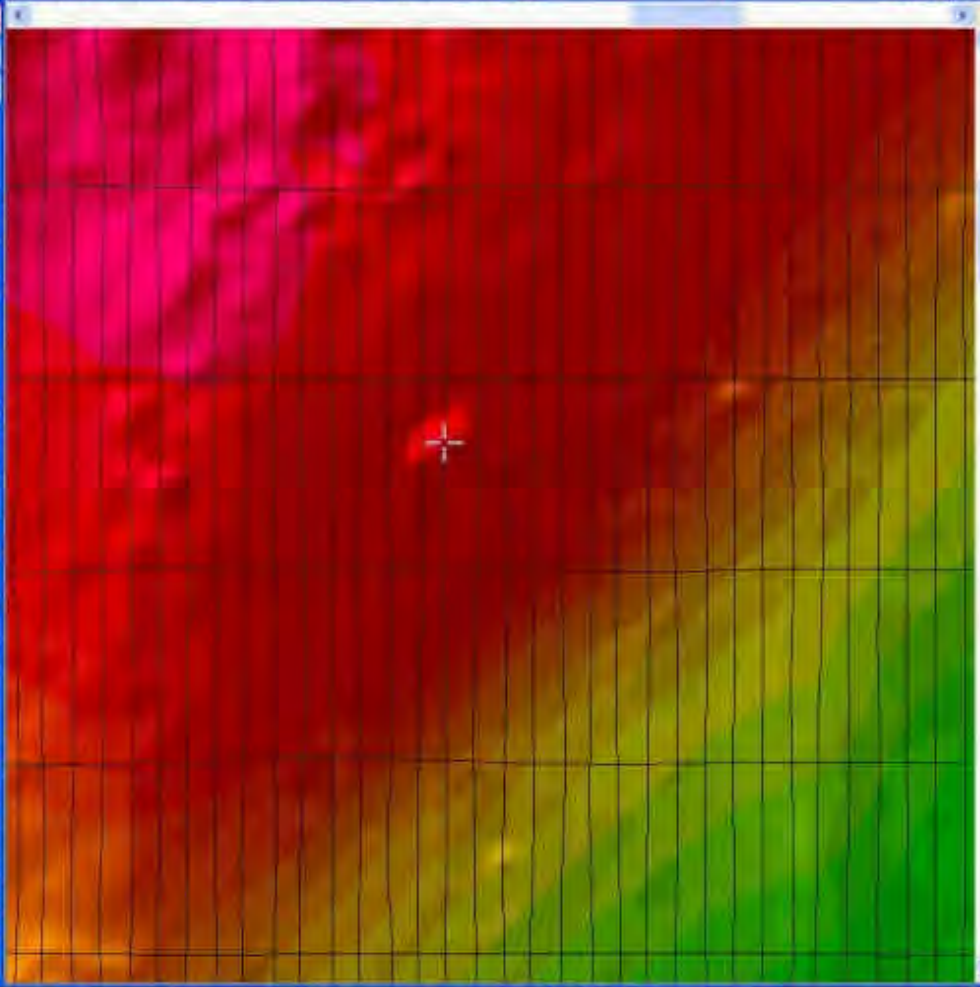
窗 口 菜 单 工 具 栏 主 菜 单 图 层 菜 单 数 据 菜 单 数 据 菜 单 数 据 菜 单



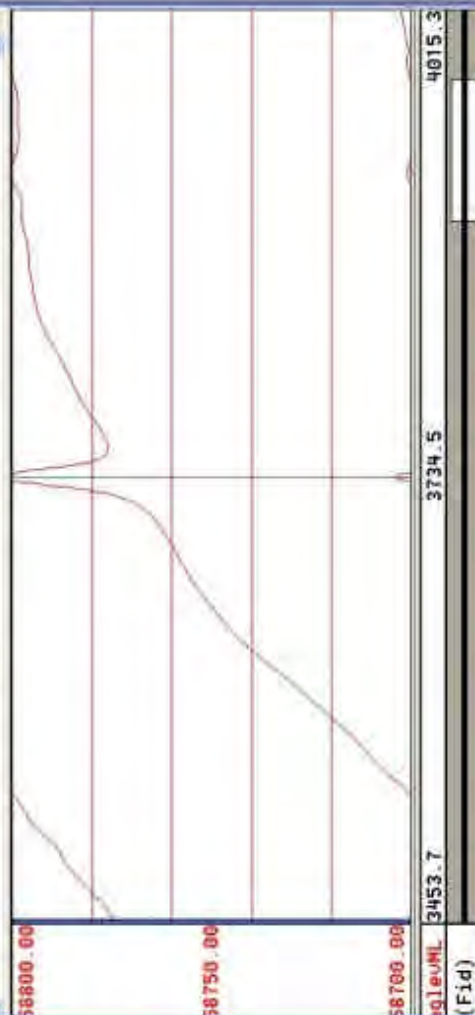
590.3	x	y	galt	qtme	radar	sysstime	diff4
1881.0	518239.13	6271216.29	672.22	61347.10	54.18	433628.00	-0.0
1882.0	518247.46	6271216.18	672.24	61347.20	55.52	433629.00	0.0
1883.0	518255.79	6271216.07	672.26	61347.30	56.85	433630.00	0.0
1884.0	518264.12	6271215.96	672.28	61347.40	58.19	433631.00	0.0
1885.0	518272.45	6271215.85	672.30	61347.50	59.52	433632.00	0.0
1886.0	518280.78	6271215.74	672.32	61347.60	60.85	433633.00	0.0
1887.0	518289.11	6271215.63	672.34	61347.70	62.19	433634.00	0.0
1888.0	518297.44	6271215.52	672.36	61347.80	63.52	433635.00	0.0
1889.0	518305.77	6271215.41	672.38	61347.90	64.86	433636.00	-0.0
1890.0	518314.10	6271215.30	672.40	61348.00	66.19	433637.00	0.0
1891.0	518322.43	6271215.18	672.40	61348.10	65.53	433638.00	0.0
1892.0	518330.76	6271215.06	672.40	61348.20	64.87	433639.00	0.0
1893.0	518339.09	6271214.94	672.40	61348.30	64.20	433640.00	0.0
1894.0	518347.42	6271214.82	672.40	61348.40	63.54	433641.00	0.0
1895.0	518355.75	6271214.70	672.40	61348.50	62.88	433642.00	-0.0
1896.0	518364.08	6271214.58	672.40	61348.60	62.22	433643.00	0.0

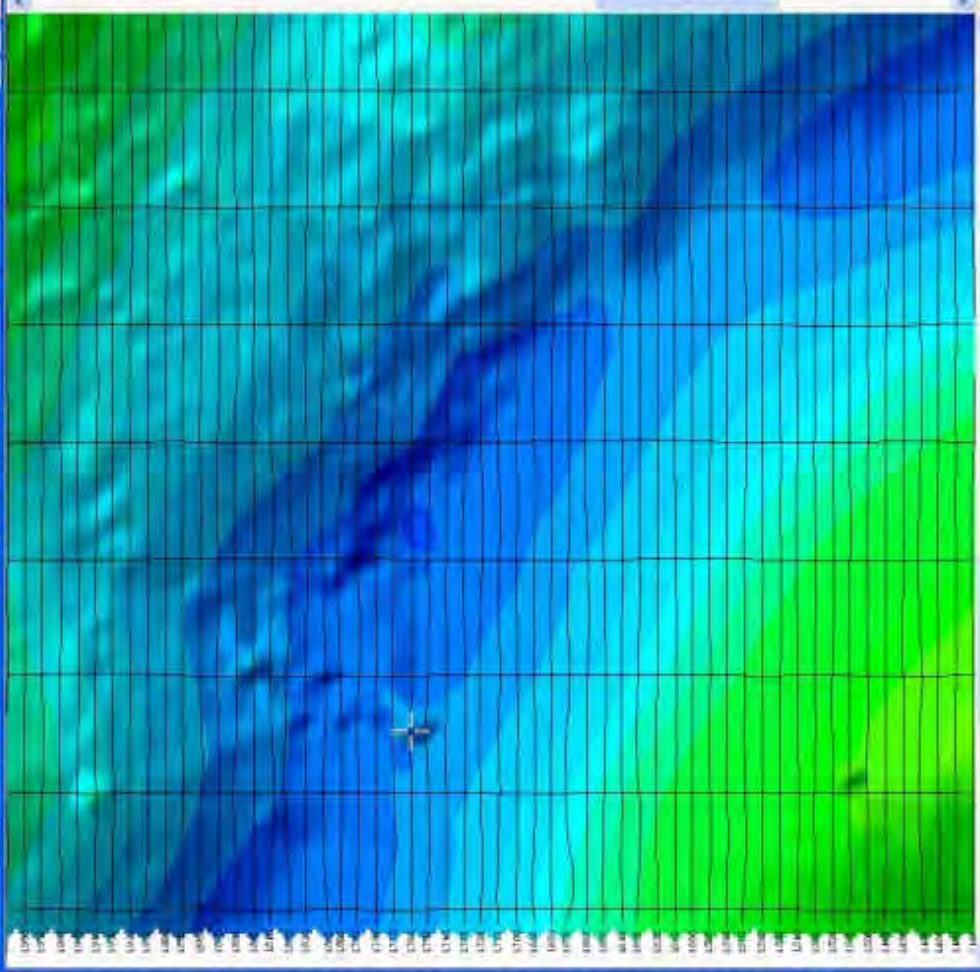


Navigation toolbar with icons for back, forward, home, search, and other standard map controls.



	730.3	x	y	galt	gtime	radar	sysstime	diff4
	3716.0	532430.72	6273323.58	711.14	67667.60	69.22	496833.00	0.0
	3717.0	532438.99	6273323.46	711.23	67667.70	70.94	496834.00	0.0
	3718.0	532447.26	6273323.34	711.32	67667.80	72.67	496835.00	0.0
	3719.0	532455.53	6273323.22	711.41	67667.90	74.39	496836.00	0.0
	3720.0	532463.80	6273323.10	711.50	67668.00	76.11	496837.00	0.0
	3721.0	532472.05	6273322.99	711.65	67668.10	75.83	496838.00	0.0
	3722.0	532480.30	6273322.88	711.80	67668.20	75.54	496839.00	0.0
	3723.0	532488.55	6273322.77	711.95	67668.30	75.26	496840.00	0.0
	3724.0	532496.80	6273322.66	712.10	67668.40	74.97	496841.00	-0.0
	3725.0	532505.05	6273322.55	712.25	67668.50	74.69	496842.00	0.0
	3726.0	532513.30	6273322.44	712.40	67668.60	74.41	496843.00	0.0
	3727.0	532521.55	6273322.33	712.55	67668.70	74.12	496844.00	-0.0
	3728.0	532529.80	6273322.22	712.70	67668.80	73.84	496845.00	0.0
	3729.0	532538.05	6273322.11	712.85	67668.90	73.55	496846.00	-0.0
	3730.0	532546.30	6273322.00	713.00	67669.00	73.27	496847.00	0.0
	3731.0	532554.56	6273321.87	712.98	67669.10	72.15	496848.00	0.0
	3732.0	532562.82	6273321.74	712.96	67669.20	71.02	496849.00	0.0





760.3	x	y	galt	gtime	radar	systime	diff4
3783.0	509504.07	6273766.81	671.01	68969.30	65.83	509850.00	0.0
3784.0	509495.36	6273767.08	670.78	68969.40	66.66	509851.00	-0.0
3785.0	509486.65	6273767.35	670.55	68969.50	67.48	509852.00	0.0
3786.0	509477.94	6273767.62	670.32	68969.60	68.31	509853.00	0.0
3787.0	509469.23	6273767.89	670.09	68969.70	69.14	509854.00	0.0
3788.0	509460.52	6273768.16	669.86	68969.80	69.97	509855.00	-0.0
3789.0	509451.81	6273768.43	669.63	68969.90	70.79	509856.00	0.0
3790.0	509443.10	6273768.70	669.40	68970.00	71.62	509857.00	0.0
3791.0	509434.37	6273768.95	669.22	68970.10	70.39	509858.00	0.0
3792.0	509425.64	6273769.00	669.04	68970.20	69.17	509859.00	-0.0
3793.0	509416.91	6273769.15	668.86	68970.30	67.94	509860.00	0.0
3794.0	509408.18	6273769.30	668.68	68970.40	66.71	509861.00	-0.0
3795.0	509399.45	6273769.45	668.50	68970.50	65.48	509862.00	0.0
3796.0	509390.72	6273769.60	668.32	68970.60	64.26	509863.00	0.0
3797.0	509381.99	6273769.75	668.14	68970.70	63.03	509864.00	0.0
3798.0	509373.26	6273769.90	667.96	68970.80	61.80	509865.00	0.0
3799.0	509364.53	6273770.05	667.78	68970.90	60.58	509866.00	0.0

58800.00

58750.00

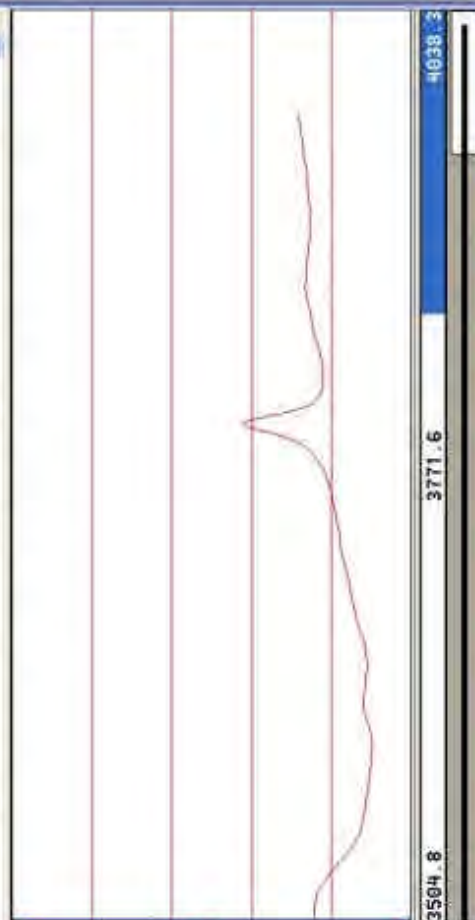
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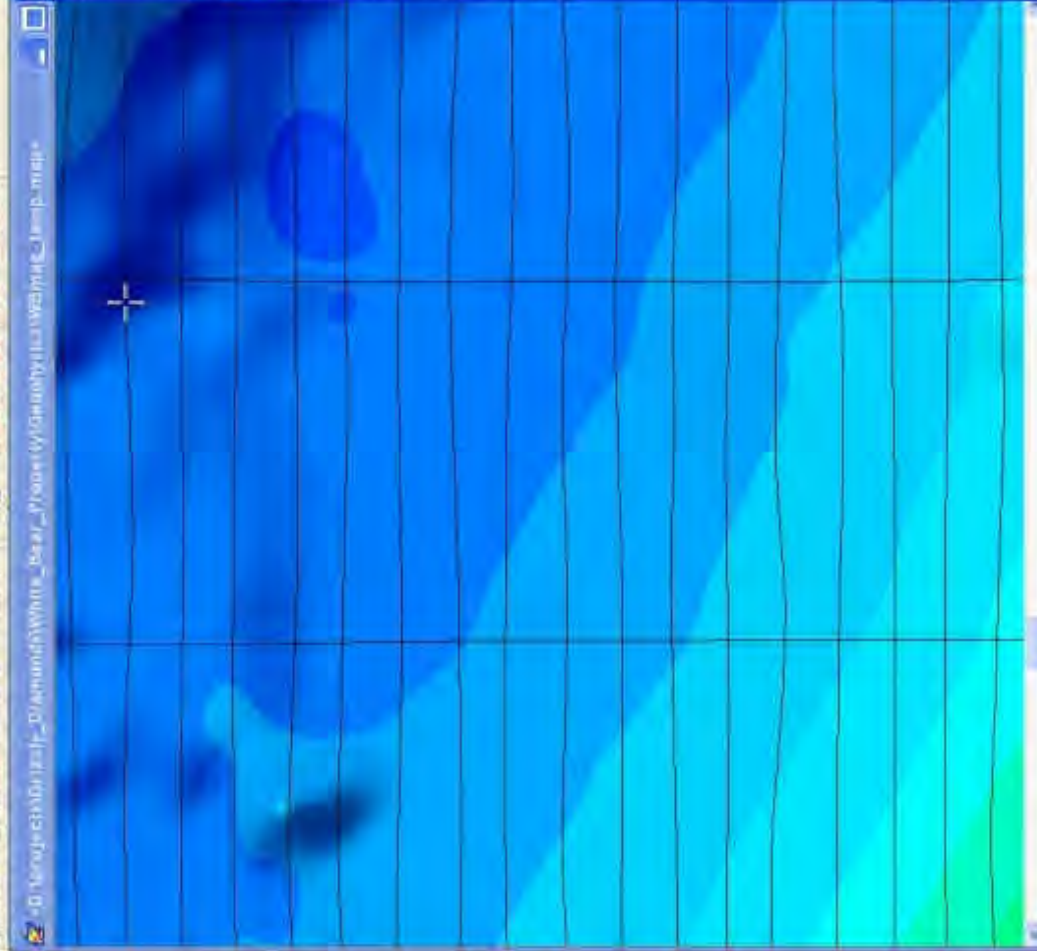
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(Fid)

3771.6

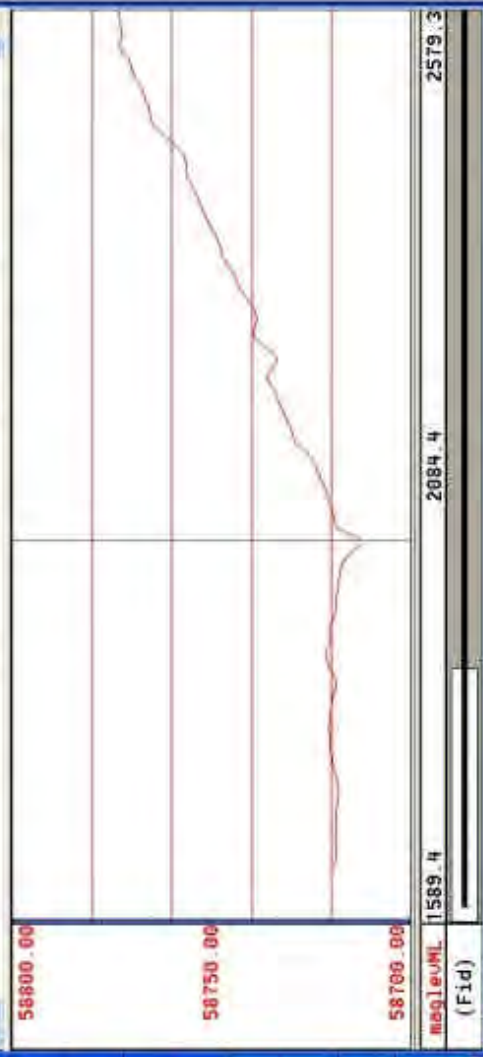
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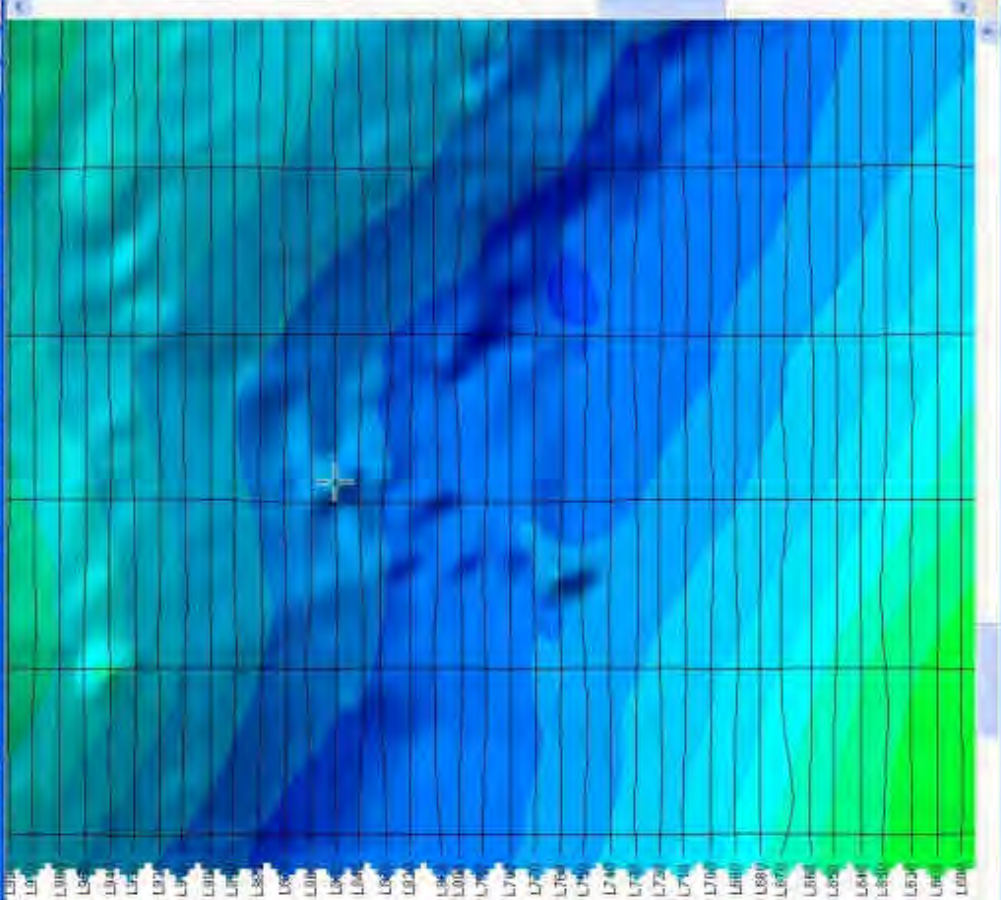


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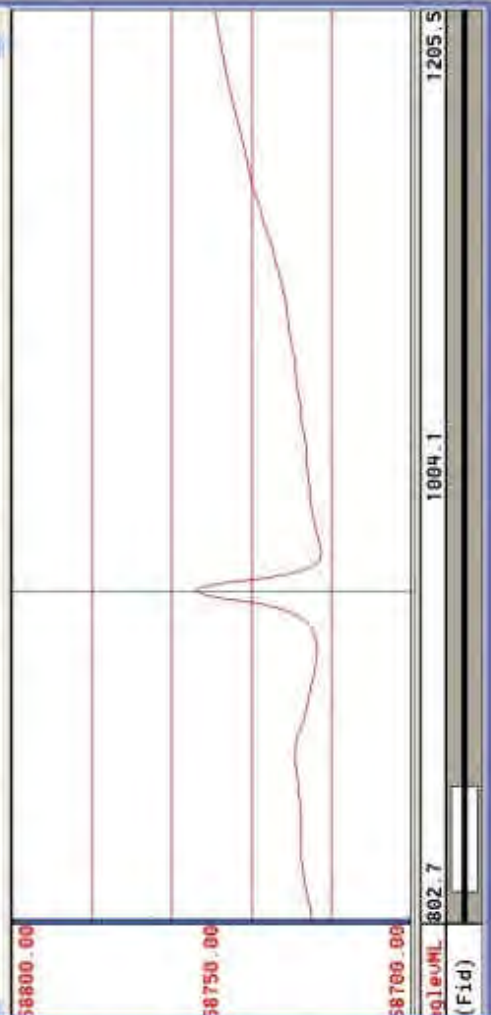
✓ L790.3	x	y	galt	gtime	radar	gustime	diff4
1997.0	510739.38	6274216.33	665.60	70050.70	50.87	520664.00	0.0
1998.0	510747.92	6274216.62	665.60	70050.80	50.46	520665.00	0.0
1999.0	510756.46	6274216.91	665.60	70050.90	50.06	520666.00	0.0
2000.0	510765.00	6274217.20	665.60	70051.00	49.65	520667.00	0.0
2001.0	510773.52	6274217.39	665.76	70051.10	49.47	520668.00	0.0
2002.0	510782.04	6274217.58	665.92	70051.20	49.28	520669.00	0.0
2003.0	510790.56	6274217.77	666.08	70051.30	49.10	520670.00	0.0
2004.0	510799.08	6274217.96	666.24	70051.40	48.92	520671.00	0.0
2005.0	510807.60	6274218.15	666.40	70051.50	48.73	520672.00	0.0
2006.0	510816.12	6274218.34	666.56	70051.60	48.55	520673.00	0.0
2007.0	510824.64	6274218.53	666.72	70051.70	48.37	520674.00	-0.0
2008.0	510833.16	6274218.72	666.88	70051.80	48.19	520675.00	0.0
2009.0	510841.68	6274218.91	667.04	70051.90	48.00	520676.00	0.0
2010.0	510850.20	6274219.10	667.20	70052.00	47.82	520677.00	0.0
2011.0	510858.71	6274219.21	667.36	70052.10	48.19	520678.00	-0.0
2012.0	510867.22	6274219.32	667.52	70052.20	48.55	520679.00	0.0
2013.0	510875.73	6274219.43	667.68	70052.30	48.92	520680.00	0.0

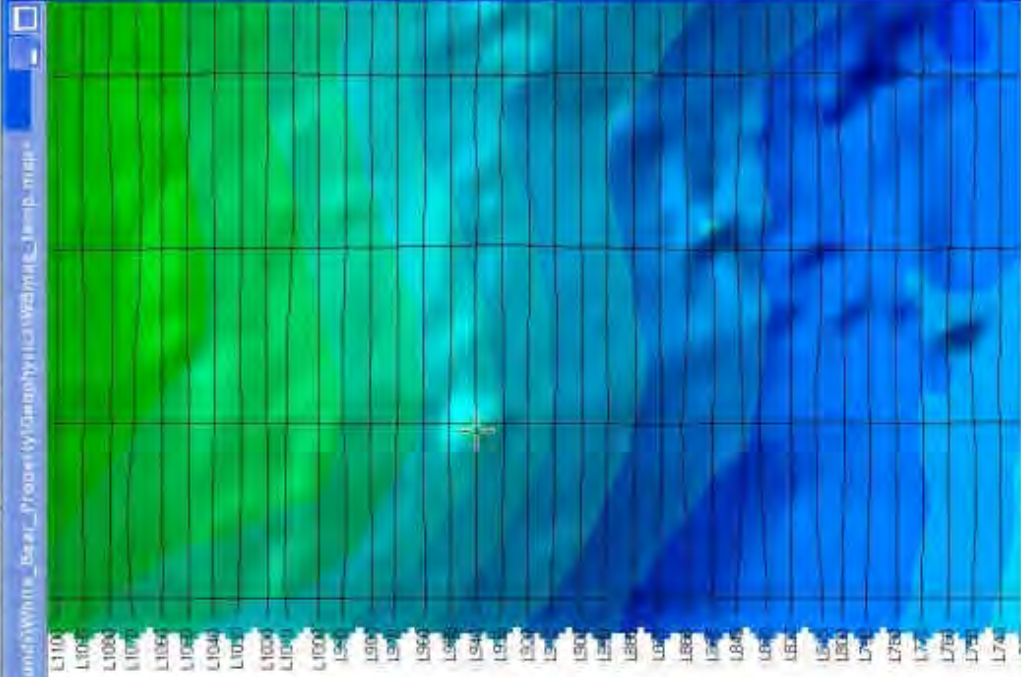


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For help, press F1  
start  
Case montaj - Windows Mode  
Date 511255.041 627408.26  
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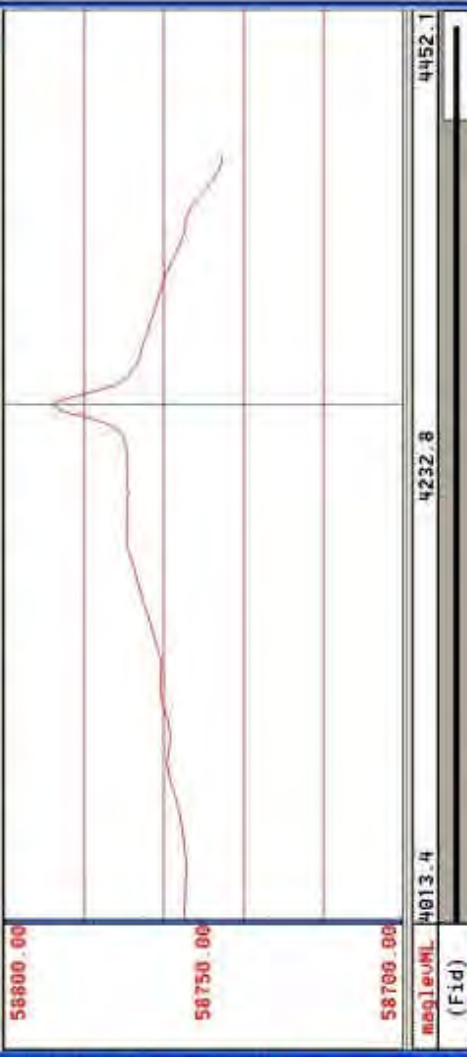


