LONGFORD
EXPLORATION

Prospecting, Geological and Geochemical Survey Report

on the

Tobi Property

Wade & Maple Creeks, Whitehorse Mining District, Yukon, Canada

Located Within:
NTS Sheet 115 G05

Centered at Approximately:
Latitude 61.26° North by Longitude 139.36° West
UTM NAD83 07V 574859E 6813115N

CLAIM NAMES:
AKK 1-112, YF48001-YF48112
TOBI 1-113, YF48113-YF48225
AR 1-66, YE6901-YE69077
ARCH 1-40, YE69501-YE69537, YD58910, YD58913, YD58914
BC 1-68, YE64601-YE64668
BC 324-480, YE64924-YE65080

Yukon Mining Exploration Program
Target Evaluation #17-055

Field Work Conducted July 16 - August 5, 2017

Report Prepared For:
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January 26, 2018

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1 Introduction

The Tobi Property consists of 544 claims (11015 hectares) covering an area of the Kluane Mountains in the Wade, Maple and Arch Creek drainages just east of the Donjek River. The terrain features broad valleys, rocky ridges and rounded upland areas incised by steep creek canyons approximately 40 km northwest of Burwash Landing, Yukon Territory.

The Tobi mineral exploration program was carried out on the Tobi 1-113 & AKK 1-112 claims in the Whitehorse Mining District of the Yukon from July 16 – Aug. 5, 2017. The work program consisted of geological mapping, rock sampling, pan sampling, soil sampling and prospecting based on recommendations from a Yukon Mineral Exploration Program proposal (YMEP) by J. Pautler, P. Geo. for 41376 Yukon Inc.

This report was prepared to satisfy requirements for the Yukon Mineral Exploration Program (YMEP) reporting. The work was carried out by Longford Exploration Services personnel with project management by James Rogers for Group Ten Metals Inc. of Vancouver, B.C. Total expenditures before GST amounted to $87,228.44.

2 Reliance on Other Experts

The author relied on information, maps, geochemical analysis results and interpretations produced by other experts in the fields of geology or geophysics during the preparation of this report. Methodology, sample collection techniques and original analysis certificates are available for the 2016 work and for much of the historical work on the area.

3 Summary of Previous Investigations & Recommendations

The region was first explored in the early 1900's by prospectors looking for the source of placer copper on the upper White River. One native copper deposit (Canyon City) was discovered in 1905. Limited development work uncovered several large tabular masses of native copper. In the 1930's placer miners were active on Quill, Arch, Burwash, Wade and Swede Johnson Creeks. Old camps, placer tailings and abandoned equipment mark the creeks that were mined.

The area surrounding the Tobi property has been explored periodically since the early 1950's after the completion of the Alaska Highway in 1942-1945 provided access to the general area. The discovery of the Wellgreen mineral deposit on upper Quill Creek (Minfile 115G024) initiated an exploration boom through the Kluane Ranges focussed on rocks of the Kluane Ultramafic Belt a 600km long trend in the southwest corner of the Yukon characterized by mineralized mafic to ultramafic Triassic aged sills.

The Wellgreen deposit 3 km northeast of the Tobi property, was mined between 1972 and 1973, producing 171,652 tonnes with an average grade of 2.23% Ni, 1.39% Cu, 0.073% Co and 2.15 grams/tonne Pt and Pd, then shut down due to weak metal prices, excessive dilution and erratic distribution. The deposit, now 100% owned by Wellgreen Platinum Ltd has an Inferred Mineral Resource of 846 million tonnes at 1.57 g/t Pt Eq. or 0.41% Ni Eq, both at a 0.57 g/t Pt Eq or 0.15% Ni Eq cut off (Simpson, 2014).

Five MINFILE occurrences are in the vicinity of the Tobi property (Table 3.1) hosted by rocks of the Pennsylvanian to Lower Permian Skolai Group (Station Creek and Hasen Creek formations), Nikolai volcanics and Kluane Range intrusives. To the northwest the Skolai rocks are locally intruded by ultramafic sills, close to the favourable unit contact, which host the target PGE-Ni-Cu mineralization. Overlying the Skolai rocks are basalts of the upper Triassic Nikolai formation. All rocks have been folded into a series of anticlines and synclines along fold axis parallel to the dominant 290-310^{o} trend and then folded again along NE axes (D. James, 2016). At lower elevations and on benches above the Wade and Maple Creek canyons, bedrock is overlain by Quaternary unconsolidated till, fluvial gravel and mud deposits. Recent slumps, mudslides and scarps occur where the overburden is eroding on hillsides and into the creek gullies.

Previous work in the Tobi area from 1953-2016 included prospecting, geological mapping, rock & soil sampling, ground and airborne geophysical surveys. The most recent exploration in 2016 consisted of "a 200 line km airborne magnetic geophysical survey to delineate favourable ultramafic sills and the extent of the Kluane Ranges suite intrusion, and prospecting with rock geochemical and auger bedrock interface sampling including the collection and analysis of 69 rock samples. The Tobi showing was evaluated and partially delineated and two additional significant Cu-Ni-PGE showings were discovered, West Basin and Maple Peak" (J. Pautler, 2017).

Assessment reports and geological files found in the Yukon Geological Survey database with information pertaining to the property can be summarized as follows:

Table 3.1 Assessment reports and documents concerning the Property.

Date	Report ID	Author	Title
1953	019524	Davis, 1953	Geological Investigation on the Saddle, Bit, Wade, Horse & Bridle claims for Callinan Flin Flon Mines.
1955	017461	Allan, 1955	SP survey on upper Maple Creek

Date	Report ID	Author	Title
1986		Deklerk, 2009	Area restaked and road building by Columbia Mining Ltd.
1987-88	092602	P. Van Angeren 1988	Minor prospecting, soil & rock geochemical sampling of pyritic greenstone by Gold City Resources Inc.
1988-89	092744	Davidson, G. 1989	Soil sampling and mag survey by Lodestar Exploration Inc. just west of Tobi on Donjek River flats.
1997	GSC Bulletin 506	Hulbert, L.J. 1997	Geology and metallogeny of the Kluane mafic-ultramafic belt, Yukon territory.
2003		Carne, R.	Metallogeny of the Kluane Ranges.
2004	Open File 2004-20	S. Israel & D.P. Van Zeyl	Preliminary geological map of the Quill Creek map area, (parts of NTS 115G/5, 6 and 12).
2008	095044	Furgo, 2008	DIGHEM airborne survey for Coronation Minerals Inc. located EM anomaly in the upper Maple Creek valley.
2016		Pautler, J. 2016	200km airborne magnetic survey, prospecting & rock geochemical and auger bedrock sampling, 69 samples.
2016		Walcott, P. 2016	Review of Catalyst Property geophysical data.
2016		James, D. 2016	Arch Project, Geophysical Interpretation Assessment Report
2017		Pautler, J. 2017	YMEP proposal for a target evaluation program on the Tobi project
2017	Open File 2017-36	Aurora Geosciences	Reprocessing of airborne magnetic data for NTS 115G.

The 2017 YMEP proposal recommendations included (from J. Pautler, 2017):

"1: Excavator trenching with detailed mapping and sampling to expose and delineate the Tobi zone and facilitate chip sampling. If excavator trenching cannot be undertaken, hand/blast trenching is recommended.

2: Auger drilling is recommended over the lower airborne geophysical anomaly in the northwest fork of Maple Creek to determine the source and possible continuation of the mineralized zone from West Basin. Samples should be collected at a 50m spacing.

3: Hand trenching is recommended over the Maple Peak showing.

4: Soils are recommended over additional airborne geophysical anomalies and along trend of the new showings (450 samples).

5: Stream sediment sampling at 500m spacings.

6: Property 1:5,000 scale mapping is recommended, concentrating on areas with known gabbro exposure and geophysical anomalies, in areas prospective for the exposure of the favourable Hasen/Station Creek contact where the mafic/ultramafic sills tend to occur, on trend of the Tobi showing."

The 2017 program described in this report comprised 78 mandays of work including collection of a total of 376 soil samples, on contour soil lines targeting favourable geology and airborne geophysical anomalies

above Wade and Maple creeks. Difficult soil sampling conditions were encountered on north facing slopes due to areas of permafrost, swamp and rocky overburden. South facing slopes generally had better quality soil. A total of 19 pan concentrate samples were collected from drainages in the claim area. Geological mapping (80 geo pts), rock sampling (97 rock samples) and prospecting of the Maple and Wade creek canyons and uplands was undertaken on traverses. The prominent gossan zones and massive sulphide occurrences (Tobi showing) on the banks of Wade creek were exposed in 16 hand pits dug with pelican picks and grub hoes. Detailed chip and grab samples were collected of rock, oxide and soil material from the pits. Rock samples were checked with an infield XRF device and all samples were sent to Bureau Veritas in Whitehorse for analysis.

The 2017 program identified two areas of anomalous soil geochemical values. 1) A copper geochemical anomaly on the slope north of the confluence of Wade and Maple Creeks at the 1200m elevation in an area underlain by Nikolai volcanic rocks in contact with Hasen Formation sediments. One rock sample (sample #143306) above the anomaly assayed 23990ppm Cu, 325ppb Au from a malachite stained gabbro. 2) A nickel geochemical anomaly on contour lines at 1150m elevation above upper Maple Creek, below an ultramafic sill mapped on the northern margin of the claims and close to the Callinan occurrence. One rock sample of peridotite from this area returned an elevated nickel value of 1597ppm (sample# 116924). Both soil anomalies are coincidental with aeromagnetic highs and proximal to mafic and ultramafic rocks. Elsewhere results showed background values in the contour soil samples. Pan sample results were effective at demonstrating elevated nickel values in the Upper Maple Creek drainage where small gullies cut across the ultramafic sill. Elevated Au values were associated with drainages coming off the quaternary cover.

Detailed sampling of the Tobi showing returned Cu values up to 5161ppm (sample # 1889627) however Ni & PGE + Au values were low from the massive sulphide lenses and gossan zones. Pyrrhotite and pyrite occur as the main sulphide minerals in pods along the limestone diorite contact, with marginal gabbro dykes and magnetite lenses indicating a “skarn” type mineral occurrence. A second area of massive pyrrhotite lenses located 500m downstream of the Tobi on a steep slope above Wade Creek also occurs in a gossan zone. Rock samples results were similar to the Tobi showing retuning Cu values of4781ppm (sample #143303) but low values in other elements. Rock samples from Maple Peak of copper stained Nikolai volcanic rocks cut by a few mineralized quartz carbonate veins (up to 20cm wide) contained spotty chalcopyrite and bornite with (sample #143317) recording a copper value of 14770ppm.

The geochemical anomalies above upper Maple Creek (West Basin) and north of the confluence of Wade and Maple Creeks warrant follow up examination by mapping and geophysical surveys. Further work on the Maple Peak area and portions of the Tobi property that were not covered in the 2017 program require evaluation including the Wade occurrence downstream on Wade Creek and the prominent gossan zones and airborne geophysical anomalies on the steep slope and creek gullies on the west side of the property above the Donjek River. A program of further prospecting, mapping, geochemical sampling and ground geophysics is recommended.

4 Project Purpose, Property Description and Location

4.1 Purpose

The purposes of the 2017 project were:

1. Geochemical sampling, silt sampling, geological mapping and trenching of mineral occurrences and prospects on identified aeromagnetic and electromagnetic anomalies and target areas identified by the 2016 exploration program.

2. Prospecting, geochemical sampling and mapping of general claim area.

4.2 Location

The Tobi Property covers rounded upland areas of the Kluane Ranges and the Wade and Maple Creek canyons & valleys on NTS map sheet 115 G/5, G/6 & G/12 approximately 40 km by road northwest of Burwash Landing and 285km from Whitehorse, Yukon Territory, centered over 61 26' N latitude 139 36' W longitude. Access is via the Alaska Highway to KM 1799 turning onto the Quill Creek gravel road to km 11, then turn left onto the Wade and Maple access road for 4km, then right again for 1km to a gravel pad on Maple Creek suitable for a campsite. The northwestern portion of the property can be accessed by the Arch Creek road that branches of the Quill Creek road at kilometer 14 (Figure 4.3). Placer trails provide ATV access to lower Wade and upper Maple Creeks.

Whitehorse is well equipped to support the mining industry with general services, a skilled labour force, transportation (the Alaska Highway, Whitehorse airport) and abundant hydroelectric grid power. The property is located within the Kluane & White River First Nations territorial lands. Helicopter charter is available form Haines Junction, 125km south of the property. Locally Destruction Bay has a nursing station, fuel, lodging, restaurants, and repair services. Cellular service covers higher elevation portions of the project area.

Table 4.1 Driving distances to the Property.

Location	Description	Road Distance
Whitehorse (pop. 25,000)	Nearest city with services	295 km
Haines Junction	village	125
Burwash Landing	village	40
Destruction Bay	village	55

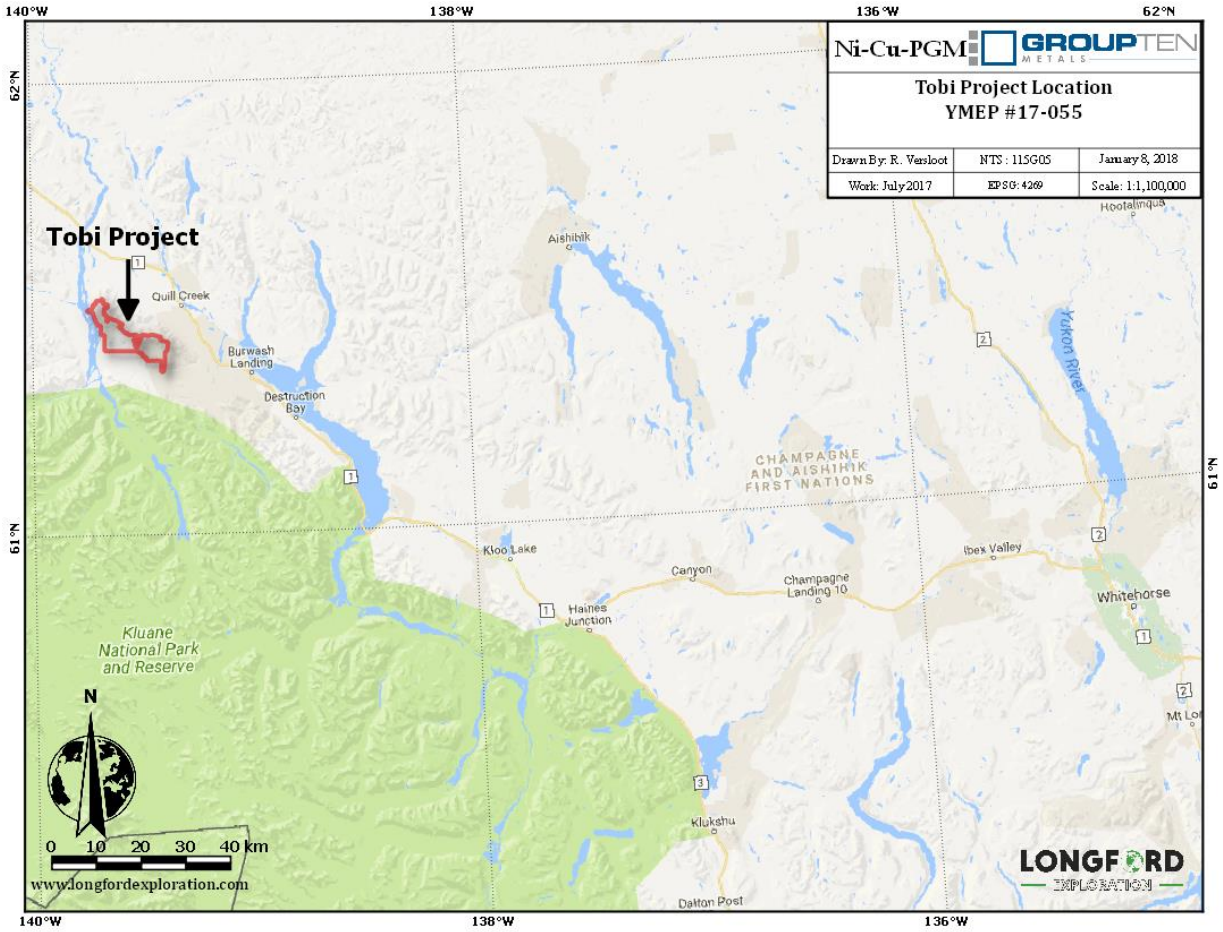

Figure 4.1 Tobi Project Location Map

4.3 Mineral Titles

The AKK and TOBI Claim Group is currently pending an option agreement to Group Ten Metals Inc. James Rogers of Longford Exploration filed an Application to Group Mineral Claims (YQMA Form 12) in respect of these claims and adjoining claims on July 28th, 2017. The work conducted on the Tobi property will therefore also be applied to the adjacent claims.

The 225 mineral claims under the initial YMEP #17-055 grant are:

Table 4.2 Mineral tenure summary.

Claim Name	Grant Numbers	NTS #s	Owner	No of claims	Grouping Certificate	Expiry Date*
AKK 1-112	YF48001-YF48112	115G05	Bill Karman	112	HW07654	2019-11-17
TOBI 1-113	YF48113-YF48225	115G05	Bill Karman	113	HW07654	2020-11-17

4.4 Property Legal Status

The Yukon Mining Recorder website (http://www.yukonminingrecorder.ca/) confirms that all claims of the Property as shown in Figure 4.2 and Appendix C were in good standing at the date of this report and that no legal encumbrances were registered with the Yukon Mining Recorder against the titles at that date. The author makes no assertion with regard to the legal status of the property. The property has not been legally surveyed to date and no requirement to do so has existed. There are no other royalties, back-in rights, environmental liabilities, or other known risks to undertake exploration.

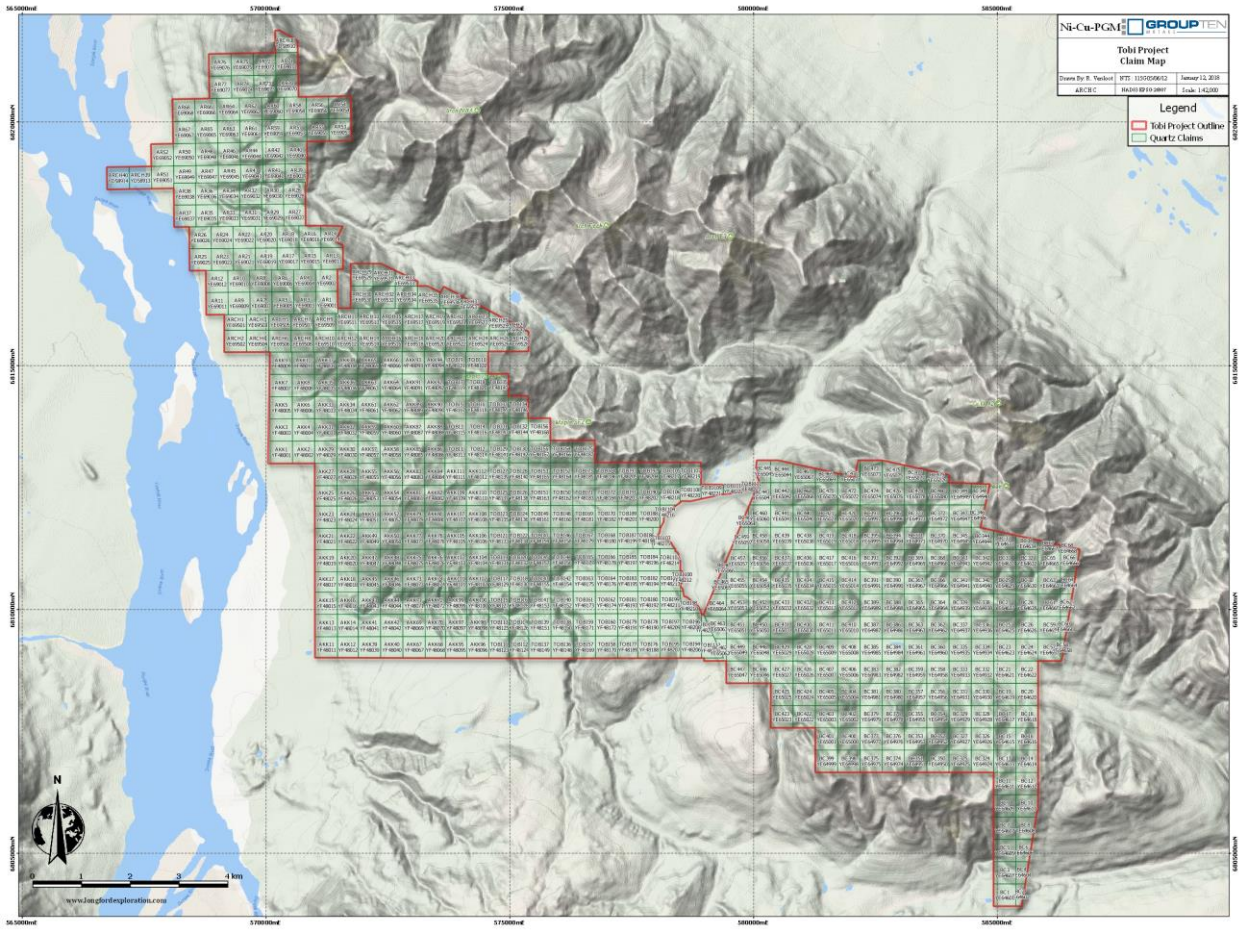

Figure 4.2 Tobi Project mineral claim and land disposition map. Full size legible map available in Appendix C.

4.5 Climate

The Wade Creek area features a northern interior climate with long cold winters and low annual precipitation. The exploration season extends from early June until late September with occasional thunderstorms and a few intervals of warm dry conditions.

4.6 Topography and Vegetation

The project is on upland slopes and valleys east of the Donjek River, deeply incised by the drainages of Wade Creek, Maple Creek, Arch Creek and unnamed minor creeks. Upland areas feature grass and rock up to 2000m while the Donjek valley floor at 900m elevation is mainly spruce forest, gravel flats and swamp. Precipitous canyons along Wade and lower Maple Creeks expose extensive rock faces and steep talus slopes. Forest cover on the property is light, with treeline at approximately 1200m elevation. Black

spruce, white spruce, balsam, poplar and white poplar dominate the forested slopes; alder willow and sub-alpine flora are found at and above the timberline.

Figure 4.3 Photo showing the general condition of roads used to access the Tobi Project.

5 Exploration History

The area surrounding the Tobi property has been explored periodically since the early 1950's after the completion of the Alaska Highway in 1942-1945 provided access to the Quill Creek drainage. The discovery of the Wellgreen mineral deposit on upper Quill Creek (Minfile 115G024) initiated an exploration boom through the Kluane Ranges focussed on rocks of the Kluane Ultramafic Belt.

The Tobi Project covers the Callinan Minfile occurrence (Minfile Number 115G 023), as documented by the Yukon Geological Survey *(Deklerk, 2009)*. The occurrence lies in a narrow gully accessed by an overgrown cat trail, outcropping as a gabbro sill originally discovered in 1953, and delineated by SP geophysics in 1955, north of upper Maple Creek *(Pautler, 2017)*.

The Maple gypsum occurrence (Minfile Number 115G 085), is reported to occur along a thrust faulted contact between a Cretaceous diorite intrusion and Upper Triassic Nikolai greenstone.

The following is a record of the known work history on the Tobi Project (after Pautler, 2017):

1953-5: Geological mapping and an SP survey by Callinan Flin Flon Mining Ltd. uncovered a gabbro body *(Callinan – Figure 5)* northwest of Maple Creek *(Davis, 1953 and Allan, 1955)*.

1986: Area was restaked and road building was carried out by Columbia Mining Ltd. *(Deklerk, 2009)*.

1987-8: The northern portion (PC claims) and south-central portion (Don claims) of the Tobi Project were acquired by Avanti Mining Ltd. and transferred to Gold City Resources Inc., which completed minor prospecting and rock geochemical sampling *(Hart and Doherty, 1988, and Van Angeren, 1988)*. Limited work uncovered an occurrence of gabbro float *(Figure 5)*.

1988-9: Soil geochemical sampling and magnetometer surveying conducted by Lodestar Exploration Inc. under option from Harjay Exploration Ltd. on the SF and Missy claims just north of northwestern property area, outlined a magnetic high anomaly proximal to Pt, Pd and Au in soil anomalies *(Davidson, 1988 and 1989)*.

2008: A DIGHEM airborne magnetic-electromagnetic geophysical survey was carried out for Coronation Minerals Inc. as part of a survey over their Wellgreen property *(Fugro, 2008)*. Significant anomalies were obtained along the northwest fork of Maple Creek in areas of favourable geology (underlying Station/Hasen Creek contact).

2016: A 200 line km airborne magnetic geophysical followed by prospecting, rock geochemical and auger bedrock interface sampling, total of 69 rock samples. The Tobi showing was evaluated and partially delineated and two additional significant Cu-Ni-PGE showings were discovered, West Basin and Maple Peak (Pautler, J. 2016 & 2017).

2016: Geophysical data compilation and interpretation by Walcott & Assoc. summarized in a Geophysical Interpretation Report (James, D., 2016).

Historical data on the general Tobi area includes prospects along the Arch and Maple Creeks drainages summarized from previous reports in the following Table 5.1.

Table 5.1 Historical activity (D. James, 2016).

Year	Work	Results
1952-54	Staked by Conwest Exploration Company Ltd. and Teck Exploration Company. Geological mapping, prospecting.	Two copper-nickel showing identified. Musketeer (now Teck) and Conwest showings. (*Walker, 1955 and Frohberg, 1953)*
1955	Ground EM and Magnetic surveys over the Teck and east of Conwest Showings by Teck	Linear magnetic anomaly over buried ultramafic sill. (*Clarke, 1956*)
1967	Geological mapping, magnetometer and EM-16 surveys by J.B. O'Neil and C. Gibbons.	Linear magnetic anomaly (*Hilker, 1967*)
1972	Geological mapping, geochemical sampling, magnetometer and EM surveying by the Nickel Syndicate	No results available. Strong magnetic high and several weak or broad conductors reported in Yukon Minfile (*Deklerk, 2009*).
1986-88	Geochemical sampling in 1986 by Kluane Joint Venture on large grid extending along the north side of Arch Creek from the Wellgreen property to Serpentine Creek. Grid lines 100m apart with samples at 50m intervals. In 1987 magnetometer and VLE-EM surveys over same grid. One 85.6m drill hole in 1988 through Donjek sill.	Poor sampling conditions towards the west end of the grid (Serpentine Creek area) because of permafrost and deep overburden. Weak, spot anomalies in Pt, Pd, Cu, Ni and Au. EM conductors and linear magnetic features. Grid does not cover the Conwest or Teck Showing but does overlap part of the 2013 Arch grid. Weakly anomalous values from drillhole. (*Eaton, 1987*)
1988	Ground magnetic survey and 30 soil samples close to mouth of Arch Creek by Lodestar.	Linear magnetic anomaly coincident with anomalous soils. Anomalous Pt, Pd and Au. 7 samples >20ppb Au, 7 samples >50 ppb Pt and 12 samples >20ppb Pd. (*Davidson, 1989*)
1987	Property examination and mapping by Dawson Eldorado Mines Inc.	Maple Creek gabbro and band of limestone mapped *(Hart and Doherty, 1987).*
2000	Geochemical sampling and trenching around Teck showing by Auterra Ventures Inc.	Detailed trench mapping and consistent sampling over the sill. *(Vanwermeskerken, 2001*
2001	Rock sampling and 11 km of magnetic and VLF EM surveys by around the Teck showing	Anomalous magnetic linear 60m north of the Tech showing. VLF EM was less responsive and two weak axes appear to border the magnetic anomaly. (*Brickner, 2002*)
2012	Short program of mapping, prospecting and sampling around the Conwest showing. 18 rock, 14 soil samples collected.	Anomalous Pb, Zn, Fe, Au and Cu (*Pautler, 2012*).
2013	Compilation of previous work, chip sampling at Teck showing. Testing of different biogeochemical and geophysical surveys over a 4 line km grid centered on the Teck showing. Work for Bill Harris and Tom Morgan. Claims were optioned to Ashburton Ventures (now Group Ten) late in the year.	Best chip samples were in altered ultramafic close to contact with Station Creek. Spruce bark samples performed the best of the 4 methods tested. Projected sill location was traced and new anomalies were detected. ELF geophysical survey was better than the HLEM but needs further processing. (*James, 2014*)

6 Geological Setting and Mineral Potential

6.1 Regional Geology

The regional and property geology is summarized from the Arch Creek (Catalyst Property) assessment report by D. James, 2016 and from Metallogeny of the Kluane Ranges by R. Carne, 2003. The Tobi property is located within the Kluane Ultramafic Belt, a 600km long belt of rocks in the southwest corner of the Yukon that are characterized by mineralized mafic to ultramafic Triassic aged sills known as the Kluane mafic-ultramafic suite. The Kluane Ultramafic Belt extends from northern BC into Alaska and hosts magmatic Ni-Cu-PGE (+/- Au) deposits and occurrences. It is the second largest Ni-Cu-PGE mafic-ultramafic belt in North America after the Circum-Superior Belt in central Canada (Hulbert, 1997).

The Kluane Ultramafic Belt lies within a displaced slice of the Wrangell Terrane which is bounded on the south by the Duke River Fault and on the north by the Denali Fault. The Wrangell Terrane is underlain by Carboniferous to Permian and Triassic sedimentary and volcanic rocks, intruded by the upper Triassic Kluane Ultramafic suite and Cretaceous granitic intrusions (Figure 6.1).

Topographically, the Kluane Ultramafic Belt is in the Kluane Ranges which are foothills to the St. Elias Mountains that range along the Yukon-Alaska border. The ultramafic rocks are distinctively coloured glassy black to dark brown or light green to pale grey when altered) and can be seen as distinctive linear features.

The dominant structural direction, controlled by the major Duke River and Denali faults, ranges in orientation from 270^{o} to 310^{o}. Movement of Wrangellia northwards along the Denali Fault began in the Tertiary and continues today. The fault is steeply dipping and the order of displacement may be 100s of kilometres. The Duke River Fault is also near vertical and joins the Denali Fault southwest of Haines Junction. Between the major faults small scale faulting is common and faults increase in number to the southeast. Major fold axes are oriented in the same dominant northwest direction. The folds are tight and inclined to the southwest. A later folding episode has refolded the strata at right angles to the dominant direction along northeast axes.

The Kluane mafic-ultramafic sills are elongated cumulate bodies than are postulated to be the crystallized magma chambers that fed the overlying Triassic Nikolai basalts. The sills are layered, with a thin rim of gabbro around the margins grading into an ultramafic core of peridotite and dunite (Hulbert, 1997). The width of the sills ranges from less than 10 to 600m and they can cover up to 20 km in strike length. The sills intrude the older Pennsylvanian to Permian Skolai Group near the contact between the lower Station Creek Formation and the overlying Hasen Creek formation. Most of the sills are poorly exposed and some are deformed and altered by faults. Nickel and Copper values increase from east to west along the belt. Compared to other Ni-Cu-PGE deposits worldwide, the belt is known for having high concentrations of PGEs such as Osmium, Iridium, Ruthenium and Rhodium and high Platinum to Palladium ratio.

The oldest formation in the Skolai Group is the Station Creek volcanic and volcaniclastic rocks with increasing sedimentary content in the upper half (Carne, 2003). The Station Creek Formation, includes shale siltstone, limestone and argillite interbedded with fine grained tuff layers that decrease in abundance upwards. The contact with the overlying Hasen Creek Formation is gradual and is placed at the top of the tuff layers.

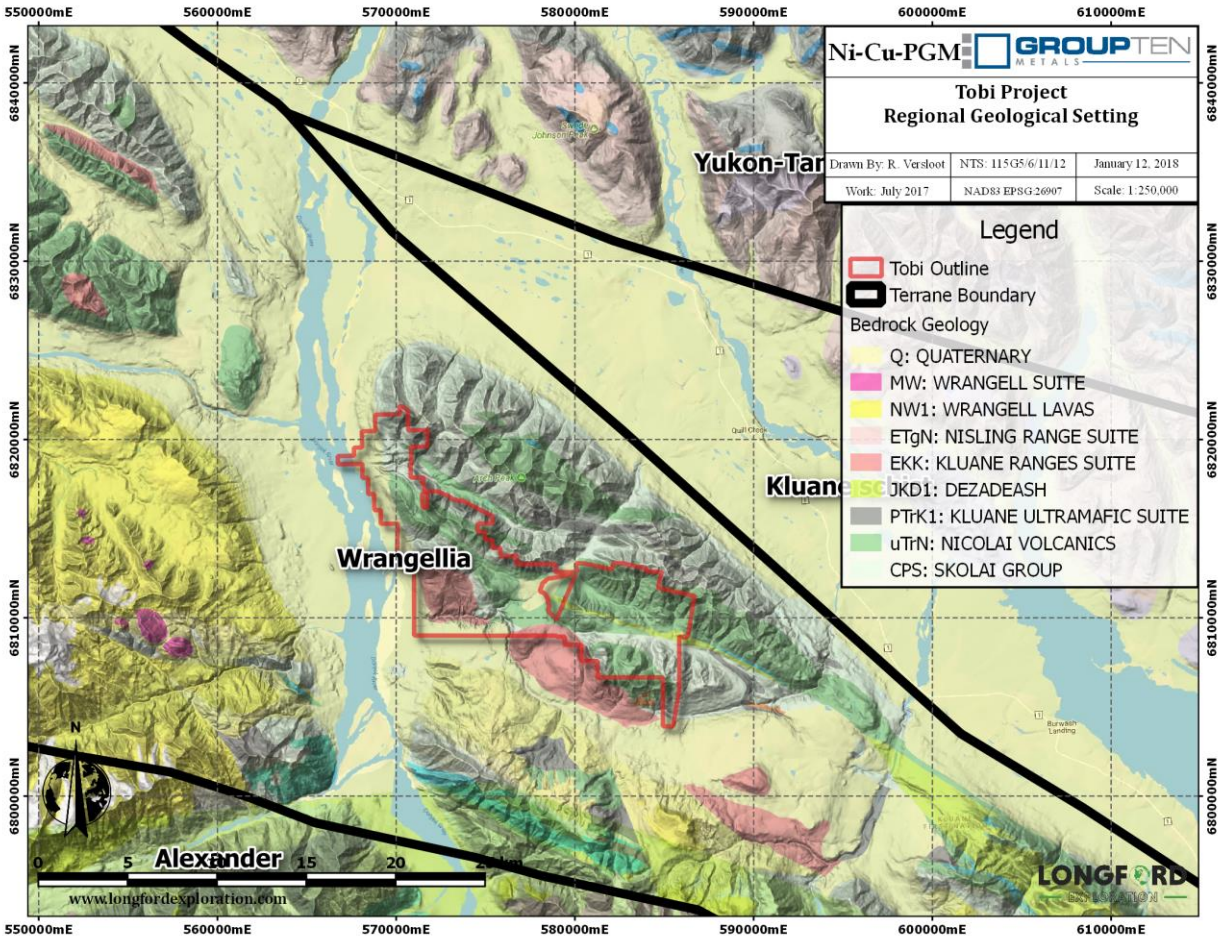

Figure 6.1 Tobi regional geological setting.

