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Mr. Timothy Young Burda and Block A Properties, Ontario, Canada

**Report on August 2016 Till Sampling for Gold** 

by Michael D.J. Michaud & Stuart A. Averill Overburden Drilling Management Limited Ottawa, Ontario, Canada November 28, 2016



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#### **EXECUTIVE SUMMARY**

This report describes a surface till sampling program for gold performed for Mr. Timothy Young on the recently acquired, wholly owned Burda property and the optioned, neighbouring Block A property of Golden Harp Resources Inc. in the Shining Tree gold district of the Abitibi Greenstone Belt, northeastern Ontario. The program included the collection of 21 samples of oxidized till and sand and gravel from hand-dug shovel pits and two backhoe trenches. The objectives of the program were to: (1) determine whether two gold grain anomalies identified by Overburden Drilling Management Limited on the eastern portion of the Block A in a major till sampling program conducted in the summer of 2011 for Mineral Mountain Resources Ltd. were derived from a bedrock source to the northeast near a gold-bearing showing, the Gardner – Courageous, on the Burda property; and (2) test an area of the Burda property east of a gold-fertile syenite intursion, the Moon Lake Stock, identified in the same program.

The properties are underlain mainly by northeast-younging Archean rocks of two volcanic cycles, the Deloro and Kidd – Munro Groups, correlative in age with cycles in the Kirkland Lake and Timmins areas. The contact between the two groups is a major, east-west trending structure compatible with the gold-fertile Cadillac – Larder Lake Fault. Both the Deloro and Kidd – Munro volcanics near this fault have been extensively intruded by syenite related to younger, Timiskaming-type alkalic volcanism of the Natal Group west of Block A. The area between the Deloro and Kidd – Munro Groups on the Burda and Block A properties, between Moon and Arthur Lakes is covered by a large esker – the Moon Lake esker.

The 2011 till sampling campaign utilized both reverse circulation drilling and hand-dug pits. The drilling yielded a significant 163-grain gold anomaly in Hole 08 which was corroborated by a similarly strong, 136-grain anomaly in a nearby reconnaissance surface sample, No. 115. Four closely spaced orientation samples around a known gold showing to the north, the Decker Zone, were also anomalous, although not as strongly despite being further up-ice glacially. The gold grains exhibited dominantly reshaped morphologies suggesting glacial transport of >1 km. The gold in Holes 08 and Sample 15 included an unusually high proportion of grains coarser than silt size suggesting possible sorting by meltwater. Glacial ice flow indicators in the vicinity of Block A are rare and range from SSW to SSE. SSW flow was favoured based primarily on the trend of the Moon Lake esker. The 2011 program established that both ascertaining the source of the gold grains and the ability to trace them to this source were complicated by: (1) uncertainty as to whether the direction of ice flow was SSW or SSE; and (2) the frequent absence of till beneath the Moon Lake esker. The RC drilling, which also sampled the underlying bedrock, discovered the previously unknown Moon Lake Stock which was found to be broadly anomalous in gold, to contain breccia zones and to be partially rimmed by infertile lamprophyre.

Mineral Mountain conducted a 23-hole diamond drilling program in 2011-2012 to follow up the gold grain anomalies indentified in the 2011 program. The holes were drilled on four sections starting in the middle of the Moon Lake Stock and working 2 km northward across the komatiite-bearing Kidd – Munro supracrustal rocks. Thirty-six anomalous intercepts ranging from 0.5 to 2 g/t Au obtained with the highest concentration occurring on the second drill section on the northern edge of the Moon Lake Stock across from the Decker Zone. While no strongly mineralized zones were encountered, the high frequency of anomalous drill intercepts could indicate that the apparent gold grain dispersal train near the Decker Zone and possibly also the anomaly to the south at Hole 08 emanates from the northern contact of the stock. Alternatively, the weak Decker anomalies could reflect this mineralization and the stronger Hole 08 anomaly could have a separate, more southerly source.



During the present sampling program, it was found that till is only sporadically preserved in the area of the Gardner – Courageous showing. Instead, most of the area, including the stripped showing, is overlain by outwash sand and esker gravel deposited directly on bedrock. As a result, only three till samples were collected. Only one of the till samples, No. 07, yielded a gold grain count above background levels. This sample was weakly anomalous, yielding 51 gold grains; however, all of the grains were reshaped or strongly modified indicating glacial transport of >1 km, probably from an off-property source. Three gravel samples were also collected but only because no till was present near the Gardner – Courageous showing. The -0.063 mm fines of two of the six samples returned Au geochemical analyses above the 2 ppb detection limit but both were below the 10 ppb anomaly threshold. Arsenic and other elements of interest were subanomalous. These negative results preclude derivation of the Decker and Hole 08 gold grain anomalies from the area near the Gardner – Courageous showing on the Burda property.

Thirteen till and two sand and gravel samples were collected in the area east of the Moon Lake Stock. Although seven or 54 percent of the till samples yielded slightly elevated gold grain counts above the 30-grain anomaly threshold for the Shining Tree area, no significant anomalies were identified. Till sample No. 08 yielded the strongest concentration of gold grains with 49, but most of the grains were reshaped or strongly modified indicating >1 km of glacial transport. The elevated counts probably represent peaks in the high regional gold grain background of the till. Elevated As, Cu, Zn and Ni analyses from the -0.063 mm fines of Sample 08 and elevated As and Cu analyses for the two gravel samples, which were obtained from a backhoe pit, reflect the underlying Ni-bearing komatiites of the Kidd – Munro Group.

Two glacially striated outcrops were discovered on the Burda property, establishing a definitive 178° or directly southward ice-flow trend. This indicates that the gold grain anomalies that were obtained near the Decker Zone and at Hole 08 in 2011 originated from within the Block A claims, not from the Burda claims. It was originally proposed that the high frequency of anomalous drill intercepts in the 2011-2012 program could indicate that: (a) the apparent gold grain dispersal at Hole 08 and/or the anomaly near the Decker Zone emanates from the northern contact of the Moon Lake Stock; or (b) the weak Decker anomalies could reflect this mineralization and the stronger Hole 08 anomaly could have a separate more, southerly source. This interpretation is compatible with the observed southward direction of ice flow.

If the Hole 08 gold grain anomaly comprises part of a systematic dispersal train, as suggested by the anomaly obtained from nearby surface till sample No. 115, the subanomalous till in three 2011 RC Holes, Nos. 37, 38 and 42, drilled 1.2 km directly to the north on the Moon Lake Stock represents a maximum up-ice cut-off of the train. Approximately 900 m up-ice of Hole 08 and 300 m down-ice of the cut-off is the inferred southwestern contact of the Moon Lake Stock with komatilitic volcanics west of the Decker showing. While the RC drilling showed that the zone of lamprophyre on the western margin of the stock was infertile, the southern contact was not tested in either the RC or subsequent diamond drilling programs and may be the source of the Hole 08 and Sample 115 gold grain anomalies. This would require that: (a) gold grain wear during glacial transport was relatively rapid as most of the source mineralization being coarse grained rather than to sorting by meltwater. The weaker Decker anomaly may be derived from the northern contact of the stock which is a similar distance up-ice and yielded numerous weakly mineralized diamond drill intercepts.

Follow-up till sampling up-ice from Hole 08 would probably not be effective in tracing the anomaly to source due to the sparse preservation of till. Therefore, it is recommended that: (1) an induced polarization survey be conducted along the southern contact of the Moon Lake Stock between RC Hole 42 and the Decker Zone to locate possible zones of disseminated sulphides that could host significant gold mineralization; and (2) one or more diamond core holes be drilled to further test this contact.



2.

2.1

#### **INTRODUCTION**

#### Subject of the Report

This report by Overburden Drilling Management Limited ("ODM") describes a till sampling program conducted on two adjoining gold properties – Burda and Block A – of Mr. Timothy Young ("Mr. Young") in the Shining Tree area of northeastern Ontario (Fig. 1). The objectives of the program were to: (1) determine whether gold grain anomalies identified by ODM on the eastern portion of the Block A in a major till sampling program conducted in the summer of 2011 for Mineral Mountain Resources Ltd. ("Mineral Mountain"; Averill 2012) were derived from a bedrock source to the northeast on or near the Burda property; and (2) test an area of the Burda property bordering a gold-fertile syenite stock identified in the same program.

## 2.2 Property Location, Description and Ownership

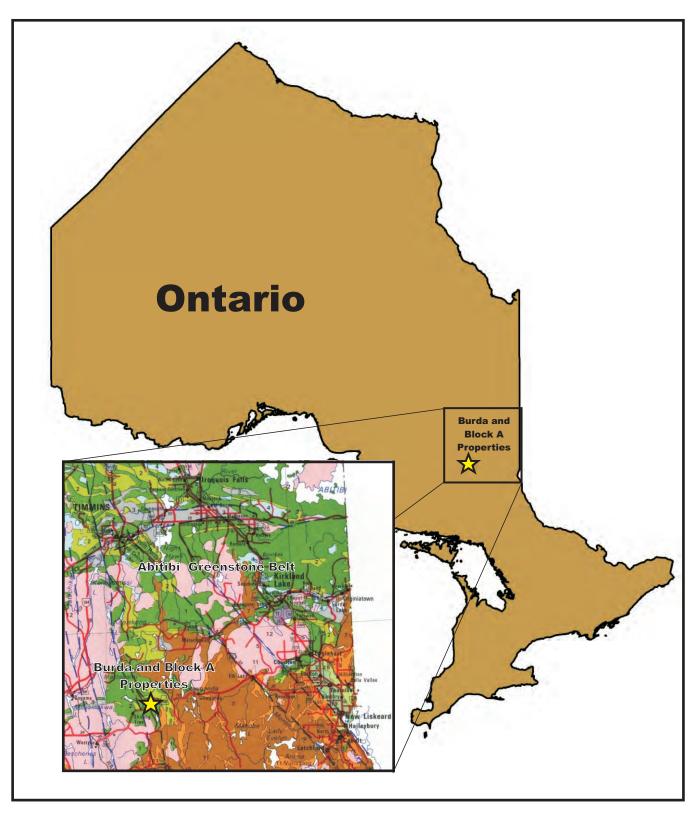
The Burda and Block A properties are located in northeastern Ontario, ~100 km from each of the three main regional population centres, Timmins to the north, Kirkland Lake to the northeast and New Liskeard to the southeast (Fig. 1). Access is gained by following Highway 11 northward from New Liskeard for ~45 km and Highway 560 westward for ~100 km. The hamlets of Gowganda and Shining Tree lie on the latter highway ~25 km east and 20 km southwest of the properties, respectively.

The properties are located at the intersection of four townships (Knight, Tyrrell, Macmurchy and Natal) in the central part of the Shining Tree gold district. The Burda property consists of 16 claims in western Knight Township (Appendix A). Mr. Young acquired this property in May 2016 and is the sole owner. The previously tested Block A property consists of 155 claims totalling 335 units with Mr. Young holding a 70 percent interest and Golden Harp Resources Inc. retaining 30 percent.

# 2.3 Regional Geological Setting and Subsurface Geology and Mineralization of the Burda and Block A Properties

Geologically, the Burda and Block A properties lie on southern edge of the Archean-age Abitibi Subprovince, or Abitibi Greenstone Belt, of the Superior Province of the Canadian Shield. The properties are underlain mainly by northeast-younging Archean rocks of two volcanic cycles correlative









in age with cycles in the Kirkland Lake and Timmins areas (Ayer *et al.* 2002). Only the upper part of the first cycle, consisting of tholeiitic to calc-alkalic basalt and intermediate volcanics of the Deloro Group, and the lower part of the second cycle, consisting of komatiite and subordinate tholeiitic basalt of the Kidd – Munro Group, are represented (Figs. 2, 3). Outcrop exposure is high on much of the property and the crustal depth represented in the exposures is unusually shallow, possibly as little as 5 km, as evidenced by an absence of granitoid plutons, very limited metamorphism at lower greenschist facies, negligible foliation and brittle rather than ductile shear deformation.

Stratigraphic and structural trends are difficult to ascertain precisely due to the lack of penetrative deformation but the volcanic strata of the Deloro Group strike broadly NW whereas those of the Kidd – Munro Group strike appear to strike NNW. This divergence suggests that the two groups, which historically have been interpreted as conformable, are separated by a significant, E-W trending fault. Recognizing even a crustal-scale fault from the available outcrops would be difficult because, at such a shallow crustal level, the fault would probably be a very narrow, brittle structure rather than a broad zone of ductile shearing. Moreover, much of the fault-prospective corridor is covered by a variety of sediments. From west to east across the properties, these cover sediments are: (1) alkalic to subalkalic volcaniclastic rocks and epiclastic to clastic sedimentary rocks of the Natal Group which extend northward and westward from the Montreal River and appear to be stratigraphically equivalent to the Timiskaming Group of the Kirkland Lake area; (2) thick glaciofluvial sand and gravel related to a large esker complex; and (3) immediately east of the properties, unmetamorphosed Huronian (Paleoproterozoic) sediments of the Gowganda Formation which extend northeastward for 60 km toward Kirkland Lake. Nevertheless, the existing geological maps of the properties do suggest marked discontinuity, both lithological and structural, along the fault-prospective corridor.

The Archean volcanosedimentary rocks range in age from ~2750 to 2688 Ma (Ayer *et al.* 2002) and have been intruded by closely spaced, north trending, unmetamorphosed, Paleoproterozoic diabase dykes of the ~2454 Ma Matachewan swarm. Immediately east of the properties, the Archean rocks, Matachewan dykes and Huronian cover sediments are intruded by a 275 m thick, ~2219 Ma sill of Nipissing diabase and locally by comagmatic diabase dykes of diverse trends. While this sill was emplaced mainly into the Huronian sediments, it locally exploited their contact with the underlying Archean volcanics or was emplaced entirely within these volcanics. At Gowganda, the same sill was host to the important silver veins of this district including those of the principal Miller Lake O'Brien mine (Moore 1955). The sill extends a further 80 km southeast to the famous Cobalt silver camp but the productive veins there occurred mainly in the subjacent Archean volcanics.



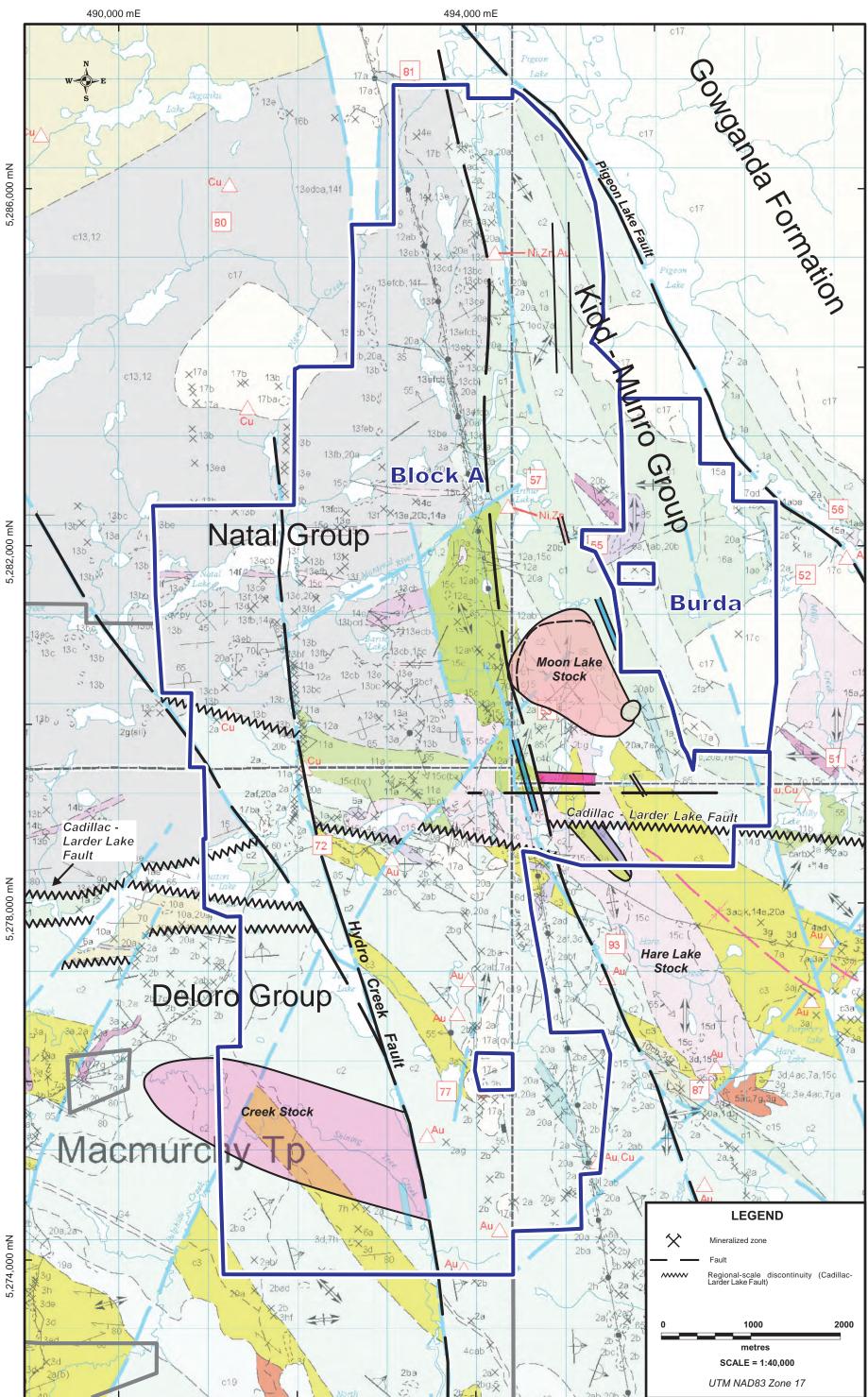


Figure 2 - Geological map of the Burda and Block A area. See Figure 2 for the detailed bedrock lithology legend. Sources: Averill 2012, Johns 2003.