	850.3	x	y	galt	gtime	radar	sysstime	diff4
L101	945.0	509950.40	6275111.90	668.90	72668.50	61.03	546842.00	-0.0
L102	946.0	509958.88	6275111.98	668.68	72668.60	60.22	546843.00	0.0
L103	947.0	509967.36	6275112.06	668.46	72668.70	59.41	546844.00	-0.0
L104	948.0	509975.84	6275112.14	668.24	72668.80	58.59	546845.00	0.0
L105	949.0	509984.32	6275112.22	668.02	72668.90	57.78	546846.00	0.0
L106	950.0	509992.80	6275112.30	667.80	72669.00	56.97	546847.00	-0.0
L107	951.0	510001.30	6275112.29	667.94	72669.10	56.68	546848.00	-0.0
L108	952.0	510009.80	6275112.28	668.08	72669.20	56.39	546849.00	0.0
L109	953.0	510018.30	6275112.27	668.22	72669.30	56.10	546850.00	-0.0
L110	954.0	510026.80	6275112.26	668.36	72669.40	55.81	546851.00	0.0
L111	955.0	510035.30	6275112.25	668.50	72669.50	55.52	546852.00	0.0
L112	956.0	510043.80	6275112.24	668.64	72669.60	55.23	546853.00	0.0
L113	957.0	510052.30	6275112.23	668.78	72669.70	54.94	546854.00	0.0
L114	958.0	510060.80	6275112.22	668.92	72669.80	54.65	546855.00	0.0
L115	959.0	510069.30	6275112.21	669.06	72669.90	54.36	546856.00	-0.0
L116	960.0	510077.80	6275112.20	669.20	72670.00	54.07	546857.00	0.0
L117	961.0	510086.28	6275112.20	669.44	72670.10	54.72	546858.00	-0.0





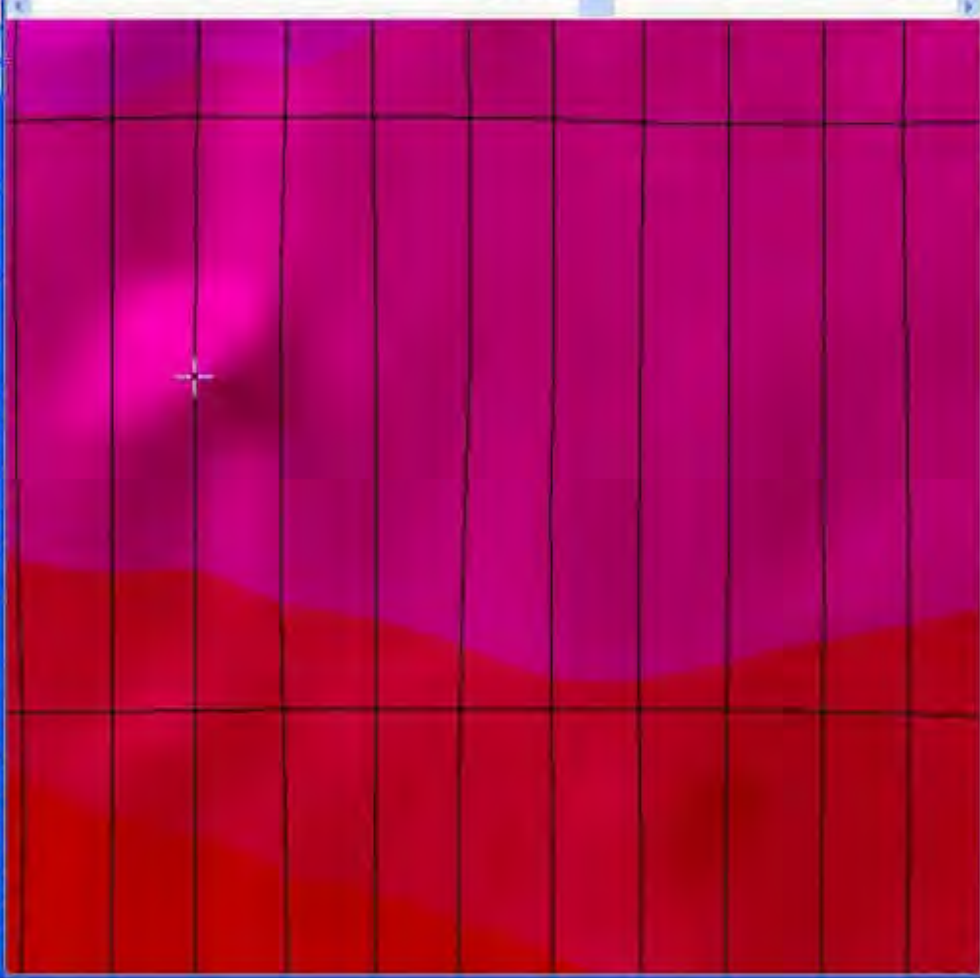
L	x	y	galt	gtime	radar	sysstime	diff4
L1940.4	508939.96	6276462.16	651.31	59792.70	53.16	418086.00	0.0
L1941	508931.44	6276462.04	651.04	59792.80	53.96	418087.00	0.0
L1942	508922.92	6276461.92	650.77	59792.90	52.95	418088.00	-0.0
L1943	508914.40	6276461.80	650.50	59793.00	52.85	418089.00	-0.0
L1944	508905.87	6276461.72	650.37	59793.10	52.31	418090.00	0.0
L1945	508897.34	6276461.64	650.24	59793.20	51.78	418091.00	-0.0
L1946	508888.81	6276461.56	650.11	59793.30	51.24	418092.00	0.0
L1947	508880.28	6276461.48	649.98	59793.40	50.70	418093.00	-0.0
L1948	508871.75	6276461.40	649.85	59793.50	50.16	418094.00	0.0
L1949	508863.22	6276461.32	649.72	59793.60	49.63	418095.00	-0.0
L1950	508854.69	6276461.24	649.59	59793.70	49.09	418096.00	0.0
L1951	508846.16	6276461.16	649.46	59793.80	48.55	418097.00	-0.0
L1952	508837.63	6276461.08	649.33	59793.90	48.02	418098.00	0.0
L1953	508829.10	6276461.00	649.20	59794.00	47.48	418099.00	-0.0
L1954	508820.58	6276460.90	649.24	59794.10	47.32	418100.00	0.0
L1955	508812.06	6276460.80	649.28	59794.20	47.17	418101.00	-0.0
L1956	508803.54	6276460.70	649.32	59794.30	47.01	418102.00	0.0



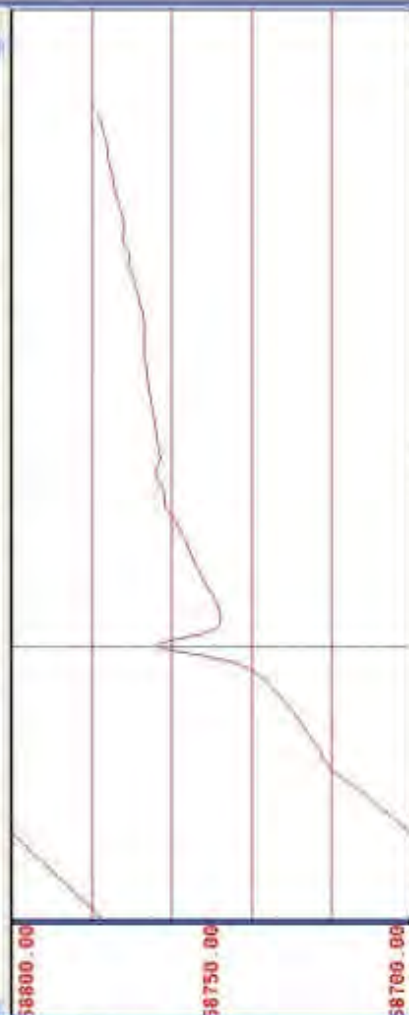
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4232.8 4452.1



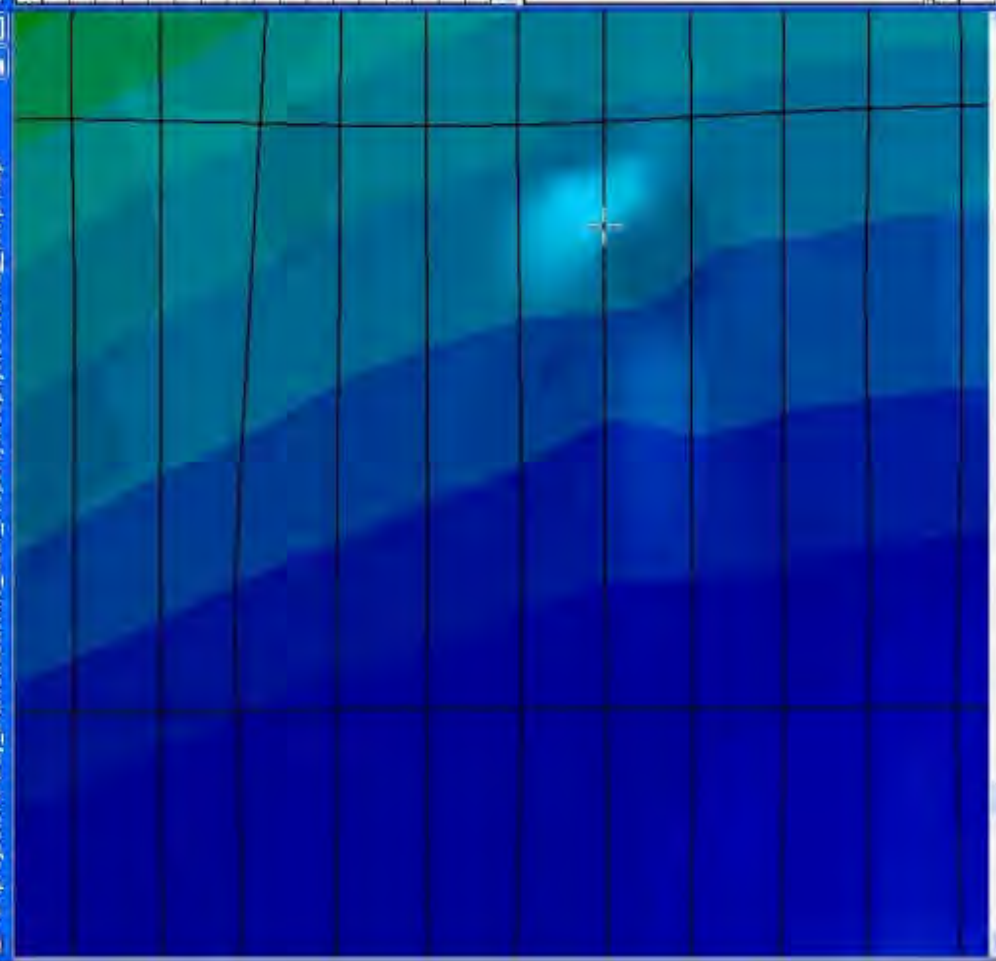


	1030.4	x	y	galt	gtime	radar	systime	diff4
	3688.0	534303.88	6277817.72	739.50	63569.80	61.97	455857.00	0.0
	3689.0	534312.64	6277817.71	739.45	63569.90	63.27	455858.00	-0.0
	3690.0	534321.40	6277817.70	739.40	63570.00	64.57	455859.00	-0.0
	3691.0	534330.15	6277817.67	739.34	63570.10	64.43	455860.00	0.0
	3692.0	534338.90	6277817.64	739.28	63570.20	64.29	455861.00	-0.0
	3693.0	534347.65	6277817.61	739.22	63570.30	64.15	455862.00	0.0
	3694.0	534356.40	6277817.58	739.16	63570.40	64.01	455863.00	0.0
	3695.0	534365.15	6277817.55	739.10	63570.50	63.87	455864.00	-0.0
	3696.0	534373.90	6277817.52	739.04	63570.60	63.73	455865.00	0.0
	3697.0	534382.65	6277817.49	738.98	63570.70	63.59	455866.00	-0.0
	3698.0	534391.40	6277817.46	738.92	63570.80	63.45	455867.00	0.0
	3699.0	534400.15	6277817.43	738.86	63570.90	63.31	455868.00	-0.0
	3700.0	534408.90	6277817.40	738.80	63571.00	63.17	455869.00	0.0
	3701.0	534417.65	6277817.36	738.84	63571.10	61.45	455870.00	-0.0
	3702.0	534426.40	6277817.32	738.88	63571.20	59.73	455871.00	0.0
	3703.0	534435.15	6277817.28	738.92	63571.30	58.01	455872.00	0.0
	3704.0	534443.90	6277817.24	738.96	63571.40	56.29	455873.00	0.0

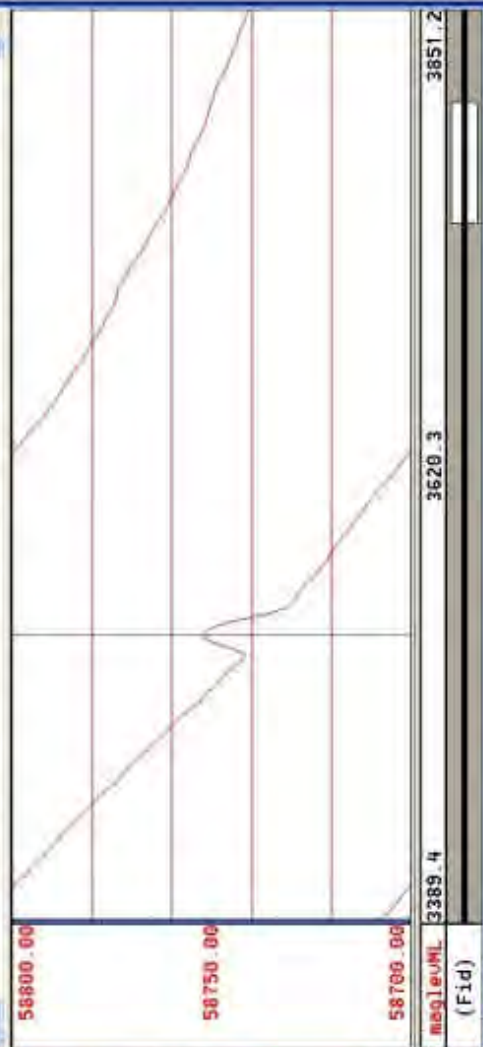


Molecule 3548.8  
(Fid)  
3803.7  
4058.6





id	x	y	u	galt	gtime	radar	systime	diff4
3532.0	503709.58	6283960.72		635.70	69119.40	50.35	684148.00	0.0
3533.0	503692.40	6283960.78		635.60	60479.60	51.41	684149.00	-0.0
3534.0	503675.30	6283960.84		635.50	51839.80	52.46	684150.00	0.0
3535.0	503658.20	6283960.90		635.40	43200.00	53.52	684151.00	-0.0
3536.0	503641.10	6283960.96		635.30	34560.20	54.58	684152.00	-0.0
3537.0	503624.00	6283961.02		635.20	25920.40	55.63	684153.00	0.0
3538.0	503606.90	6283961.08		635.10	17280.60	56.69	684154.00	-0.0
3539.0	503589.80	6283961.14		635.00	8640.80	57.74	684155.00	0.0
3540.0	503572.70	6283961.20		634.90	1.00	58.80	684156.00	0.0
3541.0	503564.17	6283961.20		634.99	1.10	57.95	684157.00	-0.0
3542.0	503555.64	6283961.20		635.08	1.20	57.10	684158.00	0.0
3543.0	503547.11	6283961.20		635.17	1.30	56.26	684159.00	-0.0
3544.0	503538.58	6283961.20		635.26	1.40	55.41	684160.00	0.0
3545.0	503530.05	6283961.20		635.35	1.50	54.56	684161.00	-0.0
3546.0	503521.52	6283961.20		635.44	1.60	53.71	684162.00	0.0
3547.0	503512.99	6283961.20		635.53	1.70	52.86	684163.00	-0.0
3548.0	503504.46	6283961.20		635.62	1.80	52.02	684164.00	0.0



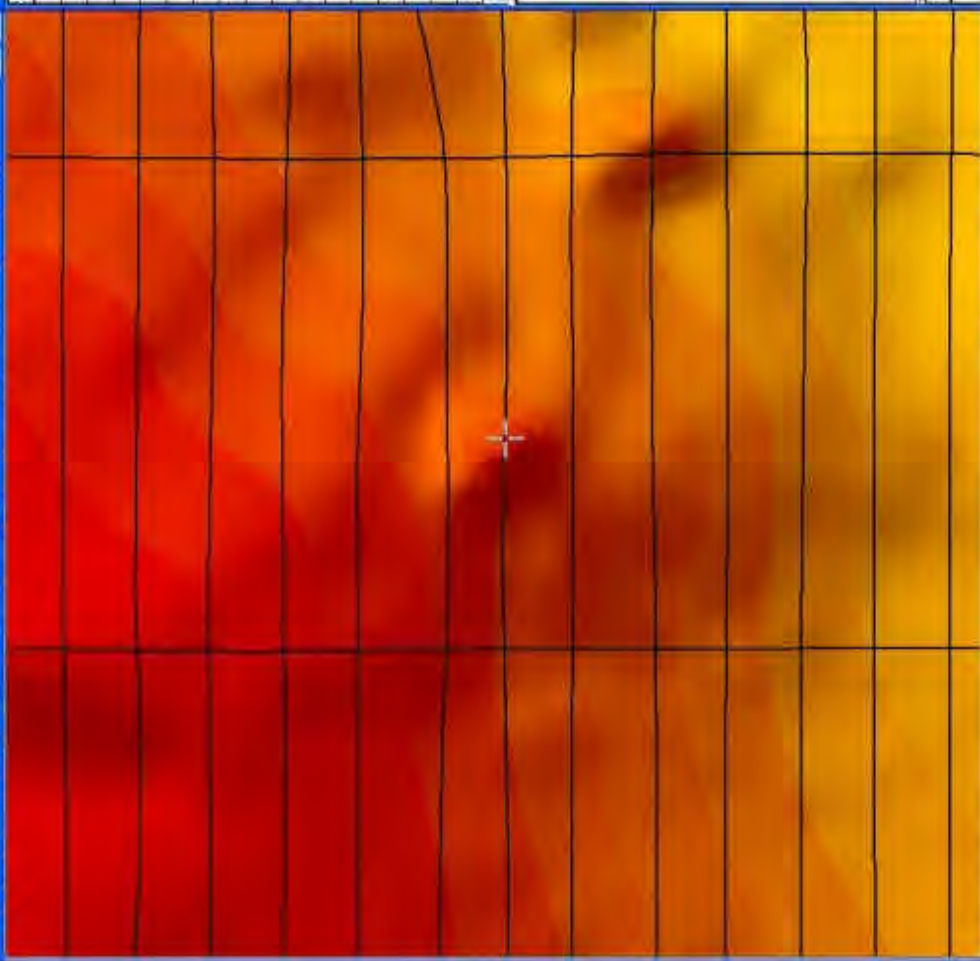
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Cell 6283960 84

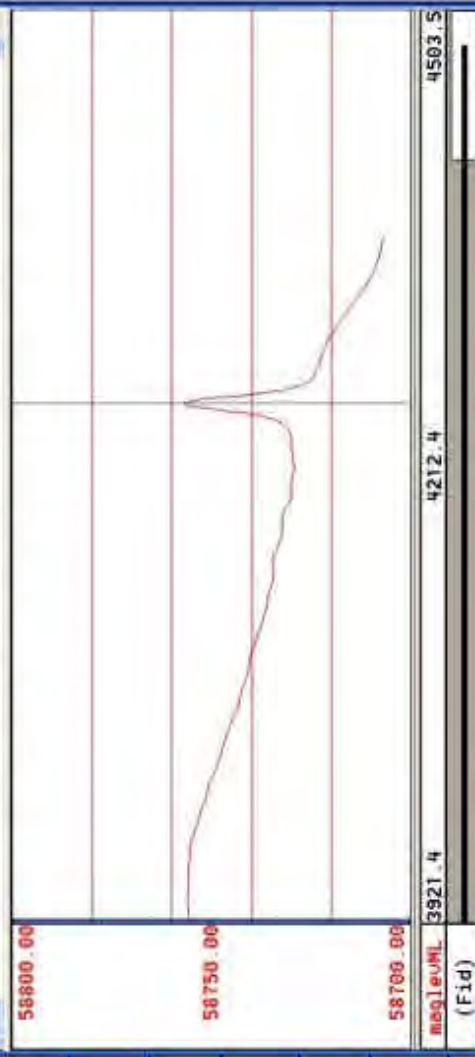
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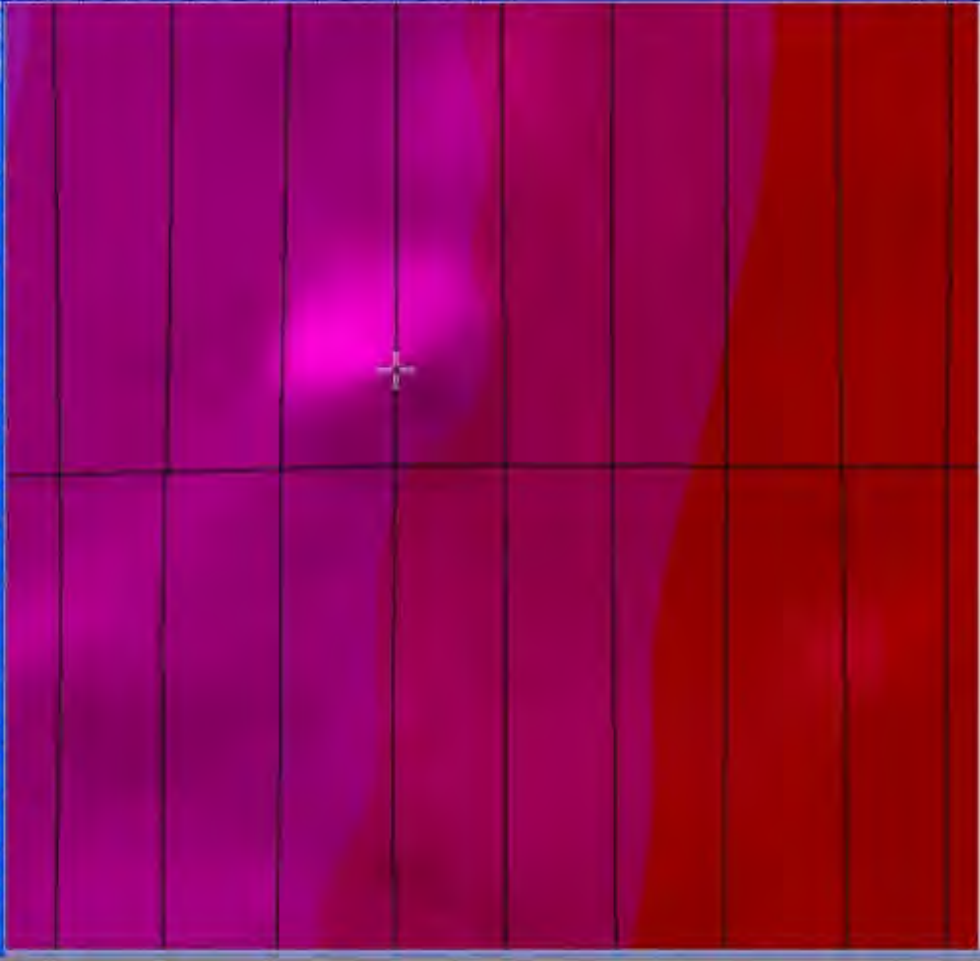
Date

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VL1600.1	x	y	galt	gtime	radar	sysstime	diff4
4242.0	526198.86	6286366.60	740.08	76652.20	66.17	586676.00	0.0
4243.0	526207.44	6286366.40	740.17	76652.30	66.64	586677.00	0.0
4244.0	526216.02	6286366.20	740.26	76652.40	67.11	586678.00	0.0
4245.0	526224.60	6286366.00	740.35	76652.50	67.58	586679.00	0.0
4246.0	526233.18	6286365.80	740.44	76652.60	68.04	586680.00	0.0
4247.0	526241.76	6286365.60	740.53	76652.70	68.51	586681.00	-0.0
4248.0	526250.34	6286365.40	740.62	76652.80	68.98	586682.00	0.0
4249.0	526258.92	6286365.20	740.71	76652.90	69.44	586683.00	0.0
4250.0	526267.50	6286365.00	740.80	76653.00	69.91	586684.00	0.0
4251.0	526276.08	6286364.78	740.86	76653.10	69.55	586685.00	0.0
4252.0	526284.66	6286364.56	740.92	76653.20	69.18	586686.00	0.0
4253.0	526293.24	6286364.34	740.98	76653.30	68.82	586687.00	-0.0
4254.0	526301.82	6286364.12	741.04	76653.40	68.46	586688.00	0.0
4255.0	526310.40	6286363.90	741.10	76653.50	68.09	586689.00	0.0
4256.0	526318.98	6286363.68	741.16	76653.60	67.73	586690.00	0.0
4257.0	526327.56	6286363.46	741.22	76653.70	67.37	586691.00	0.0
4258.0	526336.14	6286363.24	741.28	76653.80	67.01	586692.00	0.0





L1770.6	x	y	galt	gtime	radar	sytime	diff4
1578.0	520009.54	6288903.26	729.12	63939.80	69.85	459544.00	0.0
1579.0	520001.17	6288903.33	729.26	63939.90	69.79	459545.00	0.0
1580.0	519992.80	6288903.40	729.40	63940.00	69.73	459546.00	-0.0
1581.0	519984.45	6288903.50	729.53	63940.10	69.14	459547.00	-0.0
1582.0	519976.10	6288903.60	729.66	63940.20	68.56	459548.00	0.0
1583.0	519967.75	6288903.70	729.79	63940.30	67.97	459549.00	-0.0
1584.0	519959.40	6288903.80	729.92	63940.40	67.39	459550.00	0.0
1585.0	519951.05	6288903.90	730.05	63940.50	66.80	459551.00	0.0
1586.0	519942.70	6288904.00	730.18	63940.60	66.21	459552.00	0.0
1587.0	519934.35	6288904.10	730.31	63940.70	65.63	459553.00	-0.0
1588.0	519926.00	6288904.20	730.44	63940.80	65.04	459554.00	0.0
1589.0	519917.65	6288904.30	730.57	63940.90	64.46	459555.00	0.0
1590.0	519909.30	6288904.40	730.70	63941.00	63.87	459556.00	-0.0
1591.0	519900.96	6288904.49	730.72	63941.10	62.95	459557.00	0.0
1592.0	519892.62	6288904.58	730.74	63941.20	62.02	459558.00	0.0
1593.0	519884.28	6288904.67	730.76	63941.30	61.09	459559.00	-0.0
1594.0	519875.94	6288904.76	730.78	63941.40	60.17	459560.00	0.0

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(Fid)

1662.7 1890.5

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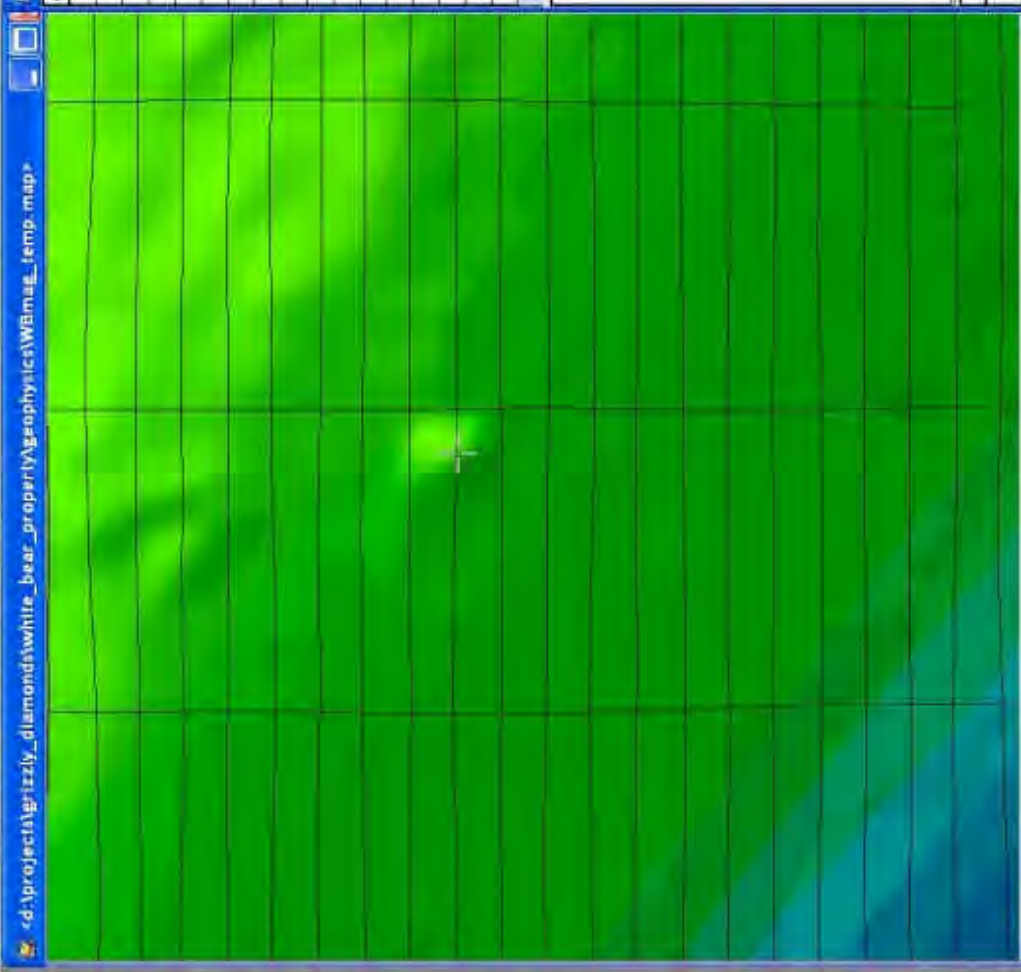


