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# PROSPECTING AND GEOCHEMICAL SURVEY REPORT ON THE

**McBean Lake Property** 

UTM Zone 16 - NAD 83 Projection 531242E, 5499082N

NTS 42E/10

PREPARED BY: Harvey M. Buck.

December 11, 2016

INTRODUCTION1
LOCATION AND ACCESS
CLAIMS AND OWNERSHIP 1
PREVIOUS WORK
REGIONAL GEOLOGY
PROPERTY GEOLOGY9
WORK PROGRAM
HUMUS SAMPLING
PROSPECTING12
Lithologies12
Veining13
PROSPECTING SAMPLES14
DAILY WORK LOG14
CONCLUSION AND RECOMMENDATIONS17
Proposed Budget17
REFERENCES
STATEMENT OF QUALIFICATIONS19
APPENDIX 1 – Sample Location and Assay Map20
APPENDIX 2 – Rock and Humus Sample Assay Certificate

## TABLE OF CONTENTS

## **FIGURES**

Figure 1	McBean Lake Property Location	2
Figure 2	McBean Lake Claim Map	4
Figure 3	McBean Property Regional Geology Map	8
Figure 4	McBean Lake Property Geology1	0
Figure 5	Photo of the 3 vein sets1	3
Figure 6	Humus Au Results over magnetic target1	6

## TABLES

Table 1	Property Claims List
Table 2	Mine Production Statistics, Geraldton, Ontario
Table 3	Assay Results for 2014 Sampling

## <u>MAPS</u>

Map 1	Prospecting and Humus	Sample Map (1: 5 000)

## INTRODUCTION

This report presents and summarizes the results of a 3 day prospecting and geochemical sampling work program, completed during the period of October 23<sup>rd</sup> and October 26<sup>th</sup>, 2016, on the Skinner property in the McBean Lake area (Figure 2) of the Thunder Bay Mining District. The field work, interpretation and report were completed by Harvey M. Buck of Thunder Bay, Ontario.

## LOCATION AND ACCESS

The Skinner property is located in the McBean Lake area, approximately 20 kilometres east of Geraldton, 8 kilometres south of Longlac, in the Thunder Bay Mining Division, NTS sheet 42E/1. See Figures 1 &2. Access for prospecting was by ATV from an abandoned sand/gravel pit 25 kilometres south of the town of Long Lac on the haulage road to Terrace Bay. A disused logging road, now an ATV trail, goes 3.3 km to the NNW and crosses the Making Ground River on a trapper's bridge. Approximately 140 m after the bridge, the trail splits. The left fork goes for 1 km to the southeast shore of McBean Lake where a number of boats are stored. The right fork continues for 2.1 km to the adhoc McBean Creek Bridge. The previous three years has seen the bridge over McBean Creak in disrepair due to inactivity of the local trapper. This year contractors for Greenstone Gold Mines GP Inc. refurbished the bridge to allow grid cutting and geophysical crews access to Viper Property claims adjacent to the Skinner property.

### CLAIMS AND OWNERSHIP

The McBean Lake property consists of 3 contiguous staked claims, comprising approximately 337 hectares (Figure 2). A list of the claims can be found in Table 1 below. Note claim 4274598 is approximately 56 ha in size rather than the standard 64 ha for a 4 unit claim.

Township/Area	Claim	Recorded	Due Date	Units	Required	Applied	Reserve	Bank
MCBEAN LAKE	4282600	2016-Feb-11	2018-Feb-11	8	\$3,200	\$0	\$0	\$0
MCBEAN LAKE	4274598	2013-Dec-13	2016-Dec-13	4	\$1,600	\$1 600	\$2 759	\$0
MCBEAN LAKE	4274599	2013-Dec-13	2016-Dec-13	11	\$4,400	\$4 400	\$0	\$0

Table 1 McBean Lake Property Claims List



Figure 1 McBean Lake Property Location

## **PREVIOUS WORK**

No historical assessment data for the immediate area of the property is recorded before 1946. The Theresa Mine, located 5 kilometres to the northeast, produced 4,727 oz of gold and 198 oz of silver from 261,120 milled tons between 1935-1955.

Previous work is as follows:

1934-37	Initial gold discovery at the Theresa Mine site by Moses Fisher;
1024 20	Pully compliants limited and all and all user and dustions 2 (47 m of drilling)
1934-38	sinking of shafts 1 & 2: Theresa Mines Ltd. was incorporated
1046	Independent Mining undertakes line cutting: magnetic and geological
1940	surveys on the majority of the present day Skinner property,
1947-49	Shaft #3 at Theresa Mine sunk to 155 m; 10 934 m of drilling,
1950-53	Theresa Mine Mill operated at 106 tons per day; Shaft #3 deepened to 300m; 2 071 m surface and 15 202 m of underground drilling,
1954	Theresa Mine operations halted; patents suspended,
1969	O. Albert carried out trenching and stripping on a claim north of Milbean Lake
1970-72	Canadian Nickel Co. conducted a drill program in the McBean I ake
177072	area.
1978	Shell Canada Resources Ltd. optioned the property held by Roxmark
	Surveys completed an AEM survey with ground magnetic and EM
1007	Area dat flaw on AEM automatic area a 186 alaim group in the MaRoom
1987	Lake area for <i>Discovery West Corp</i> and <i>Roxmark Mines</i> ; follow-up
	prospecting, ground mag and EM surveys; two holes, 180 m, were
	drilled south of Skinner Creek between Skinner Lake and Milbean
	Lake,
1987-88	Duration Mines optioned the Theresa Mine property and dewatered the
	workings; completed 5 320 m of underground drilling, Duration Mines
	declared bankruptcy; the mine contractor, J.S. Redpath gained
	ownership of the property as compensation;
1996	1996 Cyprus Canada Inc. staked the original fifteen-claim block in
	June followed by 23 km of line cutting between Nov and Dec.