The Hasen Creek Formation consists of shale, cherty argillite, chert and siltstone grading up into limestone, conglomerate, greywacke and sandstone.

Sill-like gabbroic bodies of the Maple Creek Gabbro intrude the Hasen Creek Formation. They are generally found higher in the sequence than the ultramafic sills and may be feeders to the Nikolai volcanics. Maple Creek gabbros can be distinguished from Kluane gabbros because they do not grade into peridotite or dunite, can be finer grained and may display columnar jointing. They also are not associated with Ni-Cu-PGE mineralization.

The Nikolai Group is one of the more extensive units in the region. It consists of a thick pile (up to 1 km thick) of basalt flows and pillow lavas with local interbedded limestone, unconformably overlying the Hasen Creek formation. The likely sources of the Nikolai volcanics are magma chambers represented by the Kluane ultramafic sills and feeders represented by the Maple Creek Gabbro.

Other units of less relevance to the Catalyst property are found in the ultramafic belt and are described in the table of formations (Table 6.1) below.

Table 6.1 Table of formations (after James, 2016). Units and descriptions from the Yukon Geological Survey digital geology map (Open File 2016-1) with modifications from Hulbert, 1997.

Q – Quaternary	Unconsolidated alluvium, colluvium and glacial deposits.

NW Miocene to Pliocene Wrangell Lavas	NW1 -Extensive volcanic unit, volumetrically significant but not associated with mineralization. Occur on the southwest side of Wrangellia overlapping onto the Alexander Terrane. Abundant west of the Donjek River and typically form piles 400-1000m thick. Mafic to felsic volcanic rock with NW2 – volcanic conglomerate.
MW Mid to late Miocene Wrangell Suite	Youngest intrusions in the area. Related to the Wrangell Lavas. Felsic to mafic composition.
OT Oligocene Tkope Suite	Homogeneous granite with lesser granodiorite, diorite and gabbro. Subvolcanic rhyolite, rhyodacite and dacite.
Kgd, Kd, Kg late Early Cretaceous Kluane Ranges Suite	Found along the length of the ultramafic belt but are more prevalent in the north. Medium to coarse-grained, biotite-hornblende granodiorite, quartz diorite, quartz monzonite and hornblende diorite. Minor diorite and gabbro.
uTrC upper Triassic Chitistone	Conformably overlies the Nikolai Group, varying in thickness from zero to several hundred metres. Argillaceous limestone and argillite; massive limestone, limestone breccia and well-bedded limestone, gypsum and anhydrite. (McCarthy, Chitistone and Nazina limestone)
uTrNv upper Triassic Nikolai formation	uTrN3 – thinly bedded grey limestone and argillite. uTrN2 – dark green to maroon amygdaloidal basalt and basaltic andesite flows, locally pyroxene and plagioclase phyric. (Nicolai Greenstone) uTrN1 – light to dark green volcanic breccia, pillow lava and basal conglomerate.
LTrK late Triassic Kluane Ultramafic Suite.	Preferentially intrudes at or near the Hasen Creek-Station Creek contact. LTrK1 - peridotite, dunite and clinopyroxenite, layered intrusions, locally with gabbroic chilled margins.(Kluane-type mafic-Ultramafics Gabbro-Diabase Sills) LTrK2 - Maple Creek gabbro. Fine to coarse grained diabase and gabbro sills and dykes. Intrudes the Skolai Group and locally the Kluane ultramafic suite.
PH lower Permian Skolai Group - Hasen Creek Fm.	PHp – fine-grained clastic rocks. Lower part contains volcaniclastics, rare basalts, rare chert beds and chert-pebble conglomerate. PHc – limestone, locally fossiliferous, massive to bedded.
PSv Mississippian to Pennsylvanian Skolai Group- Station Creek Fm.	PSv-undifferentiated Skolai Gp; includes Hasen and Station Creek formations PSvb - Dark green basalt flows, pillows, pillow breccia, local magnetite-rich jasper. PSvt – bedded to massive chert, tuff PSv – interbedded volcanic breccia, volcaniclastics; minor basalt flow. PSvt – laminated volcanic tuff and volcanoclastic siltstone.

6.2 Regional Mineralization

There are four main types of Ni-Cu-PGE mineralization in the Kluane Ultramafic Belt found in all the mineralized sills from southeast Alaska to northern B.C. (Hulbert, 1997):

1. Basal accumulations of massive sulphides
2. Disseminated sulphides at the gabbro-ultramafic contact in each intrusion
3. PGE and Au rich zones associated with hydrothermal quartz-carbonate alteration at the edges of the sills and extending into the country rock.
4. Disseminated and lesser net textured or massive sulphides in the ultramafic core of each sill.

Two other types of mineralization have a limited range (Hulbert, 1997):

1. Skarn ores developed in Permian carbonates at Wellgreen.
2. Ni-rich ores within the footwall in the White River sill.

The most common sulphide minerals are pyrrhotite, pyrite, pentlandite and chalcopyrite; the common oxide minerals are magnetite and ilmenite. Figure 6.2 below illustrates a typical, simplified ultramafic sill. The best known deposit and the sole producer in the belt is Wellgreen Platinum's Wellgreen Deposit (Minfile 115G024). At Wellgreen the platinum group metals combine with As, Sb, Te, Bi, Ni, S, Co and Fe to form minerals and alloys. Sperrylite (PtAs2) and Sudburyite (PdSb) are two of the more abundant minerals (Hulbert, 1997).

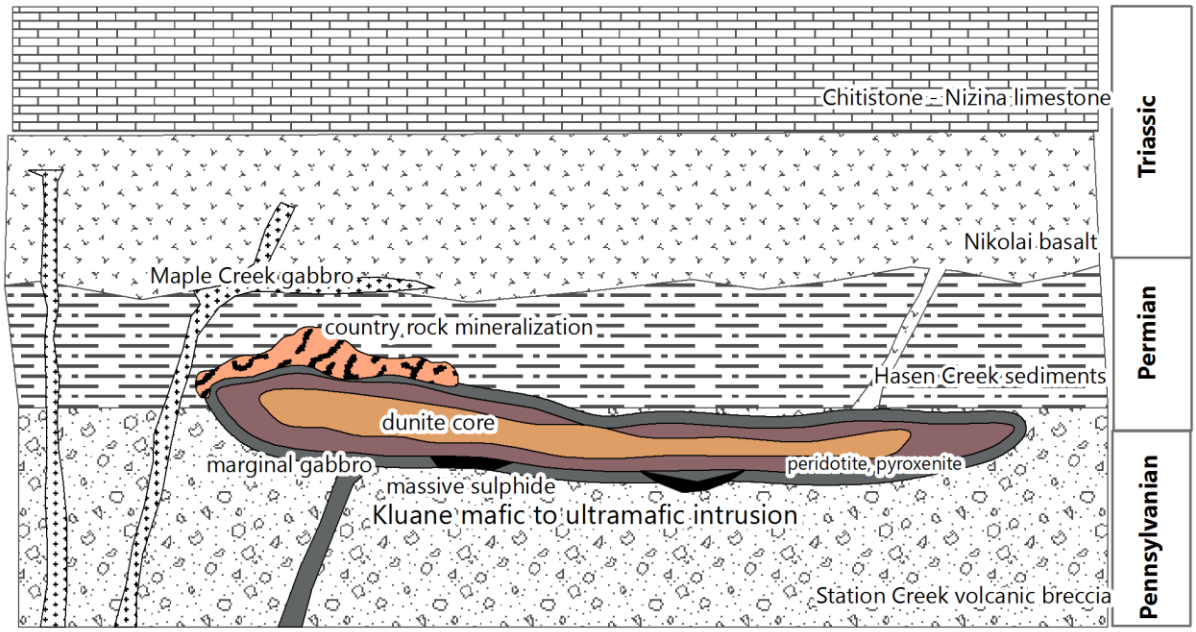

Figure 6.2 Deposit model for the Kluane Belt (modified from Hulbert, 1997)

6.3 Property Geology

On the Tobi property, the oldest units are the Permian Skolai Group consisting of Station Creek volcanics overlain by Hasen Creek sediments and Triassic Nikolai mafic volcanics. Intrusions of upper Triassic age include ultramafic-mafic sills and dykes of the Kluane mafic-ultramafic complex mainly peridotite or gabbro and Triassic Maple Creek gabbro. The younger Kluane Range Intrusive Suite consists of grano-diorite, diorite and quartz diorite sills, dykes and plugs. The older units are folded in a series of anticlines and synclines along fold axis at the dominant 270-310 degree trend parallel to the Shakwak Valley. At lower elevations in the Wade Creek valley the above units are locally overlain by Quaternary unconsolidated glacial, glacio-fluvial and glacio-lacustrine deposits.

Locally the oldest unit, the Station Creek Formation consists of augite basaltic and andesitic volcanic flows that are succeeded upwards by fine to medium grained tuff (Carne, 2003). Volcanic agglomerate and breccia are locally present and discontinuous beds of argillite and limestone occur throughout. The upper portion of the formation is transitional with overlying Hasen Creek Formation with the contact informally

put at the cessation of pyroclastic deposition (Campbell, 1981). Sedimentary and volcanic textures suggest a restricted marine basin as the environment of deposition for the Station Creek Formation.

The Hasen Creek Formation consists of a fine grained clastic lower member composed of grey to black shale, cherty argillite, chert and siltstone overlain by argillaceous limestone and massive buff-coloured bioclastic limestone containing narrow beds of reddish-brown conglomerate, greywacke and sandstone. Thin basaltic flows, breccia and tuff are locally present.

The Nikolai Assemblage basalt flows can be divided into: fine diabasic-textured flows, porphyritic flows with or without amygdules, and very fine-grained amygdaloidal lava flows (Carne, 2003). Phenocrysts include plagioclase, augite, olivine and hornblende in a groundmass of plagioclase, augite, magnetite, ilmenite and volcanic glass.

Intrusive rock consists of Kluane Range Suite grey, medium to coarse grained, biotite hornblende granodiorite, quartz diorite, diorite and rarer quartz monzonite.

6.4 Mineralization

Three potential Cu-Ni-PGE showings have been discovered on the Tobi Project, the Tobi showing, West Basin and Maple Peak (Pautler, 2017).

1: “The Tobi showing was discovered in the upper canyon of Wade Creek during the course of staking in 2015. A grab sample of gabbro float returned 0.96% Cu, >1% Ni, 0.48 g/t Pd, and 0.18 g/t Pt. An open ended 250 by 100m area of significant Cu-Ni-PGE mineralization was delineated at the Tobi showing in 2016 consisting of pentlandite with lesser chalcopyrite and pyrrhotite, primarily hosted by gabbro.”

2: “A 600m extent of gabbro, mineralized with pyrrhotite and lesser chalcopyrite, pentlandite and possible magnetite, was intersected in auger drilling in 2016 from an overburden covered area in the vicinity of a 2008 electromagnetic anomaly in West Basin (headwaters of NW Fork Maple Creek). Values ranged from 0.24 to 0.87% Cu, 0.35 to 1.89% Ni, 0.013 to 0.112% Co, 0.3 to 0.738 g/t Pd and 0.365 to 0.931 g/t Pt.”

3: “A 330 by 200m mineralized gabbro showing was discovered in 2016 about 1 km west of Maple Peak returning 0.37 to 0.56% Cu, 0.10 to 0.26% Ni, 0.014 to 0.049% Co, 0.188 to 0.713 g/t Pd, 0.112 to 0.339 g/t Pt and 0.041 to 0.219 g/t Au.”

“Malachite stained siltstones, with carbonate ± quartz stringers, veinlets and veins with chalcopyrite and chalcocite and significant Cu-Ni values (commonly 0.1-0.4% range) occur proximal to the three Cu-Ni-PGE showings discussed above. Investigation of green staining along the lower canyon of Wade Creek defined a 1 by 1 km area of similar malachite stained siltstone which may lie proximal to another Cu-Ni-PGE mineralized sill, possibly to the south. Anomalous arsenic and antimony values are often associated with the copper-nickel bearing sediments on the property with maximum values of 1590 ppm As and 75 ppm.” (Pautler, J. 2017).

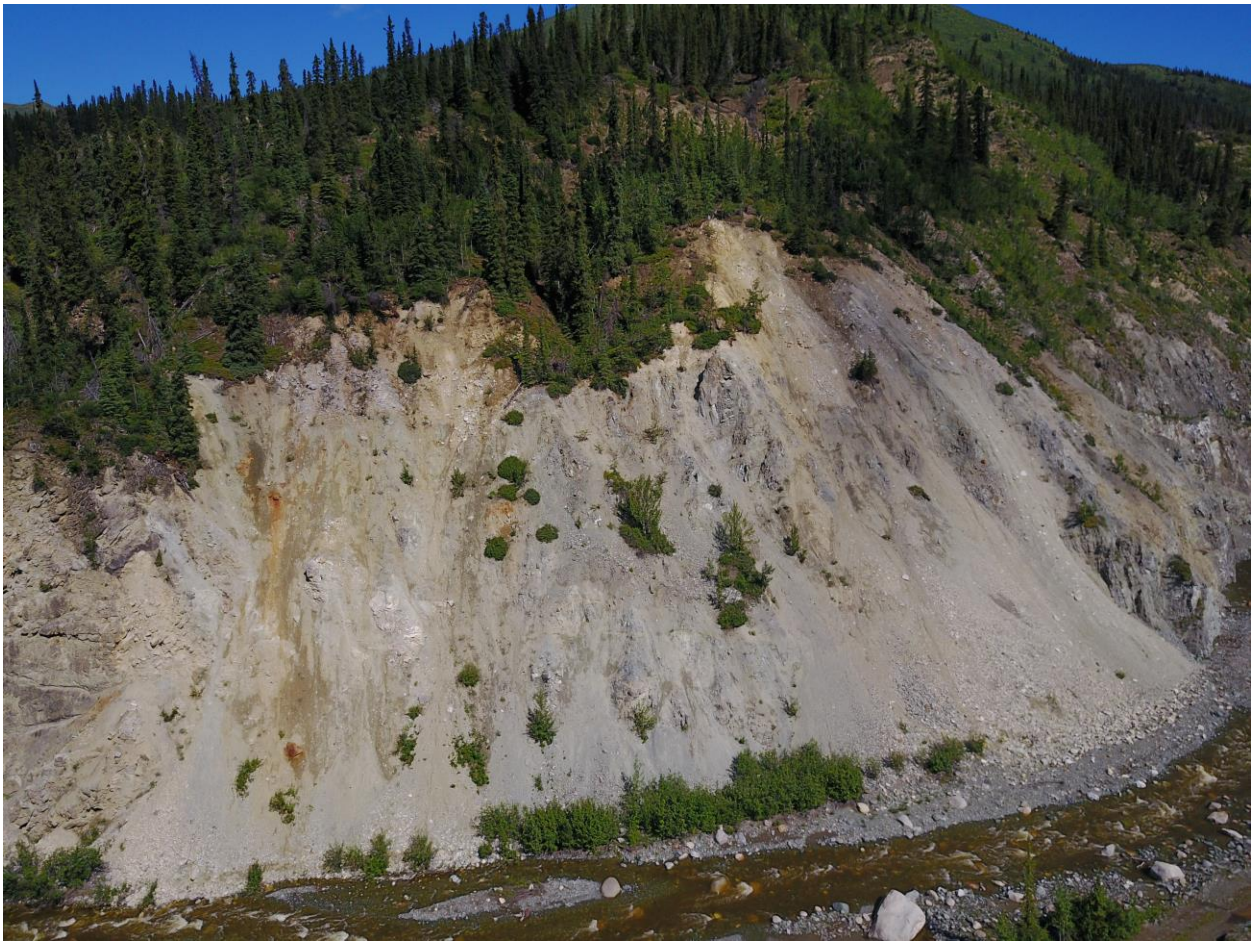

Figure 6.3 Hasen Formation limestone along steep bank above Wade Creek.

7 Work Program: Geological and Geochemical Survey

7.1 Summary

A Longford Field Crew mobilized to the Tobi property on July 16, 2017 and set up camp on gravel pad upstream from the canyon on Wade Creek road. Field personnel included: project manager James Rogers, geologists Graham Davidson and Ryan Versloot, prospector Bill Harris and field assistants Josh Mckenzie and Matt Martinolich. . A total of 44 mandays was spent on the field work as detailed in the daily summary in Appendix B.

During the 2017 work program a total of 376 soil samples were collected on contour soil lines targeting airborne geophysical anomalies above Wade and Maple creeks. Difficult soil sampling conditions were encountered on north facing slopes due to areas of permafrost, swamp and rocky overburden. South facing slopes generally had better quality soil. The field crew recorded GPS readings at all sample sites and data on the sample site characteristics; including soil type, depth, slope, vegetation and moisture content. It was often necessary to dig several holes to get a good sample. After the fieldwork was completed information from the sample form was entered into an MS Excel spreadsheet.

Samples were collected using soil augers in an attempt to sample below organic, ash and permafrost layers. The target soil horizon was the B horizon, but immature soil development in many areas and shallow permafrost meant that sample quality was not ideal. In many cases the soils were developing on glacial material and were too young to have formed B horizons. Average sample depth was 0.46 m, with a wide range from 0.15 to 1.0 m. Soil descriptions show that while some samples were from the B horizon, many were mixtures of A, B and C horizons. At other locations mainly on south facing slopes, good quality samples were collected below volcanic ash and narrow permafrost layers. Complete results, method descriptions and analysis certificates are in Appendix D.

A total of 19 pan samples were collected from drainages in the claim area. The samplers took GPS readings at all sample sites and recorded data about site characteristics including rate of flow, type and size of sediment and vegetation in notebooks. The sample information was entered into an MS Excel spreadsheet with full results that are in Appendix D.

A total of 97 rock samples were collected from the showings and during traverses around the property. Rock descriptions and GPS coordinates were recorded for each sample and entered into an MS Excel spreadsheet. Rock samples were packaged in numbered plastic bags, secured with plastic zap straps and packed into a rice bag for delivery to Acme Labs in Whitehorse. Complete results, method descriptions and analysis certificates are in Appendix D.

Geological mapping of the Maple and Wade creek canyons and uplands was undertaken on traverses (Figure 7.1). The prominent gossan zones and massive sulphide occurrences (Tobi showing) on the banks of Wade creek were exposed in 16 hand pits dug with pelican picks and grub hoes. Detailed chip and grab samples were collected of rock, oxide and soil material from the pits. Rock samples were checked with an infield XRF device before samples were sent to Acme Labs in Whitehorse for analysis.

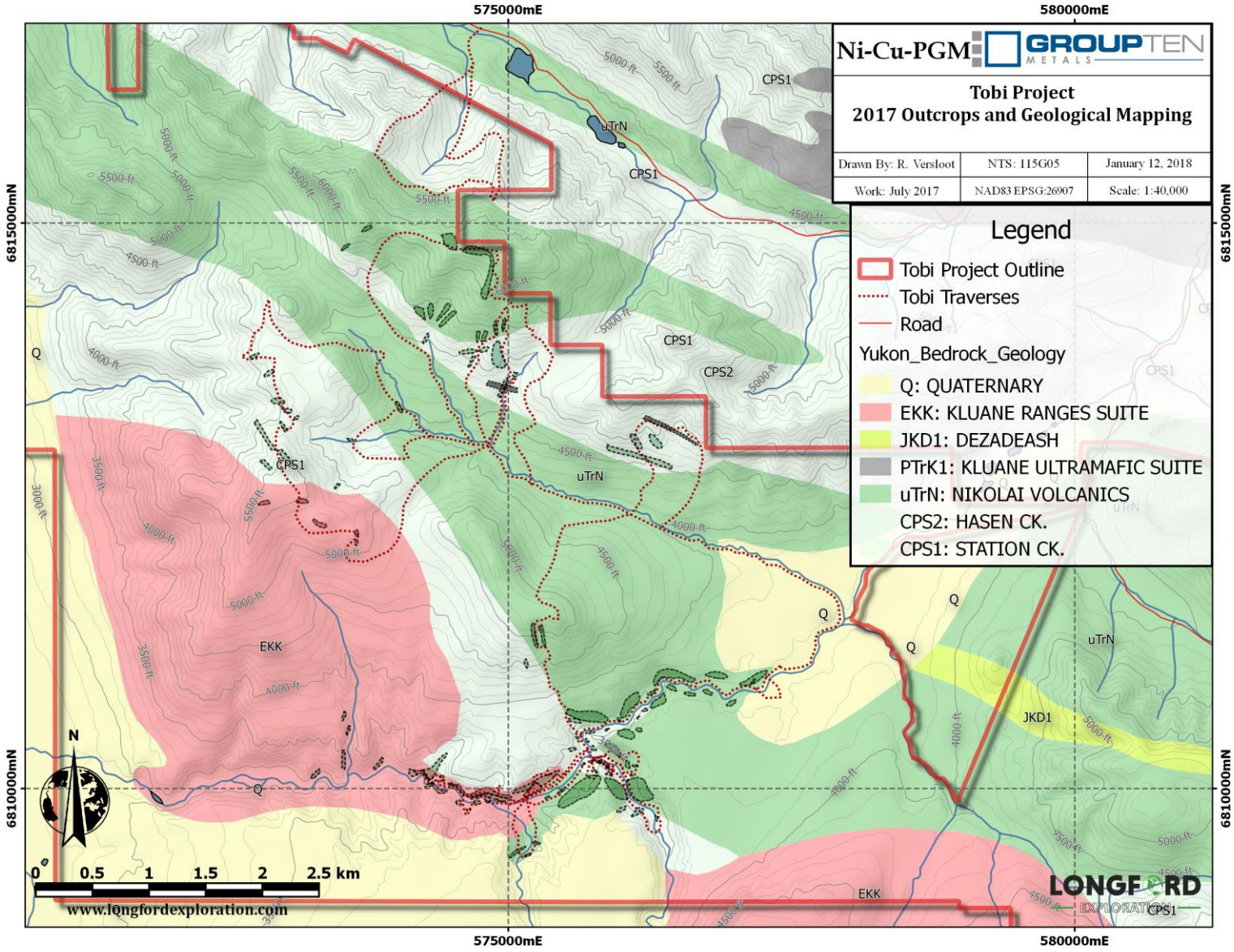

Figure 7.1 Tobi property geology, outcrops and traverses.

7.2 Hand Trenching & Pits

The initial focus of the 2017 exploration program was to dig out and expose the gossan zone and massive sulphide occurrence (Tobi showing) exposed across a steep slope on the right limit of Wade Creek approximately 100m upstream from the confluence with Maple Creek. The gossan and sulphide material had slumped 5-10m downslope, pelican picks and mattocks were utilized to clean off the overburden at intervals across the 150m long gossan (Figure 7.2). Previous work had located two main zones of mineralization divided by a limestone bluff. The downstream or north location was exposed in ten hand pits and the upstream or south occurrence was exposed in six hand pits. Systematic chip sampling across the gossanous rubble, bedrock and massive sulphide lenses is summarized in Table 7.1 & 7.2.

The massive sulphide occurs in conformable lenses up to 1m thick in limestone and argillite overlying mafic volcanic rocks and intruded by diorite and gabbroic dykes and sills. Magnetite lenses occur proximal to the diorite dykes. Folding of the sediments is evident in outcrop on the steep slope above the Tobi south showing. A total of 40 rock samples were collected from the Tobi showing area returned assay values up to 124ppm Ni and 4916ppm Cu. Au, Pt & Pd values were low.

Table 7.1 Sample locations and descriptions form Tobi showing hand pits on the north gossan zone.

Sample Number	Location	Width (m)	Description	Cu (ppm)	Ni (ppm)	Au+Pt+Pd (ppb)
HTr #1 1889601	575813E 6810247N	1.2	Chip grab of limonitic gossan, argillite and massive pyrrhotite cobbles	583	40	47
HTr#2 1889602	575817E 6810247N	1.6	Chip grab of limonitic gossan, argillite and massive sulphide cobbles	316	21	32
HTr#3 1889603	575817E 6810244N	1.6	Chip grab of limonitic gossan, argillite and massive sulphide cobbles	573	13	26
HTr#3 1889604	575817E 6810244N	0.4	Massive pyrrhotite, mnr py + cpy, moderately magnetic	996	12	53
HTr#4 1889605	575820E 6810242N	3.0	Chip grab of limonitic gossan, fractured diorite and argillite	1282	6	12
HTr#4 1889606	575820E 6810242N	0.6	Massive pyrrhotite, mnr py + cpy, moderately magnetic	2578	9	24
HTr#4 1889607	575820E 6810242N	0.5	Massive pyrrhotite, mnr py + cpy, moderately magnetic	2802	8	46
HTr#5 1889608	575824E 6810234N	2.7	Chip grab of limonitic gossan, fractured diorite and argillite.	847	10	12
HTr#5 1889609	575824E 6810234N	0.3	Massive pyrrhotite, mnr py + cpy, moderately magnetic	1233	9	21
HTr#6 1889610	575831E 6810238N	2.2	Chip grab of oxidized diorite, argillite and massive sulphide cobbles.	513	35	18
HTr#7 1889611	575835E 6810238N	1.2	Chip grab of oxidized diorite, argillite and massive sulphide cobbles.	131	62	13

1889612	575851E 6810219N	0.5	Grab of oxide material at limestone gabbro contact	217	19	8
HTr#8 1889613	575859E 6810216N	1.5	Chip grab of gossanous rock and soil across limestone gabbro contact	833	20	24
HTr#8 1889614	575859E 6810216N	1.5	Chip grab of limonitic gabbro, argillite and clay gouge	246	22	25
HTr#9 1889615	575875E 6810224N	2.0	Chip grab of gossan at limestone gabbro contact, a few massive sulphide cobbles.	339	11	7
HTr#9 1889616	575875E 6810224N	grab	Massive pyrrhotite, mnr py + cpy, moderately magnetic	1644	23	30
HTr#10 1889617	575877E 6810223N	1.5	Chip grab of argillite, limestone and massive sulphide across gossanous material	879	19	23
HTr#10 1889618	575877E 6810223N	0.3	Massive pyrrhotite, mnr py + cpy, moderately magnetic	3016	27	21

Table 7.2 Sample locations and descriptions form Tobi showing hand pits on the south gossan zone.

Sample Number	Location	Width (m)	Description	Cu (ppm)	Ni (ppm)	Au+Pt+Pd (ppb)
HTr #11 1889619	575898E 6810192N	0.3	Chip grab of gossanous limestone and argillite, no visible massive sulphide	373	19	7
1889620	575906E 6810164N	0.3	Cobbles of massive pyrrhotite, mnr py + cpy, moderately magnetic	1559	88	52
HTr#12 1889621	575906E 6810164N	1.0	Chip grab across massive sulphide lense with some limonite rubble	4916	22	36
HTr#12 1889622	575906E 6810164N	0.4	Massive pyrrhotite, mnr py + cpy, moderately magnetic	2735	43	32
HTr#13 1889623	575908E 6810164N	1.0	Massive pyrrhotite knob, mnr py + cpy, moderately magnetic	3091	48	35
HTr#14 1889624	575919E 6810165N	0.65	Black orange weathering massive sulphide cobble	3312	44	28
HTr#15 1889625	575919E 6810162N	0.5	Massive pyrrhotite, mnr py + cpy, moderately magnetic	3320	44	29
HTr#16 1889626	575935E 6810161N	2.7	Chip grab of limonitic gossan, fractured diorite and argillite	2123	55	23

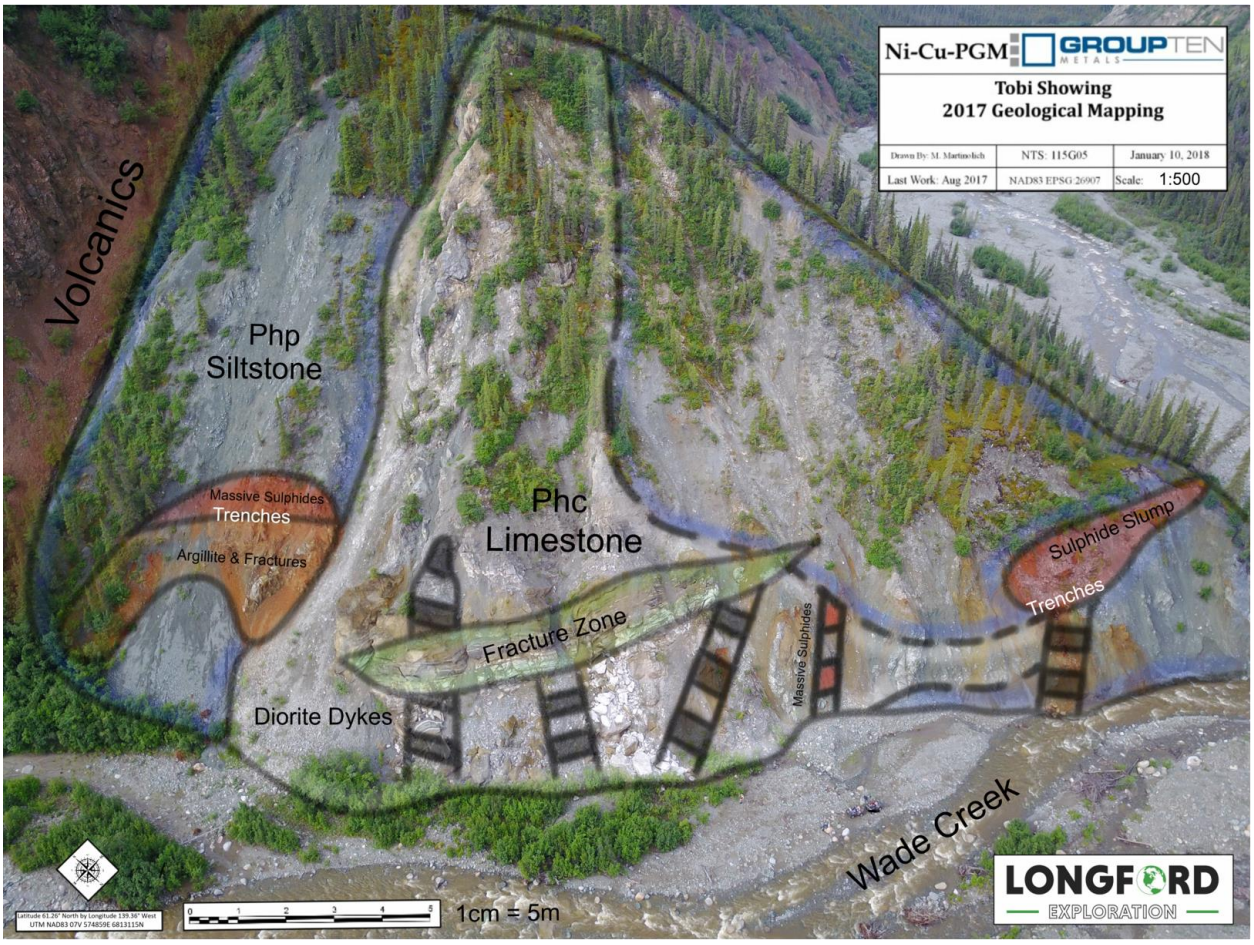

Figure 7.2 Tobi showing, preliminary geology.

7.3 Geological Mapping and Prospecting

Preliminary geological mapping of the Tobi & AKK Claim Group was undertaken in the 2017 field season, with access by daily traverses from camp on July 17-23, 2017, across claims TOBI 13-120, TOBI 38-45, TOBI63, TOBI 66-68, AKK 97-98, AKK 100, AKK 102 (Figures 7.3 – 7.4). The geologic mapping and prospecting program was conducted by Graham Davidson and Ryan Versloot. Mapping was focused on tracing the contact between Hasen sediments and Station Creek volcanics and samples are summarized in Table 7.3.