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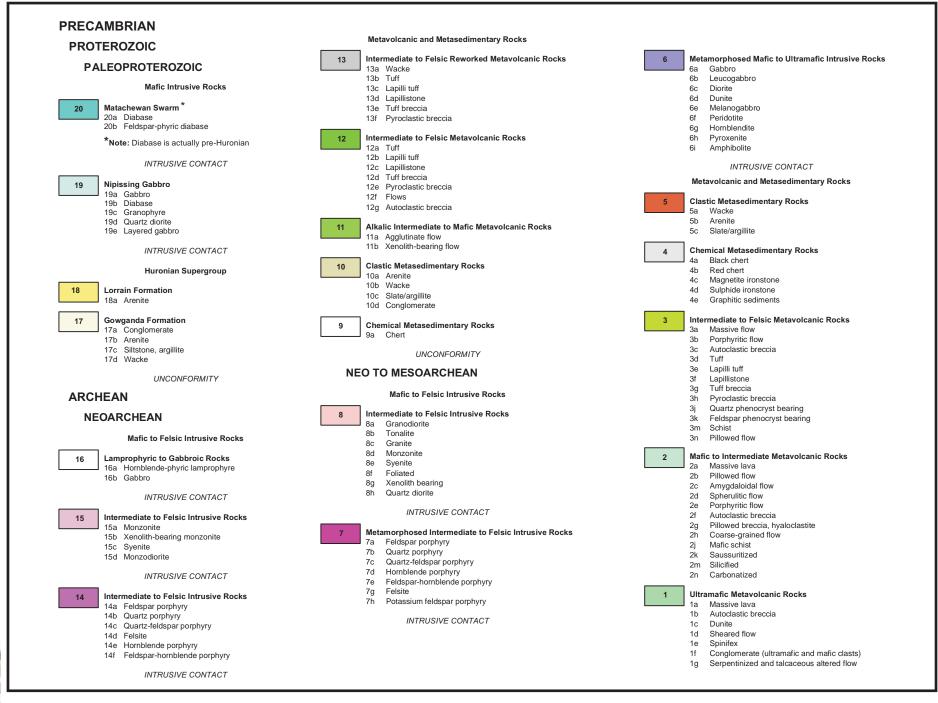


Figure 3 - Detailed bedrock lithology legend. Source: Johns 2003.

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The area between the Deloro and Kidd – Munro Group along the boundary between the Burda and Block A properties, between Moon Lake and Arthur Lake, is covered by a large esker – the Moon Lake esker. Stratigraphic relationships in this area are further masked by numerous dykes and small stocks of syenite which are comagmatic with the alkalic volcanics of the Natal Group (Fig. 2). At Kirkland Lake, Timiskaming Group sedimentation, alkalic volcanism and syenitic magmatism are all closely linked with the gold-fertile Cadillac – Larder Lake Fault. The repetition of the same three features on the Burda and Block A properties in direct association with a zone of marked lithologic and structural discontinuity strongly suggests that the Cadillac – Larder Lake Fault extends westward beneath the Huronian cover sediments to the Shining Tree district, passes through the Block A immediately south of the Burda property and connects with the similar Ridout Fault further to the west.

Several younger N to NNW trending cross faults are known in the area (Fig. 2). One of these, the Hydro Creek Fault, follows a major northward jog in the east-flowing Montreal River and defines the western boundary of the komatiitic Kidd - Munro Group with the Natal Group. The eastern boundary of the komatiites with the Gowganda Formation is defined by a similar structure, the Pigeon Lake Fault. Thus significant uplift has occurred in the komatiitic block and the crustal section exposed in this block, while unusually shallow relative to most parts of the Abitibi Greenstone Belt, is the deepest in the area resulting in the greatest exposure of intrusive rocks.

In the 2011 till sampling program on Block A, the samples were obtained from hand-dug pits in areas where the till was exposed and from reverse circulation ("RC") drill holes where it was covered by younger sediments, mainly sand and gravel of the Moon Lake esker. The underlying bedrock was also sampled in the RC drill holes providing the first reliable geological map of areas of the property where outcrops are scarce or absent as along the esker. Most of the RC holes along this esker were drilled in the area underlain by the Kidd – Munro Group and thus intersected komatiite and basalt. Komatiite is dominant and is entirely of the pyroxenitic rather than peridotitic type; it contains no olivine. Consequently the komatiite horizons are nonmagnetic and indistinguishable from the basalt horizons using the aeromagnetic data. They do appear to strike NNW as indicated by previous mapping but extend further south under the esker cover where they end abruptly, abutting sharply with angular discordance against NW trending andesite of the Deloro Group, thereby confirming that the contact between the two groups is a major structure compatible with the Cadillac – Larder Lake Fault (Fig. 2). Further west, in the Houston Lake area of the property where the fault is only thinly overburden covered, it coincides with the southern limit of the Timiskaming-type, alkalic volcanics and sediments of



the Natal Group such that its position is more readily recognizable. These same relationships occur along strike to the west on the Ridout Fault. Thus the esker-covered area of the Block A and Burda properties appears to hold the missing link connecting the Cadillac – Larder Lake Fault of the Kirkland Lake district to the Ridout Fault of the western Shining Tree and Swayze Districts.

The Kidd – Munro volcanics are cut by two large quartz-feldspar porphyry dykes which appear to be early, subvolcanic intrusions, and both the Kidd – Munro and Deloro volcanics near the Cadillac – Larder Lake Fault have been extensively intruded by syenite related to the younger, Timiskaming-type alkalic volcanism of the Natal Group. The syenite occurs mainly in two large stocks – the Hare Lake Stock within the Deloro Group and the previously unknown Moon Lake Stock to the north within the Kidd – Munro Group (Fig. 2) which was discovered during the RC drilling program. Four syenite dykes were also encountered in RC holes peripheral to the Moon Lake Stock and the stock itself may, in part, consist of a dyke swarm rather than a single intrusive mass. An unusual rock type, pyroxene lamprophyre, was intersected in three drill holes along the northern and western margins of the stock.

The syenite is variably porphyritic in hornblende, biotite and alkali feldspar and commonly occurs as a magmatic breccia containing small xenoliths of basalt or komatiite. Each stock is >1 km in diameter yet the groundmass of the syenite, which consists mainly of alkali feldspar, is consistently semi-aphanitic indicating emplacement of the syenite at a very high level in the crust and further attesting to the shallowness of the exposed crustal section.

Numerous historical mineralized zones on the Burda and Block A properties are described in detail in Lintner & Kleinboeck (2012) and Averill (2012). Prior to the 2011 RC drilling campaign, the most notable were:

- 1. Gardner Courageous: auriferous quartz stringers hosted in a porphyry dyke on the Burda property.
- Decker, Cook and MC: auriferous fuchsite-bearing carbonate breccia zones hosted by sheared komatiite flows of the Kidd – Munro Group and syenite related to the Natal Group volcanism, on the central part of Block A, proximal to the major geological discontinuity that may mark the western extension of the Cadillac – Larder Lake Fault.





- Jude: an auriferous shear-hosted, brecciated quartz vein in basalt on the southern part of Block
   A.
- 4. Hydro Creek: in auriferous fragmental intermediate to felsic volcanics of the Natal Group near the Montreal River on Block A.

# 2.3 Surficial Geology

The Burda and Block A properties lie on the south side of the Hudson Bay/St. Lawrence River drainage divide. This area was not influenced by Glacial Lake Barlow-Ojibway which flooded the Hudson Bay drainage basin to the north during meltdown of the Laurentide ice sheet ~10,000 years ago (Dyke & Prest 1987). Consequently, the surficial sediments are generally thin and consist mainly of till, known regionally as Matheson Till, that was deposited by ice flowing southward from the Hudson Bay ice centre. Bedrock exposure is relatively high (Averill 2012).

Alcock & Miller (2001) interpreted the surficial geology of the area from stereo air photos with field confirmation in accessible areas. They categorized ~70 percent of the area as a bedrock-drift complex in which the till between outcrops is commonly <1 m thick. In the rest of the area, the till is thinly to thickly covered by glaciofluvial sand and gravel fringed by finer outwash sand. These sediments are related to a series of eskers that cross the area in a generally southward to south-southeast direction parallel to glacial ice flow including the 6 km long Moon Lake esker that extends from Arthur Lake on Block A southward into Tyrrell Township (Figs. 4, 5). Ice-flow indicators in the vicinity of the Burda and Block A properties are rare and range from SSW to SSE (Alcock & Miller 2001).

# **Recent Exploration History**

2.4

Lintner & Kleinboeck (2012) included a summary of all historical exploration on Block A in their report on a program of diamond drilling that was undertaken tin 2012 to follow up the positive gold results obtained from the 2011 till sampling program. The results of both programs are discussed in more detail below.



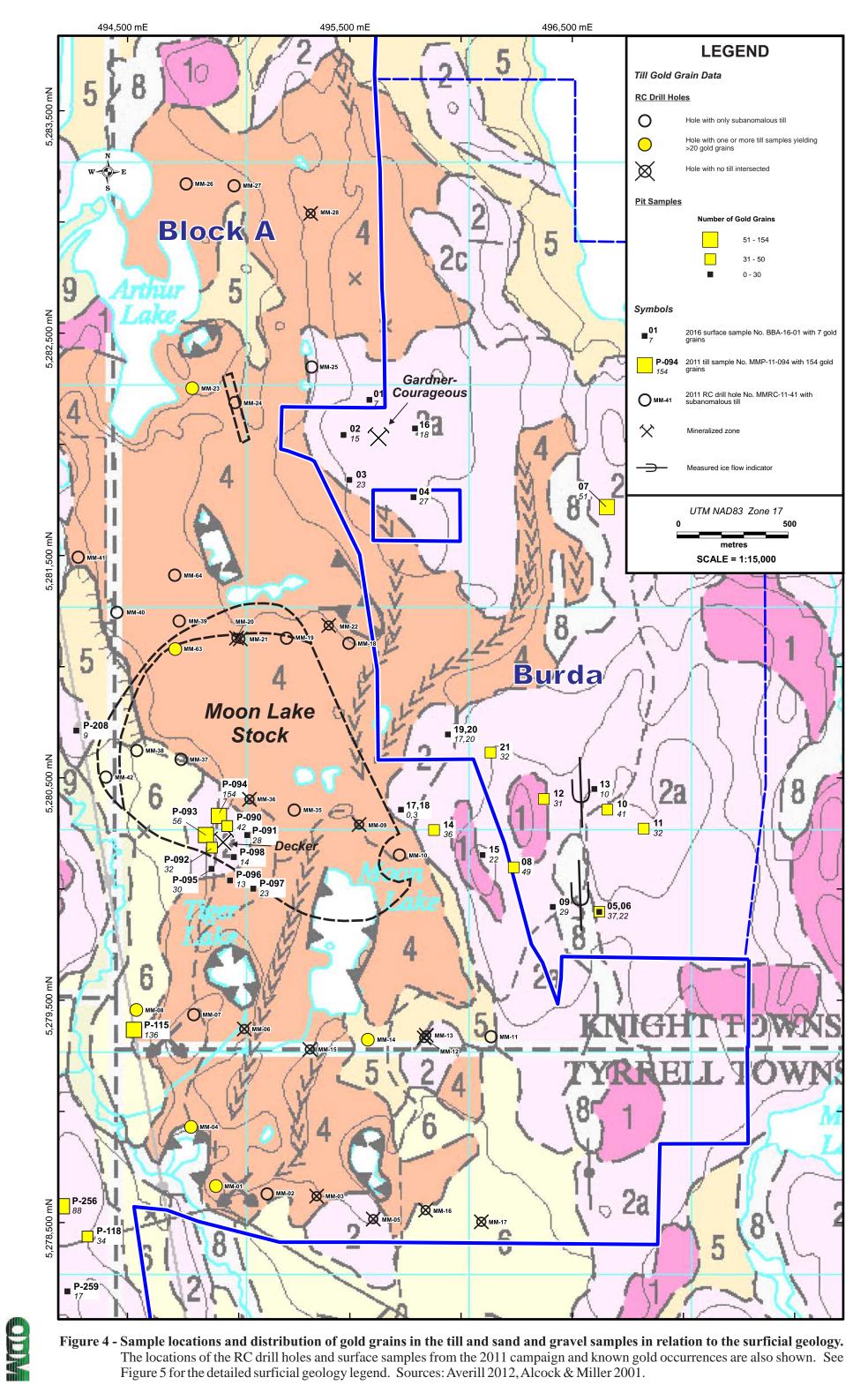


Figure 4 - Sample locations and distribution of gold grains in the till and sand and gravel samples in relation to the surficial geology. The locations of the RC drill holes and surface samples from the 2011 campaign and known gold occurrences are also shown. See Figure 5 for the detailed surficial geology legend. Sources: Averill 2012, Alcock & Miller 2001.

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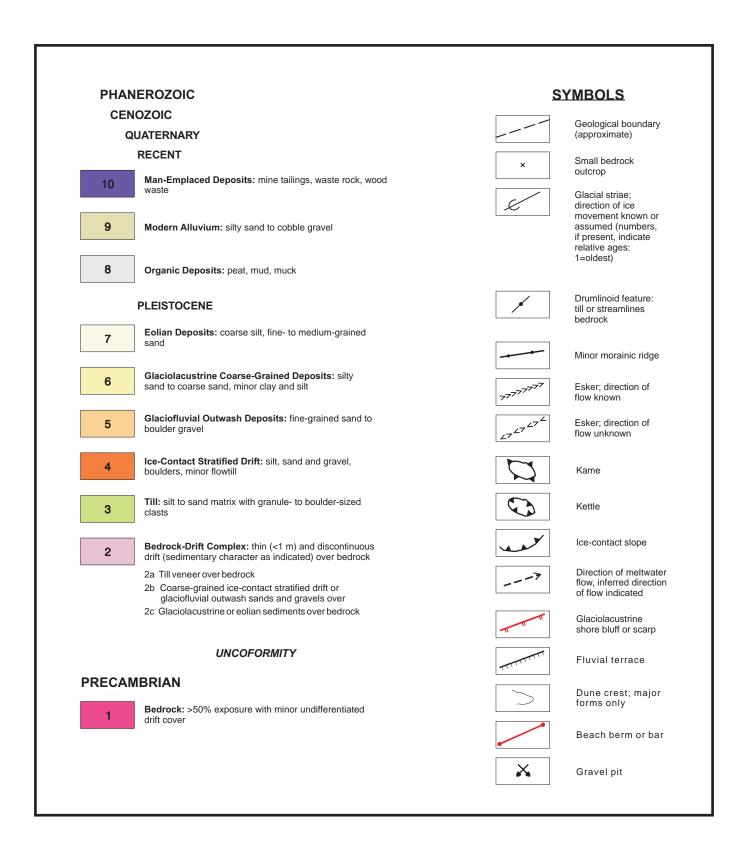


Figure 5 - Detailed surficial geology legend. Source: Alcock & Miller 2001.



# 2.4.1 2011 Till Sampling Program

The 2011 till sampling program included the collection of 131 samples of oxidized till from hand-dug shovel pits and 78 samples of unoxidized till from 62 RC drill holes along with bedrock intercepts (Averill 2012). An additional 25 samples of gravel and two of sand were collected from the drill holes, mainly because 21 holes did not encounter any till. The program was designed primarily to provide uniform, reconnaissance-scale exploration coverage at 300 x 1000 m sample spacing over most of the property but the pit sampling portion also included closely spaced orientation sampling at the known Decker, Jude, Cook, MC and Hydro Creek gold zones.

The till, gravel and sand samples were processed to extract their heavy mineral fraction and visually separate any gold grains. A -0.063 mm silt + clay subsample of the raw, oxidized surface till samples was analyzed for geochemically scavenged gold and other elements commonly associated with gold or base metal deposits. Heavy mineral concentrates ("HMCs") were prepared from the unoxidized till, gravel and samples collected from the RC drill holes and then analyzed.

The 62 RC holes on Block A were drilled in three separate, thickly overburden-covered areas of the property including 44 holes on the Moon Lake esker. In the areas tested by surface sampling, between and adjacent to the drill areas, bedrock exposure is common, averaging  $\sim 10$  percent, and the interoutcrop areas are generally covered by either a veneer of till <1 m thick or a somewhat thicker till blanket which may be patchily overlain by fine outwash sand.

In the main Moon Lake – Arthur Lake drill area, 17 of the 44 drilled holes, or 39 percent, did not encounter till because the high-energy meltwater that transported and deposited the esker gravel eroded much of the till-bearing ice. As a result, the broad exploration coverage expected from the till samples was compromised, increasing the reliance on the bedrock samples.

The 44 holes in the Moon Lake – Arthur Lake area were widely spaced and drilled randomly yet the bedrock intercepts from 11 of these holes – an exceptional 25 percent – returned anomalous gold values ranging from 14 to 233 ppb versus background of <5 ppb, indicating the presence of a very large mineralizing system. Eight of the anomalous intercepts consisted of syenite, indicating a direct link between gold and syenite similar to that in the Kirkland Lake area and providing further evidence that the major E-W structural zone separating the Deloro and Kidd – Munro Groups was compatible with the



Cadillac – Larder Lake Fault. The Moon Lake Stock was found to be particularly fertile as four of six syenite intercepts from this stock, or 67 percent, and three of the four peripheral dykes, or 75 percent, were anomalous. The marginal lamprophyre phase of the stock was, however, subanomalous suggesting that its emplacement may post-date the gold mineralizing event. The mineralized syenite is only weakly fractured and minimally sulphidized. In contrast, four neighbouring komatiite intercepts were pervasively brecciated and carbonate-cemented yet either contained no gold or were only minimally anomalous, including an intersection from Hole 39 that contained 20 percent fuchsite, 1 percent pyrite and 0.2 percent arsenopyrite.

The gold grain counts for six till samples collected from the Moon Lake - Arthur Lake drill holes exceeded the 20-grain anomaly threshold for unoxidized till along the southern edge of the Abitibi Greenstone Belt where the gold grain background is unusually high due to the cumulative contributions of the many major and minor gold occurrences in the 150 to 200 km wide belt. In five of these anomalous samples, up to 80 gold grains were observed and >30 percent of these grains were of a pristine to partly modified morphology rather than being fully reshaped from long glacial transport, suggesting that they are locally sourced, probably from the broadly gold-fertile syenite. However the corresponding HMC gold analyses were not sufficiently strong to suggest economic mineralization. The sixth till sample was the sole sample from Hole 08 and returned the strongest HMC analysis because more gold -163 grains - was observed and an unusually high proportion of these grains -53 percent versus the normal 10 percent – were sand-sized rather than silt sized. However, almost all of the grains were reshaped. Together these features indicated either: (a) a distal source; or (b) transport and sorting of the gold grains in glacial meltwater even though they were recovered from a sample of icetransported till. The various esker gravel and samples collected from the drill holes consistently yielded only low numbers of gold grains with no bias to sand-sized grains, arguing against transport of the Hole 08 grains by meltwater. However, both ascertaining the source of the gold grains and the ability to trace them to this source were complicated by: (1) uncertainty as to whether the direction of ice flow was SSW or SSE; and (2) the frequent absence of till beneath the esker complex.

