MAR 20100015: PICHE LAKE

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PART B

AND

PART C

ASSESSMENT REPORT

Metallic and Industrial Mineral Permit Number 9304060631

PICHE LAKE PROPERTY, NORTHERN ALBERTA

NTS 73M

Bounded by the Co-ordinates:

111° 31' 53" - 111° 41' 01" West Longitude 55° 01' 27 - 55° 06' 42" North Latitude

By:

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06 August 2010

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PART B - TECHNICAL REPORT

SUMMARY

In 2009 Sanatana Diamonds Inc. entered into an option agreement with Marmac Mines Ltd. to earn into the Piche Lake Property. The property comprised four metallic and industrial minerals exploration permits totaling 27,323 hectares located 200 km northeast of Edmonton. A key milestone to be met as part of the option agreement was to drill test the Piche 1 seismic anomaly for the presence of diamondiferous kimberlite.

The regional setting in the Lac La Biche area is considered favourable for the presence of diamondiferous kimberlites. The Piche Lake permits are underlain by Early Proterozoic to Archean basement of the Rimbey Domain as well as a prominent gravity low. The local bedrock geology likely provided a favourable environment for the preservation of kimberlite intruding the sedimentary pile. 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. Studies of seismic profile interpretation and subsequent drill testing resulting in the discovery of kimberlites in the Buffalo Head Hills region has shown that kimberlites can be detected on seismic sections making this a legitimate exploration tool comparable with other traditional geophysical methods.

Previous exploration work by other companies recovered a number of diamond indicator minerals from glacial outwash gravel, recent fluvial gravel and till on and around the property. A limited number of samples collected from and around the Piche Lake Property have yielded some indicator minerals including olivine, pyrope garnet, chromite and picroilmenite. Other work has included airborne and ground magnetics and ground gravity covering the Piche Lake Property and surrounding permits, which have generated a number of to date untested anomalies of interest for kimberlite.

The 2008 - 2010 field program focused on testing the Piche 1 seismic anomaly. Seven surface samples of till drift and erratic boulders were collected over and around the anomaly. One reverse circulation drillhole for 87 m was completed. A total of $155,009.02 was spent on the field work during this period. The results of the surface sampling were not conclusive for the presence of kimberlite in the vicinity of Piche 1 target. Unfortunately the RC drillhole did not encounter bedrock before the limits of the drill were reached.

The presence of scattered indicator minerals from till sampling in the area indicates there is a good likelihood that undiscovered kimberlites exist on or in the vicinity of the Piche Lake Property. There remains to be many geophysical anomalies to follow up on the ground from the regional airborne magnetic dataset. The source of the Piche 1 seismic anomaly is still unverified and requires deeper drilling to reach bedrock.

INTRODUCTION

This assessment report documents the results of field work completed on the Piche Lake Property during the assessment work period 2009 to 2010. During that period expenditure of $ 155,009.02 was incurred on exploration comprising surface sampling and reverse circulation drilling of the Piche 1 seismic anomaly (see Mineral Assessment Expenditure Breakdown by Type of Work).

Property Description and Location

Piche Lake Property is situated approximately 40 km northeast of the town of Lac La Biche, Alberta and approximately 200 km northeast of Edmonton, Alberta (Figure 1). The property is located in East Central Alberta within 1:250 000 scale National Topographic System (NTS) map sheet 73M bounded by the co-ordinates 31' 53" - 111° 41' 01" West Longitude 55° 01' 27 - 55° 06' 42" North Latitude. For the purposes of this report, the Piche Lake Property consists of one metallic and industrial mineral exploration permit (9304060631, Figure 2) totalling 7,728 hectares (Table 1).

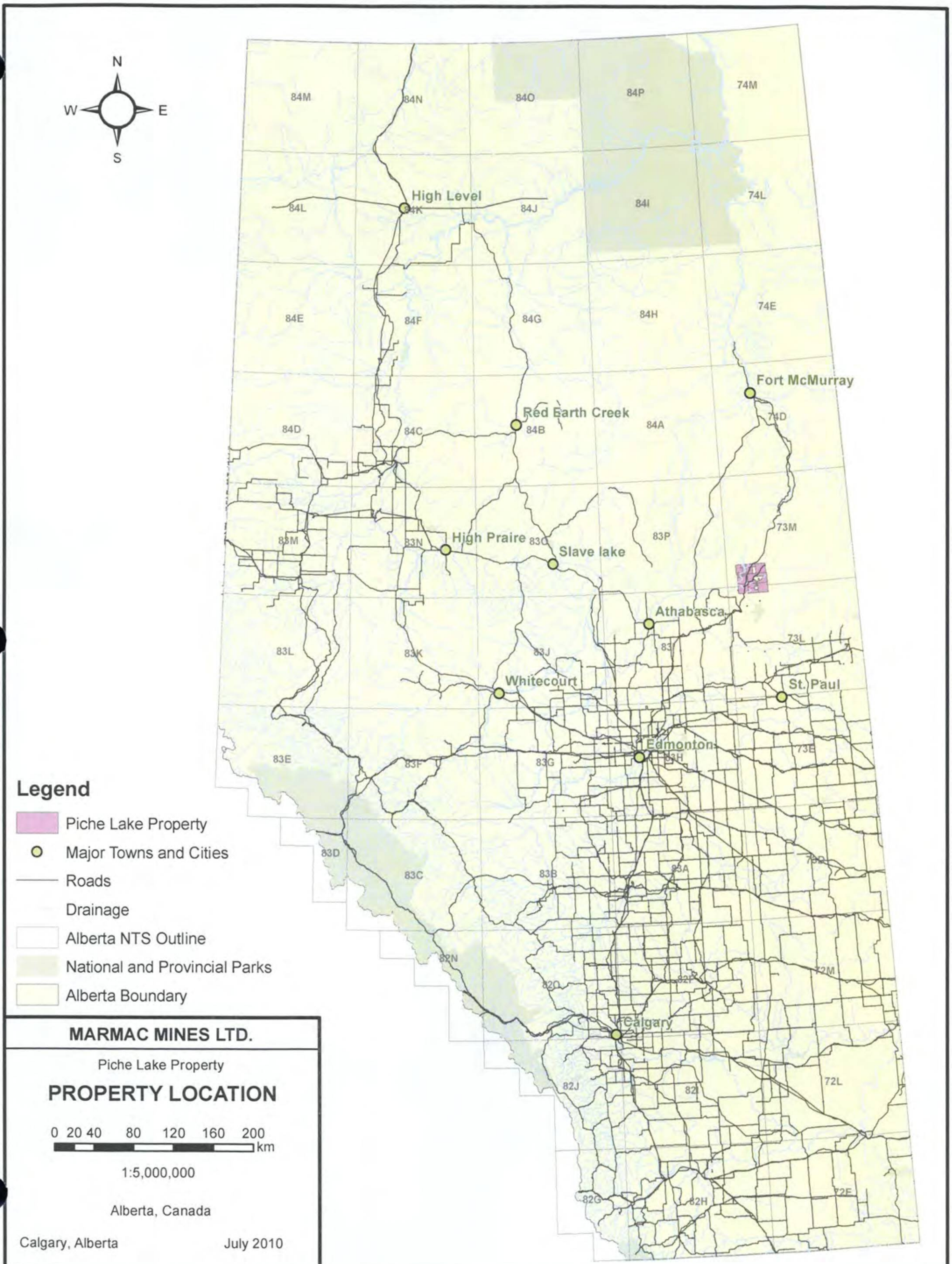
Table 1: Legal Permit Descriptions

Permit Number	Record Date	Term Period	Legal Description	Permit Holder	Area (ha)
9304060631	15-Jun-04	10 years	T70-R11W4	Marmac Mines Ltd.	7,728

Accessibility, Climate and Local Resources

The Piche Lake Property is accessed via Provincial Highway 881 east out of the town of Lac La Biche. Locally there are many dry weather gravel roads, cart trails and seismic lines in the area of the property (Figure 2). Most portions of the mineral permits area may be accessed by four-wheel drive vehicles or all terrain vehicles (ATV's) during the summer and winter months. There are several airstrips in the area and an airport servicing Lac La Biche with charter flights. Accommodation, food, fuel, and supplies were obtained in the town of Lac La Biche.

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



MARMAC MINES LTD.

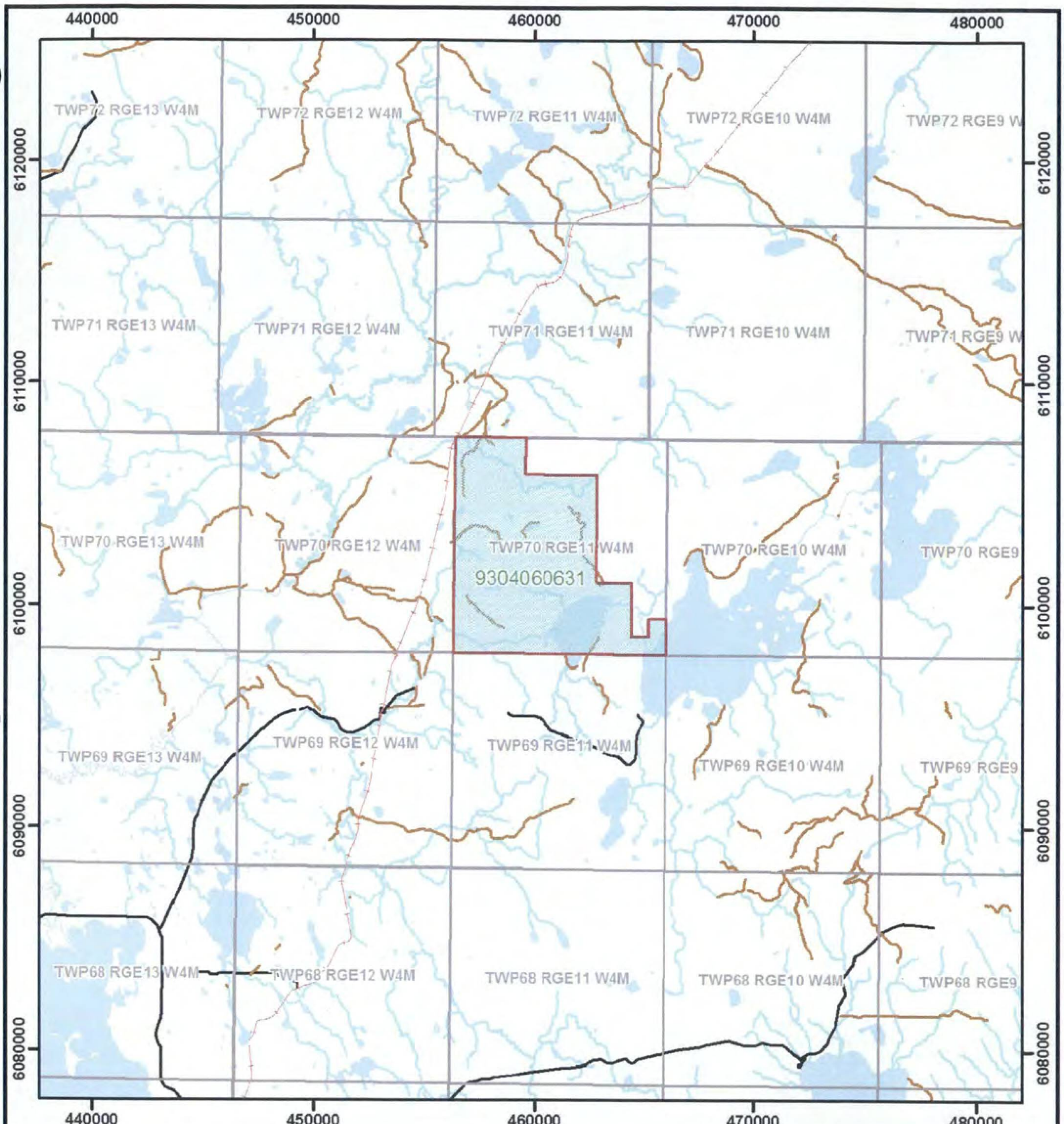
Piche Lake Property

PROPERTY LOCATION

Alberta, Canada

Calgary, Alberta July 2010

FIGURE 1



Legend

- Piche Property Boundaries
- Marmac Permit
- Railway
- Roads
- Trails
- Drainage
- Waterbodies
- Township and Range

MARMAC MINES LTD.

Piche Lake Property

MINERAL PERMITS

0 1 2 4 6 8 10 Kilometers

1:250,000

NAD83 Zone 12
Alberta, Canada
U.T.M.

Calgary, Alberta July, 2010

FIGURE 2

MINERAL ASSESSMENT

EXPENDITURE BREAKDOWN BY TYPE OF WORK

☐ Estimated Expenditure (submitting with Statement of Intent to File)

☒ Actual Expenditure (for Part B of Report; Must match total filed in Part A)

Project Name: Piche Lake Property

		AMOUNT
1. Prospecting	$	8,891.20
2. Geological mapping & petrography	$	
3. Geophysical Surveys		
a. Airborne	$	
b. Ground	$	
4. Geochemical Surveys	$	
5. Trenching and Stripping	$	
6. Drilling	$	120,581.44
7. Assaying & whole rock analysis	$	11,444.65
8. Other Work	$	
SUBTOTAL	$	140,917.29
9. Administration (10% of subtotal)	$	14,091.73
TOTAL	$	155,009.02

Bruce McIntyre — 9 August 2010

SUBMITTED BY (Print Name) — DATE

GEOLOGICAL SETTING

Precambrian Geology

The Piche Lake Property lies 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 to Piche Lake 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 (Figures 3 and 4). To date, 26 of the 38 kimberlites, discovered in the region by the Buffalo Head Hills Joint Venture, have yielded diamonds.

The Piche Lake Property is underlain by basement comprised of the Rimbey Terrane (Figure 3). The Rimbey Terrane is an area of high positive magnetic relief with a northeasterly fabric (Villeneuve *et al.*, 1993). The Rimbey Terrane is classified as part of the Churchill Structural Province but may represent either Archean crust (that was part of the Hearne Province) 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). The Rimbey Terrane is classified as being derived from a 1.8 to 2.0 Ga Magmatic Arc similar to the Taltson Magmatic Zone, a region not considered favourable for the preservation of diamonds in the upper mantle due to thermal reworking. However, the magnetic signature of the Rimbery Terrane is significantly different (much less magnetic) to that of the Taltson Magmatic Zone and its origin is enigmatic and is interpreted on the basis of not a lot of data. The Rimbey Terrane could easily be part of the Hearne Structural Province and therefore have an Archean component to it, a more favourable setting for the preservation of diamonds in the upper mantle. Seismic refraction and reflection studies indicate that the crust beneath the Rimbey Terrane 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).

It should also be noted that the Piche Lake Property sits over top of an apparent and prominent Bouguer gravity low that straddles or is spatially associated with the Snowbird Tectonic Zone (Figures 3 and 5). The Buffalo Head Hills area and associated diamondiferous kimberlites are underlain by a prominent gravity low, which is purported to be the result of thickened crust and perhaps, which in turn may reflect a deep and cool mantle root. These type of crust-mantle conditions would be considered favourable for the formation and preservation of diamonds in the upper mantle in the area.