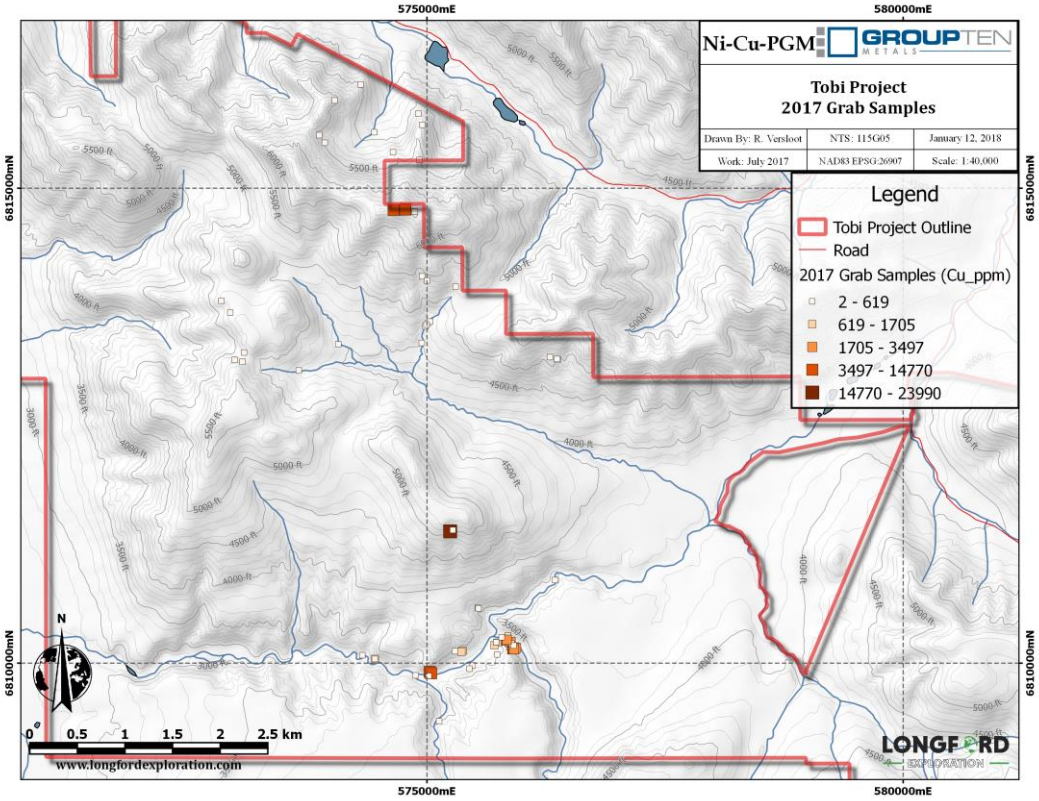

Figure 7.3 2017 Tobi grab samples Cu results.

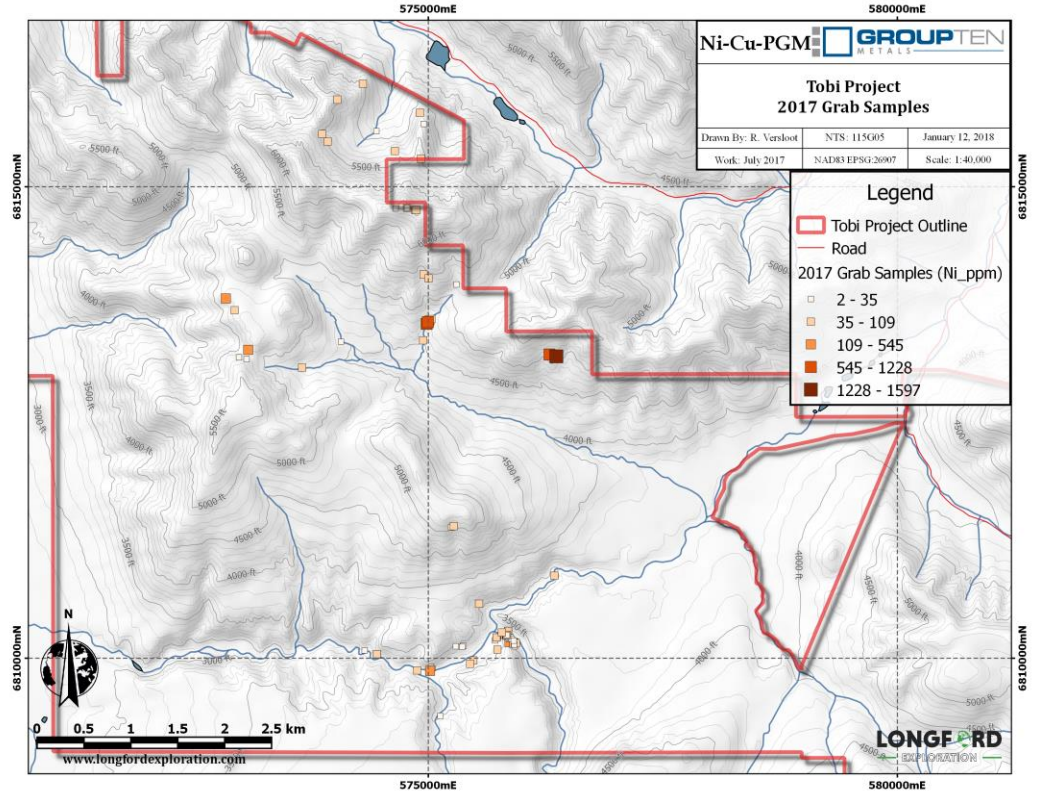

Figure 7.4 2017 Tobi grab samples Ni results.

Outcrop on the claims was extensive in creek canyons incising the upland area. Elsewhere outcrop was limited to ridge tops and steep gullies descending from the ridges. Rocks of the Pennsylvanian to Lower Permian Skolai Group (Station Creek and Hasen Creek formations) and mafic volcanics of the Nikolai Group make up the majority of the bedrock. To the west a body of Kluane Ranges quartz diorite is outlined by the aeromagnetic surveys. The Skolai rocks are locally intruded by Kluane Ranges Suite diorite and quartz feldspar porphyry dykes.

Along Wade Creek a second gossanous area occurs approximately 500m downstream of the Tobi showing on the west bank above Wade Creek. Similar to the Tobi, a lens of massive pyrrhotite occurs at the contact between diorite and limestone. Sample 143303, a grab of massive sulphide returned 4781ppm Cu and 9ppm Ni. A fine grained black glassy volcanic dyke in the same area intruding silicified limestone has minor azurite and malachite staining on sample 1889629 and returned low copper and nickel values.

Further downstream below the placer cut on Wade Creek in the walls of a steep canyon, diorite dykes and sills intrude the limestone with narrow rusty weathering fractures zone exhibiting minor azurite and malachite (Figure 7.6). Sample 1889638 returned Cu values of 1033ppm and 48ppm Ni.

Outcrop in the Maple Creek canyon upstream of the confluence with Wade Creek consists of massive Nikolai volcanics with occasional intervals of iron stained quartz carbonate veining and minor disseminated pyrite and pyrrhotite. The volcanics are locally sheared with intervals of chloritic and graphitic schist. A few quartz veins are evident in the volcanics both cross-cutting and parallel to the foliation. On the ridge top north of the confluence of Wade and Maple Creeks, sample 143306 of ultramafic rock returned a Cu value of 23990ppm, 325ppb Au and 29ppm Ni.

On upper Maple Creek above the old placer camp, an ultramafic sill was outlined across the slope trending towards a second ultramafic outcrop exposed in a small gully to the west. The sill is traced by an aeromagnetic anomaly shown on Figure 7.12. Sample 116924 of the peridotite returned 1597ppm Ni and 114ppm Cu.

On the Maple Peak ridge tops outcrop of upper Triassic Nikolai formation consists of basalts and mafic volcanic tuffs intruded by gabbroic dykes. Patchy malachite and azurite staining is common in the volcanic rocks and gabbro with a few quartz carbonate veins containing blebs of chalcopyrite and bornite. Sample 143317 of quartz carbonate veining returned 14770ppm Cu and 12ppm Ni.

At the headwaters of upper Maple Creek and on small drainages descending towards the Donjek River, a rusty outcrop of Hasen Formation limestone and argillite is fractured and silicified with quartz carbonate veining and pyrite, one sample 143318 retuned Cu values of 151ppm and nickel values of 5ppm. Visual examination of lower slopes above the Donjek River located several prominent gossan zones and slumps with correlating aeromagnetic anomalies which would be targets for future investigation. This precipitous terrain would require helicopter access.

Table 7.3 Select rock sample locations and descriptions from samples collected on traverses on the Tobi property.

Sample Number	Location	Width (m)	Description	Cu (ppm)	Ni (ppm)	Au+Pt+Pd (ppb)
143303	575028E 6809909N	grab	Cobbles of massive pyrrhotite, mnr py + cpy, moderately magnetic	4781	9	50

143306	575243E 6811388N	grab	Ultramafic, black, tr malachite, moderately magnetic	23990	29	335
116924	576364E 6813202N	grab	Peridotite, black, serpentine, tr py+po, moderately magnetic	114	1597	26
1889629	575018E 6809866N	grab	Mafic volcanic dyke, mnr py + cpy, azurite stain	108	188	12
1889638	574452E 6810045N	grab	Grab of limonitic gossan, fractured diorite and limestone	1033	48	17
143317	574773E 6814776N	grab	Quartz carbonate vein in gabbroic rock, mnr cpy and malachite	14770	21	17
143318	572981E 6813192N	grab	Rusty knob of argillite and limestone, qtz carb vns	151	5	22

One day, Aug. 4, 2017 was spent on a traverse on the north side of Maple Peak accessed by the Arch Creek road. The crew followed an old cat trail to the cirque below Maple Peak, where a prominent gossan zone crosses the gully in a northwesterly orientation. The rusty weathering band features Hasen Formation limestone, conglomerate and argillite with a dark green gabbro occurring in a shear zone in the sediments (Figure 7.6). Nikolai volcanics outcrop above the gossan zone. Several rock samples were collected from the cirque and the ridges above the Arch Creek road (Table 7.4). No significant sample results were obtained from this traverse.

Table 7.4 Select rock sample locations and descriptions from samples collected on traverses on the north side of Maple Peak.

Sample Number	Location	Width (m)	Description	Cu (ppm)	Ni (ppm)	PGE + Au
116940	574446E 6815590N	grab	Argillite, rusty weathering, minor pyrite	36	31	21
116941	574643E 6815379N	grab	Gabbro, dark green, foliated, chloritic, minor pyrite	40	45	11
116942	573926E 6815479N	grab	Felsic volcanic, agglomerate, 2% disseminated pyrite	115	85	20
116943	573868E 6815559N	grab	Gabbro, dark green, chloritic, trace disseminated pyrite	103	65	20
116944	574030E 6815924N	grab	Gabbro, gray green, chlorite, trace pyrite	82	94	24
116945	574302E 6816093N	grab	Gabbro, dark green to black, chlorite, trace pyrite	89	109	23
143319	574909E 6815680N	grab	Mafic tuff, dark gray-green, weakly magnetic, Sation Ck. Fm.	145	77	29
143320	574949E 6815667N	grab	Mafic volcanic, dark gray green, trace pyr + cpy	292	22	14
143321	574921E 6815298N	Grab	Mafic volcanic, rusty and silicified, Nikoli volcanic	46	82	8

Figure 7.5 Hasen Formation limestone intruded by diorite above placer cut in the Wade Cree canyon.

Figure 7.6 Hasen Creek succession younging upwards to the right.

7.4 Pan Concentrate Sampling

Pan concentrate samples from the Wade and Maple drainages are summarized in Table 7.4. The samples returned consistently elevated values for Ni in the Maple Creek drainage relative to Wade Creek (Figure 7.6). The highest values can be correlated to a grab sample taken from an ultramafic outcrop in a gully above the stream sediment sample site.

Table 7.4: Summary of stream sediment sample results

Sample Number	Au+Pt+Pd (ppb)	Ni (ppm)	Cu (ppm)	As (ppm)	Cr (ppm	Ba (ppm)
116909	33	166	74	10	192	409
116911	39	100	78	12	110	571
116912	39	72	70	11	83	355
116913	28	38	31	2	128	30
116914	29	74	72	2	69	27
116915	59	69	70	5	75	890
116916	56	73	61	2	85	173
116917	1228	45	43	8	91	249
116919	38	49	66	10	72	407
116921	50	42	34	2	75	43
116925	1831	33	143	2	92	38
116926	31	33	28	2	112	46
116927	41	32	46	25	48	31
116928	31	31	28	6	76	40
116929	216	28	30	6	94	69
116930	715	32	20	2	77	42
116931	135	26	31	13	90	40
116932	1256	36	21	2	56	67
116933	53	40	21	3	59	66

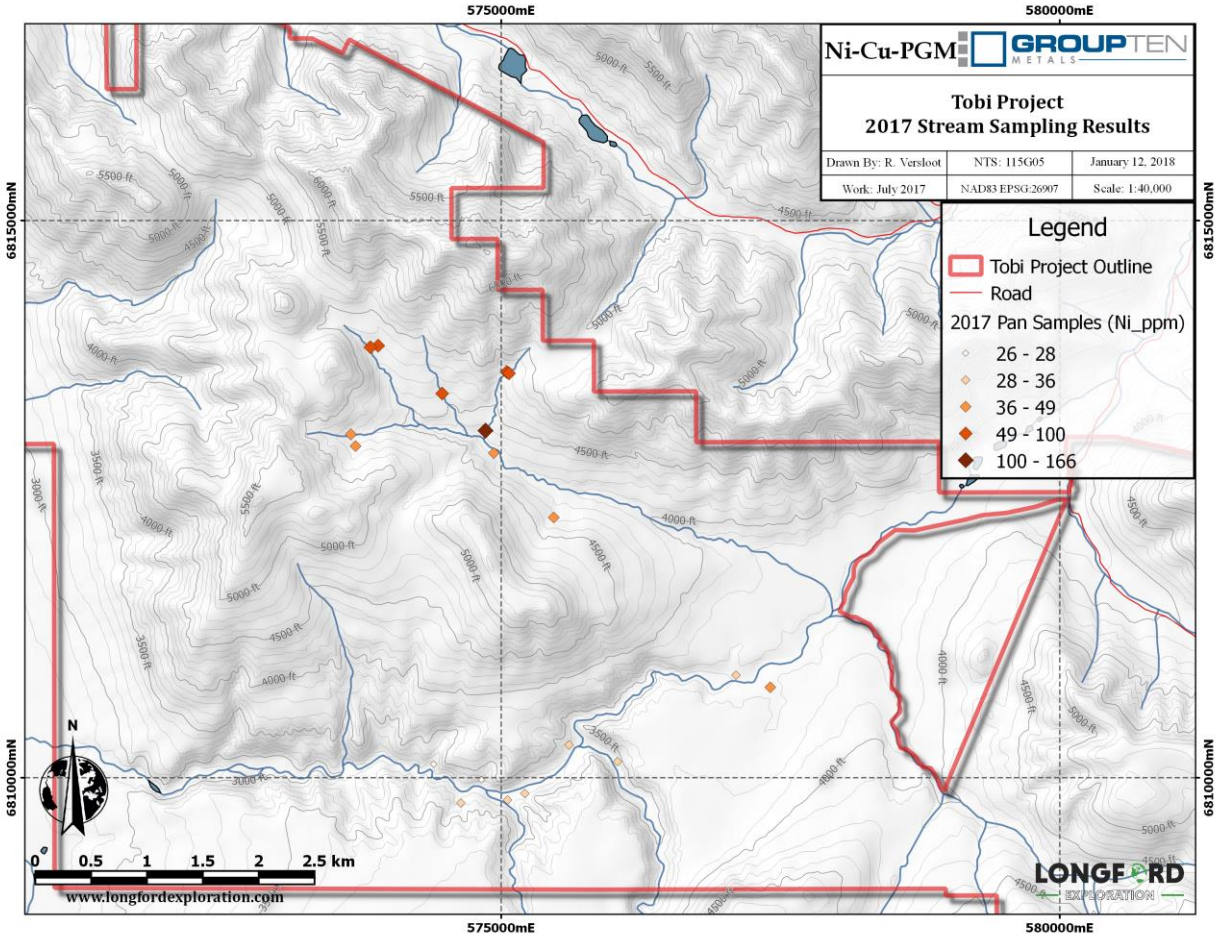

Figure 7.7 2017 Tobi stream sediment results for Ni.

7.5 Soil Geochemical Survey

Longford field crews collected 376 soil samples on contour soil lines with sample intervals at 50m along lines approximately 100m apart over slopes above Wade and Maple Creeks along the contact between Hasen and Station Creek Formations as recommended in the YMEP application. The samples were submitted for analysis to the Bureau Veritas lab in Whitehorse, Yukon.

The soil sample results and locations are shown for copper, nickel, and gold, platinum and palladium in Figures 7.8 – 7.10 respectively. Certificates of analysis can be found in Appendix D.

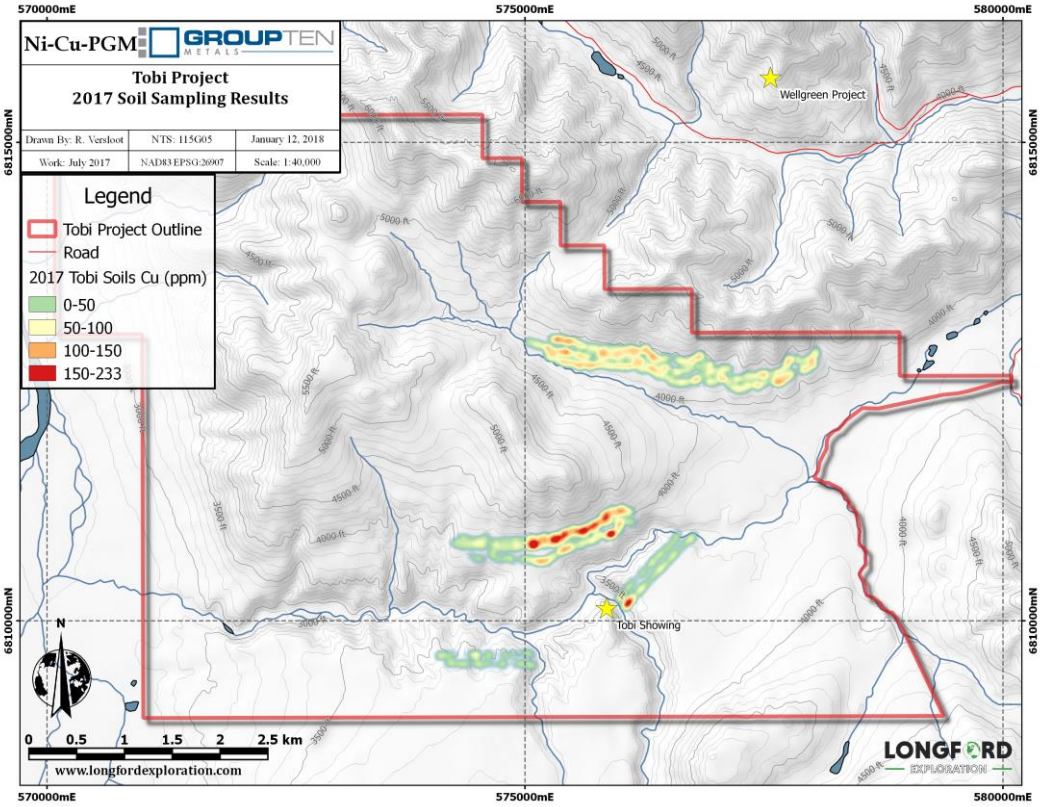

Figure 7.8 Cu results from 2017 soil sampling at Tobi.

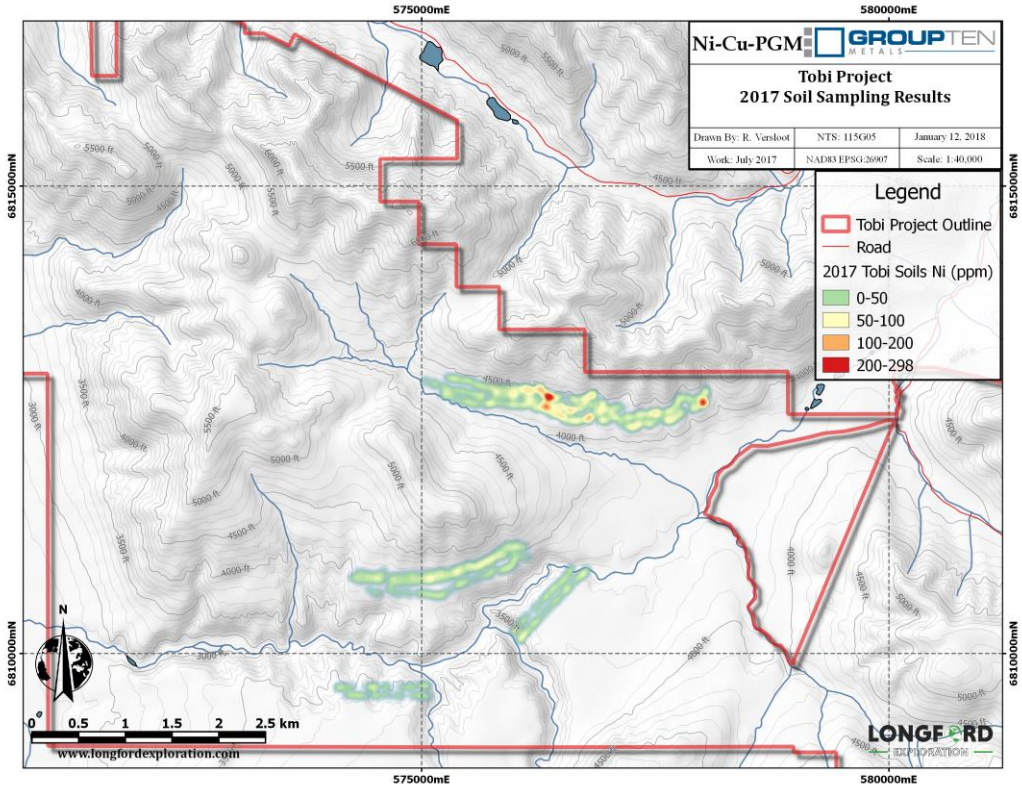

Figure 7.9 Ni results from 2017 soil sampling at Tobi.

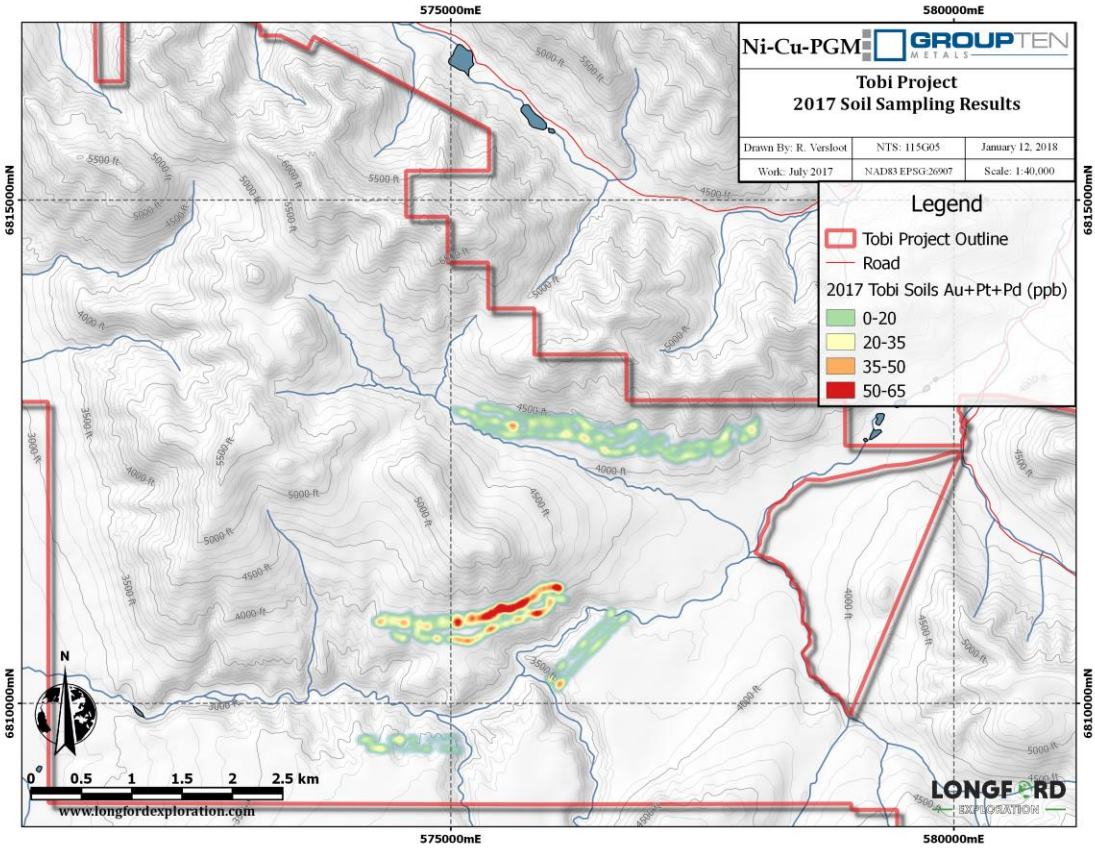

Figure 7.10 Au+Pt+Pd results from 2017 soil sampling at Tobi.

7.6 Geophysical Interpretation

The re-processing of the airborne magnetic data for the 115 G Map Sheet is shown with potential target areas for the Tobi property in Figure 7.11. The plots show a number of features of interest, some of which were examined in the 2017 field program. Other targets were identified in recent reports by Walcott P. (2016), James D. (2016) and Pautler J. (2017). Several of the anomalies show correlation with known ultramafic rocks, while other features lie along the prospective Hasen and Station Creek Formations contact.

Historic ground and airborne geophysical surveys on the Tobi property from 1955 to 2016 show linear EM conductors and aeromagnetic anomalies trending northwest across the area. The conductors are not continuous across the map; they are interrupted and displaced with respect to each other. Aeromagnetic surveys also show distinctive linear magnetic feature trending across the area that are coincident with outcrops of Nikolai volcanics , Kluane Range quartz diorite and potential ultramafic sills.

Summarized by J. Paulter (2017), “the airborne magnetic survey completed in 2016 defined a 6 km long, curvilinear sharp magnetic high anomaly transecting current mapped lithologies, suggestive of a folded magnetic horizon along a northwest plunging axis. The Maple Peak and West Basin showings occur below the magnetic high with the newly discovered Tobi showing occurring proximal to the fold closure. The anomaly may represent a mafic to ultramafic horizon, possibly beneath a thin veneer of Nikolai volcanic rocks. The Wade showing along the lower canyon of Wade Creek lies proximal to the western extent of

this curvilinear magnetic high anomaly, suggestive of another nickel-copper-PGE occurrence along this horizon".

Northwest trending linear EM conductors are prospective for mineralization in possible ultramafic sills, along the Station Creek volcanic and Hasen sediment contact and along faults or folds. They parallel the dominant structural trend and are somewhat coincident with linear magnetic highs.

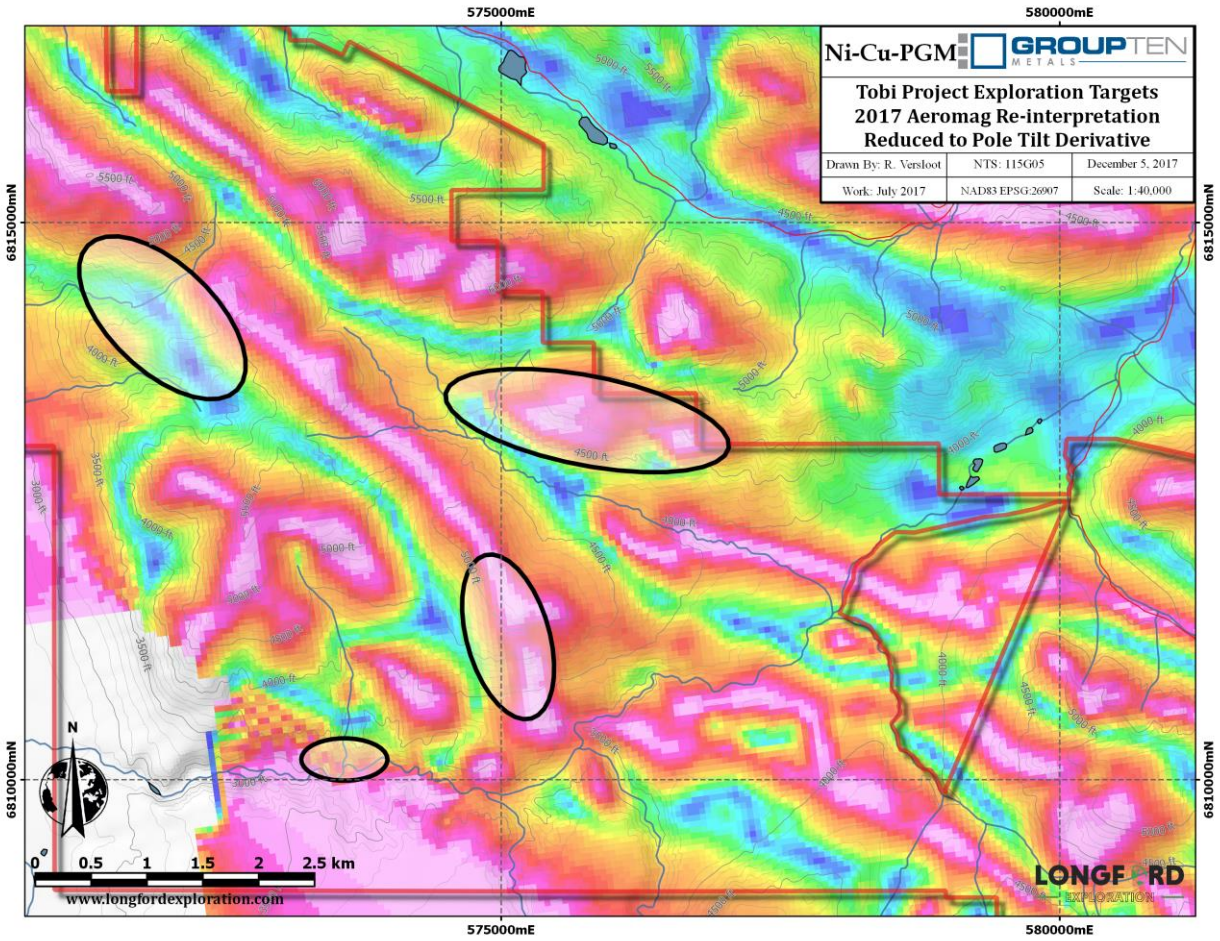

Figure 7.11 2017 re-processing of airborne magnetic data with exploration targets.

8 Conclusions

The 4 goals of the Tobi YMEP program were:

1. Excavator trenching, detailed mapping and sampling of the Tobi showing and the West Basin showing.

2. Auger drilling over the airborne geophysical anomaly on upper Maple Creek.

3. Soil geochemical sampling and silt sampling of known mineral occurrences, identified aeromagnetic anomalies, and 2016 target areas.

4. Geological mapping of the property.

Goal 1 was accomplished by hand trenching and detailed sampling of the main Tobi showing and surface sampling at the West Basin. In field sample results using an XRF yielded lower than expected nickel and copper values. Further trenching with an excavator was not undertaken. Goal 2, the geophysical anomaly on upper Maple Creek was covered by contour soil sampling and geological traverses across the slope finding an ultramafic sill and anomalous Cu Ni values. Goal 3 was completed by contour soil sampling and silt sampling over areas identified in the YMEP proposal. Geological mapping as Goal 4 was undertaken in the Wade and Maple Creeks canyons and along upper slopes of the upland areas.

8.1 Rock Sampling

Rock sample results were consistently anomalous in copper from the massive pyrrhotite lenses along the banks of Wade Creek running 0.3-0.5% Cu however the rocks returned low values in nickel and PGE's. The best copper values (up to 2.9%) were obtained in a gully north of the Wade and Maple Creek confluence and on Maple Peak (up to 1.5%) from narrow quartz carbonate veins in Nikolai volcanics. Samples of ultramafic rock collected above the upper Maple Creek placer camp returned anomalous nickel values of 1500ppm from a well exposed sill on the steep slope. Regional mapping shows the area underlain by Hasen limestone is extensively intruded by diorite dykes and sills with gossanous areas containing copper staining and limonitic fractures. Contacts, shears and faults in the upland areas are poorly exposed but remain targets for potential mineralization.

Detailed sampling of the Tobi showing returned Cu values up to 5161ppm (sample # 1889627) however Ni & PGE + Au values were low from the massive sulphide lenses and gossan zones. Pyrrhotite and pyrite occur as the main sulphide minerals in pods along the limestone diorite contact, with marginal gabbro dykes and magnetite lenses indicating a "skarn" type mineral occurrence. A second area of massive pyrrhotite lenses located 500m downstream of the Tobi on a steep slope above Wade Creek also occurs in a gossan zone. Rock samples results were similar to the Tobi showing retuning Cu values of 4781ppm (sample #143303) but low values in other elements. Rock samples from Maple Peak of copper stained Nikolai volcanic rocks cut by a few mineralized quartz carbonate veins (up to 20cm wide) contained spotty chalcopyrite and bornite with (sample #143317) recording a copper value of 14770ppm.