10:23 AM

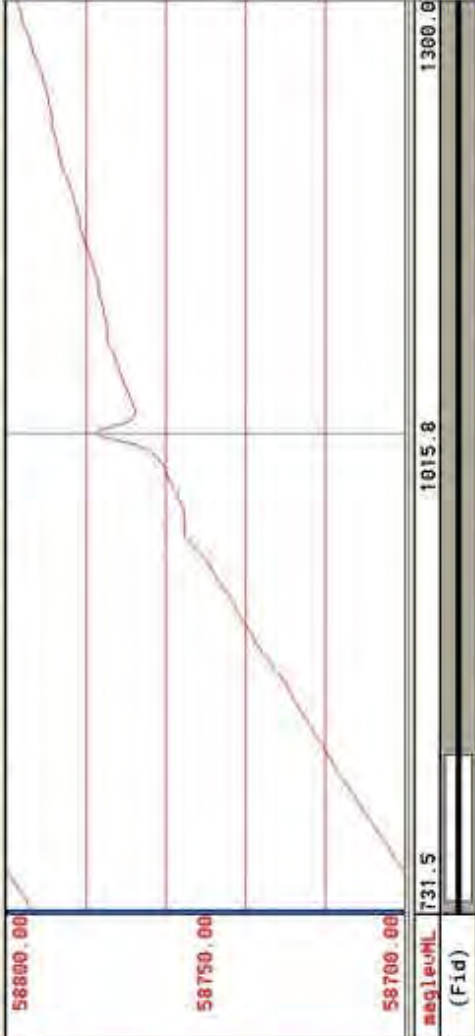
	x	y	galt	gtime	radar	sytime	diff4
2605.0	511430.85	6290113.70	675.50	67521.50	59.84	495361.00	0.0
2606.0	511422.36	6290113.86	675.62	67521.60	60.08	495362.00	0.0
2607.0	511413.87	6290114.02	675.74	67521.70	60.32	495363.00	0.0
2608.0	511405.38	6290114.18	675.86	67521.80	60.55	495364.00	-0.0
2609.0	511396.89	6290114.34	675.98	67521.90	60.79	495365.00	0.0
2610.0	511388.40	6290114.50	676.10	67522.00	61.03	495366.00	0.0
2611.0	511379.90	6290114.58	676.15	67522.10	60.77	495367.00	-0.0
2612.0	511371.40	6290114.66	676.20	67522.20	60.51	495368.00	0.0
2613.0	511362.90	6290114.74	676.25	67522.30	60.24	495369.00	-0.0
2614.0	511354.40	6290114.82	676.30	67522.40	59.98	495370.00	0.0
2615.0	511345.90	6290114.90	676.35	67522.50	59.72	495371.00	0.0
2616.0	511337.40	6290114.98	676.40	67522.60	59.46	495372.00	-0.0
2617.0	511328.90	6290115.06	676.45	67522.70	59.20	495373.00	0.0
2618.0	511320.40	6290115.14	676.50	67522.80	58.93	495374.00	0.0
2619.0	511311.90	6290115.22	676.55	67522.90	58.67	495375.00	0.0
2620.0	511303.40	6290115.30	676.60	67523.00	58.41	495376.00	0.0
2621.0	511294.91	6290115.32	676.59	67523.10	58.22	495377.00	-0.0

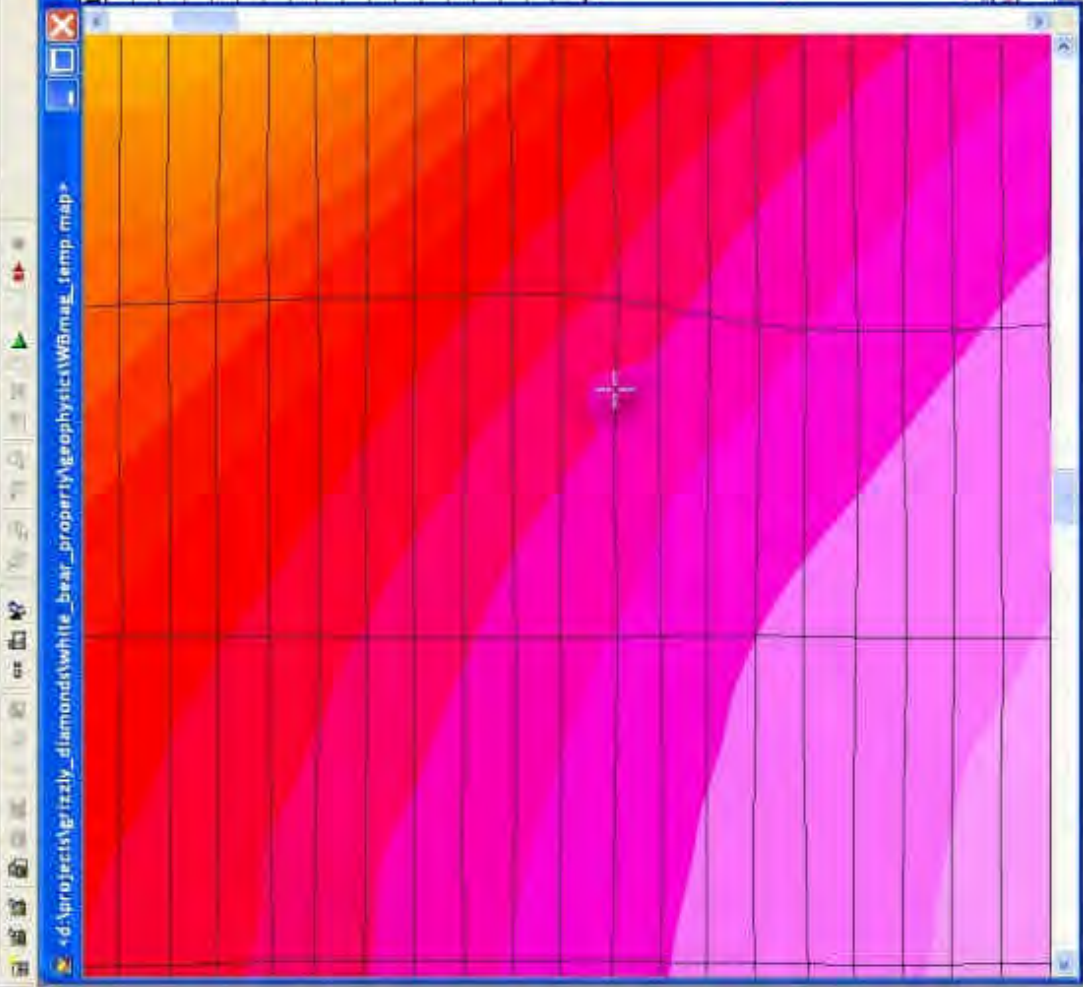


mag	nT	2195.2	2199.6	2723.9
(Fid)				



L2020:T	x	y	galt	gtime	radar	sytime	diff4
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1031.0	500714.74	6292658.10	642.71	59834.10	60.59	418483.00	-0.0
1032.0	500723.08	6292658.10	642.92	59834.20	60.38	418484.00	-0.0
1033.0	500731.42	6292658.10	643.13	59834.30	60.17	418485.00	0.1
1034.0	500739.76	6292658.10	643.34	59834.40	59.97	418486.00	-0.1
1035.0	500748.10	6292658.10	643.55	59834.50	59.77	418487.00	0.0
1036.0	500756.44	6292658.10	643.76	59834.60	59.56	418488.00	0.0
1037.0	500764.78	6292658.10	643.97	59834.70	59.36	418489.00	-0.0
1038.0	500773.12	6292658.10	644.18	59834.80	59.15	418490.00	0.0
1039.0	500781.46	6292658.10	644.39	59834.90	58.95	418491.00	-0.0
1040.0	500789.80	6292658.10	644.60	59835.00	58.74	418492.00	-0.0
1041.0	500798.13	6292658.14	644.60	59835.10	58.67	418493.00	0.0
1042.0	500806.46	6292658.18	644.60	59835.20	58.59	418494.00	-0.0
1043.0	500814.79	6292658.22	644.60	59835.30	58.52	418495.00	0.0
1044.0	500823.12	6292658.26	644.60	59835.40	58.45	418496.00	-0.0
1045.0	500831.45	6292658.30	644.60	59835.50	58.38	418497.00	0.0
1046.0	500839.78	6292658.34	644.60	59835.60	58.30	418498.00	-0.0



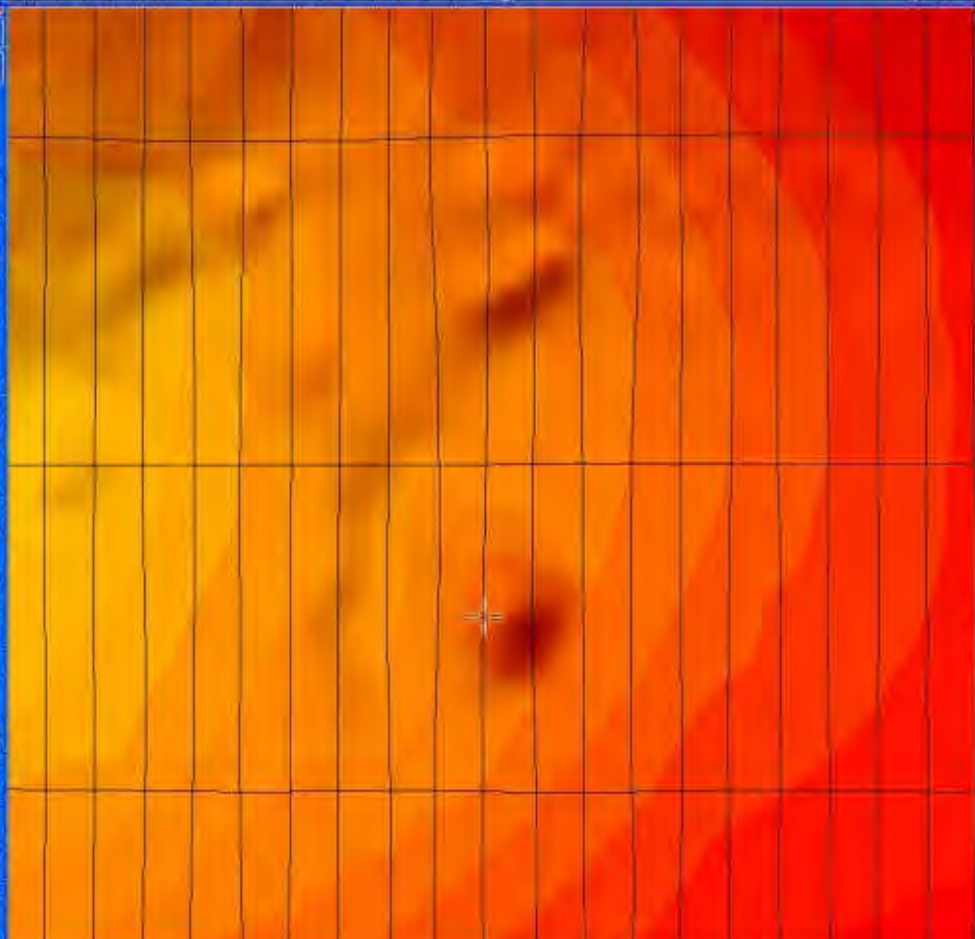


2380.0	cmagDlnorm	mag	tielev	maglev	decorr	decorrflt	maglevHL
3268.0	0.00	59135.27	59135.27	59134.57	2.78	2.93	59131.64
3269.0	-0.00	59135.15	59135.15	59134.41	3.36	2.96	59131.45
3270.0	-0.00	59135.12	59135.12	59134.35	4.03	3.00	59131.35
3271.0	0.00	59135.22	59135.22	59134.41	4.70	3.03	59131.38
3272.0	0.00	59135.47	59135.47	59134.63	5.37	3.06	59131.57
3273.0	-0.00	59135.94	59135.94	59135.05	6.03	3.09	59131.97
3274.0	-0.00	59136.66	59136.66	59135.73	6.71	3.11	59132.62
3275.0	-0.00	59137.69	59137.69	59136.73	7.38	3.13	59133.60
3276.0	0.00	59139.12	59139.12	59138.12	8.06	3.15	59134.97
3277.0	0.00	59141.01	59141.01	59139.97	8.73	3.17	59136.81
3278.0	0.00	59143.35	59143.35	59142.28	9.39	3.18	59139.10
3279.0	-0.00	59146.05	59146.05	59144.94	10.04	3.19	59141.75
3280.0	0.00	59148.81	59148.81	59147.66	10.70	3.19	59144.47
3281.0	-0.00	59151.19	59151.19	59150.00	11.34	3.20	59146.80
3282.0	0.00	59152.68	59152.68	59151.45	11.60	3.20	59148.26
3283.0	-0.00	59152.89	59152.89	59151.62	11.35	3.19	59148.43
3284.0	-0.01	59151.69	59151.69	59150.39	11.10	3.19	59147.20

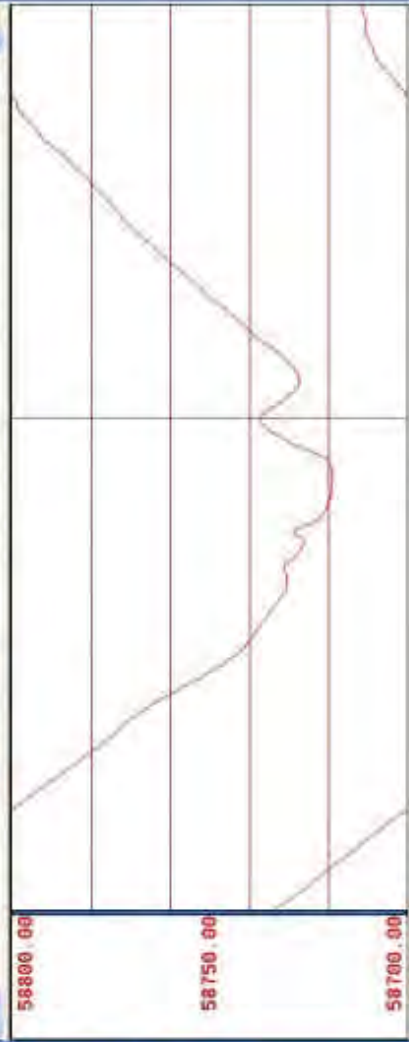


eqllevHL	3028.1	3334.9	3641.7
(Fid)			





L2390: \$	x	y	u	galt	gtime	radar	suetime	diff4
2784.0	510528.34	6298217.58		688.74	81988.40	55.66	640012.00	0.0
2785.0	510519.95	6298217.65		688.65	81988.50	55.90	640013.00	-0.0
2786.0	510511.56	6298217.72		688.56	81988.60	56.14	640014.00	0.0
2787.0	510503.17	6298217.79		688.47	81988.70	56.38	640015.00	-0.0
2788.0	510494.78	6298217.86		688.38	81988.80	56.61	640016.00	0.0
2789.0	510486.39	6298217.93		688.29	81988.90	56.85	640017.00	-0.0
2790.0	510478.00	6298218.00		688.20	81989.00	57.09	640018.00	0.0
2791.0	510469.61	6298218.09		688.14	81989.10	56.99	640019.00	0.0
2792.0	510461.22	6298218.18		688.08	81989.20	56.88	640020.00	0.0
2793.0	510452.83	6298218.27		688.02	81989.30	56.78	640021.00	-0.0
2794.0	510444.44	6298218.36		687.96	81989.40	56.68	640022.00	0.0
2795.0	510436.05	6298218.45		687.90	81989.50	56.57	640023.00	0.0
2796.0	510427.66	6298218.54		687.84	81989.60	56.47	640024.00	0.0
2797.0	510419.27	6298218.63		687.78	81989.70	56.37	640025.00	-0.0
2798.0	510410.88	6298218.72		687.72	81989.80	56.27	640026.00	0.0
2799.0	510402.49	6298218.81		687.66	81989.90	56.16	640027.00	0.0
2800.0	510394.10	6298218.90		687.60	81990.00	56.06	640028.00	0.0



maglevHL 2293.9 2758.7 3223.5  
(Fid)

Cell 6298218.90

Sublet Interactive Zoom Plot

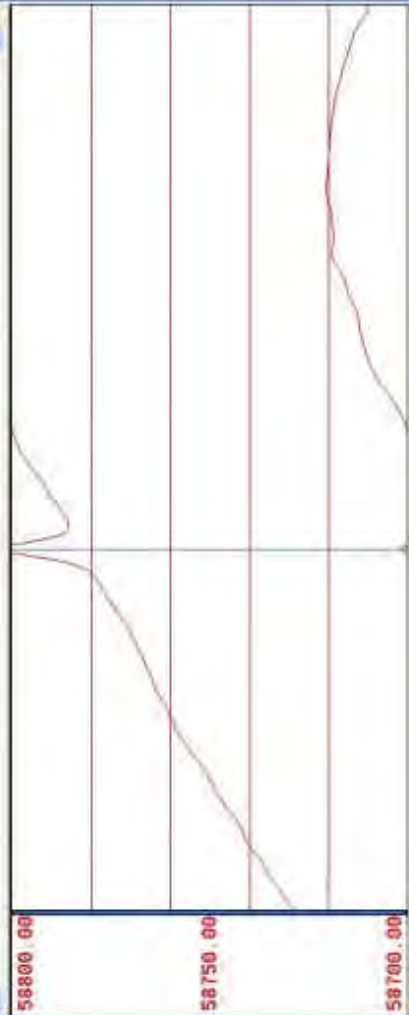
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IP: 5129261778 2500000.44

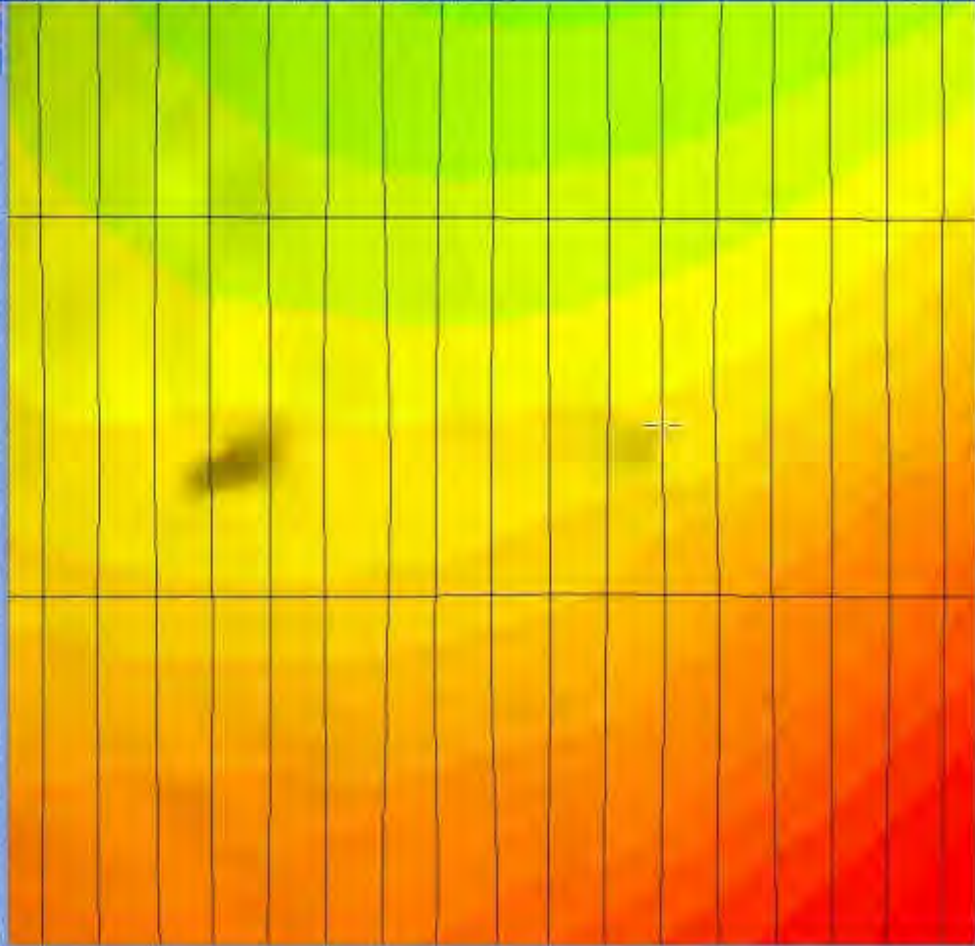




2410:8	x	y	galt	gtime	radar	gusttime	diff4
2940.0	508054.90	6298517.20	680.10	82858.00	56.30	648708.00	0.0
2941.0	508046.41	6298517.04	680.18	82858.10	55.71	648709.00	0.0
2942.0	508037.92	6298516.88	680.26	82858.20	55.12	648710.00	0.0
2943.0	508029.43	6298516.72	680.34	82858.30	54.53	648711.00	-0.0
2944.0	508020.94	6298516.56	680.42	82858.40	53.94	648712.00	-0.0
2945.0	508012.45	6298516.40	680.50	82858.50	53.35	648713.00	0.0
2946.0	508003.96	6298516.24	680.58	82858.60	52.77	648714.00	0.0
2947.0	507995.47	6298516.08	680.66	82858.70	52.18	648715.00	-0.0
2948.0	507986.98	6298515.92	680.74	82858.80	51.59	648716.00	0.0
2949.0	507978.49	6298515.76	680.82	82858.90	51.00	648717.00	0.0
2950.0	507970.00	6298515.60	680.90	82859.00	50.41	648718.00	0.0
2951.0	507961.51	6298515.44	680.81	82859.10	51.24	648719.00	0.0
2952.0	507953.02	6298515.28	680.72	82859.20	52.07	648720.00	-0.0
2953.0	507944.53	6298515.12	680.63	82859.30	52.90	648721.00	0.0
2954.0	507936.04	6298514.96	680.54	82859.40	53.73	648722.00	-0.0
2955.0	507927.55	6298514.80	680.45	82859.50	54.56	648723.00	0.0
2956.0	507919.06	6298514.64	680.36	82859.60	55.39	648724.00	-0.0



eg1euHL 2743.1 2994.1 3245.1  
(Fid)



L2460: \$	x	y	galt	gtime	radar	sgttime	diff4
3459.0	521256.13	6299258.18	720.32	85049.90	44.79	670627.00	-0.0
3460.0	521264.60	6299258.30	720.30	85050.00	44.00	670628.00	0.0
3461.0	521273.07	6299258.47	720.30	85050.10	44.13	670629.00	-0.0
3462.0	521281.54	6299258.64	720.30	85050.20	44.26	670630.00	0.0
3463.0	521290.01	6299258.81	720.30	85050.30	44.38	670631.00	-0.0
3464.0	521298.48	6299258.98	720.30	85050.40	44.51	670632.00	0.0
3465.0	521306.95	6299259.15	720.30	85050.50	44.64	670633.00	-0.0
3466.0	521315.42	6299259.32	720.30	85050.60	44.77	670634.00	0.0
3467.0	521323.89	6299259.49	720.30	85050.70	44.90	670635.00	0.0
3468.0	521332.36	6299259.66	720.30	85050.80	45.02	670636.00	-0.0
3469.0	521340.83	6299259.83	720.30	85050.90	45.15	670637.00	0.0
3470.0	521349.30	6299260.00	720.30	85051.00	45.28	670638.00	-0.0
3471.0	521357.77	6299260.18	720.42	85051.10	46.12	670639.00	0.0
3472.0	521366.24	6299260.36	720.54	85051.20	46.97	670640.00	-0.0
3473.0	521374.71	6299260.54	720.66	85051.30	47.81	670641.00	0.0
3474.0	521383.18	6299260.72	720.78	85051.40	48.65	670642.00	-0.0
3475.0	521391.65	6299260.90	720.90	85051.50	49.49	670643.00	0.0

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seglevHL 3261.4

3776.2

4291.0

(Fid)

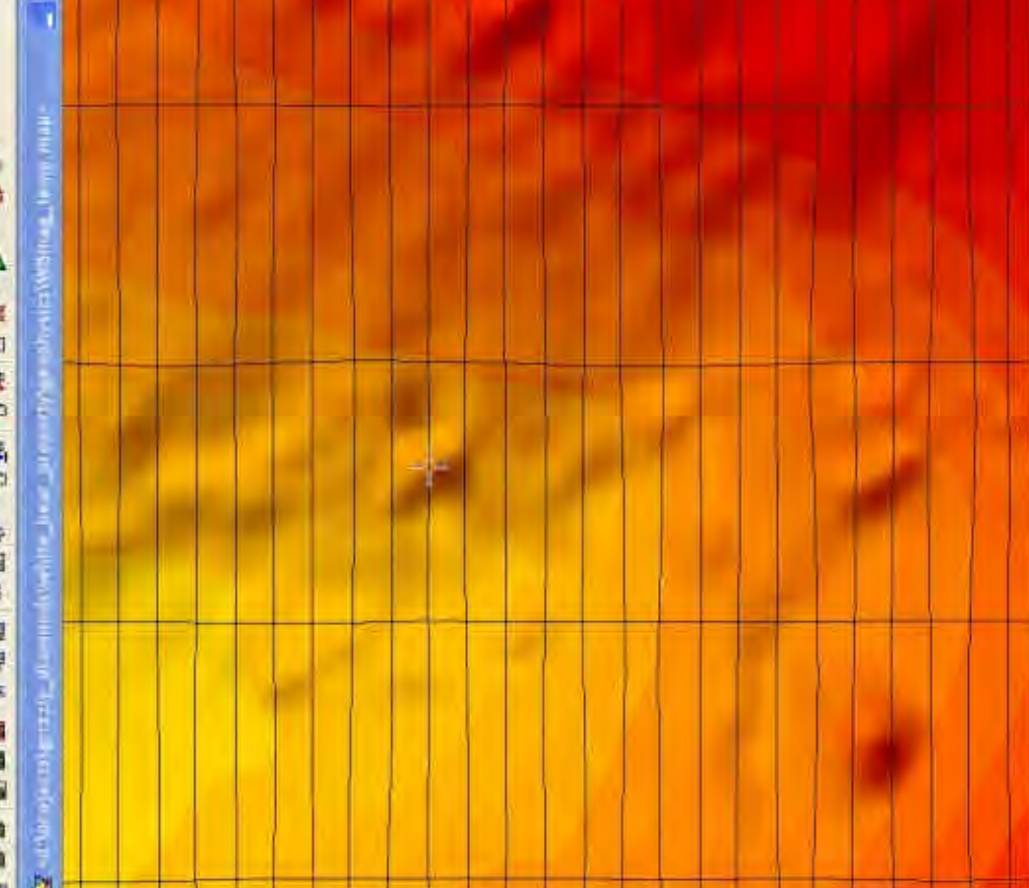
Cell 6299259.15

Sublet Interactive Zoom Plot

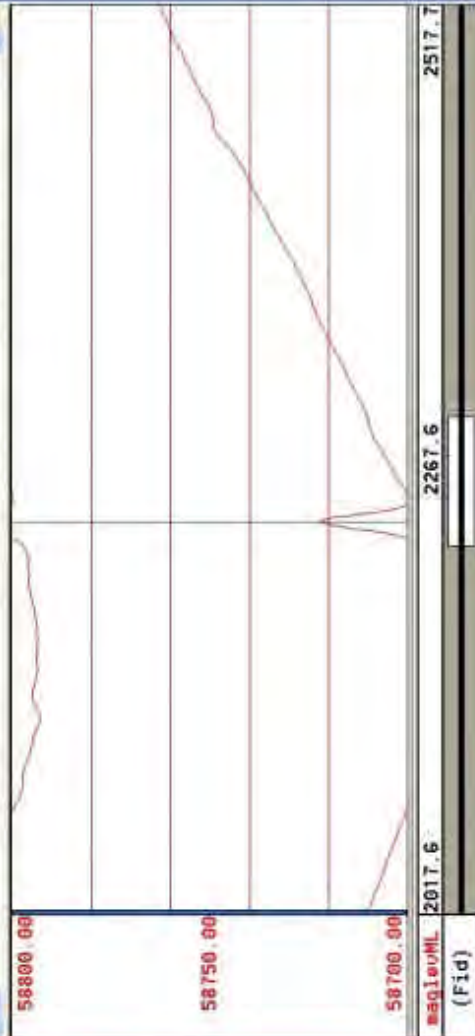
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05/17/2010 10:55:10 AM