Phanerozoic Geology

Overlying the basement in the Piche Lake region is a thick sequence of Phanerozoic rocks comprised mainly of Cretaceous sandstones and shales near surface and Mississippian to

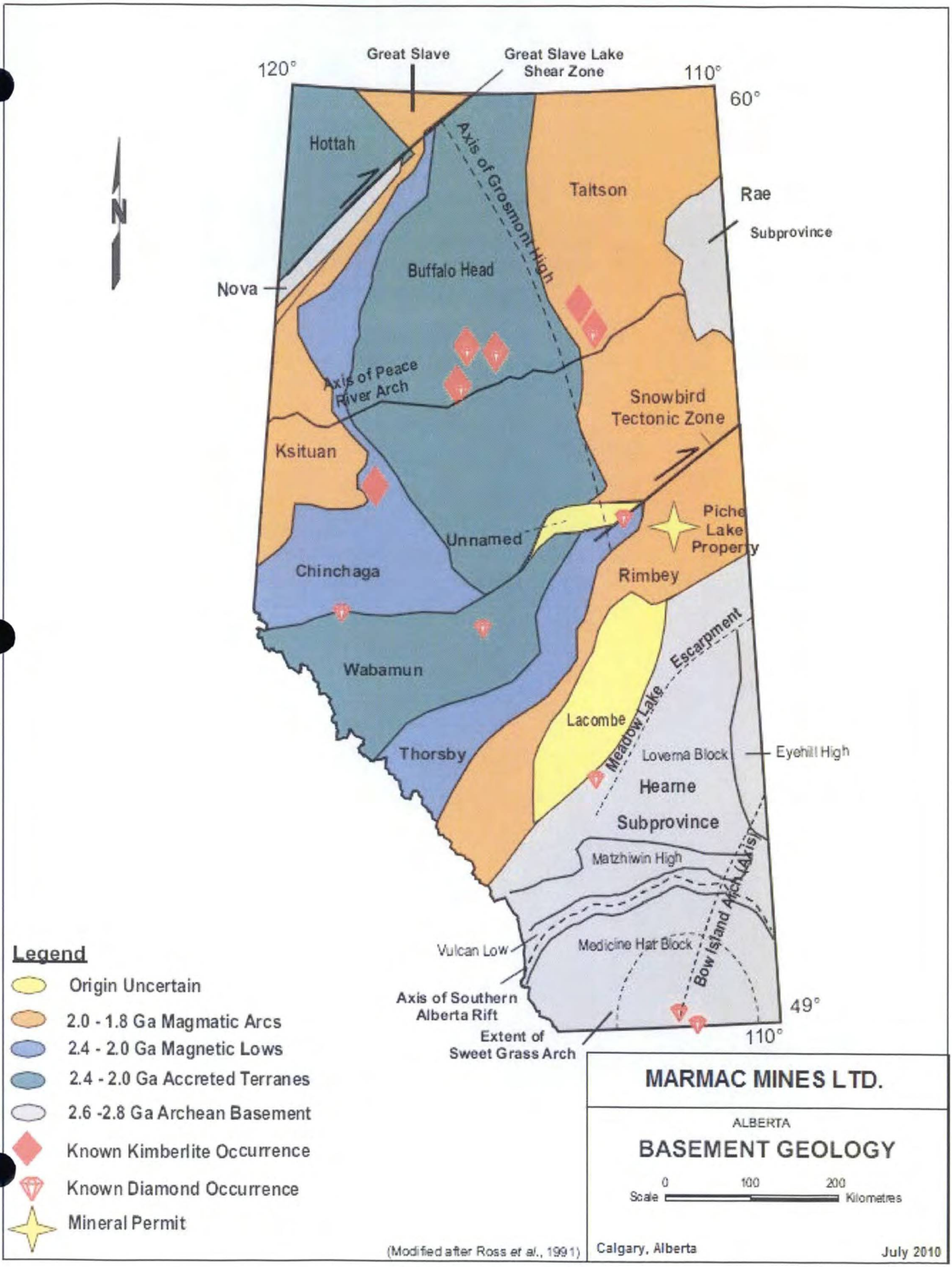
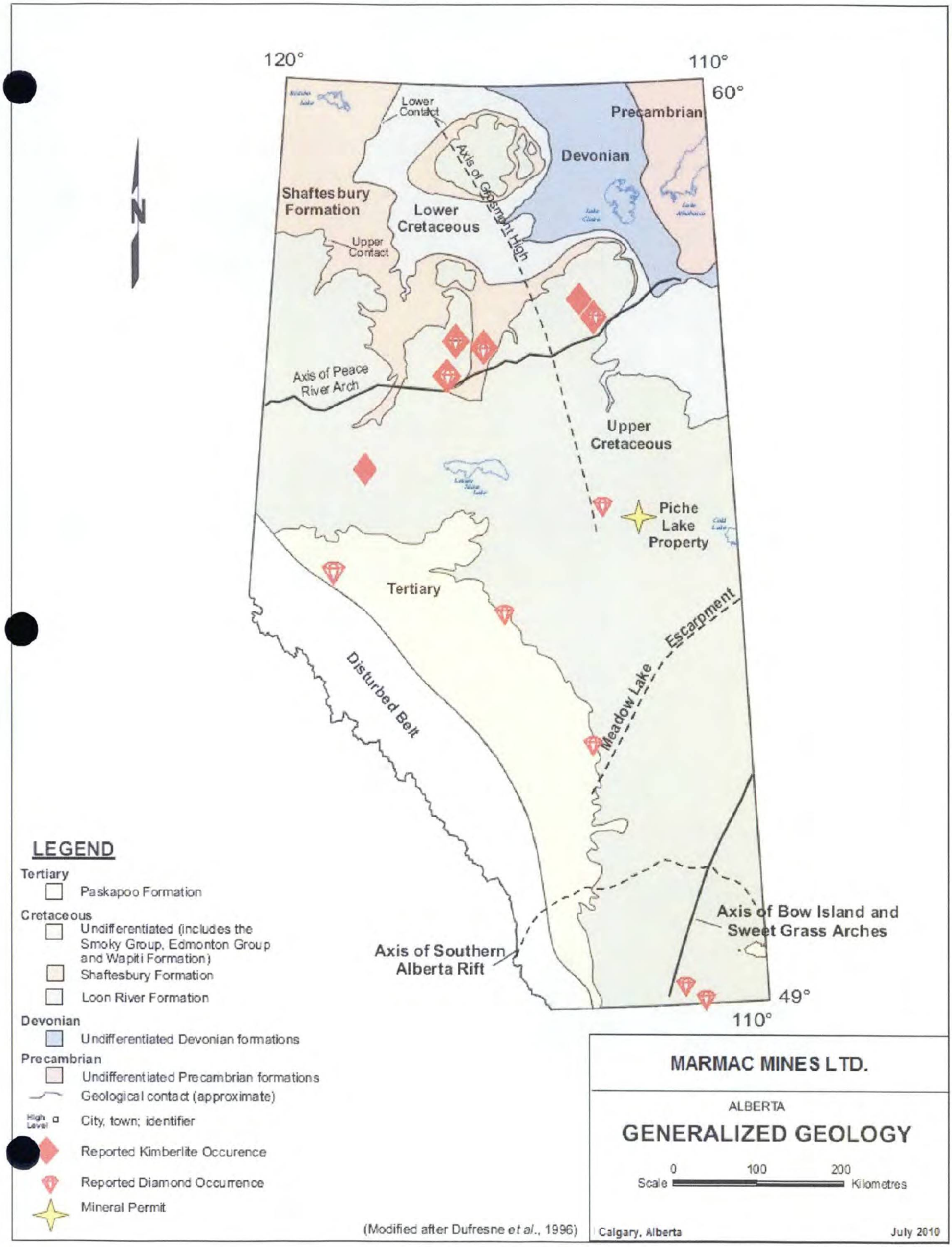
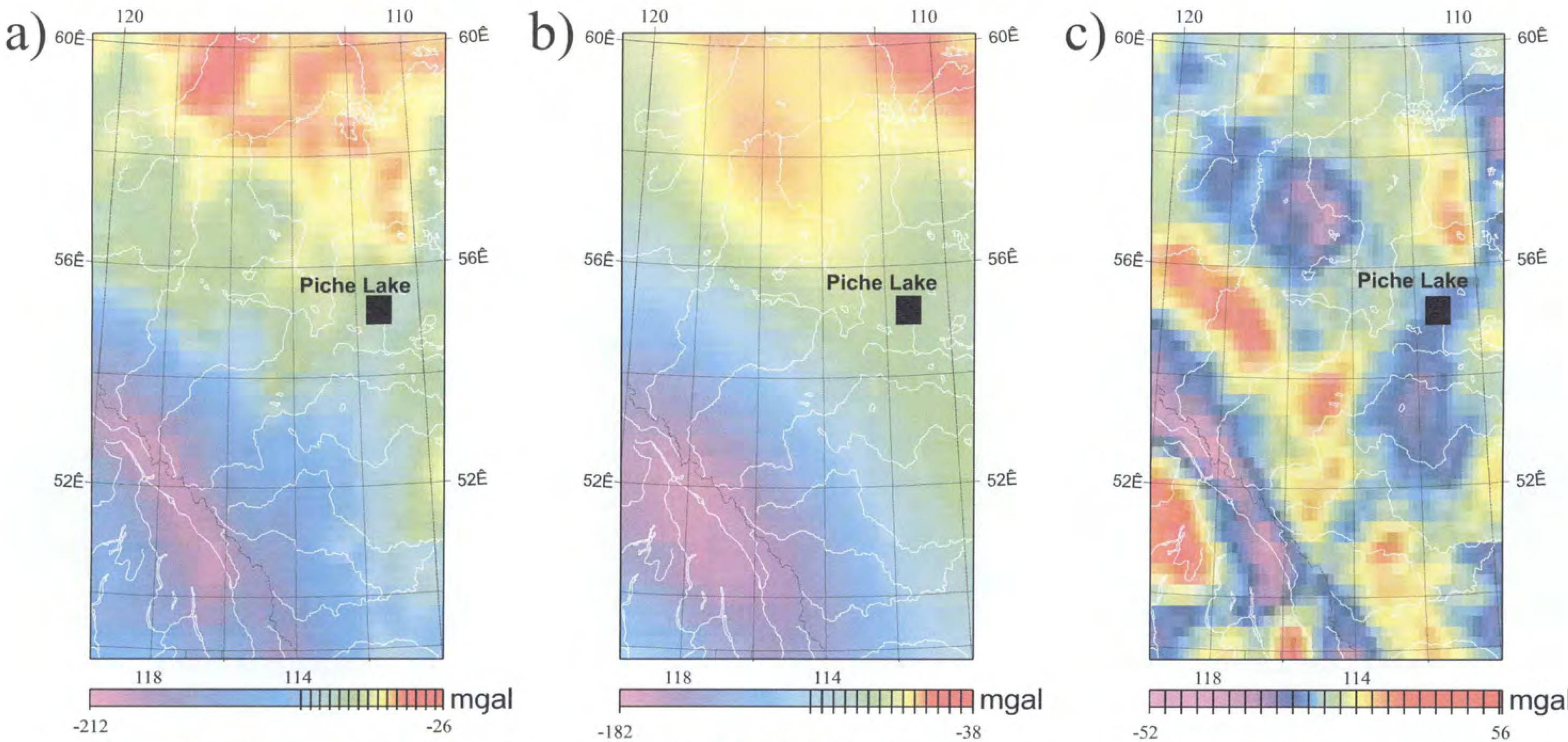

Great Slave
Great Slave Lake Shear Zone
120°
110°
60°
Hottah
Axis of Grosmont High
Taltson
Rae
Subprovince
Buffalo Head
Nova
Axis of Peace River Arch
Snowbird Tectonic Zone
Ksituan
Unnamed
Piche Lake Property
Chinchaga
Rimbey
Escarpment
Wabamun
Meadow Lake
Lacombe
Thorsby
Loverna Block
Eyehill High
Hearne
Subprovince
Matzhiwin High
Bow Island Arch (Axis)
Medicine Hat Block
Vulcan Low
Axis of Southern Alberta Rift
Extent of Sweet Grass Arch
49°
110°
Legend
Origin Uncertain
2.0 - 1.8 Ga Magmatic Arcs
2.4 - 2.0 Ga Magnetic Lows
2.4 - 2.0 Ga Accreted Terranes
2.6 -2.8 Ga Archean Basement
Known Kimberlite Occurrence
Known Diamond Occurrence
Mineral Permit
(Modified after Ross et al., 1991)
MARMAC MINES LTD.
ALBERTA
BASEMENT GEOLOGY
0
100
200
Scale
Kilometres
Calgary, Alberta
July 2010

FIGURE 3.



120°
110°
60°
Lower Contact
Axis of Grosmont High
Precambrian
Devonian
Shaftesbury Formation
Lower Cretaceous
Upper Contact
Axis of Peace River Arch
Upper Cretaceous
Piche Lake Property
Tertiary
Meadow Lake Escarpment
Disturbed Belt
Axis of Bow Island and Sweet Grass Arches
Axis of Southern Alberta Rift
49°
110°
LEGEND
Tertiary
Paskapoo Formation
Cretaceous
Undifferentiated (includes the Smoky Group, Edmonton Group and Wapiti Formation)
Shaftesbury Formation
Loon River Formation
Devonian
Undifferentiated Devonian formations
Precambrian
Undifferentiated Precambrian formations
Geological contact (approximate)
High Level
City, town; identifier
Reported Kimberlite Occurence
Reported Diamond Occurrence
Mineral Permit
(Modified after Dufresne et al., 1996)
MARMAC MINES LTD.
ALBERTA
GENERALIZED GEOLOGY
0
100
200
Scale
Kilometres
Calgary, Alberta
July 2010

FIGURE 4.



A) Observed Bougeur Gravity: purple to red represent variations in Bougeur gravity from -21mgal to -3.1 mgal.

B) Regional Trend of Bougeur Gravity: purple to red represent variations in Bougeur gravity from -20mgal to -46.7mgal.

C) Residual Bougeur Gravity: purple to red represents increasing Bougeur residual gravity (difference between 5a and 5b).

Figure 5. Bouger gravity maps for Alberta

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

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

Table 2 Generalized Stratigraphy Piche Lake Region

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

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

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

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

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

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

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

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

Quaternary Geology

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

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

The majority of the Piche Lake area is covered by drift of variable thickness, ranging from 15 m to over 250 m (Pawlowicz and Fenton, 1995a, 1995b, 2005a, 2005b and Balzer and Dufresne, 1999). The vast majority of the property is thought to be covered with drift ranging from about 75 m to 150 m thick. Drift thickness may be thinner locally, in areas of higher topographic relief. Unfortunately, local drift thickness for Piche Lake Property can not be easily delineated due to the paucity of publicly available data for the region. Limited general information regarding bedrock topography and drift thickness in northern Alberta is available from the logs of holes drilled for petroleum, coal or groundwater exploration and from regional government compilations (Tokarsky, 1972; Mossop and Shetson, 1994;

Pawlowicz and Fenton, 1995a, 1995b, 2005a, 2005b; Dufresne *et al.*, 1996). It should be noted that the drift thickness over the Buffalo Head Hills Kimberlites is extremely variable ranging from more than 120 m to kimberlites that outcrop or subcrop. Several of the kimberlites intersected in drilling to date exist as positive topographic features relative to the local bedrock surface beneath the glacial overburden. For example, the BHHJV's K6 Kimberlite was initially intersected beneath 13 m of overburden (Ashton Mining of Canada Inc., 1997c). The K6 Kimberlite yields depths of overburden of more than 70 m at the margins of the pipe and even thicker depths of overburden over the mudstone bedrock surrounding the pipe (Mr. B. Clements, *personal communication*, 2002). The K6 Kimberlite is one of a number of kimberlites in the Buffalo Head Hills that display this relationship. The implications of this are that in areas where the overburden is estimated to be 75 to 150 m, there is still a chance that any kimberlites found could be covered by substantially less overburden.

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

Structural Geology

In north-central Alberta, the PRA to STZ is a region where the younger Phanerozoic rocks, which overlie the Precambrian basement, have undergone periodic vertical and, possibly, compressive deformation from the Proterozoic into Tertiary time (Cant, 1988; O'Connell *et al.*, 1990; Dufresne *et al.*, 1995, 1996). This pattern of long-lived, periodic uplift and subsidence has imposed a structural control on the deposition patterns of the Phanerozoic strata in northern Alberta. In addition, this periodic movement has resulted in a rectilinear pattern of faults that not only is responsible for structurally controlled oil and gas pools, but may have provided potential pathways for later deep-seated intrusive kimberlitic magmas. Eccles *et al.* (2000) show that several of the Buffalo Head Hills kimberlites occur at the intersection of north and east-northeast trending lineaments likely related to underlying faults that have been reactivated during periodic tectonic activity associated with the Peace River Arch. Eccles *at al.* (2000) used a combination of very detailed digital elevation data and RadarSat data to identify the intersecting lineaments.

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

DEPOSIT MODEL: DIAMONDIFEROUS 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 emplacement of a kimberlite is referred to as a diatreme or kimberlite pipe (Mitchell, 1986, 1989, 1991). In a simplified cross section a kimberlite diatreme appears as a near vertical, roughly "carrot shaped" body of solidified kimberlite magma capped by a broad shallow crater on surface that is both ringed and filled with tuffaceous kimberlite and country rock fragments (Mitchell, 1986, 1989, 1991).

Diamond Indicator Minerals

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

Diamond indicator minerals (DIMs) include minerals that have crystallised directly from a kimberlitic magma (phenocrysts), or mantle derived minerals (xenocrysts) that have been incorporated into the kimberlitic magma as it ascends to the earth's surface. Examples of DIMs are picroilmenite, titanium and magnesium rich chromite, chrome diopside, magnesium rich olivine, pyropic and eclogitic garnets. Varieties of garnet include G1, G2, G9, G10, G11, G12 pyropes as defined by Dawson and Stephens (1975), G9 and G10 pyropes as defined by Gurney (1984) and Gurney and Moore (1993) and G3, G4, G5, and G6 eclogitic garnets as defined by Dawson and Stephens (1975). From this paragraph on, reference to G1, G2, G3, G4, G5, G6, G11 and G12 pyrope garnets refers to Dawson and Stephens' (1975) classification and G9 and G10 refers to Gurney's (1984) G9 and G10 pyrope garnets of lherzolitic and harzburgitic origin, respectively.

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

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

<u>Diamonds Exploration</u>

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).

PREVIOUS EXPLORATION

Previous Exploration Buffalo Head Hills Region

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

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

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

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

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

In January 1997, Ashton announced a drill program to test 10 isolated geophysical anomalies in the Buffalo Head Hills area, approximately 35 to 45 km (21 to 27 miles) northwest of the town of Red Earth Creek. An initial two drillholes, located on Ashtons anomalies 7B and 7C, penetrated olivine-dominated fragmental and tuffaceous volcanic rocks underlying glacial overburden at depths of 34.0 m (111.5 ft) and 36.6 m (120 ft), respectively. The rock types were interpreted by Ashton to represent kimberlite pipes (diatremes) that intruded the basement into a thick column of overlying younger sedimentary rocks and the preglacial surface (Ashton Mining of Canada Inc., 1997a). Petrographic studies of core from K7B and K7C confirmed that the drillholes intersected kimberlites and yielded indicator minerals such as chromite, eclogitic garnet and peridotitic garnet (Ashton Mining of Canada Inc., 1997b). By March 1997, a total of 11 kimberlites within a 100 km^2 area (36 square miles) had been discovered, 10 by drilling and 1 by bulldozer, including kimberlites K2, K4A, K4B, K4C, K5A, K5B, K6, K7A, K7B, K7C, and K14 (Ashton Mining of Canada Inc., 1997c). The first microdiamond analyses of samples collected from kimberlites K2, K4, and K14 were released in April 1997 and confirmed that the pipes were diamondiferous and more significantly, 3 samples totaling 152.5 kg (387 lbs) from kimberlite K14 yielded significant numbers of diamonds, including 139 microdiamonds and 11 macrodiamonds (Ashton Mining of Canada Inc., 1997d). Mineralogical analysis of indicator minerals from the Buffalo Head Hills kimberlites indicates that although they are not abundant, a significant number of favourable G10 pyrope garnets, some with exceptionally high chromium contents (up to 17.8 wt% Cr_2O_3), along with abundant diamond inclusion quality chromites, have been obtained from several of the kimberlites in the central and northern portion of the cluster (Carlson *et al.*, 1999; Hood and McCandless, 2003). In addition, a large number of the kimberlites yielded euhedral to subhedral xenocrystic (mantle derived) garnet and clinopyroxene suggesting that resorption had been limited, therefore, the potential to preserve any carried diamonds may be considered high (Carlson *et al.*, 1999). These results ushered in a new era in the history of resource development in Alberta. To date, 38 kimberlites were found on the joint venture property, 26 of which are diamondiferous. The joint venture ownership has changed, in 2007 Stornoway Diamond Corp acquired Ashton Mining and therefore took control of their respective interest in the BHHJV (see news release dated). Subsequently Stornoway Diamond Corp. has vended 45% of their interest for a total of $17.5 Million cash to Diamondex Recources Inc and Shore Gold Corp. (see news release dated July 24, 2007 www.stornowaydiamonds.com). Diamondex and Shore are currently active with a $7.0 Million delineation drilling program on known kimberlites (see Feb 20, 2008 news release www.diamondex.net).