The geochemical anomalies above upper Maple Creek (West Basin) and north of the confluence of Wade and Maple Creeks warrant follow up examination by mapping and geophysical surveys. Further work on the Maple Peak area and portions of the Tobi property that were not covered in the 2017 program require evaluation including the Wade occurrence downstream on Wade Creek and the prominent gossan zones

and airborne geophysical anomalies on the steep slope and creek gullies on the west side of the property above the Donjek River. A program of further prospecting, mapping, geochemical sampling and ground geophysics is recommended.

8.2 Soil Sampling

The 2017 program identified two areas of anomalous soil geochemical values. 1) A copper geochemical anomaly on the slope north of the confluence of Wade and Maple Creeks at the 1200m elevation in an area underlain by Nikoli volcanic rocks in contact with Hasen Formation sediments. One rock sample (sample #143306) above the anomaly assayed 23990ppm Cu, 325ppb Au from a malachite stained gabbro. 2) A nickel geochemical anomaly on contour lines at 1150m elevation above upper Maple Creek, below an ultramafic sill mapped on the northern margin of the claims and close to the Callinan occurrence. One rock sample of peridotite from this area returned an elevated nickel value of 1597ppm (sample# 116924). Both soil anomalies are coincidental with aeromagnetic highs and proximal to mafic and ultramafic rocks. Elsewhere results showed background values in the contour soil samples.

Despite the difficult soil sampling conditions, the soils performed better than expected. Glacial cover and permafrost often mute the geochemical response in the elements of interest, but there was enough variation in the results to reveal distinct signatures of the underlying mapped rock types. This was especially apparent north of the confluence of Wade and Maple Creeks where soil lines crossed from anomalous copper values in the Nikolai volcanics & Hasen sediments to background values in the Cretaceous intrusive units. The anomalous Ni values found on the south facing slope above Upper Maple Creek correlates well with a geophysical anomaly trending northwest, and is also below a mapped ultramafic unit.

The contour soil lines results along the Wade and Maple valleys were inclined to be higher on south and west facing slopes where better quality samples that did not encounter permafrost were taken.

8.3 Silt Sampling

The two highest silt sample results for Ni were from sample 116909 and 116911 collected from creeks draining into Upper Maple Creek from Hasen Creek sediments and Upper Triassic Nikolai Volcanics. These samples correlate with a mapped ultramafic sill trending northwest and cutting across the gully from which the pan samples were taken and suggest that it may extend further to the northwest than previously mapped. Elevated values for Au generally came from creeks draining quaternary cover into Wade Creek.

9 Recommendations

The soil and rock geochemical anomalies described above warrant follow up examination by mapping, sampling and geophysical surveys. Areas of the Tobi property that were not covered in the 2017 program require evaluation including the Wade occurrence downstream on Wade Creek and the prominent gossan zones and airborne geophysical anomalies on the steep slope and creek gullies on the west side of the property above the Donjek River. A program of further prospecting, mapping, geochemical sampling and ground geophysics is recommended:

General Recommendations:

9.1 Logistical

- Compile and evaluate previous work on the property and general area.
- Prepare summary maps to determine optimal areas for future work programs.

9.2 Geophysics

- Proceed with ground geophysics over airborne geophysics anomalies and favourable geology. Geophysics is the best non-intrusive tool to see through ground cover on the upland areas. Ground magnetic and VLF-EM surveys are fast, relatively cheap and effective. Areas of complexity around magnetic anomalies are targets at the Wellgreen property. VLF-EM surveys can be easily done at the same time as magnetic surveys.
- Conductors from VLF-EM surveys should be further refined with HLEM or similar surveys before used as drill targets.
- All geophysical targets from the airborne surveys should be considered, even if they are of lesser strength.
- Consider drones or unmanned aerial vehicles (UAVs) for magnetic surveys over inaccessible terrain. UAVs fly closer to the ground and have a tighter line spacing than a helicopter or fixed wing survey and can cover steeper terrain than a ground magnetic survey. At the present time, UAVs cannot carry the additional weight of a VLF-EM.

9.3 Soil and Silt Sampling

- Further contour soil sampling lines and silt samples over areas on the western extent of the claims above the Donjek River and on lower Wade Creek.
- Follow up soils above upper Wade Creek in anomalous areas.

9.4 Prospecting, Mapping, Rock Sampling

- Continue mapping and sampling of the uplands, Maple Peak and the slopes above the Donjek River focussing on gossan zones, aeromagnetic anomalies and areas of previous results.

9.5 Budget

Costs and assumptions used in budget: **Phase I $100,000:**

- Compilation, digitization, map making and interpretation of all available historic data $15,000
- Soil and silt geochemistry $20,000
- Geological mapping, prospecting and sampling, detailed mapping and sampling to investigate structural features and ultramafic and gabbroic rocks. $40,000
- Geophysics, mag & EM survey $25,000

10 References

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11 Statement of Qualifications

I, Graham Davidson, with business address at 53 Grandin Woods, St. Albert, Alberta T8N 2Y4 hereby certify that:

- I am a practising Geologist, resident in St. Albert, Alberta;
- I am a member in good standing with Association of Professional Engineers, Geologists and Geophysicists of Alberta (# 42308);
- I hold a Bachelor of Science (Honours) degree in Geology (1982) from the University of Western Ontario;
- I have practiced my profession as a geologist since graduation;
- I have no direct or indirect interest in the Tobi Project, which is the subject of this report.
- I have based this report on:
    - Field work conducted by exploration contractors under my direct supervision
    - Historical research into past operations on and adjacent to the subject claims
- I consent to the use of this report for any Filing Statement, Statement of Material Facts, or support document.

Graham Davidson P.Geol.

APPENDIX A: Statement of Costs

DATE: December 7, 2017

LONGFORD EXPLORATION

SEND TO:
Group Ten Metals
#814 - 675 West Hastings Street
Vancouver, BC
V6B 1N2
604 357-4790

Longford Exploration Services
14501 Kidston Road
Coldstream, BC
Canada V1B1R7
778-809-7009

Catalyst East 2017 Cost Summary

			Days	Rate	Line Total
Personnel					
	Pgeo Graham Davidson	July 16-23	8	$ 550.00	$ 4,400.00
	Geologist-Versloot	July 16, July 18-23	7	$ 500.00	$ 3,500.00
	Soil Sampler/assistant- Mckenzie	July 16-23	8	$ 300.00	$ 2,400.00
	Soil Sampler/assistant - Martinolich	July 16, July 18-23	7	$ 300.00	$ 2,100.00
		total man days	30	Cat. Total	$ 12,400.00
Food and Lodging			Units	Rate	Line Total
	Food and Groceries	$460, $450	1	$ 910.00	$ 910.00
				Cat. Total	$ 910.00
Transportation			Units/Days	Unit Price	Line Total
	Truck	1 ton with safety and recovery gear	15	$ 140.00	$ 2,100.00
	Trailer	18' 7000lb covered trailer	8	$ 50.00	$ 400.00
	ATVS	per days	16	$ 140.00	$ 2,240.00
	Fuel	per km for truck, km	1310	$ 0.55	$ 720.50
				Cat. Total	$ 5,460.50
Equipment Rentals			Units	Unit Price	Line Total
	Electronics Kit	Radios, Sat phones, GPS, per man day	30	$ 20.00	$ 600.00
	portable XRF with Stand	Per Day	8	$ 177.42	$ 1,419.36
	Fly Camp	4 person setup, per man day	30	$ 40.00	$ 1,200.00
				Cat. Total	$ 3,219.36
Consumable			Units	Unit Price	Line Total
	Sample Bags	per man day	30	$ 5.00	$ 150.00
	Flagging Tape	per man day	30	$ 5.00	$ 150.00
	office consumables	per man day	30	$ 3.00	$ 90.00
				Cat. Total	$ 390.00
Analytical			Units	Unit Price	Line Total
	Analysis-soil	SS80, AQ300 FA330	155	$ 30.25	$ 4,688.75
	Analysis-rock	prp70-250, FA330, AQ300	48	$ 34.25	$ 1,644.00
				Cat. Total	$ 6,332.75
Post Field			Units	Unit Price	Line Total
	Assessment Report prep and work filing		1	$ 2,500.00	$ 2,500.00
				Cat. Total	$ 2,500.00
				Estimated Sub Total	$ 31,212.61
				Management 15%	$ 4,681.89
				SUB TOTAL	$ 35,894.50
				GST 5 %	$ 1,794.73
				Total	$ 37,689.23

DATE: December 7, 2017

LONGFORD
EXPLORATION

SEND TO:
Group Ten Metals
#814 - 675 West Hastings Street
Vancouver, BC
V6B 1N2
604 357-4790

Longford Exploration Services
14501 Kidston Road
Coldstream, BC
Canada V1B1R7
778-809-7009

TOBI 2017 Cost Summary

Personnel		Days	Rate		Line Total	
Pgeo Graham Davidson	July 24 - August 2, August 4-5	12	$	550.00	$	6,600.00
Geologist-Versloot	July 24 - August 2, August 4-5	12	$	500.00	$	6,000.00
Soil Sampler/assistant- Mckenzie	July 24 - August 2, August 4-5	12	$	300.00	$	3,600.00
Soil Sampler/assistant - Martinolich	July 24 - 31	8	$	300.00	$	2,400.00
	total man days	44	**Cat. Total**		**$**	**18,600.00**
Food and Lodging		Units	Rate		Line Total	
Food and Groceries		1	$	1,502.62	$	1,502.62
			Cat. Total		**$**	**1,502.62**
Transportation		Units/Days	Unit Price		Line Total	
Truck	1 ton with safety and recovery gear	24	$	140.00	$	3,360.00
Trailer	18' 7000lb covered trailer	12	$	50.00	$	600.00
ATV's	per days	24	$	140.00	$	3,360.00
Fuel	per km for truck, km	1941	$	0.55	$	1,067.55
			Cat. Total		**$**	**8,387.55**
Equipment Rentals		Units	Unit Price		Line Total	
Electronics Kit	Radios, Sat phones, GPS, per man day	44	$	20.00	$	880.00
portable XRF with Stand	Per Day	12	$	177.42	$	2,129.04
Fly Camp	4 person setup, per man day	44	$	40.00	$	1,760.00
			Cat. Total		**$**	**4,769.04**
Consumable		Units	Unit Price		Line Total	
Sample Bags	per man day	44	$	5.00	$	220.00
Flagging Tape	per man day	44	$	5.00	$	220.00
Office Consumables	per man day	44	$	3.00	$	132.00
			Cat. Total		**$**	**572.00**
Analytical		Units	Unit Price		Line Total	
Analysis-soil	SS80, AQ300 FA330	218	$	30.25	$	6,594.50
Analysis-rock	prp70-250, FA330, AQ300	50	$	34.25	$	1,712.50
Analysis-Sediment	SS80, AQ300 FA330	19	$	30.25	$	574.75
			Cat. Total		**$**	**8,307.00**
Post Field		Units	Unit Price		Line Total	
Assessment Report prep and work filing		1	$	2,500.00	$	2,500.00
			Cat. Total		**$**	**2,500.00**

Estimated Sub Total	$	44,638.21
Management 15%	$	6,695.73
SUB TOTAL	$	51,333.94
GST 5%	$	2,566.70
Total	$	53,900.64

APPENDIX B: Daily Summary of 2017 Tobi Program

Crew:
Pgeo – Graham Davidson
Geologist – Ryan Versloot
Soil Sampler/Assistant – Josh Mckenzie
Soil Sampler/Assistant – Matt Martinolich

July 16, 2017

Mobilize to Maple Creek and set up TOBI camp on gravel pad beside access trail approximately 2km from Tobi showing. Attempt to drive down Wade canyon but trail very rough with slide material from canyon walls.

	Task
GD	Camp setup
RV	Camp Setup
JM	Camp Setup
MM	Camp Setup

July 17, 2017

ATV down access trail along Maple Ck. to Wade Ck. and cross Wade Ck. to the gossan zones and massive sulphide target (Tobi showing) exposed by slumping on the south bank above Wade Ck. approximately 100-200m upstream of the Wade & Maple confluence. Examine massive sulphide lenses up to 1.0m thick occurring in limestone, siltstone and argillite intruded by diorite and gabbro dykes and sills. Main massive sulphide section has slumped downslope 5-10m toward Wade Ck. forming a prominent gossan. A few narrow black fine grained waxy mafic sills occur along the limestone diorite contact with minor serpentine and trace azurite stain.

A second area of gossan and massive sulphide was examined approx. 100m upstream of the main Tobi showing past limestone cliffs on the same bank along Wade Ck. Limestone, argillite and siltstone beds are intruded by diorite and andesite porphyry dykes. Red weathering fractured argillite hosts lenses of massive pyrrhotite upto 1.0m thick along the limestone contact and in fractures. The limestone is folded and silicified by the intrusive rocks.

Ryan and Josh offsite for the day.

	Task
GD	Prospecting Tobi
MM	Prospecting Tobi

July 18, 2017

Digging hand pits across the Tobi showing to expose massive sulphide and gossanous soil & gravel. Sampling and mapping of pits and Tobi occurrence. Massive sulphide lenses and bands 0.5-1.0m thick occur along bedding at limestone diorite contact.

	Task	Geo-Points	Rock Samples
GD	Hand trenching, sampling.	1	17
RV	Prospecting Tobi showing, Sampling.		3
JM	Digging.		
MM	Digging		

July 19, 2017

Start soil sample program on contour lines on NW slope above Wade Ck. Continue sample and mapping of hand pits on Tobi occurrence. Located similar massive sulphide occurrence found approx. 500m downstream of the Tobi on the NW slope above Wade Ck.

	Task	Rock Samples	Soil Samples	Geo Points
GD	Prospecting Tobi, Sampling	8		1
RV	Prospecting Tobi, Mapping, Sampling.	1		5
JM	Soil Sampling		24	
MM	Soil Sampling		26	

July 20, 2017

Continue contour soil lines on NW slope above Wade Ck. Examine massive sulphide occurrence found yesterday, traverse along ridge and down Wade Ck. These sulphide lenses occur in limestone beside diorite intrusion and dykes, some breccia boulders. Several diorite and quartz diorite dykes and sills intruding limestone and argillite, rusty weathering bands in sediments with up to 5% Po and Py. Cross Wade Ck. and traverse back towards Tobi occurrence finding extension of Tobi approx. 100m south of main gossan.

	Task	Geo-Points	Rock Samples	Soil Samples
GD	Sampling, Prospecting Tobi Showing.	13	5	
RV	Prospecting Tobi Site.		2	
JM	Soil Sampling.			14
MM	Soil Sampling.			16

July 21, 2017

Hand trench on Tobi extension and on upstream gossan. Sample and map on new pits upstream of Tobi occurrence. Further upstream red weathering volcanics and dioritic rocks outcropping on banks of Wade Ck. weakly mineralized with disseminated pyrite (<2%) and trace malachite stain.

	Task	Rock Samples	Geo Points
GD	Prospecting Tobi, Sampling.	3	4
RV	Prospecting Tobi, Mapping		5
JM	Digging.		
MM	Digging.		

July 22, 2017

Traverse downstream on Wade Ck. past placer camp to lower Wade canyon. Several gossan zones occur where diorite dykes and sills intrude limestone. Minor quartz carbonate veining along contacts with trace pyrite and local weak malachite stain. Map geology on return walk up Wade Ck. Crew running contour soil lines on NW slope above Wade Ck.

	Task	Rock Samples	Soil Samples	Geo Points
GD	Prospecting Tobi, Sampling, Mapping.	4		1
RV	Prospecting Tobi, Sampling.	1		3
JM	Soil Sampling.		19	
MM	Soil Sampling.		21	

July 23, 2017

Mapping lower Maple Creek and the upper Canyon of Wade Creek. Cliffs and scree slopes are mafic volcanic rocks, tufaceous to porphyritic with diorite sills and dykes. A few felsic porphyry and andesite dykes cut the mafic units. Occasional breccia and rusty weathering argillaceous inclusions. Along Wade Ck. valley limestone and argillite beds strike 280 deg. with near vertical dip. Contacts with diorite and volcanic sills and dykes are silicified with minor pyrite and chalcopyrite in fractures. Trace malachite and azurite occurs in black glassy volcanic sills. Crew running contour soil lines on southeast bank above Wade Ck.

	Task	Rock Samples	Soil Samples	Geo Points
GD	Prospecting Tobi, Sampling	3		6
RV	Prospecting Tobi, Mapping.	1		2
JM	Soil Sampling.		17	
MM	Soil Sampling.		18	

July 24, 2017

Check rock samples from Tobi with XRF, weak Cu, Ni response. Crew running contour soil lines from Wade Ck. across upland to Maple Ck.

	Task	Soil Samples
GD	XRF and office work.	
RV	XRF and office work	
JM	Soil Sampling	21
MM	Soil Sampling	22

July 25, 2017

Take 14 new rock samples from Tobi showing where 2016 samples had good Cu & Ni values. Check with XRF produced weak Cu & Ni values, unable to duplicate previous results. Traverse upslope to ridge crest and down contact between rusty weathering volcanics and sediments, trace malachite and azurite along contact, appears to be fault which crosses Wade Creek to the NE.

	Task	Rock Samples	Geopoints
GD	Prospecting Tobi, Sampling	14	
RV	Prospecting Tobi, Mapping.	2	5
JM	Prospecting Tobi, Digging.		
MM	Prospecting Tobi, Digging.		

July 26, 2017

Access upper Maple Ck. by ATV along rough mining road to old placer camp. Traverse up creek to West Basin area and check 2016 sample sites in creek draw, unable to find mineralization along gully. Continued upstream to extensive outcrop of Hasen sediments (limestone & argillite), continue up slope into cliffs of Nikoli volcanics (andesite and basalt tuffs). A gabbro sill occurs at the contact between sedimentary and volcanic rocks. Crew running contour soil lines above upper Maple Ck.

	Task	Rock Samples	Soil Samples	Geo Points
GD	Prospecting Tobi, Mapping.	1		6
RV	Prospecting Tobi, Sampling.	3		1
JM	Soil Sampling.		23	
MM	Soil Sampling.		25	

July 27, 2017

Traverse along creek draws above upper Maple Ck. Pan sample side creeks. Ultramafic rock outcrops in creek gully intruding argillite, conglomerate and limestone (Hasen seds), several samples collected. Sedimentary rocks outcrop along lower slopes in narrow creek gullies, higher slopes are mainly grass with a few outcrops of Nikoli volcanics. Continue contour soils above upper Maple Creek.

	Task	Rock Samples	Pan Sample	Soil Samples	Geo Points
GD	Prospecting Tobi, Sampling.	1	2		
RV	Prospecting Tobi, Sampling.	2	2		2
JM	Soil Sampling.			15	
MM	Soil Sampling.			16	

July 28, 2017

Camp move upstream on Maple Creek. Office and sample work for the rest of the day.

	Task
GD	Move Camp.
RV	Move Camp.
JM	Move Camp.
MM	Move Camp.

July 29, 2017

Traverse up upper Maple Ck. to the headwaters, pan sample side creeks. Mostly grassy slopes, a few volcanic rock outcrops along creek gully, higher up argillite, rusty weathering fractures, minor quartz carbonate veining and spotty pyrite (<2%). Old 4x4 claim posts along hillside.

	Task	Rock Samples	Pan Sample	Soil Samples	Geo Points
GD	Prospecting Tobi, Sampling.	2	3		2
RV	Prospecting Tobi, Sampling.	1	3		
JM	Soil Sampling.			27	
MM	Soil Sampling.			29	

July 30, 2017

Traverse up hillside to north of old placer camp on upper Maple CK. Very poor weather, heavy rain and fog. Walk up old cat trail into gully, possible old drill sites below waterfall (Callinan occurance) rusty fractured and brecciated argillite and limestone intruded by gabbroic dyke. Scaled cliff face and continued up to black streak on ridge crest. Peridotite outcrops across and downslope, sampled three locations. This sill correlates with magnetic high on airborne geophysical map. Crew continue contour soil lines on upper Maple Ck.

	Task	Rock Samples	Soil Samples	Geo Points
GD	Prospecting Tobi, Sampling	3		1
RV	Prospecting Tobi			1
JM	Soil Sampling		19	
MM	Soil Sampling		21	

July 31, 2017

Ryan drives Matt to airport for time off and to pick up groceries. Graham and Matt focus on collecting pan concentrate samples along Wade cre

	Task	Pan Samples
GD	Prospecting Tobi, Pan Sampling	9
RV	Food Trip to Whitehorse.	
JM	Prospecting, Pan Sampling.	
MM	Travel day.	

August 1, 2017

Traverse up upper Maple Ck. then up side hill to top of Maple Peak. Lower slopes are Hasen sediments and upper slopes and ridges are massive Nikolai volcanics with a few gabbroic sills. Spotty Cu stain in volcanics. A few quartz carbonate veins up to 20cm wide host patchy chalcopyrite and bornite with cu stain.

	Task	Rock Samples	Geo Points
GD	Prospecting Maple Peak	2	2
RV	Prospecting Maple Peak	4	
JM	Prospecting Maple Peak		

August 2, 2017

Traverse up upper Maple Ck. across upland to overlook the Donjek River, mainly light grey quartz diorite outcrop and talus crossing into argillite and limestone. Common rusty fractures in argillite with spotty malachite. Looking downslope to the Donjek, extensive gossan zones on ridges with a few slumps that correlate with aeromagnetic anomaly, inaccessible except by helicopter set out and pick up.

	Task	Rock Samples	Geo Points
GD	Prospecting Tobi, Sampling.	4	9
RV	Prospecting Tobi.	1	3
JM	Prospecting, Digging.		

August 4, 2017

The crew prospected a claim adjacent to the Tobi group subject to this YMEP grant. Drive around to Arch Ck. road and access northwest side of Maple Peak. Follow old cat trail to upper slope where a prominent gossan zone crosses the gully. Rusty Hasen limestone, conglomerate and argillite outcrop below Nikolai volcanics. Possible gabbroic sill along shear zone in sediments with minor pyrite. Traverse around cirque and down ridge to road crossing mafic volcanic and several gabbroic sills.

	Task	Rock Samples	Geo Points
GD	Prospecting Maple Peak.	6	10
RV	Prospecting Maple Peak.	3	5
JM	Prospecting Maple Peak.		

August 5, 2017

Demob camp and travel to Haines Junction, complete paperwork and prepare sample reports for submission to lab.

	Task
GD	Demob Camp
RV	Demob Camp
JM	Demob Camp

APPENDIX C: Claim Map

See digital file for 18”x24” sized claim map in .pdf format.

APPENDIX D: Assay Certificates

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Submitted By: James Rogers
Receiving Lab: Canada-Whitehorse
Received: July 31, 2017
Report Date: August 30, 2017
Page: 1 of 7

CERTIFICATE OF ANALYSIS WHI17000411.1

CLIENT JOB INFORMATION

Project: Catalyst
Shipment ID:
P.O. Number
Number of Samples: 171

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	171	Dry at 60C			WHI
SS80	171	Dry at 60C sieve 100g to -80 mesh			WHI
SVRJT	171	Save all or part of Soil Reject			WHI
FA330	171	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
EN002	171	Environmental disposal charge-Fire assay lead waste			VAN
AQ300	171	1:1:1 Aqua Regia digestion ICP-ES analysis	0.5	Completed	VAN
SHP01	171	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

Invoice To: Longford Exploration Services Ltd.
6970 Napier Street
Burnaby British Columbia V5B 2C4
Canada

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
Marcus Lau
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1889901	Soil	8	7	13	<1	47	<3	70	<0.3	28	12	364	2.37	6	<2	46	<0.5	<3	<3	52	1.38
1889902	Soil	11	<3	13	1	52	4	60	<0.3	30	12	378	2.31	8	<2	51	<0.5	<3	<3	52	1.52
1889903	Soil	12	7	17	1	124	4	71	<0.3	43	20	369	3.63	4	<2	111	<0.5	<3	<3	97	1.67
1889904	Soil	7	4	10	<1	117	<3	45	<0.3	26	9	274	1.86	6	<2	54	<0.5	<3	<3	41	2.07
1889905	Soil	7	5	7	<1	57	4	67	<0.3	32	13	325	2.55	6	<2	61	<0.5	<3	<3	59	1.60
1889906	Soil	11	4	8	<1	67	3	61	0.3	34	14	397	2.46	7	<2	53	<0.5	<3	<3	59	1.57
1889907	Soil	7	<3	7	<1	41	4	60	<0.3	31	13	381	2.52	8	<2	54	<0.5	<3	<3	59	1.44
1889908	Soil	6	<3	7	<1	167	<3	93	<0.3	50	15	409	2.59	5	<2	56	1.0	<3	<3	59	2.54
1889909	Soil	9	13	11	<1	99	<3	55	<0.3	32	14	354	2.54	8	<2	61	<0.5	<3	<3	69	2.13
1889910	Soil	9	<3	13	<1	103	4	51	<0.3	33	16	431	2.67	7	<2	63	<0.5	<3	<3	75	2.39
1889911	Soil	6	<3	5	2	40	3	71	<0.3	34	13	348	2.28	10	<2	58	<0.5	<3	<3	56	2.80
1889912	Soil	8	4	4	1	35	5	68	<0.3	32	12	431	2.38	10	<2	57	<0.5	<3	<3	50	2.07
1889913	Soil	7	<3	7	2	59	5	84	<0.3	38	12	444	2.28	11	<2	71	<0.5	<3	<3	49	2.74
1889914	Soil	7	<3	6	1	43	4	56	<0.3	34	11	360	2.24	8	<2	56	<0.5	<3	<3	47	1.66
1889915	Soil	8	<3	3	<1	47	4	67	<0.3	33	14	436	2.52	10	<2	63	<0.5	<3	<3	56	2.15
1889916	Soil	20	10	5	<1	40	3	76	<0.3	31	11	391	2.28	7	<2	63	<0.5	<3	<3	52	1.98
1889917	Soil	7	<3	4	<1	39	4	57	<0.3	30	13	398	2.53	9	<2	54	<0.5	<3	<3	59	1.74
1889918	Soil	6	11	5	1	35	4	56	<0.3	32	13	440	2.51	11	<2	57	<0.5	<3	<3	55	1.41
1889919	Soil	7	3	7	1	37	3	56	<0.3	25	11	446	2.24	8	<2	62	<0.5	<3	<3	48	1.66
1889920	Soil	7	4	7	1	34	<3	63	<0.3	26	12	470	2.28	9	<2	57	<0.5	<3	<3	50	1.41
1889921	Soil	8	10	4	1	38	5	61	<0.3	33	13	456	2.61	10	<2	54	<0.5	<3	<3	58	1.27
1889922	Soil	6	8	9	<1	44	<3	64	<0.3	38	13	462	2.50	8	<2	52	<0.5	<3	<3	58	1.32
1889923	Soil	5	<3	4	1	41	<3	56	<0.3	28	8	427	1.37	5	<2	94	<0.5	<3	<3	27	3.41
1889924	Soil	7	<3	7	1	32	4	62	<0.3	30	12	425	2.30	8	<2	57	<0.5	<3	<3	52	1.49
1889925	Soil	5	<3	5	<1	46	4	61	<0.3	34	15	544	2.48	10	<2	60	<0.5	<3	<3	55	1.65
1889926	Soil	7	7	15	1	30	6	60	<0.3	33	15	444	2.84	10	<2	45	<0.5	<3	<3	66	0.96
1889927	Soil	7	13	6	1	44	<3	61	<0.3	34	12	401	2.36	7	<2	63	0.5	<3	<3	51	1.73
1889928	Soil	5	10	6	1	39	3	69	<0.3	32	13	426	2.64	9	<2	50	<0.5	<3	<3	59	1.15
1889929	Soil	9	<3	4	1	39	4	61	<0.3	29	12	397	2.21	10	<2	44	<0.5	<3	<3	47	0.96
1889930	Soil	7	7	4	1	52	4	67	<0.3	33	12	446	2.33	13	<2	53	<0.5	<3	<3	47	1.24

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889901	Soil	0.055	8	36	0.80	97	0.080	<20	1.36	0.03	0.10	<2	<0.05	<1	<5	<5	<5
1889902	Soil	0.058	9	34	0.69	97	0.064	<20	1.30	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889903	Soil	0.042	6	62	2.00	55	0.136	<20	2.80	0.03	0.08	<2	0.05	<1	<5	5	6
1889904	Soil	0.062	8	30	0.69	83	0.054	<20	1.21	0.03	0.07	<2	0.10	<1	<5	<5	<5
1889905	Soil	0.064	10	47	0.93	102	0.087	<20	1.62	0.04	0.11	<2	0.06	<1	<5	<5	<5
1889906	Soil	0.054	9	45	0.93	85	0.081	<20	1.57	0.03	0.09	<2	0.07	<1	<5	<5	<5
1889907	Soil	0.054	9	40	0.90	97	0.076	<20	1.56	0.03	0.09	<2	0.07	<1	<5	<5	<5
1889908	Soil	0.050	7	45	1.22	65	0.092	<20	1.59	0.03	0.12	<2	0.07	<1	<5	<5	<5
1889909	Soil	0.064	8	50	1.33	72	0.085	<20	1.80	0.04	0.10	<2	0.08	<1	<5	<5	<5
1889910	Soil	0.060	8	49	1.58	69	0.095	<20	1.76	0.04	0.10	<2	0.08	<1	<5	<5	<5
1889911	Soil	0.064	8	53	1.40	87	0.062	<20	1.67	0.03	0.10	<2	0.09	<1	<5	<5	<5
1889912	Soil	0.058	11	38	0.68	107	0.059	<20	1.36	0.03	0.07	<2	0.11	<1	<5	<5	<5
1889913	Soil	0.084	10	41	0.78	138	0.046	<20	1.33	0.03	0.09	<2	0.16	<1	<5	<5	<5
1889914	Soil	0.060	11	33	0.61	99	0.060	<20	1.28	0.03	0.08	<2	0.08	<1	<5	<5	<5
1889915	Soil	0.058	11	41	0.80	124	0.065	<20	1.43	0.03	0.08	<2	0.08	<1	<5	<5	<5
1889916	Soil	0.064	10	40	0.82	111	0.065	<20	1.39	0.04	0.09	<2	0.09	<1	<5	<5	<5
1889917	Soil	0.049	10	41	0.76	98	0.069	<20	1.46	0.04	0.06	<2	0.08	<1	<5	<5	<5
1889918	Soil	0.066	11	39	0.72	123	0.065	<20	1.43	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889919	Soil	0.066	10	32	0.56	129	0.058	<20	1.26	0.03	0.07	<2	0.09	<1	<5	<5	<5
1889920	Soil	0.062	10	35	0.62	128	0.060	<20	1.29	0.03	0.06	<2	0.07	<1	<5	<5	<5
1889921	Soil	0.061	11	44	0.78	123	0.066	<20	1.62	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889922	Soil	0.051	10	41	0.75	119	0.074	<20	1.45	0.04	0.06	<2	0.06	<1	<5	<5	<5
1889923	Soil	0.093	11	21	0.50	101	0.027	<20	0.82	0.02	0.06	<2	0.19	<1	<5	<5	<5
1889924	Soil	0.062	10	40	0.74	115	0.060	<20	1.38	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889925	Soil	0.067	12	41	0.72	119	0.064	<20	1.43	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889926	Soil	0.044	9	50	0.87	103	0.090	<20	1.61	0.03	0.07	<2	0.05	<1	<5	<5	<5
1889927	Soil	0.075	12	35	0.67	118	0.065	<20	1.42	0.03	0.08	<2	0.08	<1	<5	<5	<5
1889928	Soil	0.065	10	38	0.69	124	0.074	<20	1.36	0.03	0.07	<2	0.06	<1	<5	<5	<5
1889929	Soil	0.059	11	35	0.62	100	0.056	<20	1.36	0.03	0.06	<2	0.06	<1	<5	<5	<5
1889930	Soil	0.070	13	39	0.68	109	0.055	<20	1.49	0.03	0.05	<2	0.07	<1	<5	<5	<5