The gold grain background of the weathered, oxidized till sampled in the shovel pits was higher than that of the unoxidized till sampled in the RC drill holes – up to 30 rather than 20 grains per sample – because weathering involves leaching and removal of the soluble constituents of the till, reducing its volume and thereby concentrating the insoluble gold grains. Of the 131 collected pit samples, 31 or 24 percent yielded >30 gold grains. Predictably, the anomaly frequency was much higher – 53 versus 13



percent – in the 36 orientation samples collected at the Decker, Jude, Cook, MC, and Hydro Creek gold zones than in the 95 reconnaissance samples. While HMCs were not prepared from the pit samples, HMC gold values were calculated based on the normal 250:1 laboratory concentration factor. Such gold values are useful because the laboratory concentration procedure effectively offsets glacial dilution of the gold grains within the till as they are dispersed from source such that the HMC gold analyses roughly mirror the grade of the bedrock source mineralization.

At the Decker Zone, anomalous gold grain counts were obtained from a tight cluster of four samples which, if ice flow was SSW, lie 1 km directly up ice from the very strong gold grain Au anomaly of RC drill hole No. 08. Lending support to a SSW ice-flow direction are three RC holes, Nos. 37, 38 and 42, drilled 1.2 km due north of Hole 08 each yielding a single sample from a thin till horizon that was subanomalous in gold. As in Hole 08, the gold grains from the Decker till samples were biased toward sand size, effectively increasing the strength of the corresponding HMC Au anomaly, and were mostly reshaped, indicating that they were derived not from the Decker Zone but rather from a distal source which would be difficult to locate due to frequent interruption of the till by esker sand and gravel. A similar gold grain response was obtained from the Hydro Creek samples, again suggesting a distal source, possibly in the esker-covered area under and west of Arthur Lake.

The most significant anomaly encountered in the reconnaissance pits was a 136-grain response from Sample 115 which was collected from a small till exposure beside Hole 08, corroborating the strong, 163-grain anomaly obtained from this drill hole. The gold grains in Sample 115 were reshaped to the same degree as those in Hole 08 but a lesser percentage were sand sized, resulting in a calculated HMC gold value of just 1252 ppb versus the 12,826 ppb (normalized) analysis obtained from the HMC in Hole 08.

The geochemical analyses obtained from the -0.063 mm fraction of the oxidized surface till samples on Block A were expected only to identify possible broad-scale associations between gold and other elements that are commonly associated with gold or base metal mineralization. Without the aid of heavy mineral concentration, such analyses are too insensitive to directly detect individual mineralized zones covered by till unless, either serendipitously or purposefully, as in the case of the Jude, Cook, MC, Decker and Hydro Creek orientation surveys, samples are collected within 100 m of these zones.



Till geochemical analyses >10 ppb are normally considered anomalous but most such analyses indicate the presence of a gold grain in the analytical aliquot rather than of geochemically scavenged gold. Therefore, anomaly frequency is sympathetic to the gold grain content of the till. A high anomaly frequency of 14 percent, representing 18 of the 131 collected samples, was obtained from the Block A survey because: (1) the gold grain background on the property is high; and (2) 36 samples, or 27 percent of the program total of 131 samples, were orientation samples collected close to known gold zones and many of these samples were significantly anomalous in gold grains. Indeed, 72 percent of the gold geochemical anomalies, including the strongest and most significant anomalies, were obtained from the orientation samples. All but four of the anomalies were weak responses below 50 ppb that could be explained simply by the statistical probability of one or two silt-sized gold grains entering the small, 40 g analyzed aliquots of the -0.063 mm fraction of the till.

The gold-fertile Moon Lake and Hare Lake syenite stocks in the Moon Lake – Arthur Lake sector of Block A, together with a similar stock east of Block A that hosts the past-producing Tyranite Mine (Carter 1987), are probably cupolas of a much larger, underlying syenite intrusion (Averill 2012). These three cupolas have been unroofed only because they occur in the uplifted block of Kidd – Munro volcanics between the Hydro Creek and Pigeon Lake Faults. While the subcropping portions of the Moon Lake and Hare Lake stocks appear to have limited gold potential based on the modest gold grain responses obtained from the till samples, other, undiscovered, gold-fertile cupolas could be expected at shallow depth in the surrounding area, especially beneath areas where syenite dykes are exposed. Averill (2012) recommended that future exploration be focussed on discovering new, gold-fertile syenite cupolas at shallow depth in the Moon Lake – Arthur Lake area and that diamond drilling be conducted to locate these cupolas.

# 2.2 2011-2012 Diamond Drilling Program

A 23-hole diamond drilling program totalling 6,040.2 m was conducted in late 2011 and early 2012 (Lintner & Kleinboeck 2012) to follow up the strong gold-in-till anomaly identified in RC Hole 08 and surface till sample No. 115 south of the Decker occurrence in the 2011 sampling program. The 23 holes were drilled to the east-northeast on four 0.5 to 1 km long sections ~0.5 km apart, starting in the middle of the Moon Lake Stock and working 2 km northward across the SSE-trending, komatiite-bearing Kidd – Munro Group of supracrustal rocks (Fig. 6). These drill holes yielded 36 anomalous intercepts ranging



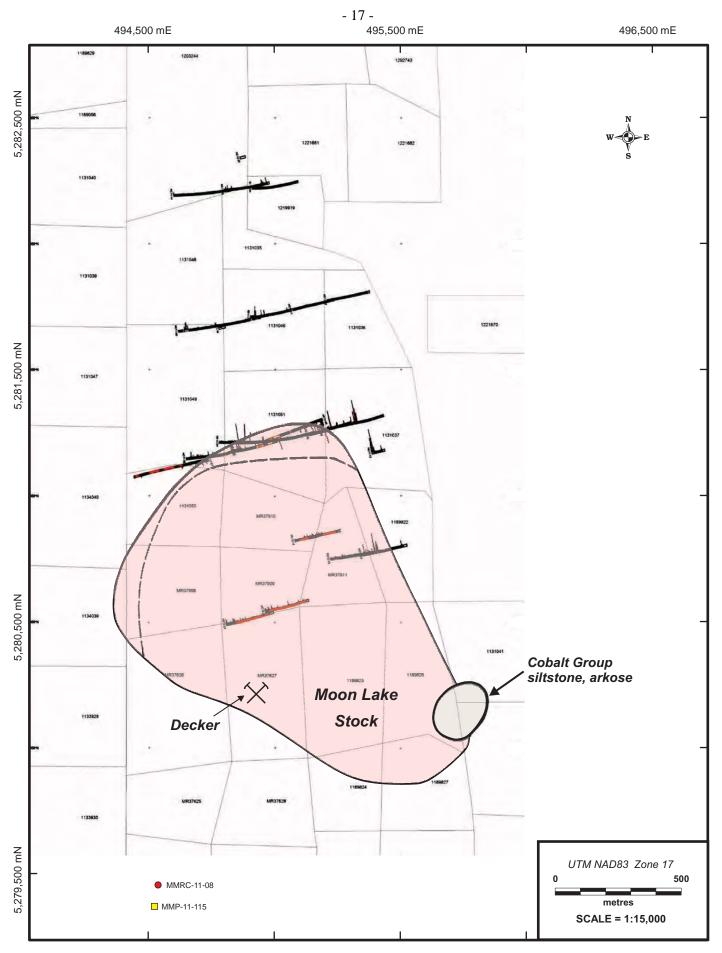


Figure 6 - Plan of the 2011-2012 diamond drill holes in relation to the Moon Lake Stock. The locations of the Decker Zone, 2011RC hole No. 08 and 2011 till sample No. 115 are also shown. Modified from Lintner & Kleinboeck 2012.



in length from  $\sim 1$  to 10 m and in Au content from 0.5 to 2 g/t. The anomalous intercepts were concentrated along the second drill section on the northern edge of the Moon Lake Stock. While strongly mineralized zones were encountered, the high frequency of anomalous drill intercepts could indicate that the apparent gold grain dispersal at Hole 08 and/or the nearby Decker Zone emanates from the northern contact of the stock. Alternatively, the weak Decker anomalies could reflect this mineralization and the stronger Hole 08 anomaly could have a separate more proximal source.

3.

3.1

#### METHODS AND COSTS

#### **Program Description and Contractors**

After the recent acquisition of the Burda claims, Mr. Young's representative Joerg Kleinboeck, P.Geo., commissioned ODM Chairman, Stuart Averill, P.Geo., to review the 2011 till sampling program and assess the merits and practicality of performing additional till sampling on the Burda property and eastern edge of the Block A property to resolve the source of the strong gold-grain-in-till anomalies in Hole 08, nearby surface till sample No. 115 and at the Decker Zone on the assumption that the direction of ice flow was SSW (Averill 2016). A total of 26 sample sites were proposed: (a) 14 in the area of the Gardner – Courageous showing to test for evidence of a bedrock source compatible with the gold grain anomalies; and (b) 12 east of the gold-fertile Moon Lake Stock to test for evidence of additional gold mineralization. The proposed sites were spaced at ~200 m along traverses ~400 m apart. The traverses were oriented NW-SE, roughly orthogonal to the suspected SSW transport direction of the till. An excavator was budgeted to dig trenches at two sites to reach buried till along the eastern margin of the esker.

Mr. Young contracted ODM to plan and execute the program and also to process the collected samples for gold. The sampling was conducted from August 16 to 21, 2016. Twenty-one samples were collected during the program including two duplicate, quality control samples. Fifteen samples were collected on the Burda property and six on Block A. The geographic co-ordinates of the sample sites are listed in Table 1. The sample locations are shown in relation to surficial geology in Figure 4 and in relation to bedrock geology in Figure 7. A log of each site is attached in Appendix B.



UTM (NAD 83, Zone 1											
Sample Number	Easting	Northing									
	405500										
BBA-16-01	495588	5282203									
BBA-16-02	495472	5282045									
BBA-16-03	495498	5281843									
BBA-16-04	495786	5281765									
BBA-16-05	496622	5279901									
BBA-16-06	496622	5279901									
BBA-16-07	496656	5281720									
BBA-16-08	496237	5280100									
BBA-16-09	496413	5279923									
BBA-16-10	496658	5280360									
BBA-16-11	496822	5280274									
BBA-16-12	496373	5280407									
BBA-16-13	496600	5280453									
BBA-16-14	495879	5280268									
BBA-16-15	496097	5280156									
BBA-16-16	495793	5282074									
BBA-16-17	495730	5280360									
BBA-16-19	495941	5280698									
BBA-16-20	495941	5280698									
BBA-16-21	496133	5280616									

Table 1 – Geographic co-ordinates of the till samples.

ODM chose the sample sites and dug and sampled the till pits. ODM's field personnel for the program were Michael Michaud, P.Geo. and geotechnician Shawn Hargadon. Al Tulpin of Elk Lake, Ontario, supplied and operated a JD 120 excavator to dig two trenches. ODM coordinated the program with Joerg Kleinboeck.

At its Ottawa laboratory, ODM: (a) tabled the till samples to extract a primary (impure) heavy mineral concentrate; (b) micropanned this concentrate to extract, count, measure and classify any contained gold grains; (c) sieved the fine, -0.063 mm silt + clay fraction from a subsample of each till sample and forwarded it to Actlabs Limited ("Actlabs") in Ancaster, Ontario, for geochemical analysis to check for possible chemically scavenged gold and elements that are not recoverable in heavy mineral concentrates due to the oxidized condition of the till and the high susceptibility of most sulphides to oxidation; and (d) interpreted the indicator mineral and geochemical data. Remy Huneault, P.Geo., supervised the sample processing. Michael Michaud and Stuart Averill interpreted the data and wrote the final report. David Hozjan, P.Geo. drafted the illustrations.



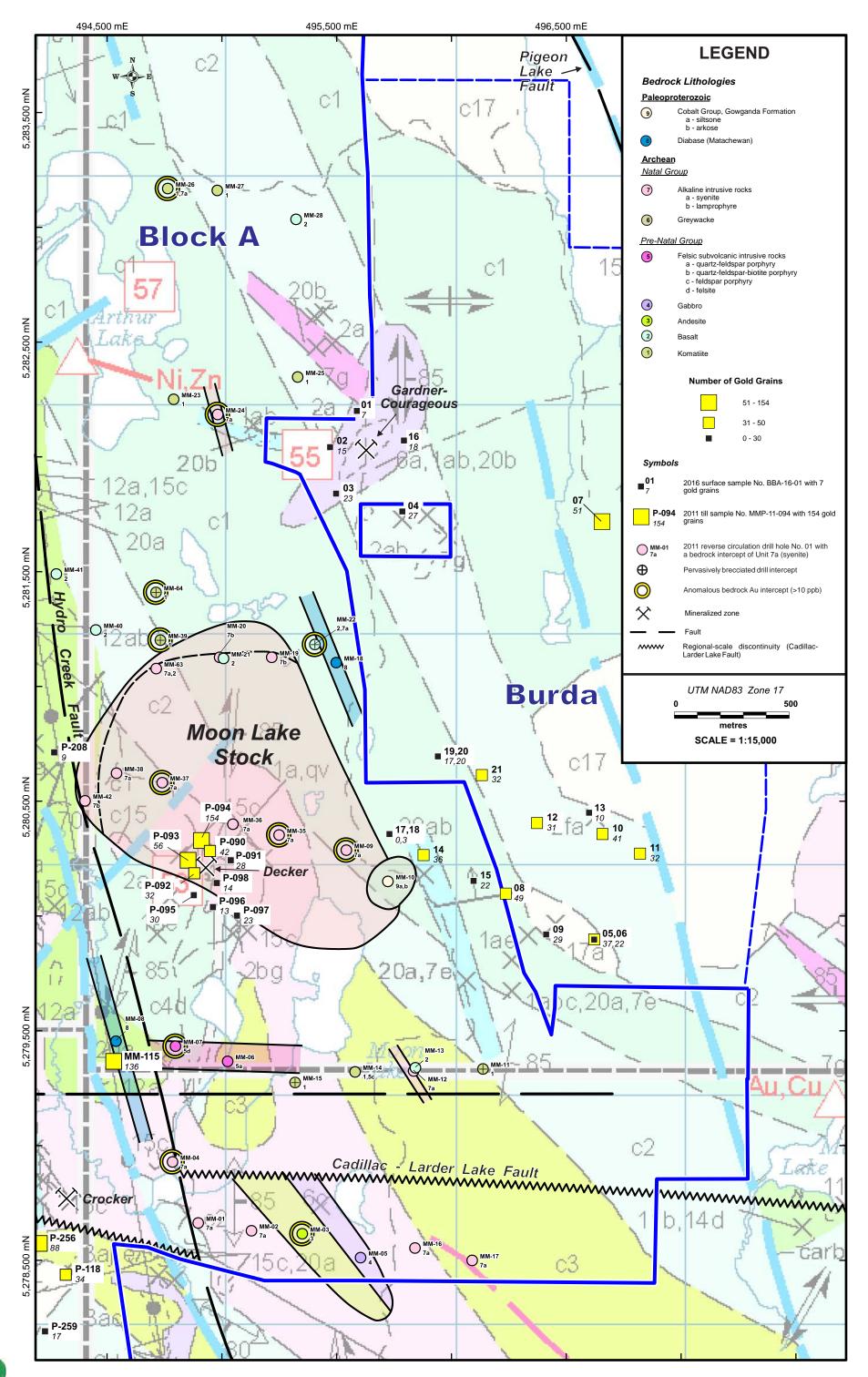


Figure 7 - Sample locations and distribution of gold grains in the till and sand and gravel samples in relation to the lithology of the underlying bedrock. The locations of the RC drill holes and surface samples from the 2011 campaign and known gold occurrences are also shown. See Figure 3 for the detailed bedrock lithology legend. Sources: Averill 2012, Johns 2003.

20 -

3.2

#### **Field Procedures**

- 21 -

The surface till sampling sites were preselected using topographic and geology maps, stereo air photos and satellite imagery, with the UTM coordinates digitized and loaded into GPS receivers. Actual pit locations were subject to adjustment in the field to ensure that high-quality subglacial till was sampled, if available, and new UTM coordinates were recorded for every site (Table 1). Where possible, pits were dug to a depth of approximately 1 m, using a hand shovel and grub-hoe, to reach the minimally oxidized C-horizon of the subglacial till.

All sample pits were logged, describing the sediment and soil type and character, sample interval, topography and the geology of the nearest rock outcrop (Appendix B). The same information was recorded on a modified logging form for the samples excavated from the trenches. The till excavated from the lower part of the pit was roughly hand screened on site at 8 mm to remove most of the large clasts. Approximately 12 kg of -8 mm material, along with a representative handful of the larger clasts, was packed in a heavy-duty, 30 x 50 cm plastic bag. The 12 kg sample size was based on ~10 kg of -2 mm matrix being required for indicator mineral processing and ~15 percent or 2 kg of the collected material being granules and small pebbles between 2 and 8 mm. The sample bag was labeled on both sides with the sample number and sealed with a cable tie. Two such samples were packed in a protective 20-litre plastic shipping pail with a secure lid. ODM transported the samples directly to its Ottawa processing laboratory.