Figure 2 McBean Lake Claim Map

1997	An eleven hole, 1,851 metre BQ reconnaissance scale drill program was								
	completed by Cyprus Canada Inc. Seventy-four kilometre's of line for								
	Grid B were cut between June and August. Line cutting was								
	accompanied by a 58.9 kilometre mag/VLF survey. Geological								
	mapping was completed in August. A 13.7 km pole-dipole array IP								
	survey was completed during August. A 10 drill hole, 1,656 meter BQ								
	diamond drill program was conducted by Cyprus Canada Inc.								
	between October 7 <sup>th</sup> and 27 <sup>th</sup> , 1997								
2004	Andrew A. Tims staked two claims on June 9th, 2004								
2006	A sampling program of 50 "B" horizon and 50 Mobile Metal Ion (MMI)								
	media was undertaken by Andrew A. Tims on old grid lines on the property.								
2007	Two additional claims were staked on May 5th and 6th, 2007 for								
	Andrew A. Tims by SkyBridge Development. No work was completed								
	by SkyBridge and the option lapsed.								
2008	A 66 soil sample survey plus prospecting was completed over the core								
	of the property.								
2009	Two small magnetic/VLF surveys where completed covering the								
	northern end of McBean Lake and the southern shore of Milbean Lake.								
	A 10 sample prospecting program was completed on claim 30153127.								
2010	A prospecting and soil sampling work program was carried out over								
	claims 4253400 and 4221057.								
2013	Property restaked in current 3 claim configuration.								

Between 1934 and 1968, the Geraldton camp produced approximately 2.9 million ounces of gold at an average grade of 0.17 oz/ton from eleven, moderate to high grade underground operations. Production statistics for the Geraldton camp are listed in Table 2.

MINE	PERIOD	TONS	AU OZ.	AU OZ/T	PROD. RATE
1. MacLeod Cockshutt	1938-67	9 404 145	1 366 404	0.15	500-1 000
2. Little Long Lac	1934-53	1 780516	605 449	0.34	250
3. Mosher	1962-66	2 710 657	330 265	0.13	NA
4. Hardrock	1938-51	1 458 375	269 081	0.18	200-500
5. Magnet Consolidated	1938-51	359 912	152 089	0.42	100
6. Consolidated Mosher	1967-68	934 084	109 324	0.12	1000
7. Tombill	1838-42	190 622	69 120	0.36	100
8. Bankfield	1937-42	231 009	66 417	0.29	100
9. Jellex	1939-40	14 722	5 672	0.39	45
10. Theresa	1950-55	26 120	4 727	0.15	106
11. Talmora	1948	6 634	1 417	0.21	50
TOTALS	1934-68	17 102 074	2 974 293	0.17	50-1000

 Table 2

 Mine Production Statistics, Geraldton, Ontario

### **REGIONAL GEOLOGY**

The Beardmore-Geraldton Greenstone Belt has an average width of about 30 km and stretches for about 180 km from Lake Nipigon in the west to within 60 km of Paleozoic cover rocks in the east. It is dominated by a series of repetitive, east trending, isoclinally folded, steeply dipping mafic volcanic and turbiditic sedimentary units, believed to represent tectonically imbricated stratigraphy from accretionary wedge (Williams, 1986, 1987; Devaney and Williams, 1989). Zones of laterally extensive but thin magnetite iron formation occur within the sedimentary rocks and can be traced magnetically from Lake Nipigon through to the McBean Lake area. The supracrustal units are intruded by syn to post-tectonic gabbro, diorite, tonalite and quartz-feldspar porphyries. During the Proterozoic, all lithologies were intruded by northwest-trending diabase and lesser lamprophyre dikes. Regional structures suggest that the belt is a north facing assemblage (Kresz and Zayachivsky 1993). The Geraldton Gold camp is underlain by the eastsoutheast striking sediment-volcanic Barton Bay synclinorium (Figure 3a). The sediments are comprised of Precambrian turbidite assemblages with interbeds of banded iron formation and lesser mafic volcaniclastic rocks of the Southern Sedimentary unit (Kresz & Zayachivsky, 1991). Semi-conformable sills of diorite/gabbro, including quartz and quartz-feldspar porphyry intrude these formations. The sediments/volcanics and intrusives have been deformed into tight large and small-scale isoclinal folds. Later intrafold and drag folds have been superimposed on these structures. To the north, the synclinorium is bound by a sequence of mafic volcanic flows and to the south by a major east-southeast tectonic structure known as the Barton Bay deformation zone (BBDZ). See Figure 3a and 3b.