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Project: Catalyst
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CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1889931	Soil	6	10	6	<1	28	4	71	<0.3	33	14	392	2.61	7	<2	53	<0.5	<3	<3	62	1.14
1889932	Soil	6	<3	8	1	43	3	68	<0.3	33	15	568	2.61	10	<2	64	<0.5	<3	<3	60	1.52
1889933	Soil	5	5	8	1	49	7	74	0.4	37	14	470	2.85	10	<2	55	<0.5	<3	<3	61	1.26
1889934	Soil	5	<3	8	1	37	3	67	<0.3	27	10	374	2.21	9	<2	56	<0.5	<3	<3	48	1.36
1889935	Soil	7	12	3	2	51	4	57	<0.3	35	14	460	2.62	11	<2	62	<0.5	<3	<3	59	1.52
1889936	Soil	7	<3	<2	<1	39	3	66	<0.3	32	13	447	2.23	8	<2	59	<0.5	<3	<3	53	1.80
1889937	Soil	9	<3	4	1	42	4	73	<0.3	30	11	309	2.20	10	<2	50	<0.5	<3	<3	43	1.83
1889938	Soil	6	<3	<2	2	35	4	53	<0.3	28	11	321	2.16	9	<2	47	<0.5	<3	<3	45	1.38
1889939	Soil	11	<3	7	1	45	4	69	<0.3	34	12	375	2.32	9	<2	55	<0.5	<3	<3	49	1.82
1889940	Soil	7	<3	<2	1	43	3	70	<0.3	33	11	362	2.38	10	<2	55	<0.5	<3	<3	52	1.73
1889941	Soil	6	<3	8	2	31	6	63	<0.3	26	11	641	2.25	9	<2	52	<0.5	<3	<3	45	1.88
1889942	Soil	8	<3	5	2	40	<3	50	<0.3	31	11	320	2.02	10	<2	80	<0.5	<3	<3	49	5.89
1889943	Soil	9	6	19	<1	100	<3	55	<0.3	35	15	333	2.65	8	<2	69	<0.5	<3	<3	66	2.07
1889944	Soil	6	<3	6	<1	84	5	108	<0.3	43	16	500	3.21	6	<2	36	<0.5	<3	<3	68	0.89
1889945	Soil	9	<3	7	<1	80	5	58	<0.3	33	14	405	2.37	6	<2	49	<0.5	<3	<3	52	1.52
1889946	Soil	8	4	2	<1	55	6	78	<0.3	47	19	621	3.72	6	3	80	<0.5	<3	<3	85	2.90
1889947	Soil	8	5	4	1	31	4	52	<0.3	26	10	297	2.13	6	<2	46	<0.5	<3	<3	47	1.33
1889948	Soil	5	<3	8	1	34	5	89	<0.3	31	15	512	2.72	6	<2	51	<0.5	<3	<3	63	1.43
1889949	Soil	7	<3	<2	1	27	5	56	<0.3	27	12	375	2.46	8	<2	37	<0.5	<3	<3	58	0.81
1889950	Soil	7	6	7	1	29	5	53	<0.3	26	10	278	2.41	8	<2	39	<0.5	<3	<3	54	0.88
1889961	Soil	5	<3	<2	<1	35	5	60	<0.3	30	13	519	2.62	5	<2	118	<0.5	<3	<3	62	4.14
1889962	Soil	6	<3	2	1	55	8	75	<0.3	44	19	654	3.77	4	3	87	<0.5	<3	<3	91	2.98
1889963	Soil	4	3	<2	<1	36	5	61	<0.3	27	14	515	3.15	2	3	44	<0.5	<3	<3	78	0.93
1889964	Soil	7	<3	<2	<1	33	5	52	<0.3	25	11	408	1.99	8	<2	58	<0.5	<3	<3	40	1.53
1889965	Soil	5	3	2	1	18	5	37	<0.3	16	9	282	1.88	5	<2	29	<0.5	<3	<3	46	0.55
1889966	Soil	4	<3	3	1	14	5	57	<0.3	17	8	220	2.05	7	<2	36	<0.5	<3	<3	49	0.55
1889967	Soil	8	<3	7	<1	43	5	48	<0.3	31	6	241	1.84	7	<2	77	<0.5	<3	<3	30	1.87
1889968	Soil	5	<3	<2	1	22	6	40	<0.3	18	11	350	2.19	9	<2	36	<0.5	<3	<3	44	0.66
1889969	Soil	4	<3	3	2	30	5	71	<0.3	28	14	481	2.90	10	<2	37	<0.5	<3	<3	64	0.75
1889970	Soil	5	5	<2	2	24	6	73	<0.3	27	15	459	2.88	9	<2	36	<0.5	<3	<3	62	0.73

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	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889931	Soil	0.069	11	51	0.90	121	0.080	<20	1.77	0.04	0.07	<2	0.06	<1	<5	<5	<5
1889932	Soil	0.074	12	42	0.75	138	0.063	<20	1.54	0.03	0.06	<2	0.08	<1	<5	<5	<5
1889933	Soil	0.072	11	43	0.81	128	0.080	<20	1.59	0.03	0.09	<2	0.07	<1	<5	<5	<5
1889934	Soil	0.067	10	36	0.67	118	0.056	<20	1.42	0.03	0.07	<2	0.09	<1	<5	<5	<5
1889935	Soil	0.071	13	41	0.73	121	0.063	<20	1.51	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889936	Soil	0.063	9	38	0.76	103	0.061	<20	1.35	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889937	Soil	0.066	10	31	0.69	97	0.042	<20	1.27	0.02	0.06	<2	0.08	<1	<5	<5	<5
1889938	Soil	0.059	8	31	0.57	117	0.050	<20	1.12	0.03	0.05	<2	0.07	<1	<5	<5	<5
1889939	Soil	0.068	9	37	0.71	127	0.050	<20	1.30	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889940	Soil	0.072	9	38	0.72	128	0.055	<20	1.31	0.03	0.08	<2	0.07	<1	<5	<5	<5
1889941	Soil	0.059	9	30	0.58	112	0.050	<20	1.17	0.02	0.06	<2	0.10	<1	<5	<5	<5
1889942	Soil	0.053	7	42	1.26	80	0.046	<20	1.42	0.02	0.09	<2	0.06	<1	<5	<5	<5
1889943	Soil	0.060	7	49	1.58	61	0.073	<20	1.82	0.03	0.13	<2	0.08	<1	<5	<5	<5
1889944	Soil	0.048	8	44	1.03	76	0.092	<20	1.63	0.03	0.08	<2	<0.05	<1	<5	<5	<5
1889945	Soil	0.055	8	37	0.87	81	0.066	<20	1.48	0.03	0.08	<2	0.07	<1	<5	<5	<5
1889946	Soil	0.083	13	69	1.40	154	0.099	<20	2.07	0.03	0.18	<2	<0.05	<1	<5	<5	8
1889947	Soil	0.057	8	36	0.62	117	0.048	<20	1.08	0.02	0.06	<2	0.07	<1	<5	<5	<5
1889948	Soil	0.082	10	46	0.92	111	0.065	<20	1.42	0.02	0.11	<2	0.08	<1	<5	<5	<5
1889949	Soil	0.044	7	39	0.72	94	0.062	<20	1.25	0.02	0.07	<2	0.06	<1	<5	<5	<5
1889950	Soil	0.046	7	37	0.67	95	0.055	<20	1.19	0.02	0.06	<2	0.07	<1	<5	<5	<5
1889961	Soil	0.088	10	44	1.10	87	0.101	<20	1.39	0.03	0.11	<2	0.05	<1	<5	<5	5
1889962	Soil	0.086	12	67	1.39	130	0.106	<20	2.00	0.03	0.14	<2	<0.05	<1	<5	<5	8
1889963	Soil	0.064	12	43	0.97	90	0.077	<20	1.55	0.02	0.07	<2	<0.05	<1	<5	<5	7
1889964	Soil	0.064	8	30	0.57	107	0.045	<20	1.06	0.03	0.05	<2	0.07	<1	<5	<5	<5
1889965	Soil	0.034	5	28	0.51	80	0.046	<20	0.97	0.02	0.04	<2	<0.05	<1	<5	<5	<5
1889966	Soil	0.045	6	33	0.67	82	0.049	<20	1.17	0.02	0.06	<2	<0.05	<1	<5	<5	<5
1889967	Soil	0.065	10	26	0.43	158	0.036	<20	0.98	0.02	0.05	<2	0.11	<1	<5	<5	<5
1889968	Soil	0.050	8	30	0.53	98	0.043	<20	1.15	0.02	0.04	<2	0.05	<1	<5	<5	<5
1889969	Soil	0.063	9	44	0.83	111	0.068	<20	1.51	0.02	0.07	<2	0.05	<1	<5	<5	<5
1889970	Soil	0.057	8	45	0.83	110	0.067	<20	1.36	0.02	0.07	<2	<0.05	<1	<5	<5	<5

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1889971	Soil	8	<3	<2	1	33	3	55	<0.3	28	13	420	2.60	8	<2	37	<0.5	<3	<3	53	0.83
1889972	Soil	7	<3	4	1	44	5	74	<0.3	45	17	572	3.59	10	2	44	<0.5	<3	<3	70	1.18
1889973	Soil	5	4	7	<1	57	5	56	<0.3	37	16	550	2.82	8	<2	96	<0.5	<3	<3	59	1.81
116701	Soil	5	7	4	<1	22	4	62	<0.3	27	13	438	2.54	8	<2	29	<0.5	<3	<3	55	0.55
116702	Soil	6	7	3	<1	56	7	74	<0.3	43	19	640	3.63	4	3	96	<0.5	<3	<3	87	3.21
116703	Soil	4	7	19	<1	60	8	77	<0.3	45	19	622	3.72	5	3	87	<0.5	<3	<3	91	2.55
116704	Soil	8	<3	6	1	51	6	70	<0.3	44	18	601	3.41	6	2	87	<0.5	<3	<3	82	3.26
116705	Soil	5	<3	4	<1	21	5	35	<0.3	15	7	217	1.71	7	<2	25	<0.5	<3	<3	37	0.52
116706	Soil	4	<3	<2	<1	35	6	39	<0.3	22	9	217	1.97	8	<2	33	<0.5	<3	<3	41	0.72
116707	Soil	5	<3	<2	2	27	7	70	<0.3	26	14	422	3.04	11	<2	38	<0.5	<3	<3	68	0.70
116708	Soil	4	<3	3	<1	28	5	73	<0.3	42	17	467	3.60	6	2	43	<0.5	<3	<3	71	0.70
116709	Soil	9	<3	<2	1	24	5	49	<0.3	29	13	416	2.49	7	<2	35	<0.5	<3	<3	51	0.69
116710	Soil	5	<3	3	<1	26	3	48	<0.3	29	11	367	2.36	6	<2	36	<0.5	<3	<3	46	0.73
116711	Soil	8	<3	<2	1	37	7	73	<0.3	39	15	494	3.26	7	2	43	<0.5	<3	<3	66	0.94
116712	Soil	5	<3	<2	1	35	7	88	<0.3	40	18	590	3.72	7	3	39	<0.5	<3	<3	73	0.89
1889536	Soil	5	<3	3	1	44	<3	62	0.4	26	12	555	2.38	6	<2	57	<0.5	<3	<3	54	1.55
1889537	Soil	6	<3	3	1	38	4	59	<0.3	26	13	460	2.50	10	<2	56	<0.5	<3	<3	56	1.29
1889538	Soil	4	<3	3	<1	54	4	46	<0.3	31	11	325	2.54	7	<2	75	<0.5	<3	<3	59	1.55
1889539	Soil	6	3	3	<1	45	4	37	<0.3	22	8	201	1.83	8	<2	50	<0.5	<3	<3	36	1.47
1889540	Soil	5	<3	4	1	41	4	36	<0.3	19	6	172	1.67	7	<2	43	<0.5	<3	<3	33	1.36
1889541	Soil	5	<3	3	1	53	5	61	<0.3	30	12	330	2.47	8	<2	67	<0.5	<3	<3	54	1.70
1889542	Soil	13	3	12	1	113	6	64	<0.3	48	22	468	3.63	4	<2	107	<0.5	<3	<3	84	1.35
1889543	Soil	8	<3	4	1	59	5	61	<0.3	27	11	352	2.00	7	<2	56	<0.5	<3	<3	43	1.90
1889544	Soil	5	<3	5	<1	60	6	58	<0.3	29	10	359	1.91	7	<2	37	<0.5	<3	<3	40	1.28
1889545	Soil	12	4	15	<1	91	6	55	<0.3	33	13	403	2.33	10	<2	66	<0.5	<3	<3	51	2.37
1889546	Soil	7	3	13	1	82	8	53	<0.3	36	14	387	2.47	10	<2	58	<0.5	<3	<3	54	1.93
1889547	Soil	6	<3	14	1	119	8	58	<0.3	39	16	444	3.05	7	<2	68	<0.5	<3	<3	67	1.53
1889548	Soil	4	<3	12	<1	61	5	63	<0.3	31	13	305	2.52	11	<2	49	<0.5	<3	<3	59	1.48
1889549	Soil	4	<3	<2	2	42	6	61	<0.3	36	15	360	3.44	12	<2	38	<0.5	<3	<3	71	0.54
1889550	Soil	4	<3	2	2	39	8	50	<0.3	31	12	292	3.18	10	<2	38	<0.5	<3	<3	65	0.55

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889971	Soil	0.054	11	37	0.67	111	0.051	<20	1.42	0.02	0.05	<2	<0.05	<1	<5	<5	<5
1889972	Soil	0.071	13	55	1.04	171	0.087	<20	1.81	0.03	0.12	<2	<0.05	<1	<5	<5	6
1889973	Soil	0.046	10	41	0.93	111	0.058	<20	1.92	0.03	0.07	<2	0.05	<1	<5	<5	<5
116701	Soil	0.052	7	43	0.81	83	0.066	<20	1.35	0.02	0.07	<2	<0.05	<1	<5	<5	<5
116702	Soil	0.088	12	66	1.46	142	0.111	<20	2.03	0.03	0.13	<2	<0.05	<1	<5	<5	8
116703	Soil	0.083	12	72	1.49	139	0.098	<20	2.18	0.03	0.14	<2	<0.05	<1	<5	<5	9
116704	Soil	0.090	11	68	1.42	124	0.111	<20	1.91	0.03	0.12	<2	<0.05	<1	<5	<5	8
116705	Soil	0.040	6	23	0.42	62	0.040	<20	0.85	0.02	0.04	<2	<0.05	<1	<5	<5	<5
116706	Soil	0.047	8	26	0.46	109	0.038	<20	0.99	0.02	0.04	<2	0.06	<1	<5	<5	<5
116707	Soil	0.056	8	41	0.79	119	0.056	<20	1.51	0.02	0.06	<2	<0.05	<1	<5	<5	<5
116708	Soil	0.075	12	50	1.25	114	0.095	<20	2.04	0.04	0.08	<2	<0.05	<1	<5	<5	6
116709	Soil	0.067	10	32	0.76	96	0.052	<20	1.33	0.03	0.05	<2	<0.05	<1	<5	<5	<5
116710	Soil	0.064	11	30	0.71	95	0.047	<20	1.25	0.03	0.05	<2	<0.05	<1	<5	<5	<5
116711	Soil	0.063	13	43	0.95	142	0.092	<20	1.72	0.03	0.15	<2	<0.05	<1	<5	<5	5
116712	Soil	0.082	15	51	1.22	144	0.095	<20	2.10	0.03	0.16	<2	<0.05	<1	<5	<5	7
1889536	Soil	0.072	8	29	0.65	101	0.066	<20	1.22	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889537	Soil	0.059	8	37	0.76	122	0.073	<20	1.47	0.04	0.07	<2	0.05	<1	<5	<5	<5
1889538	Soil	0.068	9	40	0.79	99	0.077	<20	1.53	0.04	0.07	<2	0.05	<1	<5	<5	<5
1889539	Soil	0.050	7	24	0.45	86	0.047	<20	1.12	0.03	0.04	<2	0.07	<1	<5	<5	<5
1889540	Soil	0.046	6	21	0.39	73	0.041	<20	0.93	0.03	0.04	<2	0.07	<1	<5	<5	<5
1889541	Soil	0.062	8	37	0.89	90	0.067	<20	1.64	0.03	0.09	<2	0.07	<1	<5	<5	<5
1889542	Soil	0.052	4	53	1.67	53	0.169	<20	2.40	0.03	0.15	<2	<0.05	<1	<5	<5	<5
1889543	Soil	0.058	8	30	0.64	79	0.051	<20	1.27	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889544	Soil	0.047	8	28	0.54	73	0.051	<20	1.12	0.04	0.06	<2	<0.05	<1	<5	<5	<5
1889545	Soil	0.072	10	36	0.77	93	0.053	<20	1.54	0.03	0.08	<2	0.09	<1	<5	<5	<5
1889546	Soil	0.063	9	40	0.84	95	0.059	<20	1.61	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889547	Soil	0.056	9	45	1.01	88	0.103	<20	1.88	0.04	0.10	<2	<0.05	<1	<5	<5	<5
1889548	Soil	0.051	8	36	0.79	98	0.064	<20	1.58	0.03	0.06	<2	0.06	<1	<5	<5	<5
1889549	Soil	0.044	11	42	0.81	97	0.078	<20	1.93	0.03	0.06	<2	<0.05	<1	<5	<5	<5
1889550	Soil	0.043	9	38	0.73	77	0.070	<20	1.70	0.03	0.05	<2	<0.05	<1	<5	<5	<5

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Project: Catalyst
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CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
116736	Soil	4	<3	<2	2	47	7	76	<0.3	37	13	314	3.10	14	<2	32	<0.5	<3	<3	60	0.61
116737	Soil	9	<3	12	1	86	11	104	<0.3	78	21	704	4.22	16	<2	58	<0.5	<3	<3	72	1.48
116738	Soil	10	<3	2	1	29	9	60	<0.3	64	16	469	2.80	12	<2	30	<0.5	<3	<3	53	0.63
116739	Soil	6	4	4	2	69	11	136	0.4	84	22	639	4.12	12	<2	54	<0.5	<3	<3	83	1.09
116740	Soil	6	<3	5	2	76	11	125	0.4	80	21	603	3.85	11	<2	55	<0.5	<3	<3	78	1.25
116741	Soil	5	4	3	2	54	10	118	<0.3	78	20	609	4.55	10	<2	66	<0.5	<3	<3	95	1.24
116742	Soil	5	3	4	3	56	12	106	0.3	58	20	634	3.91	13	<2	44	<0.5	<3	<3	72	0.92
116743	Soil	5	<3	3	1	51	11	99	<0.3	45	14	442	2.84	9	<2	42	<0.5	<3	<3	58	1.11
116744	Soil	4	<3	3	<1	41	4	62	<0.3	48	9	296	1.84	8	<2	39	<0.5	<3	<3	39	1.30
116745	Soil	5	<3	3	2	58	10	90	<0.3	55	17	721	3.14	12	<2	40	<0.5	<3	<3	63	1.14
116746	Soil	4	<3	5	2	50	17	131	<0.3	76	23	790	3.48	20	<2	51	<0.5	<3	<3	67	1.29
116747	Soil	4	<3	4	2	55	10	94	<0.3	46	13	465	2.66	11	<2	45	<0.5	<3	<3	59	1.47
116748	Soil	6	<3	3	2	49	10	77	<0.3	51	17	613	3.33	11	<2	55	<0.5	<3	<3	64	1.23
116749	Soil	5	<3	3	6	61	12	109	0.4	48	15	544	3.19	15	<2	40	<0.5	<3	<3	81	1.08
116750	Soil	6	<3	3	4	63	12	75	<0.3	47	14	498	2.95	13	<2	40	<0.5	<3	<3	64	1.10
1889695	Soil	7	6	6	1	37	8	54	<0.3	25	12	404	2.27	9	<2	54	<0.5	<3	<3	49	1.40
1889696	Soil	10	<3	8	<1	37	6	66	<0.3	24	12	429	2.45	8	<2	56	<0.5	<3	<3	52	1.31
1889697	Soil	7	<3	6	<1	47	6	56	<0.3	34	13	427	2.67	7	<2	57	<0.5	<3	<3	60	1.11
1889698	Soil	20	5	11	1	106	8	52	<0.3	38	15	491	2.57	10	<2	43	<0.5	<3	<3	55	1.12
1889699	Soil	7	5	15	1	71	5	64	<0.3	45	19	524	3.21	7	<2	59	<0.5	<3	<3	76	1.11
1889700	Soil	9	<3	12	2	73	4	66	<0.3	44	19	564	3.26	8	<2	60	<0.5	<3	<3	76	1.20
1889751	Soil	8	5	9	1	68	6	72	<0.3	43	20	554	3.20	7	<2	75	<0.5	<3	<3	75	1.22
1889752	Soil	9	8	21	<1	233	3	57	<0.3	48	21	608	3.53	7	<2	98	<0.5	<3	<3	84	1.22
1889753	Soil	27	16	7	1	68	5	50	<0.3	37	15	289	3.07	6	<2	86	<0.5	<3	<3	75	1.00
1889754	Soil	7	7	11	<1	38	6	33	<0.3	15	6	215	1.48	8	<2	33	<0.5	<3	<3	27	1.13
1889755	Soil	8	<3	15	1	79	7	61	<0.3	38	12	342	2.33	7	<2	59	<0.5	<3	<3	48	1.76
1889756	Soil	9	4	6	1	67	5	58	<0.3	42	16	368	2.75	7	<2	76	<0.5	<3	<3	67	1.24
1889757	Soil	16	9	6	2	56	7	63	<0.3	27	13	851	2.19	9	<2	54	<0.5	<3	<3	42	1.80
1889758	Soil	9	15	<2	1	45	6	71	<0.3	26	12	437	2.15	10	<2	50	<0.5	<3	<3	45	1.60
1889759	Soil	10	6	<2	<1	67	5	43	<0.3	19	8	198	1.74	6	<2	44	<0.5	<3	<3	34	1.71

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	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
116736	Soil	0.047	9	39	0.73	97	0.059	<20	1.78	0.02	0.06	<2	<0.05	<1	<5	<5	<5
116737	Soil	0.058	13	62	1.16	155	0.077	<20	2.18	0.02	0.09	<2	<0.05	<1	<5	<5	7
116738	Soil	0.047	8	52	0.88	111	0.057	<20	1.64	0.03	0.05	<2	<0.05	<1	<5	<5	<5
116739	Soil	0.060	12	75	1.38	211	0.100	<20	2.70	0.02	0.09	<2	<0.05	<1	<5	<5	7
116740	Soil	0.066	13	71	1.30	205	0.089	<20	2.55	0.02	0.08	<2	0.05	<1	<5	<5	7
116741	Soil	0.046	6	97	1.74	204	0.149	<20	3.11	0.03	0.11	<2	<0.05	<1	<5	6	7
116742	Soil	0.067	13	56	1.11	201	0.080	<20	2.29	0.02	0.08	<2	<0.05	<1	<5	<5	6
116743	Soil	0.066	11	49	1.00	150	0.070	<20	1.83	0.03	0.07	<2	0.06	<1	<5	<5	5
116744	Soil	0.054	8	26	0.57	98	0.047	<20	0.97	0.03	0.04	<2	0.07	<1	<5	<5	<5
116745	Soil	0.072	13	58	1.10	153	0.060	<20	1.98	0.02	0.07	<2	0.06	<1	<5	<5	6
116746	Soil	0.054	8	80	1.59	134	0.085	<20	2.10	0.02	0.09	<2	0.06	<1	<5	6	6
116747	Soil	0.054	8	48	0.95	203	0.062	<20	1.65	0.03	0.07	<2	0.07	<1	<5	<5	<5
116748	Soil	0.058	10	53	1.13	160	0.079	<20	2.23	0.04	0.08	<2	<0.05	<1	<5	<5	5
116749	Soil	0.058	11	48	0.96	278	0.062	<20	1.80	0.03	0.06	<2	<0.05	<1	<5	<5	<5
116750	Soil	0.053	12	45	0.87	260	0.062	<20	1.94	0.03	0.06	<2	<0.05	<1	<5	<5	<5
1889695	Soil	0.053	7	31	0.67	97	0.062	<20	1.31	0.03	0.06	<2	0.07	<1	<5	<5	<5
1889696	Soil	0.062	9	33	0.69	110	0.067	<20	1.48	0.03	0.06	<2	0.06	<1	<5	<5	<5
1889697	Soil	0.058	10	43	0.88	102	0.091	<20	1.58	0.04	0.08	<2	<0.05	<1	<5	<5	<5
1889698	Soil	0.061	10	39	0.78	76	0.059	<20	1.48	0.02	0.05	<2	<0.05	<1	<5	<5	<5
1889699	Soil	0.051	6	55	1.39	99	0.121	<20	1.99	0.03	0.07	<2	<0.05	<1	<5	<5	5
1889700	Soil	0.058	7	56	1.37	104	0.109	<20	2.00	0.03	0.07	<2	0.06	<1	<5	<5	5
1889751	Soil	0.043	6	49	1.41	93	0.124	<20	2.15	0.03	0.09	<2	<0.05	<1	<5	<5	<5
1889752	Soil	0.044	6	50	1.58	62	0.141	<20	2.47	0.04	0.08	<2	<0.05	<1	<5	<5	<5
1889753	Soil	0.036	5	44	1.22	54	0.127	<20	2.05	0.03	0.07	<2	<0.05	<1	<5	<5	<5
1889754	Soil	0.037	5	16	0.31	59	0.032	<20	0.74	0.03	0.04	<2	0.05	<1	<5	<5	<5
1889755	Soil	0.060	8	34	0.72	92	0.056	<20	1.43	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889756	Soil	0.056	9	54	1.11	104	0.084	<20	2.05	0.03	0.08	<2	<0.05	<1	<5	<5	5
1889757	Soil	0.064	8	30	0.63	109	0.045	<20	1.19	0.03	0.06	<2	0.09	<1	<5	<5	<5
1889758	Soil	0.071	8	29	0.61	108	0.045	<20	1.15	0.03	0.06	<2	0.08	<1	<5	<5	<5
1889759	Soil	0.062	10	22	0.38	71	0.038	<20	1.12	0.03	0.04	<2	0.08	<1	<5	<5	<5

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1889760	Soil	12	<3	3	<1	68	6	35	<0.3	17	5	214	1.48	5	<2	40	<0.5	<3	<3	28	1.59
1889761	Soil	5	7	12	<1	29	4	42	<0.3	19	7	268	1.75	8	<2	39	<0.5	<3	<3	35	0.96
1889762	Soil	8	<3	4	2	79	3	59	<0.3	28	12	378	2.11	8	<2	65	<0.5	<3	<3	44	1.82
1889763	Soil	12	6	13	<1	113	3	54	<0.3	46	23	411	4.08	5	<2	249	<0.5	<3	<3	108	1.73
1889764	Soil	18	17	7	1	112	4	48	<0.3	49	19	388	3.46	5	<2	125	<0.5	<3	<3	82	1.80
1889765	Soil	9	4	7	<1	35	4	25	<0.3	12	4	92	1.22	6	<2	27	<0.5	<3	<3	24	0.68
1889766	Soil	7	6	5	<1	48	4	33	<0.3	17	6	245	1.49	8	<2	44	<0.5	<3	<3	29	1.47
1889767	Soil	8	6	8	1	48	<3	30	<0.3	16	7	168	1.57	9	<2	31	<0.5	<3	<3	28	0.81
1889768	Soil	9	<3	10	<1	87	4	57	<0.3	40	16	407	2.91	8	<2	80	<0.5	<3	<3	67	2.21
1889769	Soil	6	14	16	1	103	<3	58	<0.3	43	18	387	3.31	8	<2	72	<0.5	<3	<3	77	1.79
1889770	Soil	7	14	10	1	84	<3	58	<0.3	41	18	394	3.35	7	<2	71	<0.5	<3	<3	81	1.69
1889771	Soil	11	5	14	<1	96	4	56	<0.3	42	18	367	3.03	6	<2	75	<0.5	<3	<3	70	1.67
1889772	Soil	6	13	18	1	63	4	48	<0.3	47	23	414	4.15	6	<2	79	<0.5	<3	<3	113	3.26
1889773	Soil	6	5	10	1	46	6	54	<0.3	31	11	376	2.58	7	<2	61	<0.5	<3	<3	61	2.32
1889774	Soil	10	<3	7	2	45	3	89	<0.3	41	13	386	2.81	13	<2	71	<0.5	<3	<3	60	1.48
1889775	Soil	20	16	3	1	42	6	63	<0.3	31	11	429	2.21	12	<2	59	<0.5	<3	<3	45	1.89
1889776	Soil	6	<3	8	1	51	4	56	<0.3	25	12	485	2.36	8	<2	50	<0.5	<3	<3	46	1.59
1889777	Soil	14	<3	7	<1	35	5	59	<0.3	29	12	375	2.16	8	<2	55	<0.5	<3	<3	46	1.60
1889778	Soil	5	4	9	1	35	6	65	<0.3	28	13	473	2.39	10	<2	52	<0.5	<3	<3	51	1.46
1889779	Soil	6	9	9	1	50	5	63	<0.3	38	15	441	2.81	9	<2	62	<0.5	<3	<3	63	1.36
1889780	Soil	5	9	9	1	56	5	71	<0.3	41	15	482	2.99	8	<2	61	<0.5	<3	<3	65	1.43
1889781	Soil	6	11	7	1	32	7	57	<0.3	28	12	413	2.41	9	<2	48	<0.5	<3	<3	50	1.12
1889782	Soil	5	6	7	2	33	4	55	<0.3	26	13	444	2.21	8	<2	52	<0.5	<3	<3	51	1.30
1889783	Soil	6	11	6	<1	27	5	53	<0.3	26	11	367	2.34	8	<2	46	<0.5	<3	<3	48	1.05
1889784	Soil	5	14	12	<1	73	4	58	<0.3	32	13	403	2.25	7	<2	53	<0.5	<3	<3	51	1.62
1889785	Soil	4	4	10	<1	48	5	66	<0.3	29	12	372	2.38	7	<2	53	<0.5	<3	<3	56	1.57
1889786	Soil	9	10	17	<1	167	4	48	<0.3	31	14	320	2.34	5	<2	68	<0.5	<3	<3	57	2.01
1889787	Soil	7	10	12	1	54	6	60	<0.3	39	16	429	2.82	9	<2	60	<0.5	<3	<3	68	1.52
1889788	Soil	7	4	21	1	106	6	52	<0.3	35	12	247	2.31	9	<2	40	<0.5	<3	<3	47	1.50
1889789	Soil	7	12	15	<1	115	6	61	<0.3	35	13	420	2.44	9	<2	58	<0.5	<3	<3	53	1.95

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889760	Soil	0.054	9	18	0.31	56	0.035	<20	0.98	0.03	0.04	<2	0.07	<1	<5	<5	<5
1889761	Soil	0.046	7	23	0.48	78	0.044	<20	1.00	0.03	0.05	<2	0.05	<1	<5	<5	<5
1889762	Soil	0.063	8	32	0.83	81	0.054	<20	1.33	0.03	0.07	<2	0.09	<1	<5	<5	<5
1889763	Soil	0.054	4	59	2.73	81	0.136	<20	3.50	0.03	0.18	<2	<0.05	<1	<5	6	7
1889764	Soil	0.048	5	54	1.87	48	0.120	<20	2.62	0.04	0.10	<2	0.05	<1	<5	<5	<5
1889765	Soil	0.043	5	14	0.26	46	0.033	<20	0.66	0.03	0.03	<2	<0.05	<1	<5	<5	<5
1889766	Soil	0.050	6	20	0.56	59	0.034	<20	0.94	0.03	0.04	<2	0.07	<1	<5	<5	<5
1889767	Soil	0.038	5	18	0.41	37	0.036	<20	0.88	0.03	0.04	<2	0.05	<1	<5	<5	<5
1889768	Soil	0.062	7	48	1.49	81	0.082	<20	1.88	0.04	0.13	<2	0.07	<1	<5	<5	<5
1889769	Soil	0.053	6	53	1.69	92	0.098	<20	2.21	0.04	0.14	<2	0.07	<1	<5	<5	<5
1889770	Soil	0.050	6	51	1.90	82	0.111	<20	2.24	0.04	0.15	<2	0.06	<1	<5	<5	<5
1889771	Soil	0.049	6	47	1.57	105	0.103	<20	2.27	0.04	0.13	<2	0.06	<1	<5	<5	<5
1889772	Soil	0.041	5	64	3.17	57	0.175	<20	2.94	0.11	0.21	<2	<0.05	<1	<5	<5	<5
1889773	Soil	0.059	7	44	1.34	90	0.073	<20	1.60	0.03	0.10	<2	0.08	<1	<5	<5	<5
1889774	Soil	0.085	10	44	0.83	226	0.064	<20	1.54	0.04	0.09	<2	<0.05	<1	<5	<5	<5
1889775	Soil	0.059	10	33	0.58	131	0.041	<20	1.21	0.02	0.05	<2	0.09	<1	<5	<5	<5
1889776	Soil	0.049	8	31	0.65	112	0.049	<20	1.24	0.03	0.05	<2	0.07	<1	<5	<5	<5
1889777	Soil	0.054	9	35	0.71	100	0.055	<20	1.29	0.03	0.07	<2	0.08	<1	<5	<5	<5
1889778	Soil	0.062	8	36	0.69	116	0.053	<20	1.28	0.02	0.06	<2	0.07	<1	<5	<5	<5
1889779	Soil	0.069	12	45	0.89	112	0.071	<20	1.65	0.03	0.09	<2	<0.05	<1	<5	<5	<5
1889780	Soil	0.075	11	47	0.94	123	0.078	<20	1.60	0.04	0.11	<2	<0.05	<1	<5	<5	<5
1889781	Soil	0.061	10	36	0.70	121	0.055	<20	1.42	0.03	0.05	<2	0.06	<1	<5	<5	<5
1889782	Soil	0.059	8	33	0.64	112	0.057	<20	1.25	0.03	0.05	<2	0.07	<1	<5	<5	<5
1889783	Soil	0.053	9	35	0.69	109	0.056	<20	1.37	0.03	0.05	<2	0.05	<1	<5	<5	<5
1889784	Soil	0.051	8	38	0.87	85	0.067	<20	1.45	0.03	0.08	<2	0.07	<1	<5	<5	<5
1889785	Soil	0.059	8	37	0.79	86	0.072	<20	1.29	0.03	0.08	<2	0.07	<1	<5	<5	<5
1889786	Soil	0.061	7	38	1.07	75	0.078	<20	1.68	0.03	0.06	<2	0.08	<1	<5	<5	<5
1889787	Soil	0.049	9	47	1.01	120	0.088	<20	1.70	0.03	0.12	<2	0.05	<1	<5	6	<5
1889788	Soil	0.051	11	31	0.62	76	0.051	<20	1.31	0.03	0.08	<2	0.06	<1	<5	<5	<5
1889789	Soil	0.064	9	38	0.83	95	0.057	<20	1.59	0.03	0.09	<2	0.07	<1	<5	<5	<5