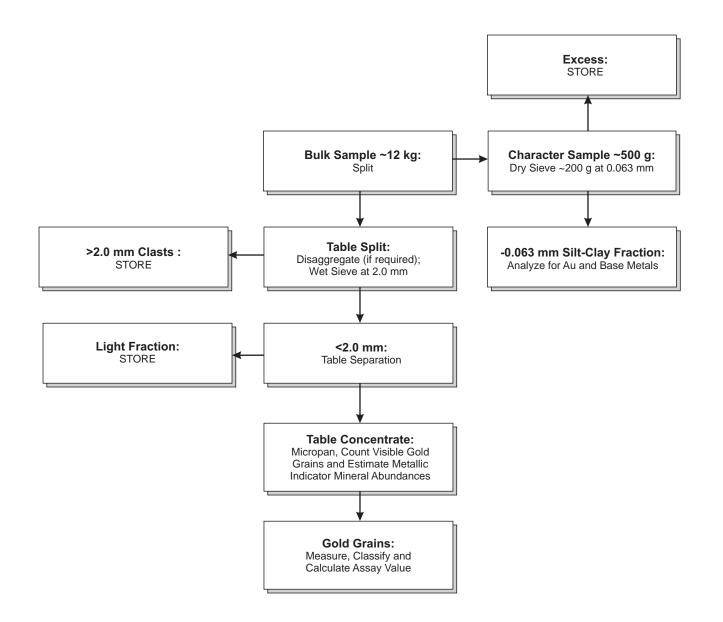
The till samples were prefixed BBA-16 (for Burda/Block A, 2016) and were numbered consecutively from 01 to 21 in the sequence collected irrespective of whether they were collected on the Burda or Block A claims. All samples were placed in protective 20-litre shipping pails, capped with lids and delivered by the ODM field crew to ODM's laboratory in Nepean.

3.3

#### Sample Processing Procedures

The till samples were processed by ODM using the procedures shown in Figure 8 which are designed specifically for extracting gold grains and a suitable analytical fraction from samples of oxidized till collected at surface.







First, a representative 500 g split is removed from the sample and reserved for geochemical analysis. The remaining bulk sample material is wet screened at 2.0 mm and a -2.0 mm table concentrate is prepared. Geological observations on the character of the sample are made during both the screening and tabling operations (Appendix C). The table concentrate is purposely large (typically 300-400 g) and of low grade (10-25% heavy minerals) in order to achieve a high, 80 to 90 percent recovery rate for all desired heavy minerals irrespective of their grain size or relative specific gravity. The gold grains, which by nature are mostly silt-sized, are observed at this stage with the aid of micropanning and are counted, measured and classified (Appendix C) as to degree of wear (i.e. distance of glacial transport; Fig. 9). The relative abundances of any sulphides or similar indicator minerals or metallic contaminants are also estimated and the expected gold assay value of the contained gold grains is calculated (Appendix C).

# 3.4 Analytical Procedures

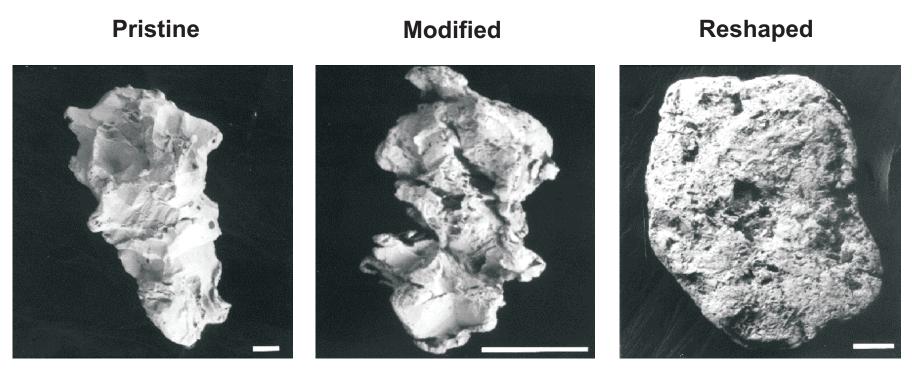
The sieved fines from the till samples were placed in two containers, a large vial and a small plastic bag, and submitted to Actlabs for geochemical analysis. The large vial, containing  $\sim$ 30 g of fines, was analyzed for a package of 35 elements by the instrumental neutron activation ("INA") method with no milling or acid digestion. Of these 35 elements, Au and As are quantitative with suitable detection limits of 2 ppb and 0.5 ppm, respectively, but most of the others are either too qualitative to be useful or of limited exploration interest. A 1 g split from the plastic bag, which generally contained <30 g of fines, was analyzed quantitatively for a suite of elements other than Au and As that are commonly associated with gold and base metal deposits – namely Ag, Cu, Zn, Pb, Cd, Ni, Mo, Mn and S – by inductively coupled plasma/optical emission spectrometry ("ICP/OES") following aqua regia acid digestion ("AR"). No milling was required prior to acid digestion due to the very fine particle size. Complete analyses for the till samples are presented in Appendix D.

### 3.5 Quality Control and Quality Assurance Measures

The two duplicate samples were used to check the consistency and robustness of both the mineral processing and analytical data. To ensure homogeneity, the parent and duplicate samples were collected from a single till pit by screening sufficient material for two samples into a pail and then placing alternate scoops into two consecutively numbered sample bags. The duplicate samples were processed and analyzed blindly in sequence with the parent samples.



# **Till Gold Grain Morphology**



100 m

500 m

>1,000 to >10,000 m

# **Distance of Transport**

Figure 9 - Backscatter electron images of gold grains from till illustrating the relationship between grain wear and distance of transport. The wear processes are compressional (infolding and compaction) and do not reduce the mass of the gold grain. Scale bars = 50 µm. Source: Averill (2001).



The gold grain counts obtained from both parent and duplicate sample pairs were very similar (Table 2), confirming that the mineral separations were consistent. Actlabs' INA analyses for Au and As and ICP analyses for Ag, Cu, Zn, Pb, Cd, Ni, Mo, Mn and S show negligible variability between the parent and duplicate samples (Table 2).

To further check Actlabs' analytical precision, two 30 g splits of the -0.063 mm fraction of a till standard was inserted in the analytical stream as Samples 01B and 12B (Appendix D). This standard is proprietary. It is ideal because: (a) being comprised of till, it is completely natural in appearance and thus impossible to distinguish from the actual project samples; (b) it contains significantly elevated but subanomalous levels of Au and most other elements of exploration interest; and (c) it is devoid of gold grains that could cause erratic spikes in the Au analyses. The gold analyses for the two ODM standards, <2 and 7 ppb, are within the acceptable range for the standard and the analyses for the other analyzed elements show little deviation and very good reproducibility giving a high degree of confidence in the analyses. Actlabs also used 3 internal standards and 1 blank sample in the INA analyses and 4 standards and 2 blanks in the ICP analyses (Appendix D).

In addition to using field duplicates and a till standard to monitor the quality of the indicator mineral data obtained from specific projects, ODM frequently performs blind tests to ensure that the recovery rates for all targeted minerals are consistently in the 80 to 90 percent range. Furthermore, both the quality of each heavy mineral separation and the overall mineralogy of the concentrate are visible at every stage of the concentration process, minimizing the potential for sample mix-ups, indicator mineral carryover between samples and other potential contamination issues. For example gold grains, which are the most important indicator mineral due to their very small size, but these grains are physically observed during the first stage of mineral concentration – tabling – and, if anomalous concentrations are present, blank samples are tabled and carefully inspected for gold grains before the next project sample is processed.

3.6

# Costs

The cost of the 21-sample program, excluding charges associated with the excavator, was \$21,813.87 or \$1,038.76 per sample which is approximately 10 percent less than the budgeted costs of \$24,144.00. The program was cheaper than budgeted due to collecting and analyzing fewer samples.



							Geochemical Analyses for the -0.063 mm Fraction													
		Weight (kg wet)			Weight (kg wet) No. of Gold				No. of Gold	INA ICP										
Sample	Sample	Bulk	Table	+2.0 mm	Table	Grains	Au	As	Ag	Cu	Zn	Pb	Cd	Mo	Ni	Mn	S			
Category	Number	Received	Split	Clasts	Feed	Recovered	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(%)			
Parent	BBA-16-05	11.8	11.3	3.0	8.3	37	< 2	4.8	< 0.2	27	15	5	< 0.5	< 2	43	140	0.013			
Duplicate	BBA-16-06	12.1	11.6	3.6	8.0	22	< 2	5.3	< 0.2	24	14	4	< 0.5	< 2	40	134	0.012			
Parent	BBA-16-19	12.4	11.9	4.7	7.2	17	6	8.8	< 0.2	58	23	12	< 0.5	< 2	44	305	0.024			
Duplicate	BBA-16-20	12.2	11.7	4.2	7.5	20	< 2	7.4	< 0.2	49	21	11	< 0.5	< 2	41	274	0.021			

 Table 2 – Comparative weights, gold grain counts and geochemical analyses for the duplicate samples.

4.

# RESULTS

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4.1

# Gardner – Courageous Area

As previously noted, the sample sites were spotted near outcrops that were expected to have a till veneer on bedrock as depicted by Alcock & Miller (2001; Fig. 4). However, field investigations revealed that till is only sporadically preserved in the Gardner – Courageous area. Instead: (a) the central and eastern parts of this area are mostly overlain with glaciolacustrine fine sand deposited directly on bedrock; and (b) the western part, including the stripped Gardner – Courageous showing, is overlain with highenergy, glaciofluvial sand and gravel (Fig. 10).

Six samples were collected in the Gardner – Courageous area; three of till, Nos. 04, 07 and 16, and three of sand and gravel, Nos. 01 to 03 (Fig. 4, Table 3). As demonstrated in the earlier RC drilling program (Averill 2012) sand and gravel are not a suitable sampling medium for gold exploration because they are coarse grained and approximately 90 percent of gold grains are silt sized (Averill 2001). The three gravel samples were collected only because no till was present near the Gardner – Courageous showing.

Till sample No. 07, collected ~1 km ESE of the Gardner – Courageous showing, yielded a moderately anomalous 51 gold grains which is the strongest gold grain response of the program (Table 3). However, all of the gold grains were reshaped or strongly modified indicating glacial transport of >1 km. A high proportion of the grains, 88 percent, are silt sized resulting in a low calculated HMC gold value of 490 ppb. Samples 04 and 16 were collected ~350 m southeast and ~100 m east of the Gardner – Courageous showing, respectively. These samples yielded only background levels of gold grain, 27 and 18 respectively, with most of the grains being reshaped.

Sand and gravel samples Nos. 01 to 03 yielded subanomalous concentrations of gold grains, 7, 15 and 23 grains, respectively (Table 3). As expected for sand and gravel, >87 percent of the grains were reshaped or modified indicating a long transport distance. The calculated HMC gold value for Sample 02 was the strongest reported for the program at 3988 ppb, however, 85 percent of the value comprises just three 0.15 to 0.3 mm gold grains reflecting the coarsely sorted texture of the gravel (Appendix C).



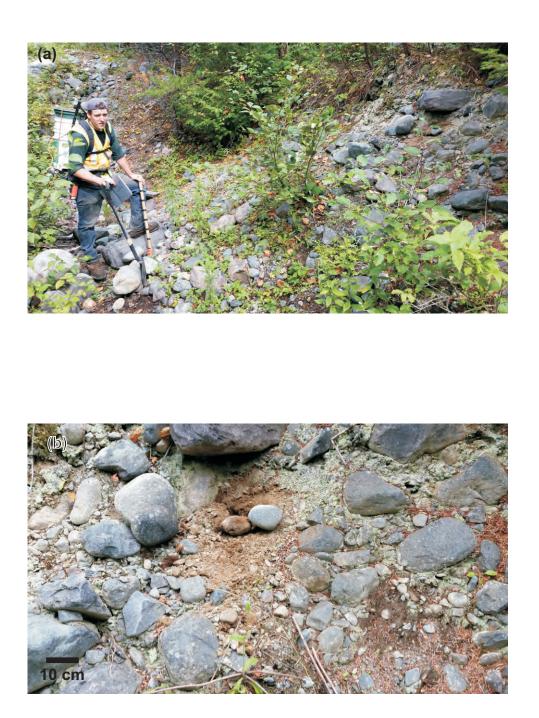


Figure 10 – High-energy, bouldery gravel from the stripped Gardner – Courageous showing.



								Selected Geochemical Analyses										
						Calculated	Au-As	s Split					ICP \$	Split				
		Numb	er of Recov	vered Gold	Grains	Au Value of	Au	As	Ag	Hg	Cu	Pb	Zn	Cd	Мо	Ni	Mn	S
Sample						the Gold			-	-								
Number	Classification	Total	Reshaped	Modified	Pristine	Grains (ppb)	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		-	-				~	0.5			10	40	40	0.5		45	0.07	0.000
BBA-16-01	Sand + Gravel	7	5	2	0	84	< 2	8.5	0.2	< 1	46	10	49	< 0.5	2	15	307	0.038
BBA-16-02	Sand + Gravel	15	13	2	0	3988	< 2	10.9	< 0.2	< 1	21	6	25	< 0.5	< 2	29	219	0.02
BBA-16-03	Sand + Gravel	23	16	3	4	711	7	9.5	< 0.2	< 1	15	5	24	< 0.5	< 2	36	211	0.026
BBA-16-04	Till	27	19	3	5	83	9	11.3	< 0.2	< 1	49	8	19	< 0.5	< 2	48	249	0.015
BBA-16-05	Till	37	25	6	6	149	< 2	4.8	< 0.2	< 1	27	5	15	< 0.5	< 2	43	140	0.013
BBA-16-06	Till	22	17	4	1	116	< 2	5.3	< 0.2	< 1	24	4	14	< 0.5	< 2	40	134	0.012
BBA-16-07	Till	51	43	8	0	490	< 2	6.1	< 0.2	< 1	10	3	15	< 0.5	< 2	55	193	0.008
BBA-16-08	Till	49	31	16	2	82	< 2	15.5	< 0.2	< 1	81	5	504	< 0.5	< 2	417	186	0.015
BBA-16-09	Till	29	21	6	2	127	< 2	3.1	< 0.2	< 1	10	5	21	< 0.5	< 2	55	270	0.013
BBA-16-10	Till	41	29	11	1	245	9	4.8	< 0.2	< 1	17	5	17	< 0.5	< 2	48	147	0.012
BBA-16-11	Till	32	29	2	1	297	< 2	4.7	< 0.2	< 1	10	3	17	< 0.5	< 2	27	142	0.014
BBA-16-12	Till	31	29	2	0	103	< 2	4.5	< 0.2	< 1	13	4	16	< 0.5	< 2	55	190	0.007
BBA-16-13	Till	10	10	0	0	18	< 2	5.6	< 0.2	< 1	25	6	41	< 0.5	< 2	39	184	0.026
BBA-16-14	Till	36	25	9	2	413	< 2	4.7	< 0.2	< 1	8	3	14	< 0.5	< 2	28	182	0.007
BBA-16-15	Till	22	18	4	0	49	< 2	6.4	< 0.2	< 1	18	4	16	< 0.5	< 2	49	165	0.01
BBA-16-16	Till	18	17	1	0	276	< 2	5.9	< 0.2	< 1	13	4	19	< 0.5	< 2	44	183	0.011
BBA-16-17	Sand + Gravel	0	0	0	0	0	< 2	30.3	< 0.2	< 1	180	23	36	< 0.5	2	69	1040	0.015
BBA-16-18	Sand + Gravel	3	3	0	0	7	< 2	21.3	< 0.2	< 1	79	14	31	< 0.5	< 2	51	721	0.016
BBA-16-19	Till	17	16	1	0	208	6	8.8	< 0.2	< 1	58	12	23	< 0.5	< 2	44	305	0.024
BBA-16-20	Till	20	17	3	0	157	< 2	7.4	< 0.2	< 1	49	11	21	< 0.5	< 2	41	274	0.021
BBA-16-21	Till	32	31	0	1	65	< 2	6.3	< 0.2	< 1	14	6	15	< 0.5	< 2	29	154	0.015

Table 3 – Summary of gold grain and geochemical data obtained from the till and gravel samples.



The Au analyses for the -0.063 mm fines from the six samples are mostly subanomalous with only two, Nos. 03 and 04, returning values above the 2 ppb detection limit – 7 and 9 ppb, respectively (Table 3). Both values are below the normal 10 ppb Au anomaly threshold and may simply reflect the statistical probability of one or two silt-sized grains from the normal background population reporting to the small -0.063 mm analytical aliquots when the samples were sieved. Arsenic and other elements of interest are subanomalous.

# 4.2 Area East of the Moon Lake Stock

Thirteen till – Nos. 05, 06, 08, 09, 10, 11, 12, 13, 14, 15, 19, 20, 21 – and two sand and gravel samples – Nos. 17 and 18 – were collected in the area east of the Moon Lake Stock (Figs. 4, 7). As previously noted, four of these samples were from two duplicate pairs – Nos. 05/06 and 19/20. The excavator was used to dig two trenches close to the Moon Lake esker with the objective of reaching till. The first trench only encountered gravel but the second trench exposed a thin till horizon in direct contact with bedrock. Samples 17 and 18 were collected successively downward through the gravel section in the first trench and duplicate till samples Nos. 19 and 20 were collected from the second trench.

Seven of the thirteen till samples, or 54 percent, yielded marginally anomalous gold grain counts. Sample 08 yielded the strongest concentration of gold grains in the area with 49 grains but 96 percent were reshaped and modified (Table 3). All of the gold grains in this sample are silt sized, consequently, the calculated HMC gold value is very low – just 82 ppb.

The -0.063 mm fines from only two of the till samples, Nos. 10 and 19, returned gold geochemical analyses above the detection limit -9 and 6 ppb, respectively (Table 3) - but are not considered anomalous. Elevated As, Cu, Zn and Ni - 15.5, 81, 504 and 417 ppm, respectively - were reported for Sample 08 where the underlying bedrock consists of Ni-bearing komatiites (Fig. 7). The arsenic and copper analyses for the two esker gravel samples from the first backhoe trench, Nos. 17 and 18, which is underlain by the same komatiite horizon, are also elevated. Arsenic and other elements of interest in the other samples are subanomalous.

As previously explained, prior to the present program no definitive ice-flow indicators were available in the vicinity of the Burda and Block A properties. Due to recent logging and bush-road construction however, two tillite and mafic volcanic outcrops with unambiguous glacial striae have been exposed (Fig. 11). All striae on both outcrops trend 178°, establishing a definitive southward ice-flow direction.





Figure 11 – Glacial striae on tillite (a) and mafic volcanic (b) outcrops in the East Moon Lake survey area. Both sets of striae were measured at 178°.



5.