The supracrustal rocks forming the tectono-stratigraphic sequence of Beardmore – Geraldton Belt belt can be subdivided into 3 pairs of east-striking sub-belts informally referred to as: the northern metasedimentary sub-belt (NMB), northern volcanic sub-belt (NVB), central metasedimentary sub-belt (CMB), central volcanic sub-belt (CVB), southern metasedimentary sub-belt (SMB) and southern volcanic sub-belt (SVB). The Longlac fault, which trends NNE through Longlac Lake divided the belt into two metamorphic assembages. Greenschist is the dominant

metamorphic grade within the belt west of the Longlac Fault but could ranges up to upper greenschist to amphibolite grade in west of Longlac (Smyk et.al., 2005). The faults have been offset by the Longlac fault producing a horizontal offset of 1 kilometre and a significant displacement in the vertical sense.

Two prominent east-west deformation zones (Barton Bay and McBean lake Deformation Zones) have been recognized in the area with the Barton Bay structure closely associated with iron formation and gold mineralization at Geraldton. In the Geraldton area, the deformation zone is approximately 3.0 kilometres wide and trends ESE. The deformation zone swings ENE to NE in the area of the McBean Lake property, apparently deflected or otherwise influenced by the Croll Lake intrusion (Kresz and Zayachivsky 1993).



Figure 3 McBean Property Regional Geology Map

#### **PROPERTY GEOLOGY**

The McBean property is underlain by an east-west striking, steeply south dipping fine to medium grained volcano-sedimentary succession. A mafic volcanic unit known as the Eldee Lake Volcanic unit (ELV) occupies the northmost 100 m of the property with a poorly sorted biotitic greywacke to the south (Figure 3b). Northnorthwest striking diabase and aplite dykes intrude these lithological units. The 150 to 200 metre wide ELV assemblage consists of tholeiitic, massive and pillowed flows as well as tuffs and minor lapilli tuffs all exhibiting varying degrees of recrystallization as indicated by the presence of metamorphic amphiboles and locally garnets. The southern greywacke package is fine grain and weakly bedded with graded bedding indicating tops to the south. The contact with the northern sediments and the ELV unit is marked by a strong, continuous AEM anomaly, which corresponds to the Barton Bay fault zone (BBFZ) as described by Kresz S Zayachivsky (1991). The southern contact between the ELV and greywacke succession was not located in outcrop. In close proximity of the contact the ELV becomes strongly altered by ankerite and chlorite and the greywacke moderately fractured and intruded by quartz with a moderate ankerite staining. Drilling by previous operators along this contact, McBean Lake Fault, described the structure as a black line fault or a centimetre-scale gouge occasionally accompanied by fault bounded repetition of lithologies on the meter-scale.

## WORK PROGRAM

The work program consisted of prospecting and a humus sampling. The two aims of the work program was to: 1) trace out the gold horizon intersected in the 1997 drill by Cyprus Canada 300 m to the east of claim 4282600 and, 2) to field check an irregularity in the magnetic data on claim 4274599. The target area 1) encompassed the mafic–sediment contact along the McBean Lake structure where the lithological contacted is overprinted by a biotite-amphibole-garnet alteration envelope with fine-grained arsenopyrite present within deformed blue-grey quartz veinlets.



Figure 4 McBean Lake Property Geology

Area 2) is south of McBean creek in a portion of the property that has seen little exploration due to the blanketing Quaternary deposit of a bouldery till and low lying topography typified by cedar and tamarack swamp. Humus sampling was chosen as the preferred tool to remotely test the magnetic anomaly as there was outcrop within 100 m of the traverse line and it the geochemical method was effective elsewhere on the property. The end goal of the work program was to identify areas for overburden stripping.

The above fieldwork was carried between October 24<sup>th</sup> October 30<sup>th</sup>,2016. Traverses were completed by pace and compass. Sample locations were recorded in UTM NAD83 coordinates with a Garmin 76Cx.

## HUMUS SAMPLING

A single 300 m north-south traverse line was used to undertake the survey. Samples were taken every 25 m using a hand soil auger. Humus samples were taken below the lowermost leave litter layer to just above to grey oxidized horizon. Humus sample material varied from brown to black and dry to wet with the majority of the wet humus being very black peat-like material. The southernmost three samples sites possessed a thinnest humic layer less than 30 cm over a base of coble and boulders.

Pace and compass was used to make the sample traverses with locations recorded by a Garmin 76Cx. Sample media was placed into Kraft soil bags, folded closed and strung onto rope. Field data for each sample was recorded on custom designed data sheets. Data collected included: sample number, sample location in both grid as well as UTM coordinates, altitude, depth, vegetation type, colour, sample type, topography, slope direction, texture, plus a section for noting comments or cultural features (see appendix 3). Quality assurance and control of the geochemical data involved taking duplicates at the end of the traverse line. A total of 15 humus soils were hung to dry until delivery to the Activation Laboratories Ltd. (Actlab) preparation lab in Thunder Bay by the author. At Actlabs, 34 elements were determined in each humus sub-sample. The elements are measured as well as in replicated reference standards using Instrumental Neutron Activation Analysis (INNA) multi-element techniques. This technique provides for ultimate sensitivity for gold and other trace elements. Gold is determined to a detection limit of one (1) ppb. Under Actlab's Code 2A for the INNA analyses of humus samples, the organic humus material is dried at temperatures below 60°C, macerated and a 15 gram aliquot is compressed into a briquette and analyzed using Code 2A. The briquettes are irradiated and their gamma ray spectra are measured and quantified. The advantages of this technique are simplicity and less chance for human error, contamination and loss of gold (such as occurs in ashing). The samples are analyzed in random order.