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CERTIFICATE OF ANALYSIS WHI17000411.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1889790	Soil	7	6	18	<1	95	5	54	<0.3	31	13	386	2.39	9	<2	56	<0.5	<3	<3	53	1.77
1889791	Soil	26	10	29	<1	66	5	46	<0.3	27	11	268	2.14	10	<2	44	<0.5	<3	<3	46	1.49
1889792	Soil	6	8	28	<1	82	5	53	<0.3	31	13	333	2.27	7	<2	55	<0.5	<3	<3	53	1.69
1889793	Soil	8	15	27	<1	102	5	45	<0.3	31	12	286	2.17	7	<2	45	<0.5	<3	<3	48	1.34
1889794	Soil	5	8	18	<1	87	5	54	<0.3	33	14	372	2.37	9	<2	48	<0.5	<3	<3	55	1.47
1889795	Soil	8	11	12	1	52	7	53	<0.3	34	14	366	2.56	13	<2	37	<0.5	<3	<3	53	1.03
1889796	Soil	6	14	21	<1	92	5	57	<0.3	39	16	445	2.62	7	<2	56	<0.5	<3	<3	62	1.69
1889797	Soil	5	9	12	<1	54	5	64	<0.3	28	12	403	2.31	8	2	45	<0.5	<3	<3	55	1.81
1889798	Soil	7	12	8	<1	71	6	63	<0.3	32	13	381	2.32	13	<2	52	<0.5	<3	<3	51	1.57
1889799	Soil	8	9	11	<1	154	4	70	<0.3	31	14	368	2.56	7	<2	59	<0.5	<3	<3	63	1.57
1889800	Soil	6	<3	12	<1	57	4	44	<0.3	25	11	392	2.09	6	<2	48	<0.5	<3	<3	47	1.64
1889951	Soil	6	7	14	<1	76	5	43	<0.3	27	11	327	2.02	7	<2	49	<0.5	<3	<3	46	1.70
1889952	Soil	6	6	12	<1	54	6	44	<0.3	34	13	357	2.50	6	<2	61	<0.5	<3	<3	64	0.95
1889953	Soil	7	7	12	<1	78	5	47	<0.3	30	11	419	1.92	7	<2	48	<0.5	<3	<3	39	1.67
1889954	Soil	8	6	20	1	105	6	72	<0.3	36	15	442	2.72	10	3	59	<0.5	<3	<3	61	1.83
1889955	Soil	7	19	34	<1	46	4	39	<0.3	17	8	303	1.54	7	<2	56	<0.5	<3	<3	31	2.09
1889956	Soil	5	5	7	2	39	6	57	<0.3	24	8	324	2.05	8	<2	49	<0.5	<3	<3	41	1.29
1889957	Soil	3	3	8	<1	36	5	73	<0.3	37	16	462	2.94	4	3	43	<0.5	<3	<3	75	0.83
1889958	Soil	13	8	6	2	29	6	69	<0.3	34	17	501	3.13	7	2	39	<0.5	<3	<3	74	0.77
1889959	Soil	7	<3	8	<1	47	9	67	<0.3	41	17	592	3.19	5	2	48	<0.5	<3	<3	78	1.48
1889960	Soil	7	<3	5	<1	55	7	70	<0.3	41	17	568	3.10	5	2	57	<0.5	<3	<3	75	1.89

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	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889790	Soil	0.060	9	34	0.72	88	0.061	<20	1.50	0.03	0.07	<2	0.06	<1	<5	<5	<5
1889791	Soil	0.051	7	29	0.64	92	0.049	<20	1.39	0.03	0.07	<2	0.06	<1	<5	<5	<5
1889792	Soil	0.055	8	35	0.80	86	0.068	<20	1.57	0.03	0.06	<2	0.06	<1	<5	<5	<5
1889793	Soil	0.040	8	36	0.76	75	0.064	<20	1.44	0.04	0.07	<2	<0.05	<1	<5	<5	<5
1889794	Soil	0.053	9	38	0.79	110	0.065	<20	1.49	0.03	0.06	<2	<0.05	<1	<5	<5	<5
1889795	Soil	0.034	9	36	0.67	77	0.058	<20	1.46	0.03	0.07	<2	<0.05	<1	<5	<5	<5
1889796	Soil	0.055	10	47	0.95	81	0.079	<20	1.77	0.04	0.08	<2	0.05	<1	<5	6	<5
1889797	Soil	0.064	8	32	0.63	86	0.067	<20	1.17	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889798	Soil	0.059	9	36	0.68	128	0.052	<20	1.42	0.04	0.06	<2	0.06	<1	<5	<5	<5
1889799	Soil	0.058	8	33	1.02	89	0.084	<20	1.70	0.03	0.13	<2	<0.05	<1	<5	<5	<5
1889800	Soil	0.056	7	27	0.65	105	0.062	<20	1.21	0.03	0.08	<2	0.06	<1	<5	<5	<5
1889951	Soil	0.050	7	34	0.75	57	0.058	<20	1.39	0.03	0.06	<2	0.07	<1	<5	<5	<5
1889952	Soil	0.049	10	46	0.94	80	0.100	<20	1.69	0.04	0.09	<2	<0.05	<1	<5	5	<5
1889953	Soil	0.053	9	29	0.64	93	0.047	<20	1.21	0.03	0.06	<2	0.07	<1	<5	<5	<5
1889954	Soil	0.059	9	41	0.87	120	0.073	<20	1.55	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889955	Soil	0.047	8	22	0.41	91	0.036	<20	0.96	0.03	0.06	<2	0.09	<1	<5	<5	<5
1889956	Soil	0.063	9	28	0.45	117	0.037	<20	1.05	0.02	0.05	<2	0.10	<1	<5	<5	<5
1889957	Soil	0.080	12	54	1.08	117	0.106	<20	1.67	0.02	0.12	<2	<0.05	<1	<5	<5	7
1889958	Soil	0.054	10	54	1.03	108	0.074	<20	1.71	0.02	0.09	<2	<0.05	<1	<5	<5	6
1889959	Soil	0.065	11	61	1.22	101	0.114	<20	1.76	0.02	0.10	<2	<0.05	<1	<5	6	7
1889960	Soil	0.071	11	61	1.19	119	0.107	<20	1.72	0.02	0.11	<2	<0.05	<1	<5	6	7

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PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000411.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
Pulp Duplicates																					
1889904	Soil	7	4	10	<1	117	<3	45	<0.3	26	9	274	1.86	6	<2	54	<0.5	<3	<3	41	2.07
REP 1889904	QC	9	<3	12																	
1889920	Soil	7	4	7	1	34	<3	63	<0.3	26	12	470	2.28	9	<2	57	<0.5	<3	<3	50	1.41
REP 1889920	QC				1	35	5	64	<0.3	26	12	488	2.29	9	<2	57	<0.5	<3	<3	51	1.46
1889939	Soil	11	<3	7	1	45	4	69	<0.3	34	12	375	2.32	9	<2	55	<0.5	<3	<3	49	1.82
REP 1889939	QC	7	<3	4																	
1889966	Soil	4	<3	3	1	14	5	57	<0.3	17	8	220	2.05	7	<2	36	<0.5	<3	<3	49	0.55
REP 1889966	QC				1	14	6	60	<0.3	18	8	220	2.06	7	<2	36	<0.5	<3	<3	51	0.56
116711	Soil	8	<3	<2	1	37	7	73	<0.3	39	15	494	3.26	7	2	43	<0.5	<3	<3	66	0.94
REP 116711	QC	9	6	2																	
116737	Soil	9	<3	12	1	86	11	104	<0.3	78	21	704	4.22	16	<2	58	<0.5	<3	<3	72	1.48
REP 116737	QC				2	84	13	106	<0.3	79	21	724	4.15	17	<2	65	<0.5	<3	<3	74	1.46
1889698	Soil	20	5	11	1	106	8	52	<0.3	38	15	491	2.57	10	<2	43	<0.5	<3	<3	55	1.12
REP 1889698	QC	9	9	12																	
1889767	Soil	8	6	8	1	48	<3	30	<0.3	16	7	168	1.57	9	<2	31	<0.5	<3	<3	28	0.81
REP 1889767	QC				1	49	4	31	<0.3	16	7	164	1.52	9	<2	30	<0.5	<3	<3	29	0.80
1889768	Soil	9	<3	10	<1	87	4	57	<0.3	40	16	407	2.91	8	<2	80	<0.5	<3	<3	67	2.21
REP 1889768	QC	10	6	<2																	
1889783	Soil	6	11	6	<1	27	5	53	<0.3	26	11	367	2.34	8	<2	46	<0.5	<3	<3	48	1.05
REP 1889783	QC	6	5	8																	
1889798	Soil	7	12	8	<1	71	6	63	<0.3	32	13	381	2.32	13	<2	52	<0.5	<3	<3	51	1.57
REP 1889798	QC				<1	68	6	62	<0.3	32	13	368	2.32	13	<2	50	<0.5	<3	<3	51	1.51
Reference Materials																					
STD CDN-PGMS-19	Standard	235	98	479																	
STD CDN-PGMS-23	Standard	536	513	2102																	
STD CDN-PGMS-19	Standard	232	120	466																	
STD CDN-PGMS-23	Standard	492	481	2116																	
STD CDN-PGMS-19	Standard	302	113	473																	

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Client: **Longford Exploration Services Ltd.**
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Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000411.1

		Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
		Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
		MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
Pulp Duplicates																		
1889904	Soil		0.062	8	30	0.69	83	0.054	<20	1.21	0.03	0.07	<2	0.10	<1	<5	<5	<5
REP 1889904	QC																	
1889920	Soil		0.062	10	35	0.62	128	0.060	<20	1.29	0.03	0.06	<2	0.07	<1	<5	<5	<5
REP 1889920	QC		0.064	10	35	0.62	128	0.061	<20	1.33	0.03	0.07	<2	0.07	<1	<5	<5	<5
1889939	Soil		0.068	9	37	0.71	127	0.050	<20	1.30	0.03	0.07	<2	0.08	<1	<5	<5	<5
REP 1889939	QC																	
1889966	Soil		0.045	6	33	0.67	82	0.049	<20	1.17	0.02	0.06	<2	<0.05	<1	<5	<5	<5
REP 1889966	QC		0.046	7	34	0.68	84	0.051	<20	1.19	0.02	0.07	<2	<0.05	<1	<5	<5	<5
116711	Soil		0.063	13	43	0.95	142	0.092	<20	1.72	0.03	0.15	<2	<0.05	<1	<5	<5	5
REP 116711	QC																	
116737	Soil		0.058	13	62	1.16	155	0.077	<20	2.18	0.02	0.09	<2	<0.05	<1	<5	<5	7
REP 116737	QC		0.059	14	63	1.29	149	0.088	<20	2.47	0.02	0.09	<2	<0.05	<1	<5	<5	7
1889698	Soil		0.061	10	39	0.78	76	0.059	<20	1.48	0.02	0.05	<2	<0.05	<1	<5	<5	<5
REP 1889698	QC																	
1889767	Soil		0.038	5	18	0.41	37	0.036	<20	0.88	0.03	0.04	<2	0.05	<1	<5	<5	<5
REP 1889767	QC		0.040	5	18	0.40	39	0.037	<20	0.93	0.03	0.04	<2	0.05	<1	<5	<5	<5
1889768	Soil		0.062	7	48	1.49	81	0.082	<20	1.88	0.04	0.13	<2	0.07	<1	<5	<5	<5
REP 1889768	QC																	
1889783	Soil		0.053	9	35	0.69	109	0.056	<20	1.37	0.03	0.05	<2	0.05	<1	<5	<5	<5
REP 1889783	QC																	
1889798	Soil		0.059	9	36	0.68	128	0.052	<20	1.42	0.04	0.06	<2	0.06	<1	<5	<5	<5
REP 1889798	QC		0.058	9	35	0.67	124	0.054	<20	1.39	0.03	0.06	<2	0.06	<1	<5	<5	<5
Reference Materials																		
STD CDN-PGMS-19	Standard																	
STD CDN-PGMS-23	Standard																	
STD CDN-PGMS-19	Standard																	
STD CDN-PGMS-23	Standard																	
STD CDN-PGMS-19	Standard																	

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
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Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000411.1

		FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
		ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
STD CDN-PGMS-23	Standard	495	465	2058																	
STD CDN-PGMS-19	Standard	227	106	489																	
STD CDN-PGMS-23	Standard	534	468	2067																	
STD CDN-PGMS-19	Standard	228	106	470																	
STD CDN-PGMS-23	Standard	478	450	2053																	
STD CDN-PGMS-19	Standard	258	99	488																	
STD DS11	Standard				15	154	140	357	1.8	82	14	1065	3.28	45	9	68	2.4	7	11	53	1.11
STD DS11	Standard				14	146	137	337	1.6	75	13	1009	3.13	41	7	65	2.1	6	13	46	1.02
STD DS11	Standard				13	142	135	324	1.6	75	13	1046	3.08	42	6	67	2.0	7	10	47	1.01
STD DS11	Standard				14	147	136	334	1.7	78	13	1012	3.14	41	6	64	1.9	6	10	48	1.03
STD DS11	Standard				13	142	133	341	1.5	76	13	1013	2.96	40	7	62	2.1	7	11	47	0.99
STD OREAS45EA	Standard				2	695	15	32	0.6	375	54	405	21.71	11	11	4	<0.5	<3	<3	302	0.03
STD OREAS45EA	Standard				2	724	14	31	0.3	394	50	427	23.52	11	8	4	<0.5	<3	<3	300	0.03
STD OREAS45EA	Standard				2	699	15	32	0.4	402	54	415	23.74	11	9	4	<0.5	<3	<3	306	0.03
STD OREAS45EA	Standard				2	720	12	32	0.3	410	55	426	23.96	13	8	4	<0.5	<3	4	315	0.03
STD OREAS45EA	Standard				2	701	12	31	<0.3	383	53	410	20.80	6	8	4	<0.5	<3	<3	303	0.04
STD OREAS45EA Expected					1.6	709	14.3	31.4	0.26	381	52	400	23.51	10	10.7	3.5				303	0.036
STD DS11 Expected					13.9	156	138	345	1.71	81.9	14.2	1055	3.2082	42.8	7.65	67.3	2.37	7.2	12.2	50	1.063
STD CDN-PGMS-23 Expected		496	456	2032																	
STD CDN-PGMS-19 Expected		230	108	476																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	

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QUALITY CONTROL REPORT WHI17000411.1

		AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
		0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD DS11	Standard	0.072	19	64	0.89	440	0.097	<20	1.21	0.08	0.42	3	0.29	<1	<5	<5	<5
STD DS11	Standard	0.070	16	55	0.84	429	0.089	<20	1.12	0.07	0.39	3	0.27	<1	<5	<5	<5
STD DS11	Standard	0.070	16	54	0.85	418	0.091	<20	1.16	0.07	0.38	3	0.27	<1	<5	<5	<5
STD DS11	Standard	0.070	16	56	0.84	425	0.088	<20	1.11	0.07	0.39	3	0.28	<1	<5	<5	<5
STD DS11	Standard	0.068	16	56	0.83	414	0.087	<20	1.08	0.07	0.39	3	0.27	<1	6	<5	<5
STD OREAS45EA	Standard	0.030	8	923	0.10	143	0.096	<20	3.43	0.02	0.06	<2	<0.05	<1	<5	14	85
STD OREAS45EA	Standard	0.030	7	877	0.10	148	0.099	<20	3.23	0.02	0.05	<2	<0.05	<1	8	<5	88
STD OREAS45EA	Standard	0.031	7	887	0.10	147	0.100	<20	3.38	0.02	0.06	<2	<0.05	<1	7	<5	87
STD OREAS45EA	Standard	0.031	7	929	0.10	149	0.102	<20	3.43	0.02	0.06	<2	<0.05	<1	9	<5	89
STD OREAS45EA	Standard	0.029	7	872	0.10	142	0.101	<20	3.28	0.02	0.06	<2	<0.05	<1	<5	15	81
STD OREAS45EA Expected		0.029	7.06	849	0.095	148	0.0984		3.13	0.02	0.053		0.036			12.4	78
STD DS11 Expected		0.0701	18.6	61.5	0.85	417	0.0976	6	1.129	0.0694	0.4	2.9	0.2835	0.3	4.9	4.7	3.1
STD CDN-PGMS-23 Expected																	
STD CDN-PGMS-19 Expected																	
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																
BLK	Blank																
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																
BLK	Blank																

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QUALITY CONTROL REPORT WHI17000411.1

		FA330 Au ppb 2	FA330 Pt ppb 3	FA330 Pd ppb 2	AQ300 Mo ppm 1	AQ300 Cu ppm 1	AQ300 Pb ppm 3	AQ300 Zn ppm 1	AQ300 Ag ppm 0.3	AQ300 Ni ppm 1	AQ300 Co ppm 1	AQ300 Mn ppm 2	AQ300 Fe % 0.01	AQ300 As ppm 2	AQ300 Th ppm 2	AQ300 Sr ppm 1	AQ300 Cd ppm 0.5	AQ300 Sb ppm 3	AQ300 Bi ppm 3	AQ300 V ppm 1	AQ300 Ca % 0.01
BLK	Blank	3	<3	<2																	
BLK	Blank	2	<3	<2																	
BLK	Blank	<2	3	2																	
BLK	Blank	<2	<3	3																	
BLK	Blank	<2	5	<2																	
BLK	Blank	<2	<3	<2																	

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		AQ300 P % 0.001	AQ300 La ppm 1	AQ300 Cr ppm 1	AQ300 Mg % 0.01	AQ300 Ba ppm 1	AQ300 Ti % 0.001	AQ300 B ppm 20	AQ300 Al % 0.01	AQ300 Na % 0.01	AQ300 K % 0.01	AQ300 W ppm 2	AQ300 S % 0.05	AQ300 Hg ppm 1	AQ300 Tl ppm 5	AQ300 Ga ppm 5	AQ300 Sc ppm 5
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank																

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6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Submitted By: James Rogers
Receiving Lab: Canada-Whitehorse
Received: August 07, 2017
Report Date: August 30, 2017
Page: 1 of 8

CERTIFICATE OF ANALYSIS WHI17000522.1

CLIENT JOB INFORMATION

Project: Catalyst
Shipment ID:
P.O. Number
Number of Samples: 205

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	205	Dry at 60C			WHI
SS80	205	Dry at 60C sieve 100g to -80 mesh			WHI
SVRJT	205	Save all or part of Soil Reject			WHI
FA330	205	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
EN002	205	Environmental disposal charge-Fire assay lead waste			VAN
AQ300	205	1:1:1 Aqua Regia digestion ICP-ES analysis	0.5	Completed	VAN
SHP01	205	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

Invoice To: Longford Exploration Services Ltd.
6970 Napier Street
Burnaby British Columbia V5B 2C4
Canada

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

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Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1494501	Soil	6	<3	4	1	47	5	92	<0.3	50	14	486	2.90	9	<2	47	<0.5	<3	<3	66	1.04
1494502	Soil	11	<3	7	26	101	12	94	<0.3	136	28	761	4.95	19	<2	38	<0.5	<3	<3	202	0.62
1494503	Soil	8	<3	11	1	60	4	73	<0.3	63	12	412	2.62	10	<2	39	<0.5	<3	<3	53	1.30
1494504	Soil	10	<3	6	2	59	6	88	<0.3	51	16	684	3.04	12	<2	36	<0.5	<3	<3	71	1.13
1494505	Soil	4	4	6	2	67	6	81	<0.3	73	19	874	4.18	16	<2	54	<0.5	<3	<3	99	1.44
1494506	Soil	5	<3	5	1	51	6	55	<0.3	34	10	324	2.05	10	<2	45	<0.5	<3	<3	40	1.75
1494507	Soil	5	<3	7	2	90	6	82	0.3	59	15	508	3.26	14	<2	35	<0.5	<3	<3	66	0.84
1494508	Soil	8	<3	3	1	55	<3	69	<0.3	39	12	483	2.33	11	<2	60	<0.5	<3	<3	47	1.97
1494509	Soil	6	<3	2	2	34	8	60	<0.3	30	10	329	2.42	8	<2	34	<0.5	<3	<3	53	0.65
1494510	Soil	5	<3	3	1	38	<3	51	0.4	28	8	259	2.53	9	<2	31	<0.5	<3	<3	56	0.61
1494511	Soil	7	<3	8	3	53	5	68	<0.3	29	12	900	2.05	9	<2	56	0.6	<3	<3	39	1.75
1494512	Soil	6	<3	4	2	65	<3	67	<0.3	43	11	526	2.09	8	<2	55	<0.5	<3	<3	41	1.71
1494513	Soil	8	<3	4	5	58	<3	159	<0.3	72	19	544	3.63	11	<2	69	<0.5	<3	<3	91	1.11
1494514	Soil	6	<3	8	2	61	5	124	0.5	62	16	404	3.14	8	<2	60	<0.5	<3	<3	85	1.16
1494515	Soil	7	6	6	4	63	5	106	0.5	59	15	552	2.96	18	<2	59	<0.5	<3	<3	79	1.24
1494516	Soil	6	5	7	2	45	<3	62	<0.3	27	9	357	1.88	7	<2	48	<0.5	<3	<3	45	1.33
1494517	Soil	8	<3	5	2	96	<3	94	0.6	70	19	579	3.03	11	<2	49	<0.5	<3	<3	71	1.10
1494518	Soil	6	<3	4	<1	43	5	70	<0.3	26	7	355	1.50	6	<2	46	0.8	<3	<3	35	1.49
1494519	Soil	4	<3	4	2	50	4	73	<0.3	38	14	504	2.62	11	<2	51	<0.5	<3	<3	59	1.26
1494520	Soil	4	<3	2	2	42	<3	79	<0.3	36	13	503	2.58	9	<2	42	<0.5	<3	<3	61	0.94
1494521	Soil	6	<3	7	1	105	<3	81	0.5	64	21	489	3.23	7	<2	49	<0.5	<3	<3	83	1.28
1494522	Soil	7	3	9	2	106	7	104	0.7	70	21	596	3.48	10	<2	52	<0.5	<3	<3	94	1.19
1494523	Soil	5	5	4	1	89	4	80	<0.3	55	18	559	3.03	10	<2	41	<0.5	<3	<3	75	1.49
1494524	Soil	7	<3	5	1	77	11	109	0.3	48	17	541	3.17	14	<2	36	<0.5	<3	<3	70	1.14
1494525	Soil	5	<3	5	2	69	7	111	0.4	50	20	630	3.43	15	<2	37	<0.5	<3	<3	78	1.02
1494526	Soil	5	<3	12	2	58	6	97	<0.3	47	16	696	3.49	16	<2	41	<0.5	<3	<3	68	1.10
1494527	Soil	7	<3	5	2	76	9	86	<0.3	51	16	999	3.15	11	<2	41	<0.5	<3	<3	61	1.31
1494528	Soil	5	<3	2	1	53	<3	67	<0.3	38	13	498	2.47	11	<2	37	<0.5	<3	<3	49	1.22
1494529	Soil	6	6	12	<1	98	<3	59	<0.3	269	31	496	2.96	5	<2	29	<0.5	<3	<3	43	1.53
1494530	Soil	12	<3	15	2	116	4	94	<0.3	291	37	659	3.89	10	<2	38	<0.5	<3	<3	72	1.69

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1494501	Soil	0.054	7	54	1.04	160	0.074	<20	1.81	0.02	0.07	<2	<0.05	<1	<5	<5	<5
1494502	Soil	0.033	7	158	3.30	350	0.122	<20	3.64	0.02	0.05	<2	<0.05	<1	<5	11	12
1494503	Soil	0.058	12	47	0.94	119	0.053	<20	1.49	0.02	0.06	<2	0.07	<1	<5	<5	<5
1494504	Soil	0.057	11	51	0.87	163	0.052	<20	1.97	0.02	0.05	<2	<0.05	<1	<5	<5	<5
1494505	Soil	0.046	8	93	1.47	105	0.107	<20	2.62	0.02	0.07	<2	<0.05	<1	<5	8	8
1494506	Soil	0.050	8	26	0.48	102	0.038	<20	1.16	0.02	0.05	<2	0.08	<1	<5	<5	<5
1494507	Soil	0.053	16	45	0.77	123	0.058	<20	1.84	0.02	0.05	<2	<0.05	<1	<5	<5	<5
1494508	Soil	0.061	9	34	0.72	128	0.049	<20	1.44	0.03	0.05	<2	0.09	<1	<5	<5	<5
1494509	Soil	0.046	6	35	0.69	107	0.055	<20	1.45	0.02	0.06	<2	<0.05	<1	<5	<5	<5
1494510	Soil	0.042	6	33	0.63	100	0.051	<20	1.34	0.02	0.04	<2	<0.05	<1	<5	<5	<5
1494511	Soil	0.080	13	22	0.48	193	0.040	<20	1.12	0.03	0.05	<2	0.10	<1	<5	<5	<5
1494512	Soil	0.085	11	29	0.55	178	0.035	<20	1.35	0.03	0.04	<2	0.09	<1	<5	<5	<5
1494513	Soil	0.060	8	81	1.41	239	0.085	<20	2.40	0.02	0.08	<2	<0.05	<1	<5	6	5
1494514	Soil	0.071	10	75	1.34	225	0.074	<20	2.10	0.03	0.07	<2	0.05	<1	<5	5	6
1494515	Soil	0.081	11	60	0.98	223	0.052	<20	1.84	0.02	0.05	<2	0.05	<1	<5	<5	<5
1494516	Soil	0.065	8	24	0.45	136	0.051	<20	1.04	0.03	0.04	<2	0.08	<1	<5	<5	<5
1494517	Soil	0.058	11	55	0.94	165	0.059	<20	1.92	0.02	0.05	<2	<0.05	<1	<5	<5	<5
1494518	Soil	0.069	6	20	0.40	131	0.040	<20	0.87	0.03	0.05	<2	0.08	<1	<5	<5	<5
1494519	Soil	0.087	11	42	0.74	183	0.054	<20	1.62	0.02	0.06	<2	0.07	<1	<5	<5	<5
1494520	Soil	0.064	9	39	0.74	164	0.064	<20	1.56	0.02	0.06	<2	<0.05	<1	<5	<5	<5
1494521	Soil	0.059	10	65	1.21	127	0.082	<20	2.33	0.03	0.07	<2	<0.05	<1	<5	6	7
1494522	Soil	0.064	12	72	1.31	199	0.084	<20	2.35	0.03	0.06	<2	<0.05	<1	<5	5	7
1494523	Soil	0.054	9	69	1.12	122	0.076	<20	1.89	0.02	0.06	<2	0.06	<1	<5	7	6
1494524	Soil	0.056	12	52	0.96	141	0.069	<20	1.88	0.02	0.06	<2	<0.05	<1	<5	<5	6
1494525	Soil	0.063	11	57	1.07	126	0.070	<20	2.04	0.02	0.06	<2	<0.05	<1	<5	<5	5
1494526	Soil	0.054	14	46	0.94	148	0.067	<20	2.00	0.02	0.08	<2	<0.05	<1	<5	<5	5
1494527	Soil	0.066	17	47	0.95	120	0.055	<20	1.97	0.02	0.08	<2	0.05	<1	<5	<5	5
1494528	Soil	0.065	11	33	0.65	91	0.049	<20	1.46	0.02	0.05	<2	0.06	<1	<5	<5	<5
1494529	Soil	0.040	6	138	3.12	118	0.072	<20	1.65	0.02	0.03	<2	<0.05	<1	<5	5	<5
1494530	Soil	0.046	8	156	3.61	295	0.113	<20	2.22	0.02	0.05	<2	0.05	<1	<5	7	6

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

Method		FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
Analyte		Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
Unit		ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
MDL		2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1494531	Soil	5	3	3	2	33	<3	39	<0.3	23	8	276	1.78	9	<2	27	<0.5	<3	<3	38	0.57
1494532	Soil	5	<3	4	1	55	6	94	<0.3	75	22	743	3.61	10	<2	60	<0.5	<3	<3	73	1.26
1494533	Soil	9	6	3	1	55	9	90	<0.3	126	17	592	2.79	11	<2	41	<0.5	<3	<3	59	1.32
1494534	Soil	4	3	4	<1	40	5	46	<0.3	33	17	908	1.98	11	<2	26	<0.5	<3	<3	40	0.80
1494535	Soil	5	<3	<2	1	68	<3	56	<0.3	32	10	310	2.25	10	<2	25	<0.5	<3	<3	48	1.26
1494536	Soil	5	<3	6	<1	83	5	79	<0.3	46	18	603	3.36	11	<2	39	<0.5	<3	<3	70	1.93
1494537	Soil	7	<3	3	2	54	<3	79	<0.3	57	14	589	2.75	12	<2	41	<0.5	<3	<3	56	1.27
1494538	Soil	7	<3	2	1	58	<3	76	<0.3	35	10	449	2.09	9	<2	44	<0.5	<3	<3	43	1.84
1494539	Soil	5	<3	5	<1	47	<3	68	<0.3	27	9	499	1.86	8	<2	40	<0.5	<3	<3	36	1.90
1494540	Soil	6	<3	2	1	29	<3	58	<0.3	23	8	449	1.72	5	<2	35	<0.5	<3	<3	33	1.37
1494541	Soil	5	<3	10	1	77	<3	72	<0.3	80	17	586	2.83	8	<2	57	<0.5	<3	<3	58	1.38
1494542	Soil	6	<3	6	1	71	<3	78	<0.3	45	15	626	3.02	8	<2	68	<0.5	<3	<3	66	1.36
1494543	Soil	6	<3	4	1	71	5	80	<0.3	40	13	460	2.80	6	<2	44	<0.5	<3	<3	61	1.58
1494544	Soil	8	<3	6	<1	72	<3	58	<0.3	31	9	430	2.26	6	<2	48	<0.5	<3	3	52	1.68
1494545	Soil	7	<3	10	1	86	<3	68	<0.3	57	16	682	2.80	11	<2	68	<0.5	<3	<3	65	1.36
1494546	Soil	5	<3	4	1	49	<3	79	<0.3	28	10	385	2.04	9	<2	46	<0.5	<3	<3	41	1.65
1494547	Soil	22	<3	16	1	69	11	107	<0.3	52	18	789	2.91	18	<2	49	<0.5	<3	<3	67	2.15
1494548	Soil	5	8	13	<1	81	5	84	<0.3	36	11	469	2.15	10	<2	49	<0.5	<3	<3	53	1.90
1494549	Soil	5	<3	5	<1	69	<3	85	<0.3	35	12	615	2.28	12	<2	38	<0.5	<3	<3	51	1.84
1494550	Soil	5	<3	6	2	78	<3	89	<0.3	39	14	1025	2.39	11	<2	37	<0.5	<3	<3	56	1.75
1494551	Soil	6	<3	4	1	56	<3	83	<0.3	33	10	395	2.07	6	<2	50	<0.5	<3	<3	45	1.54
1494552	Soil	7	4	<2	1	50	<3	62	<0.3	34	11	427	2.55	11	<2	34	<0.5	<3	<3	53	0.62
1494553	Soil	9	<3	7	4	62	<3	120	0.5	61	12	332	2.31	8	<2	66	1.1	<3	<3	61	1.56
1494554	Soil	6	<3	3	1	51	<3	97	0.4	42	11	362	2.47	10	<2	41	<0.5	<3	<3	58	1.02
1494555	Soil	5	3	4	3	51	7	85	0.4	44	14	488	2.89	13	<2	45	<0.5	<3	<3	63	1.02
1494556	Soil	6	<3	6	4	66	6	102	0.4	66	16	411	3.18	8	<2	51	<0.5	<3	<3	78	1.19
1494557	Soil	6	<3	7	2	66	4	84	<0.3	45	12	472	2.45	9	<2	54	<0.5	<3	<3	55	1.67
1494558	Soil	6	<3	3	10	55	3	180	0.6	59	15	431	3.02	13	<2	78	1.4	<3	<3	113	1.03
1494559	Soil	5	<3	7	3	76	<3	86	0.4	50	14	637	3.16	12	<2	48	<0.5	<3	<3	73	1.51
1494560	Soil	6	<3	7	3	63	5	84	<0.3	48	14	580	3.20	11	<2	47	<0.5	<3	<3	72	1.46