#### **CONCLUSIONS AND RECOMMENDATIONS**

The objectives of the till sampling program were to: (1) determine whether two gold grain anomalies identified in the 2011 till sampling program on the adjoining Block A property to the west were derived from a bedrock source to the northeast near the Gardner – Courageous showing on the Burda property based on the suspected SSW ice-flow direction; and (2) test for new sources of gold in the area east of the gold-fertile Moon Lake Stock. Locating the source of the 2011 gold grain anomalies had previously been complicated by: (1) uncertainty as to whether the direction of ice flow was SSW or SSE; and (2) the frequent absence of till beneath the Moon Lake esker.

Till was also found to be only sporadically preserved in the Gardner – Courageous area. Instead, most of the area including the stripped Gardner – Courageous showing is overlain by fine outwash sand and esker gravel deposited directly on bedrock. As a result, only three till samples were collected. Sample 07 was moderately anomalous, yielding 51 gold grains, however, all the grains were reshaped or strongly modified indicating glacial transport of >1 km probably from an off-property source. The other two samples yielded subanomalous concentrations of gold grains. Three gravel samples were also collected but only because no till was present near the Gardner – Courageous showing. The -0.063 mm fines of two of the six samples returned gold geochemical analyses above the 2 ppb detection limit but both were below the 10 ppb anomaly threshold. Arsenic and other elements of interest were subanomalous. These negative results preclude derivation of the 2011 gold grain anomalies from the area of the Gardner – Courageous showing on the Burda property.

Of the thirteen till samples collected in the area east of the Moon Lake Stock, seven or 54 percent yielded gold grain counts slightly above the regional background of up to 30 grains but no significant gold grain anomalies were identified. Sample 08 yielded the most gold with 49 grains, but as in the Gardner – Courageous area most of the grains were reshaped and strongly modified indicating >1 km of glacial transport. The elevated counts probably reflect peaks in the high overall gold grain background of the Shining Tree district. Elevated As, Cu, Zn and Ni analyses in the -0.063 mm fines of Sample 08 and elevated As and Cu in the two gravel samples that were collected from one of the backhoe pits reflect the underlying Ni-bearing komatiites.



The two glacially striated outcrops that were discovered establish a definitive 178° or directly southward ice-flow trend. This indicates that the gold grains in the 2011 anomalies originated from within the Block A claims, not from the Burda claims. Averill (2016) proposed that the high frequency of anomalous drill intercepts in the earlier RC and diamond drill holes could indicate that: (a) the apparent gold grain dispersal at Hole 08 and/or the anomaly near the Decker Zone emanates from the northern contact of the Moon Lake Stock; or (b) the weak Decker anomalies could reflect this mineralization and the stronger Hole 08 anomaly could have a separate, more southerly source. This interpretation is compatible with the observed southward direction of ice flow.

If the 163-grain Hole 08 gold grain anomaly comprises part of a systematic dispersal train, as suggested by the 136-grain anomaly obtained nearby from surface till sample No. 115 (Fig. 4), the subanomalous till in three 2011 RC Holes, Nos. 37, 38 and 42, drilled 1.2 km directly to the north on the Moon Lake Stock represents a maximum up-ice cut-off of the train. Approximately 900 m up-ice of Hole 08 and 300 m down-ice of the cut-off is the inferred southwestern contact of the Moon Lake Stock with komatilitic volcanics (Fig. 7) west of the Decker showing. While the RC drilling showed that the zone of lamprophyre on the western margin of the stock is infertile, the southern contact was not tested in either the RC or subsequent diamond drilling programs and may be the source of the Hole 08 and Sample 115 gold grain anomalies. This would require that: (a) gold grain wear during glacial transport was relatively rapid as most of the grains are fully reshaped; and (b) the higher than normal proportion of sand-sized grains is due to the source mineralization being coarse grained, rather than to sorting by meltwater as proposed by Averill (2012). The weaker Decker anomaly may be derived from the northern contact of the stock which is a similar distance up-ice and yielded numerous weakly mineralized diamond drill intercepts.

Follow-up till sampling up-ice from Hole 08 would probably not be effective in tracing the anomaly to source due to the sparse preservation of till. Therefore, it is recommended that: (1) an induced polarization survey be conducted along the southern contact of the Moon Lake Stock between RC Hole 42 and the Decker Zone to locate possible zones of disseminated sulphides that could host significant gold mineralization; and (2) one or more diamond core holes be drilled to further test this contact.

\* \* \* \* \* \*



6.

### **CERTIFICATE** – Michael D.J. Michaud

I, Michael D.J. Michaud, residing at 515 Pennycross Lane, Carp, Ontario hereby certify as follows:

That I attended the University of New Brunswick, at Fredericton, New Brunswick and graduated with a B.Sc. in Geology in 1994;

That I have worked continuously in the field of mineral exploration geology since 1995;

That I am a co-owner and consulting geologist of Overburden Drilling Management Limited, 107-15 Capella Court, Ottawa, Ontario;

That I am a Member of the Association of Professional Geoscientists of Ontario;

That this technical report is based on data gathered on the subject property by me and employees of Overburden Drilling Management Limited;

That I was personally involved in interpreting the data;

That I have no beneficial interest in the subject properties.

Michael D.J. Michaud, B.Sc., P.Geo.

Dated at Ottawa, Ontario this 28<sup>th</sup> day of November, 2016



#### REFERENCES

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Appendix A

Mineral Claims of the Burda and Block A Properties

Property	Township / Area	Claim Number	Recording Date	Claim Due Date	Status	Percent Option
Block A	KNIGHT	<u>1131021</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	KNIGHT	<u>1131022</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	KNIGHT	1131035	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	<u>1131036</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	<u>1131037</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	1131038	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	<u>1131041</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	KNIGHT	1131042	1991-Jan-08	2018-Jan-08	А	70%
Block A	KNIGHT	1131043	1991-Jan-08	2018-Jan-08	А	70%
Block A	KNIGHT	1131044	1991-Jan-08	2018-Jan-08	А	70%
Block A	KNIGHT	<u>1131046</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	<u>1131048</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	1131049	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	<u>1131050</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	1131051	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	1131052	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131053	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131054	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131055	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131056	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131057	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131059	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131070	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	1131071	1990-Apr-06	2018-Apr-06	А	70%
Block A	KNIGHT	1131073	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131074	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131075	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131076	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131077	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1131078	1990-Apr-05	2018-Apr-05	А	70%
Block A	KNIGHT	1189822	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1189823	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1189824	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1189825	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1189826	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1189827	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1189828	1992-Jun-15	2018-Jun-15	А	70%
Block A	KNIGHT	1193325	1994-Jan-25	2018-Jan-25	А	70%
Block A	KNIGHT	1202743	1995-Mar-14	2018-Mar-14	А	70%
Block A	KNIGHT	1203244	1995-Mar-14	2018-Mar-14	А	70%
Block A	KNIGHT	1204629	1996-Sep-18	2018-Sep-18	А	70%
Block A	KNIGHT	1219919	1996-Sep-23	2018-Jan-09	А	70%
Block A	KNIGHT	1220378	1996-Sep-18	2018-Sep-18	А	70%
Block A	KNIGHT	1221670	1996-Oct-23	2018-Jan-23	А	70%
Block A	KNIGHT	1221681	1996-Oct-25	2018-Oct-25	А	70%

Property	Township / Area	Claim Number	Recording Date	Claim Due Date	Status	Percent Option
Block A	KNIGHT	1221682	1996-Oct-25	2018-Oct-25	А	70%
Block A	MACMURCHY	<u>1131940</u>	1990-Apr-03	2018-Apr-03	А	70%
Block A	MACMURCHY	<u>1131941</u>	1990-Apr-03	2018-Apr-03	А	70%
Block A	MACMURCHY	<u>1131942</u>	1990-Apr-03	2018-Apr-03	А	70%
Block A	MACMURCHY	<u>1145897</u>	1990-Apr-09	2018-Apr-09	А	70%
Block A	MACMURCHY	<u>1146533</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	MACMURCHY	<u>1185697</u>	1991-Dec-04	2018-Dec-04	А	70%
Block A	MACMURCHY	1185723	1991-Dec-04	2018-Dec-04	А	70%
Block A	MACMURCHY	<u>1185816</u>	1991-Dec-04	2018-Dec-04	А	70%
Block A	MACMURCHY	<u>1190912</u>	1992-Sep-08	2018-Sep-08	А	70%
Block A	MACMURCHY	<u>1190916</u>	1993-Jun-15	2018-Jun-15	А	70%
Block A	MACMURCHY	<u>1200167</u>	1993-Dec-08	2018-Dec-08	А	70%
Block A	MACMURCHY	1200824	1993-Dec-08	2018-Dec-08	А	70%
Block A	MACMURCHY	1200825	1993-Dec-08	2018-Dec-08	А	70%
Block A	MACMURCHY	<u>1201534</u>	1995-Feb-06	2018-Feb-06	А	70%
Block A	MACMURCHY	1202537	1994-Mar-29	2018-Mar-29	А	70%
Block A	MACMURCHY	1202562	1994-Apr-15	2018-Apr-15	А	70%
Block A	MACMURCHY	1204265	1994-Nov-22	2018-Nov-22	А	70%
Block A	MACMURCHY	1204266	1994-Nov-22	2018-Nov-22	А	70%
Block A	MACMURCHY	1204267	1994-Nov-22	2018-Nov-22	А	70%
Block A	MACMURCHY	1229049	1997-Sep-08	2018-Sep-08	А	70%
Block A	MACMURCHY	1236486	1999-Jun-04	2018-Jun-04	А	70%
Block A	MACMURCHY	1239106	2000-Mar-29	2018-Mar-29	А	70%
Block A	MACMURCHY	1239330	2000-Mar-06	2018-Mar-06	А	70%
Block A	MACMURCHY	1239331	2000-Mar-06	2018-Mar-06	А	70%
Block A	MACMURCHY	1239332	2000-Mar-29	2018-Mar-29	А	70%
Block A	MACMURCHY	1239333	2000-Mar-29	2018-Mar-29	А	70%
Block A	MACMURCHY	1240182	2000-Apr-17	2018-Apr-17	А	70%
Block A	MACMURCHY	1242397	2001-Feb-05	2018-Feb-05	А	70%
Block A	MACMURCHY	3014503	2004-Aug-30	2018-Aug-30	А	70%
Block A	MACMURCHY	4206254	2005-Mar-31	2018-Mar-31	А	70%
Block A	MACMURCHY	4206255	2005-Mar-31	2018-Mar-31	А	70%
Block A	MACMURCHY	4206256	2005-Mar-31	2018-Mar-31	А	70%
Block A	MACMURCHY	4206258	2005-Mar-31	2018-Mar-31	А	70%
Block A	MACMURCHY	4208278	2006-Sep-26	2018-Sep-26	А	70%
Block A	MACMURCHY	4208300	2006-Apr-13	2018-Apr-13	А	70%
Block A	MACMURCHY	4209657	2006-Feb-23	2018-Feb-23	А	70%
Block A	MACMURCHY	4209658	2006-Feb-23	2018-Feb-23	А	70%
Block A	NATAL	1094977	1990-Apr-10	2018-Apr-10	A	70%
Block A	NATAL	1094978	1990-Apr-10	2018-Apr-10	Α	70%
Block A	NATAL	1094979	1990-Apr-10	2018-Apr-10	A	70%
Block A	NATAL	1094980	1990-Apr-10	2018-Apr-10	A	70%
Block A	NATAL	1094981	1990-Apr-10	2018-Apr-10	A	70%
Block A	NATAL	1094982	1990-Apr-10	2018-Apr-10	A	70%
Block A	NATAL	1094983	1990-Oct-12	2018-Oct-12	A	70%

Property	Township / Area	Claim Number	Recording Date	Claim Due Date	Status	Percent Option
Block A	NATAL	1094984	1990-Oct-12	2018-Oct-12	А	70%
Block A	NATAL	1094985	1990-Oct-12	2018-Oct-12	А	70%
Block A	NATAL	1094986	1990-Oct-12	2018-Oct-12	А	70%
Block A	NATAL	<u>1131023</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	1131024	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	1131025	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	<u>1131026</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	1131027	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	<u>1131028</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	<u>1131029</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	<u>1131033</u>	1991-Jan-08	2018-Jan-08	А	70%
Block A	NATAL	<u>1131039</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	NATAL	1131040	1990-Apr-06	2018-Apr-06	А	70%
Block A	NATAL	1131047	1990-Apr-06	2018-Apr-06	А	70%
Block A	NATAL	<u>1131072</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	NATAL	<u>1131079</u>	1990-Apr-06	2018-Apr-06	А	70%
Block A	NATAL	1133929	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133930	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133931	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133932	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133933	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133934	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133935	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133936	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133937	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1133938	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	<u>1134039</u>	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1134040	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1134041	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1134042	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1134043	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1134044	1990-Apr-10	2018-Apr-10	А	70%
Block A	NATAL	1134045	1990-Aug-31	2018-Aug-31	А	70%
Block A	NATAL	1134046	1990-Aug-31	2018-Aug-31	А	70%
Block A	NATAL	1134047	1990-Oct-12	2018-Oct-12	А	70%
Block A	NATAL	1134048	1990-Oct-12	2018-Oct-12	А	70%
Block A	NATAL	1189056	1992-Mar-27	2018-Mar-27	А	70%
Block A	NATAL	<u>1189829</u>	1992-Jun-26	2018-Jun-26	А	70%
Block A	NATAL	1189830	1992-Jun-26	2018-Jun-26	А	70%
Block A	NATAL	1193300	1993-Dec-21	2018-Dec-21	А	70%
Block A	NATAL	1193301	1994-Jan-17	2018-Jan-17	А	70%
Block A	NATAL	1193302	1994-Jan-17	2018-Jan-17	А	70%
Block A	NATAL	1193304	1994-Jan-17	2018-Jan-17	А	70%
Block A	NATAL	1193322	1994-Jan-25	2018-Jan-25	А	70%
Block A	NATAL	1193323	1994-Jan-25	2018-Jan-25	А	70%

Property	Township / Area	Claim Number	Recording Date	Claim Due Date	Status	Percent Option
Block A	NATAL	1193324	1994-Jan-25	2018-Jan-25	А	70%
Block A	NATAL	1202484	1994-Feb-21	2018-Feb-21	А	70%
Block A	NATAL	4216699	2007-Oct-19	2018-Oct-19	А	70%
Block A	NATAL	4248232	2010-Apr-26	2018-Apr-26	А	70%
Block A	NATAL	496696	1978-Jan-31	2018-Jun-01	А	70%
Block A	TYRRELL	1145916	1990-Apr-03	2018-Apr-03	А	70%
Block A	TYRRELL	1146422	1990-Apr-04	2018-Apr-04	А	70%
Block A	TYRRELL	1179361	1992-Sep-08	2018-Sep-08	А	70%
Block A	TYRRELL	1190913	1992-Sep-08	2018-Sep-08	А	70%
Block A	TYRRELL	1190914	1992-Sep-08	2018-Sep-08	А	70%
Block A	TYRRELL	1193848	1996-Sep-18	2018-Sep-18	А	70%
Block A	TYRRELL	1202771	1998-Apr-06	2018-Apr-06	А	70%
Block A	TYRRELL	1219994	1996-Sep-18	2018-Sep-18	А	70%
Block A	TYRRELL	1219995	1996-Sep-18	2018-Sep-18	А	70%
Block A	TYRRELL	1239334	2000-Mar-29	2018-Mar-29	А	70%
Block A	TYRRELL	1239335	2000-Apr-10	2018-Apr-10	А	70%
Block A	TYRRELL	4208286	2006-Apr-13	2018-Apr-13	А	70%
Block A	TYRRELL	4208287	2006-Apr-13	2018-Apr-13	А	70%
Block A	TYRRELL	4208289	2006-May-10	2018-May-10	А	70%
Block A	TYRRELL	4210476	2007-May-18	2018-May-18	А	70%
Tyrell	TYRRELL	1076738	2001-Jul-16	2017-Jul-16	А	100%
Tyrell	TYRRELL	1076741	2001-Aug-03	2017-Aug-03	А	100%
Tyrell	TYRRELL	1156484	2001-Jun-13	2017-Jun-13	А	100%
, Tyrell	TYRRELL	1227282	2001-Apr-05	2018-Apr-05	А	100%
Tyrell	TYRRELL	3008986	2004-Mar-22	2019-Mar-22	А	100%
Tyrell	TYRRELL	4245722	2008-Oct-06	2017-Oct-06	А	100%
	KNIGHT	1220092	1996-Sep-17	2017-Sep-17	А	100%
Burda Option		1220094	1996-Sep-17	2017-Sep-17	А	100%
Burda Option		1220095	1996-Sep-17	2018-Oct-24	А	100%
Burda Option	KNIGHT	1220372	1996-Sep-18	2018-Sep-18	А	100%
Burda Option	KNIGHT	<u>1220373</u>	1996-Sep-18	2017-Sep-18	А	100%
Burda Option	KNIGHT	<u>1220374</u>	1996-Sep-18	2017-Sep-18	А	100%
Burda Option	KNIGHT	1220375	1996-Sep-18	2017-Sep-18	А	100%
Burda Option	KNIGHT	<u>1220376</u>	1996-Sep-18	2018-Sep-18	А	100%
Burda Option	KNIGHT	<u>1220377</u>	1996-Sep-18	2017-Sep-18	А	100%
Burda Option	KNIGHT	<u>1221717</u>	1996-Sep-17	2018-Sep-17	А	100%
Burda Option	KNIGHT	<u>1221718</u>	1996-Sep-17	2018-Sep-17	А	100%
Burda Option		<u>1221719</u>	1996-Sep-17	2018-Oct-24	А	100%
Burda Option		<u>1221720</u>	1996-Sep-17	2018-Sep-17	А	100%
Burda Option		<u>4247571</u>	2009-Apr-03	2019-Apr-03	А	100%
Burda Option		<u>4251937</u>	2009-Oct-27	2018-Oct-27	Α	100%
Burda Option		<u>4257829</u>	2010-Nov-26	2017-Nov-26	A	100%
Burda Option		4258963	2010-Oct-29	2017-Oct-29	A	100%
Burda Option	KNIGHT	<u>4270959</u>	2012-Jul-13	2017-Jul-13	A	100%
Burda Option	KNIGHT	<u>4283642</u>	2015-Mar-18	2018-Mar-18	А	100%