## PROSPECTING

## Lithologies

Outcrop prospecting encountered greywacke or diabase. A description of each is as follows:

- Greywacke (coded S3G) is a light to grey-green, poorly sorted, massive to coarsely bedded sediment. The matrix is recrystallized and typically contains 20-50% quartz, <20% feldspar, 5-10% biotite with trace porphyroblasts of amphibole.
- Biotitic Greywacke (coded S3G) is a fine-grained, medium to dark grey, poorly sorted sediment that has undergone partial recrystallization. The matrix typically contains 30-40% quartz, <10% feldspar, 10-20% biotite plus 5-8% of amphibole and <5% garnet as porphyroblasts.</li>
- Diabase Dykes (coded 18) are massive, magnetic, weakly fractured dark grey units. The dykes are feldspar phyric with up to 50% medium grained subhedral plagioclase and have fine grained, dark coloured chill margins.

## Veining

The above sediment typically hosts three generations of quartz veining (Figure 5). The oldest vein generation is a glassy grey, averages 2-3 cm thick , exhibits pinchswell textures and are sub parallel to the foliation (100°/60S). These veins host minor iron oxide staining and erratic gold values. A second generation is significantly smaller and numerous, 2-5 mm in size, isoclinally folded and highlight the pervasive stretching lineation (31°/250°). The youngest vein set is a dirty white colour, subparallel to the local fracture pattern at 315° and exhibit only minor folding.



Figure 5 Photo of the 3 vein sets.

## PROSPECTING SAMPLES

All prospecting occurred on claim 4274598. Sample locations with gold assays are displayed on Map 1 in Appendix I. Table 2 below lists the gold as results.

Analyzis for gold in the twelve prospecting samples involved fire assay on a 30 gram split with an atomic absorption finish at Activation Laboratories in Ancaster Ontario after being delivered and prepped at ActLab's prep laboratory in Thunder Bay.

Table 3           Assay Results for 2016 Au Sampling												
Sample_No	UTME	UTMN	Lithology	Au_ppb								
130108	530701	5499498	Qv	< 5								
130109	530270	5499436	Qv	727								
130110	530231	5499430	Qv	157								
130201	530491	5499439	Qv	< 5								
130202	530489	5499457	Qv	< 5								
130203	530477	5499467	Qv	< 5								
130204	530470	5499480	Qv	< 5								
130205	530484	5499492	Qv	< 5								
130211	530493	5499523	Qv	< 5								
130212	530505	5499532	Qv	< 5								
130213	530541	5499534	Qv	< 5								
130214	530443	5499502	Qv	< 5								

### DAILY WORK LOG

- October 24, 2014: Travel to Long Lac from Thunder Bay picking up rented motor in Long Lac and then proceeding to the access point into the property. Hauled boat motor and equipment via the ATV into boat cached on McBean Lake. Repaired boat and tested motor;
- October 25, 2014: Revisited an outcrop (530273, 5499430) bleached during the 2014 work program along the old drill trail on claim 4274598. Took photos of the suite of quartz veins exposed by bleaching and recorded structural measurement. Noted additional moss pulling and sampling sites along

margins of outcrop by persons unknown..... Precipitation in the form of rain and then heavy sleet began by 1 pm. Return to ice covered boat and truck;

- October 26, 2014: Returned to claim 4274598 and began prospecting along the eastern north-south claim boundary. Most outcrops consisted of massive diabase. One sample, 130108, was collected from a strongly sericite altered greywacke exhibiting the three different vein generations;
- October 27, 2014: Returned to claim 4274598. During the walk in took two samples (130109 & 130110) of quartz veins from under recently fallen trees. Detailed prospecting of eastern claim boundary was completed to the number one post finding no outcrop to sample. Observed recent ATV/ARGO tracks on the drill trail and a freshly cut grid lines on adjacent property;
- October 28, 2014: Returned to claim 4274598. Started a new north-south traverse 250 m west of the eastern claim boundary. Numerous outcrops and fallen spruce made progress slow. Collected samples 130202 to 130205 and 130211 to 130214 along the traverse. All samples are grey quartz vein material hosted in sericite-altered greywacke. The exception being samples 130212 and 130213 which exhibited moderate biotite alteration of the greywacke matrix;
- October 29, 2014: Accessed claim 4274599 by traversing west from ATV trail near McBean Creek. The former ATV bridge along the beaver dam has been reconditioned possibly be the line-cutting crew noted earlier. Located the 1997 era 11+00S tieline and completed the humus sampling traverse collecting samples MBS1601 to MBS1615;
- October 30, 2014: Returned to McBean Lake to retrieve the motor and store the boat. Drove back to Thunder Bay;



Figure 6 Humus Au Results over magnetic target

## CONCLUSION AND RECOMMENDATIONS

The prospecting program was unable to locate the eastern extension of the historical gold horizon delineated in the 1997 drilling by Cyprus Canada. The results of outcrop bleaching confirmed the presence of a progressive folding history and a shallow stretching lineation, 30°SW, characteristic of the Beardmore-Geraldton Greenstone Belt.