Seven kimberlites, referred to as Legend kimberlites, were discovered north and northwest of the Liege and Legend properties by junior resource companies but none of these kimberlites are diamondiferous (Cavey and LeBel, 2003). In 2008 two new kimberlites were discovered by drilling by Grizzly Diamonds Ltd (see news releases dated Feb 19 and 25, 2008; www.grizzlydiamonds.com) in the BHH. A total of 54 diamonds was recovered from 56.6 kg of the BE-02 (see news release www.grizzlydiamonds.com dated May 6, 2008). Future drilling of the BE-02 and additional targets is planned.

Previous Exploration by Marmac Mines and Shear on the Piche Lake Property (2004-2006)

Marmac Mines Ltd. (Marmac) acquired the Piche Lake Permits in 2004 based on information of the possibility of diamondiferous kimberlites in the area and the presence of an interesting seismic anomaly. Marmac conducted preliminary exploration work on the properties including the acquisition and reinterpretation of seismic data for kimberlites, prospecting and indicator mineral sampling.

Marmac conducted work on the property based on the results of seismic reflection surveys and drilling by a number of oil and gas explorers. Seismic surveys are not a primary tool for diamond exploration, however, in a sedimentary environment the tool cab be useful in identifying kimberlite diatremes through the sedimentary layering by interruptions and/or disruptions in seismic reflections (Cavey and LeBel, 2003; Atkinson and Pryde, 2006). According to Skelton and Bursey (1999a) these seismic reflection surveys resulted in the identification of the K2, K4, K5, K6, K7, K32 and K92 kimberlites in the Buffalo Head Hills region west of the Piche Lake Properties. A number of the seismic signatures of the Buffalo Head Hills Kimberlites are shown by Atkinson and Pryde (2006). They compare favourably to the signature observed on Line BAM 12755 (Bam Anomaly, later simply numbered Piche 1) on the Piche Lake Property. Seismic reflection surveys also aids in the identification of the geometry and structure of kimberlites (Cavey and LeBel, 2003; Atkinson and Pryde, 2006). The seismic signatures of the Buffalo Head Hills' kimberlites is very similar to the interrupted seismic reflections of the Piche 1 anomaly on the Piche Lake Property, and even though the recently flown airborne geophysical survey and ground geophysical surveys have not identified a distinct geophysical anomaly, the Piche 1 seismic anomaly warranted further work.

As well as the seismic work conducted during 2004, Marmac hired two prospectors to collect fifteen indicator mineral samples on the property of from which six samples were anomalous with picked kimberlite indicator mineral grains. The most anomalous sample contained more than 50 picroilmenites. Other kimberlite indicator minerals recovered included pyrope, chrome diopside, and olivine.

There are no publicly available records of any other companies performing diamond exploration in and around the Piche Lake region. This included a review of all other assessment reports available at the AGS. Active diamond exploration is currently being performed in the Calling Lake region about 100 km to the west and in the St. Paul to Cold Lake region about 100 km to the south on the basis of historic exploration that has yielded favourable results. However, the discovery of beach sands with excellent diamond indicator minerals in both regions (Turnbull, 2002; Rich, 2003) has yet to lead to the discovery of kimberlites.

In 2005 Shear Minerals Ltd. (Shear) signed an agreement with Marmac whereby Shear could earn into a majority interest of the Piche Lake Property from Marmac Mines by incurring $1,500,000 in exploration expenditures over time. APEX Geoscience Ltd. (APEX) was retained during 2006 by Shear to compile all the available geological, geophysical and mineralogical data for the Piche Lake Property and evaluate the potential of the property to host kimberlites and, possibly, diamonds. Based upon the recommendations that resulted from the data compilation and review, a program consisting of a fixed-wing airborne geophysical survey totalling 14,864 line km was completed by Firefly Aviation Ltd. and followed up with prospecting, ground checking of anomalies and limited ground geophysical surveys. The airborne magnetic survey was flown over the Piche Lake Property in spring 2006 (Dufresne, 2006)

As a result of a high resolution airborne magnetic (HRAM) fixed-wing survey completed over the Piche Lake Property in 2006, a number of magnetic anomalies (60 initial and 13 additional) were picked by APEX and Mr. Kit Campbell, a geophysical consultant with Intrepid Geophysics of North Vancouver, BC. These anomalies were visited by Shear personnel during 2007 in order to eliminate those anomalies that are the result of a well head, well casing and/or other man-made culture. As a result three anomalies were selected to be possible kimberlite candidates and a total of two ground magnetic surveys were completed as well as one ground gravity survey completed by Quadra Surveys, of Barriere, BC. As a result one priority drill target is proposed for drill follow up._A further 13 targets were chosen and still need to be ground checked.

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 GSC in 1992 and AGS in 1993 (Fenton *et al*, 1994; Dufresne *et al.*, 1996). These initial surveys 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 Piche Lake region has yielded a few diamond indicator minerals within the "Vermillion Trend", which was defined as a northerly belt of sites yielding anomalous diamond indicator minerals centered around the town of Vermillion (Dufresne *et al.*, 1996). However, in general there is a lack of diamond indicator mineral anomalies in the Piche Lake region that is really a function of a lack of sampling rather than poor results.

EXPLORATION

Till Sampling

Some surface till sampling and prospecting was undertaken from 24th to 27th October 2008 by B.G. McIntyre and R.K. Rathier of Marmac Mines Ltd., to back up mixed results from ground geophysics surveys attempting to define a drill target at the Piche 1 seismic anomaly.

The anomaly corresponds to a topographic high (Figure 6), with the strongest positive gravity response being along the seismic line. The anomaly is heavily treed over the topographic high. The topographic low surrounding the anomaly is poorly drained and consists of small birch, willows and spruce.

The drift cover is predominantly sand, silt and clay with occasional well rounded clasts of granitic glacial till, ranging in size from 2.5 cm to 30 cm in diameter.

Five till samples (Table 3) were taken across and proximal to the anomaly (Figure 6). The samples were taken in areas that there was drainage off the anomaly's topographic high point. Samples were taken from holes dug to below the organic and root layers and all were at least 70 – 90 cm deep. Each sample was between 10 and 15 kg in weight in the field (Sample Descriptions, Appendix 1).

There were no signs of kimberlite at surface. Two erratics were sampled (Table 3). The first was sampled because it stood out as being different from other erratics in the area; it was moss covered and quite friable. The second erratic sample was more typical of other glacial erratics in the area.

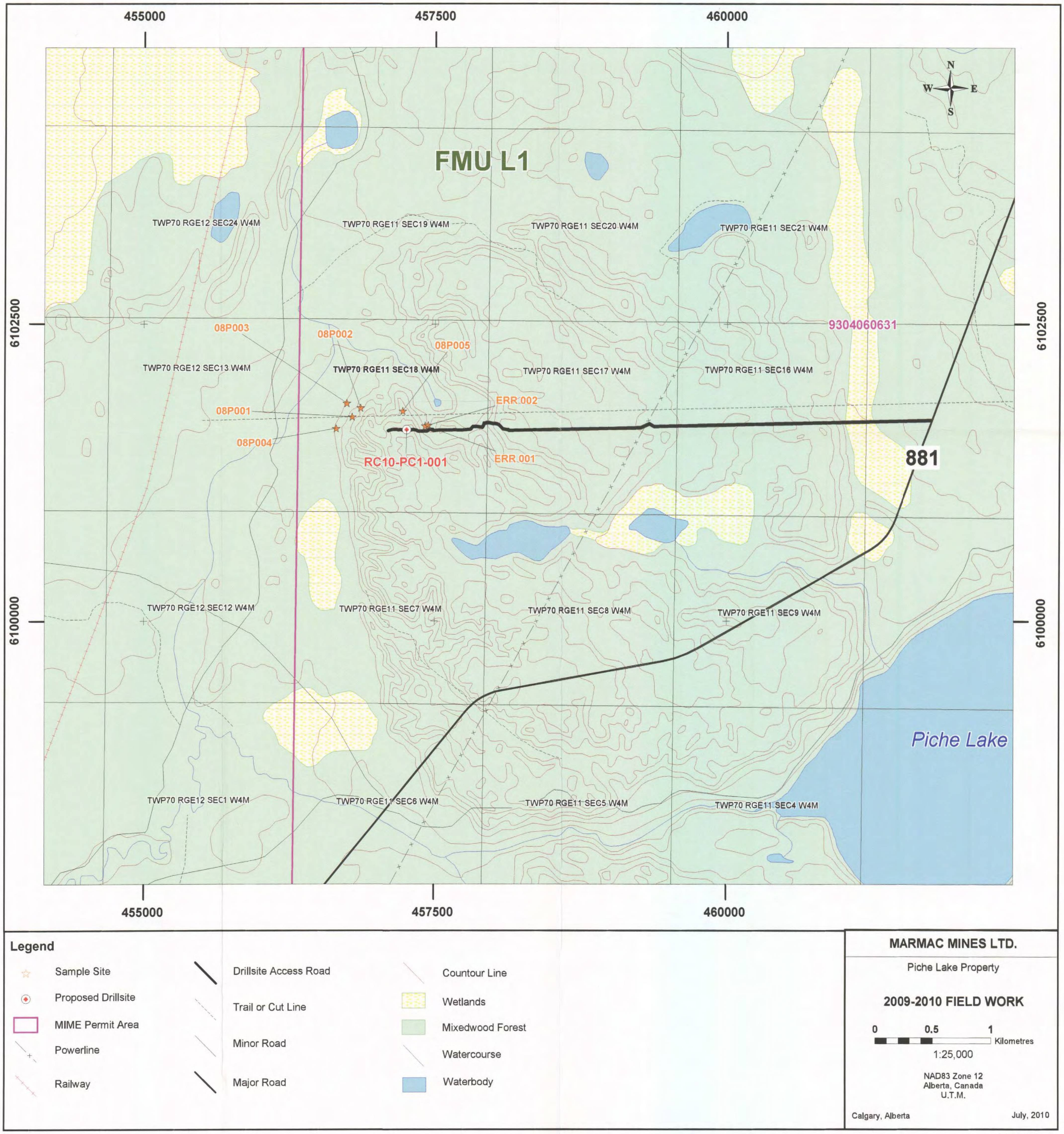

455000
457500
460000
6102500
6100000
N
W
E
S
FMU L1
TWP70 RGE12 SEC24 W4M
TWP70 RGE11 SEC19 W4M
TWP70 RGE11 SEC20 W4M
TWP70 RGE11 SEC21 W4M
08P003
08P002
08P005
9304060631
TWP70 RGE12 SEC13 W4M
TWP70 RGE11 SEC18 W4M
TWP70 RGE11 SEC17 W4M
TWP70 RGE11 SEC16 W4M
ERR 002
08P001
08P004
RC10-PC1-001
ERR 001
881
TWP70 RGE12 SEC12 W4M
TWP70 RGE11 SEC7 W4M
TWP70 RGE11 SEC8 W4M
TWP70 RGE11 SEC9 W4M
Piche Lake
TWP70 RGE12 SEC1 W4M
TWP70 RGE11 SEC6 W4M
TWP70 RGE11 SEC5 W4M
TWP70 RGE11 SEC4 W4M
Legend
Sample Site
Proposed Drillsite
MIME Permit Area
Powerline
Railway
Drillsite Access Road
Trail or Cut Line
Minor Road
Major Road
Countour Line
Wetlands
Mixedwood Forest
Watercourse
Waterbody
MARMAC MINES LTD.
Piche Lake Property
2009-2010 FIELD WORK
0 0.5 1 Kilometres
1:25,000
NAD83 Zone 12
Alberta, Canada
U.T.M.
Calgary, Alberta
July, 2010

FIGURE 6

Table 3: Locations of Surface Sampling.

Sample	UTM East	UTM North
08P001	0456784E	6101721N
08P002	0456856E	6101797N
08P003	0456738E	6101837N
08P004	0456646E	6101624N
08P005	0457221E	6101770N
ERR 001	0457415E	6101645N
ERR 002	0457440E	6101649N

The till samples were processed for heavy minerals (Mineral Processing, Appendix 1) by Loring Laboratories Ltd (Calgary, Alberta) using an industry standard processing system (Figure 7).

LORING LABORATORIES LTD.

DIAMOND EXPLORATION SERVICES

SAMPLE PROCESSING FLOWCHART

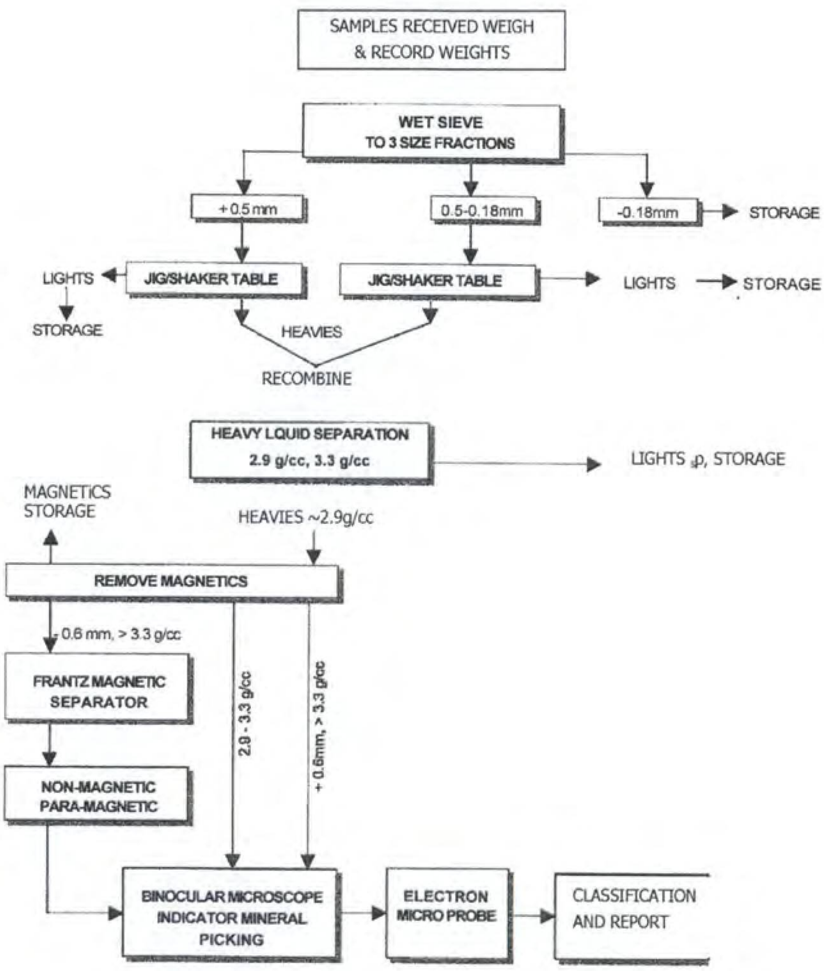


Figure 7: Loring Laboratories Ltd. Heavy Mineral Concentration Flow Sheet.

Reverse Circulation Drilling

A drill programme comprising five potential drill collar locations for reverse circulation (RC) drilling was planned to test the Piche 1 seismic line anomaly. The RC drilling method was selected due to its low cost and ease of mobility and operation in order to gain a quick test of bedrock across the target area.

Northspan Explorations Ltd. (Kelowna, BC) were contracted to undertake the drilling using a Multi Power Products Ltd. Hornet track mounted hydraulic top drive RC drill rig. The drill has 8,250 lb down force and 16,200 lb pullback. The unboosted air delivery is approximately 300 CFM at 200 PSI. The percussion system utilizes an Atlas Copco Series 32 hammer coupled with a Bulroc 90 mm overburden casing advancing bit or a 3 9/16" ballistic button bit for bedrock drilling. In this configuration the drill is capable of hole depths of around 100 m.