Appendix B

Field Descriptions of the Till Sample Sites



PROJECT: Burda Option / Block A	SAMPLE NO.: BBA-16-00   COLLECTED BY:	M. MICHAUD DATE: August 17/2010
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography Flat lying	Classification Gravel
Geology map no		Structure Loose sundy grand lodged between bouldets
UTM co-ord. (zone 17) $begin{pmatrix} 0495588 \\ 5782203 \\ N \\ 1ce distance to \\ outcrop \\ \hline $	Surficial material Bouldary gravel Section/Sample Interval _ Bouldereat	Clasts: Size range $2 - 30 \text{ cm}$
Outcrop geology	0 metres $-0.0.1m - 0.7gam co$ 0 - 0.2 1 - V.F. me 5 and t	% of sample <u>80%</u> Shape <u>Rounded</u>
Shovel pit Road cut Other exposure	-Bouldery gravel.	Lithology <u>80° Vol</u> . <u>202 greintoids</u> Matrix: 20%
Est. OB thickness <u>L/m</u> Additional notes <u>Very difficult</u> <u>diaging due to monerous</u> boulders.	1 metre - Bouldery gravel. - matrix in ochre, fine to course sand	Grain size class Medium to course 5000.
<u>Site 504</u>	2 metres	

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PROJECT: BUKNA OPTION/BLOCKA SAMPLE NO .: BBA-16-02 COLLECTED BY: M. MICHAYD DATE: A4x 17/2016 LOCATION SURFICIAL GEOLOGY SAMPLE MATERIAL and V NTS map no. Topography GENERALY FLAT Classification LYING tructure Colibly tabouldry gravel. Coose Matrix Structure Geology map no. Airphoto no. etaineen colables & Roolder Surficial material V. Time to fine glacioflurial sand 0495472E 5282045 E UTM co-ord. (zone 17 Ν Clasts: 2-20 cm Ice distance to Size range outcrop Section/Sample Interval 30% % of sample Outcrop geology 0 metres Rounded 0-0.3 m Shape - V, Fine to fine card - Dark to light of ochre 20% Val Shovel pit Lithology Road cut 0,3-0,6 m - Bauldery/cobbly gravel. Matrix: 70% Other exposure % of sample 1 metre LIM. ochre Est. OB thickness Colour Grain size class Med - Course Gund Additional notes UNDER OVERTYRNED TREE 5tr 510 2 metres



BURDA OPTION/BLOCK A SAMPLE NO .: BBA-16-03 COLLECTED BY: MIMICHAUN DATE: Aug 17/2016 PROJECT: LOCATION SURFICIAL GEOLOGY SAMPLE MATERIAL Sand & Gravel. Classification NTS map no. Topography North barn, slope. Structure Loose matrix Geology map no. between to Airphoto no. Surficial material \_\_\_\_\_ blacerofflurral \_\_\_\_\_\_ V. fine to fine sand . 0495 496 UTM co-ord. Ε (zone) N Clasts: 2 cm > 30 cm. Ice distance to Size range Section/Sample Interval outcrop 20% % of sample Outcrop geology 0 metres 0-0,3m -V.Fine to find Sand. rounded. Shape 80% Vol. 20% / multionali Shovel pit Lithology Road cut Matrix: 80% - oral Other exposure % of sample 1 metre CIM. Light oche. Est. OB thickness Colour Additional notes Road out South Grain size class Med - course sand, of site 11 2 metres



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### OVERBURDEN DRILLING MANAGEMENT LIMITED FIELD PIT SAMPLING LOG

PROJECT: Bunda Option / Block ASAMPLE NO.: BBA-16-04 COLLECTED BY: M. MICINAYD DATE: Aug 18/2016

LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography Bottom east - bacing outcrop Slope	Classification <u>7 </u>
Geology map no.		Structure <u>Compact</u> clast Supported, collely
Airphoto no.	Surficial material Fine Sand	
UTM co-ord. $0495786$ E (zone 17) 5281765 N		Clasts:
Ice distance to outcrop <u>5.7e 20-30meent</u> .	Section/Sample Interval	Size range $2 - 10 cm$
Outcrop geology		% of sample 70 Shape angular
Shovel pit	- A hormon Soil + Dine send	Lithology <u>90 To Vol</u> . <u>10 To granitarth.</u>
Road cut	\$\$ 0.2-0.6m	Matrix:
Other exposure	1 metre	% of sample <u>90</u>
Additional notes Under over-turned		Colour <u>lightochne</u> Grain size class <u>Silt + fine 5 and</u>
Hoursites 12913		
	2 metres	



PROJECT: Barder Option Block A:	SAMPLE NO .: BBA-16-05,06 COLLECTED BY:	M. MICINAUD DATE: Aug 18/2016
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography Topof South-frame	Classification <u>Till</u> Structure <u>Matrix supported</u> compart till
Geology map no.		Structure Malux supported
Airphoto no.	Surficial material Vory And sand	compart till
UTM co-ord. 0496622 E		
(zone <u>17</u> ) <u>527990</u> N		Clasts:
Ice distance to		Size range <u>2-10 Cm</u>
outcrop	Section/Sample Interval	% of sample 10 %
Outcrop geology	0 metres $0 - 0.4 m$	Shape Angular
Shovel pit	0 metres 0-0.4 m - V. Jime - Ame Sand - org. to 0,2 m Simples. Do []? - med. orhe.	Lithology <u>95% V.R.</u>
Road cut	Suples Do A? - med. orher.	
Other exposure	$\begin{array}{c} 0.54 \\ 1 \\ \text{metre} \end{array} = \begin{array}{c} 0.4 \\ - \\ 1 \\ - \\ \end{array} \\ \end{array}$	Matrix: % of sample 90 %
Est. OB thickness L_2	- matrix supported.	Colour <u>lightochre</u> . Grain size class <u>GUV fine oand</u> .
Additional notes Duplicate sample BBA-16-06 collected at this site.		Grain size class <u>GUV fine oand</u> .
	2 metres	

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PROJECT: Bundu Option Block A.	SAMPLE NO.: BBA-16-07 COLLECTED BY:	M.MICHAUDDATE: Aug 19/2016
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no Geology map no Airphoto no	Topography <u>Very 5 hallow, south</u> <u>facing slope</u>	Classification <u>Till</u> Structure <u>Compact</u> , matrix <u>supported till</u> .
UTM co-ord. (zone $17$ ) $04966566$ $5241720$ EN $5241720$ NIce distance to outcrop $uwkwowww$ Outcrop geology	Surficial material $V_1$ Fine - Fine sund Section/Sample Interval 0 metres $0-0.1$ . 0  metres $0-0.4$ m. 0, -0.4 m. 0, -0.4 m. 0.4 - 0.8 1  metre $0.4 - 0.8-7.10$ . 2 metres $-7.10$ .	Clasts: Size range $2 - 10cm$ . % of sample $15\%$ Shape $Mngulan$ Lithology $100\% Vol$ . Matrix: % of sample $85\%$ Colour $Light orhne$ . Grain size class $silt + fine sand$ .



PROJECT: _	Bondy Option / BLock As	SAMPLE NO.: BBA -16-08 COLLECTED BY:	M. Michaud DATE: Angust 19/2016
	LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.		Topography <u>Flat lying</u>	Classification <u>7</u>
Geology map no.			Structure Marine Very compact Matin Supported.
Airphoto no.	0496237 E	Surficial material	
	5280100 N		Clasts: Size range <u> </u>
	· _ · _ ·	Section/Sample Interval	% of sample 15%
Outcrop geology		0 metres	Shape <u>Ançular</u>
Shovel pit		0 metres 20. 0-0.1 0.5 00 0 - 0.1 0.5 00 0 - 0.2 0.1-0.2	Lithology 100 2 Vol.
Road cut Other exposure		here crust that	Matrix: 858
Est. OB thickness	Clm	1 metre reginned breaking to access till	Colour <u>Light-ochie</u> . Grain size class <u>Silt &amp; Jime Sand</u> .
Additional notes	5tg 24	0.2-0.5	Grain size class <u>5 14 June Sand</u> .
		$2 \text{ metres}$ $- T \mathcal{U}^{-}$	



PROJECT: Bunda Option/Block A	SAMPLE NO .: BBA-16 - 0 4 COLLECTED BY:	M. MICHAUD DATE: Aug 19/2016
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography benerelly flut Lying	Classification
Geology map no.	- Connectly peter Cypie	Structure (our act, mating Supported, Cobbly.
Airphoto no.	Surficial material	- Supported ; Cours .
UTM co-ord. $\frac{0496413}{5279923}$ E		
$\begin{array}{c} (20 \text{ me} \underline{17}) & \underline{32} & (12) & \underline{17} \\ \text{Ice distance to} \\ \text{outcrop} & \underline{514} & \underline{30m} & \underline{5W} \\ \end{array}$	Section/Sample Interval	Clasts: Size range <u>2-206</u>
Outcrop geology		% of sample 10 %
	0 metres $0 - 0.1 m$	Shape <u>Sub-angular</u>
Shovel pit	A0 0-0.1 m 0-0.1 m 0.1-0.4 m	Lithology 100% USL
Road cut	E Till.	Matrix: 9 6 %
Other exposure	1 metre	% of sample <u>90 %</u>
Est. OB thickness		Colour <u>Light Ochre</u> . Grain size class <u>selt Mfme sand</u> .
Additional notes 57225		Grain size class <u>selt Pfine sand</u> .
Pit is on North sich of road.		
*	2 metres	



PROJECT: Bunder Option Block A:	SAMPLE NO.: BBA-16-10 COLLECTED BY:	M. MICHAND DATE: Ang 19/204
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography Malfway down a gently East-Facine slope	Classification <u>TU</u>
Geology map no		Structure <u>Compart</u> Matrix <u>supported</u>
Airphoto no.	Surficial material Till .	
UTM co-ord. 0496658 E (zone 17) 5280360 N		Clasts:
Ice distance to outcrop NA .	Section/Sample Interval	Size range <u>2 - 50 Cm</u>
Outcrop geology Volcanic	0 metres	% of sample <u>15 %</u>
Shovel pit	Aio 0,0-0,1 0,0 0,0 0,1-0,6	Shape <u>Ancular</u> Lithology <u>100 % Valconics</u>
Road cut	Till.	Matrix:
Est. OB thickness 0,6 m	1 metre 0.6 m - Volcanic Bedrock.	% of sample <u>85%</u> Colour Lidtorhe
Additional notes <u>5 te = 19</u>		Colour <u>Light or he</u> . Grain size class <u>self + Fine rand</u>
· · · · · · · · · · · · · · · · · · ·	2 metres	



PROJECT: Bandu Option Block A:	SAMPLE NO.: BBA-16-11 COLLECTED BY:	M. MIChand DATE: Aug 19/2016
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography <u>Half way</u> down west pricing slope.	Classification <u></u>
Geology map no.		Structure Compact unotrix Supported,
Airphoto no.	Surficial material	
$\begin{array}{ccc} \text{UTM co-ord.} & \underline{0496821} & \text{E} \\ \text{(zone } \underline{17} & \underline{5280274} & \text{N} \end{array}$		Clasts: $2 - 10$
Ice distance to outcrop SITE 20 MEAST	Section/Sample Interval	Size range $\frac{\lambda - 10 \text{ cm}}{5 \text{ C}}$
Outcrop geology Volcanics	0 metres $0 - 0.1 m$	
Shovel pit	0 metres $0 - 0.1 m$ 0 - 0.1 m 0 - 0.1 m	Shape <u>Angledon</u> Lithology <u>100 &amp; Volcouries</u>
Road cut	Till	Matrix:
Other exposure	1 metre	% of sample $\frac{952}{4}$
Est. OB thickness $\underline{-(M)}$		Colour <u>Cight orhre</u> . Grain size class <u>alt # fine sand</u> .
Additional notes 5707720		Grain size class <u>and</u> <i>fine sand</i> .
	2 metres	



PROJECT: Burder Option /Block A	SAMPLE NO.: BBA -16-12 COLLECTED BY:	M. MICHAND DATE: Aug 20/2016
LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography <u>Top of 3 m high</u> bed rock knob.	Classification <u>T</u> U
Geology map no.		Structure Matrix
Airphoto no.		supported, cobbly.
UTM co-ord. $0496373$ E	Surficial material Very fine Sand.	
(zone $17$ ) 5280407 N lce distance to		Clasts: Size range 2 – 20 cm
Outcrop geology Volcames.	Section/Sample Interval	% of sample 5
Outcrop geology	0 metres 0 - 0. 1 m	Shape Angular
Shovel pit	A. T. 0, 1-0, 3 m	Shape <u>Angulan</u> Lithology <u>100% Volcomes</u>
Road cut	#12 2 - Very fine - fine sand - mino pebbles.	
Other exposure	1 metre 0.3-0.6m	Matrix: 95 % of sample
Est. OB thickness O , 6 µm	Tel	Colour <u>Light-Ochre</u> Grain size class <u>Selt Phine scand.</u>
Additional notes	- Volconie Bedrock.	Grain size class <u>Sult Thing scand</u> .
	- Volcome Bedroch.	
	2 metres	

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PROJECT: Bunda Option / Plack A SAMPLE NO .: BBA-16-13 COLLECTED BY: M.MICMAND DATE: Aug 24/2016

LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography Top of North facing slope.	Classification <u>T</u>
Geology map no.		Structure Massive matrix supported colleg.
Airphoto no.	Surficial material Very fine & fine sand.	
UTM co-ord $0496600 = 17$ (zone $17$ ) $5280453 = N$		Clasts:
outcrop Site is 30 m North of Nord-side outcrop.	Section/Sample Interval	Size range 2-20 cm % of sample 15-6
Outcrop geology <u>Vo/canco</u>	0 metres 0 - 0.1 organics	
Shovel pit	D.1-0.3m	Shape <u>Angulan</u> Lithology <u>100 Evolcantas</u>
Road cut	#13 05/	Matrix: 852
Other exposure	1 metre	
Additional notes Site #18		Colour <u>Medin - Ochne</u> . Grain size class <u>Silt &amp; fine sand</u>
	2 metres	



PROJECT: Burda Option Block A SAMPLE NO.: BBA-16-14 COLLECTED BY: MICHAND DATE: Aug 20/2016

LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography Buse of West-facing slope (outerop ridge), Bog	Classification <u>Sundy</u> Till (poss, ble gravel)
Geology map no.	to the west .	Structure compact but loosens
Airphoto no.	Surficial material Very fine to fine	easily, cobbly, matin supported unsorted
UTM co-ord. $0495879 = 17$ (zone 17) $5280268 = N$	sand.	Clasts:
Ice distance to outcrop Site 10m west.	Section/Sample Interval	Size range $2 - 2 - 0$ cm
Outcrop geology Probable Volcanico (perched boulders).	0 metres 0-0.1m	% of sample <u>156</u> Shape <u>Subrounced</u>
Shovel pit	0,1-0.4m	Lithology <u>95% Volcomics</u> 5% cronterics
Road cut	# 14 0. A vory fine - fine	Matrix:
Other exposure		% of sample 75 %
Est. OB thickness	Sandy till (possible gravel.)	Colour <u>Light ochre</u>
Additional notes Site # 22	(pomble gravel.)	Colour <u>Light ochne</u> Grain size class <u>Silt</u> fine to <u>coarse seund</u> .
	2 metres	



PROJECT: Bunda Option Burk A SAMPLE NO.: 13BA-16-15 COLLECTED BY: M.MICHAND DATE: Aug 20/2016

LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography bentle North - paincy slope.	Classification <u>Ticl</u>
Geology map no.		Structure Compact, Matrix supported, cobbles.
Airphoto no.	Surficial material Very fine - Fine sand.	
UTM co-ord. (zone 17) $(zone to)$ $(zo$		Clasts: Size range <u>2-20cm</u>
outcrop <u>UNLIVOWIN</u> .	Section/Sample Interval	% of sample <u>15 %</u>
Outcrop geology	0 metres 0-0,1 m	Shape Angular
Shovel pit	#19 Act 0.1-0.3 m	Lithology 10006 Volumico
Road cut	#19 07. H Very fine - fine Sand.	Matrix: 85-8
Other exposure	1 metre 0.3-0,6 m	
Additional notes 5te #23	Tiel.	Colour <u>Light Ochre</u> . Grain size class <u>Silt Offine Sand</u> .
	2 metres	



PROJECT: Bunda Option Block A SAMPLE NO .: BBA-16-16 COLLECTED BY: M. MICHIAMO DATE: Aug 20/2016

LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography <u>Flat lying</u> .	Classification <u>Till</u>
Geology map no.		Structure Maising matix supported cobbly
Airphoto no.	Surficial material Very fine -fine sand.	
UTM co-ord. $0495793$ E (zone $17$ ) $5282074$ N		Clasts:
Ice distance to outcrop 30m west of outcrop	Section/Sample Interval	Size range 2-10 cm
Outcrop geology Volcanics.	0 metres	% of sample <u>10 %</u>
Shovel pit	1 0-0.1m	Shape <u>Angulan</u> Lithology 100% Volcanica
Road cut	# 16 40 0.1-0.2m	
Other exposure	1 metre	Matrix: <b>10</b> 7
Est. OB thickness C / M	0.2-0.5~	Colour <u>Light Ochne</u> Grain size class <u>Silt P Bine sand</u> .
Additional notes <u>Southof site</u> #5	Till.	Grain size class <u>SPt Phine sand</u> .
	2 metres	

OVERBI Bundu Option / PROJECT: Block ATRENCH:	FIELD	TRENCH	G MANAGEN I SAMPLING BBA 16 - :	
LOCATION/TOPOGRAPHY	Depth (Metres)	Graphic Log and Interval	Sample No.	Descriptive Log
NTS Map No.: UTM Coord: $\frac{0495731}{5280360}$ E Grid Coord: Airphoto Nos.: Topography/Site Description: CREST OF ESKAN Model ,	1		±17 ±18	- blaciofluvial Sand & gravel. - Bouldary, cobbly & unsorted. - coarse sand matrix - clasto are hounded. - 0-3.2 in * Sand & gravel sumpled. May not be processed.
Additional Notes: Site #21	4			May not be processed.
Assecond trench was dug 100 m east on the alge of the bog. Trench dug to +3 m in glaciofluvial 5Vg. IN 3 year old clear cut.	6 -			