The humus orientation survey over the magnetic anomaly on claim 4274599 did show a weak gold response along the northern margin of the magnetic high. The flat spruce-cedar terrain over the magnetic-humus target can only be test by diamond drilling during the winter months.

A budget of \$70,375 is proposed below.

## Proposed Budget

Mechanical stripping / trenching
Mob/Demob (from Thunder Bay)
Excavator (120 hours @\$175/hour) 21,000.00
Manning Prospecting and Sampling
1 geologist for 15 days @ \$600/day 9000.00
1 assistant for 15 days @ $$275 / day$
1 assistant for 15 days @ \$5757 day 5,625.00
Room and Board
2 people 15 days @ \$250/day 7,500.00
Pump, Hoses, Rock saw and Blades
15 days @ \$400/ day 6,000.00
Transportation: ATV & truck
15  days  @ \$300/ day  4 500 00
10 days @ \$0007 day
Assays 250 @ \$15/sample
Reports and Maps
Contingencies
TOTAL

## REFERENCES

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## STATEMENT OF QUALIFICATIONS

I, Harvey M. Buck, of 330 White Park Road, Thunder Bay, Ontario P7G hereby certify that:

- 1.) I am the holder of the claims mentioned in this report.
- 2.) I graduated from Carleton University, in Ottawa, with a Honours Bachelor of Science Degree in Geology (1989).
- 3.) I am a Fellow of the Canadian Gemmological Association (F.C.Gm.A., 1989).
- 4.) I attended the University of Manitoba and completed graduate level courses in mineralogy and geochemistry (1994-1999) that were related to the study of granitic pegmatites, and an unfinished thesis on the mineralogy and geochemistry of the Shatford Lake Pegmatite Group was mostly finished.
- 5.) I have worked as a geologist or been a student studying geology for 16 of the past 25 years since I graduated from Carleton.
- 6.) I have worked as a cataloguer of mineral specimens for the Canadian Museum of Nature for 2 and ½ years, and occasionally as an assistant mineral dealer for well known Canadian and American mineral dealers.
- 7.) I possess a valid prospectors license (1002662) and have spent five summers working for exploration firms such as BHP, Tri-Gold Resources, Grandcru Resources, Eastmain Resources, Rainy River Resources, NewGold Inc and Caracle Creek International Consulting

Thunder Bay, Ontario December 11, 2016 Harvey M. Buck Geologist APPENDIX 1 – Sample Location and Assay Map



APPENDIX 2 – Rock and Humus Sample Assay Certificate

Date	GPS	Sample	Zone 16	Zone 16	Sample	Sample	Surface	Depth		
Collected	Waypoint	Number	UTM m E	UTM m N	Colour	Moisture	Vegetation	(cm)	Comment	Certificate
10/29/2016	6	MBS1601	531523	5498547	dark brown	wet	Sp,Tm	20		A16-11333
10/29/2016	Duplicate	MBS1602	531523	5498547	dark brown	wet	Sp,Tm	20		A16-11333
10/29/2016	7	MBS1603	531523	5498523	dark brown	wet	Sp,Tm	10		A16-11333
10/29/2016	8	MBS1604	531519	5498496	black	wet	Sp,Tm	10		A16-11333
10/29/2016	8	MBS1605	531518	5498473	black	moist	Sp,Tm	20		A16-11333
10/29/2016	9	MBS1606	531523	dark brown	black	wet	Tm,Sp	25	Cyprus TL11+00S	A16-11333
10/29/2016	10	MBS1607	531523	5498424	black	wet	Ce,Tm,Sp	25		A16-11333
10/29/2016	11	MBS1608	531522	5498398	black	wet	Ce,Tm,Sp	20		A16-11333
10/29/2016	12	MBS1609	531523	5498379	black	wet	Sp	20		A16-11333
10/29/2016	13	MBS1610	531530	5498351	dark brown	wet	Sp	25		A16-11333
10/29/2016	14	MBS1611	531522	5498325	black	wet	Sp,Al	10		A16-11333
10/29/2016	15	MBS1612	531519	5498302	dark brown	wet	Sp	10		A16-11333
10/29/2016	16	MBS1613	531523	5498275	dark brown	moist	Sp	10	gentle north facing up hill grade	A16-11333
10/29/2016	17	MBS1614	531519	5498251	dark brown	moist	Sp	10		A16-11333
10/29/2016	Duplicate	MBS1615	531519	5498251	dark brown	moist	Sp	10		A16-11333

		Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	lr	Мо	Na	Ni	Rb	Sb	Sc	Se	Sr	Та
Sa	ample	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Nu	umber	1.00	2.00	1	100	1	0.5	1	1	0.5	0.05	0.5	0.5	5	0.5	100	10	20	0.1	0.1	2	100	0.5
MB	S1601	4	< 2	18	200	14	3.9	2	6	< 0.5	0.63	< 0.5	< 0.5	< 5	< 0.5	2100	< 10	< 20	< 0.1	2.7	< 2	< 100	< 0.5
MB	S1602	3	< 2	33	100	16	3.5	3	4	< 0.5	0.48	< 0.5	< 0.5	< 5	1	1600	< 10	< 20	0.2	1.9	< 2	< 100	< 0.5
MB	S1603	8	< 2	34	200	21	3.7	5	4	< 0.5	0.66	< 0.5	< 0.5	< 5	1.6	2000	< 10	< 20	0.5	1.9	< 2	< 100	< 0.5
MB	S1604	10	< 2	38	200	17	4.3	11	4	< 0.5	0.76	< 0.5	< 0.5	< 5	1	1900	< 10	< 20	0.2	2.9	< 2	< 100	< 0.5
MB	S1605	3	< 2	12	600	12	2.4	67	49	1.1	9.43	1.3	< 0.5	< 5	< 0.5	38800	< 10	20	0.8	35.3	< 2	< 100	< 0.5
MB	S1606	9	< 2	52	400	21	4.3	21	21	1.3	3.93	1.2	< 0.5	< 5	2.6	11000	< 10	< 20	0.6	14.9	< 2	< 100	< 0.5
MB	S1607	4	< 2	28	200	14	4.5	12	6	< 0.5	2.41	< 0.5	< 0.5	< 5	< 0.5	3200	< 10	< 20	0.3	5	< 2	< 100	< 0.5
MB	S1608	4	< 2	33	200	16	4.9	9	4	< 0.5	1.87	< 0.5	< 0.5	< 5	< 0.5	2100	< 10	< 20	0.3	2.6	< 2	< 100	< 0.5
MB	S1609	3	< 2	37	300	21	4.3	5	3	< 0.5	0.66	< 0.5	< 0.5	< 5	2	2300	< 10	< 20	0.3	2.5	< 2	< 100	< 0.5
MB	S1610	5	< 2	13	500	13	2	60	41	1.3	7.95	1.2	< 0.5	< 5	< 0.5	30700	< 10	20	0.9	26.9	< 2	< 100	< 0.5
MB	S1611	3	< 2	27	200	22	3.9	6	7	< 0.5	1.24	< 0.5	< 0.5	< 5	< 0.5	5500	< 10	< 20	0.3	4.3	< 2	< 100	< 0.5
MB	S1612	4	< 2	41	200	24	4.9	6	4	< 0.5	1.98	< 0.5	< 0.5	< 5	1.8	1900	< 10	< 20	0.3	2	< 2	< 100	< 0.5
MB	S1613	2	< 2	66	300	27	4.5	21	8	< 0.5	1.89	< 0.5	< 0.5	< 5	0.5	3200	< 10	< 20	0.4	6.3	< 2	< 100	< 0.5
MB	S1614	4	< 2	59	300	18	4.4	13	10	< 0.5	1.73	< 0.5	< 0.5	< 5	0.6	5700	< 10	< 20	0.4	6.3	< 2	< 100	< 0.5
MB	S1615	5	< 2	52	200	16	3.4	3	5	< 0.5	0.74	< 0.5	< 0.5	< 5	1.5	2100	< 10	< 20	0.7	2.5	< 2	< 100	< 0.5

	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass
Sample	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g
Number	0.5	0.1	1	20	0.1	1	3	0.1	0.2	0.2	0.1	0.1	
MBS1601	0.6	0.2	< 1	90	6.5	15	3	1	< 0.2	< 0.2	1.3	< 0.1	15.5
MBS1602	0.6	< 0.1	< 1	100	4.9	10	< 3	0.7	< 0.2	< 0.2	0.8	< 0.1	15.5
MBS1603	< 0.5	< 0.1	< 1	130	6.2	13	4	0.8	< 0.2	< 0.2	0.8	< 0.1	15.6
MBS1604	0.7	< 0.1	< 1	80	9.4	19	< 3	1.2	< 0.2	< 0.2	1.3	< 0.1	15.9
MBS1605	2.1	0.3	< 1	150	42.9	93	10	7.2	0.5	< 0.2	5.9	< 0.1	15.8
MBS1606	3.1	0.9	< 1	80	65.2	120	17	7.7	0.4	< 0.2	5.5	< 0.1	15.7
MBS1607	1.3	0.2	< 1	70	23.5	38	6	2.8	< 0.2	< 0.2	2.4	< 0.1	15.8
MBS1608	0.6	0.1	< 1	70	9.6	19	3	1.2	< 0.2	< 0.2	1.3	< 0.1	15.6
MBS1609	0.6	< 0.1	< 1	80	6.9	13	< 3	1	< 0.2	< 0.2	1.2	< 0.1	15.5
MBS1610	1.9	0.4	< 1	170	36	79	8	5.8	0.4	< 0.2	5	< 0.1	15.4
MBS1611	0.6	< 0.1	< 1	60	7.9	16	4	1.2	< 0.2	< 0.2	1.3	< 0.1	15.3
MBS1612	0.5	< 0.1	< 1	100	8.8	16	4	1.1	< 0.2	< 0.2	1.2	< 0.1	15.3
MBS1613	1.6	0.5	< 1	50	64.4	128	19	7.9	0.4	< 0.2	3.4	< 0.1	15.6
MBS1614	1.3	0.4	< 1	110	27.2	49	8	3.1	< 0.2	< 0.2	2.3	< 0.1	15.4
MBS1615	0.6	< 0.1	< 1	80	10.1	18	< 3	1.4	< 0.2	< 0.2	1.3	< 0.1	15.7

Quality Analysis ...