In the end only one drillhole was completed during the week of 24th to 31st March 2010, for a total of 87 m (Figure 6) before the onset of spring breakup made access to the drill area very difficult. The hole was terminated in till cover after all available drill rods were used meaning that bedrock geology was not identified (Drill Logs, Appendix 2). Observations of the nature of the drill cuttings were recorded by a geologist on site at all times while drilling was underway (Drill Logs, Appendix 2). Personnel on site throughout the drill program included T. Gill (Geologist, Sanatana Diamonds Inc., Vancouver BC), C. Woolverton (Field helper, Minconsult Exploration Services, Vernon BC), H. Kozakevich (Equipment operator, Millennium Cats Inc., Lac la Biche, AB), K. Mitchell (Kenton Environmental, Lac la Biche, AB), B. Meuls and L. Rutherford (Driller and helper, Northspan Explorations Ltd., Kelowna BC).

Samples of all the drill cuttings were collected in large, clear, clean plastic bags for every 5' (approximately 1.5 m) of drill rod advancement and protected by placing these bags in clean white rice bags. Sample numbers were allocated one per bag and a security tag placed on each bag and this number was recorded along with the sample number against the drillhole footage.

All the samples were retained and dispatched to Microlithics Laboratories Inc. (Thunder Bay, Ontario), but initially only every odd numbered sample was processed for heavy minerals (Mineral Processing, Appendix 2) using an industry standard processing system (Figure 8).

The 150 g -0.25 mm aliquot was forwarded to ALS Minerals Laboratory (Thunder Bay, Ontariio) for Fire Assay gold and ICP multielement ISO 9001/17025 Certified geochemical analysis (Assay Results, Appendix 2).

Heavy mineral concentrates were observed by KIM Dynamics (North Vancouver, BC). They are sieved in order to provide easier focusing under the binocular microscope. Samples of <10g concentrate weight were sieved through two screen sizes (0.3mm and 0.25mm), producing three fractions (+0.3mm, +0.25mm and <0.25mm). Samples of >10g concentrate were sieved through four screen sizes (0.5mm, 0.4mm, 0.3mm and 0.25mm) producing five fractions (+0.5mm, +0.4mm, +0.3mm, +0.25mm, and <0.25mm).

The +0.5mm, +0.4mm, +0.3mm, and +0.25mm size fractions of all concentrates were observed under a binocular microscope in order to separate any possible KIMs (Appendix 2). The <0.25mm fractions were not observed.

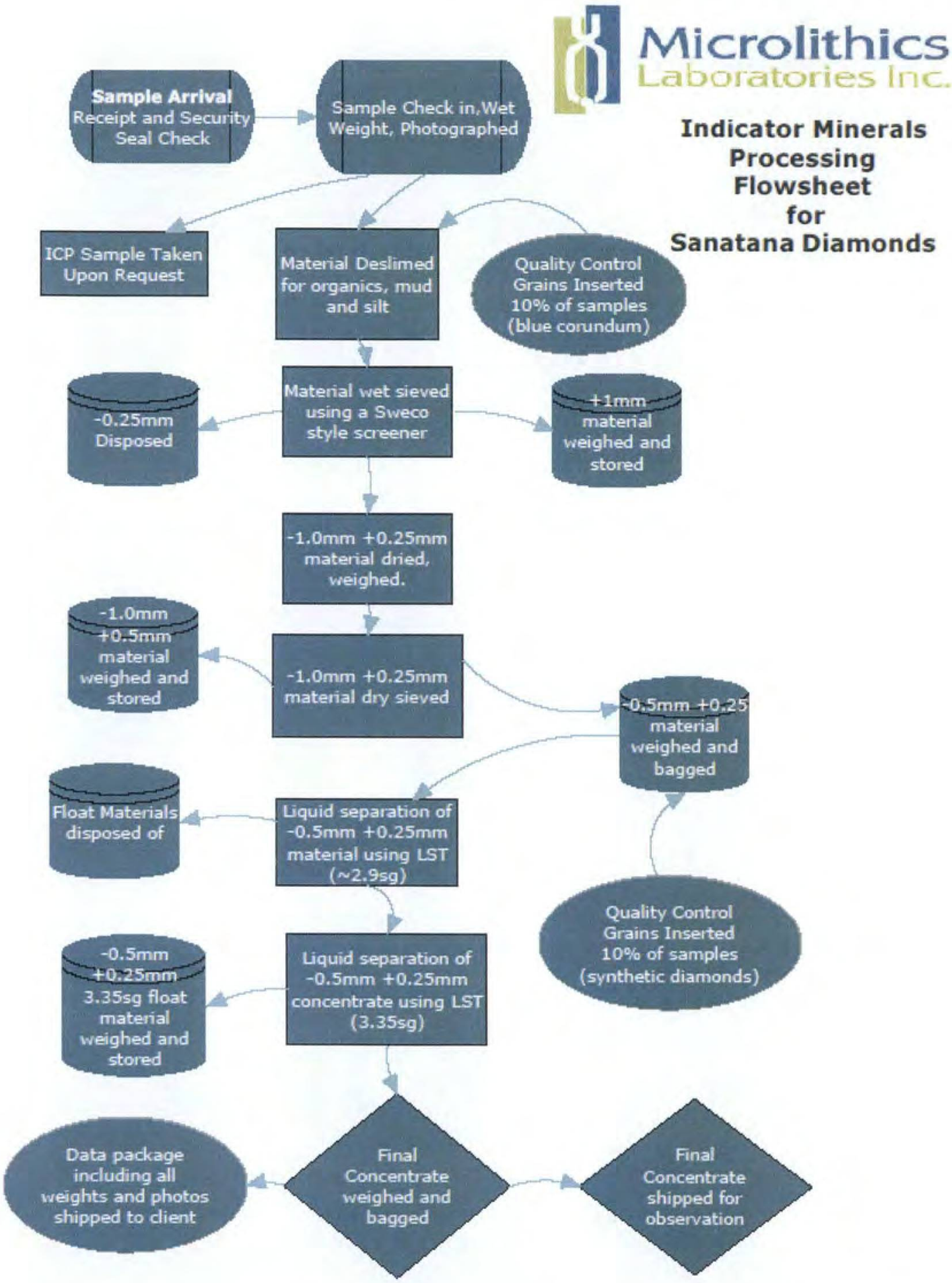


Figure 8: Microlithics Laboratories Inc Heavy Mineral Concentration Flow Sheet.

CONCLUSION AND DISCUSSION

The regional setting in the Lac La Biche area is considered favourable for the presence of diamondiferous kimberlites. The Piche Lake permits are underlain by Early Proterozoic to Archean basement of the Rimbey Domain as well as a prominent gravity low. The local bedrock geology likely provided a favourable environment for the preservation of kimberlite intruding the sedimentary pile. 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. Studies of seismic profile interpretation and subsequent drill testing resulting in the discovery of kimberlites in the Buffalo Head Hills region has shown that kimberlites can be detected on seismic sections making this a legitimate exploration tool comparable with other traditional geophysical methods.

From the five till samples only seven ilmenites and two chrome diopside heavy minerals were identified. After microprobe geochemical analysis and plotting on industry standard interpretative charts these grains were not considered as being kimberlitic indicator minerals.

Only two possible kimberlitic chromites were observed in the 29 RC drill samples. The grains were not probed.

It was unfortunate that bedrock was not encountered from the RC drilling, but there was still one significant outcome from the drilling. The topographic feature that correlates to the Piche 1 seismic anomaly was determined to be a complex pile of glacial deposits and not due to a bedrock high. Because of this complexity it can be assumed that surface till sampling results will not reflect bedrock geology in the immediate up ice vicinity of the sample site. If this is true for entire region around the Piche Lake Property then till sampling is not a valid method to assess kimberlite potential in the area.

RECOMMENDATIONS

The Piche 1 target remains untested and requires drilling to greater depths in order to reach bedrock.

The nature of the till cover around the Piche Lake Property needs to be further studied before geochemical sampling programs can be used to assess kimberlite potential in the area.

CERTIFICATE OF AUTHOR

I Bruce G McIntyre, Residing at 215 11th Ave NE Calgary, Alberta, Canada do hereby certify that:

1. I am President and Director of Marmac Mines Ltd., Suite #2 135 12th Ave NW, Calgary, Alberta , Canada.
2. I am a graduate of Carleton University with a B.Sc. Honours Degree in Geology (1979) and have practised my profession continuously since 1979.
3. I am a Professional Geologist registered with APEGGA (Association of Professional Engineers, Geologists and Geophysicists of Alberta)
4. I have not received, nor do I expect to receive, any interest directly or indirectly in the Piche Lake Diamond Property, Alberta.
5. I currently have an interest in Marmac Mines Ltd in the form of securities.
6. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report or the omission to disclose that makes the report misleading.

PROFESSIONAL GEOLOGIST BRUCE G. McINTYRE ALBERTA

Bruce G McIntyre, B.Sc., P Geol
Calgary, Alberta
7 August 2010

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1

PART C - APPENDICES

APPENDIX 1

TILL SAMPLING DATA

Sample # 08P001

Project ~~Churchill~~ PICHE

Samplers Name B. McINTYRE

Date OCT 26/08 Map Sheet ______

UTM 0456784 E Zone 15Z

6101721 N Datum NAD83

Site: Stream (S)______ Esker (E)______

River (R)______ Beach (B)______

Lake (L)______ Till (T)______

Frostboil (F)______

Glaciofluvial (GF) ✓

Marine Influenced (MT) ______

Till Samples

Matrix: Clay; 15-20 %Silt ______ %

Clast; ______ %Sand 80 %

Shape of Clast; A / SA / SR / R

Clast Origin; local______ %exotic______ %

Dom. Lithology; SAND

Compaction; poor / med / well

Sorted ; poor / med / well

Colour; orange-brown

Quality; 1 / 2 / 3 / 4 / 5

Comments on back of card

ELEV: 624m, side slope, near center of gravity anomaly, weigh point! Sample taken ~30" down.

PART C - APPENDICES

Sample # D8P002
Project ~~[illegible]~~ PICHE
Samplers Name B. McINTYRE
Date OCT. 26/08 Map Sheet
UTM 0456859 E Zone 18
6101797 N Datum NAD 83

Site: Stream (S) ____ Esker (E) ____
River (R) ____ Beach (B) ____
Lake (L) ____ Till (T) ____
Frostboil (F) ____
Glaciofluvial (GF) ✓
Marine Influenced (MT) ____

Till Samples

Matrix: Clay; 50 %Silt ____ %
Clast; — %Sand 50 %

Shape of Clast; A / SA / SR / R

Clast Origin; local ____ %exotic ____ %

Dom. Lithology; SANDY - more clay at base

Compaction; poor / med / well

Sorted ; poor / med / well

Colour; brown - dK brown

Quality; 1 / 2 / 3 / 4 / 5

Comments on back of card

Smpl - 30" down. site - drainage rill, near gravity map anomaly - large windblown knock down

Sample # 08P003
Project ~~[illegible]~~ PICHE
Samplers Name B. McINTYRE
Date OCT. 26/08 Map Sheet ______
UTM 0456738 E Zone 12
6101837 N Datum NAD 83

Site: Stream (S) ______ Esker (E) ______
River (R) ______ Beach (B) ______
Lake (L) ______ Till (T) ______
Frostboil (F) ______
Glaciofluvial (GF) ✓
Marine Influenced (MT) ______

Till Samples

Matrix: Clay; 60 %Silt ______ %
Clast; ______ %Sand 40 %

Shape of Clast; A / SA / SR / R

Clast Origin; local ______ %exotic ______ %

Dom. Lithology; sandy clay

Compaction; poor / med / well

Sorted ; poor / med / well

Colour; dk brown

Quality; 1 / 2 / 3 / 4 / 5

Comments on back of card

Sample site - along trail, NW side of ano. at base of hill. Visual w/ well site ~ 500m N of site. Smpl ~ 3' down

Sample # 08P004
Project ~~[illegible]~~ PICHE
Samplers Name B. McIntyre
Date Oct. 26/08 Map Sheet ____
UTM 0456646 E Zone 12
6101624 N Datum NAD83

Site: Stream (S) ____ Esker (E) ____
River (R) ____ Beach (B) ____
Lake (L) ____ Till (T) ____
Frostboil (F) ____
Glaciofluvial (GF) ✓
Marine Influenced (MT) ____

Till Samples

Matrix: Clay; 25-30 %Silt ____ %
Clast; ____ %Sand 75 %

Shape of Clast; A / SA / SR / R

Clast Origin; local ____ %exotic ____ %

Dom. Lithology; ____

Compaction; poor / med / well

Sorted ; poor / med / well

Colour; honey brown

Quality; 1 / 2 / 3 / 4 / 5

Comments on back of card

ELEV. 605m
ALONG trail, low side along W side of anomaly.

PART C - APPENDICES

Sample # 08P005
Project ~~Churchill~~ PICHE
Samplers Name B. McIntyre
Date OCT. 26/08 Map Sheet______
UTM 0457221 E Zone 13
6101770 N Datum NAD 83

Site: Stream (S)_____ Esker (E)_____
River (R)_____ Beach (B)_____
Lake (L)_____ Till (T)_____
Frostboil (F)_____
Glaciofluvial (GF) ✓
Marine Influenced (MT) _____

Till Samples

Matrix: Clay; 60 %Silt _____ %
Clast; — %Sand 40 %

Shape of Clast; A / SA / SR / R

Clast Origin; local_____ %exotic_____ %

Dom. Lithology; sandy clay

Compaction; poor / med / well

Sorted ; poor / med / well

Colour; dk brown

Quality; 1 / 2 / 3 / 4 / 5

Comments on back of card

Along trail - E side of anomaly
(W. side of trail) in nat. drainage

No. 395

Loring Laboratories Ltd.
629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File No: 51630-D
Client: Marmac Mines

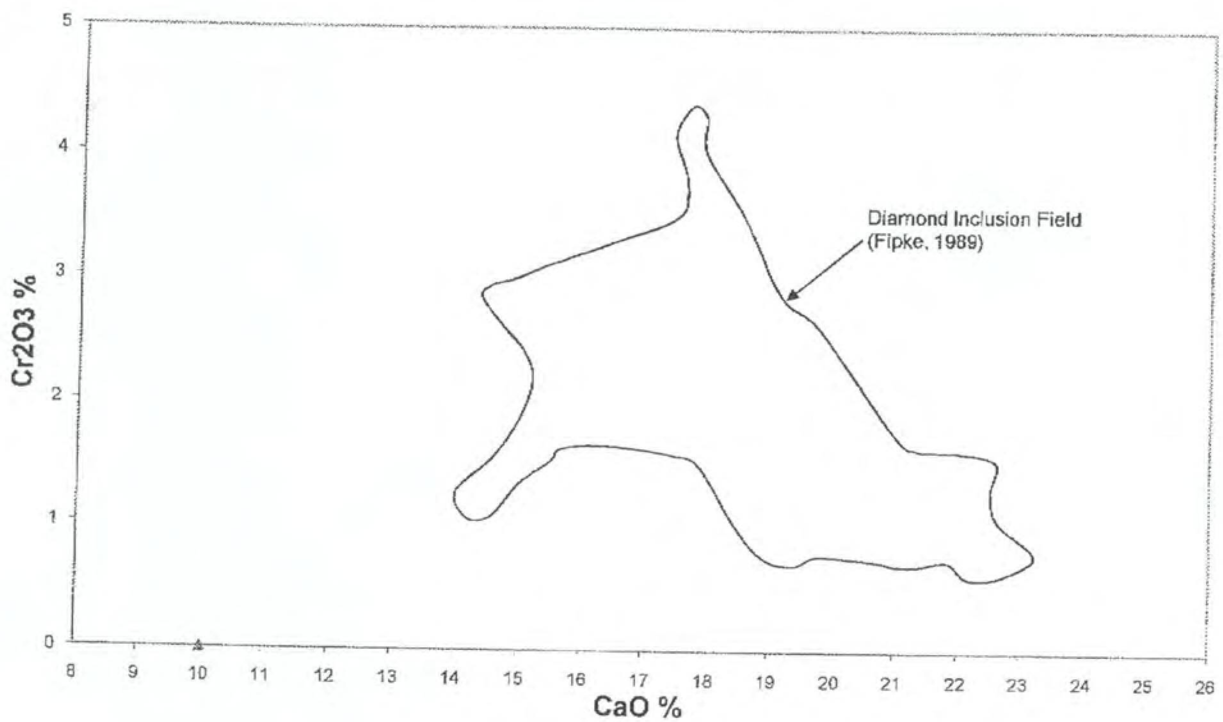
Date: March 10, 2009

Pyroxene Classification (after Stephens and Dawson, '977)