L2500:8	x	y	u	galt	gtime	radar	sgttime	diff4
2223.0	511382.92	6299861.55		691.84	216.30	54.72	686291.00	0.0
2224.0	511391.36	6299861.50		691.82	216.40	54.53	686292.00	-0.0
2225.0	511399.80	6299861.45		691.80	216.50	54.34	686293.00	0.0
2226.0	511408.24	6299861.40		691.78	216.60	54.16	686294.00	0.0
2227.0	511416.68	6299861.35		691.76	216.70	53.97	686295.00	0.0
2228.0	511425.12	6299861.30		691.74	216.80	53.78	686296.00	-0.0
2229.0	511433.56	6299861.25		691.72	216.90	53.59	686297.00	0.0
2230.0	511442.00	6299861.20		691.70	217.00	53.40	686298.00	0.0
2231.0	511450.45	6299861.20		691.66	217.10	53.09	686299.00	-0.0
2232.0	511458.90	6299861.20		691.62	217.20	52.77	686300.00	-0.0
2233.0	511467.35	6299861.20		691.58	217.30	52.46	686301.00	0.0
2234.0	511475.80	6299861.20		691.54	217.40	52.14	686302.00	-0.0
2235.0	511484.25	6299861.20		691.50	217.50	51.83	686303.00	-0.0
2236.0	511492.70	6299861.20		691.46	217.60	51.52	686304.00	0.0
2237.0	511501.15	6299861.20		691.42	217.70	51.20	686305.00	0.0
2238.0	511509.60	6299861.20		691.38	217.80	50.89	686306.00	0.0
2239.0	511518.05	6299861.20		691.34	217.90	50.57	686307.00	0.0



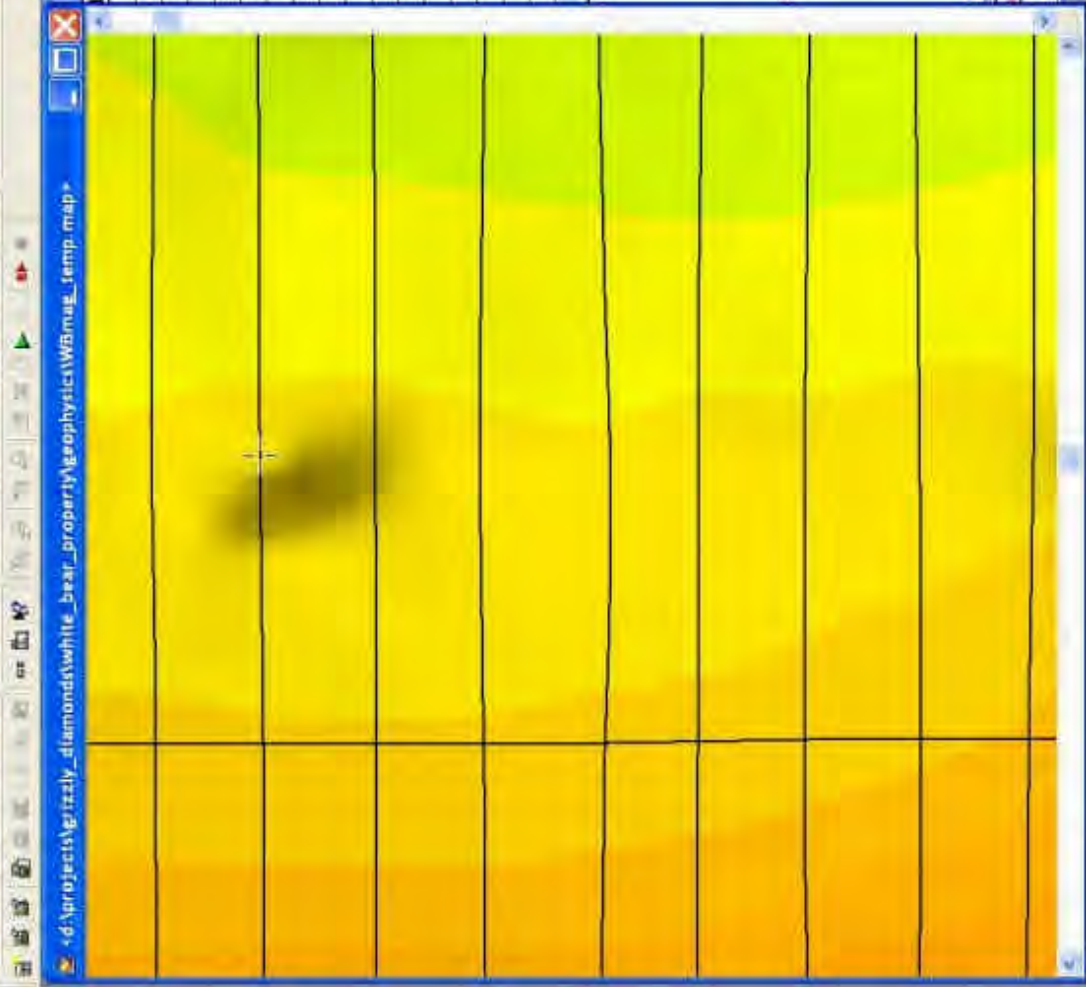
Cell 6299861.20

Subject Information: Zoom Plot

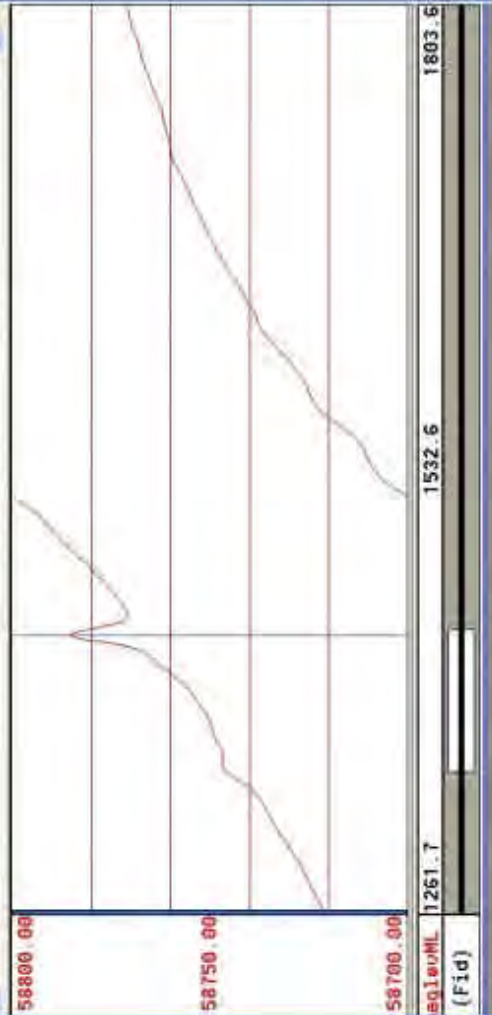
Data

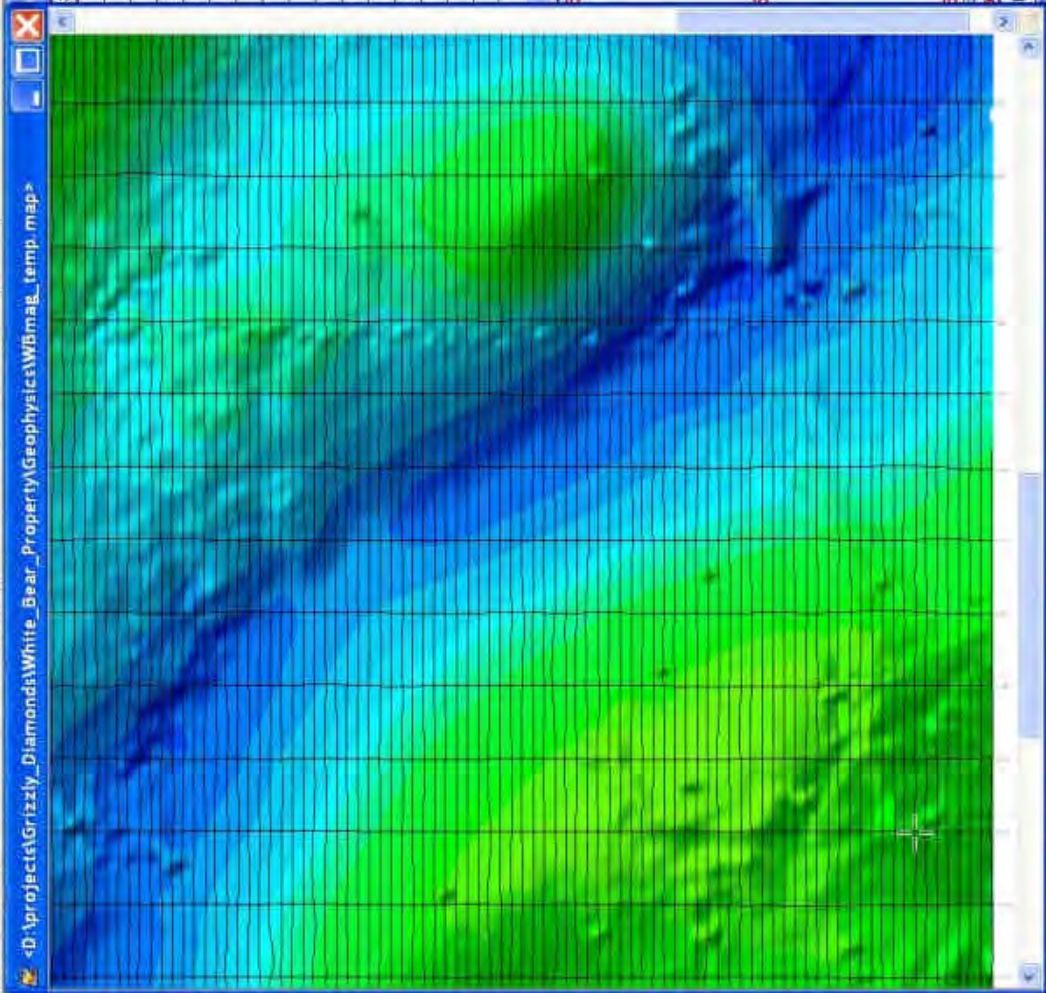
5/15/2011 10:31 AM



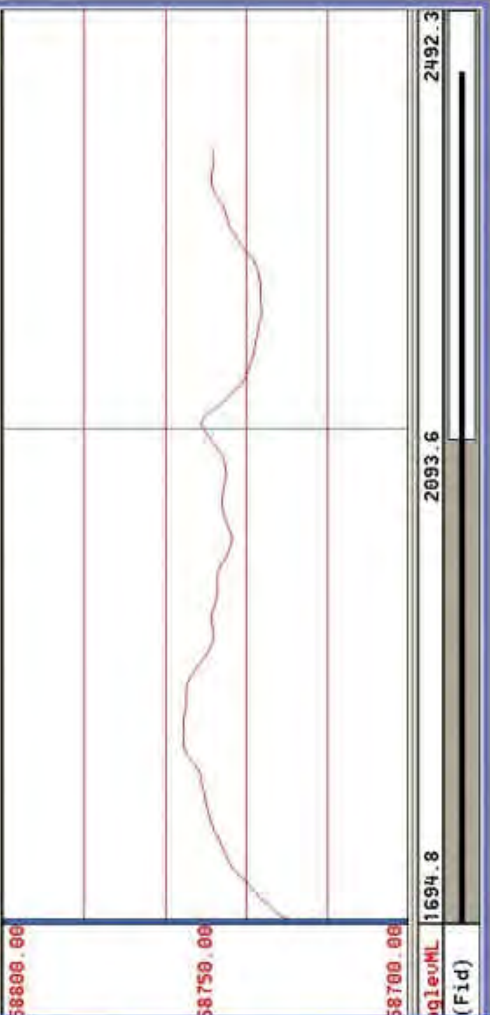


	x	y	galt	gtime	radar	gusttime	diff4
12540.9	521357.92	6300467.08	720.19	56717.30	53.46	387308.00	0.0
1413.0	521349.26	6300467.04	720.22	56717.40	53.79	387309.00	0.0
1415.0	521340.60	6300467.00	720.25	56717.50	54.13	387310.00	-0.0
1416.0	521331.94	6300466.96	720.28	56717.60	54.47	387311.00	0.0
1417.0	521323.28	6300466.92	720.31	56717.70	54.80	387312.00	-0.0
1418.0	521314.62	6300466.88	720.34	56717.80	55.14	387313.00	0.0
1419.0	521305.96	6300466.84	720.37	56717.90	55.47	387314.00	-0.0
1420.0	521297.30	6300466.80	720.40	56718.00	55.81	387315.00	0.0
1421.0	521288.66	6300466.76	720.32	56718.10	55.47	387316.00	0.0
1422.0	521280.02	6300466.72	720.24	56718.20	55.13	387317.00	-0.0
1423.0	521271.38	6300466.68	720.16	56718.30	54.78	387318.00	0.0
1424.0	521262.74	6300466.64	720.08	56718.40	54.44	387319.00	0.0
1425.0	521254.10	6300466.60	720.00	56718.50	54.10	387320.00	-0.0
1426.0	521245.46	6300466.56	719.92	56718.60	53.76	387321.00	0.0
1427.0	521236.82	6300466.52	719.84	56718.70	53.42	387322.00	-0.1
1428.0	521228.18	6300466.48	719.76	56718.80	53.07	387323.00	0.0
1429.0	521219.54	6300466.44	719.68	56718.90	52.73	387324.00	-0.0

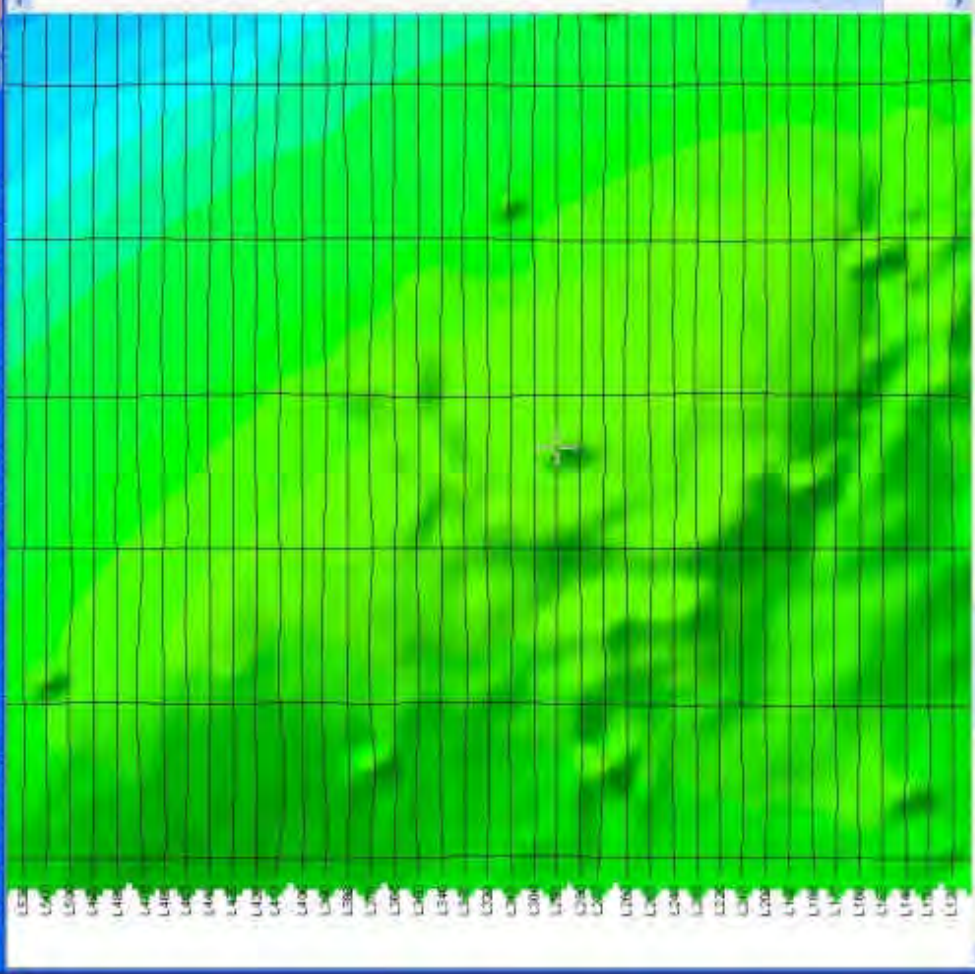




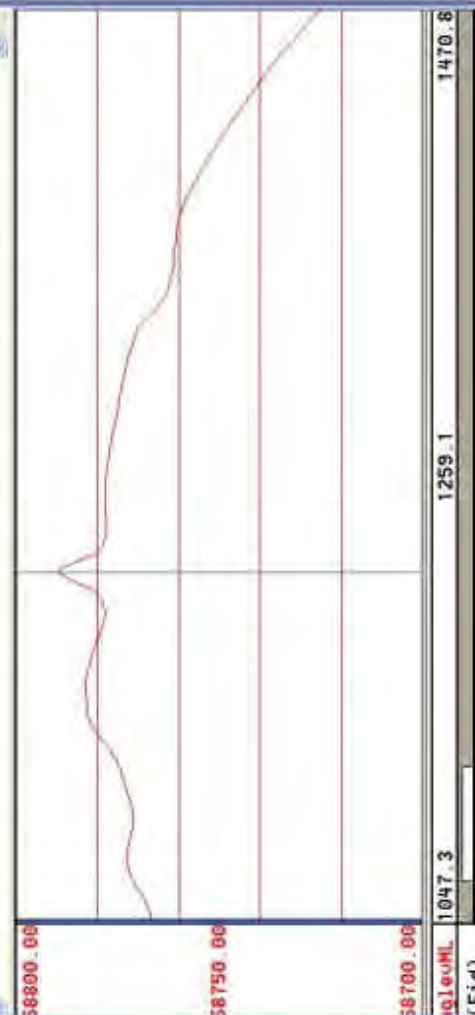
80:2	x	y	galt	gtime	radar	systime	diff4
2111.0	509955.91	6263564.19	636.00	62033.10	57.96	440491.00	-0.0
2112.0	509947.52	6263564.08	635.90	62033.20	57.75	440492.00	0.0
2113.0	509939.13	6263563.97	635.80	62033.30	57.55	440493.00	-0.0
2114.0	509930.74	6263563.86	635.70	62033.40	57.34	440494.00	0.0
2115.0	509922.35	6263563.75	635.60	62033.50	57.14	440495.00	0.0
2116.0	509913.96	6263563.64	635.50	62033.60	56.94	440496.00	0.0
2117.0	509905.57	6263563.53	635.40	62033.70	56.73	440497.00	-0.0
2118.0	509897.18	6263563.42	635.30	62033.80	56.53	440498.00	0.0
2119.0	509888.79	6263563.31	635.20	62033.90	56.32	440499.00	-0.0
2120.0	509880.40	6263563.20	635.10	62034.00	56.12	440500.00	-0.0
2121.0	509872.01	6263563.09	634.98	62034.10	56.06	440501.00	0.0
2122.0	509863.62	6263562.98	634.86	62034.20	56.01	440502.00	-0.0
2123.0	509855.23	6263562.87	634.74	62034.30	55.95	440503.00	0.0
2124.0	509846.84	6263562.76	634.62	62034.40	55.90	440504.00	0.0
2125.0	509838.45	6263562.65	634.50	62034.50	55.84	440505.00	-0.0
2126.0	509830.06	6263562.54	634.38	62034.60	55.79	440506.00	0.0





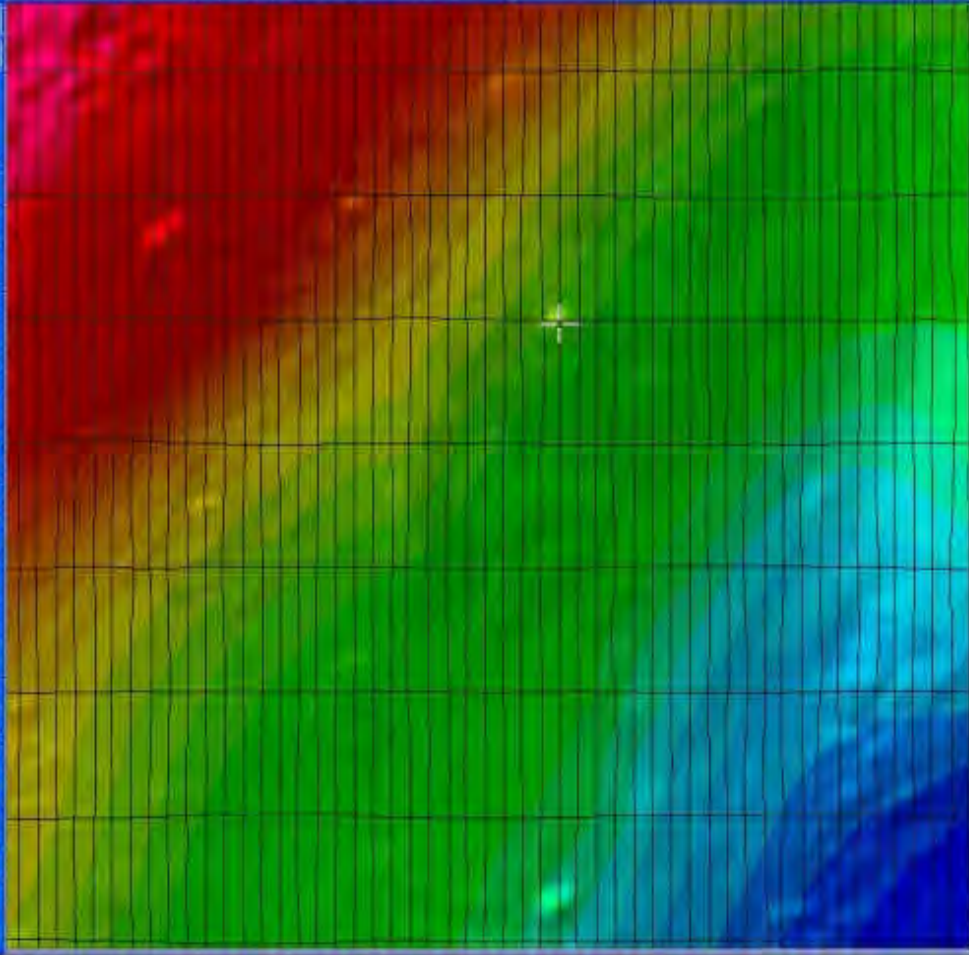


290:2	x	y	galt	qtme	radar	sysstime	diff4
1196.0	510393.90	6266716.00	651.72	68234.60	57.73	502506.00	0.0
1197.0	510402.70	6266716.00	651.79	68234.70	57.63	502507.00	-0.0
1198.0	510411.50	6266716.00	651.86	68234.80	57.52	502508.00	0.0
1199.0	510420.30	6266716.00	651.93	68234.90	57.42	502509.00	-0.0
1200.0	510429.10	6266716.00	652.00	68235.00	57.31	502510.00	-0.0
1201.0	510437.90	6266715.95	652.10	68235.10	56.46	502511.00	0.0
1202.0	510446.70	6266715.90	652.20	68235.20	55.62	502512.00	-0.0
1203.0	510455.50	6266715.85	652.30	68235.30	54.77	502513.00	0.0
1204.0	510464.30	6266715.80	652.40	68235.40	53.93	502514.00	-0.0
1205.0	510473.10	6266715.75	652.50	68235.50	53.08	502515.00	-0.0
1206.0	510481.90	6266715.70	652.60	68235.60	52.23	502516.00	0.0
1207.0	510490.70	6266715.65	652.70	68235.70	51.39	502517.00	-0.0
1208.0	510499.50	6266715.60	652.80	68235.80	50.54	502518.00	0.0
1209.0	510508.30	6266715.55	652.90	68235.90	49.70	502519.00	-0.0
1210.0	510517.10	6266715.50	653.00	68236.00	48.85	502520.00	0.0
1211.0	510525.88	6266715.39	653.11	68236.10	49.27	502521.00	0.0

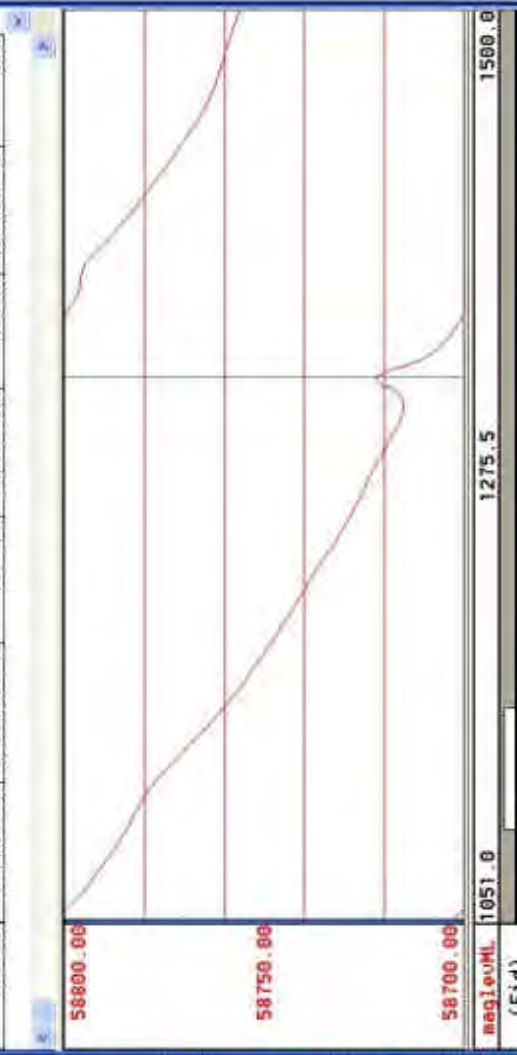








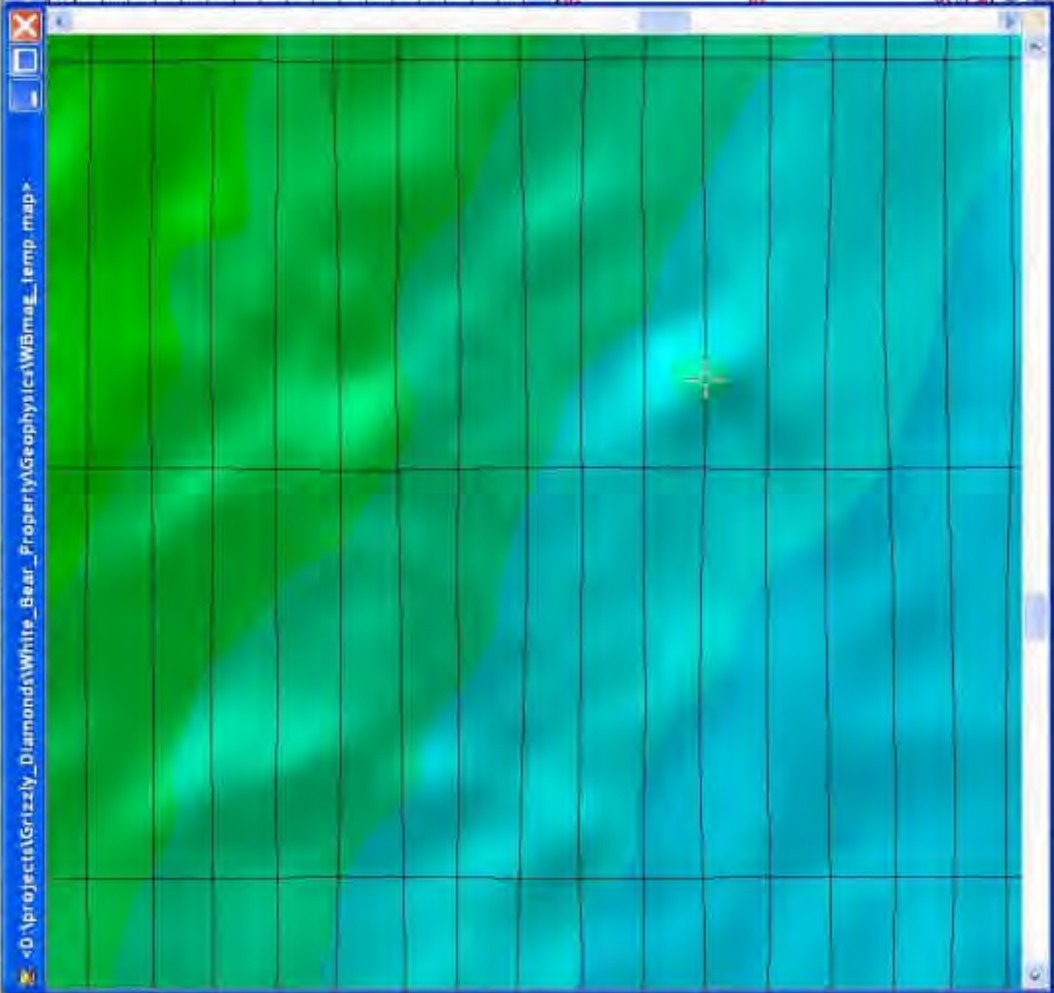
L520:3	x	y	galt	qtme	radar	sysstime	diff4
1315.0	531853.98	6270161.80	709.25	58401.50	61.71	404172.00	0.0
1316.0	531845.26	6270161.92	709.26	58401.60	60.64	404173.00	-0.0
1317.0	531836.62	6270162.04	709.27	58401.70	59.57	404174.00	0.0
1318.0	531827.98	6270162.16	709.28	58401.80	58.50	404175.00	0.0
1319.0	531819.34	6270162.28	709.29	58401.90	57.43	404176.00	0.0
1320.0	531810.70	6270162.40	709.30	58402.00	56.36	404177.00	0.0
1321.0	531802.05	6270162.48	709.14	58402.10	55.67	404178.00	0.0
1322.0	531793.40	6270162.56	708.98	58402.20	54.98	404179.00	0.0
1323.0	531784.75	6270162.64	708.82	58402.30	54.29	404180.00	0.0
1324.0	531776.10	6270162.72	708.66	58402.40	53.60	404181.00	-0.0
1325.0	531767.45	6270162.80	708.50	58402.50	52.91	404182.00	0.0
1326.0	531758.80	6270162.88	708.34	58402.60	52.22	404183.00	0.0
1327.0	531750.15	6270162.96	708.18	58402.70	51.53	404184.00	-0.0
1328.0	531741.50	6270163.04	708.02	58402.80	50.84	404185.00	0.0
1329.0	531732.85	6270163.12	707.86	58402.90	50.15	404186.00	-0.0
1330.0	531724.20	6270163.20	707.70	58403.00	49.46	404187.00	0.0