Innovative Technologies

Date Submitted:28-Oct-16Invoice No.:A16-11333Invoice Date:01-Dec-16Your Reference:Skinner

Harvey M. Buck 330 White Park Road Thunder bay Ontario P7G 1T1 Canada

5 HHB. <sup>....</sup> < Uf j YmA "6 i W\_

## **CERTIFICATE OF ANALYSIS**

15 Humus samples were submitted for analysis.

The following analytical package(s) were requested:

Code 2A-15g Humus INAA(INAAGEO)

#### REPORT A16-11333

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:

CERTIFIED BY:

Emmanuel Eseme , Ph.D. Quality Control

ACTIVATION LABORATORIES LTD.

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Activation Laboratories Ltd.

## Report: A16-11333

Analyte Symbol	Au	Ag	As	Ва	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	lr	Мо	Na	Ni	Rb	Sb	Sc	Se	Sr	Та	Th
Unit Symbol	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	2	1	100	1	0.5	1	1	0.5	0.05	0.5	0.5	5	0.5	100	10	20	0.1	0.1	2	100	0.5	0.5
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA								
MBS1601	4	< 2	18	200	14	3.9	2	6	< 0.5	0.63	< 0.5	< 0.5	< 5	< 0.5	2100	< 10	< 20	< 0.1	2.7	< 2	< 100	< 0.5	0.6
MBS1602	3	< 2	33	100	16	3.5	3	4	< 0.5	0.48	< 0.5	< 0.5	< 5	1.0	1600	< 10	< 20	0.2	1.9	< 2	< 100	< 0.5	0.6
MBS1603	8	< 2	34	200	21	3.7	5	4	< 0.5	0.66	< 0.5	< 0.5	< 5	1.6	2000	< 10	< 20	0.5	1.9	< 2	< 100	< 0.5	< 0.5
MBS1604	10	< 2	38	200	17	4.3	11	4	< 0.5	0.76	< 0.5	< 0.5	< 5	1.0	1900	< 10	< 20	0.2	2.9	< 2	< 100	< 0.5	0.7
MBS1605	3	< 2	12	600	12	2.4	67	49	1.1	9.43	1.3	< 0.5	< 5	< 0.5	38800	< 10	20	0.8	35.3	< 2	< 100	< 0.5	2.1
MBS1606	9	< 2	52	400	21	4.3	21	21	1.3	3.93	1.2	< 0.5	< 5	2.6	11000	< 10	< 20	0.6	14.9	< 2	< 100	< 0.5	3.1
MBS1607	4	< 2	28	200	14	4.5	12	6	< 0.5	2.41	< 0.5	< 0.5	< 5	< 0.5	3200	< 10	< 20	0.3	5.0	< 2	< 100	< 0.5	1.3
MBS1608	4	< 2	33	200	16	4.9	9	4	< 0.5	1.87	< 0.5	< 0.5	< 5	< 0.5	2100	< 10	< 20	0.3	2.6	< 2	< 100	< 0.5	0.6
MBS1609	3	< 2	37	300	21	4.3	5	3	< 0.5	0.66	< 0.5	< 0.5	< 5	2.0	2300	< 10	< 20	0.3	2.5	< 2	< 100	< 0.5	0.6
MBS1610	5	< 2	13	500	13	2.0	60	41	1.3	7.95	1.2	< 0.5	< 5	< 0.5	30700	< 10	20	0.9	26.9	< 2	< 100	< 0.5	1.9
MBS1611	3	< 2	27	200	22	3.9	6	7	< 0.5	1.24	< 0.5	< 0.5	< 5	< 0.5	5500	< 10	< 20	0.3	4.3	< 2	< 100	< 0.5	0.6
MBS1612	4	< 2	41	200	24	4.9	6	4	< 0.5	1.98	< 0.5	< 0.5	< 5	1.8	1900	< 10	< 20	0.3	2.0	< 2	< 100	< 0.5	0.5
MBS1613	2	< 2	66	300	27	4.5	21	8	< 0.5	1.89	< 0.5	< 0.5	< 5	0.5	3200	< 10	< 20	0.4	6.3	< 2	< 100	< 0.5	1.6
MBS1614	4	< 2	59	300	18	4.4	13	10	< 0.5	1.73	< 0.5	< 0.5	< 5	0.6	5700	< 10	< 20	0.4	6.3	< 2	< 100	< 0.5	1.3
MBS1615	5	< 2	52	200	16	3.4	3	5	< 0.5	0.74	< 0.5	< 0.5	< 5	1.5	2100	< 10	< 20	0.7	2.5	< 2	< 100	< 0.5	0.6

Results

Activation Laboratories Ltd.