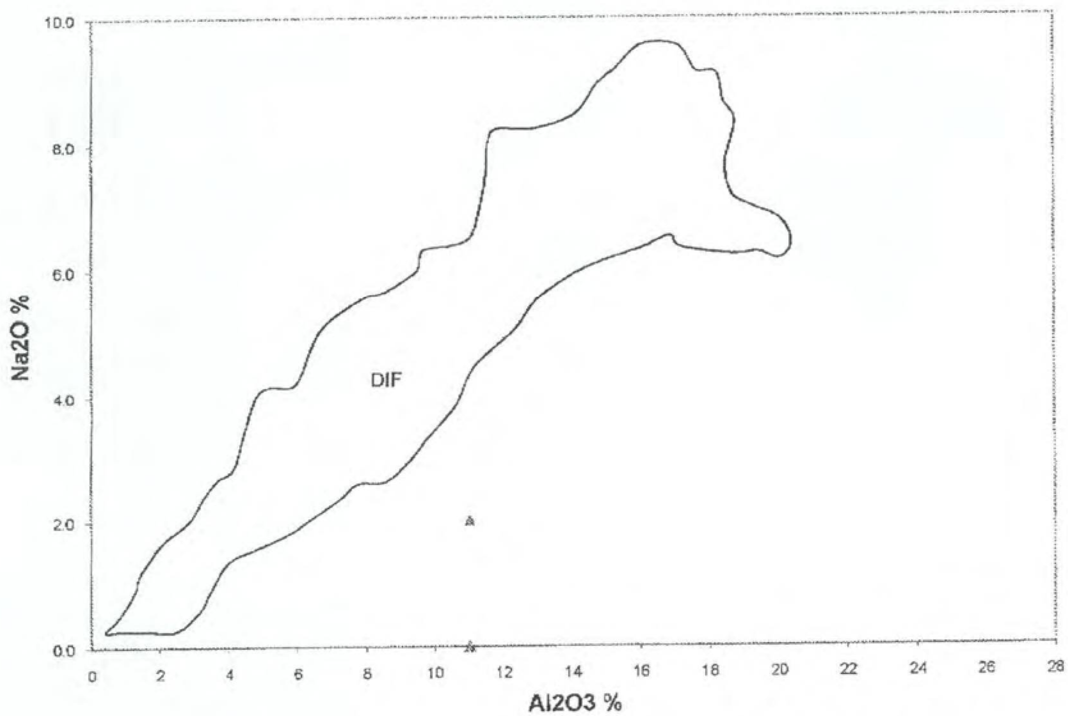
		Location-Data in wt %									ORTHOPYROXENE					CLINOPYROXENE									
G #	Sample #	P#	C#	TiO2	Al2O3	Cr2O3	FeO	MgO	CaO	Na2O	1	2	3	4	5	1	2	3	4	5	6	7	8	9	10
1	08P001	135	4E	0.00	11.00	10.00	1.00	1.00	22.00	0.00											6				
8	08P005	135	4F	0.0C	11.00	0.00	1.00	19.00	10.0C	2.00														9	

	ORTHOPYROXENE					CLINOPYROXENE									
	1	2	3	4	5	1	2	3	4	5	6	7	8	9	10
Total Pyroxene = 2	0	0	0	C	0	0	0	0	0	0	1	0	0	1	0

Clinopyroxene Indicators



Eclogitic Low-Chrome Diopsides



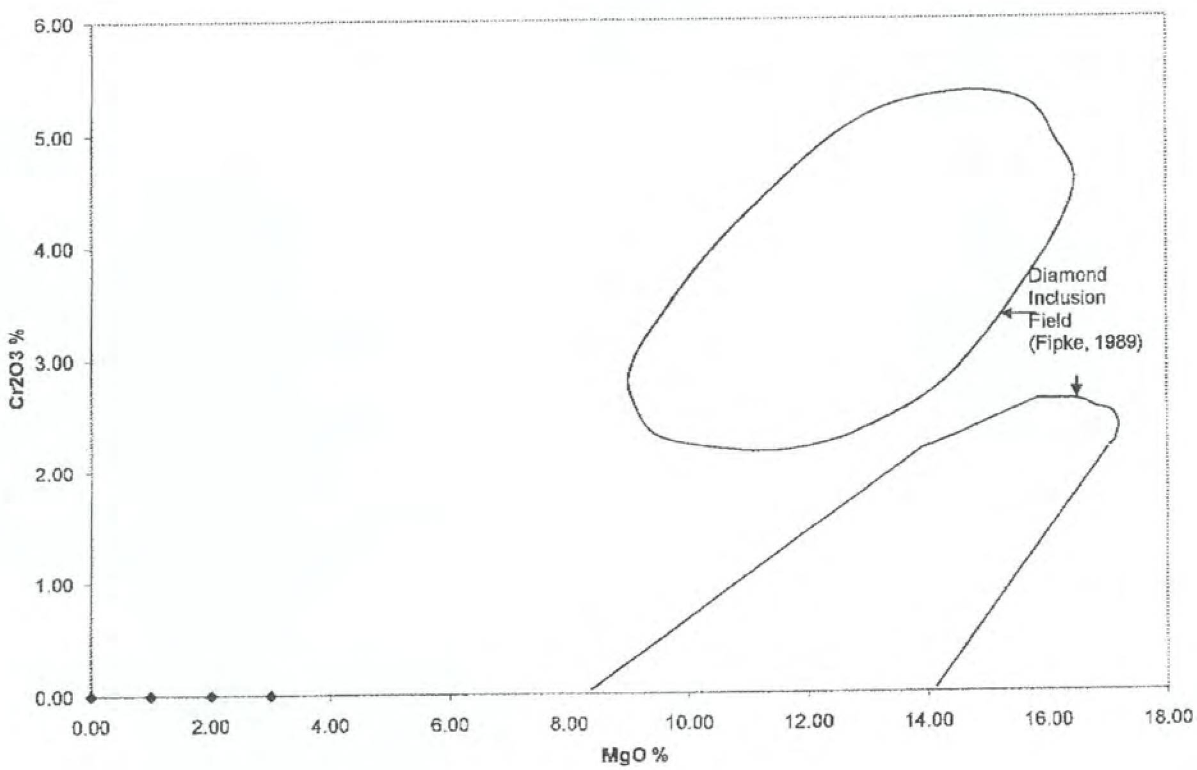
Loring Laboratories Ltd.
629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

File No. : 51630-D
Client: MARMAC MINES
Ilmenite Data

Date: MARCH 13, 2009

Grain #	Sample	Location Plug C # R #	SiO2	TiO2	Al2O3	Cr2O3	Nb2O5	FeO	MnO	MgO	NiO	ZnO	CaO	Na2O	K2O	Total	Mineral
			Data in wt %														
1	1		3.00	48.00	2.00	0.00	0.00	47.00	0.00	0.00	0.00	0.00	0.00	0.00	--	100.00	Ilmenite
2	2		2.00	7.00	1.00	0.00	0.00	91.00	0.00	0.00	0.00	0.00	0.00	0.00	--	101.00	Ilmenite
2	2		2.00	60.00	0.00	0.00	0.00	37.00	1.00	0.00	0.00	0.00	0.00	0.00	--	100.00	Ilmenite
5	5		0.00	54.00	1.00	0.00	0.00	41.00	3.00	1.00	0.00	0.00	0.00	0.00	--	100.00	Ilmenite
5	5		5.00	55.00	3.00	0.00	0.00	36.00	1.00	0.00	0.00	0.00	0.00	0.00	--	100.00	Ilmenite
5	5		3.00	63.00	3.00	0.00	0.00	29.00	0.00	3.00	0.00	0.00	0.00	0.00	--	101.00	Ilmenite
5	5		4.00	61.00	3.00	0.00	0.00	27.00	2.00	2.00	0.00	0.00	1.00	0.00	--	100.00	Ilmenite

Ilmenite Indicators



Sample	Observed	Na2O	MgO	Al2O3	SiO2	CaO	V2O5	Cr2O3	TiO2	MnO	Fe2O3	Total
08P001	CD		1	11	53	22	2	10			2	101
	ILM			2	3				48		47	100
	ILM			1	2				7		91	101
	ILM				2				60	1	37	100
08P003	ILM		1	1					54	3	41	100
08P004	ILM			3	5				55	1	36	100
	ILM		3	3	3				63		29	101
	ILM		2	3	4	1			61	2	27	100
08P005	CD	2	19	11	56	10					2	100

Loring Laboratories Ltd.
629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

FILE # : 51630-D COMPANY: MARMAC MINES DATE : Mar 10, 2009

SAMPLE ID.	ORIGINAL WEIGHT	Screen Analysis			TABLE CONC.	MIDDLINGS 2.9 - 3.3 SG		HEAVIES >3.3 SG							
								MAG.	+28	P.M.			W.P.M.		N.M.
	(Kg)	+ 10 mesh (kg)	10 x 80 mesh (kg)	-80 mesh (kg)	+80 mesh (g)	MAG. (g)	NON - MAG. (g)	(g)	Mesh (g)	0.5 (g)	0.6 (g)	0.7 (g)	1.2 (g)	2.0 (g)	2.0 (g)
08P001	5593.00	4.00	4350.00	1239.00	143		0.49							0.32	0.07
08P002	4035.00	45.00	1460.00	2530.00	65		0.53							0.43	0.07
08P003	4966.0	111.0	2377.0	2478.00	142		0.69							0.61	0.09
08P004	6079.0	16.0	5170.0	893.00	171		0.63							0.76	0.08
08P005	3264.0	54.0	1658.0	1552.00	66		0.89							0.69	0.09

NOTE : P.M. = PARAMAGNETIC W.P.M. = WEAKLY PARAMAGNETIC N.M. = NON-MAGNETIC

[redacted]
ASSAYER

2

PART C - APPENDICES

APPENDIX 2

RC DRILLING DATA

Sanatana Diamonds Inc.

GEOLOGICAL DRILL LOG

PROJECT PICHE 1 RC DRILLING PROGRAMME 2010

		LOGGED BY:	TROY GILL
DRILL HOLE:	RC10-PC1-001	**BIT DIAMETER:**	3 9/16"
EASTING:	457312	**CASING:**	115'
NORTHING:	6101385	**DIP:**	-90
ELEVATION:	650m	**AZIMUTH**	—
DATUM / ZONE:	NAD27 Zone 12	**DEPTH**	285' (87m)
GRID COOR:	—		
CLAIM NAME/#:			
DATE COLLARED:	25 MAR 2010	**DRILL CONTRACTOR:**	NORTHSPAN ~~Sanatana / Minconsult~~
DATE COMPLETED:	28 MAR 2010	**DRILL FOREMAN:**	BRAD ~~Nick Gunner~~

NAD83 457250 6101600

TARGET DESCRIPTION

PICHE 1 SEISMIC ANOMALY

SUMMARY LOG

From	To	Description
0	35	MUD TILL
35	105	SANDY TILL
105	150	PEBBLE TILL
150	285	BOULDER TILL

Sanatana Diamonds Inc.

DRILL HOLE: RC01-RC1-001		LOGGED BY: TH.	PAGE: 1	OF		
FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH
0	5	TILL				
		Brown, clay + sand, rare 5mm rounded pebbles, black cherty + quartz, till.				
5	10	TILL				
		Similar brown fine sand + clay till with rare coarser pebbles.				
10	15	TILL				
		As Above.				
15	20	TILL				
		Similar brown fine sand and clay till with rare pebbles mostly of pale chert and quartz				
20	25	TILL				
		Brown changing to green, same fine sandy and clay till with rare pebbles.				
25	30	TILL				
		Green, fine sand and clay till with rare pebbles				

Sanatana Diamonds Inc.

DRILL HOLE:		LOGGED BY:	PAGE: 2	OF		
FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH
30	35	TILL				
		As Above				
35	40	SANDY MORRAINE				
		Light brown, medium fairly clean sand with minor coarser pebbles. Unconsolidated and free flowing.				
40	45	SANDY MORRAINE				
		As above				
45	75	SANDY MORRAINE				
		As above				
75	90	TILL				
		Green, clay till with rare pebbles				
90	105	SAND MORRAINE				
		Light brown, medium sand till.				
105	140	TILL				
		Green-grey, clay till with no pebbles.				

Sanatana Diamonds Inc.

DRILL HOLE:	PC1-1	LOGGED BY:	T-A.	PAGE:	3	OF	

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH
140	150	SANDY TILL Light Brown sand and clay till with more coarser pebbles of rounded quartz, black shale and granite/gneiss.				
150	285	TILL Grey-green, sand and clay till with abundant coarser pebbles and cobbles, chips 1mm - 15mm, rounded quartz abundant others include granite, gneiss, black shale ferruginous fragments and sandstone. Rock comprising black shinny mineral and quartz = tar sand? 180-185' identified garnet in chips. Also seen in other samples in this interval. Possible mantle fragments? kimberlite?				
		EOH = 285'				

80-185'

Sanatana Diamonds Inc.

MAGNETIC SUSCEPTIBILITY

PROJECT: PICHE

HOLE : RC10-PC1-001 **DATE:** 25 MAR 2010 **INTIALS:**

Depth (ft)	Depth (ft)	X 10-3 SI units	Depth (ft)	Depth (ft)	X 10^{-3} SI units	Depth (ft)	Depth (ft)	X 10^{-3} SI units
0	5	1.75	100	105	2.68	200	205	8.66
5	10	4.37	105	110	2.43	205	210	9.60
10	15	11.90	110	115	1.18	210	215	11.7
15	20	9.50	115	120	0.66	215	220	5.75
20	25	10.50	120	125	0.69	220	225	14.6
25	30	5.08	125	130	0.59	225	230	3.62
30	35	7.46	130	135	4.76	230	235	8.14
35	40	6.94	135	140	4.88	235	240	9.13
40	45	8.24	140	145	5.32	240	245	5.19
45	50	6.99	145	150	4.78	245	250	9.83
50	55	6.35	150	155	7.02	250	255	1.81
55	60	12.3	155	160	2.38	255	260	7.82
60	65	5.17	160	165	3.37	260	265	9.02
65	70	6.66	165	180	2.26	265	270	2.74
75	80	9.73	170	175	6.74	270	275	2.82
85	80	5.77	185	180	7.14	275	280	10.3
80	85	7.83	180	185	4.48	280	285	8.28
85	90	7.42	185	190	3.75	285	290	
90	95	5.64	190	195	8.44	290	295	
95	100	0.78	195	200	8.18	295	300	

Sanatana Diamonds Inc.

SAMPLING RECORD

PROJECT: PICHE 1

HOLE: RC10PC1-001 | DATE: 31 MAR 2010 | Sampler: WOOLFIE

SAMPLE #	Security Tag #	FROM	TO	Weight	SAMPLE #	Security Tag #	FROM	TO	Weight
KD14663	1334	0	5	3 [illegible]	KD14703	1399	200	205	20
4	1317		10	10	4	1390		210	30
5	1378		15	10	5	1258		215	30
6	1341		20	15	6	1311		220	20
7	1323		25	20	7	1253		225	40
8	1369		30	4	8	1273		230	40
9	1357		35	5	9	1375		235	40
70	1392		40	15	10	1284		240	20
1	1386		45	5	11	1278		245	20
2	1275		50	8	12	1352		250	20
3	1381		55	25	13	1321		255	10
4	1339		60	40	14	1294		260	20
5	1350		65	25	15	1301		265	30
6	1325		70	15	16	1363		270	20
7	1343		75	35	17	1249		275	20
8	1298		80	30	18	1376		280	10
9	1368		85	20	KD14719	1312		285	10
80	1308		90	15					
1	1295		95	10					
2	1334		100	15					
3	1288		105	20					
4	1267		110	20					
5	1292		115	5					
6	1355		120	7					
7	1377		125	5					
8	1345		130	7					
9	1338		135	30					
90	1297		140	30					
1	1305		145	30					
2	1347		150	20					
3	1314		155	10					
4	1327		160	30					
5	1354		165	20					
6	1389		170	30					
7	1360		175	30					
8	1331		180	30					
KD14699	1359		185	20					
KD14700	1384		190	30					
1	1280		195	30					
2	1271		200	20					

Microlithics Laboratories Inc.

10-HMInv-146

827 Harold Cres
Thunder Bay, Ontario
P7C 5H8 (807) 623-3383

SOLD TO:
Sanatana Diamonds
1925-925 West Georgia Street
Vancouver, B.C.
V6C 3L2
(604) 408-6680

INVOICE NUMBER	10-HMInv-146
INVOICE DATE	April 27, 2010
TERMS	Net 30 days

QUANTITY	DESCRIPTION		UNIT PRICE	AMOUNT
29	STA	Samples for Heavy Mineral Processing	200.00	$ 5,800.00
29	Total Samples this invoice (Second batch of 2009 STA samples)			
			SUBTOTAL	5,800.00
G.S.T. Registered Number 89236 8804			TAX G.S.T	290.00
See Attached Statements/Receipts for Shipping details			FREIGHT	50.00
Freight G.S.T.			Freight G.S.T.	2.50

$6,142.50
Please Pay this AMOUNT

DIRECT ALL INQUIRIES TO:
Jeff Barrett
Chris Berner
(807) 623-3383
info@microlithics.com

Please Make Cheques Payable to:

Microlithics Laboratories Inc.
827 Harold Cres
Thunder Bay, ON P7C 5H8

Sample Number	Lab ID	Client Sample Number	Sample Season	Crate #	Sample Condition	Original Wt (kg)	Check In By	Sample Type	Project Code	Priority Status	Date Checked In	Arrival Comments
KD14663	11238	KD14663	2010 - Sanatana	A10-STA-11	Good	1.57 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:52 AM	Seal #0001335
KD14665	11240	KD14665	2010 - Sanatana	A10-STA-11	Good	11.09 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:54 AM	Seal #0001378
KD14667	11245	KD14667	2010 - Sanatana	A10-STA-11	Good	17.48 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:00 AM	Seal #0001323
KD14669	11271	KD14669	2010 - Sanatana	A10-STA-11	Good	3.42 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:49 AM	Seal #0001357 Bag is torn possible loss
KD14671	11243	KD14671	2010 - Sanatana	A10-STA-11	Good	4.88 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:58 AM	Seal #0001386
KD14673	11244	KD14673	2010 - Sanatana	A10-STA-11	Good	16.64 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:59 AM	Seal #0001381
KD14675	11250	KD14675	2010 - Sanatana	A10-STA-11	Good	13.36 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:06 AM	Seal #0001350
KD14677	11258	KD14677	2010 - Sanatana	A10-STA-11	Good	17.23 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:31 AM	Seal #0001343
KD14679	11252	KD14679	2010 - Sanatana	A10-STA-11	Good	12.90 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:08 AM	Seal #0001368
KD14681	11263	KD14681	2010 - Sanatana	A10-STA-11	Good	7.09 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:38 AM	Seal #0001295
KD14683	11257	KD14683	2010 - Sanatana	A10-STA-11	Good	12.44 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:30 AM	Seal #0001288
KD14685	11266	KD14685	2010 - Sanatana	A10-STA-11	Good	2.66 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:41 AM	Seal #0001292
KD14687	11249	KD14687	2010 - Sanatana	A10-STA-11	Good	5.52 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:04 AM	Seal #0001377
KD14689	11253	KD14689	2010 - Sanatana	A10-STA-11	Good	18.93 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:25 AM	Seal #0001338
KD14691	11265	KD14691	2010 - Sanatana	A10-STA-11	Good	15.45 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:40 AM	Seal #0001305
KD14693	11259	KD14693	2010 - Sanatana	A10-STA-11	Good	7.33 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:33 AM	Seal #0001314
KD14695	11224	KD14695	2010 - Sanatana	A10-STA-10	Good	8.99 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:34 AM	Seal #0001354
KD14697	11221	KD14697	2010 - Sanatana	A10-STA-10	Good	13.33 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:30 AM	Seal #0001360
KD14699	11262	KD14699	2010 - Sanatana	A10-STA-11	Good	13.27 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 11:37 AM	Seal #0001359
KD14701	11220	KD14701	2010 - Sanatana	A10-STA-10	Good	18.99 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:29 AM	Seal #0001280
KD14703	11237	KD14703	2010 - Sanatana	A10-STA-10	Good	12.93 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:49 AM	Seal #0001399
KD14705	11230	KD14705	2010 - Sanatana	A10-STA-10	Good	15.14 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:41 AM	Seal #0001258
KD14707	11227	KD14707	2010 - Sanatana	A10-STA-10	Good	21.38 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:38 AM	Seal #0001253
KD14709	11234	KD14709	2010 - Sanatana	A10-STA-10	Good	19.02 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:46 AM	Seal #0001375
KD14711	11232	KD14711	2010 - Sanatana	A10-STA-10	Good	9.64 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:44 AM	Seal #0001278
KD14713	11204	KD14713	2010 - Sanatana	A10-STA-10	Good	11.94 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:21 AM	Seal #0001321
KD14715	11223	KD14715	2010 - Sanatana	A10-STA-10	Good	14.35 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:33 AM	Seal #0001301
KD14717	11236	KD14717	2010 - Sanatana	A10-STA-10	Good	11.96 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 10:48 AM	Seal #0001249
KD14719	11202	KD14719	2010 - Sanatana	A10-STA-10	Good	7.72 kg	Derek C.	Till	Sanatana	1 - Highest	Apr 8/10 9:41 AM	Seal #0001312

Sample Number	Mixers Processed	Mixers Start Date/Time	Geochem Taken	Geochem Type	Mixer ID	Mixer Operator ID	Mixers Finish Date/Time	Mixer Comments
KD14663	TRUE	Apr 9/10 10:31 AM	FALSE		M3	Derek C.	Apr 9/10 10:44 AM	QC = C29
KD14665	TRUE	Apr 12/10 11:13 AM	FALSE		M2	Derek C.	Apr 12/10 11:29 AM	QC = 6
KD14667	TRUE	Apr 9/10 10:08 AM	FALSE		M3	Derek C.	Apr 9/10 10:31 AM	QC = D65
KD14669	TRUE	Apr 8/10 12:22 PM	FALSE		M2	Derek C.	Apr 8/10 12:30 PM	QC = D42
KD14671	TRUE	Apr 12/10 11:30 AM	FALSE		M2	Derek C.	Apr 12/10 11:37 AM	QC = J92
KD14673	TRUE	Apr 9/10 10:25 AM	FALSE		M2	Derek C.	Apr 9/10 10:37 AM	QC = A6
KD14675	TRUE	Apr 12/10 11:03 AM	FALSE		M2	Derek C.	Apr 12/10 11:12 AM	QC = D56
KD14677	TRUE	Apr 9/10 9:07 AM	FALSE		M3	Derek C.	Apr 9/10 9:25 AM	QC = Z71
KD14679	TRUE	Apr 9/10 9:37 AM	FALSE		M2	Derek C.	Apr 9/10 9:59 AM	QC = D55
KD14681	TRUE	Apr 9/10 9:16 AM	FALSE		M2	Derek C.	Apr 9/10 9:36 AM	QC = 1
KD14683	TRUE	Apr 9/10 9:27 AM	FALSE		M3	Derek C.	Apr 9/10 9:44 AM	QC = J11
KD14685	TRUE	Apr 8/10 12:37 PM	FALSE		M2	Derek C.	Apr 8/10 12:45 PM	QC = D49
KD14687	TRUE	Apr 12/10 10:52 AM	FALSE		M2	Derek C.	Apr 12/10 11:01 AM	QC = D46
KD14689	TRUE	Apr 9/10 9:46 AM	FALSE		M3	Derek C.	Apr 9/10 10:06 AM	QC = 5
KD14691	TRUE	Apr 9/10 9:59 AM	FALSE		M2	Derek C.	Apr 9/10 10:25 AM	QC = 12
KD14693	TRUE	Apr 9/10 9:00 AM	FALSE		M2	Derek C.	Apr 9/10 9:16 AM	QC = C27
KD14695	TRUE	Apr 12/10 2:17 PM	FALSE		M2	Derek C.	Apr 12/10 2:26 PM	QC = 14
KD14697	TRUE	Apr 12/10 1:41 PM	FALSE		M2	Derek C.	Apr 12/10 1:50 PM	QC = B17
KD14699	TRUE	Apr 8/10 1:50 PM	FALSE		M2	Derek C.	Apr 8/10 2:04 PM	QC = DRK
KD14701	TRUE	Apr 12/10 1:31 PM	FALSE		M2	Derek C.	Apr 12/10 1:41 PM	QC = A5
KD14703	TRUE	Apr 9/10 10:47 AM	FALSE		M3	Derek C.	Apr 9/10 11:19 AM	QC = B20
KD14705	TRUE	Apr 12/10 2:34 PM	FALSE		M2	Derek C.	Apr 12/10 2:42 PM	QC = D31
KD14707	TRUE	Apr 12/10 2:05 PM	FALSE		M2	Derek C.	Apr 12/10 2:17 PM	QC = J91
KD14709	TRUE	Apr 12/10 11:38 AM	FALSE		M2	Derek C.	Apr 12/10 11:56 AM	QC = D68
KD14711	TRUE	Apr 12/10 2:27 PM	FALSE		M2	Derek C.	Apr 12/10 2:34 PM	QC = B14
KD14713	TRUE	Apr 12/10 1:14 PM	FALSE		M2	Derek C.	Apr 12/10 1:31 PM	QC = D51
KD14715	TRUE	Apr 12/10 1:50 PM	FALSE		M2	Derek C.	Apr 12/10 2:04 PM	QC = J96
KD14717	TRUE	Apr 9/10 10:39 AM	FALSE		M2	Derek C.	Apr 9/10 11:16 AM	QC = B12
KD14719	TRUE	Apr 8/10 12:10 PM	FALSE		M2	Derek C.	Apr 8/10 12:19 PM	QC = P3

Sample Number	Wetscreens Processed	Wetscreens Date/Time Started	Wetscreens Date/Time Finished	Wetscreens Start Operator ID	Wetscreen ID	Wetscreens Finish Operator ID	Wet UltraFines Wt	UltraFines Disposed	Oven Used	Tag Used	# of Pans	Oversize Storage Bin	Oversize Weight	Wetscreen Comments
KD14663	TRUE	Apr 12/10 10:15 AM	Apr 12/10 12:44 PM	Derek C.	W1	Derek C.		FALSE	B	5	3			
KD14665	TRUE	Apr 12/10 12:06 PM	Apr 12/10 12:53 PM	Derek C.	W1	Derek C.		FALSE	B	7	3			
KD14667	TRUE	Apr 9/10 12:15 PM	Apr 9/10 1:24 PM	Derek C.	W1	Derek C.		FALSE	A	10	3			
KD14669	TRUE	Apr 8/10 12:32 PM	Apr 8/10 12:46 PM	Derek C.	W2	Derek C.		FALSE	A	1	2			
KD14671	TRUE	Apr 12/10 11:48 AM	Apr 12/10 12:59 PM	Derek C.	W1	Derek C.		FALSE	B	8	3			
KD14673	TRUE	Apr 12/10 9:53 AM	Apr 12/10 12:39 PM	Derek C.	W2	Derek C.		FALSE	B	3	5			B4 x 1 Also.
KD14675	TRUE	Apr 12/10 11:12 AM	Apr 12/10 1:08 PM	Derek C.	W2	Derek C.		FALSE	B	10	3			
KD14677	TRUE	Apr 12/10 9:08 AM	Apr 12/10 10:06 AM	Derek C.	W1	Derek C.		FALSE	B	2	3			
KD14679	TRUE	Apr 9/10 11:50 AM	Apr 9/10 12:41 PM	Derek C.	W2	Derek C.		FALSE	A	7	3			
KD14681	TRUE	Apr 12/10 9:12 AM	Apr 12/10 10:01 AM	Derek C.	W2	Derek C.		FALSE	B	1	3			
KD14683	TRUE	Apr 12/10 9:45 AM	Apr 12/10 12:48 PM	Derek C.	W1	Derek C.		FALSE	B	6	3			
KD14685	TRUE	Apr 8/10 1:20 PM	Apr 8/10 1:45 PM	Derek C.	W1	Derek C.		FALSE	A	3	2			
KD14687	TRUE	Apr 12/10 11:02 AM	Apr 12/10 1:04 PM	Derek C.	W1	Derek C.		FALSE	B	9	3			
KD14689	TRUE	Apr 9/10 11:41 AM	Apr 9/10 12:46 PM	Derek C.	W1	Derek C.		FALSE	A	8	3			
KD14691	TRUE	Apr 9/10 12:26 PM	Apr 9/10 1:19 PM	Derek C.	W2	Derek C.		FALSE	A	9	3			
KD14693	TRUE	Apr 9/10 1:03 PM	Apr 9/10 1:37 PM	Derek C.	W1	Derek C.		FALSE	A	11	3			
KD14695	TRUE	Apr 13/10 7:46 AM	Apr 13/10 10:19 AM	Derek C.	W1	Derek C.		FALSE	A	6	3			
KD14697	TRUE	Apr 13/10 8:35 AM	Apr 13/10 10:38 AM	Derek C.	W2	Derek C.		FALSE	A	10	3			
KD14699	TRUE	Apr 8/10 2:05 PM	Apr 8/10 2:44 PM	Derek C.	W1	Derek C.		FALSE	A	4	2			
KD14701	TRUE	Apr 13/10 8:50 AM	Apr 13/10 10:09 AM	Derek C.	W1	Derek C.		FALSE	A	4	3			
KD14703	TRUE	Apr 9/10 11:20 AM	Apr 9/10 12:07 PM	Derek C.	W1	Derek C.		FALSE	A	6	2			
KD14705	TRUE	Apr 13/10 7:24 AM	Apr 13/10 9:41 AM	Derek C.	W1	Derek C.		FALSE	A	2	3			
KD14707	TRUE	Apr 13/10 7:56 AM	Apr 13/10 10:28 AM	Derek C.	W2	Derek C.		FALSE	A	7	5			A8 x 1 Also.
KD14709	TRUE	Apr 13/10 9:19 AM	Apr 13/10 10:04 AM	Derek C.	W2	Derek C.		FALSE	A	3	4			
KD14711	TRUE	Apr 13/10 7:28 AM	Apr 13/10 9:37 AM	Derek C.	W2	Derek C.		FALSE	A	1	3			
KD14713	TRUE	Apr 13/10 9:00 AM	Apr 13/10 10:14 AM	Derek C.	W2	Derek C.		FALSE	A	5	3			
KD14715	TRUE	Apr 13/10 8:23 AM	Apr 13/10 10:33 AM	Derek C.	W1	Derek C.		FALSE	A	9	3			
KD14717	TRUE	Apr 9/10 11:23 AM	Apr 9/10 12:04 PM	Derek C.	W2	Derek C.		FALSE	A	5	2			
KD14719	TRUE	Apr 8/10 12:20 PM	Apr 8/10 2:40 PM	Derek C.	W1	Derek C.		FALSE	A	2	2			

Sample Number	Rotaps Processed	Rotaps Start Operator ID	Rotaps Date/Time Started	Stack #	Splits	Rotap Start Wt	Start Fraction Size	Fraction 1 Weight	Fraction 1 Size	Fraction 2 Weight	Fraction 2 Size	Fraction 3 Weight	Fraction 3 Size
KD14663	TRUE	Jeff B.	Apr 13/10 10:14 AM	n/a	0		n/a	44 gr	+ 1 mm	159 gr	0.25 - 1 mm		n/a
KD14665	TRUE	Jeff B.	Apr 13/10 10:31 AM	n/a	0		n/a	261 gr	+ 1 mm	924 gr	0.25 - 1 mm		n/a
KD14667	TRUE	Jeff B.	Apr 13/10 8:18 AM	n/a	0		n/a	382 gr	+ 1 mm	1,742 gr	0.25 - 1 mm		n/a
KD14669	TRUE	Jeff B.	Apr 13/10 9:19 AM	n/a	0		n/a	90 gr	+ 1 mm	94 gr	0.25 - 1 mm		n/a
KD14671	TRUE	Jeff B.	Apr 13/10 10:42 AM	n/a	0		n/a	1 gr	+ 1 mm	1,060 gr	0.25 - 1 mm		n/a
KD14673	TRUE	Jeff B.	Apr 13/10 11:01 AM	n/a	0		n/a	166 gr	+ 1 mm	9,282 gr	0.25 - 1 mm		n/a
KD14675	TRUE	Jeff B.	Apr 13/10 10:38 AM	n/a	0		n/a	3 gr	+ 1 mm	1,948 gr	0.25 - 1 mm		n/a
KD14677	TRUE	Jeff B.	Apr 13/10 9:52 AM	n/a	0		n/a	8 gr	+ 1 mm	608 gr	0.25 - 1 mm		n/a
KD14679	TRUE	Jeff B.	Apr 13/10 8:39 AM	n/a	0		n/a	57 gr	+ 1 mm	175 gr	0.25 - 1 mm		n/a
KD14681	TRUE	Jeff B.	Apr 13/10 9:45 AM	n/a	0		n/a	11 gr	+ 1 mm	44 gr	0.25 - 1 mm		n/a
KD14683	TRUE	Jeff B.	Apr 13/10 10:21 AM	n/a	0		n/a	7 gr	+ 1 mm	388 gr	0.25 - 1 mm		n/a
KD14685	TRUE	Jeff B.	Apr 13/10 9:03 AM	n/a	0		n/a	25 gr	+ 1 mm	15 gr	0.25 - 1 mm		n/a
KD14687	TRUE	Jeff B.	Apr 13/10 10:50 AM	n/a	0		n/a	2 gr	+ 1 mm	12 gr	0.25 - 1 mm		n/a
KD14689	TRUE	Jeff B.	Apr 13/10 8:33 AM	n/a	0		n/a	2 gr	+ 1 mm	16 gr	0.25 - 1 mm		n/a
KD14691	TRUE	Jeff B.	Apr 13/10 8:24 AM	n/a	0		n/a	48 gr	+ 1 mm	281 gr	0.25 - 1 mm		n/a
KD14693	TRUE	Jeff B.	Apr 13/10 7:52 AM	n/a	0		n/a	194 gr	+ 1 mm	741 gr	0.25 - 1 mm		n/a
KD14695	TRUE	Jeff B.	Apr 14/10 10:53 AM	n/a	0		n/a	144 gr	+ 1 mm	760 gr	0.25 - 1 mm		n/a
KD14697	TRUE	Jeff B.	Apr 14/10 11:01 AM	n/a	0		n/a	456 gr	+ 1 mm	2,146 gr	0.25 - 1 mm		n/a
KD14699	TRUE	Jeff B.	Apr 13/10 8:55 AM	n/a	0		n/a	194 gr	+ 1 mm	957 gr	0.25 - 1 mm		n/a
KD14701	TRUE	Jeff B.	Apr 14/10 10:35 AM	n/a	0		n/a	82 gr	+ 1 mm	857 gr	0.25 - 1 mm		n/a
KD14703	TRUE	Jeff B.	Apr 13/10 8:45 AM	n/a	0		n/a	203 gr	+ 1 mm	943 gr	0.25 - 1 mm		n/a
KD14705	TRUE	Jeff B.	Apr 14/10 10:28 AM	n/a	0		n/a	158 gr	+1 mm	1,205 gr	0.25 - 1 mm		n/a
KD14707	TRUE	Jeff B.	Apr 14/10 11:25 AM	n/a	0		n/a	5,583 gr	+ 1 mm	5,718 gr	0.25 - 1 mm		14717
KD14709	TRUE	Jeff B.	Apr 14/10 11:40 AM	n/a	0		n/a	2,098 gr	+ 1 mm	6,535 gr	0.25 - 1 mm		n/a
KD14711	TRUE	Jeff B.	Apr 14/10 10:19 AM	n/a	0		n/a	429 gr	+ 1 mm	2,157 gr	0.25 - 1 mm		n/a
KD14713	TRUE	Jeff B.	Apr 14/10 11:15 AM	n/a	0		n/a	506 gr	+ 1 mm	3,263 gr	0.25 - 1 mm		n/a
KD14715	TRUE	Jeff B.	Apr 14/10 11:08 AM	n/a	0		n/a	513 gr	+ 1 mm	2,964 gr	0.25 - 1 mm		n/a
KD14717	TRUE	Jeff B.	Apr 13/10 8:50 AM	n/a	0		n/a	675 gr	+ 1 mm	2,873 gr	0.25 - 1 mm		n/a
KD14719	TRUE	Jeff B.	Apr 13/10 9:15 AM	n/a	0		n/a	341 gr	+ 1 mm	2,079 gr	0.25 - 1 mm		n/a