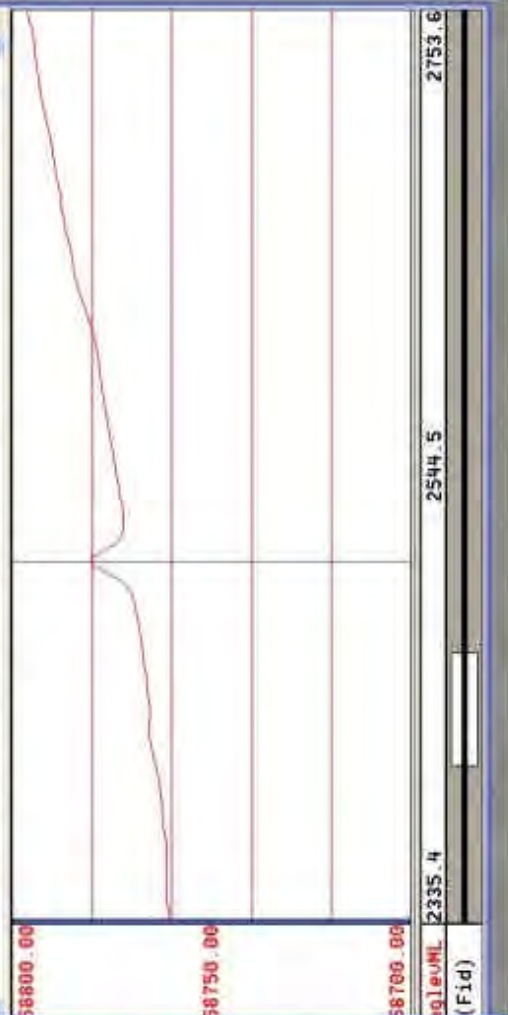




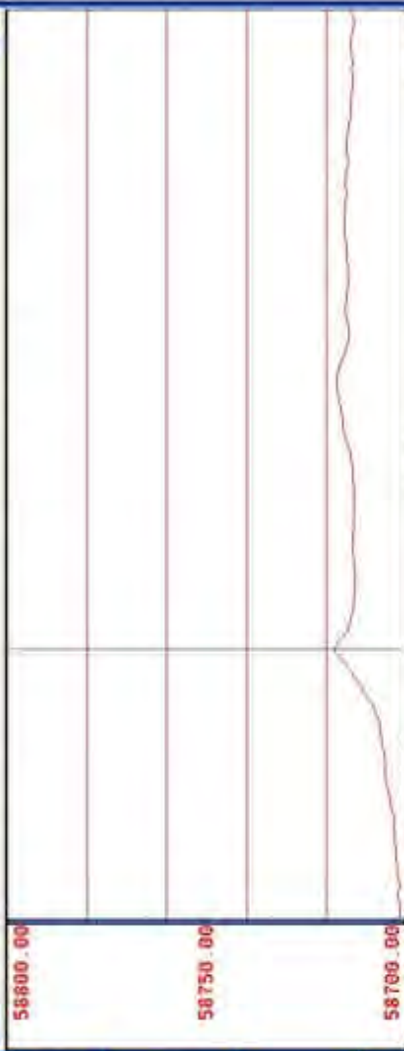




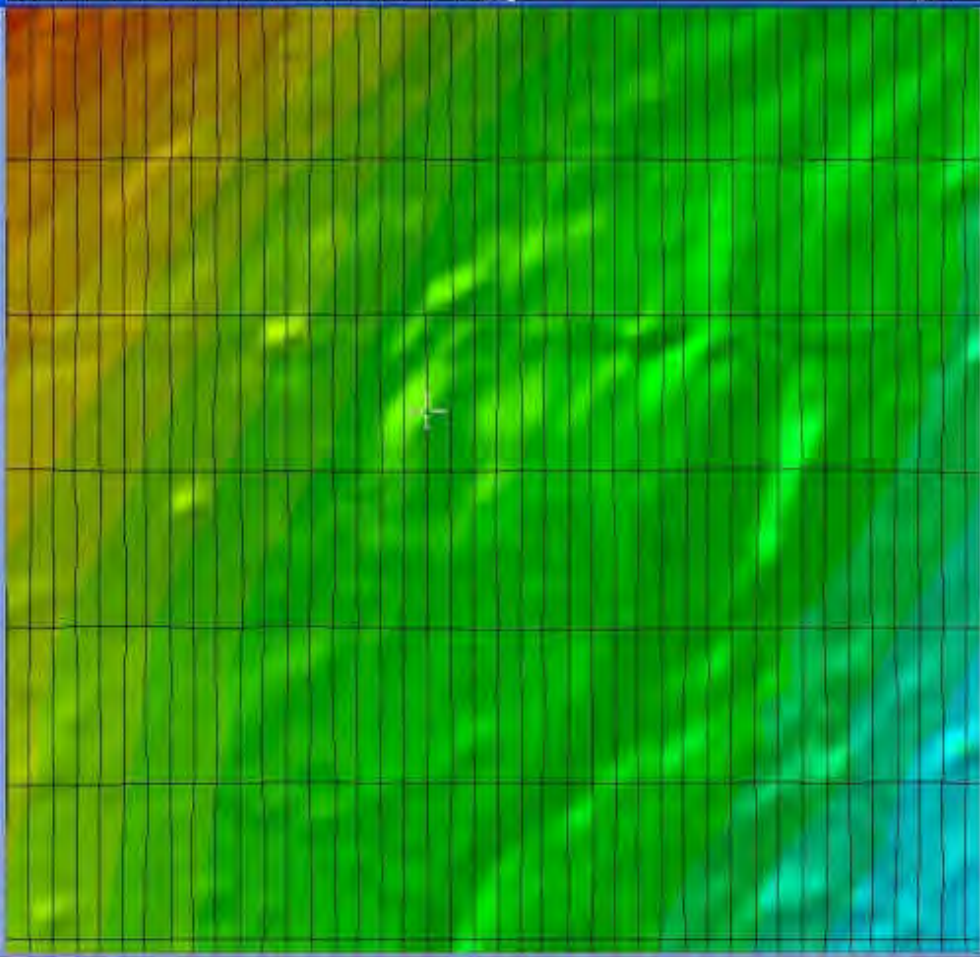
890.4	x	y	galt	gtime	radar	systime	diff4
2499.0	514065.99	6275708.54	719.18	57125.90	66.19	391418.00	-0.0
2500.0	514074.50	6275708.40	719.30	57126.00	66.40	391419.00	0.0
2501.0	514083.01	6275708.33	719.33	57126.10	66.47	391420.00	0.0
2502.0	514091.52	6275708.26	719.36	57126.20	66.53	391421.00	-0.0
2503.0	514100.03	6275708.19	719.39	57126.30	66.60	391422.00	0.0
2504.0	514108.54	6275708.12	719.42	57126.40	66.67	391423.00	0.0
2505.0	514117.05	6275708.05	719.45	57126.50	66.73	391424.00	0.0
2506.0	514125.56	6275707.98	719.48	57126.60	66.80	391425.00	-0.0
2507.0	514134.07	6275707.91	719.51	57126.70	66.87	391426.00	0.0
2508.0	514142.58	6275707.84	719.54	57126.80	66.94	391427.00	0.0
2509.0	514151.09	6275707.77	719.57	57126.90	67.00	391428.00	-0.0
2510.0	514159.60	6275707.70	719.60	57127.00	67.07	391429.00	0.0
2511.0	514168.14	6275707.71	719.64	57127.10	67.19	391430.00	-0.0
2512.0	514176.68	6275707.72	719.68	57127.20	67.31	391431.00	0.0
2513.0	514185.22	6275707.73	719.72	57127.30	67.44	391432.00	0.0
2514.0	514193.76	6275707.74	719.76	57127.40	67.56	391433.00	-0.0
2515.0	514202.30	6275707.75	719.80	57127.50	67.68	391434.00	0.0



L980.4	x	y	galt	gtime	radar	systime	diff4
1736.0	528282.64	6277056.40	728.58	61249.60	42.58	432655.00	0.0
1737.0	528274.48	6277056.45	728.76	61249.70	42.65	432656.00	0.0
1738.0	528266.32	6277056.50	728.94	61249.80	42.71	432657.00	0.0
1739.0	528258.16	6277056.55	729.12	61249.90	42.78	432658.00	0.0
1740.0	528250.00	6277056.60	729.30	61250.00	42.84	432659.00	0.0
1741.0	528241.85	6277056.63	729.50	61250.10	43.12	432660.00	0.0
1742.0	528233.70	6277056.66	729.70	61250.20	43.41	432661.00	0.0
1743.0	528225.55	6277056.69	729.90	61250.30	43.69	432662.00	0.0
1744.0	528217.40	6277056.72	730.10	61250.40	43.98	432663.00	0.0
1745.0	528209.25	6277056.75	730.30	61250.50	44.26	432664.00	0.0
1746.0	528201.10	6277056.78	730.50	61250.60	44.54	432665.00	0.0
1747.0	528192.95	6277056.81	730.70	61250.70	44.83	432666.00	0.0
1748.0	528184.80	6277056.84	730.90	61250.80	45.11	432667.00	0.0
1749.0	528176.65	6277056.87	731.10	61250.90	45.40	432668.00	0.0
1750.0	528168.50	6277056.90	731.30	61251.00	45.68	432669.00	0.0
1751.0	528160.38	6277056.91	731.53	61251.10	46.15	432670.00	0.0
1752.0	528152.26	6277056.92	731.76	61251.20	46.61	432671.00	0.0



meqleuML	1558.5	1879.2	2200.0
(Fid)			



✓ L1120.4	x	y	galt	gtime	radar	systime	diff4
3303.0	516355.19	6279164.88	718.08	67433.30	58.85	494502.00	0.0
3304.0	516347.12	6279164.84	718.24	67433.40	58.40	494503.00	0.0
3305.0	516339.05	6279164.80	718.40	67433.50	57.95	494504.00	0.0
3306.0	516330.98	6279164.76	718.56	67433.60	57.50	494505.00	0.0
3307.0	516322.91	6279164.72	718.72	67433.70	57.05	494506.00	-0.0
3308.0	516314.84	6279164.68	718.88	67433.80	56.59	494507.00	0.0
3309.0	516306.77	6279164.64	719.04	67433.90	56.14	494508.00	0.0
3310.0	516298.70	6279164.60	719.20	67434.00	55.69	494509.00	0.0
3311.0	516290.62	6279164.59	719.27	67434.10	56.03	494510.00	-0.0
3312.0	516282.54	6279164.58	719.34	67434.20	56.37	494511.00	0.0
3313.0	516274.46	6279164.57	719.41	67434.30	56.72	494512.00	-0.0
3314.0	516266.38	6279164.56	719.48	67434.40	57.06	494513.00	0.0
3315.0	516258.30	6279164.55	719.55	67434.50	57.40	494514.00	0.0
3316.0	516250.22	6279164.54	719.62	67434.60	57.74	494515.00	-0.0
3317.0	516242.14	6279164.53	719.69	67434.70	58.08	494516.00	0.0
3318.0	516234.06	6279164.52	719.76	67434.80	58.43	494517.00	0.0
3319.0	516225.98	6279164.51	719.83	67434.90	58.77	494518.00	-0.0



megeuML 2959.9  
 (Fid)  
 3533.1  
 4106.3

Cell [6279164, 53

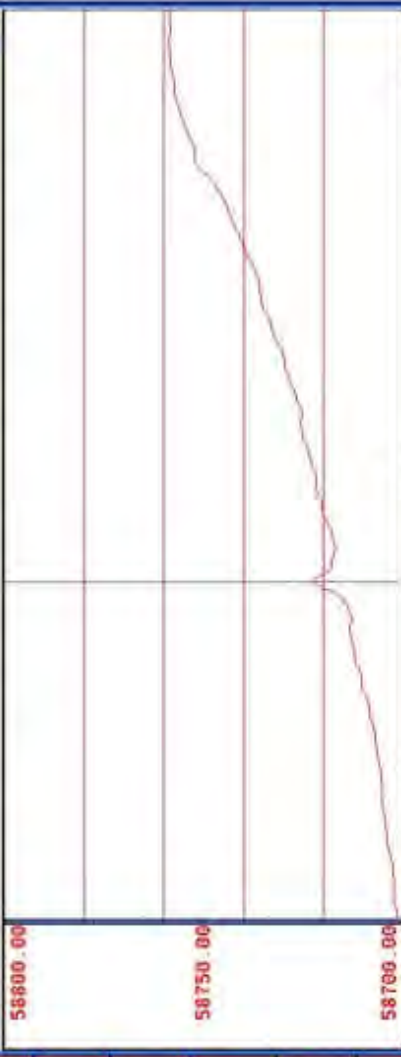
Select Interactive Zoom Point...

Date

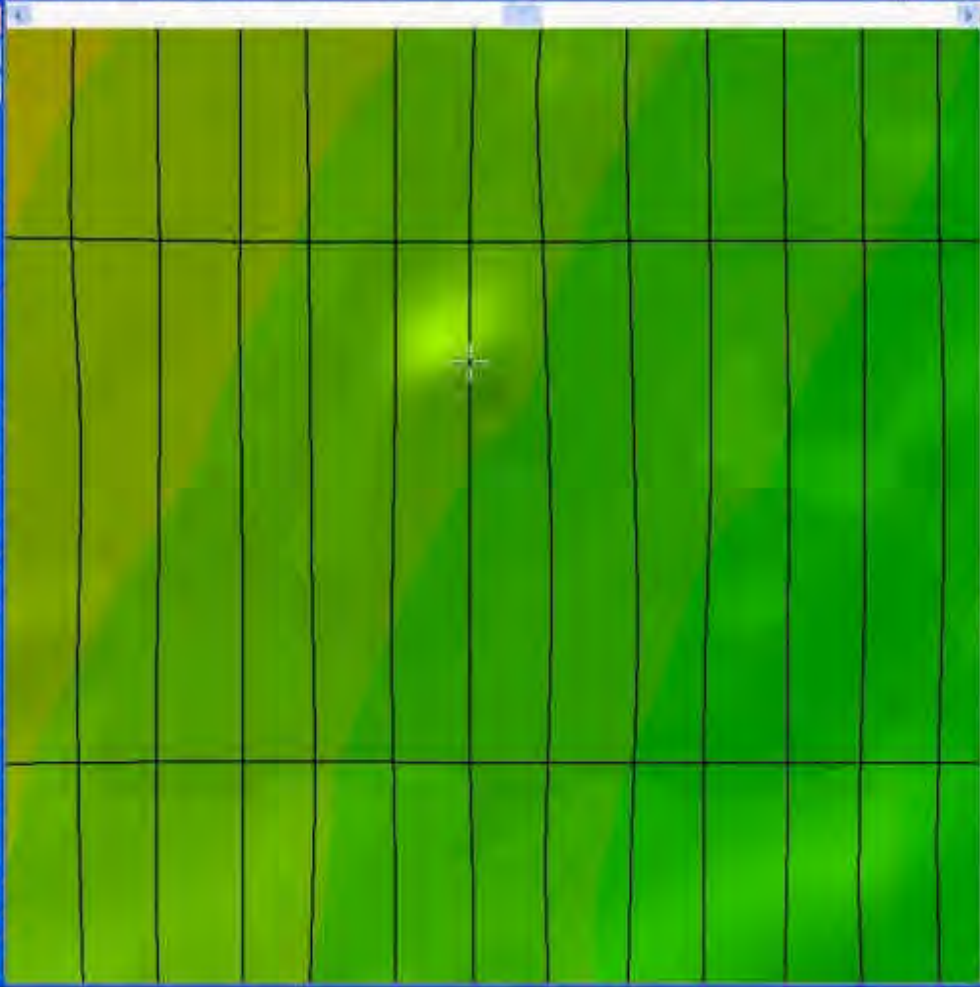
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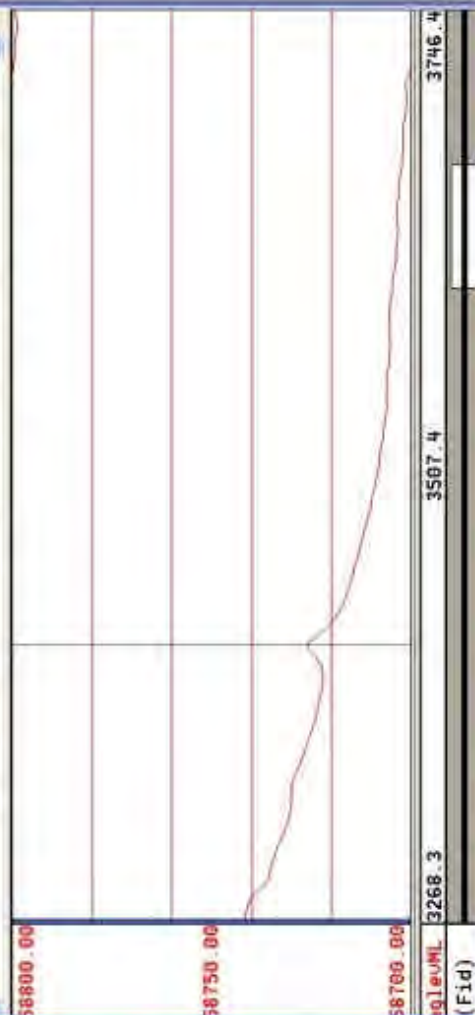
✓ L1180.4	x	y	galt	gtime	radar	sysstime	diff4
2204.0	526391.22	6280058.78	715.98	69958.40	52.61	519753.00	-0.0
2205.0	526382.75	6280058.55	715.90	69958.50	52.52	519754.00	0.0
2206.0	526374.28	6280058.32	715.82	69958.60	52.42	519755.00	-0.0
2207.0	526365.81	6280058.09	715.74	69958.70	52.32	519756.00	0.0
2208.0	526357.34	6280057.86	715.66	69958.80	52.22	519757.00	0.0
2209.0	526348.87	6280057.63	715.58	69958.90	52.13	519758.00	-0.0
2210.0	526340.40	6280057.40	715.50	69959.00	52.03	519759.00	-0.0
2211.0	526331.94	6280057.09	715.39	69959.10	52.02	519760.00	0.0
2212.0	526323.48	6280056.78	715.28	69959.20	52.01	519761.00	-0.0
2213.0	526315.02	6280056.47	715.17	69959.30	51.99	519762.00	0.0
2214.0	526306.56	6280056.16	715.06	69959.40	51.98	519763.00	-0.0
2215.0	526298.10	6280055.85	714.95	69959.50	51.97	519764.00	0.0
2216.0	526289.64	6280055.54	714.84	69959.60	51.96	519765.00	0.0
2217.0	526281.18	6280055.23	714.73	69959.70	51.95	519766.00	-0.0
2218.0	526272.72	6280054.92	714.62	69959.80	51.93	519767.00	0.0
2219.0	526264.26	6280054.61	714.51	69959.90	51.92	519768.00	0.0
2220.0	526255.80	6280054.30	714.40	69960.00	51.91	519769.00	-0.0



meqleuML	1981.3	2301.3	2621.3
(Fid)			



	1220.4	x	y	galt	gtime	radar	systime	diff4
	3398.0	515746.14	6280664.86	738.94	71803.80	65.53	538207.00	0.0
	3399.0	515737.97	6280664.88	738.97	71803.90	64.78	538208.00	-0.0
	3400.0	515729.80	6280664.90	739.00	71804.00	64.02	538209.00	0.0
	3401.0	515721.62	6280664.88	738.75	71804.10	64.28	538210.00	0.0
	3402.0	515713.44	6280664.86	738.50	71804.20	64.38	538211.00	0.0
	3403.0	515705.26	6280664.84	738.25	71804.38	64.56	538212.00	0.0
	3404.0	515697.08	6280664.82	738.00	71804.40	64.74	538213.00	-0.0
	3405.0	515688.90	6280664.80	737.75	71804.50	64.92	538214.00	0.0
	3406.0	515680.72	6280664.78	737.50	71804.68	65.10	538215.00	0.0
	3407.0	515672.54	6280664.76	737.25	71804.70	65.28	538216.00	0.0
	3408.0	515664.36	6280664.74	737.00	71804.88	65.46	538217.00	-0.0
	3409.0	515656.18	6280664.72	736.75	71804.90	65.64	538218.00	0.0
	3410.0	515648.00	6280664.70	736.50	71805.00	65.82	538219.00	0.0
	3411.0	515639.77	6280664.67	736.18	71805.18	64.69	538220.00	-0.0
	3412.0	515631.54	6280664.64	735.86	71805.20	63.56	538221.00	0.0
	3413.0	515623.31	6280664.81	735.54	71805.30	62.42	538222.00	0.0
	3414.0	515615.08	6280664.58	735.22	71805.40	61.29	538223.00	-0.0

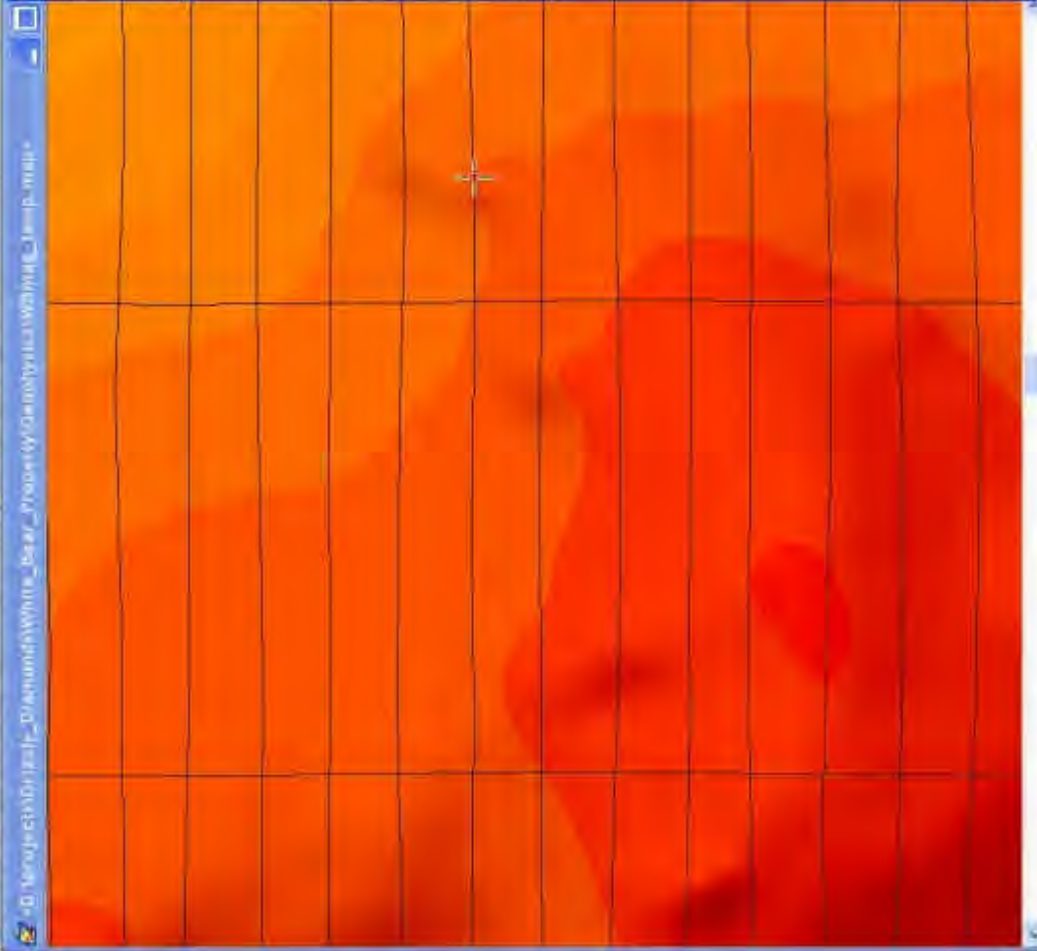


3268.3 (Fid)

Data

Select Interactive Zoom Point...