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OVERBURDEN DRILLING MANAGEMENT LIMITED ODM Bunde Option / PROJECT: Block A TRENCH: #2 SAMPLE NOS.: BBA-16-19, 20 BBA-16-19, 20 GEOLOGIST: M.M.ICHAMPDATE: Aug. 21/2016 Graphic Log LOCATION/TOPOGRAPHY Depth Sample Descriptive Log and (Metres) No. Interval NTS Map No.: \_ 0-0,1 organico. UTM Coord: 049 5941 Ε #19 0,1-0.7 blacioflural 52-50698 N 9# 20 (duplicated - Sandly gravel Grid Coord: - Cobbly /bouldery (vounded) - Medum - Coorse sand matrice Airphoto Nos.: \_\_\_\_\_ 2 Topography/Site Description: 07-08 - Till Cenerally Flut lying. ~ 75 m west of bog \_\_\_\_ - Unsorted, matin supported. 3 - 20% lasta - 90 % volconies /10 % granitaids - subangular - silt & time and matine. - light ochre. Additional Notes: 5 te# 15 5 0.8m - Bechock in 3-year ald clean cut. - unmineralized Volcanic. 6 Sample # 20 is a duplicate - possible 139°? 8



LOCATION	SURFICIAL GEOLOGY	SAMPLE MATERIAL
NTS map no.	Topography West Focing ploppe.	Classification <u>Scindy</u> Till
Geology map no		Structure Bouldary/Cobbles insorted, locre matrix
Airphoto no.	Surficial material Very fine - fine Same	
$\begin{array}{c} \text{UTM co-ord.} \\ \text{(zone } 17 \text{)} \\ \hline 5240616 \\ \hline \end{array}$	<u>E</u> <u>N</u>	– Clasts: Size range <u>2 – 30 cm</u>
Ice distance to outcrop Unknown	Section/Sample Interval	Size range $2 - 70 cm$ % of sample $20 c$
Outcrop geology	0 metres 0-0, lorgonica	. Shape <u>Subousulan</u> Lithology 100 & Volcomes.
Shovel pit	0 metres 0,1-0,10rgonica 0,1-0,4m Veryfine to fine 30 Scord.	Lithology 100 & Volcomes.
Road cut	Tal 034 0.4-0.7m	
Other exposure	1 metre 5 andy Till-	% of sample
Additional notes 5tc.16		Matrix:       Fire Scincl (minor)         % of sample       Fire Scincl (minor)         Colour       Fire Scincl (minor)         Grain size class       Fire Scincl (minor)
	2 metres	

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Appendix C

Heavy Mineral Processing Weights, Physical Characteristics of the Till Samples, Gold Grain Summaries and Descriptions, and Calculated Visible Gold Values for the Till Samples



Overburden Drilling Management Limited Unit 107, 15 Capella Court Nepean, Ontario, Canada, K2E 7X1 Tel: (613) 226-1771 Fax: (613) 226-8753 odm@storm.ca www.odm.ca

	Laboratory Data Report
Client Information	
Mr. T. A. Young Suite 3123, 595 Burrard Street PO Box 49139, Three Bentall Centre Vancouver, BC V7X 1J1	
<u>timothy_a_young@yahoo.ca</u>	jkleinboeck@gmail.com
Attention: Mr. Tim Young	
Data-File Information	
Date: Project name:	September 30, 2016 Burda Project
ODM batch number: Sample numbers: Data file:	7281 BBA-16-01 to 21 20167281 - Young - Burda - (BBA-16) - September 2016
Number of samples in this report: Number of samples processed to date: Total number of samples in project:	21 21 21
Preliminary data: Final data: Revised data:	x
Sample Processing Specifications	

- 1. Submitted by client: Glacial till and alluvial sand and gravel samples prescreened to -8.0 mm in the field.
- 2. One ±500 g archival split taken, ± 200 g of each sieved to -0.063 mm.
- 3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.

Notes

Remy Huneault, P.Geo. President

#### **Primary Processing Sample Weights and Descriptions**

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

	T								5	Screen	ing an	d Shaki	ng Tal	ole Sa	mple D	escript	ions	
	1						Clast	s (+2.0	mm)*				Matr	ix (-2.0	) mm)			
		We	ight (kg w	ret) ·				Perce	entage			Di	stributi	on		Col	our	
		Archived	Table	+2.0 mm														
Sample Number	Bulk Rec'd	Split	Split	Clasts*	Table Feed	Size	V/S	GR	LS	OT	S/U	SD	ST	CY	ORG		CY	Class
BBA-16-01	10.2	0.5	9.7	5.1	4.6	Р	95	5	0	0	S	MC	-	Ν	Y	DOC	OC	SAND + GRAVEL
BBA-16-02	12.0	0.5	11.5	6,8	4.7	Р	90	10	0	0	S	MC	-	N	Y	DOC	OC .	SAND + GRAVEL
BBA-16-03	12.3	0.5	11.8	5.0	6.8	P	80	20	0	0	S	MC	-	Ν	Y	DOC	OC	SAND + GRAVEL
BBA-16-04	11.2	0.5	10.7	4.3	6.4	Р	90	10	0	0	U	+	Y	Ν	Y		OC	TILL
BBA-16-05	11.8	0.5	11.3	3,0	8.3	Р	95	5	0	0	ļυ	+	Y	Ν	Y		OC	TILL
BBA-16-06	12.1	0.5	11.6	3.6	8.0	Р	90	10	0	0	U	+	Y	N	Y		OC	TILL
BBA-16-07	12.1	0.5	11.6	2.8	8.8	P	90	10	0	0	U	+	Y	-	Y		OC	TILL
BBA-16-08	11.9	0.5	11.4	2.4	9.0	Р	95	5	0	0	U	Y	+	Ν	Y	OC	OC	TILL
BBA-16-09	11.2	0.5	10.7	1.5	9.2	Р	95	5	0	0	U	+	Y	Ν	Y	oc	OC	TILL
BBA-16-10	11.5	0.5	11.0	1.4	9.6	Р	100	0	0	0	U	+	Y	N	Y	oc	oc	TILL
BBA-16-11	12.0	0.5	11.5	2.4	9.1	Р	100	0	0	0	U	+	Y	N	Y	OC	oc	TILL
BBA-16-12	12.5	0.5	12.0	1.4	10.6	Р	100	0	0	0	U	+	Y	N	Y	LOC	OC	TILL
BBA-16-13	12.1	0.5	11.6	3.5	8.1	Р	100	0	0	0	U	+	Y	N	Y	DOC	00	TILL
BBA-16-14	11.5	0.5	11.0	2.4	8.6	Р	90	10	0	0	U	+	Y	N	Y	OC	OC	TILL
BBA-16-15	12.1	0.5	11.6	2.4	9.2	Р	95	5	0	0	υ	+	Y	Ν	Y	OC	OC	TILL
BBA-16-16	11.5	0.5	11.0	2.3	B.7	Р	95	5	0	0	υ	+	Y	Ν	Y	LOC	OC	TILL
BBA-16-17	11.8	0.5	11.3	4.9	6.4	Р	90	10	0	0	s	MC	•	Ν	Y	LOC	OC	SAND + GRAVEL
BBA-16-18	12.0	0.5	11.5	3.6	7.9	Р	90	10	O Ì	0	s	MC	-	N	Y	LOC	oc	SAND + GRAVEI
BBA-16-19	12.4	0.5	11.9	4.7	7.2	Р	95	5	0	0	υ	+	Y	Ν	Y	LOC	OC	TILL
BBA-16-20	12.2	0.5	11.7	4.2	7.5	Р	95	5	0	0	υ	+	Y	N	Y	LOC	oc	TILL
BBA-16-21	12,4	0.5	11.9	3.4	8.5	Р	95	5	0	0	U	+	Y	N	Y	oc	OC	TILL
Semples preserve	ened to -8 (	mm in the	field								•							

\*Samples prescreened to -8.0 mm in the field.

### **Gold Grain Summary**

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

	Num	Number of Visible Gold Grains				Calculated PPB Visible Gold in HMC				
			:		Nonmag HMC Weight					
Sample Number	Total	Reshaped		Pristine	(g)*	Total	Reshaped		Pristine	
BBA-16-01	7	5	2	0	18.4	84	83	2	0	
BBA-16-02	15	13	2	0	18.8	3988	3983	5	0	
BBA-16-03	23	16	3	4	27.2	711	676	10	26	
BBA-16-04	27	19	3	5	25.6	83	72	1	11	
BBA-16-05	37	25	6	6	33.2	149	122	18	8	
BBA-16-06	22	17	4	1	32.0	116	105	5	6	
BBA-16-07	51	43	8	0	35.2	490	452	38	0	
BBA-16-08	49	31	16	2	36.0	82	67	15	1	
BBA-16-09	29	21	6	2	36.8	127	114	7	5	
BBA-16-10	41	29	11	1	38.4	245	240	6	<1	
BBA-16-11	32	29	2	1	36.4	297	296	1	<1	
BBA-16-12	31	29	2	0	42.4	103	101	2	0	
BBA-16-13	10	10	0	0	32.4	18	18	0	0	
BBA-16-14	36	25	9	2	34.4	413	403	9	<1	
BBA-16-15	22	18	4	0	36.8	49	46	3	0	
BBA-16-16	18	17	1	0	34.8	276	276	<1	0	
BBA-16-17	0	0	0	0	25.6	0	0	0	0	
BBA-16-18	3	3	0	0	31.6	7	7	0	0	
BBA-16-19	17	16	1	0	28.8	208	207	1	0	
BBA-16-20	20	17	3	0	30	157	155	2	0	
BBA-16-21	32	31	0	1	34.0	65	65	0	<1	

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

	Dime	nsions ()	um)	Numbe	r of Visible	e Gold Gr	ains	Nonmag HMC	Calculated V.G. Assay	
Sample Number	Thickness	Width	Length	Reshaped	Modified	Pristine	Total	Weight* (g)	in HMC (ppb)	Metallic Minerals in Pan Concentrate
BBA-16-01	3 C 5 C 8 C 13 C 18 C	15 25 25 50 75	15 25 50 75 100	1 2 1 1	1 1		1 2 2 1 1 7	18.4	<1 3 8 19 54 84	No sulphides.
BBA-16-02	5 C 8 C 10 C 13 C 13 C 18 C 20 C 20 C 25 C 29 C 50 C 54 C	25 25 50 50 75 75 100 100 150 300	25 50 75 100 100 125 100 150 150 400 300	1 2 1 3 1 1 1 1	1		1 1 2 1 3 1 1 1 1 1 5	18.8	1 4 8 38 30 53 224 80 148 263 1201 1939 3988	No sulphides.
BBA-16-03	3 C. 5 C 8 C 10 C 10 C 13 C 15 C 15 C 15 C 18 C 29 C 34 C	15 25 25 50 50 50 75 75 75 100	15 25 50 75 50 75 100 200 75 100 125 200 250	2 1 2 1 1 2 1 1 1 1 1	1 1 1	1 2 1	2 2 3 1 4 2 1 1 3 1 1 1 1 2 3	27.2	<1 2 8 5 28 26 21 68 71 36 52 161 232 711	No sulphides.
BBA-16-04	3 C 5 C 8 C 10 C 10 C 13 C 15 C	15 25 25 50 50 50	15 25 50 75 50 75 100	4 6 5 2 1 1	3	1 2 1 1	8 6 1 2 1 1 27	25.6	2 8 17 6 15 14 22 83	No sulphides.
BBA-16-05	3 C 5 C 8 C 10 C 10 C 13 C 15 C 18 C	15 25 25 50 50 50 75	15 25 50 75 50 75 100 100	2 6 4 5 1 1 1	2 2 1 1	2 3 1	6 11 4 5 7 2 1 1 37	33.2	1 8 9 22 41 22 17 30 149	No sulphides.

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

	Dimer	nsions (j	ım)	Numbe	r of Visible	e Gold Gr	ains	Nonmag HMC	Calculated V.G. Assay	
Sample Number	Thickness	Width	Length	Reshaped	Modified	Pristine	Total	Weight* (g)	in HMC (ppb)	Metallic Minerals in Pan Concentrate
BBA-16-06	3 C 5 C 8 C 10 C 10 C 13 C 15 C 15 C	15 25 25 25 50 50 50 75	15 25 50 75 50 75 100 75	1 2 6 1 3 1 2 1	1 1 2	1	2 3 8 1 4 1 2 1 22	32.0	<1 2 18 5 24 11 36 20 116	No sulphides.
BBA-16-07	3 C 5 C 8 C 10 C 13 C 15 C 18 C 22 C 22 C	15 25 25 50 50 75 75 100	15 25 50 75 50 75 100 100 150 125	4 5 8 1 10 5 4 3 1 2	2 1 1 2 2		6 5 9 2 12 7 4 3 1 2 51	35.2	1 3 19 8 66 71 65 84 54 119 490	No sulphides.
BBA-16-08	3 C 5 C 8 C 10 C 10 C 13 C	15 25 25 25 50 50	15 25 50 75 50 75	9 10 3 8 1	10 3 1 1 1	1 1	20 14 4 1 9 1 49	36.0	3 9 8 4 48 10 82	7 grains pyrite (50-100μm).
BBA-16-09	3 C 5 C 8 C 10 C 10 C 13 C 27 C	15 25 25 25 50 50 75	15 25 50 75 50 75 200	4 12 2 2 1	3 1 1 1	1	8 13 3 1 1 2 1 29	36.8	1 9 6 4 5 19 82 127	No sulphides.
BBA-16-10	3 C 5 C 8 C 10 C 13 C 15 C 25 C 18 C	15 25 50 50 50 75 75	15 25 50 50 75 100 175 100	4 9 5 2 5 1 2 1	5 5 1	1	10 14 6 2 5 1 2 1 41	38.4	1 9 11 10 47 15 127 26 245	No sulphides.
BBA-16-11	3 C 5 C 8 C 10 C 13 C 18 C 20 C 34 C	15 25 50 50 75 100 100	15 25 50 50 75 100 100 250	7 8 6 3 2 1 1 1	<b>1</b> 1	1	9 9 6 3 2 1 1 1 32	36.4	1 6 12 16 20 27 41 174 297	1 grain galena (75µm).

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

		imer	nsions (µm)		Numbe	r of Visible	Gold Gra	ains	Nonmag HMC	Calculated V.G. Assay	
Sample Number	Thick	ness	Width	Length	Reshaped	Modified	Pristine	Total	Weight* (g)	in HMC (ppb)	Metallic Minerals in Pan Concentrate
BBA-16-12	3	C	15	15	4	1	Thathe	5	(9/	1	No sulphides.
	5	С	25	25	17			17		10	
	8	Ċ	25	50	2	1		3		5	
	10	C	25	75	1			1		3	
	10	c	50	50	3			3		14	
	20	С	100	100	2			<u>2</u> 31	42.4	<u>71</u> 103	=
		_									
BBA-16-13	3	С	15	15	2			2		<1	No sulphides.
	5	C	25	25 50	5			5		4	
	8 10	с С	25 50	50 50	1 2			1 2		2 12	
	10	C	50	50	2		:	10	32.4	18	-
		_			_	_	_				
BBA-16-14	3	C	15	15	2	6	2	10		2	No sulphides.
	5	C	25	25	8	1 1		9		6 11	
	8 10	C C	25 50	50 50	4 2	1		5 3		17	
	13	c	50 50	50 75	2	I		3		31	
	15	č	50	100	1			1		17	,
	15	č	75	75	1			1		19	
	18	č	75	100	1			1		29	
	22	Ċ	75	150	1			1		55	
	27	С	75	200	1			1		88	
	29	С	125	175	1			1		140	
								36	34.4	413	
BBA-16-15	3	с	15	15	2	2		4		1	No sulphides.
	5	Ċ	25	25	9	1		10		7	·
	8	С	25	50	4	1		5		10	
	10	С	25	75	1			1		4	
	10	С	50	50	1			1		5	
	18	С	50	125	1		:	1 22	36.8	<u>22</u> 49	=
								22	30.0	49	
BBA-16-16	3	С	15	15	2	1		3		<1	1 grain pyrite (50µm).
	5	С	25	25	8			8		6	
	8	С	25	50	2			2		4	
	10	С	50	50	. 3			3		17	
	25	C	100	150	1			1		80	
	31	С	125	200	1			18	34.8	<u>170</u> 276	-
									0.10		
BBA-16-17	No Vis	sible	Gold								No sulphides.
	2	c	15	15	4			4		<1	No subbidos
BBA-16-18	3	C	15 25	15 25	1			1 1		<1 1	No sulphides.
	5 10	с с	25 50	25 50	1 1			1		6	
	10	U	50	00	I			3	31.6	U	

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

	D	imen	sions (j	rw)	Number	of Visible	e Gold Gr	ains	Nonmag HMC	Calculated V.G. Assay	
Sample									Weight*	in HMC	
Number	Thickr	ness	Width	Length	Reshaped	Modified	Pristine	Total	(g)	(ppb)	Metallic Minerals in Pan Concentrate
BBA-16-19	3	С	15	15	2			2		<1	No sulphides.
	5	С	25	25	7	1		8		7	
	8	С	25	50	1			1		3	
	10	С	50	50	2			2		13	
	13	С	50	75	1			1		12	
	22	Ċ	50	175	1			1		51	
	20	С	75	125	1			1		49	
	22	С	100	125	1					73	_
								17	28.8	208	-
BBA-16-20	3	С	15	15	1	1		2		<1	No sulphides.
	5	С	25	25	7	2		9		7	
	8	С	25	50	3			3		7	
	10	С	25	75	1			1		5	
	10	С	50	50	1			1		6	
	13	С	50	75	1			1		12	
	15	С	50	100	2			2		38	
	25	С	75	175	1			1		81	
								20	30.0	157	
BBA-16-21	3	С	15	15	12		1	13		2	No sulphides.
	5	С	25	25	13			13		9	
	8	С	25	50	1			1		2	
	10	С	50	50	2			2		11	
	13	С	50	75	2			2		21	
	15	С	75	75	1					19	
								32	34.0	65	-

### -0.063 mm Clay-Silt Fraction Weights

Client: Mr. T. A. Young File Name: 20167281 - Young - Burda - (BBA-16) - September 2016 Total Number of Samples in this Report: 21 ODM Batch Number(s): 7281

			Archiv	al Split Weigh	t (g)		
				Si	eved Split		
						-0.063 mm	
						Analytic	al Split
Sample Number	Total	Excess	Total	+0.063 mm	Total	INA	ICP
BBA-16-01B		Inserted	Standard		41.3	27.4	13.9
BBA-16-01	503.7	192.4	311.3	293.8	17.5	11.7	5.8
BBA-16-02	454.5	121.3	333.2	316.5	16.7	12.3	4.4
BBA-16-03	494.0	177.0	317.0	297.3	19.7	14.4	5.3
BBA-16-04	449.7	132.2	317.5	237.2	80.3	27.7	52.6
BBA-16-05	569.3	291.5	277.8	181.5	96.3	28.5	67.8
BBA-16-06	522.1	305.3	216.8	147.0	69.8	28.1	41.7
BBA-16-07	470.4	243.2	227.2	130.9	96.3	31.3	65.0
BBA-16-08	408.6	185.8	222.8	112.6	110.2	25.8	84.4
BBA-16-09	486.8	295.9	190.9	94.6	96.3	27.5	68.8
BBA-16-10	433.8	224.3	209.5	97.2	112.3	29.1	83.2
BBA-16-11	505.6	321.1	184.5	103.1	81.4	26.9	54.5
BBA-16-12	369.3	160.7	208.6	154.1	54.5	30.3	24.2
BBA-16-12B			Standard		39.4	26.8	12.6
BBA-16-13	368.4	116.8	251.6	207.8	43.8	22.6	21.2
BBA-16-14	358.5	96.2	262.3	198.6	63.7	31.9	31.8
BBA-16-15	438.9	194.1	244.8	169.4	75.4	30.3	45.1
BBA-16-16	398.7	187.7	211.0	152.2	58.8	28.7	30.1
BBA-16-17	397.4	0.0	397.4	395.2	2.2	1.2-	
BBA-16-18	367.3	0.0	367.3	362.9	4.4	2.4	2.0
BBA-16-19	483.5	222.2	261.3	225.0	36.3	24.1	12.2
BBA-16-20	434.2	111.1	323.1	278.2	44.9	27.0	17.9
BBA-16-21	430.2	138.4	291.8	215.1	76.7	29.1	47.6

Appendix D

-0.063 mm Geochemical Analyses for the Till Samples

Quality Analysis ...