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	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1494531	Soil	0.044	8	24	0.44	142	0.043	<20	1.14	0.03	0.03	<2	<0.05	<1	<5	<5	<5
1494532	Soil	0.059	12	80	1.41	128	0.076	<20	2.22	0.02	0.07	<2	0.05	<1	<5	<5	5
1494533	Soil	0.060	8	82	1.40	113	0.069	<20	1.64	0.03	0.06	<2	0.07	<1	<5	5	<5
1494534	Soil	0.055	8	28	0.53	88	0.047	<20	1.08	0.03	0.04	<2	0.05	<1	<5	<5	<5
1494535	Soil	0.053	10	29	0.49	69	0.049	<20	1.25	0.03	0.05	<2	0.05	<1	<5	<5	<5
1494536	Soil	0.056	9	52	0.99	81	0.079	<20	1.85	0.02	0.05	<2	0.06	<1	<5	<5	6
1494537	Soil	0.063	10	57	0.88	138	0.058	<20	1.63	0.02	0.06	<2	0.07	<1	<5	<5	<5
1494538	Soil	0.068	8	36	0.62	132	0.042	<20	1.13	0.02	0.06	<2	0.09	<1	<5	<5	<5
1494539	Soil	0.063	7	22	0.44	91	0.042	<20	0.86	0.02	0.04	<2	0.10	<1	<5	<5	<5
1494540	Soil	0.050	6	25	0.50	90	0.037	<20	0.99	0.02	0.04	<2	0.08	<1	<5	<5	<5
1494541	Soil	0.053	8	61	1.33	116	0.059	<20	1.58	0.02	0.04	<2	0.07	<1	<5	<5	<5
1494542	Soil	0.059	10	53	1.09	104	0.071	<20	1.87	0.02	0.07	<2	0.06	<1	<5	5	6
1494543	Soil	0.057	9	53	1.05	97	0.076	<20	1.83	0.02	0.07	<2	0.05	<1	<5	<5	5
1494544	Soil	0.054	7	35	0.84	63	0.067	<20	1.36	0.02	0.05	<2	0.07	<1	<5	<5	<5
1494545	Soil	0.048	8	69	1.44	83	0.072	<20	1.77	0.02	0.06	<2	0.06	<1	<5	<5	<5
1494546	Soil	0.070	8	28	0.57	125	0.040	<20	1.12	0.02	0.05	<2	0.11	<1	<5	<5	<5
1494547	Soil	0.062	9	59	1.29	114	0.057	<20	1.67	0.02	0.06	<2	0.11	<1	<5	<5	5
1494548	Soil	0.070	11	44	0.86	100	0.049	<20	1.31	0.03	0.05	<2	0.11	<1	<5	<5	<5
1494549	Soil	0.060	9	38	0.76	115	0.045	<20	1.28	0.02	0.05	<2	0.09	<1	<5	<5	<5
1494550	Soil	0.059	9	44	0.87	122	0.051	<20	1.42	0.02	0.06	<2	0.08	<1	<5	<5	<5
1494551	Soil	0.063	9	32	0.68	335	0.051	<20	1.24	0.03	0.04	<2	0.11	<1	<5	<5	<5
1494552	Soil	0.052	13	35	0.66	150	0.059	<20	1.58	0.03	0.06	<2	<0.05	<1	<5	<5	<5
1494553	Soil	0.060	8	52	0.89	498	0.054	<20	1.51	0.03	0.06	<2	0.07	<1	<5	<5	<5
1494554	Soil	0.068	9	37	0.66	255	0.048	<20	1.39	0.02	0.05	<2	0.05	<1	<5	<5	<5
1494555	Soil	0.063	10	42	0.76	392	0.059	<20	1.68	0.03	0.06	<2	0.06	<1	<5	<5	<5
1494556	Soil	0.063	13	70	1.18	535	0.082	<20	2.14	0.03	0.07	<2	0.05	<1	<5	<5	7
1494557	Soil	0.056	8	44	0.78	323	0.057	<20	1.43	0.03	0.06	<2	0.07	<1	<5	<5	<5
1494558	Soil	0.066	7	69	1.36	309	0.093	<20	2.14	0.03	0.08	<2	<0.05	<1	<5	<5	6
1494559	Soil	0.069	14	49	0.94	216	0.071	<20	1.91	0.03	0.06	<2	0.07	<1	<5	<5	5
1494560	Soil	0.065	12	50	0.97	218	0.074	<20	1.92	0.03	0.07	<2	0.06	<1	<5	<5	5

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1494561	Soil	6	<3	5	6	61	3	161	0.7	80	16	478	3.61	9	<2	87	0.5	<3	<3	107	1.17
1494562	Soil	5	<3	5	1	41	<3	58	<0.3	27	8	317	1.87	7	<2	39	<0.5	<3	<3	41	1.33
1494563	Soil	5	<3	5	1	62	6	97	0.4	51	17	560	3.15	13	<2	40	<0.5	<3	<3	79	1.19
1494564	Soil	6	<3	9	1	73	6	102	<0.3	53	15	588	3.14	15	<2	40	<0.5	<3	<3	68	1.26
1494565	Soil	5	4	16	2	50	4	86	<0.3	44	17	596	3.38	13	<2	43	<0.5	<3	<3	75	1.03
1494566	Soil	5	<3	7	1	56	3	68	<0.3	32	11	440	2.33	9	<2	50	<0.5	<3	<3	48	1.76
1494567	Soil	5	<3	3	2	67	8	78	<0.3	32	12	522	2.68	15	<2	49	<0.5	<3	4	49	1.75
1494568	Soil	5	<3	4	2	56	17	107	<0.3	44	13	686	3.64	12	<2	121	<0.5	<3	<3	69	0.91
1494569	Soil	5	<3	<2	3	58	9	91	<0.3	52	16	637	3.28	17	<2	40	<0.5	<3	<3	74	1.82
1494570	Soil	5	<3	4	2	66	11	99	<0.3	52	17	729	3.37	15	<2	41	<0.5	<3	<3	76	1.90
1494571	Soil	6	3	<2	<1	50	<3	71	<0.3	42	13	676	2.87	9	<2	36	<0.5	<3	<3	66	1.05
1494572	Soil	6	<3	2	1	29	7	43	<0.3	18	6	247	1.56	8	<2	24	<0.5	<3	<3	33	0.63
1494573	Soil	16	<3	4	<1	64	12	87	<0.3	48	18	789	3.17	11	<2	38	<0.5	<3	<3	66	1.47
1494574	Soil	12	<3	<2	1	44	6	47	<0.3	24	11	373	2.08	11	<2	33	<0.5	<3	<3	42	1.02
1494575	Soil	6	<3	<2	2	55	9	86	<0.3	42	16	680	3.11	14	<2	46	<0.5	<3	<3	65	1.56
1494576	Soil	9	<3	3	1	59	10	93	<0.3	53	18	703	3.33	10	<2	50	<0.5	<3	<3	83	2.32
1494577	Soil	13	<3	4	1	60	9	92	<0.3	51	19	576	3.19	11	<2	45	<0.5	<3	<3	65	1.03
1494578	Soil	7	3	4	<1	54	8	99	<0.3	83	17	556	2.83	9	<2	48	<0.5	<3	<3	63	1.44
1494579	Soil	7	<3	3	2	36	7	51	<0.3	24	13	346	2.16	8	<2	38	<0.5	<3	<3	45	0.89
1494580	Soil	15	5	<2	2	45	8	51	<0.3	26	13	347	2.20	9	<2	39	<0.5	<3	<3	46	0.90
1494581	Soil	7	<3	<2	3	59	15	138	<0.3	65	27	1015	4.24	21	<2	31	<0.5	<3	<3	86	0.51
1494582	Soil	11	<3	2	1	46	7	84	<0.3	28	13	662	2.16	11	<2	40	<0.5	<3	<3	46	1.37
1494583	Soil	15	3	4	<1	57	7	89	<0.3	49	15	474	3.35	9	<2	42	<0.5	<3	<3	74	1.36
1494584	Soil	17	<3	4	1	77	7	78	<0.3	56	14	465	2.82	10	<2	45	<0.5	<3	<3	59	1.73
1494585	Soil	6	<3	2	1	68	8	65	<0.3	34	10	374	1.88	9	<2	36	<0.5	<3	<3	39	1.10
1494586	Soil	5	<3	15	1	88	7	84	<0.3	64	17	619	2.91	9	<2	92	<0.5	<3	<3	68	1.75
1494587	Soil	5	<3	4	1	65	7	87	<0.3	41	14	425	2.74	7	<2	56	<0.5	<3	<3	58	1.37
1494588	Soil	6	<3	5	1	65	6	52	<0.3	25	10	341	1.92	10	<2	38	<0.5	<3	<3	36	1.62
1494589	Soil	6	<3	<2	<1	69	6	73	<0.3	36	14	537	2.44	7	<2	48	<0.5	<3	<3	54	1.81
1494590	Soil	4	<3	4	<1	63	6	70	<0.3	31	11	365	2.34	6	<2	42	<0.5	<3	<3	53	1.35

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1494561	Soil	0.083	7	94	1.60	398	0.126	<20	2.57	0.03	0.10	<2	<0.05	<1	<5	8	6
1494562	Soil	0.058	7	26	0.54	121	0.045	<20	1.10	0.03	0.05	<2	0.08	<1	<5	<5	<5
1494563	Soil	0.058	7	60	1.13	111	0.089	<20	1.96	0.03	0.08	<2	<0.05	<1	<5	5	6
1494564	Soil	0.055	8	49	0.97	148	0.072	<20	1.76	0.02	0.08	<2	0.05	<1	<5	<5	<5
1494565	Soil	0.054	12	48	0.94	120	0.068	<20	2.02	0.03	0.07	<2	0.05	<1	<5	<5	<5
1494566	Soil	0.068	10	31	0.69	117	0.059	<20	1.47	0.03	0.07	<2	0.10	<1	<5	<5	<5
1494567	Soil	0.062	11	30	0.66	164	0.050	<20	1.71	0.03	0.07	<2	0.08	<1	<5	<5	<5
1494568	Soil	0.040	12	45	1.01	320	0.110	<20	2.50	0.02	0.13	<2	<0.05	<1	<5	<5	7
1494569	Soil	0.049	11	59	1.01	349	0.089	<20	1.91	0.02	0.06	<2	0.07	<1	<5	<5	6
1494570	Soil	0.051	12	56	1.03	266	0.094	<20	1.99	0.02	0.06	<2	0.07	<1	<5	<5	6
1494571	Soil	0.047	10	48	0.99	205	0.084	<20	1.79	0.02	0.08	<2	<0.05	<1	<5	<5	6
1494572	Soil	0.042	6	18	0.36	104	0.038	<20	0.83	0.03	0.04	<2	<0.05	<1	<5	<5	<5
1494573	Soil	0.051	17	51	1.00	268	0.083	<20	1.99	0.02	0.08	<2	<0.05	<1	<5	6	6
1494574	Soil	0.053	8	27	0.50	126	0.043	<20	1.15	0.03	0.05	<2	0.06	<1	<5	<5	<5
1494575	Soil	0.056	13	46	0.81	239	0.068	<20	1.70	0.02	0.07	<2	0.06	<1	<5	8	<5
1494576	Soil	0.057	15	63	0.98	276	0.090	102	2.39	0.02	0.08	<2	0.06	<1	<5	7	6
1494577	Soil	0.062	12	56	1.05	120	0.068	<20	2.07	0.02	0.08	<2	0.05	<1	<5	6	<5
1494578	Soil	0.069	8	79	1.33	120	0.075	<20	1.87	0.02	0.07	<2	0.09	<1	<5	7	<5
1494579	Soil	0.061	10	28	0.49	104	0.048	<20	1.17	0.02	0.05	<2	0.09	<1	<5	6	<5
1494580	Soil	0.061	11	29	0.51	111	0.050	<20	1.20	0.02	0.06	<2	0.08	<1	<5	<5	<5
1494581	Soil	0.061	13	88	1.02	196	0.065	<20	2.31	0.01	0.07	<2	<0.05	<1	<5	9	<5
1494582	Soil	0.074	9	33	0.58	130	0.042	<20	1.14	0.02	0.05	<2	0.09	<1	<5	<5	<5
1494583	Soil	0.059	8	63	1.22	111	0.109	<20	2.10	0.02	0.06	<2	0.06	<1	<5	7	6
1494584	Soil	0.059	11	66	1.02	115	0.069	<20	1.74	0.02	0.06	<2	0.09	<1	<5	6	<5
1494585	Soil	0.056	8	31	0.57	100	0.039	<20	1.08	0.03	0.05	<2	0.07	<1	<5	<5	<5
1494586	Soil	0.071	9	65	1.43	108	0.072	21	1.87	0.03	0.05	<2	0.14	<1	<5	5	5
1494587	Soil	0.074	9	49	1.00	131	0.065	<20	1.88	0.02	0.07	<2	0.11	<1	<5	6	<5
1494588	Soil	0.068	10	24	0.49	111	0.039	<20	1.12	0.03	0.05	<2	0.10	<1	<5	<5	<5
1494589	Soil	0.073	9	41	0.92	113	0.068	<20	1.48	0.02	0.07	<2	0.10	<1	<5	<5	<5
1494590	Soil	0.071	9	32	0.77	104	0.070	<20	1.31	0.03	0.07	<2	0.08	<1	<5	6	<5

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	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1494591	Soil	5	4	8	1	72	7	72	<0.3	29	15	410	2.43	11	<2	40	<0.5	<3	<3	52	1.09
1494592	Soil	4	<3	3	<1	80	12	108	<0.3	78	26	845	3.79	17	<2	47	<0.5	<3	<3	88	1.60
1494593	Soil	7	<3	6	2	114	5	93	<0.3	34	13	1153	1.96	8	<2	57	0.6	<3	<3	36	2.19
1494594	Soil	8	<3	7	1	63	5	45	<0.3	23	9	217	1.80	8	<2	75	<0.5	<3	<3	36	2.82
1494595	Soil	9	<3	10	1	105	8	82	<0.3	39	15	575	2.59	15	<2	50	<0.5	<3	<3	56	1.98
1494596	Soil	7	3	6	1	73	10	94	<0.3	38	20	1057	3.19	14	<2	47	<0.5	<3	<3	72	1.74
1494597	Soil	5	<3	5	<1	78	6	67	<0.3	41	17	655	3.12	8	<2	49	<0.5	<3	<3	77	1.48
1494598	Soil	5	<3	4	<1	91	5	62	<0.3	31	13	539	2.61	8	<2	53	<0.5	<3	<3	66	1.83
1494599	Soil	7	<3	2	<1	77	5	75	<0.3	27	11	456	2.18	6	<2	46	<0.5	<3	<3	50	1.67
1494600	Soil	6	<3	2	1	81	5	68	<0.3	29	12	517	2.34	8	<2	48	<0.5	<3	<3	56	1.51
116713	Soil	7	<3	4	1	102	5	80	<0.3	53	29	807	3.66	6	<2	101	<0.5	<3	<3	81	1.66
116714	Soil	10	9	23	<1	175	4	60	<0.3	61	36	867	5.22	<2	<2	175	<0.5	<3	<3	159	1.60
116715	Soil	4	5	14	1	124	5	66	<0.3	59	29	629	4.23	4	<2	98	<0.5	<3	<3	114	1.57
116716	Soil	4	<3	<2	<1	34	5	69	<0.3	31	14	461	2.66	5	<2	49	<0.5	<3	<3	61	1.18
116717	Soil	6	<3	<2	<1	49	6	64	<0.3	37	16	516	3.05	6	<2	55	<0.5	<3	<3	73	1.42
116718	Soil	7	<3	3	<1	60	6	65	<0.3	42	18	539	3.36	6	<2	53	<0.5	<3	<3	83	1.34
116719	Soil	6	<3	2	1	36	8	76	<0.3	27	12	257	2.57	11	<2	29	<0.5	<3	<3	64	0.47
116720	Soil	7	<3	3	2	33	9	78	<0.3	29	12	198	2.57	11	<2	27	<0.5	<3	<3	66	0.43
116721	Soil	6	<3	<2	<1	25	5	66	<0.3	24	10	219	1.85	4	<2	28	<0.5	<3	<3	54	0.45
116722	Soil	5	<3	3	2	36	<3	65	<0.3	30	13	382	4.35	7	<2	33	<0.5	<3	<3	76	0.48
116723	Soil	6	<3	4	<1	37	3	53	<0.3	21	7	138	1.56	7	<2	25	<0.5	<3	<3	42	0.38
116724	Soil	9	<3	5	2	54	6	68	<0.3	27	10	364	2.41	11	<2	36	<0.5	<3	<3	48	0.66
116725	Soil	14	<3	3	2	57	4	89	<0.3	41	19	2239	2.57	5	<2	45	<0.5	<3	<3	40	0.88
116726	Soil	6	7	5	<1	37	4	77	<0.3	27	10	272	2.22	6	<2	30	<0.5	<3	<3	62	0.53
116727	Soil	7	<3	4	<1	38	7	67	<0.3	26	11	250	1.80	5	<2	28	<0.5	<3	<3	52	0.48
116728	Soil	9	<3	5	<1	57	5	79	<0.3	54	21	561	4.03	6	2	42	<0.5	<3	<3	92	0.58
116729	Soil	4	<3	<2	1	37	5	91	<0.3	41	16	541	3.47	9	<2	36	<0.5	<3	<3	78	0.56
116730	Soil	4	<3	4	1	38	6	98	<0.3	45	16	642	3.55	9	<2	40	<0.5	<3	<3	80	0.61
116731	Soil	9	<3	4	1	21	<3	40	<0.3	14	6	192	1.64	8	<2	28	<0.5	<3	<3	26	0.51
116732	Soil	6	<3	3	<1	35	5	63	<0.3	41	16	533	3.23	8	<2	39	<0.5	<3	<3	76	0.80

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	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1494591	Soil	0.063	10	31	0.62	97	0.056	<20	1.36	0.03	0.05	<2	0.06	<1	<5	6	<5
1494592	Soil	0.050	9	75	1.91	96	0.103	<20	2.25	0.02	0.07	<2	0.06	<1	<5	9	8
1494593	Soil	0.076	11	27	0.61	143	0.042	<20	1.28	0.03	0.06	<2	0.11	<1	<5	<5	<5
1494594	Soil	0.073	10	20	0.39	123	0.045	<20	1.17	0.02	0.05	<2	0.17	<1	<5	<5	<5
1494595	Soil	0.075	12	45	0.85	125	0.046	<20	1.46	0.03	0.06	<2	0.10	<1	<5	7	<5
1494596	Soil	0.087	10	47	0.94	124	0.071	<20	1.66	0.03	0.07	<2	0.10	<1	<5	6	<5
1494597	Soil	0.071	9	50	1.28	104	0.092	<20	1.91	0.02	0.08	<2	0.06	<1	<5	6	6
1494598	Soil	0.066	9	36	1.00	89	0.087	<20	1.61	0.02	0.07	<2	0.08	<1	<5	5	<5
1494599	Soil	0.068	9	30	0.72	98	0.065	<20	1.29	0.02	0.06	<2	0.09	<1	<5	<5	<5
1494600	Soil	0.063	8	33	0.87	99	0.072	<20	1.47	0.02	0.06	<2	0.08	<1	<5	6	<5
116713	Soil	0.070	8	52	1.19	80	0.081	<20	1.93	0.04	0.11	<2	0.09	<1	<5	8	8
116714	Soil	0.052	6	73	1.97	55	0.246	<20	3.17	0.07	0.22	<2	<0.05	<1	<5	14	9
116715	Soil	0.050	6	54	1.84	66	0.161	<20	2.56	0.05	0.26	<2	<0.05	<1	<5	12	6
116716	Soil	0.078	10	41	0.92	100	0.079	<20	1.50	0.03	0.10	<2	<0.05	<1	<5	6	<5
116717	Soil	0.070	11	52	1.13	104	0.091	<20	1.68	0.03	0.11	<2	<0.05	<1	<5	6	6
116718	Soil	0.073	13	55	1.20	106	0.093	<20	1.91	0.03	0.09	<2	<0.05	<1	<5	8	8
116719	Soil	0.059	12	42	0.73	117	0.072	<20	1.66	0.02	0.06	<2	<0.05	<1	<5	7	<5
116720	Soil	0.059	12	45	0.78	117	0.073	<20	1.80	0.01	0.06	<2	<0.05	<1	<5	6	<5
116721	Soil	0.061	9	37	0.69	117	0.071	<20	1.42	0.01	0.05	<2	<0.05	<1	<5	<5	<5
116722	Soil	0.048	10	48	0.75	140	0.082	<20	1.56	0.02	0.06	<2	<0.05	<1	<5	<5	6
116723	Soil	0.055	10	29	0.53	110	0.058	<20	1.12	0.02	0.04	<2	0.06	<1	<5	<5	<5
116724	Soil	0.077	10	29	0.50	139	0.053	<20	1.13	0.02	0.05	<2	0.09	<1	<5	<5	<5
116725	Soil	0.088	10	28	0.50	273	0.040	<20	1.15	0.02	0.04	<2	0.13	<1	<5	<5	<5
116726	Soil	0.081	10	35	0.66	117	0.091	<20	1.29	0.02	0.04	<2	0.06	<1	<5	<5	<5
116727	Soil	0.069	11	31	0.56	122	0.065	<20	1.24	0.02	0.04	<2	0.08	<1	<5	<5	<5
116728	Soil	0.076	13	70	1.08	163	0.106	<20	2.08	0.02	0.08	<2	<0.05	<1	<5	<5	9
116729	Soil	0.069	12	58	0.96	152	0.086	<20	1.95	0.01	0.05	<2	<0.05	<1	<5	<5	7
116730	Soil	0.074	13	59	0.97	167	0.087	<20	2.01	0.02	0.06	<2	<0.05	<1	<5	<5	7
116731	Soil	0.047	6	14	0.22	83	0.037	<20	0.57	0.02	0.04	<2	0.06	<1	<5	<5	<5
116732	Soil	0.072	11	50	1.01	112	0.085	<20	1.57	0.02	0.08	<2	<0.05	<1	<5	<5	6

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
116733	Soil	7	5	4	<1	31	<3	82	<0.3	41	16	602	3.29	6	<2	49	<0.5	<3	<3	78	0.83
116734	Soil	10	<3	8	<1	58	3	73	<0.3	54	18	656	3.74	7	<2	50	<0.5	<3	<3	85	0.89
116735	Soil	5	<3	2	<1	40	7	74	<0.3	42	15	419	3.02	5	<2	45	<0.5	<3	<3	73	0.95
116951	Soil	5	<3	7	1	59	<3	72	<0.3	33	12	522	2.51	7	<2	44	<0.5	<3	<3	57	1.51
116952	Soil	5	6	9	<1	111	6	54	<0.3	25	13	1082	2.89	17	<2	47	<0.5	<3	<3	52	2.47
116953	Soil	4	<3	5	1	92	4	64	<0.3	34	13	591	2.57	8	<2	49	<0.5	<3	<3	60	2.01
116954	Soil	7	5	5	1	87	5	75	<0.3	33	11	473	2.42	9	<2	54	<0.5	<3	<3	52	1.60
116955	Soil	5	<3	2	2	73	4	79	<0.3	42	18	978	3.12	8	<2	55	<0.5	<3	<3	78	1.48
116956	Soil	6	6	7	<1	93	4	55	<0.3	29	11	419	2.14	6	<2	48	<0.5	<3	<3	55	2.24
116957	Soil	4	<3	4	<1	51	4	58	<0.3	21	6	169	1.42	3	<2	35	<0.5	<3	<3	32	1.01
116958	Soil	13	4	9	1	68	4	69	<0.3	46	17	615	3.44	11	<2	38	<0.5	<3	<3	78	1.36
116959	Soil	6	<3	3	<1	39	4	25	<0.3	11	3	240	1.03	5	<2	21	<0.5	<3	<3	21	0.64
116960	Soil	4	<3	5	2	69	5	71	<0.3	41	18	1174	3.29	10	<2	40	<0.5	<3	<3	76	1.01
116961	Soil	4	<3	5	<1	52	5	75	<0.3	34	14	468	2.55	7	<2	39	<0.5	<3	<3	59	1.22
116962	Soil	5	<3	5	2	88	10	104	<0.3	75	24	931	4.21	14	<2	30	<0.5	<3	<3	83	0.61
116963	Soil	7	<3	3	2	74	9	71	<0.3	51	16	645	3.17	13	<2	33	<0.5	<3	<3	60	1.21
116964	Soil	4	3	4	2	52	8	61	<0.3	49	17	518	3.25	14	<2	71	<0.5	<3	<3	67	0.89
116965	Soil	9	3	5	2	70	6	87	<0.3	46	17	645	3.43	13	<2	40	<0.5	<3	<3	70	1.37
116966	Soil	5	7	2	2	49	6	56	<0.3	38	15	630	2.98	13	<2	36	<0.5	<3	<3	62	1.24
116967	Soil	4	<3	5	1	79	5	51	<0.3	33	11	439	2.33	10	<2	34	<0.5	<3	<3	50	1.77
116968	Soil	4	<3	3	3	50	7	84	<0.3	47	18	552	4.30	16	<2	33	<0.5	<3	<3	89	0.72
116969	Soil	5	<3	5	3	57	7	101	<0.3	43	18	703	4.07	16	<2	32	<0.5	<3	<3	86	0.65
116970	Soil	5	<3	3	2	50	7	79	<0.3	37	16	534	3.39	13	<2	31	<0.5	<3	<3	77	0.62
116971	Soil	5	<3	4	2	56	8	69	<0.3	35	16	721	2.87	11	<2	41	<0.5	<3	<3	58	0.96
116972	Soil	6	<3	3	2	61	14	105	<0.3	54	20	766	3.79	17	<2	35	<0.5	<3	<3	79	0.87
116973	Soil	6	3	10	1	85	9	85	<0.3	38	16	793	2.45	11	<2	42	0.6	<3	<3	53	2.13
116974	Soil	6	4	<2	1	61	7	63	<0.3	33	13	554	2.36	9	<2	44	<0.5	<3	<3	52	1.52
116975	Soil	5	<3	5	<1	96	8	74	<0.3	42	16	617	3.09	8	<2	47	<0.5	<3	<3	78	1.35
116976	Soil	6	4	4	1	120	8	64	<0.3	34	14	585	2.61	10	<2	44	<0.5	<3	<3	57	1.30
116977	Soil	5	5	5	1	87	8	79	<0.3	40	18	710	3.38	11	<2	50	<0.5	<3	<3	80	0.90

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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
116733	Soil	0.084	9	57	1.17	139	0.098	<20	1.79	0.03	0.10	<2	<0.05	<1	<5	<5	6
116734	Soil	0.092	12	65	1.29	143	0.119	<20	2.00	0.03	0.12	<2	<0.05	<1	<5	<5	8
116735	Soil	0.079	10	54	1.07	113	0.096	<20	1.70	0.03	0.09	<2	<0.05	<1	<5	<5	6
116951	Soil	0.079	8	39	0.94	103	0.070	<20	1.56	0.03	0.06	<2	0.08	<1	<5	<5	<5
116952	Soil	0.083	9	25	0.58	112	0.039	<20	1.14	0.02	0.04	<2	0.12	<1	<5	<5	<5
116953	Soil	0.066	9	38	0.99	111	0.065	<20	1.61	0.02	0.06	<2	0.09	<1	<5	<5	<5
116954	Soil	0.100	11	36	0.77	134	0.048	<20	1.60	0.02	0.07	<2	0.12	<1	<5	<5	<5
116955	Soil	0.077	10	45	1.20	122	0.093	<20	2.09	0.03	0.07	<2	0.08	<1	<5	<5	6
116956	Soil	0.062	10	33	0.79	84	0.066	<20	1.34	0.02	0.05	<2	0.09	<1	<5	<5	<5
116957	Soil	0.059	8	22	0.47	89	0.042	<20	0.97	0.03	0.04	<2	0.08	<1	<5	<5	<5
116958	Soil	0.056	12	52	1.29	110	0.092	<20	2.03	0.02	0.07	<2	0.05	<1	<5	<5	7
116959	Soil	0.052	6	11	0.24	47	0.030	<20	0.70	0.03	0.03	<2	<0.05	<1	<5	<5	<5
116960	Soil	0.063	14	48	1.08	147	0.077	<20	2.05	0.02	0.06	<2	0.06	<1	<5	<5	7
116961	Soil	0.074	10	38	0.91	114	0.063	<20	1.55	0.02	0.05	<2	0.06	<1	<5	<5	<5
116962	Soil	0.049	17	100	1.45	117	0.082	<20	2.33	0.02	0.17	<2	<0.05	<1	<5	<5	9
116963	Soil	0.068	15	47	0.77	146	0.056	<20	1.74	0.03	0.06	<2	0.05	<1	<5	<5	5
116964	Soil	0.051	10	52	1.01	120	0.065	<20	1.87	0.03	0.07	<2	<0.05	<1	<5	<5	5
116965	Soil	0.062	13	48	0.99	151	0.069	<20	1.88	0.02	0.08	<2	<0.05	<1	<5	<5	6
116966	Soil	0.076	11	42	0.79	140	0.052	<20	1.70	0.02	0.07	<2	<0.05	<1	<5	<5	<5
116967	Soil	0.054	9	34	0.70	95	0.052	<20	1.32	0.03	0.05	<2	0.07	<1	<5	<5	<5
116968	Soil	0.049	11	51	0.97	165	0.072	<20	2.23	0.01	0.07	<2	<0.05	<1	<5	<5	<5
116969	Soil	0.066	14	49	0.95	103	0.068	<20	2.25	0.02	0.06	<2	<0.05	<1	<5	<5	<5
116970	Soil	0.060	12	41	0.86	90	0.069	<20	1.96	0.02	0.06	<2	<0.05	<1	<5	<5	<5
116971	Soil	0.091	12	39	0.78	135	0.046	<20	1.66	0.02	0.06	<2	0.06	<1	<5	<5	<5
116972	Soil	0.055	13	62	1.17	140	0.072	<20	2.07	0.02	0.08	<2	<0.05	<1	<5	<5	7
116973	Soil	0.085	14	44	0.77	108	0.059	<20	1.80	0.02	0.06	<2	0.11	<1	<5	<5	<5
116974	Soil	0.069	10	38	0.82	105	0.050	<20	1.36	0.02	0.06	<2	0.11	<1	<5	<5	<5
116975	Soil	0.078	13	52	1.12	128	0.088	<20	1.98	0.02	0.08	<2	0.06	<1	<5	5	7
116976	Soil	0.080	12	38	0.82	124	0.057	<20	1.65	0.02	0.05	<2	0.07	<1	<5	<5	<5
116977	Soil	0.082	10	50	1.19	160	0.080	<20	2.20	0.02	0.07	<2	0.05	<1	<5	5	7

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	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
116978	Soil	7	4	5	<1	122	7	68	<0.3	42	18	839	2.93	7	<2	39	<0.5	<3	<3	76	1.04
116979	Soil	5	<3	6	1	63	7	75	<0.3	38	16	621	3.04	9	<2	42	<0.5	<3	<3	70	0.77
116980	Soil	6	<3	5	1	79	8	80	<0.3	45	18	787	3.35	9	<2	44	<0.5	<3	<3	76	0.81
1889851	Soil	5	<3	2	1	49	6	67	<0.3	27	12	676	2.44	10	<2	46	<0.5	<3	<3	52	1.07
1889852	Soil	4	5	6	<1	81	7	80	<0.3	43	16	885	3.29	9	<2	54	<0.5	<3	<3	78	1.29
1889853	Soil	4	<3	4	1	61	7	72	<0.3	50	17	581	3.43	8	<2	53	<0.5	<3	<3	91	1.45
1889863	Soil	5	<3	4	1	78	9	72	<0.3	72	17	597	2.89	11	<2	36	<0.5	<3	<3	58	1.06
1889864	Soil	6	<3	4	<1	77	11	104	<0.3	71	21	706	4.24	11	<2	40	<0.5	<3	<3	106	1.39
1889865	Soil	5	<3	3	3	56	11	106	<0.3	50	20	627	3.85	17	<2	37	<0.5	<3	<3	82	0.66
1889866	Soil	9	<3	4	2	109	29	126	0.6	105	37	991	4.14	31	<2	81	<0.5	<3	<3	79	1.82
1889867	Soil	7	<3	7	2	67	12	94	<0.3	100	24	701	3.80	16	<2	40	<0.5	<3	<3	79	1.01
1889868	Soil	9	<3	8	2	107	13	104	0.4	75	22	665	3.88	16	<2	40	<0.5	<3	<3	82	1.09
1889869	Soil	7	<3	10	<1	87	11	103	<0.3	295	37	923	3.94	13	<2	40	<0.5	<3	<3	68	1.20
1889870	Soil	6	6	10	1	88	10	105	<0.3	298	38	868	3.92	13	<2	39	<0.5	<3	<3	68	1.20
1889871	Soil	4	<3	4	1	44	8	77	<0.3	58	20	574	3.84	9	<2	45	<0.5	<3	<3	93	0.82
1889872	Soil	5	<3	<2	2	53	11	89	<0.3	58	21	632	3.88	17	<2	40	<0.5	<3	<3	90	0.74
1889873	Soil	4	<3	2	2	42	11	87	<0.3	28	10	345	2.99	15	<2	38	<0.5	<3	<3	65	0.75
1889874	Soil	7	<3	2	1	43	5	43	<0.3	25	5	127	1.63	8	<2	47	<0.5	<3	<3	33	1.33
1889875	Soil	5	<3	<2	1	65	11	102	<0.3	57	17	580	3.43	12	<2	51	<0.5	<3	<3	80	1.17
1889876	Soil	7	<3	5	2	49	7	82	<0.3	30	12	541	2.35	12	<2	31	<0.5	<3	<3	46	0.89
1889877	Soil	7	<3	4	1	52	8	103	<0.3	41	12	555	2.41	10	<2	51	<0.5	<3	<3	47	1.57
1889878	Soil	6	<3	4	1	72	9	90	<0.3	73	15	579	2.76	12	<2	50	<0.5	<3	<3	57	1.70
1889879	Soil	9	<3	12	1	47	8	122	<0.3	41	13	454	2.54	11	<2	39	<0.5	<3	<3	51	1.14
1889880	Soil	4	<3	2	1	60	13	126	<0.3	65	19	629	3.58	16	<2	41	<0.5	<3	<3	73	1.10
1889881	Soil	5	4	3	2	74	13	108	<0.3	79	21	721	3.64	23	<2	47	<0.5	<3	<3	77	1.43
1889882	Soil	4	9	<2	2	43	10	80	<0.3	27	12	394	2.26	13	<2	43	<0.5	<3	<3	45	1.31
1889883	Soil	5	<3	3	1	60	11	90	<0.3	42	16	568	2.95	12	<2	45	<0.5	<3	<3	62	1.02
1889884	Soil	3	<3	3	2	59	15	100	<0.3	68	20	575	4.06	15	<2	46	<0.5	<3	<3	88	0.75
1889974	Soil	4	8	16	1	85	6	69	<0.3	51	21	568	3.46	5	<2	63	<0.5	<3	<3	79	1.60
1889975	Soil	4	<3	9	1	87	5	63	<0.3	60	20	558	3.47	5	2	75	<0.5	<3	<3	76	1.71