✓ L1240.4	x	y	galt	gtime	radar	sysstime	diff4
2566.0	524125.78	6280959.70	719.60	72855.60	72.92	548725.00	-0.0
2567.0	524117.36	6280959.55	719.25	72855.70	72.67	548726.00	0.0
2568.0	524108.94	6280959.40	718.90	72855.80	72.42	548727.00	-0.0
2569.0	524100.52	6280959.25	718.55	72855.90	72.17	548728.00	0.0
2570.0	524092.10	6280959.10	718.20	72856.00	71.92	548729.00	0.0
2571.0	524083.68	6280959.00	717.99	72856.10	70.97	548730.00	-0.0
2572.0	524075.26	6280959.10	717.78	72856.20	70.01	548731.00	0.0
2573.0	524066.85	6280959.10	717.57	72856.30	69.06	548732.00	-0.0
2574.0	524058.43	6280959.10	717.36	72856.40	68.10	548733.00	0.0
2575.0	524049.85	6280959.10	717.15	72856.50	67.14	548734.00	-0.0
2576.0	524041.48	6280959.10	716.94	72856.60	66.19	548735.00	0.0
2577.0	524032.95	6280959.10	716.73	72856.70	65.23	548736.00	0.0
2578.0	524024.50	6280959.10	716.52	72856.80	64.28	548737.00	-0.0
2579.0	524016.05	6280959.10	716.31	72856.90	63.32	548738.00	0.0
2580.0	524007.60	6280959.10	716.10	72857.00	62.37	548739.00	-0.0
2581.0	523999.14	6280959.11	715.86	72857.10	61.46	548740.00	0.0
2582.0	523990.68	6280959.12	715.62	72857.20	60.56	548741.00	-0.0

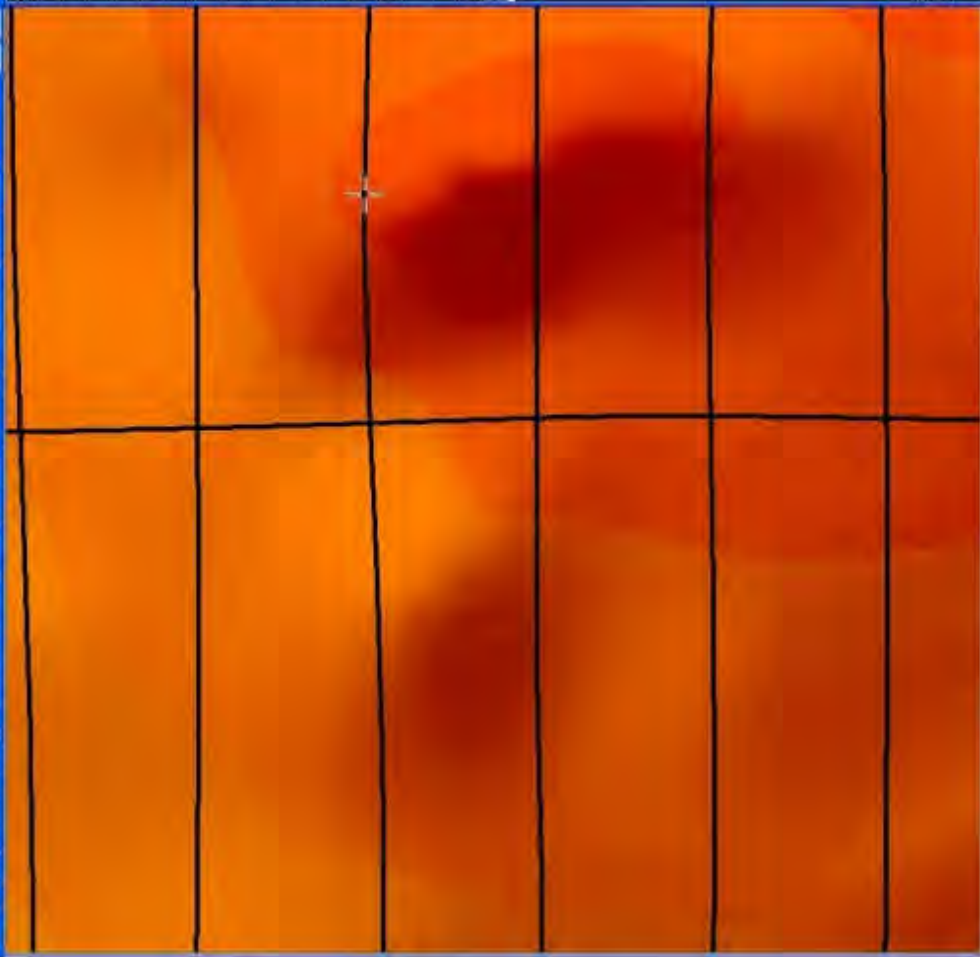


Cell 6280959.55

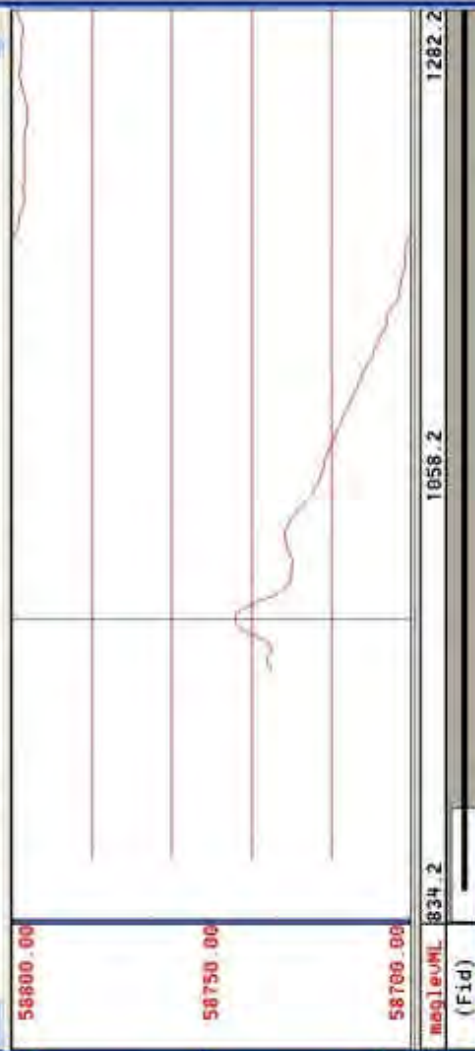
Select Interactive Zoom Point...

meqlevML 2363.4 (Fid)

2623.5 2883.6



id	x	y	u	galt	gtime	radar	systime	diff4
981.0	527061.76	6283665.95	702.74	85266.10	49.61	672807.00	0.0	
982.0	527053.22	6283665.90	702.88	85266.20	50.16	672808.00	0.0	
983.0	527044.68	6283665.85	703.02	85266.30	50.70	672809.00	0.0	
984.0	527036.14	6283665.80	703.16	85266.40	51.24	672810.00	0.0	
985.0	527027.60	6283665.75	703.30	85266.50	51.79	672811.00	0.0	
986.0	527019.06	6283665.70	703.44	85266.60	52.33	672812.00	0.0	
987.0	527010.52	6283665.65	703.58	85266.70	52.87	672813.00	0.0	
988.0	527001.98	6283665.60	703.72	85266.80	53.41	672814.00	0.0	
989.0	526993.44	6283665.55	703.86	85266.90	53.96	672815.00	0.0	
990.0	526984.90	6283665.50	704.00	85267.00	54.50	672816.00	0.0	
991.0	526976.35	6283665.45	704.14	85267.10	54.51	672817.00	0.0	
992.0	526967.80	6283665.40	704.28	85267.20	54.52	672818.00	0.0	
993.0	526959.25	6283665.35	704.42	85267.30	54.53	672819.00	0.0	
994.0	526950.70	6283665.30	704.56	85267.40	54.54	672820.00	0.0	
995.0	526942.15	6283665.25	704.70	85267.50	54.55	672821.00	0.0	
996.0	526933.60	6283665.20	704.84	85267.60	54.55	672822.00	0.0	
997.0	526925.05	6283665.15	704.98	85267.70	54.56	672823.00	0.0	



Cell 6283665.90

Select Interactive Zoom Point...



Microsoft Excel

Windows Media

PowerPoint

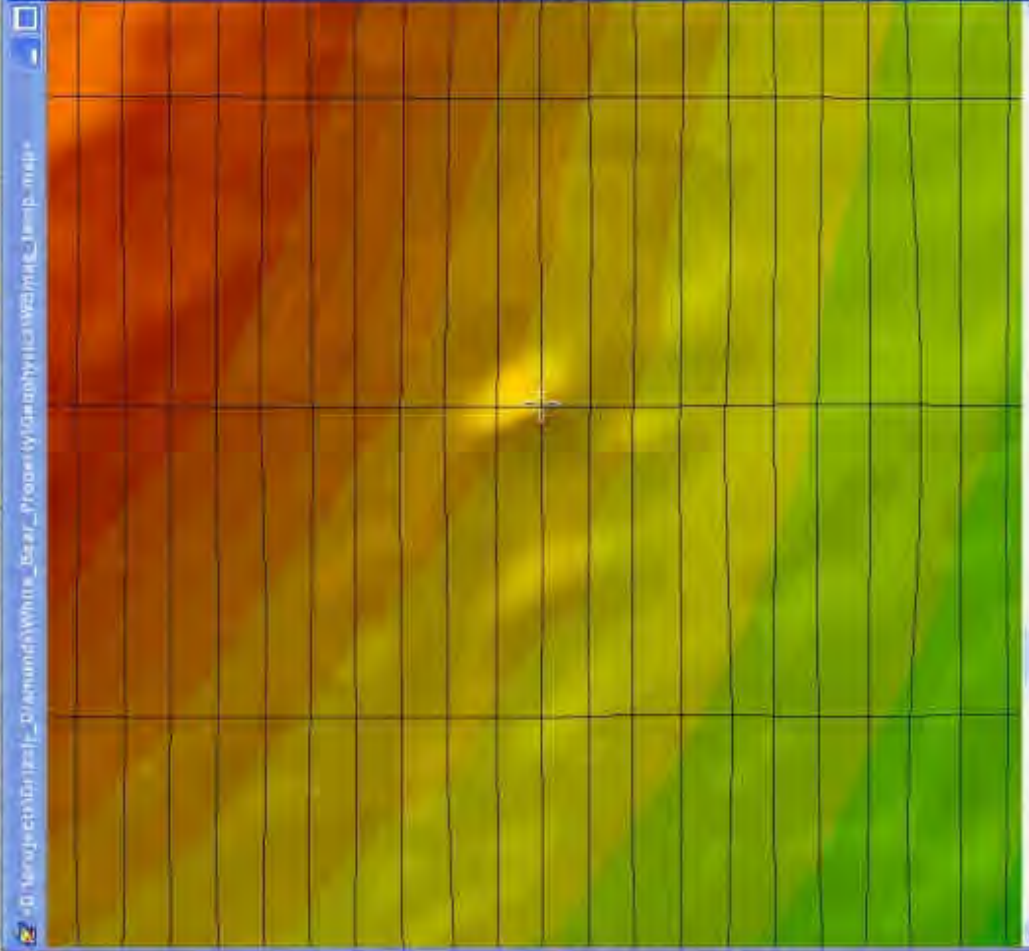
Date

527215.81 6283665.95

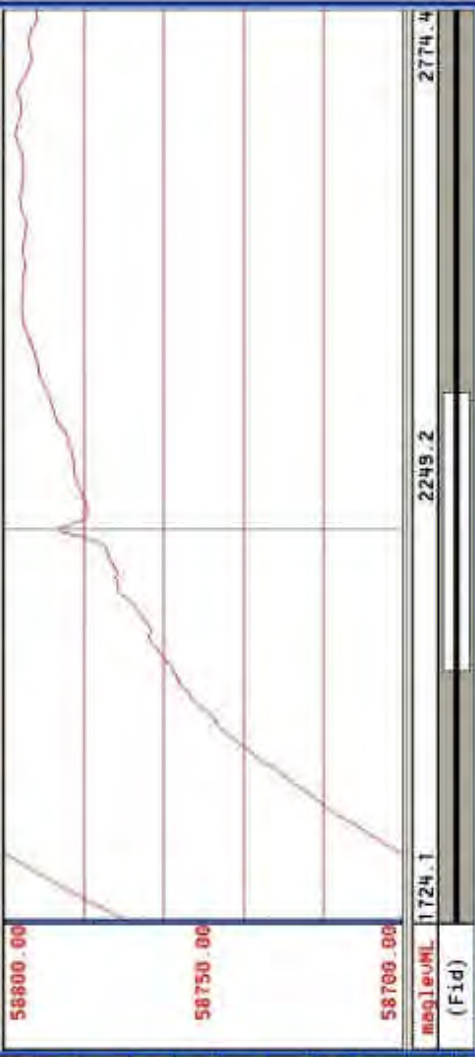


1st High Priority

wb-128 - Windows Pic...



✓ L1450.5	x	y	galt	gtime	radar	systime	diff4
2159.0	509729.89	6284114.03	660.72	287.90	56.19	687025.00	-0.1
2160.0	509738.40	6284114.10	660.90	288.00	55.72	687026.00	0.0
2161.0	509746.91	6284114.21	661.00	288.10	56.33	687027.00	-0.0
2162.0	509755.42	6284114.32	661.10	288.20	56.93	687028.00	-0.0
2163.0	509763.93	6284114.43	661.20	288.30	57.54	687029.00	0.0
2164.0	509772.44	6284114.54	661.30	288.40	58.15	687030.00	0.0
2165.0	509780.95	6284114.65	661.40	288.50	58.76	687031.00	-0.0
2166.0	509789.46	6284114.76	661.50	288.60	59.36	687032.00	0.0
2167.0	509797.97	6284114.87	661.60	288.70	59.97	687033.00	0.0
2168.0	509806.48	6284114.98	661.70	288.80	60.58	687034.00	0.0
2169.0	509814.99	6284115.09	661.80	288.90	61.18	687035.00	0.0
2170.0	509823.50	6284115.20	661.90	289.00	61.79	687036.00	0.0
2171.0	509831.99	6284115.26	662.03	289.10	62.14	687037.00	-0.1
2172.0	509840.48	6284115.32	662.16	289.20	62.49	687038.00	0.0
2173.0	509848.97	6284115.38	662.29	289.30	62.83	687039.00	0.0
2174.0	509857.46	6284115.44	662.42	289.40	63.18	687040.00	0.0
2175.0	509865.95	6284115.50	662.55	289.50	63.53	687041.00	-0.0



Cell 6284115.50

Select Interactive Zoom Point...



start

See about...

Security Monitor

Windows Media

PowerDesk

Date

589863.400, 6283165.09



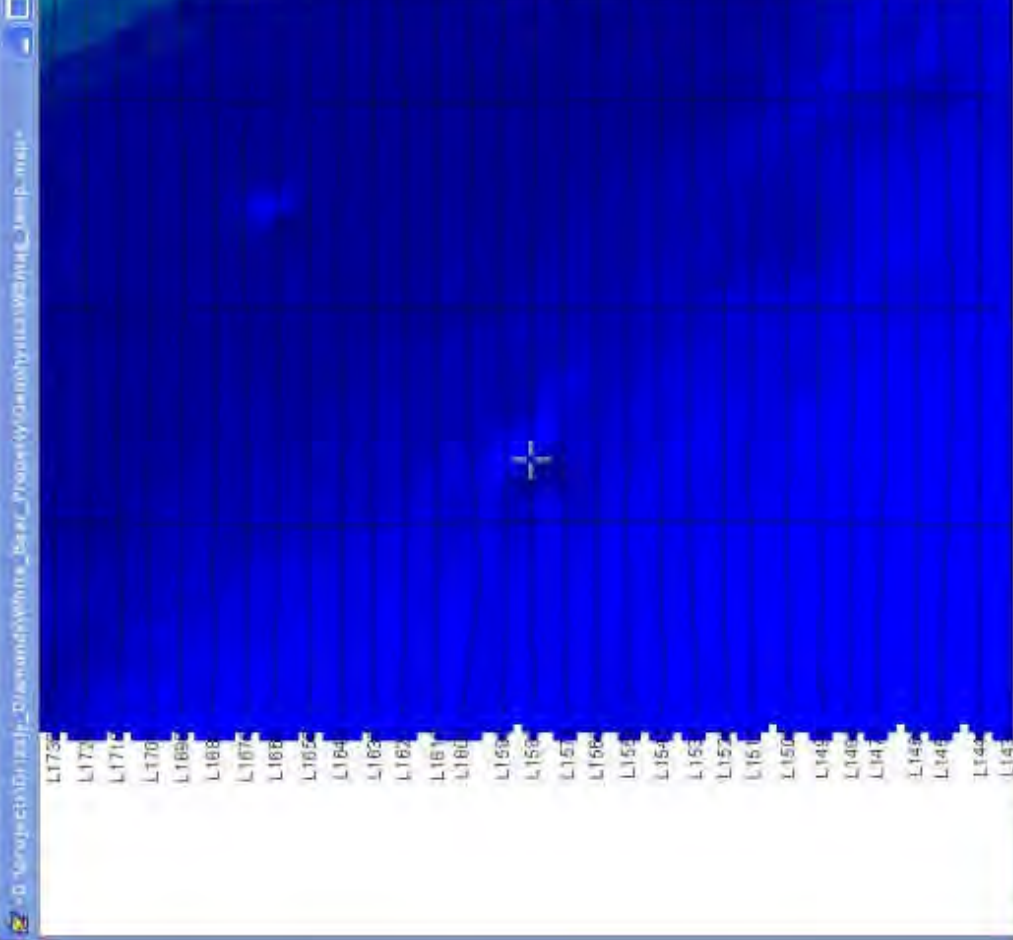
Start

1st High Priority

wb-132 - Windows Pic...

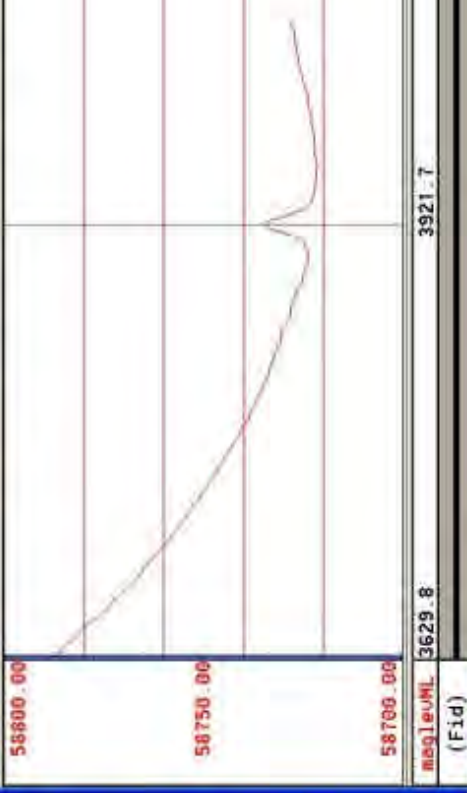


11:34 AM



D:\Project\Grizzly\_Diamonds\White\_Bear\_Property\Geophysics\GrizzPRE.gbb

Cell	x	y	galt	gtime	radar	sysstime	diff4
L175	499230.59	6286068.39	622.02	59029.10	48.98	410437.00	0.0
L172	499281.88	6286068.38	621.94	59029.20	49.96	410438.00	-0.0
L171	499273.17	6286068.37	621.86	59029.30	50.94	410439.00	0.0
L170	499264.46	6286068.36	621.78	59029.40	51.92	410440.00	0.0
L169	499255.75	6286068.35	621.70	59029.50	52.90	410441.00	-0.0
L168	499247.04	6286068.34	621.62	59029.60	53.88	410442.00	0.0
L167	499238.33	6286068.33	621.54	59029.70	54.86	410443.00	0.0
L166	499229.62	6286068.32	621.46	59029.80	55.84	410444.00	-0.0
L165	499220.91	6286068.31	621.38	59029.90	56.82	410445.00	0.0
L164	499212.20	6286068.30	621.30	59030.00	57.80	410446.00	-0.1
L163	499203.50	6286068.29	621.22	59030.10	57.36	410447.00	0.0
L162	499194.80	6286068.28	621.14	59030.20	56.92	410448.00	0.0
L161	499186.10	6286068.27	621.06	59030.30	56.48	410449.00	-0.1
L160	499177.40	6286068.26	620.98	59030.40	56.04	410450.00	0.0
L159	499168.70	6286068.25	620.90	59030.50	55.60	410451.00	0.0
L158	499160.00	6286068.24	620.82	59030.60	55.16	410452.00	-0.0
L157	499151.30	6286067.95	621.02	59030.70	54.72	410453.00	0.0



Cell 6286067.95

Select Interactive Zoom Point...

start

Assembly Manual

PowerDesk

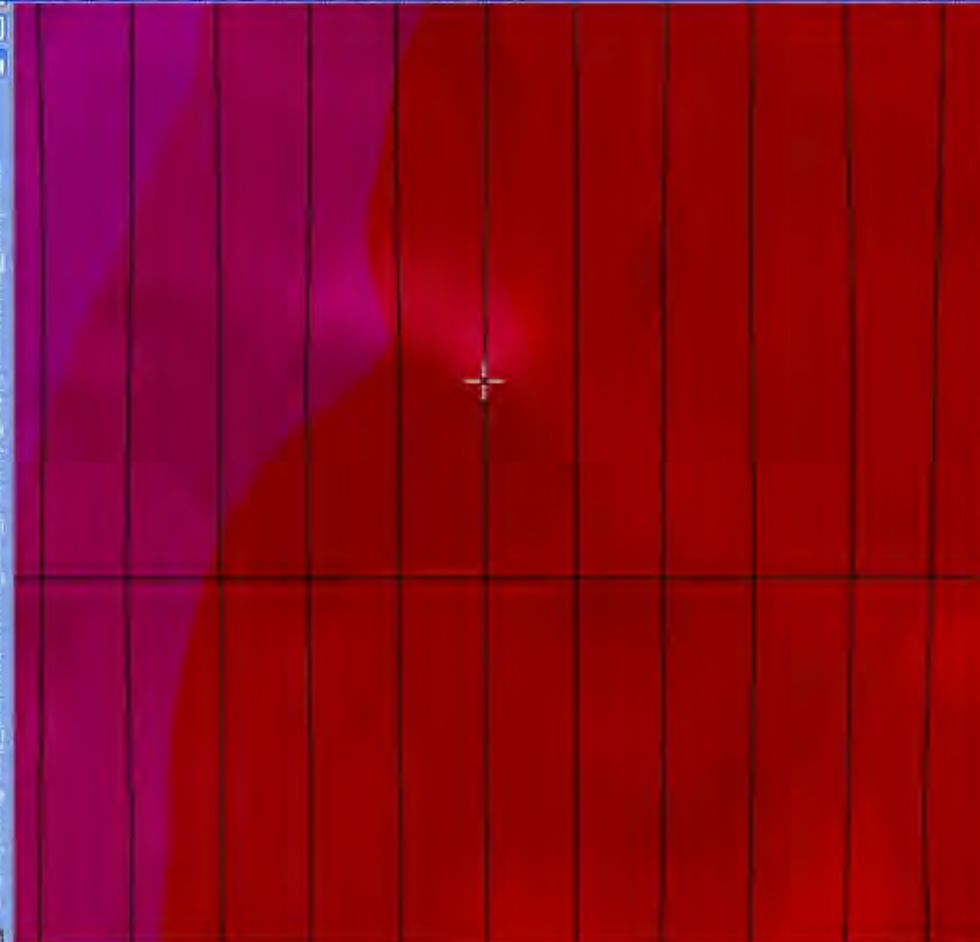
Windows Mail

wb-144 - Internet

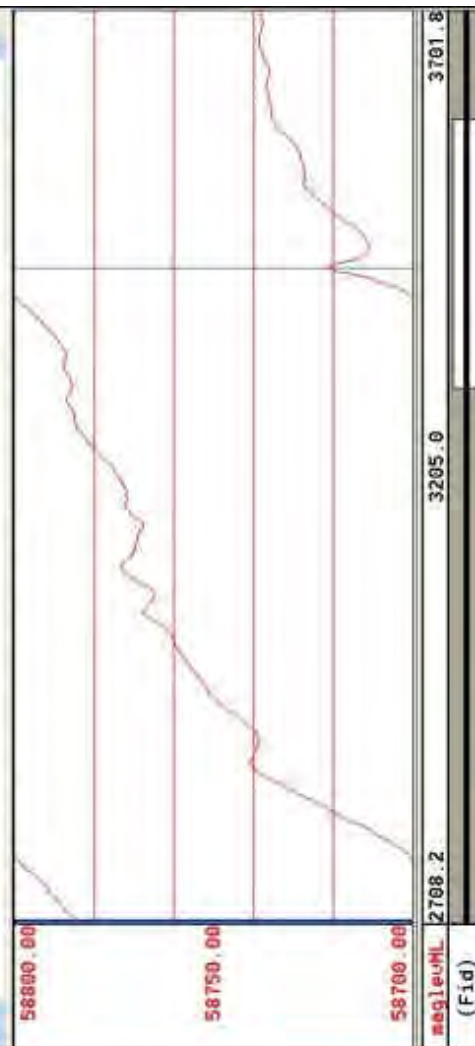
Date

500824.02: 6283844.38

Navigation icons: Home, Back, Forward, Stop, Refresh, Print, Zoom In, Zoom Out, Full Screen, Help



L1700.6	x	y	galt	gtime	radar	syptime	diff4
3409.0	521083.13	6287864.01	724.70	61120.90	48.70	431355.00	0.0
3410.0	521092.00	6287864.00	724.70	61121.00	48.73	431356.00	0.0
3411.0	521100.87	6287863.97	724.70	61121.10	48.89	431357.00	-0.0
3412.0	521109.74	6287863.94	724.70	61121.20	49.05	431358.00	0.0
3413.0	521118.61	6287863.91	724.70	61121.30	49.21	431359.00	-0.0
3414.0	521127.48	6287863.88	724.70	61121.40	49.37	431360.00	0.0
3415.0	521136.35	6287863.85	724.70	61121.50	49.52	431361.00	0.0
3416.0	521145.22	6287863.82	724.70	61121.60	49.68	431362.00	0.0
3417.0	521154.09	6287863.79	724.70	61121.70	49.84	431363.00	-0.1
3418.0	521162.96	6287863.76	724.70	61121.80	50.00	431364.00	0.1
3419.0	521171.83	6287863.73	724.70	61121.90	50.16	431365.00	-0.0
3420.0	521180.70	6287863.70	724.70	61122.00	50.32	431366.00	0.0
3421.0	521189.58	6287863.65	724.68	61122.10	50.21	431367.00	0.0
3422.0	521198.46	6287863.60	724.66	61122.20	50.09	431368.00	0.0
3423.0	521207.34	6287863.55	724.64	61122.30	49.98	431369.00	-0.0
3424.0	521216.22	6287863.50	724.62	61122.40	49.87	431370.00	0.0
3425.0	521225.10	6287863.45	724.60	61122.50	49.76	431371.00	-0.0

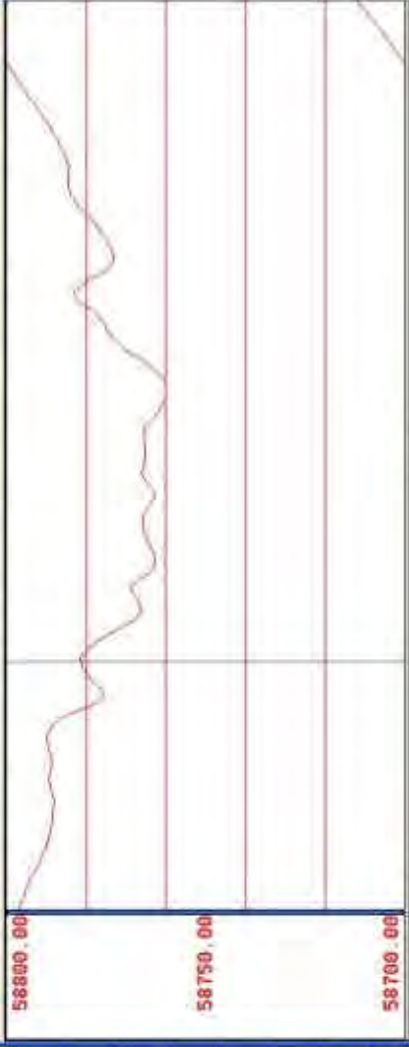


58800.00	2708.2	3205.0	3701.8
58750.00			
58700.00			
segleuHL	2708.2	3205.0	3701.8
(Fid)			





	x	y	galt	gtime	radar	sytttime	diff4
2407.0	512040.75	6288459.94	669.51	62748.70	58.83	447633.00	-0.0
2408.0	512049.60	6288459.86	669.44	62748.80	58.18	447634.00	0.0
2409.0	512058.45	6288459.78	669.37	62748.90	57.53	447635.00	-0.0
2410.0	512067.30	6288459.70	669.30	62749.00	56.88	447636.00	-0.0
2411.0	512076.16	6288459.60	669.32	62749.10	56.10	447637.00	0.0
2412.0	512085.02	6288459.50	669.34	62749.20	55.31	447638.00	0.0
2413.0	512093.88	6288459.40	669.36	62749.30	54.53	447639.00	-0.0
2414.0	512102.74	6288459.30	669.38	62749.40	53.74	447640.00	0.0
2415.0	512111.60	6288459.20	669.40	62749.50	52.96	447641.00	-0.0
2416.0	512120.46	6288459.10	669.42	62749.60	52.18	447642.00	0.0
2417.0	512129.32	6288459.00	669.44	62749.70	51.39	447643.00	-0.0
2418.0	512138.18	6288458.90	669.46	62749.80	50.61	447644.00	0.0
2419.0	512147.04	6288458.80	669.48	62749.90	49.82	447645.00	-0.0
2420.0	512155.90	6288458.70	669.50	62750.00	49.04	447646.00	0.0
2421.0	512164.75	6288458.57	669.48	62750.10	50.35	447647.00	-0.0
2422.0	512173.60	6288458.44	669.46	62750.20	51.66	447648.00	0.0
2423.0	512182.45	6288458.31	669.44	62750.30	52.96	447649.00	0.0



58800.00	
58750.00	
58700.00	
maglevHL 2288.4	2531.0
(Fid)	
	2773.6

Cell 1 6288458.57

Select Interactive Zoom Point...



start

Call montaj - d...

Microsoft Excel

Date

511605.305, 6288458.71



2nd Priority (possible wel...

wb-174 - Windows Pic...