Report: A16-11333

Analyte Symbol	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g
Lower Limit	0.1	1	20	0.1	1	3	0.1	0.2	0.2	0.1	0.1	
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
MBS1601	0.2	< 1	90	6.5	15	3	1.0	< 0.2	< 0.2	1.3	< 0.1	15.5
MBS1602	< 0.1	< 1	100	4.9	10	< 3	0.7	< 0.2	< 0.2	0.8	< 0.1	15.5
MBS1603	< 0.1	< 1	130	6.2	13	4	0.8	< 0.2	< 0.2	0.8	< 0.1	15.6
MBS1604	< 0.1	< 1	80	9.4	19	< 3	1.2	< 0.2	< 0.2	1.3	< 0.1	15.9
MBS1605	0.3	< 1	150	42.9	93	10	7.2	0.5	< 0.2	5.9	< 0.1	15.8
MBS1606	0.9	< 1	80	65.2	120	17	7.7	0.4	< 0.2	5.5	< 0.1	15.7
MBS1607	0.2	< 1	70	23.5	38	6	2.8	< 0.2	< 0.2	2.4	< 0.1	15.8
MBS1608	0.1	< 1	70	9.6	19	3	1.2	< 0.2	< 0.2	1.3	< 0.1	15.6
MBS1609	< 0.1	< 1	80	6.9	13	< 3	1.0	< 0.2	< 0.2	1.2	< 0.1	15.5
MBS1610	0.4	< 1	170	36.0	79	8	5.8	0.4	< 0.2	5.0	< 0.1	15.4
MBS1611	< 0.1	< 1	60	7.9	16	4	1.2	< 0.2	< 0.2	1.3	< 0.1	15.3
MBS1612	< 0.1	< 1	100	8.8	16	4	1.1	< 0.2	< 0.2	1.2	< 0.1	15.3
MBS1613	0.5	< 1	50	64.4	128	19	7.9	0.4	< 0.2	3.4	< 0.1	15.6
MBS1614	0.4	< 1	110	27.2	49	8	3.1	< 0.2	< 0.2	2.3	< 0.1	15.4
MBS1615	< 0.1	< 1	80	10.1	18	< 3	1.4	< 0.2	< 0.2	1.3	< 0.1	15.7

QC

Activation Laboratories Ltd.

Report: A16-11333

Analyte Symbol	Au	As	Ba	Br	Ca	Co	Fe	Na	Rb	Sb	Sc	Sr	U	Zn	La	Ce	Sm	Yb
Unit Symbol	ppb	ppm	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	1	100	1	0.5	1	0.05	100	20	0.1	0.1	100	0.1	20	0.1	1	0.1	0.1
Method Code	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
L-Std-3 Meas	22	1	< 100	5	4.1	1	0.37	1700	< 20	0.2	0.9	< 100	< 0.1	60	2.8	6	0.4	0.3
L-Std-3 Cert	20.0	1.23	71.0	4.00	3.60	1.40	0.350	1660	9.00	0.240	0.890	105	0.210	64.0	2.73	5.60	0.400	0.290

Quality Analysis ...



## Innovative Technologies

Date Submitted:31-Oct-16Invoice No.:A16-11361Invoice Date:03-Nov-16Your Reference:Skinner

Harvey M. Buck 330 White Park Road Thunder bay Ontario P7G 1T1 Canada

ATTN: Harvey M. Buck

## **CERTIFICATE OF ANALYSIS**

3 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-Tbay Au - Fire Assay AA (QOP Fire Assay Tbay)

#### REPORT A16-11361

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

Emmanuel Eseme , Ph.D. Quality Control

ACTIVATION LABORATORIES LTD.

1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6 TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613 E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com Results

Activation Laboratories Ltd.

Analyte Symbol	Au
Unit Symbol	ppb
Lower Limit	5
Method Code	FA-AA
130108	< 5
130109	727
130110	157

#### Activation Laboratories Ltd.

Analyte Symbol	Au
Unit Symbol	ppb
Lower Limit	5
Method Code	FA-AA
OREAS 251(FA-Anaster) Meas	516
OREAS 251(FA-Anaster) Cert	504
130110 Orig	154
130110 Dup	160
Method Blank	< 5

Quality Analysis ...



## Innovative Technologies

Date Submitted:11-Nov-16Invoice No.:A16-12046Invoice Date:02-Dec-16Your Reference:Skinner

Harvey M. Buck 330 White Park Road Thunder bay Ontario P7G 1T1 Canada

ATTN: Harvey M. Buck

## **CERTIFICATE OF ANALYSIS**

9 Rock samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2 Au - Fire Assay AA

#### REPORT A16-12046

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

Rob Hoffman Region Manager

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.

Analyte Symbol	Au
Unit Symbol	ppb
Lower Limit	5
Method Code	FA-AA
130201	< 5
130202	< 5
130203	< 5
130204	< 5
130205	< 5
130211	< 5
130212	< 5
130213	< 5
130214	< 5

#### Activation Laboratories Ltd.

Analyte Symbol	Au
Unit Symbol	ppb
Lower Limit	5
Method Code	FA-AA
OREAS 16A (FA-Ancaster) Meas	1750
OREAS 16A (FA-Ancaster) Cert	1810
OREAS 251 Meas	504
OREAS 251 Cert	504.00
130214 Orig	< 5
130214 Dup	< 5
Method Blank	< 5