Fraction 4 Weight	Fraction 4 Size	Rotap Wt Difference	Rotaps Date/Time Finished	Materials Storage ID	Processing Bin Number	Rotaps Finish Operator ID	Rotap Comments
	n/a		Apr 13/10 10:14 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 10:31 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:18 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 9:19 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 10:42 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 11:01 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 10:38 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 9:52 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:39 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 9:45 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 10:21 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 9:03 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 10:51 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:33 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:24 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 7:53 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 10:53 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 11:01 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:55 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 10:35 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:45 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 10:28 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 11:25 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 11:40 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 10:19 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 11:15 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 14/10 11:08 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 8:51 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD
	n/a		Apr 13/10 9:15 AM	C10-STA-A-001		Jeff B.	sample was not dry sieved but sent through directly to LD

Sample Number	LD Processed	LD Start Operator ID	LD Date/Time Started	LD Funnel ID	LST SG	LD Number of Splits	LD Date/Time Finished	LD Finish Operator ID	LD Comments
KD14663	TRUE	Brad W.	Apr 14/10 10:00 AM	7	2.89	1	Apr 14/10 10:50 AM	Brad W.	
KD14665	TRUE	Brad W.	Apr 14/10 10:00 AM	4	2.89	1	Apr 14/10 10:50 AM	Brad W.	
KD14667	TRUE	Brad W.	Apr 13/10 10:30 AM	9,10	2.89	2	Jan 5/00 12:00 AM	Brad W.	
KD14669	TRUE	Brad W.	Apr 14/10 10:00 AM	2	2.89	1	Apr 14/10 10:50 AM	Brad W.	
KD14671	TRUE	Brad W.	Apr 14/10 10:00 AM	3	2.89	1	Apr 14/10 10:50 AM	Brad W.	
KD14673	TRUE	Brad W.	Apr 14/10 11:00 AM	1-7	2.88	7	Apr 14/10 11:50 AM	Brad W.	
KD14675	TRUE	Brad W.	Apr 14/10 10:00 AM	9,10	2.89	2	Apr 14/10 10:50 AM	Brad W.	
KD14677	TRUE	Brad W.	Apr 14/10 10:00 AM	6	2.89	1	Apr 14/10 10:50 AM	Brad W.	
KD14679	TRUE	Brad W.	Apr 13/10 10:30 AM	3	2.9	1	Apr 13/10 11:20 AM	Brad W.	
KD14681	TRUE	Brad W.	Apr 14/10 10:00 AM	5	2.9	1	Apr 14/10 10:50 AM	Brad W.	
KD14683	TRUE	Brad W.	Apr 14/10 10:00 AM	8	2.89	1	Apr 14/10 10:50 AM	Brad W.	
KD14685	TRUE	Brad W.	Apr 14/10 10:00 AM	1	2.9	1	Apr 14/10 10:50 AM	Brad W.	
KD14687	TRUE	Brad W.	Apr 16/10 10:30 AM	10	2.9	1	Apr 16/10 11:20 AM	Brad W.	
KD14689	TRUE	Brad W.	Apr 13/10 10:30 AM	2	2.9	1	Apr 13/10 11:20 AM	Brad W.	
KD14691	TRUE	Brad W.	Apr 13/10 10:30 AM	4	2.9	1	Apr 13/10 11:20 AM	Brad W.	
KD14693	TRUE	Brad W.	Apr 13/10 10:30 AM	5	2.9	1	Apr 13/10 11:20 AM	Brad W.	
KD14695	TRUE	Brad W.	Apr 20/10 10:20 AM	2	2.9	1	Apr 20/10 11:10 AM	Brad W.	
KD14697	TRUE	Brad W.	Apr 19/10 10:30 AM	2-3	2.9	2	Apr 19/10 11:20 AM	Brad W.	
KD14699	TRUE	Brad W.	Apr 13/10 10:30 AM	1	2.9	1	Apr 13/10 11:20 AM	Brad W.	
KD14701	TRUE	Brad W.	Apr 20/10 10:20 AM	1	2.9	1	Apr 20/10 11:10 AM	Brad W.	
KD14703	TRUE	Brad W.	Apr 13/10 10:30 AM	6	2.9	1	Apr 13/10 11:20 AM	Brad W.	
KD14705	TRUE	Brad W.	Apr 19/10 10:30 AM	1	2.9	1	Apr 19/10 11:20 AM	Brad W.	
KD14707	TRUE	Brad W.	Apr 16/10 10:30 AM	6-9	2.9	4	Apr 16/10 11:20 AM	Brad W.	
KD14709	TRUE	Brad W.	Apr 16/10 10:30 AM	1-5	2.9	5	Apr 16/10 11:20 AM	Brad W.	
KD14711	TRUE	Brad W.	Apr 19/10 10:30 AM	4-5	2.9	1	Apr 19/10 11:20 AM	Brad W.	
KD14713	TRUE	Brad W.	Apr 19/10 10:30 AM	8-10	2.9	3	Apr 19/10 11:20 AM	Brad W.	
KD14715	TRUE	Brad W.	Apr 15/11 11:00 AM	8-10	2.88	3	Apr 15/10 11:50 AM	Brad W.	
KD14717	TRUE	Brad W.	Apr 13/10 10:30 AM	7-8	2.9	2	Apr 13/10 11:20 AM	Brad W.	
KD14719	TRUE	Brad W.	Apr 19/10 10:30 AM	6-7	2.9	1	Apr 19/10 11:20 AM	Brad W.	

Sample Number	HD Processed	HD Operator ID	HD Date/Time Started	HD Start Weight	HD Unprocessed Wt	HD Float Weight	HD Conc Weight	HD Difference	HD Fraction Size	HD SG	HD Funnel ID	HD Number of Splits	HD Float Storage Bin	HD Skip	HD ReRun	HD Comments
KD14663	TRUE	Chris B.	Apr 21/10 8:00 AM	7.00 gr	0.00 gr	4.96 gr	1.88 gr	-0.16 gr	0.25 - 1.0 mm	3.35	HD-22	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14665	TRUE	Chris B.	Apr 21/10 8:00 AM	9.30 gr	0.00 gr	6.54 gr	2.55 gr	-0.21 gr	0.25 - 1.0 mm	3.35	HD-13	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14667	TRUE	Chris B.	Apr 21/10 8:00 AM	12.27 gr	0.00 gr	6.69 gr	5.36 gr	-0.22 gr	0.25 - 1.0 mm	3.35	HD-20	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14669	TRUE	Chris B.	Apr 21/10 8:00 AM	1.54 gr	0.00 gr	0.89 gr	0.53 gr	-0.12 gr	0.25 - 1.0 mm	3.35	HD-12	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14671	TRUE	Chris B.	Apr 21/10 8:00 AM	1.28 gr	0.00 gr	0.85 gr	0.27 gr	-0.16 gr	0.25 - 1.0 mm	3.35	HD-15	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14673	TRUE	Chris B.	Apr 21/10 8:00 AM	12.92 gr	0.00 gr	7.49 gr	5.12 gr	-0.31 gr	0.25 - 1.0 mm	3.35	HD-10	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14675	TRUE	Chris B.	Apr 21/10 8:00 AM	1.89 gr	0.00 gr	1.03 gr	0.75 gr	-0.11 gr	0.25 - 1.0 mm	3.35	HD-21	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14677	TRUE	Chris B.	Apr 21/10 8:00 AM	1.16 gr	0.00 gr	0.58 gr	0.38 gr	-0.20 gr	0.25 - 1.0 mm	3.35	HD-14	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14679	TRUE	Chris B.	Apr 21/10 8:00 AM	1.84 gr	0.00 gr	0.82 gr	0.85 gr	-0.17 gr	0.25 - 1.0 mm	3.35	HD-23	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14681	TRUE	Chris B.	Apr 21/10 8:00 AM	0.55 gr	0.00 gr				0.25 - 1.0 mm				10-HDFloat-STA-03	TRUE	FALSE	
KD14683	TRUE	Chris B.	Apr 21/10 8:00 AM	0.44 gr	0.00 gr				0.25 - 1.0 mm				10-HDFloat-STA-03	TRUE	FALSE	
KD14685	TRUE	Chris B.	Apr 21/10 8:00 AM	0.06 gr	0.00 gr				0.25 - 1.0 mm				10-HDFloat-STA-03	TRUE	FALSE	
KD14687	TRUE	Chris B.	Apr 21/10 8:00 AM	0.13 gr	0.00 gr				0.25 - 1.0 mm				10-HDFloat-STA-03	TRUE	FALSE	
KD14689	TRUE	Chris B.	Apr 21/10 8:00 AM	0.16 gr	0.00 gr				0.25 - 1.0 mm				10-HDFloat-STA-03	TRUE	FALSE	
KD14691	TRUE	Chris B.	Apr 21/10 8:00 AM	1.79 gr	0.00 gr	0.81 gr	0.94 gr	-0.04 gr	0.25 - 1.0 mm	3.35	HD-24	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14693	TRUE	Chris B.	Apr 21/10 8:00 AM	3.84 gr	0.00 gr	1.79 gr	1.87 gr	-0.18 gr	0.25 - 1.0 mm	3.35	HD-19	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14695	TRUE	Chris B.	Apr 21/10 8:00 AM	5.28 gr	0.00 gr	2.03 gr	3.20 gr	-0.05 gr	0.25 - 1.0 mm	3.35	HD-03	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14697	TRUE	Chris B.	Apr 21/10 8:00 AM	13.18 gr	0.00 gr	5.20 gr	7.68 gr	-0.30 gr	0.25 - 1.0 mm	3.35	HD-04	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14699	TRUE	Chris B.	Apr 21/10 8:00 AM	4.96 gr	0.00 gr	2.07 gr	2.74 gr	-0.15 gr	0.25 - 1.0 mm	3.35	HD-17	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14701	TRUE	Chris B.	Apr 21/10 8:00 AM	4.20 gr	0.00 gr	1.57 gr	2.48 gr	-0.15 gr	0.25 - 1.0 mm	3.35	HD-02	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14703	TRUE	Chris B.	Apr 21/10 8:00 AM	8.72 gr	0.00 gr	4.19 gr	4.36 gr	-0.17 gr	0.25 - 1.0 mm	3.35	HD-18	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14705	TRUE	Chris B.	Apr 21/10 8:00 AM	8.58 gr	0.00 gr	3.57 gr	4.81 gr	-0.20 gr	0.25 - 1.0 mm	3.35	n/a	1	10-HDFloat-STA-03	FALSE	FALSE	Funnel number not recorded
KD14707	TRUE	Chris B.	Apr 21/10 8:00 AM	113.93 gr	0.00 gr	34.61 gr	76.73 gr	-2.59 gr	0.25 - 1.0 mm	3.35	HD-08	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14709	TRUE	Chris B.	Apr 21/10 8:00 AM	72.82 gr	0.00 gr	24.67 gr	46.24 gr	-1.91 gr	0.25 - 1.0 mm	3.35	HD-09	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14711	TRUE	Chris B.	Apr 21/10 8:00 AM	27.74 gr	0.00 gr	9.45 gr	17.61 gr	-0.68 gr	0.25 - 1.0 mm	3.35	HD-06	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14713	TRUE	Chris B.	Apr 21/10 8:00 AM	33.75 gr	0.00 gr	11.47 gr	21.29 gr	-0.99 gr	0.25 - 1.0 mm	3.35	HD-07	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14715	TRUE	Chris B.	Apr 21/10 8:00 AM	36.38 gr	0.00 gr	15.00 gr	20.35 gr	-1.03 gr	0.25 - 1.0 mm	3.35	HD-11	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14717	TRUE	Chris B.	Apr 21/10 8:00 AM	29.75 gr	0.00 gr	12.22 gr	16.72 gr	-0.81 gr	0.25 - 1.0 mm	3.35	HD-16	1	10-HDFloat-STA-03	FALSE	FALSE	
KD14719	TRUE	Chris B.	Apr 21/10 8:00 AM	19.08 gr	0.00 gr	7.27 gr	11.42 gr	-0.39 gr	0.25 - 1.0 mm	3.35	HD-05	1	10-HDFloat-STA-03	FALSE	FALSE	

Sample Number	Till Geochem Wt	Stream DeSlime Geochem	Stream Ultrafines Geochem	Geochem Bin	Geochem Comments
KD14663	0.227 kg			10-ICP-STA-A004	
KD14665	0.202 kg			10-ICP-STA-A004	
KD14667	0.3 kg			10-ICP-STA-A004	
KD14669	0.179 kg			10-ICP-STA-A004	
KD14671	0.239 kg			10-ICP-STA-A004	
KD14673	0.215 kg			10-ICP-STA-A004	
KD14675	0.203 kg			10-ICP-STA-A004	
KD14677	0.238 kg			10-ICP-STA-A004	
KD14679	0.189 kg			10-ICP-STA-A004	
KD14681	0.344 kg			10-ICP-STA-A004	
KD14683	0.216 kg			10-ICP-STA-A004	
KD14685	0.273 kg			10-ICP-STA-A004	
KD14687	0.232 kg			10-ICP-STA-A004	
KD14689	0.205 kg			10-ICP-STA-A004	
KD14691	0.26 kg			10-ICP-STA-A004	
KD14693	0.255 kg			10-ICP-STA-A004	
KD14695	0.305 kg			10-ICP-STA-A004	
KD14697	0.284 kg			10-ICP-STA-A004	
KD14699	0.241 kg			10-ICP-STA-A004	
KD14701	0.291 kg			10-ICP-STA-A004	
KD14703	0.235 kg			10-ICP-STA-A004	
KD14705	0.272 kg			10-ICP-STA-A004	
KD14707	0.248 kg			10-ICP-STA-A004	
KD14709	0.29 kg			10-ICP-STA-A004	
KD14711	0.229 kg			10-ICP-STA-A004	
KD14713	0.242 kg			10-ICP-STA-A004	
KD14715	0.278 kg			10-ICP-STA-A004	
KD14717	0.263 kg			10-ICP-STA-A004	
KD14719	0.264 kg			10-ICP-STA-A004	

Sample Number	Sample Shipment ID	Conc Shipping Comments	Date Sample Shipped	Shipped Via	Shipped To	Shipped By	Shipment Waybill	Shipments Comments
KD14663	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14665	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14667	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14669	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14671	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14673	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14675	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14677	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14679	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14681	10-SH-STA-08	HD Skip	April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14683	10-SH-STA-08	HD Skip	April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14685	10-SH-STA-08	HD Skip	April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14687	10-SH-STA-08	HD Skip	April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14689	10-SH-STA-08	HD Skip	April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14691	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14693	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14695	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14697	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14699	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14701	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14703	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14705	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14707	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14709	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14711	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14713	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14715	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14717	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	
KD14719	10-SH-STA-08		April 26, 2010	Purolator Courier	KIM Dynamics	Jeff B.	3292 1296 1539	

Sample Number	Sample Type	Project Code	Invoice Number	Invoice Rate	Surcharge1	Surcharge2	Surcharge3	Surcharge4	MicroTotal	MicroComments
KD14663	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14665	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14667	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14669	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14671	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14673	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14675	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14677	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14679	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14681	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14683	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14685	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14687	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14689	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14691	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14693	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14695	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14697	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14699	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14701	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14703	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14705	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14707	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14709	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14711	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14713	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14715	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14717	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	
KD14719	Till	Sanatana	10-HMInv-146	$200.00	$0.00	$0.00	$0.00	$0.00	$200.00	

KIM Dynamics

diamond exploration mineral services

Client : SANATANA DIAMOND INC.

To: ***Sanatana Diamond Inc., Suite 1925, 925 West Georgia St., Vancouver, B.C. V6C 3L2***

May 7, 2010 ***Invoice 55***

REPORT ON PROCEDURE AND RESULTS OF THE 29 OBSERVED SAMPLE CONCENTRATES

PROCEDURE

A total of 29 mineral concentrates arrived in KIM Dynamics Inc. for KIM observation from Microlithic Laboratory on April 28, 2010.

The 29 concentrates in size fraction 0.25-1.0mm were observed under the binocular microscope in order to find any kimberlitic indicator minerals (KIM). Note that seven large samples arrived from Microlithic laboratory already screened in two size fraction 0.25-0.5mm and 0.5-1.0mm. Both size fractions were observed and their weights combined.

All collected KIM and possible KIM were extracted from the concentrates. The results were reported in the Excel format spread sheet attached to this report.

Besides KIM and possible KIMs, representative grains of any other indicators of base metals (chalcopyrite, bornite, molybdenite, etc) were also extracted, reported, placed on the indicator cards and stored in plastic folders attached to this report.

RESULTS

A total of 257.16g of heavy mineral concentrates was observed and a total of 2 possible KIM was collected. A total of 2 possible kimberlitic chromites were extracted from the examined samples.

Chromites were found in two samples. One grain in sample KD14707 is 0.25mm in size and octahedron shape. The other chromite was found in sample KD14709 is 0.4mm in size and subrounded shape. Based on morphological features both grains are probably non kimberlitic.

Most of the examined concentrates are abundant with pyrite, almandine and light volcanic rock fragments. Bornite is also abundant in some samples. Few grains of molybdenite were found in KD14667. Few grains of unidentified blue mineral (silicate) were found in few samples.

QUALITY CONTROL

As part of the standard quality control about 6% of all observed samples in this batch were double observed by different observers. Samples that were double observed were highlighted in blue on the attached table "KIM Results".