### Innovative Technologies

 Date Submitted:
 04-Oct-16

 Invoice No.:
 A16-10216

 Invoice Date:
 01-Nov-16

 Your Reference:
 ODM #1481

Overburden Drilling Management Ltd. 107-15 Capella Court Ottawa Ontario KZE 7X1 Canada

ATTN: Don Holmes

## **CERTIFICATE OF ANALYSIS**

23 Soil samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1D Enh INAA(INAAGEO) Code 1E Aqua Regia ICP(AQUAGEO)

#### REPORT **A16-10216**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

For values exceeding the upper limits we recommend assays.

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

Emmanuel Eseme , Ph.D. Quality Control

ACTIVATION LABORATORIES LTD.

41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5 TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613 E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com Results

Activation Laboratories Ltd.

### Report: A16-10216

Analyte Symbol	Au	Ag	As	Ва	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	lr	Мо	Na	Ni	Rb	Sb	Sc	Se	Sn	Sr	Та
Unit Symbol	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	%	ppm
Lower Limit	2	5	0.5	50	0.5	1	1	5	1	0.01	1	1	5	1	0.01	20	15	0.1	0.1	3	0.02	0.05	0.5
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
BBA-16-01B	< 2	< 5	6.4	510	2.8	1	25	85	6	5.01	11	< 1	< 5	4	1.83	< 20	46	0.7	15.1	< 3	0.08	< 0.05	< 0.5
BBA-16-01	< 2	< 5	8.5	170	12.3	< 1	9	84	< 1	2.62	8	< 1	< 5	< 1	1.42	< 20	< 15	< 0.1	6.2	< 3	< 0.02	< 0.05	< 0.5
BBA-16-02	< 2	< 5	10.9	310	10.9	< 1	12	109	2	2.48	8	< 1	< 5	< 1	1.87	< 20	48	0.3	7.9	< 3	< 0.02	< 0.05	< 0.5
BBA-16-03	7	< 5	9.5	350	12.6	< 1	15	109	< 1	2.55	8	< 1	< 5	< 1	1.88	< 20	< 15	< 0.1	7.6	< 3	< 0.02	< 0.05	< 0.5
BBA-16-04	9	< 5	11.3	360	11.9	< 1	15	145	< 1	2.74	7	< 1	< 5	< 1	2.24	< 20	82	< 0.1	13.2	< 3	< 0.02	< 0.05	< 0.5
BBA-16-05	< 2	< 5	4.8	420	7.5	< 1	9	110	2	2.17	7	< 1	< 5	< 1	2.29	270	< 15	< 0.1	7.6	< 3	< 0.02	< 0.05	< 0.5
BBA-16-06	< 2	< 5	5.3	310	6.7	< 1	10	116	2	2.19	7	< 1	< 5	< 1	2.25	< 20	< 15	0.2	7.4	< 3	< 0.02	< 0.05	< 0.5
BBA-16-07	< 2	< 5	6.1	340	6.3	2	14	147	< 1	2.47	9	< 1	< 5	< 1	2.08	160	32	< 0.1	8.1	< 3	< 0.02	< 0.05	< 0.5
BBA-16-08	< 2	< 5	15.5	370	4.7	< 1	27	91	2	2.13	9	< 1	< 5	< 1	2.00	520	36	0.2	7.6	< 3	< 0.02	< 0.05	< 0.5
BBA-16-09	< 2	< 5	3.1	400	7.6	< 1	11	95	< 1	2.07	8	< 1	< 5	< 1	1.99	< 20	39	< 0.1	6.9	< 3	< 0.02	< 0.05	< 0.5
BBA-16-10	9	< 5	4.8	400	6.8	2	8	94	2	2.06	8	< 1	< 5	< 1	1.95	< 20	< 15	< 0.1	7.2	< 3	< 0.02	< 0.05	< 0.5
BBA-16-11	< 2	< 5	4.7	400	8.2	< 1	10	109	2	2.29	8	< 1	< 5	< 1	2.21	< 20	< 15	0.2	7.6	< 3	< 0.02	< 0.05	< 0.5
BBA-16-12	< 2	< 5	4.5	380	5.9	< 1	12	143	< 1	2.21	8	< 1	< 5	< 1	2.38	< 20	< 15	< 0.1	8.1	< 3	< 0.02	< 0.05	< 0.5
BBA-16-12B	7	< 5	9.5	590	2.4	2	22	91	8	5.05	11	< 1	< 5	3	1.84	< 20	118	1.2	14.9	< 3	< 0.02	< 0.05	< 0.5
BBA-16-13	< 2	< 5	5.6	560	8.9	< 1	10	122	2	2.93	6	< 1	< 5	< 1	2.29	110	89	< 0.1	7.4	< 3	< 0.02	< 0.05	< 0.5
BBA-16-14	< 2	< 5	4.7	420	5.9	< 1	12	97	< 1	2.09	10	< 1	< 5	< 1	2.20	< 20	39	< 0.1	7.8	< 3	< 0.02	< 0.05	< 0.5
BBA-16-15	< 2	< 5	6.4	360	7.3	< 1	12	133	< 1	2.11	6	< 1	< 5	< 1	2.36	260	< 15	0.3	7.8	< 3	< 0.02	< 0.05	< 0.5
BBA-16-16	< 2	< 5	5.9	360	5.8	1	13	113	1	2.23	7	< 1	< 5	< 1	2.15	< 20	36	< 0.1	7.8	< 3	< 0.02	< 0.05	< 0.5
BBA-16-17	< 2	< 5	30.3	< 50	3.7	< 1	54	168	< 1	4.75	16	< 1	< 5	< 1	2.10	< 20	< 15	< 0.1	13.3	< 3	< 0.02	< 0.05	< 0.5
BBA-16-18	< 2	< 5	21.3	< 50	6.0	< 1	33	101	< 1	3.29	14	< 1	< 5	< 1	1.92	< 20	< 15	< 0.1	9.7	< 3	< 0.02	< 0.05	< 0.5
BBA-16-19	6	< 5	8.8	420	< 0.5	1	14	142	< 1	2.57	6	< 1	< 5	< 1	2.59	< 20	< 15	0.3	9.6	< 3	< 0.02	< 0.05	< 0.5
BBA-16-20	< 2	< 5	7.4	440	2.4	< 1	15	135	< 1	2.47	6	< 1	< 5	< 1	2.65	< 20	65	0.2	9.8	< 3	< 0.02	< 0.05	< 0.5
BBA-16-21	< 2	< 5	6.3	380	9.7	1	12	109	2	2.16	8	< 1	< 5	< 1	1.99	< 20	46	0.2	7.4	< 3	< 0.02	< 0.05	< 0.5

Results

#### Activation Laboratories Ltd.

### Report: A16-10216

Analyte Symbol	Th	U	w	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass	Hg	Ag	Cd	Cu	Mn	Мо	Ni	Pb	Zn	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	ppm	%								
Lower Limit	0.2	0.5	1	50	0.5	3	5	0.1	0.2	0.5	0.2	0.05		1	0.2	0.5	1	2	2	1	2	1	0.001
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP									
BBA-16-01B	8.3	3.9	< 1	210	33.2	97	19	5.9	1.3	< 0.5	3.0	0.17	27.4	< 1	< 0.2	< 0.5	38	541	6	35	13	121	0.035
BBA-16-01	5.6	< 0.5	< 1	< 50	15.6	37	< 5	2.7	0.4	< 0.5	0.9	0.09	11.7	< 1	0.2	< 0.5	46	307	2	15	10	49	0.038
BBA-16-02	5.5	1.0	< 1	< 50	18.0	51	6	3.3	0.6	< 0.5	1.5	0.07	12.3	< 1	< 0.2	< 0.5	21	219	< 2	29	6	25	0.020
BBA-16-03	6.2	0.8	< 1	< 50	16.6	43	17	3.0	0.4	< 0.5	0.9	0.07	14.4	< 1	< 0.2	< 0.5	15	211	< 2	36	5	24	0.026
BBA-16-04	7.2	3.1	< 1	< 50	45.4	78	63	8.2	1.6	< 0.5	2.0	0.13	27.7	< 1	< 0.2	< 0.5	49	249	< 2	48	8	19	0.015
BBA-16-05	5.4	1.4	< 1	< 50	15.2	54	8	2.6	0.6	< 0.5	1.0	0.06	28.5	< 1	< 0.2	< 0.5	27	140	< 2	43	5	15	0.013
BBA-16-06	5.1	1.0	< 1	80	14.7	52	17	2.6	0.6	< 0.5	1.1	< 0.05	28.1	< 1	< 0.2	< 0.5	24	134	< 2	40	4	14	0.012
BBA-16-07	6.9	1.6	< 1	< 50	18.2	64	11	3.1	0.7	< 0.5	1.2	0.07	31.3	< 1	< 0.2	< 0.5	10	193	< 2	55	3	15	0.008
BBA-16-08	5.4	1.7	< 1	420	22.4	44	19	3.7	0.9	< 0.5	1.5	0.08	25.8	< 1	< 0.2	< 0.5	81	186	< 2	417	5	504	0.015
BBA-16-09	5.9	1.0	< 1	< 50	15.0	45	13	2.6	0.6	< 0.5	1.0	0.06	27.5	< 1	< 0.2	< 0.5	10	270	< 2	55	5	21	0.013
BBA-16-10	5.2	1.3	< 1	< 50	18.8	52	15	3.2	0.7	< 0.5	1.3	0.07	29.1	< 1	< 0.2	< 0.5	17	147	< 2	48	5	17	0.012
BBA-16-11	6.4	1.3	< 1	< 50	16.1	40	11	2.7	0.6	< 0.5	1.2	0.05	26.9	< 1	< 0.2	< 0.5	10	142	< 2	27	3	17	0.014
BBA-16-12	5.6	1.5	< 1	< 50	16.2	60	20	2.9	0.6	< 0.5	1.1	0.05	30.3	< 1	< 0.2	< 0.5	13	190	< 2	55	4	16	0.007
BBA-16-12B	7.8	4.1	< 1	140	32.4	102	30	6.0	1.4	< 0.5	3.2	0.16	26.8	< 1	< 0.2	< 0.5	38	574	5	40	14	127	0.022
BBA-16-13	6.4	1.6	< 1	70	13.2	44	9	2.3	0.7	< 0.5	1.1	0.05	22.6	< 1	< 0.2	< 0.5	25	184	< 2	39	6	41	0.026
BBA-16-14	7.0	< 0.5	< 1	< 50	19.4	56	13	3.5	0.7	< 0.5	1.3	0.06	31.9	< 1	< 0.2	< 0.5	8	182	< 2	28	3	14	0.007
BBA-16-15	4.3	< 0.5	< 1	< 50	13.7	55	12	2.6	0.6	< 0.5	1.1	0.06	30.3	< 1	< 0.2	< 0.5	18	165	< 2	49	4	16	0.010
BBA-16-16	5.3	2.6	< 1	60	14.6	41	7	2.5	0.5	< 0.5	1.3	< 0.05	28.7	< 1	< 0.2	< 0.5	13	183	< 2	44	4	19	0.011
BBA-16-17	14.8	< 0.5	< 1	< 50	47.6	402	75	7.3	0.4	< 0.5	2.8	0.27	1.20	< 1	< 0.2	< 0.5	180	1040	2	69	23	36	0.015
BBA-16-18	12.3	< 0.5	< 1	< 50	33.0	165	34	5.4	1.3	< 0.5	1.9	0.22	2.40	< 1	< 0.2	< 0.5	79	721	< 2	51	14	31	0.016
BBA-16-19	7.3	2.2	< 1	< 50	20.6	127	20	3.5	0.8	< 0.5	1.4	0.05	24.1	< 1	< 0.2	< 0.5	58	305	< 2	44	12	23	0.024
BBA-16-20	6.2	1.4	< 1	< 50	20.9	125	16	3.7	0.8	< 0.5	1.3	0.07	27.0	< 1	< 0.2	< 0.5	49	274	< 2	41	11	21	0.021
BBA-16-21	5.8	1.9	< 1	< 50	17.1	48	13	3.0	0.8	< 0.5	1.3	0.07	29.1	< 1	< 0.2	< 0.5	14	154	< 2	29	6	15	0.015

#### Activation Laboratories Ltd.

### Report: A16-10216

Analyte Symbol	Au	As	Ва	Co	Cr	Fe	Na	Sb	Sc	U	La	Ce	Sm	Hg	Ag	Cd	Cu	Mn	Мо	Ni	Pb	Zn	S
Unit Symbol	ppb	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Lower Limit	2	0.5	50	1	5	0.01	0.01	0.1	0.1	0.5	0.5	3	0.1	1	0.2	0.5	1	2	2	1	2	1	0.001
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas														3	28.0	1.7	1050	751	13	30	603	612	0.191
GXR-1 Cert														3.90	31.0	3.30	1110	852	18.0	41.0	730	760	0.257
GXR-4 Meas														< 1	3.6	< 0.5	6470	151	330	37	61	87	1.708
GXR-4 Cert														0.110	4.0	0.860	6520	155	310	42.0	52.0	73.0	1.77
GXR-6 Meas														< 1	0.3	< 0.5	69	963	< 2	23	106	118	0.157
GXR-6 Cert														0.0680	1.30	1.00	66.0	1010	2.40	27.0	101	118	0.0160
SdAR-M2 (U.S.G.S.) Meas														1		4.5	247		14	48	784	765	
SdAR-M2 (U.S.G.S.) Cert														1.44		5.1	236.0000		13.3	48.8	808	760	
DMMAS 120 Meas	756	1900	970	46	145	3.45	2.04	7.3	6.4	14.7	17.2	32	2.6										
DMMAS 120 Cert	727	1790	1270	47.0	138	3.54	2.16	7.30	6.50	11.7	17.6	32.0	2.70										
DMMAS 120 Meas	838	1850	970	48	174	3.60	2.01	7.8	6.4	12.2	17.0	39	2.8										
DMMAS 120 Cert	727	1790	1270	47.0	138	3.54	2.16	7.30	6.50	11.7	17.6	32.0	2.70										
DMMAS 120 Meas	749	1810	990	46	147	3.54	2.02	6.9	6.5	14.3	17.3	34	2.5										
DMMAS 120 Cert	727	1790	1270	47.0	138	3.54	2.16	7.30	6.50	11.7	17.6	32.0	2.70										
Method Blank														< 1	< 0.2	< 0.5	< 1	< 2	< 2	< 1	< 2	< 1	< 0.001
Method Blank														< 1	< 0.2	< 0.5	< 1	< 2	< 2	< 1	< 2	< 1	< 0.001
Method Blank	< 2	< 0.5	< 50	< 1	< 5	< 0.01	< 0.01	< 0.1	< 0.1	< 0.5	< 0.5	< 3	< 0.1										

#### Activation Laboratories Ltd.

Analyte Symbol	Ag	Br	Ca	Cs	Hf	Hg	lr	Мо	Ni	Rb	Se	Sn	Sr	Та	Th	w	Zn	Nd	Eu	Tb	Yb	Lu	Mass
	-	ppm	%	ppm	ppm	-	ppb	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g
Lower Limit	5	0.5	1	1	1	1	5	1	20	15	3	0.02		0.5	0.2		50	5			0.2	0.05	
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
GXR-1 Meas																							
GXR-1 Cert																							
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
DMMAS 120 Meas																							
DMMAS 120 Cert																							
DMMAS 120 Meas																							
DMMAS 120 Cert																							
DMMAS 120 Meas																							
DMMAS 120 Cert																							
Method Blank																							
Method Blank																							
Method Blank	< 5	< 0.5	< 1	< 1	< 1	< 1	< 5	< 1	< 20	< 15	< 3	< 0.02	< 0.05	< 0.5	< 0.2	< 1	< 50	< 5	< 0.2	< 0.5	< 0.2	< 0.05	1.00