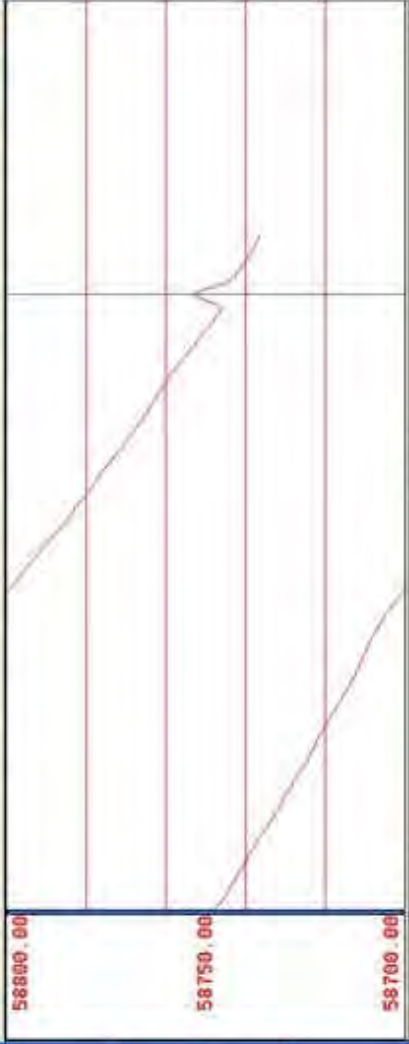


10:21 AM



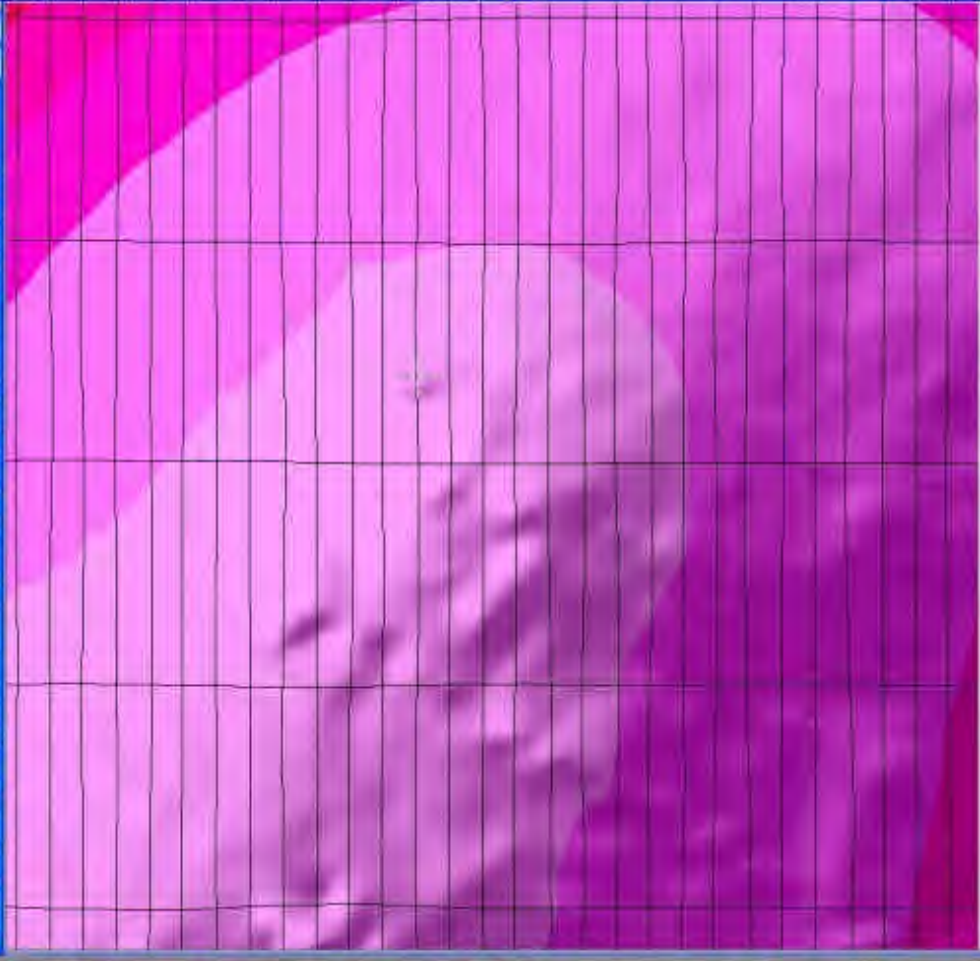


L1950:T	x	y	galt	gtime	radar	sytime	diff4
5557.0	498403.08	6291606.59	632.43	57185.70	63.48	391999.00	-0.0
5558.0	498394.42	6291606.56	632.32	57185.80	63.50	392000.00	0.0
5559.0	498385.76	6291606.53	632.21	57185.90	63.52	392001.00	0.0
5560.0	498377.10	6291606.50	632.10	57186.00	63.53	392002.00	-0.0
5561.0	498368.43	6291606.50	631.95	57186.10	63.96	392003.00	0.0
5562.0	498359.76	6291606.50	631.80	57186.20	64.38	392004.00	-0.0
5563.0	498351.09	6291606.50	631.65	57186.30	64.81	392005.00	0.0
5564.0	498342.42	6291606.50	631.50	57186.40	65.24	392006.00	0.0
5565.0	498333.75	6291606.50	631.35	57186.50	65.66	392007.00	-0.0
5566.0	498325.08	6291606.50	631.20	57186.60	66.09	392008.00	0.0
5567.0	498316.41	6291606.50	631.05	57186.70	66.52	392009.00	0.0
5568.0	498307.74	6291606.50	630.90	57186.80	66.95	392010.00	-0.0
5569.0	498299.07	6291606.50	630.75	57186.90	67.37	392011.00	0.0
5570.0	498290.40	6291606.50	630.60	57187.00	67.80	392012.00	0.0
5571.0	498281.72	6291606.52	630.34	57187.10	66.66	392013.00	-0.0
5572.0	498273.04	6291606.54	630.08	57187.20	65.52	392014.00	0.0
5573.0	498264.36	6291606.56	629.82	57187.30	64.38	392015.00	0.0



58800.00	5219.6	5479.8	5740.0
58750.00			
58700.00			
aeagleHL	5219.6	5479.8	5740.0
(Fid)			



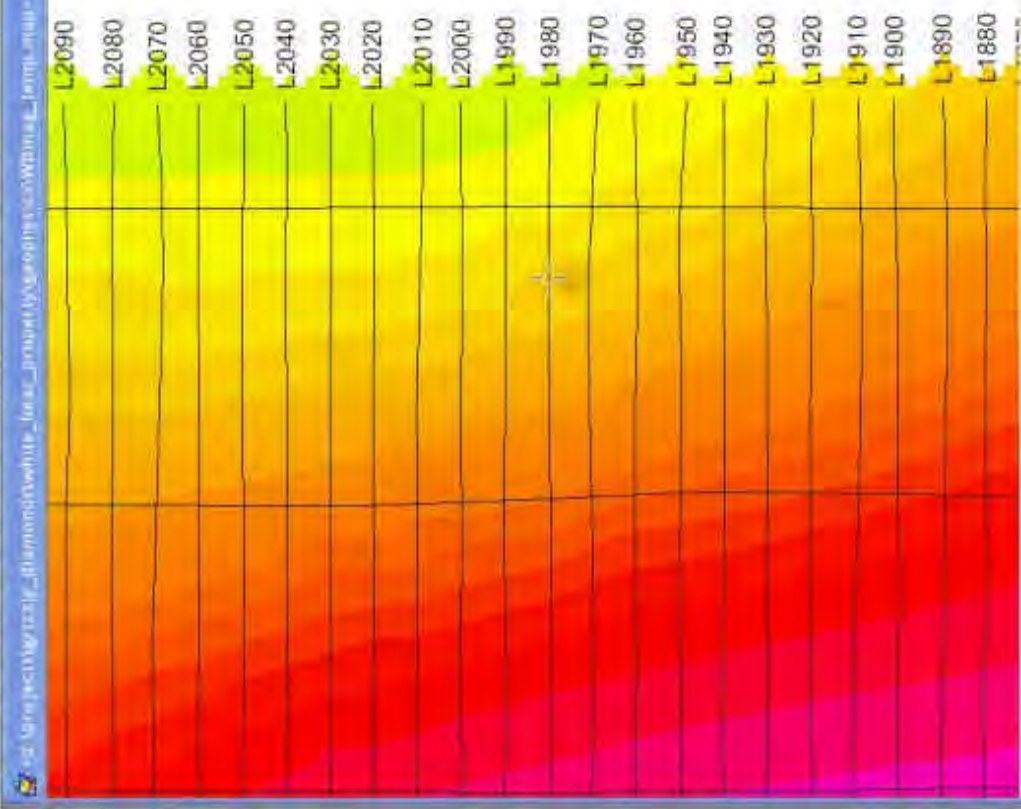


L1960:T	x	y	galt	gtime	radar	sytime	diff4
3620.0	522233.60	6291759.90	718.10	57557.00	57.03	395712.00	0.0
3621.0	522242.11	6291760.10	718.10	57557.10	57.09	395713.00	0.0
3622.0	522250.62	6291760.30	718.10	57557.20	57.15	395714.00	-0.0
3623.0	522259.13	6291760.50	718.10	57557.30	57.21	395715.00	0.0
3624.0	522267.64	6291760.70	718.10	57557.40	57.27	395716.00	0.0
3625.0	522276.15	6291760.90	718.10	57557.50	57.34	395717.00	-0.0
3626.0	522284.66	6291761.10	718.10	57557.60	57.40	395718.00	0.0
3627.0	522293.17	6291761.30	718.10	57557.70	57.46	395719.00	0.0
3628.0	522301.68	6291761.50	718.10	57557.80	57.52	395720.00	-0.0
3629.0	522310.19	6291761.70	718.10	57557.90	57.58	395721.00	0.0
3630.0	522318.70	6291761.90	718.10	57558.00	57.64	395722.00	-0.0
3631.0	522327.22	6291762.09	718.12	57558.10	57.64	395723.00	0.0
3632.0	522335.74	6291762.28	718.14	57558.20	57.63	395724.00	0.0
3633.0	522344.26	6291762.47	718.16	57558.30	57.63	395725.00	-0.0
3634.0	522352.78	6291762.66	718.18	57558.40	57.63	395726.00	0.0
3635.0	522361.30	6291762.85	718.20	57558.50	57.62	395727.00	0.0
3636.0	522369.82	6291763.04	718.22	57558.60	57.62	395728.00	-0.0



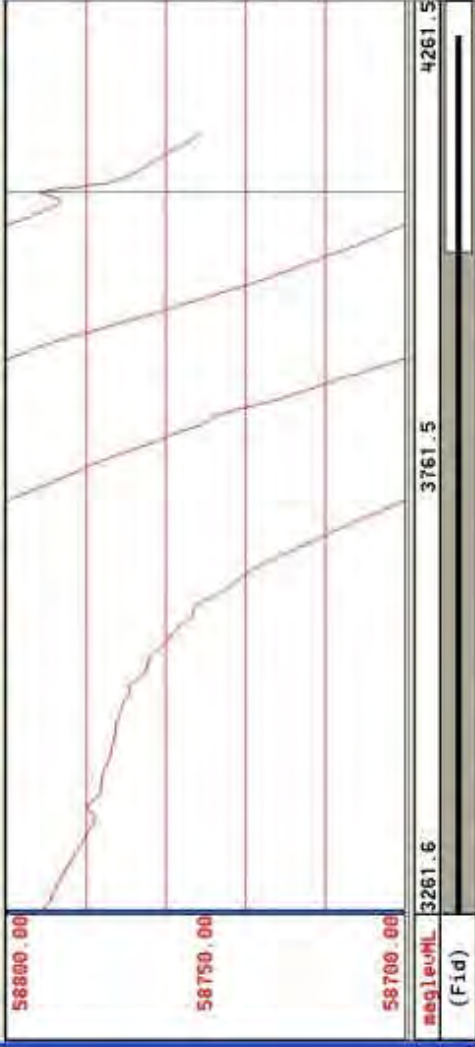
magLeuHL	3490.9	3743.7	3996.4
(Fid)			





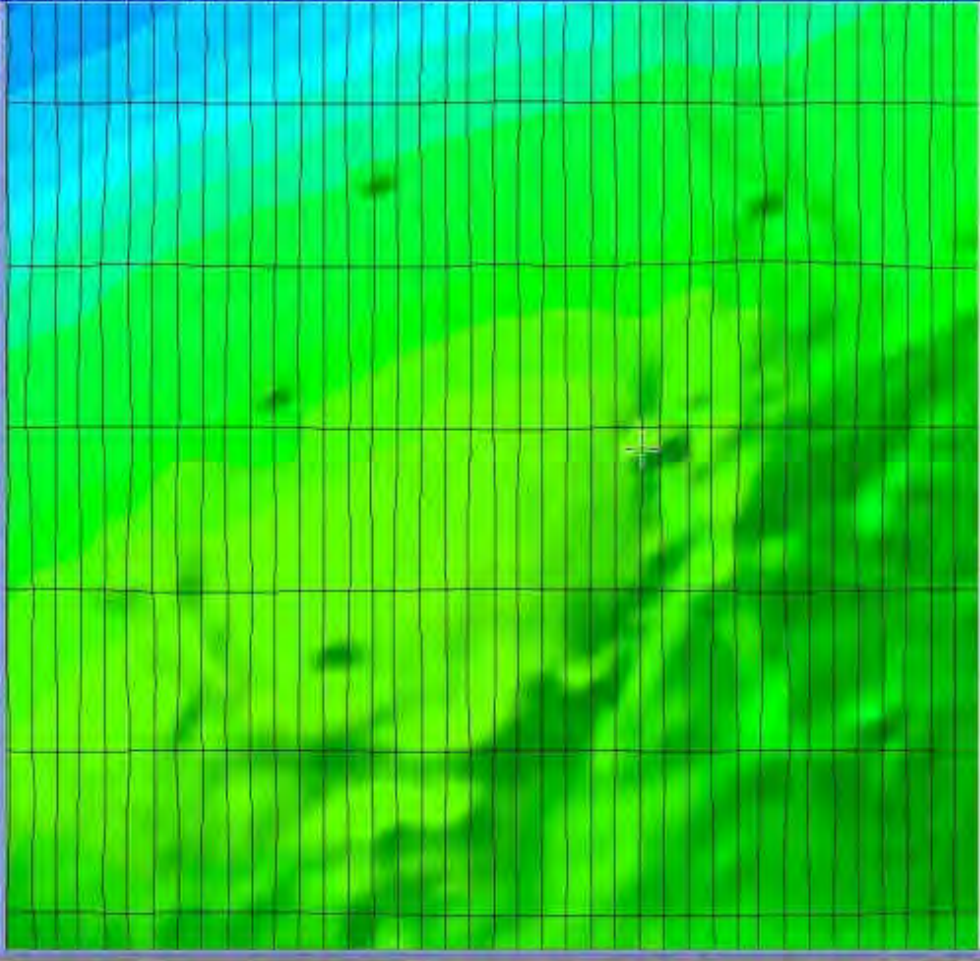
d:\projects\grizzly\_diamonds\white\_bear\_property\geophysics\GrizzPRE.gdb>

L1980:T	x	y	galt	gtime	radar	systime	diff4
4035.0	526475.25	6292061.90	727.05	58432.50	51.30	404467.00	0.0
4036.0	526483.78	6292061.98	727.02	58432.60	51.27	404468.00	-0.0
4037.0	526492.31	6292062.06	726.99	58432.70	51.25	404469.00	0.0
4038.0	526500.84	6292062.14	726.96	58432.80	51.22	404470.00	0.0
4039.0	526509.37	6292062.22	726.93	58432.90	51.20	404471.00	-0.0
4040.0	526517.90	6292062.30	726.90	58433.00	51.17	404472.00	0.0
4041.0	526526.40	6292062.34	727.05	58433.10	51.29	404473.00	0.0
4042.0	526534.90	6292062.38	727.20	58433.20	51.40	404474.00	-0.0
4043.0	526543.40	6292062.42	727.35	58433.30	51.52	404475.00	0.0
4044.0	526551.90	6292062.46	727.50	58433.40	51.63	404476.00	0.0
4045.0	526560.40	6292062.50	727.65	58433.50	51.75	404477.00	0.0
4046.0	526568.90	6292062.54	727.80	58433.60	51.87	404478.00	-0.0
4047.0	526577.40	6292062.58	727.95	58433.70	51.98	404479.00	0.0
4048.0	526585.90	6292062.62	728.10	58433.80	52.10	404480.00	-0.0
4049.0	526594.40	6292062.66	728.25	58433.90	52.21	404481.00	0.0
4050.0	526602.90	6292062.70	728.40	58434.00	52.33	404482.00	0.0
4051.0	526611.40	6292062.70	728.58	58434.10	52.21	404483.00	0.0

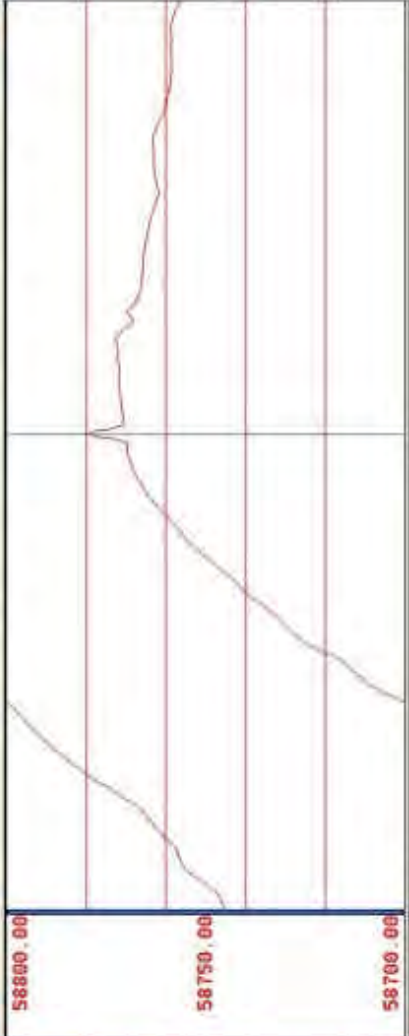


segleuHL	3261.6	3761.5	4261.5
(Fid)			



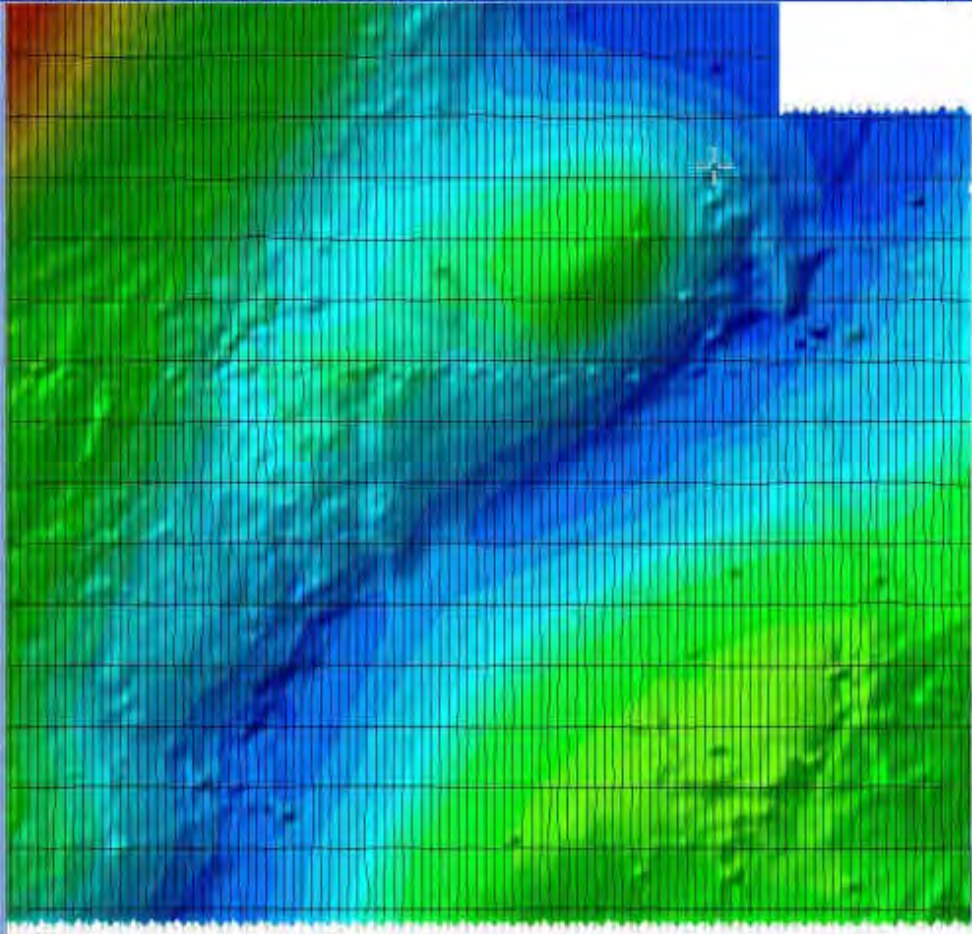


L160:2	x	y	galt	gtime	radar	sytttime	diff4
1843.0	511782.89	6264749.83	651.05	63931.30	60.19	459473.00	0.0
1844.0	511774.72	6264749.74	651.10	63931.40	60.56	459474.00	0.0
1845.0	511766.55	6264749.65	651.15	63931.50	60.92	459475.00	0.0
1846.0	511758.38	6264749.56	651.20	63931.60	61.29	459476.00	0.0
1847.0	511750.21	6264749.47	651.25	63931.70	61.66	459477.00	0.0
1848.0	511742.04	6264749.38	651.30	63931.80	62.03	459478.00	-0.0
1849.0	511733.87	6264749.29	651.35	63931.90	62.40	459479.00	0.0
1850.0	511725.70	6264749.20	651.40	63932.00	62.77	459480.00	0.0
1851.0	511717.53	6264749.14	651.48	63932.10	62.80	459481.00	-0.0
1852.0	511709.36	6264749.08	651.56	63932.20	62.84	459482.00	0.0
1853.0	511701.19	6264749.02	651.64	63932.30	62.87	459483.00	-0.0
1854.0	511693.02	6264748.96	651.72	63932.40	62.91	459484.00	0.0
1855.0	511684.85	6264748.90	651.80	63932.50	62.94	459485.00	0.0
1856.0	511676.68	6264748.84	651.88	63932.60	62.97	459486.00	-0.0
1857.0	511668.51	6264748.78	651.96	63932.70	63.01	459487.00	0.0
1858.0	511660.34	6264748.72	652.04	63932.80	63.04	459488.00	0.0
1859.0	511652.17	6264748.66	652.12	63932.90	63.08	459489.00	0.0

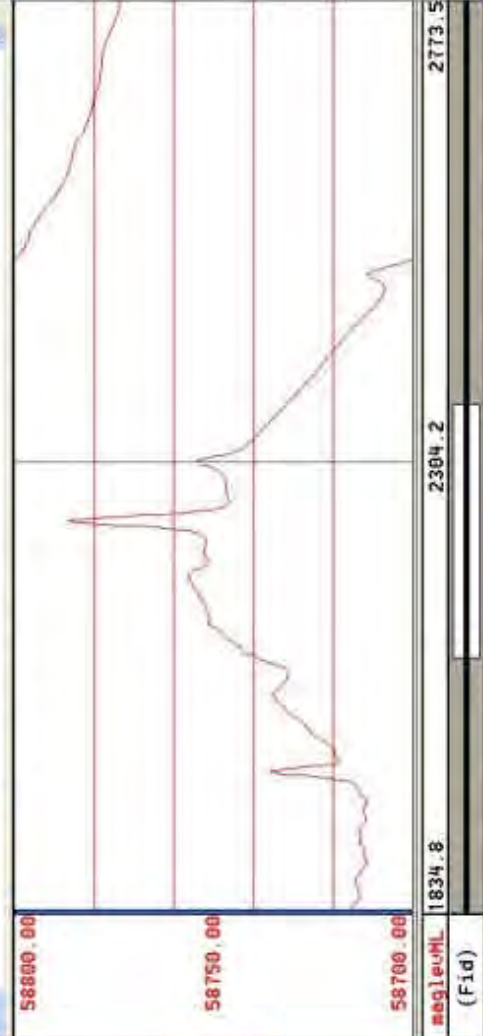


maglevHL	1340.5	1828.0	2315.5
(Fid)			





L290.2	x	y	galt	gtime	radar	sytime	diff4
2281.0	519911.62	6266708.21	662.11	68343.18	62.50	503591.00	0.0
2282.0	519920.34	6266708.32	662.12	68343.20	62.55	503592.00	-0.0
2283.0	519929.06	6266708.43	662.13	68343.30	62.59	503593.00	0.0
2284.0	519937.78	6266708.54	662.14	68343.40	62.63	503594.00	-0.0
2285.0	519946.50	6266708.65	662.15	68343.50	62.67	503595.00	0.0
2286.0	519955.22	6266708.76	662.16	68343.60	62.72	503596.00	0.0
2287.0	519963.94	6266708.87	662.17	68343.70	62.76	503597.00	0.0
2288.0	519972.66	6266708.98	662.18	68343.80	62.80	503598.00	-0.0
2289.0	519981.38	6266709.09	662.19	68343.90	62.85	503599.00	0.0
2290.0	519990.10	6266709.20	662.20	68344.00	62.89	503600.00	0.0
2291.0	519998.81	6266709.30	662.16	68344.10	62.70	503601.00	0.0
2292.0	520007.52	6266709.40	662.12	68344.20	62.51	503602.00	-0.0
2293.0	520016.23	6266709.50	662.08	68344.30	62.31	503603.00	0.0
2294.0	520024.94	6266709.60	662.04	68344.40	62.12	503604.00	-0.0
2295.0	520033.65	6266709.70	662.00	68344.50	61.93	503605.00	0.0
2296.0	520042.36	6266709.80	661.96	68344.60	61.74	503606.00	0.0
2297.0	520051.07	6266709.90	661.92	68344.70	61.55	503607.00	-0.0





L2000:T	x	y	galt	gtime	radar	sytime	diff4
3490.0	519722.00	6292359.10	737.30	59212.00	57.76	412262.00	-0.0
3491.0	519730.15	6292359.12	737.29	59212.10	56.68	412263.00	0.0
3492.0	519738.30	6292359.14	737.28	59212.20	55.61	412264.00	0.0
3493.0	519746.45	6292359.16	737.27	59212.30	54.53	412265.00	0.0
3494.0	519754.60	6292359.18	737.26	59212.40	53.45	412266.00	-0.0
3495.0	519762.75	6292359.20	737.25	59212.50	52.37	412267.00	0.0
3496.0	519770.90	6292359.22	737.24	59212.60	51.30	412268.00	0.0
3497.0	519779.05	6292359.24	737.23	59212.70	50.22	412269.00	0.0
3498.0	519787.20	6292359.26	737.22	59212.80	49.14	412270.00	0.0
3499.0	519795.35	6292359.28	737.21	59212.90	48.07	412271.00	-0.0
3500.0	519803.50	6292359.30	737.20	59213.00	46.99	412272.00	0.0
3501.0	519811.66	6292359.32	737.20	59213.10	47.36	412273.00	0.0
3502.0	519819.82	6292359.34	737.20	59213.20	47.72	412274.00	-0.0
3503.0	519827.98	6292359.36	737.20	59213.30	48.09	412275.00	0.0
3504.0	519836.14	6292359.38	737.20	59213.40	48.45	412276.00	-0.0
3505.0	519844.30	6292359.40	737.20	59213.50	48.82	412277.00	-0.0
3506.0	519852.46	6292359.42	737.20	59213.60	49.19	412278.00	0.0



58800.00	3048.3	3529.3	4010.4
58750.00			
58700.00			
negleuHL	3048.3	3529.3	4010.4
(Fid)			

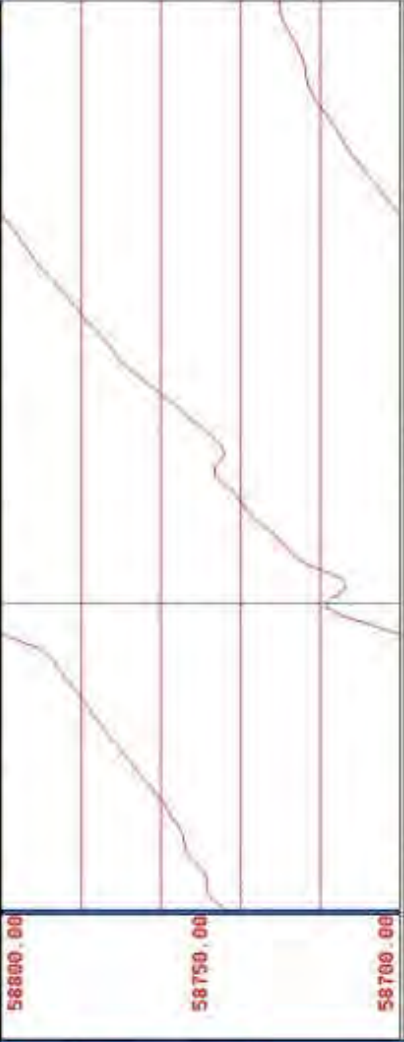
Cell 6292359.36

Select Interactive Zoom Point...