A total of 2 out of 29 sample concentrates passed double observation. A total of 0 KIM and possible KIM were recovered in the first observation and a total of 0 KIM and possible KIM were recovered in the second observation.

The total recovery rate for this batch of samples is 100%. The table below shows details for each sample.

The table of Quality Control results

	Client #	Batch #	Number of KIM grains picked out during First and Second Observation			QC Recovery Rate (%)
			First Observation	Second Observation	Total	
	KD14667	10-SH-STA-08	0	0	0	100
	KD14707	10-SH-STA-08	0	0	0	100
2	**TOTALS**		0	0	0	100

Total of 8 corundum and 9 synthetic diamonds were found in sample KD14707 as part of the Microlithic laboratory quality control.

Maja Kiridzija M.Sc., P.Geo.
KIM Dynamics Inc.

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: SANATANA DIAMONDS INC.
1925-925 WEST GEORGIA STREET
VANCOUVER BC V6C 3L2

Finalized Date: 10-JUL-2010
Account: SANATANA

CERTIFICATE TB10082939

Project: Piche
P.O. No.:
This report is for 29 Other samples submitted to our lab in Thunder Bay, ON, Canada on 23-JUN-2010.
The following have access to data associated with this certificate:

BUDDY DOYLE	T. GILL	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
SCR-41	Screen to -180um and save both

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS61	48 element four acid ICP-MS	

To: **SANATANA DIAMONDS INC.**
ATTN: T. GILL
1925-925 WEST GEORGIA STREET
VANCOUVER BC V6C 3L2

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: [redacted]
Colin Ramshaw, Vancouver Laboratory Manager

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Finalized Date: 10-JUL-2010
Account: SANATANA

Project: Piche

CERTIFICATE OF ANALYSIS TB10082939

Sample Description / Method / Analyte / Units / LOR	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2
KD14663	0.24	<0.001	0.06	2.14	1.5	300	0.53	0.03	0.58	0.03	29.1	4.3	23	0.51	6.0
KD14665	0.22	<0.001	0.07	3.55	1.9	420	0.82	0.05	1.41	0.18	41.2	5.7	21	1.05	8.3
KD14667	0.31	<0.001	0.07	3.35	1.1	430	0.73	0.04	1.45	0.21	57.2	5.2	17	0.67	5.0
KD14669	0.19	<0.001	0.10	3.12	4.4	410	0.66	0.07	0.93	0.16	39.2	5.1	21	1.44	9.5
KD14671	0.25	<0.001	0.06	1.83	3.0	310	0.38	0.03	0.47	0.09	40.0	2.4	14	0.48	5.1
KD14673	0.23	<0.001	0.08	2.38	4.6	400	0.61	0.06	0.70	0.09	61.1	3.1	26	0.51	10.6
KD14675	0.22	<0.001	0.05	1.88	2.9	350	0.40	0.08	0.54	0.09	52.5	2.4	15	0.42	6.6
KD14677	0.25	<0.001	0.06	1.89	2.1	350	0.37	0.03	0.52	0.07	46.5	2.1	12	0.45	3.7
KD14679	0.20	0.004	0.07	2.91	3.4	460	0.66	0.06	1.13	0.21	56.9	4.4	20	1.00	6.1
KD14681	0.36	<0.001	0.04	1.69	2.0	340	0.48	0.02	0.44	0.04	35.2	2.0	10	0.47	3.2
KD14683	0.23	<0.001	0.04	1.57	2.3	310	0.32	0.03	0.40	0.05	44.6	2.2	12	0.41	3.9
KD14685	0.29	<0.001	0.05	1.73	2.2	350	0.35	0.02	0.43	0.05	30.0	2.0	8	0.52	3.3
KD14687	0.25	<0.001	0.04	1.67	1.9	330	0.33	0.02	0.48	0.08	28.3	2.1	8	0.45	2.7
KD14689	0.22	<0.001	0.06	1.88	2.3	360	0.40	0.03	0.70	0.09	39.5	2.7	11	0.57	3.9
KD14691	0.27	<0.001	0.06	2.59	2.8	420	0.52	0.03	0.97	0.11	36.2	3.2	15	0.75	4.9
KD14693	0.27	<0.001	0.05	2.91	1.8	500	0.57	0.02	1.16	0.06	45.2	2.4	14	0.49	3.2
KD14695	0.32	<0.001	0.06	2.81	2.9	470	0.57	0.02	1.20	0.27	36.6	3.9	15	0.52	6.9
KD14697	0.30	<0.001	0.05	2.58	3.0	450	0.54	0.03	1.06	0.11	63.3	3.6	17	0.51	4.6
KD14699	0.26	<0.001	0.05	2.14	2.6	410	0.45	0.02	0.81	0.09	35.4	2.8	11	0.52	2.7
KD14701	0.30	<0.001	0.05	2.07	2.8	370	0.44	0.02	0.84	0.09	60.0	3.4	19	0.46	3.1
KD14703	0.25	<0.001	0.05	2.23	2.4	400	0.52	0.02	0.90	0.11	44.4	3.1	13	0.53	3.3
KD14705	0.28	<0.001	0.05	2.24	3.1	420	0.50	0.02	0.83	0.12	40.9	4.1	15	0.63	3.9
KD14707	0.26	<0.001	0.06	1.75	4.3	400	0.43	0.03	0.62	0.09	86.9	4.5	16	0.42	5.5
KD14709	0.30	<0.001	0.05	1.71	4.5	350	0.39	0.02	0.48	0.08	46.7	3.8	16	0.48	4.8
KD14711	0.24	<0.001	0.06	1.60	4.0	340	0.34	0.02	0.44	0.10	56.4	3.8	14	0.45	4.4
KD14713	0.26	<0.001	0.05	1.61	3.4	350	0.36	0.02	0.44	0.08	55.8	3.6	13	0.43	3.2
KD14715	0.29	<0.001	0.05	1.57	4.1	320	0.34	0.02	0.42	0.06	44.2	3.7	10	0.42	3.6
KD14717	0.28	<0.001	0.06	1.65	3.6	350	0.36	0.02	0.45	0.07	37.6	3.5	12	0.47	3.3
KD14719	0.27	<0.001	0.04	1.67	2.9	340	0.31	0.02	0.39	0.06	34.7	3.3	9	0.50	3.4

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1925-925 WEST GEORGIA STREET
VANCOUVER BC V6C 3L2

Project: Piche

Finalized Date: 10-JUL-2010
Account: SANATANA

CERTIFICATE OF ANALYSIS TB10082939

Sample Description	Method / Analyte / Units / LOR	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10
KD14663		0.71	5.34	<0.05	1.6	0.009	0.73	15.2	8.7	0.26	187	0.55	0.59	3.3	9.2	190
KD14665		1.19	9.09	<0.05	3.1	0.017	1.18	21.6	13.4	0.52	357	0.93	0.93	5.2	16.9	370
KD14667		0.97	8.43	0.09	3.5	0.013	1.20	29.4	9.2	0.45	339	0.83	1.00	6.3	13.3	380
KD14669		1.16	8.05	0.06	2.2	0.018	1.05	21.3	16.3	0.41	229	0.91	0.65	5.2	12.9	360
KD14671		0.79	4.56	<0.05	1.6	0.007	0.75	21.5	7.0	0.13	137	2.98	0.52	3.8	7.0	290
KD14673		1.43	6.14	<0.05	3.7	0.014	0.93	32.0	6.6	0.19	278	4.47	0.73	6.2	11.9	380
KD14675		0.81	4.58	0.05	2.9	0.009	0.76	25.1	6.4	0.16	188	0.47	0.57	4.9	6.6	330
KD14677		0.61	4.42	0.09	2.5	<0.005	0.79	21.4	6.6	0.15	136	0.32	0.57	4.1	4.6	300
KD14679		1.10	6.94	0.11	3.0	0.012	1.12	26.5	11.4	0.43	239	0.61	0.77	6.4	9.5	460
KD14681		0.51	4.00	0.09	2.3	0.005	0.69	17.4	7.2	0.14	103	0.24	0.49	3.8	3.6	310
KD14683		0.65	3.74	0.09	2.7	<0.005	0.64	20.2	6.3	0.12	150	0.50	0.45	4.5	3.9	290
KD14685		0.44	4.02	0.08	1.5	<0.005	0.76	15.3	7.8	0.14	104	0.30	0.50	3.6	4.0	260
KD14687		0.46	3.77	0.07	1.6	<0.005	0.73	14.2	7.1	0.13	114	0.17	0.48	3.5	3.7	250
KD14689		0.63	4.30	0.08	2.6	0.007	0.82	17.9	8.1	0.23	150	0.21	0.54	4.9	5.2	350
KD14691		0.92	5.51	0.12	2.4	0.009	0.98	18.3	11.1	0.33	206	0.33	0.66	4.4	6.4	400
KD14693		0.79	6.74	0.14	1.7	0.008	1.07	23.0	7.5	0.26	178	0.35	0.89	4.2	5.1	410
KD14695		1.05	6.48	0.15	2.2	0.009	1.06	18.6	8.0	0.30	250	0.39	0.85	4.5	7.3	430
KD14697		1.06	6.17	0.11	2.7	0.010	0.99	29.5	6.3	0.27	238	0.27	0.84	5.6	7.0	420
KD14699		0.67	4.89	0.09	1.9	0.005	0.90	17.9	7.0	0.21	161	0.18	0.66	3.7	5.2	350
KD14701		1.13	5.10	0.10	3.2	0.008	0.81	28.3	6.5	0.24	265	0.25	0.64	6.0	6.1	390
KD14703		0.78	5.27	0.09	2.3	0.007	0.92	22.0	7.3	0.26	181	0.30	0.69	4.6	6.2	360
KD14705		0.82	5.26	0.08	1.8	0.007	0.95	20.9	7.7	0.25	181	0.24	0.65	4.0	10.6	330
KD14707		1.58	4.66	0.11	3.6	0.009	0.77	41.5	6.2	0.19	425	0.64	0.51	7.1	7.2	400
KD14709		1.13	4.09	0.06	2.7	0.007	0.79	21.0	6.6	0.15	335	0.49	0.48	6.5	6.5	380
KD14711		1.15	4.01	0.07	2.0	0.006	0.75	27.0	6.1	0.14	348	0.57	0.43	5.6	6.8	340
KD14713		1.04	3.97	0.06	2.5	0.006	0.74	26.7	5.9	0.13	316	0.44	0.44	5.4	7.0	330
KD14715		0.94	3.75	0.05	1.9	0.007	0.74	20.9	5.7	0.12	269	0.44	0.44	10.3	5.9	300
KD14717		0.86	3.87	0.05	2.1	0.006	0.78	18.9	6.5	0.14	234	0.77	0.46	4.3	8.7	330
KD14719		0.65	3.82	0.06	2.5	<0.005	0.78	17.6	6.7	0.12	182	0.31	0.46	3.8	7.0	280

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VANCOUVER BC V6C 3L2

Finalized Date: 10-JUL-2010
Account: SANATANA

Project: Piche

CERTIFICATE OF ANALYSIS TB10082939

Sample Description	Method Analyte Units LOR	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.2	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1
KD14663		6.5	28.8	<0.002	0.01	0.17	3.3	2	0.6	105.0	0.22	<0.05	3.2	0.096	0.16	0.7
KD14665		9.5	49.8	<0.002	0.01	0.21	5.2	2	0.8	148.5	0.38	<0.05	4.6	0.141	0.30	1.1
KD14667		9.5	47.4	<0.002	0.01	0.17	3.9	2	0.6	156.0	1.37	<0.05	8.7	0.132	0.26	1.4
KD14669		8.9	49.2	0.002	0.06	0.33	4.2	2	0.8	117.5	0.36	<0.05	7.8	0.145	0.31	1.3
KD14671		6.6	29.4	<0.002	0.01	0.23	2.2	2	0.4	95.9	0.29	<0.05	7.7	0.110	0.18	0.9
KD14673		11.6	33.5	<0.002	0.02	0.33	3.6	3	1.7	121.5	0.37	<0.05	8.2	0.208	0.17	1.3
KD14675		9.5	30.8	<0.002	0.01	0.27	2.8	1	0.4	101.5	0.44	<0.05	8.9	0.165	0.13	1.4
KD14677		7.2	31.3	<0.002	0.01	0.22	2.5	1	0.3	97.2	0.28	<0.05	6.8	0.135	0.13	1.3
KD14679		10.0	39.7	<0.002	0.12	0.33	4.4	1	0.6	128.0	0.43	<0.05	9.0	0.191	0.23	1.8
KD14681		6.6	28.4	<0.002	0.02	0.21	2.3	1	0.3	93.6	0.25	<0.05	4.4	0.134	0.12	1.1
KD14683		6.5	25.7	<0.002	0.03	0.23	2.4	1	0.4	85.4	0.27	<0.05	7.0	0.157	0.10	1.3
KD14685		6.4	30.9	<0.002	0.02	0.21	1.9	1	0.3	92.9	0.23	<0.05	3.5	0.102	0.14	1.0
KD14687		6.3	28.9	<0.002	0.07	0.20	1.9	1	0.3	90.6	0.24	<0.05	3.5	0.106	0.13	0.9
KD14689		8.7	26.7	<0.002	0.13	0.23	2.5	1	0.4	96.4	0.30	<0.05	4.9	0.149	0.15	1.4
KD14691		7.5	36.3	<0.002	0.12	0.21	3.6	1	0.5	108.5	0.30	<0.05	5.6	0.157	0.19	1.2
KD14693		8.6	32.0	<0.002	0.01	0.18	3.8	1	0.4	150.5	0.28	<0.05	9.8	0.138	0.19	1.4
KD14695		8.6	31.2	<0.002	0.11	0.24	4.0	1	0.5	147.5	0.30	<0.05	6.2	0.162	0.20	1.5
KD14697		8.9	32.0	<0.002	0.12	0.25	3.7	1	0.5	143.0	0.43	<0.05	10.2	0.176	0.18	1.7
KD14699		7.6	29.4	<0.002	0.10	0.22	2.6	1	0.3	117.5	0.25	<0.05	5.4	0.125	0.15	1.2
KD14701		8.4	33.3	<0.002	0.15	0.22	3.5	1	0.4	112.0	0.48	<0.05	10.2	0.192	0.16	1.9
KD14703		8.2	31.1	<0.002	0.12	0.22	2.9	1	0.4	120.0	0.33	<0.05	8.0	0.143	0.16	1.4
KD14705		8.2	31.7	<0.002	0.12	0.28	2.9	1	0.4	115.0	0.25	<0.05	6.2	0.137	0.18	1.2
KD14707		8.9	31.3	<0.002	0.32	0.25	3.3	1	0.5	94.0	0.63	<0.05	13.4	0.244	0.19	2.2
KD14709		7.4	31.5	<0.002	0.21	0.26	2.7	1	0.4	83.1	0.43	<0.05	5.7	0.216	0.18	1.5
KD14711		8.0	30.7	<0.002	0.24	0.27	2.7	1	0.4	83.2	0.37	<0.05	9.6	0.180	0.17	1.7
KD14713		7.6	30.1	<0.002	0.19	0.24	2.5	1	0.4	83.7	0.39	<0.05	8.0	0.179	0.17	1.6
KD14715		7.3	29.5	<0.002	0.18	0.23	2.4	1	0.3	83.1	1.24	<0.05	7.5	0.155	0.18	1.3
KD14717		7.3	31.3	<0.002	0.17	0.24	2.3	1	0.4	86.6	0.29	<0.05	5.4	0.144	0.16	1.3
KD14719		6.9	31.6	<0.002	0.11	0.24	2.2	1	0.3	84.5	0.26	<0.05	5.2	0.134	0.15	1.3

***** See Appendix Page for comments regarding this certificate *****

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Account: SANATANA

CERTIFICATE OF ANALYSIS TB10082939

Sample Description	Method Analyte Units LOR	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
KD14663		19	0.5	7.3	11	60.5
KD14665		31	0.5	12.4	19	113.5
KD14667		23	0.5	12.4	12	122.5
KD14669		36	0.8	11.4	26	84.7
KD14671		15	0.3	8.4	26	59.7
KD14673		23	0.4	13.0	48	141.0
KD14675		17	0.3	10.5	32	118.0
KD14677		15	0.2	9.9	18	99.8
KD14679		29	0.5	13.8	24	117.0
KD14681		14	0.3	8.5	17	90.1
KD14683		15	0.3	10.1	55	107.0
KD14685		13	0.3	8.1	20	60.0
KD14687		12	0.3	7.6	15	65.4
KD14689		15	0.3	10.7	18	100.5
KD14691		25	0.4	10.1	18	93.8
KD14693		21	0.3	10.3	16	64.7
KD14695		23	1.4	10.3	21	80.5
KD14697		22	1.1	12.4	17	108.5
KD14699		16	0.3	9.3	14	69.4
KD14701		22	0.3	12.6	16	118.0
KD14703		18	0.3	10.6	15	92.8
KD14705		19	0.3	9.7	19	68.2
KD14707		24	0.3	14.4	22	140.5
KD14709		20	0.5	11.4	18	107.0
KD14711		18	2.4	10.3	18	75.2
KD14713		17	0.3	11.0	14	98.2
KD14715		16	0.4	8.3	15	71.0
KD14717		14	0.4	10.1	16	82.0
KD14719		14	0.5	9.1	15	94.0

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 10-JUL-2010
Account: SANATANA

Project: Piche

CERTIFICATE OF ANALYSIS TB10082939

Method	CERTIFICATE COMMENTS
ME-MS61	REE's may not be totally soluble in this method.