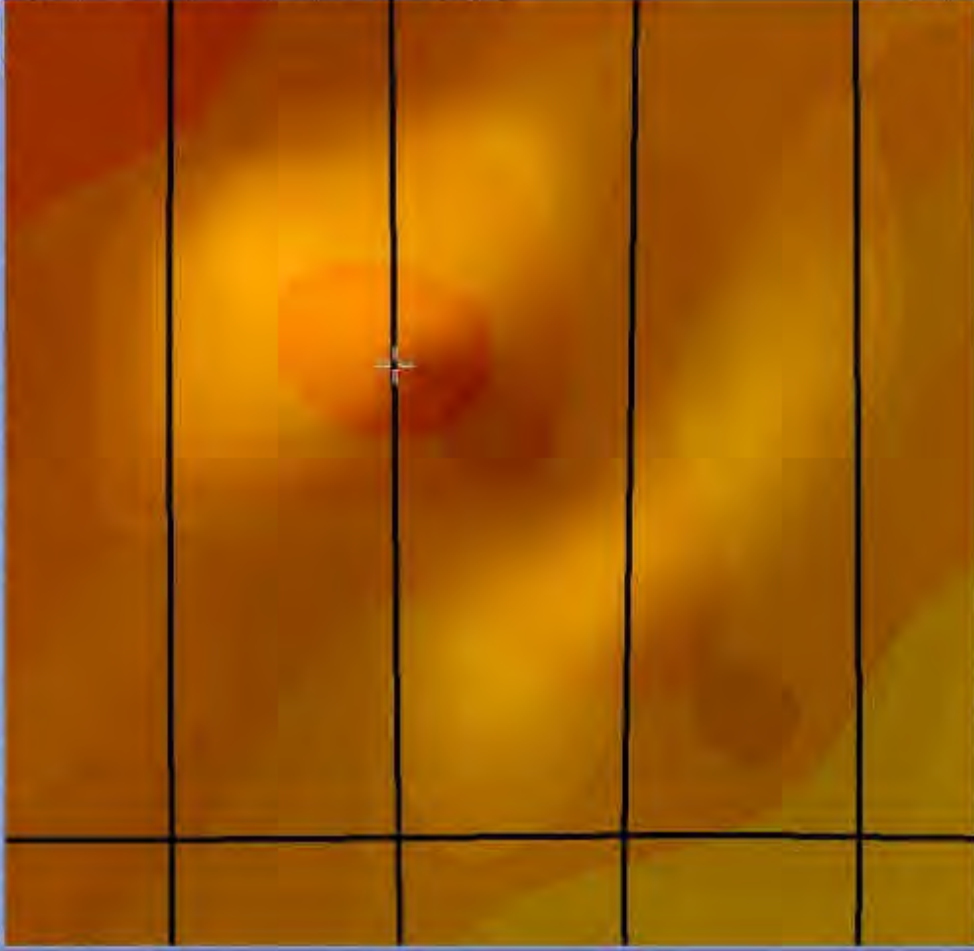


	x	y	galt	gtime	radar	sytttime	diff4
Move	.45	6293263.30	678.25	61727.70	56.27	437419.00	0.0
Size	.80	6293263.50	678.20	61727.80	57.07	437420.00	0.0
- Minimize	.15	6293263.70	678.15	61727.90	57.88	437421.00	0.0
□ Maximize	.50	6293263.90	678.10	61728.00	58.68	437422.00	0.0
X Close	.85	6293264.07	678.09	61728.10	58.87	437423.00	-0.0
	.20	6293264.24	678.08	61728.20	59.06	437424.00	0.0
Next	.55	6293264.41	678.07	61728.30	59.25	437425.00	0.0
	.90	6293264.58	678.06	61728.40	59.44	437426.00	-0.0
	3035.0	515568.25	6293264.75	678.05	61728.50	437427.00	0.0
	3036.0	515576.60	6293264.92	678.04	61728.60	437428.00	-0.0
	3037.0	515584.95	6293265.09	678.03	61728.70	437429.00	0.0
	3038.0	515593.30	6293265.26	678.02	61728.80	437430.00	0.0
	3039.0	515601.65	6293265.43	678.01	61728.90	437431.00	-0.0
	3040.0	515610.00	6293265.60	678.00	61729.00	437432.00	0.1
	3041.0	515618.35	6293265.77	678.00	61729.10	437433.00	-0.0
	3042.0	515626.70	6293265.94	678.00	61729.20	437434.00	0.0
	3043.0	515635.05	6293266.11	678.00	61729.30	437435.00	0.0

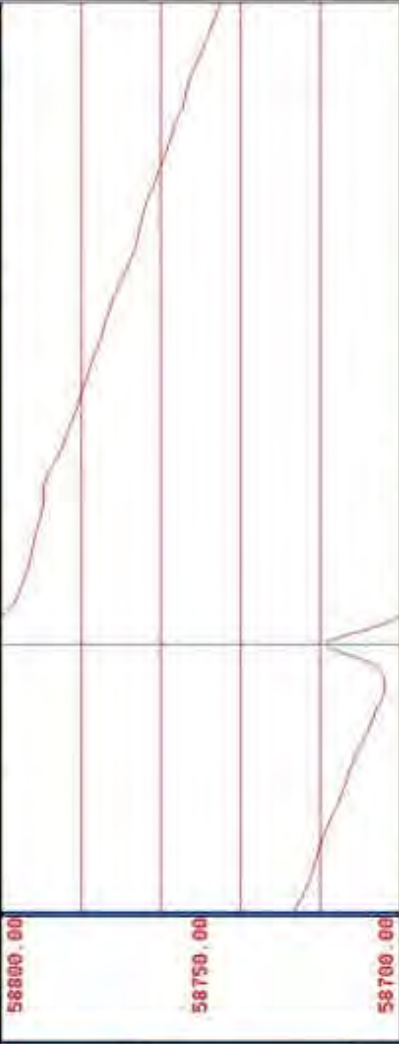


segleuHL	2900.6	3109.1	3317.6
(Fid)			

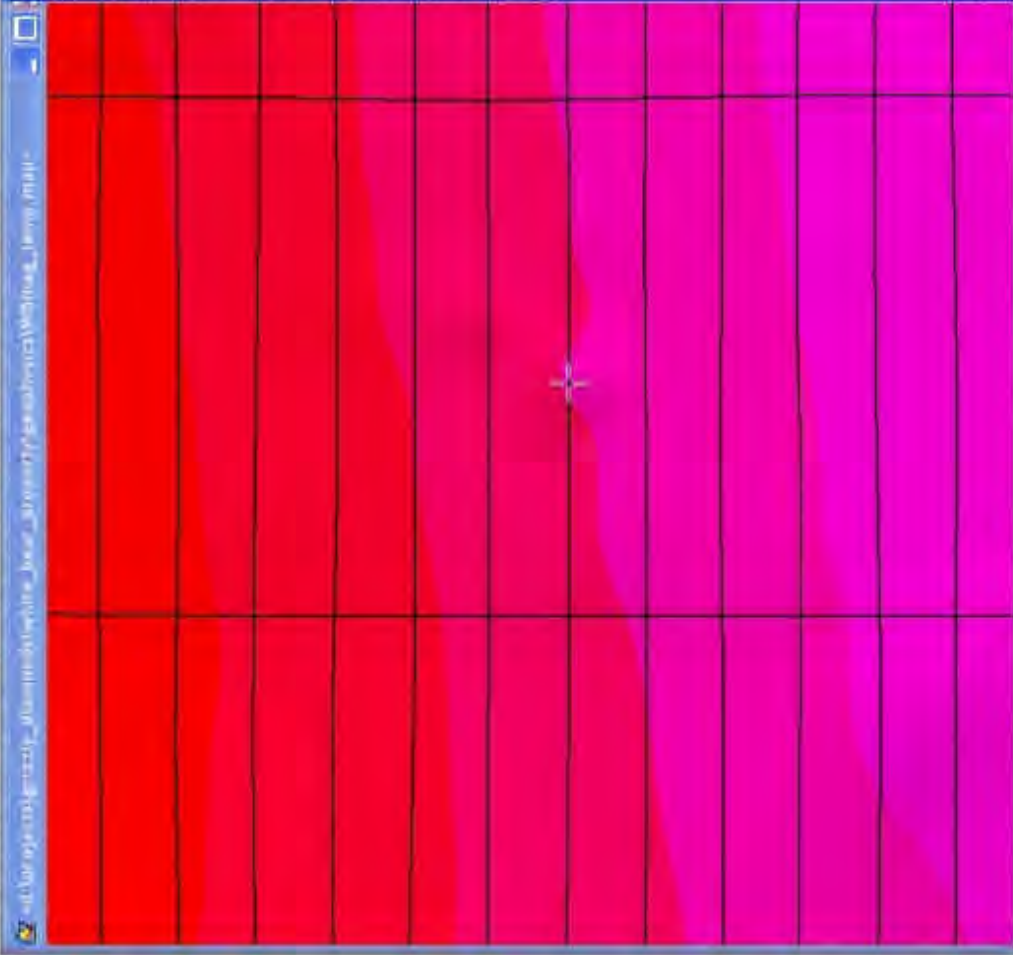




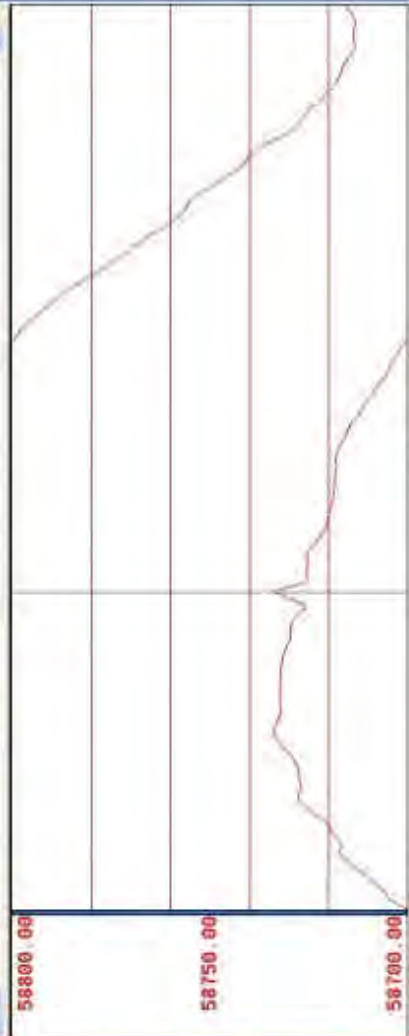
L2676:7	x	y	galt	gtime	radar	sytttime	diff4
3496.0	508210.04	6293416.24	665.00	62222.60	52.53	442368.00	0.0
3497.0	508201.48	6293416.18	665.00	62222.70	53.15	442369.00	0.0
3498.0	508192.92	6293416.12	665.00	62222.80	53.76	442370.00	0.0
3499.0	508184.36	6293416.06	665.00	62222.90	54.38	442371.00	0.0
3500.0	508175.80	6293416.00	665.00	62223.00	54.99	442372.00	-0.0
3501.0	508167.24	6293415.94	665.13	62223.10	54.82	442373.00	0.0
3502.0	508158.68	6293415.88	665.26	62223.20	54.64	442374.00	-0.0
3503.0	508150.12	6293415.82	665.39	62223.30	54.47	442375.00	0.0
3504.0	508141.56	6293415.76	665.52	62223.40	54.29	442376.00	0.0
3505.0	508133.00	6293415.70	665.65	62223.50	54.12	442377.00	-0.0
3506.0	508124.44	6293415.64	665.78	62223.60	53.95	442378.00	0.0
3507.0	508115.88	6293415.58	665.91	62223.70	53.77	442379.00	0.0
3508.0	508107.32	6293415.52	666.04	62223.80	53.60	442380.00	-0.0
3509.0	508098.76	6293415.46	666.17	62223.90	53.42	442381.00	0.0
3510.0	508090.20	6293415.40	666.30	62224.00	53.25	442382.00	-0.0
3511.0	508081.66	6293415.34	666.37	62224.10	53.08	442383.00	0.0
3512.0	508073.12	6293415.28	666.44	62224.20	52.90	442384.00	-0.0



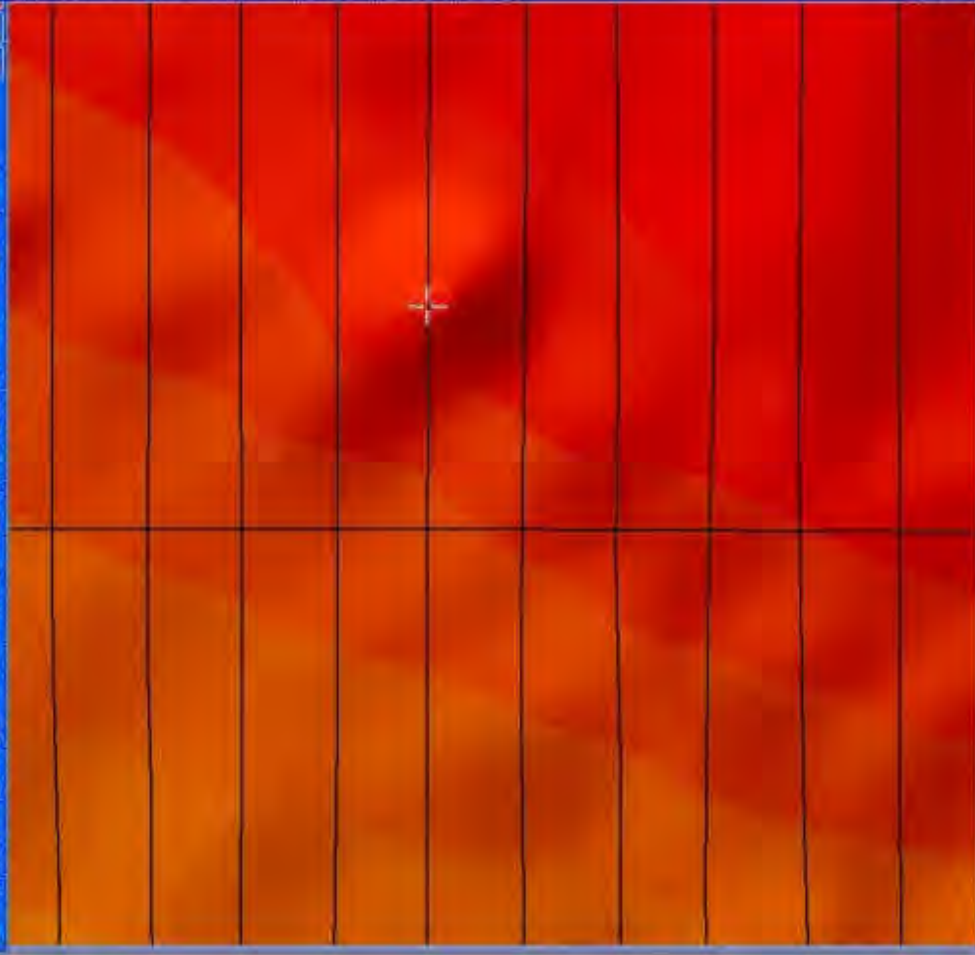
maglevHL 3387.7 3580.4 3773.2  
(Fid)



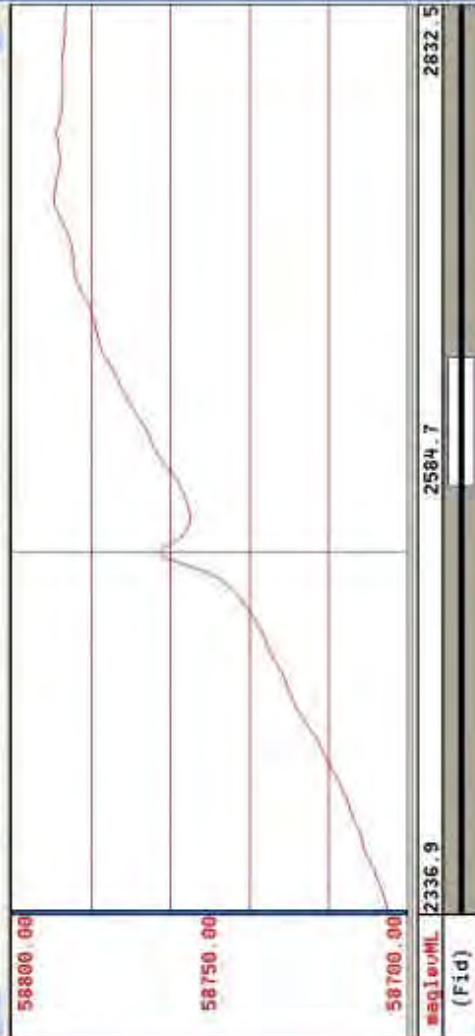
L2430: \$	x	y	u	galt	gtime	radar	sytime	diff4
1958.0	516431.92	6298809.02	693.60	83603.80	56.94	656166.00	-0.0	
1959.0	516423.46	6298809.01	693.65	83603.90	57.12	656167.00	0.0	
1960.0	516415.00	6298809.00	693.70	83604.00	57.31	656168.00	-0.0	
1961.0	516406.55	6298808.94	693.65	83604.10	57.22	656169.00	-0.0	
1962.0	516398.10	6298808.88	693.60	83604.20	57.13	656170.00	0.0	
1963.0	516389.65	6298808.82	693.55	83604.30	57.03	656171.00	-0.1	
1964.0	516381.20	6298808.76	693.50	83604.40	56.94	656172.00	0.1	
1965.0	516372.75	6298808.70	693.45	83604.50	56.85	656173.00	-0.0	
1966.0	516364.30	6298808.64	693.40	83604.60	56.76	656174.00	0.0	
1967.0	516355.85	6298808.58	693.35	83604.70	56.67	656175.00	-0.0	
1968.0	516347.40	6298808.52	693.30	83604.80	56.57	656176.00	-0.0	
1969.0	516338.95	6298808.46	693.25	83604.90	56.48	656177.00	0.0	
1970.0	516330.50	6298808.40	693.20	83605.00	56.39	656178.00	-0.0	
1971.0	516322.06	6298808.34	693.22	83605.10	56.56	656179.00	0.0	
1972.0	516313.62	6298808.28	693.24	83605.20	56.72	656180.00	-0.0	
1973.0	516305.18	6298808.22	693.26	83605.30	56.88	656181.00	0.0	
1974.0	516296.74	6298808.16	693.28	83605.40	57.05	656182.00	-0.0	



56800.00	1642.9	2112.7	2582.5
56750.00			
56700.00			
seglevHL	1642.9	2112.7	2582.5
(Fid)			



L2480: \$	x	y	galt	gtime	radar	sgttime	diff4
2527.0	513162.60	6299564.61	695.23	85801.70	50.28	678145.00	-0.0
2528.0	513171.00	6299564.64	695.12	85801.80	50.48	678146.00	0.0
2529.0	513179.40	6299564.67	695.01	85801.90	50.67	678147.00	-0.0
2530.0	513187.80	6299564.70	694.90	85802.00	50.87	678148.00	0.0
2531.0	513196.21	6299564.73	694.90	85802.10	51.07	678149.00	-0.0
2532.0	513204.62	6299564.76	694.90	85802.20	51.27	678150.00	0.0
2533.0	513213.03	6299564.79	694.90	85802.30	51.46	678151.00	0.0
2534.0	513221.44	6299564.82	694.90	85802.40	51.66	678152.00	0.0
2535.0	513229.85	6299564.85	694.90	85802.50	51.86	678153.00	0.0
2536.0	513238.26	6299564.88	694.90	85802.60	52.06	678154.00	0.0
2537.0	513246.67	6299564.91	694.90	85802.70	52.26	678155.00	0.0
2538.0	513255.08	6299564.94	694.90	85802.80	52.45	678156.00	0.0
2539.0	513263.49	6299564.97	694.90	85802.90	52.65	678157.00	0.0
2540.0	513271.90	6299565.00	694.90	85803.00	52.85	678158.00	0.0
2541.0	513280.32	6299564.96	694.93	85803.10	52.94	678159.00	0.0
2542.0	513288.74	6299564.92	694.96	85803.20	53.02	678160.00	0.0
2543.0	513297.16	6299564.88	694.99	85803.30	53.11	678161.00	-0.0

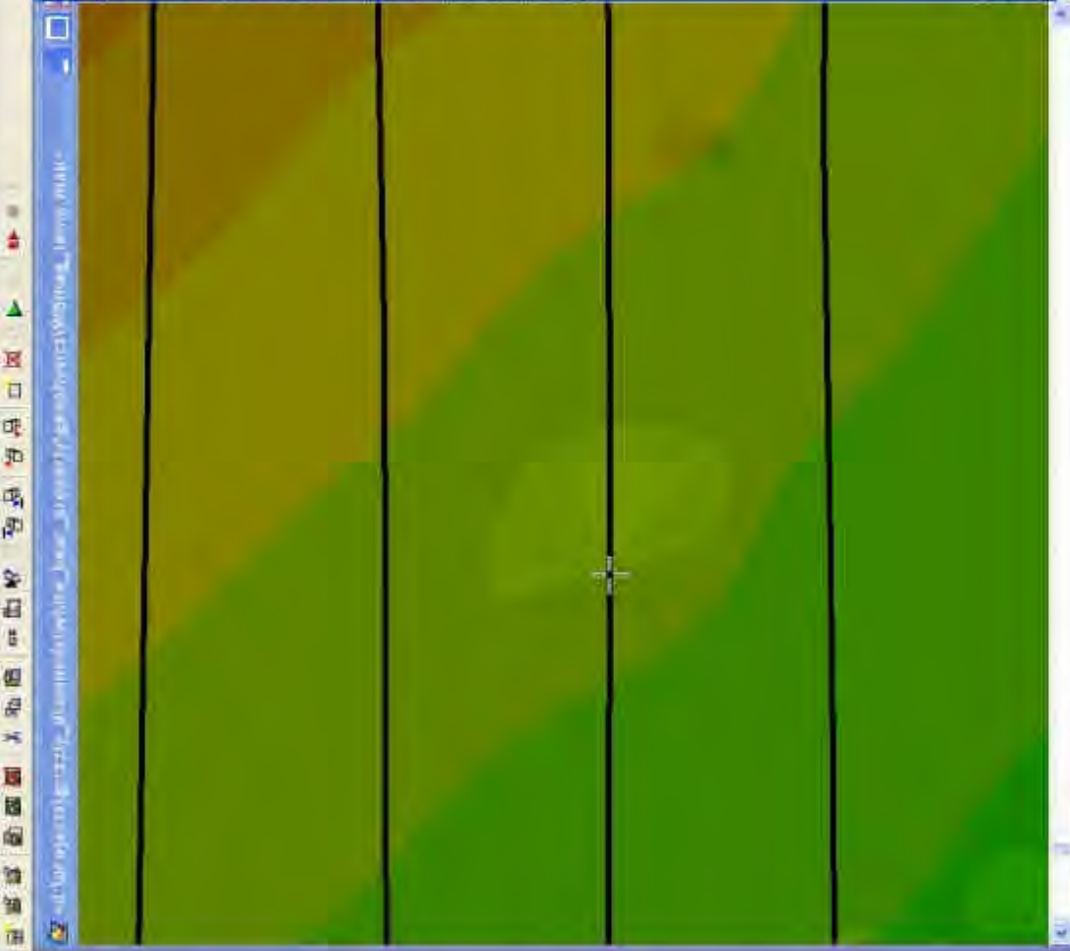


Cell 6299564.79

Sublet Interactive Zoom Plot

Data

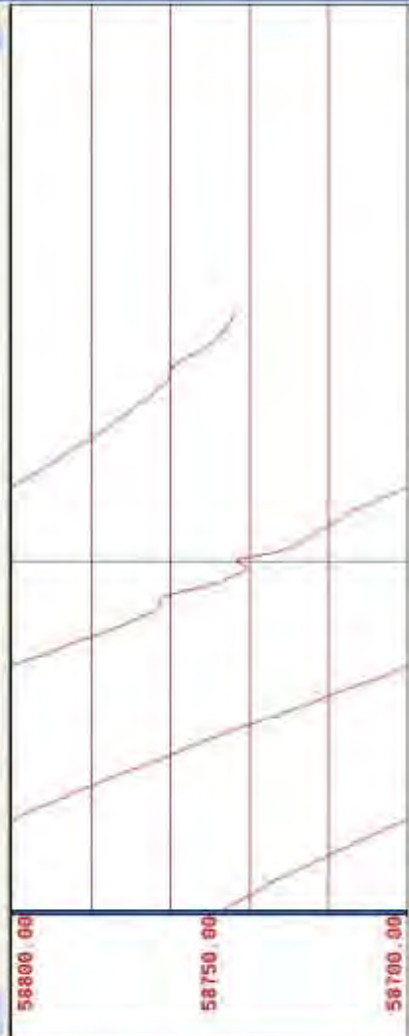
6/21/2004 11:50 AM



Cell 6300007.00  
Subcell Interactive Zoom Plot

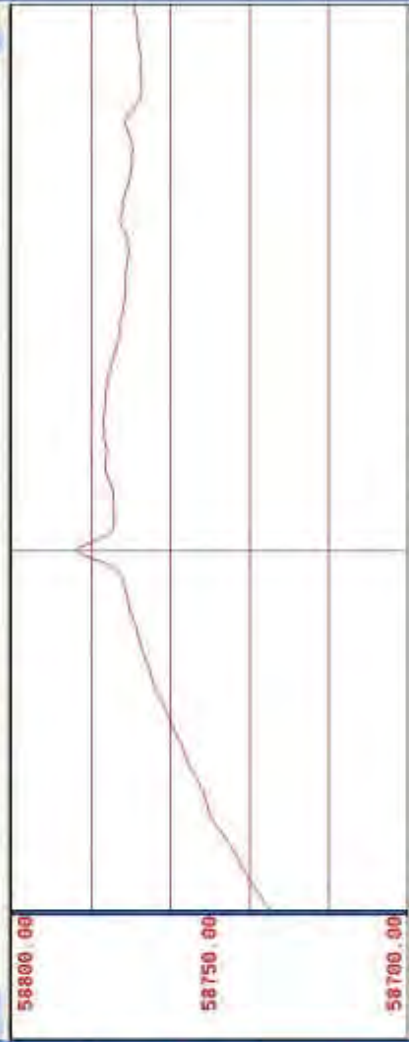
d:\project\grizzly\_diamond\white\_bear\_property\geophysics\GrizzPRE.gdb

✓ L2510:0	x	y	galt	gtime	radar	gusttime	diff4
3824.0	500321.38	6300007.20	638.46	788.40	46.57	692012.00	0.0
3825.0	500312.95	6300007.20	638.45	788.50	47.10	692013.00	0.0
3826.0	500304.52	6300007.20	638.44	788.60	47.63	692014.00	-0.0
3827.0	500296.09	6300007.20	638.43	788.70	48.16	692015.00	0.0
3828.0	500287.66	6300007.20	638.42	788.80	48.68	692016.00	-0.0
3829.0	500279.23	6300007.20	638.41	788.90	49.21	692017.00	0.0
3830.0	500270.80	6300007.20	638.40	789.00	49.74	692018.00	-0.0
3831.0	500262.36	6300007.18	638.36	789.10	49.80	692019.00	0.0
3832.0	500253.92	6300007.16	638.32	789.20	49.86	692020.00	0.0
3833.0	500245.48	6300007.14	638.28	789.30	49.91	692021.00	-0.0
3834.0	500237.04	6300007.12	638.24	789.40	49.97	692022.00	0.0
3835.0	500228.60	6300007.10	638.20	789.50	50.03	692023.00	-0.0
3836.0	500220.16	6300007.08	638.16	789.60	50.09	692024.00	0.0
3837.0	500211.72	6300007.06	638.12	789.70	50.15	692025.00	0.0
3838.0	500203.28	6300007.04	638.08	789.80	50.20	692026.00	0.0
3839.0	500194.84	6300007.02	638.04	789.90	50.26	692027.00	0.0
3840.0	500186.40	6300007.00	638.00	790.00	50.32	692028.00	0.0



58800.00  
58750.00  
58700.00  
seglevHL 3462.1  
(Fid)  
3951.9  
4441.7

	x	y	galt	gtime	radar	diff4
3429.0	518145.25	6300167.22	711.67	55905.90	63.71	379194.00
3430.0	518136.60	6300167.40	711.50	55906.00	63.69	379195.00
3431.0	518127.95	6300167.51	711.31	55906.10	63.39	379196.00
3432.0	518119.30	6300167.62	711.12	55906.20	63.09	379197.00
3433.0	518110.65	6300167.73	710.93	55906.30	62.79	379198.00
3434.0	518102.00	6300167.84	710.74	55906.40	62.49	379199.00
3435.0	518093.35	6300167.95	710.55	55906.50	62.19	379200.00
3436.0	518084.70	6300168.06	710.36	55906.60	61.89	379201.00
3437.0	518076.05	6300168.17	710.17	55906.70	61.59	379202.00
3438.0	518067.40	6300168.28	709.98	55906.80	61.29	379203.00
3439.0	518058.75	6300168.39	709.79	55906.90	60.99	379204.00
3440.0	518050.10	6300168.50	709.60	55907.00	60.69	379205.00
3441.0	518041.44	6300168.53	709.52	55907.10	60.42	379206.00
3442.0	518032.78	6300168.56	709.44	55907.20	60.15	379207.00
3443.0	518024.12	6300168.59	709.36	55907.30	59.89	379208.00
3444.0	518015.46	6300168.62	709.28	55907.40	59.62	379209.00
3445.0	518006.80	6300168.65	709.20	55907.50	59.35	379210.00



56800.00  
58750.00  
58700.00

seg1evHL 3246.4 (Fid)

3494.6 3742.7

Cell 6300168.62

Sublet Interactive Zoom Plot

Data

11:52 AM 11:52 AM