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
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Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
116978	Soil	0.078	14	49	1.20	118	0.081	<20	2.09	0.02	0.07	<2	0.06	<1	<5	5	8
116979	Soil	0.065	10	48	1.05	142	0.081	<20	1.98	0.02	0.06	<2	<0.05	<1	<5	5	6
116980	Soil	0.078	12	54	1.19	152	0.077	<20	2.27	0.02	0.07	<2	0.05	<1	<5	5	7
1889851	Soil	0.071	9	34	0.80	110	0.059	<20	1.46	0.02	0.05	<2	0.08	<1	<5	<5	<5
1889852	Soil	0.071	11	50	1.26	127	0.097	<20	2.16	0.02	0.07	<2	0.07	<1	<5	<5	6
1889853	Soil	0.069	9	52	1.40	144	0.119	<20	2.11	0.03	0.06	<2	0.07	<1	<5	5	6
1889863	Soil	0.060	12	68	1.02	100	0.069	<20	1.76	0.02	0.07	<2	0.06	<1	<5	<5	<5
1889864	Soil	0.056	11	112	1.75	126	0.137	<20	2.92	0.02	0.07	<2	<0.05	<1	<5	7	11
1889865	Soil	0.062	12	55	0.93	173	0.063	<20	2.11	0.02	0.06	<2	<0.05	<1	<5	8	<5
1889866	Soil	0.056	11	91	1.47	178	0.123	<20	3.22	0.01	0.13	<2	0.05	<1	<5	7	8
1889867	Soil	0.059	12	96	1.48	140	0.093	<20	2.24	0.02	0.07	<2	<0.05	<1	<5	5	7
1889868	Soil	0.052	12	68	1.36	123	0.096	<20	2.45	0.02	0.08	<2	<0.05	<1	<5	<5	9
1889869	Soil	0.064	12	198	2.79	139	0.093	<20	2.40	0.02	0.08	<2	0.06	<1	<5	6	6
1889870	Soil	0.065	12	200	2.76	140	0.092	<20	2.40	0.02	0.08	<2	0.06	<1	<5	6	7
1889871	Soil	0.038	8	72	1.39	113	0.151	<20	2.46	0.02	0.07	<2	<0.05	<1	<5	<5	7
1889872	Soil	0.051	11	64	1.20	166	0.107	<20	2.56	0.02	0.07	<2	<0.05	<1	<5	7	7
1889873	Soil	0.047	10	35	0.62	184	0.050	<20	1.49	0.02	0.05	<2	<0.05	<1	<5	6	<5
1889874	Soil	0.035	6	22	0.35	70	0.039	<20	0.78	0.03	0.04	<2	0.06	<1	<5	<5	<5
1889875	Soil	0.068	11	62	1.22	148	0.120	<20	2.14	0.03	0.09	<2	<0.05	<1	<5	<5	7
1889876	Soil	0.069	8	29	0.49	150	0.047	<20	1.20	0.03	0.06	<2	0.05	<1	<5	<5	<5
1889877	Soil	0.070	10	39	0.79	149	0.054	<20	1.52	0.03	0.06	<2	0.09	<1	<5	<5	<5
1889878	Soil	0.068	13	57	1.11	153	0.059	<20	1.79	0.02	0.07	<2	0.08	<1	<5	6	<5
1889879	Soil	0.056	9	40	0.83	166	0.060	<20	1.52	0.03	0.08	<2	0.06	<1	<5	5	<5
1889880	Soil	0.054	11	64	1.33	182	0.088	<20	2.23	0.02	0.10	<2	<0.05	<1	<5	<5	7
1889881	Soil	0.065	14	80	1.52	161	0.081	<20	2.37	0.02	0.10	<2	0.06	<1	<5	<5	8
1889882	Soil	0.060	10	25	0.53	83	0.053	<20	1.42	0.03	0.06	<2	0.10	<1	<5	<5	<5
1889883	Soil	0.068	10	47	0.87	157	0.066	<20	1.86	0.03	0.06	<2	0.05	<1	<5	<5	<5
1889884	Soil	0.039	10	72	1.33	143	0.097	<20	2.70	0.02	0.10	<2	<0.05	<1	<5	<5	6
1889974	Soil	0.082	11	57	1.52	93	0.119	<20	2.03	0.05	0.13	<2	0.07	<1	<5	<5	6
1889975	Soil	0.075	11	61	1.59	89	0.125	<20	2.09	0.04	0.16	<2	0.06	<1	<5	<5	6

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CERTIFICATE OF ANALYSIS WHI17000522.1

		Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
		Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
1889976	Soil		4	4	2	<1	44	<3	53	<0.3	36	15	487	2.82	6	3	96	<0.5	<3	<3	68	3.46
1889977	Soil		18	<3	2	<1	35	<3	51	<0.3	33	14	506	2.64	6	3	74	0.5	<3	<3	73	2.48
1889978	Soil		3	6	3	2	33	5	56	<0.3	23	16	472	2.50	15	<2	35	<0.5	<3	<3	54	0.54
1889979	Soil		5	5	2	2	32	5	81	<0.3	31	18	496	3.18	18	<2	34	0.6	<3	<3	61	0.56
1889980	Soil		7	<3	3	5	38	6	106	<0.3	40	24	439	4.11	18	<2	41	0.6	<3	<3	76	0.74
1889981	Soil		6	<3	4	<1	40	6	66	<0.3	29	11	281	2.09	4	2	37	<0.5	<3	<3	52	0.62
1889982	Soil		7	5	<2	<1	22	5	51	<0.3	20	7	135	1.36	3	<2	27	<0.5	<3	<3	38	0.44
1889983	Soil		5	9	6	2	45	4	89	<0.3	38	13	617	2.35	10	<2	60	<0.5	<3	<3	47	1.29
1889984	Soil		5	4	4	<1	51	6	73	<0.3	43	14	322	3.20	8	<2	41	<0.5	<3	<3	82	0.77
1889985	Soil		5	6	3	<1	45	3	62	<0.3	44	16	501	3.32	6	3	39	<0.5	<3	<3	88	0.69
1889986	Soil		3	5	4	2	39	6	79	<0.3	39	17	556	3.37	11	2	45	<0.5	<3	<3	75	0.81
1889987	Soil		4	<3	4	2	30	7	66	<0.3	36	18	609	3.64	11	3	41	<0.5	<3	<3	87	0.67
1889988	Soil		6	5	<2	2	37	4	118	<0.3	38	14	556	2.91	10	<2	49	<0.5	<3	<3	65	1.09
1889989	Soil		3	<3	4	<1	27	<3	81	<0.3	37	14	483	2.90	6	3	47	<0.5	<3	<3	74	0.92
1889990	Soil		3	<3	6	<1	30	3	81	<0.3	37	15	667	2.91	6	2	50	<0.5	<3	<3	74	1.00
1889991	Soil		4	<3	4	<1	36	<3	43	<0.3	28	14	457	2.55	5	<2	106	<0.5	<3	<3	74	4.21
1889992	Soil		22	4	4	<1	44	<3	62	<0.3	48	18	522	3.85	5	2	63	<0.5	<3	<3	121	1.55
1889993	Soil		4	<3	3	1	58	4	71	<0.3	51	17	468	3.09	13	<2	46	<0.5	<3	<3	66	0.89
1889994	Soil		4	<3	6	1	60	6	90	0.3	82	26	569	4.20	10	<2	73	<0.5	<3	<3	101	1.38
1889995	Soil		9	5	<2	2	46	12	93	0.4	86	22	547	3.86	17	3	42	<0.5	<3	<3	86	0.76
1889996	Soil		4	7	18	1	52	6	97	0.4	55	19	608	3.21	11	<2	57	<0.5	<3	<3	78	1.29
1889997	Soil		5	6	3	2	47	6	85	0.3	47	19	667	3.19	10	<2	54	<0.5	<3	<3	75	1.11
1889998	Soil		8	7	4	1	64	6	87	0.4	69	21	505	3.42	11	<2	59	<0.5	<3	<3	79	1.41
1889999	Soil		8	5	4	1	58	5	88	0.4	57	18	518	3.19	9	<2	56	<0.5	<3	<3	74	1.40
1890000	Soil		6	<3	4	1	59	3	89	0.3	57	19	563	3.23	10	3	56	<0.5	<3	<3	76	1.37

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CERTIFICATE OF ANALYSIS WHI17000522.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889976	Soil	0.104	13	47	1.18	92	0.113	<20	1.61	0.06	0.11	<2	<0.05	<1	<5	<5	6
1889977	Soil	0.088	11	52	1.02	92	0.128	<20	1.55	0.03	0.09	<2	<0.05	<1	<5	<5	6
1889978	Soil	0.066	10	35	0.53	136	0.052	<20	1.39	0.03	0.05	<2	0.05	<1	<5	<5	<5
1889979	Soil	0.073	12	43	0.71	130	0.065	<20	1.60	0.02	0.07	<2	0.06	<1	<5	<5	<5
1889980	Soil	0.099	15	54	0.83	164	0.070	<20	1.85	0.02	0.07	<2	0.07	<1	<5	<5	6
1889981	Soil	0.074	11	41	0.72	139	0.076	<20	1.60	0.02	0.06	<2	0.08	<1	<5	<5	<5
1889982	Soil	0.064	9	32	0.51	95	0.054	<20	1.18	0.02	0.05	<2	0.06	<1	<5	<5	<5
1889983	Soil	0.093	11	40	0.69	161	0.047	<20	1.37	0.03	0.07	<2	0.11	<1	<5	<5	<5
1889984	Soil	0.066	11	72	1.08	145	0.110	<20	1.99	0.02	0.07	<2	<0.05	<1	<5	<5	8
1889985	Soil	0.066	11	62	1.07	116	0.116	<20	1.85	0.02	0.07	<2	<0.05	<1	<5	<5	7
1889986	Soil	0.070	13	56	0.89	166	0.080	<20	1.95	0.02	0.07	<2	<0.05	<1	<5	<5	6
1889987	Soil	0.067	12	56	0.91	153	0.096	<20	1.96	0.02	0.08	<2	<0.05	<1	<5	<5	5
1889988	Soil	0.084	12	45	0.81	127	0.069	<20	1.62	0.03	0.08	<2	0.07	<1	<5	<5	<5
1889989	Soil	0.078	11	55	1.04	111	0.103	<20	1.66	0.03	0.09	<2	<0.05	<1	<5	<5	6
1889990	Soil	0.079	10	52	1.00	123	0.093	<20	1.68	0.03	0.09	<2	<0.05	<1	<5	<5	6
1889991	Soil	0.087	10	44	0.99	85	0.151	<20	1.38	0.04	0.09	<2	<0.05	<1	<5	<5	5
1889992	Soil	0.081	9	70	1.37	147	0.168	<20	1.89	0.04	0.08	<2	<0.05	<1	<5	<5	6
1889993	Soil	0.073	12	58	0.94	126	0.068	<20	2.08	0.03	0.08	<2	0.05	<1	<5	<5	5
1889994	Soil	0.060	9	118	2.01	130	0.134	<20	3.54	0.03	0.13	<2	<0.05	<1	<5	<5	8
1889995	Soil	0.053	12	87	1.34	216	0.097	<20	2.42	0.03	0.07	<2	<0.05	<1	<5	<5	6
1889996	Soil	0.059	9	70	1.20	222	0.100	<20	2.26	0.04	0.09	<2	0.05	<1	<5	<5	6
1889997	Soil	0.067	11	64	1.06	192	0.088	<20	2.08	0.03	0.08	<2	0.06	<1	<5	<5	6
1889998	Soil	0.062	13	78	1.24	232	0.091	<20	2.36	0.03	0.08	<2	0.06	<1	<5	<5	7
1889999	Soil	0.066	12	72	1.17	155	0.089	<20	2.25	0.03	0.09	<2	0.07	<1	<5	<5	6
1890000	Soil	0.061	12	74	1.18	157	0.090	<20	2.26	0.03	0.09	<2	0.07	<1	<5	<5	6

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QUALITY CONTROL REPORT WHI17000522.1

		Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
		Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
Pulp Duplicates																						
1494515	Soil		7	6	6	4	63	5	106	0.5	59	15	552	2.96	18	<2	59	<0.5	<3	<3	79	1.24
REP 1494515	QC					4	62	6	105	0.5	58	15	548	3.00	17	<2	59	<0.5	<3	<3	79	1.23
1494516	Soil		6	5	7	2	45	<3	62	<0.3	27	9	357	1.88	7	<2	48	<0.5	<3	<3	45	1.33
REP 1494516	QC		5	<3	5																	
1494551	Soil		6	<3	4	1	56	<3	83	<0.3	33	10	395	2.07	6	<2	50	<0.5	<3	<3	45	1.54
REP 1494551	QC		10	<3	8	1	57	5	83	<0.3	33	10	402	2.05	7	<2	51	<0.5	<3	<3	44	1.60
1494586	Soil		5	<3	15	1	88	7	84	<0.3	64	17	619	2.91	9	<2	92	<0.5	<3	<3	68	1.75
REP 1494586	QC		7	<3	16																	
1494587	Soil		5	<3	4	1	65	7	87	<0.3	41	14	425	2.74	7	<2	56	<0.5	<3	<3	58	1.37
REP 1494587	QC					1	68	7	89	<0.3	41	14	444	2.84	8	<2	58	<0.5	<3	<3	58	1.43
116733	Soil		7	5	4	<1	31	<3	82	<0.3	41	16	602	3.29	6	<2	49	<0.5	<3	<3	78	0.83
REP 116733	QC		6	5	5																	
116735	Soil		5	<3	2	<1	40	7	74	<0.3	42	15	419	3.02	5	<2	45	<0.5	<3	<3	73	0.95
REP 116735	QC					<1	41	<3	74	<0.3	43	15	419	2.99	4	<2	44	<0.5	<3	<3	73	0.96
1889853	Soil		4	<3	4	1	61	7	72	<0.3	50	17	581	3.43	8	<2	53	<0.5	<3	<3	91	1.45
REP 1889853	QC		6	<3	5																	
1889865	Soil		5	<3	3	3	56	11	106	<0.3	50	20	627	3.85	17	<2	37	<0.5	<3	<3	82	0.66
REP 1889865	QC					3	55	12	103	<0.3	49	20	634	3.88	17	<2	37	<0.5	<3	<3	82	0.64
1889986	Soil		3	5	4	2	39	6	79	<0.3	39	17	556	3.37	11	2	45	<0.5	<3	<3	75	0.81
REP 1889986	QC		4	6	8																	
1889990	Soil		3	<3	6	<1	30	3	81	<0.3	37	15	667	2.91	6	2	50	<0.5	<3	<3	74	1.00
REP 1889990	QC					<1	30	<3	83	<0.3	38	15	677	3.02	6	2	50	<0.5	<3	<3	75	1.03
Reference Materials																						
STD CDN-PGMS-19	Standard		242	110	489																	
STD CDN-PGMS-23	Standard		481	484	2076																	
STD CDN-PGMS-19	Standard		231	120	515																	
STD CDN-PGMS-23	Standard		499	452	2056																	
STD CDN-PGMS-19	Standard		226	111	493																	

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QUALITY CONTROL REPORT WHI17000522.1

		Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
		Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
		MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
Pulp Duplicates																		
1494515	Soil		0.081	11	60	0.98	223	0.052	<20	1.84	0.02	0.05	<2	0.05	<1	<5	<5	<5
REP 1494515	QC		0.081	10	60	0.98	224	0.055	<20	1.82	0.02	0.05	<2	0.05	<1	<5	<5	<5
1494516	Soil		0.065	8	24	0.45	136	0.051	<20	1.04	0.03	0.04	<2	0.08	<1	<5	<5	<5
REP 1494516	QC																	
1494551	Soil		0.063	9	32	0.68	335	0.051	<20	1.24	0.03	0.04	<2	0.11	<1	<5	<5	<5
REP 1494551	QC		0.064	9	31	0.68	350	0.049	<20	1.24	0.03	0.04	<2	0.11	<1	<5	<5	<5
1494586	Soil		0.071	9	65	1.43	108	0.072	21	1.87	0.03	0.05	<2	0.14	<1	<5	5	5
REP 1494586	QC																	
1494587	Soil		0.074	9	49	1.00	131	0.065	<20	1.88	0.02	0.07	<2	0.11	<1	<5	6	<5
REP 1494587	QC		0.078	9	49	1.02	136	0.065	<20	1.94	0.02	0.07	<2	0.11	<1	<5	7	<5
116733	Soil		0.084	9	57	1.17	139	0.098	<20	1.79	0.03	0.10	<2	<0.05	<1	<5	<5	6
REP 116733	QC																	
116735	Soil		0.079	10	54	1.07	113	0.096	<20	1.70	0.03	0.09	<2	<0.05	<1	<5	<5	6
REP 116735	QC		0.080	10	55	1.06	112	0.096	<20	1.70	0.03	0.09	<2	<0.05	<1	<5	<5	6
1889853	Soil		0.069	9	52	1.40	144	0.119	<20	2.11	0.03	0.06	<2	0.07	<1	<5	5	6
REP 1889853	QC																	
1889865	Soil		0.062	12	55	0.93	173	0.063	<20	2.11	0.02	0.06	<2	<0.05	<1	<5	8	<5
REP 1889865	QC		0.061	12	56	0.94	172	0.066	<20	2.14	0.02	0.06	<2	<0.05	<1	<5	6	<5
1889986	Soil		0.070	13	56	0.89	166	0.080	<20	1.95	0.02	0.07	<2	<0.05	<1	<5	<5	6
REP 1889986	QC																	
1889990	Soil		0.079	10	52	1.00	123	0.093	<20	1.68	0.03	0.09	<2	<0.05	<1	<5	<5	6
REP 1889990	QC		0.080	11	54	1.03	125	0.096	<20	1.70	0.03	0.09	<2	<0.05	<1	<5	<5	6
Reference Materials																		
STD CDN-PGMS-19	Standard																	
STD CDN-PGMS-23	Standard																	
STD CDN-PGMS-19	Standard																	
STD CDN-PGMS-23	Standard																	
STD CDN-PGMS-19	Standard																	

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000522.1

		FA330 Au ppb 2	FA330 Pt ppb 3	FA330 Pd ppb 2	AQ300 Mo ppm 1	AQ300 Cu ppm 1	AQ300 Pb ppm 3	AQ300 Zn ppm 1	AQ300 Ag ppm 0.3	AQ300 Ni ppm 1	AQ300 Co ppm 1	AQ300 Mn ppm 2	AQ300 Fe % 0.01	AQ300 As ppm 2	AQ300 Th ppm 2	AQ300 Sr ppm 1	AQ300 Cd ppm 0.5	AQ300 Sb ppm 3	AQ300 Bi ppm 3	AQ300 V ppm 1	AQ300 Ca % 0.01
STD CDN-PGMS-23	Standard	489	484	2077																	
STD CDN-PGMS-19	Standard	230	111	480																	
STD CDN-PGMS-23	Standard	509	505	2122																	
STD CDN-PGMS-19	Standard	244	120	482																	
STD CDN-PGMS-23	Standard	524	498	2047																	
STD CDN-PGMS-19	Standard	233	105	468																	
STD CDN-PGMS-23	Standard	481	429	2041																	
STD CDN-PGMS-19	Standard	258	99	488																	
STD DS11	Standard				13	152	138	348	1.9	78	13	1029	3.17	43	8	65	2.4	8	12	51	1.07
STD DS11	Standard				14	152	137	350	1.8	79	13	1047	3.10	43	6	65	2.1	8	10	48	1.06
STD DS11	Standard				12	137	117	333	1.3	76	10	1039	2.98	39	7	62	1.7	6	11	48	1.01
STD DS11	Standard				12	140	122	324	1.7	75	11	999	2.87	40	6	59	1.8	7	10	47	0.97
STD DS11	Standard				14	154	136	360	1.7	80	13	1038	3.04	42	4	64	2.1	6	11	48	1.07
STD DS11	Standard				13	144	130	327	1.8	75	13	994	3.05	41	5	60	2.1	8	11	46	1.00
STD OREAS45EA	Standard				2	748	13	33	0.6	396	56	425	24.88	12	12	4	<0.5	<3	<3	321	0.03
STD OREAS45EA	Standard				2	717	13	32	0.3	402	54	428	23.25	6	8	4	<0.5	<3	<3	320	0.04
STD OREAS45EA	Standard				1	691	15	30	<0.3	360	46	406	21.40	8	9	3	<0.5	<3	<3	297	0.03
STD OREAS45EA	Standard				2	701	15	30	<0.3	367	46	408	21.86	9	8	3	<0.5	<3	<3	302	0.03
STD OREAS45EA	Standard				2	725	14	31	0.4	397	55	425	22.60	5	9	4	<0.5	<3	<3	316	0.04
STD OREAS45EA	Standard				2	725	13	33	0.4	418	57	432	25.91	11	9	4	<0.5	<3	<3	321	0.03
STD CDN-PGMS-23 Expected		496	456	2032																	
STD OREAS45EA Expected					1.6	709	14.3	31.4	0.26	381	52	400	23.51	10	10.7	3.5				303	0.036
STD DS11 Expected					13.9	156	138	345	1.71	81.9	14.2	1055	3.2082	42.8	7.65	67.3	2.37	7.2	12.2	50	1.063
STD CDN-PGMS-19 Expected		230	108	476																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	3	<3	<2																	
BLK	Blank	3	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000522.1

		AQ300 P % 0.001	AQ300 La ppm 1	AQ300 Cr ppm 1	AQ300 Mg % 0.01	AQ300 Ba ppm 1	AQ300 Ti % 0.001	AQ300 B ppm 20	AQ300 Al % 0.01	AQ300 Na % 0.01	AQ300 K % 0.01	AQ300 W ppm 2	AQ300 S % 0.05	AQ300 Hg ppm 1	AQ300 Tl ppm 5	AQ300 Ga ppm 5	AQ300 Sc ppm 5
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD DS11	Standard	0.071	19	63	0.86	421	0.095	<20	1.18	0.08	0.41	3	0.28	<1	<5	<5	<5
STD DS11	Standard	0.071	17	57	0.84	432	0.089	<20	1.12	0.07	0.41	<2	0.29	<1	6	<5	<5
STD DS11	Standard	0.066	16	54	0.81	419	0.086	<20	1.08	0.06	0.37	3	0.27	<1	<5	<5	<5
STD DS11	Standard	0.064	15	55	0.78	399	0.085	<20	1.05	0.06	0.37	3	0.26	<1	<5	<5	<5
STD DS11	Standard	0.070	17	58	0.88	421	0.087	<20	1.10	0.07	0.40	3	0.29	<1	6	9	<5
STD DS11	Standard	0.069	15	55	0.82	411	0.083	<20	1.05	0.06	0.37	2	0.27	<1	7	<5	<5
STD OREAS45EA	Standard	0.032	9	969	0.11	155	0.106	<20	3.57	0.02	0.06	<2	<0.05	<1	<5	7	90
STD OREAS45EA	Standard	0.031	8	916	0.10	152	0.104	<20	3.44	0.02	0.06	<2	<0.05	<1	<5	13	85
STD OREAS45EA	Standard	0.029	7	823	0.09	138	0.096	<20	3.14	0.02	0.05	<2	<0.05	<1	<5	15	82
STD OREAS45EA	Standard	0.030	7	833	0.09	139	0.097	<20	3.14	0.02	0.05	<2	<0.05	<1	<5	21	82
STD OREAS45EA	Standard	0.030	8	906	0.10	149	0.104	<20	3.39	0.02	0.06	<2	<0.05	<1	<5	20	84
STD OREAS45EA	Standard	0.032	8	928	0.10	153	0.105	<20	3.48	0.02	0.06	<2	<0.05	<1	11	6	88
STD CDN-PGMS-23 Expected																	
STD OREAS45EA Expected		0.029	7.06	849	0.095	148	0.0984		3.13	0.02	0.053		0.036			12.4	78
STD DS11 Expected		0.0701	18.6	61.5	0.85	417	0.0976	6	1.129	0.0694	0.4	2.9	0.2835	0.3	4.9	4.7	3.1
STD CDN-PGMS-19 Expected																	
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank																

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst

Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000522.1

		FA330 Au ppb 2	FA330 Pt ppb 3	FA330 Pd ppb 2	AQ300 Mo ppm 1	AQ300 Cu ppm 1	AQ300 Pb ppm 3	AQ300 Zn ppm 1	AQ300 Ag ppm 0.3	AQ300 Ni ppm 1	AQ300 Co ppm 1	AQ300 Mn ppm 2	AQ300 Fe % 0.01	AQ300 As ppm 2	AQ300 Th ppm 2	AQ300 Sr ppm 1	AQ300 Cd ppm 0.5	AQ300 Sb ppm 3	AQ300 Bi ppm 3	AQ300 V ppm 1	AQ300 Ca % 0.01
BLK	Blank	<2	<3	3																	
BLK	Blank	<2	<3	<2																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	5	<2																	
BLK	Blank	2	<3	2																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank				<1	<1	4	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	3																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	<2	<3	<2																	

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000522.1

		AQ300 P % 0.001	AQ300 La ppm 1	AQ300 Cr ppm 1	AQ300 Mg % 0.01	AQ300 Ba ppm 1	AQ300 Ti % 0.001	AQ300 B ppm 20	AQ300 Al % 0.01	AQ300 Na % 0.01	AQ300 K % 0.01	AQ300 W ppm 2	AQ300 S % 0.05	AQ300 Hg ppm 1	AQ300 Tl ppm 5	AQ300 Ga ppm 5	AQ300 Sc ppm 5
BLK	Blank																
BLK	Blank																
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																
BLK	Blank																
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Submitted By: James Rogers
Receiving Lab: Canada-Whitehorse
Received: August 07, 2017
Report Date: August 30, 2017
Page: 1 of 2

CERTIFICATE OF ANALYSIS WHI17000523.1

CLIENT JOB INFORMATION

Project: Catalyst
Shipment ID:
P.O. Number
Number of Samples: 19

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	19	Dry at 60C			WHI
SS80	19	Dry at 60C sieve 100g to -80 mesh			WHI
SVRJT	19	Save all or part of Soil Reject			WHI
FA330	19	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
EN002	19	Environmental disposal charge-Fire assay lead waste			VAN
AQ300	19	1:1:1 Aqua Regia digestion ICP-ES analysis	0.5	Completed	VAN
SHP01	19	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

Invoice To: Longford Exploration Services Ltd.
6970 Napier Street
Burnaby British Columbia V5B 2C4
Canada

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000523.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
116909	Stream	9	7	17	<1	74	<3	83	<0.3	166	37	897	5.79	10	<2	44	<0.5	<3	<3	145	1.86
116911	Stream	8	24	7	1	78	9	156	0.4	100	31	682	5.97	12	<2	53	<0.5	<3	<3	142	1.84
116912	Stream	9	13	17	<1	70	6	89	<0.3	72	32	865	5.49	11	<2	45	0.5	<3	<3	175	2.20
116913	Stream	6	5	17	<1	31	<3	55	0.5	38	23	373	11.20	<2	2	55	<0.5	<3	<3	375	0.95
116914	Stream	9	8	12	<1	72	<3	70	0.5	74	33	735	6.04	2	<2	46	<0.5	<3	<3	227	2.80
116915	Stream	12	12	35	<1	70	<3	87	<0.3	69	32	875	6.61	5	<2	45	<0.5	<3	<3	217	2.14
116916	Stream	15	13	28	<1	61	<3	73	0.4	73	31	703	7.10	2	2	56	<0.5	<3	<3	239	1.98
116917	Stream	1201	16	11	2	43	<3	151	<0.3	45	18	529	3.94	8	<2	88	1.1	<3	<3	144	0.81
116919	Stream	10	<3	25	3	66	<3	154	0.4	49	23	749	5.11	10	2	84	0.6	<3	<3	176	0.80
116921	Stream	9	19	22	<1	34	<3	61	0.4	42	23	431	5.01	<2	<2	59	<0.5	<3	<3	180	0.92
116925	Stream	1782	16	33	<1	143	<3	55	<0.3	33	23	482	6.76	<2	<2	174	<0.5	<3	<3	195	1.57
116926	Stream	8	11	12	<1	28	<3	70	<0.3	33	18	560	9.26	<2	3	54	<0.5	<3	<3	411	1.98
116927	Stream	19	6	16	<1	46	<3	81	<0.3	32	32	475	8.06	25	<2	25	<0.5	<3	<3	207	0.75
116928	Stream	11	3	17	<1	28	<3	85	<0.3	31	22	666	10.87	6	4	28	<0.5	<3	<3	419	0.95
116929	Stream	193	8	15	<1	30	<3	77	<0.3	28	23	638	10.87	6	7	42	<0.5	<3	<3	463	1.62
116930	Stream	681	12	22	<1	20	<3	82	<0.3	32	17	562	6.97	<2	3	49	<0.5	<3	<3	311	1.88
116931	Stream	109	24	<2	<1	31	<3	50	<0.3	26	18	455	8.23	13	3	58	<0.5	<3	<3	334	3.06
116932	Stream	1227	20	9	<1	21	10	58	<0.3	36	15	654	3.70	<2	<2	43	<0.5	<3	<3	130	1.03
116933	Stream	9	31	13	<1	21	4	56	<0.3	40	15	538	4.97	3	<2	34	<0.5	<3	<3	174	0.87

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

CERTIFICATE OF ANALYSIS WHI17000523.1

		Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
		Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
		MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
116909	Stream		0.051	7	192	3.56	409	0.209	20	3.30	0.03	0.08	<2	<0.05	<1	<5	<5	11
116911	Stream		0.057	11	110	2.48	571	0.161	<20	3.24	0.03	0.10	<2	0.10	<1	<5	<5	12
116912	Stream		0.056	7	83	2.79	355	0.218	<20	3.41	0.02	0.07	<2	<0.05	<1	<5	<5	13
116913	Stream		0.053	5	128	1.20	30	0.400	<20	1.63	0.07	0.15	<2	<0.05	<1	<5	<5	<5
116914	Stream		0.055	5	69	3.14	27	0.310	26	3.90	0.02	0.03	<2	<0.05	<1	<5	<5	14
116915	Stream		0.063	7	75	2.50	890	0.329	<20	3.35	0.02	0.06	<2	<0.05	<1	<5	<5	11
116916	Stream		0.050	5	85	2.47	173	0.456	<20	3.15	0.03	0.05	<2	<0.05	<1	<5	<5	9
116917	Stream		0.078	7	91	0.79	249	0.132	<20	2.03	0.08	0.26	<2	0.06	<1	<5	<5	<5
116919	Stream		0.090	9	72	1.19	407	0.218	<20	2.51	0.06	0.56	<2	<0.05	<1	<5	<5	7
116921	Stream		0.060	5	75	1.39	43	0.324	<20	1.74	0.03	0.04	<2	<0.05	<1	<5	<5	<5
116925	Stream		0.049	4	92	1.15	38	0.223	<20	1.86	0.05	0.19	<2	0.16	<1	<5	<5	5
116926	Stream		0.084	15	112	0.93	46	0.284	<20	1.10	0.02	0.06	<2	<0.05	<1	<5	<5	<5
116927	Stream		0.084	11	48	0.94	31	0.290	<20	1.29	0.02	0.04	<2	1.94	<1	<5	<5	<5
116928	Stream		0.084	18	76	0.82	40	0.354	<20	0.98	0.02	0.04	<2	0.40	<1	<5	<5	<5
116929	Stream		0.081	29	94	0.70	69	0.363	<20	0.86	0.01	0.04	<2	0.29	<1	<5	<5	<5
116930	Stream		0.084	14	77	1.02	42	0.368	<20	1.13	0.02	0.05	<2	0.07	<1	<5	<5	<5
116931	Stream		0.091	17	90	0.72	40	0.218	<20	0.90	0.02	0.04	<2	0.24	<1	<5	<5	<5
116932	Stream		0.098	9	56	1.09	67	0.181	<20	1.34	0.04	0.06	<2	<0.05	<1	<5	<5	<5
116933	Stream		0.081	9	59	1.05	66	0.163	<20	1.23	0.02	0.06	<2	<0.05	<1	<5	<5	<5

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.
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PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000523.1

	Method	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1	0.01
Pulp Duplicates																					
116926	Stream Sedim	8	11	12	<1	28	<3	70	<0.3	33	18	560	9.26	<2	3	54	<0.5	<3	<3	411	1.98
REP 116926	QC	9	13	27																	
116929	Stream Sedim	193	8	15	<1	30	<3	77	<0.3	28	23	638	10.87	6	7	42	<0.5	<3	<3	463	1.62
REP 116929	QC				1	22	6	77	0.7	28	25	598	10.84	24	9	40	<0.5	<3	<3	455	1.56
Reference Materials																					
STD CDN-PGMS-19	Standard	244	120	482																	
STD CDN-PGMS-23	Standard	524	498	2047																	
STD CDN-PGMS-19	Standard	188	99	468																	
STD DS11	Standard				13	152	138	348	1.9	78	13	1029	3.17	43	8	65	2.4	8	12	51	1.07
STD DS11	Standard				13	153	135	362	2.3	80	13	1039	3.16	41	8	63	2.3	8	11	50	1.06
STD DS11	Standard				14	141	134	345	1.9	76	13	1069	3.11	42	7	65	2.2	8	12	49	1.04
STD OREAS45EA	Standard				2	748	13	33	0.6	396	56	425	24.88	12	12	4	<0.5	<3	<3	321	0.03
STD OREAS45EA	Standard				3	705	12	32	0.6	375	54	408	22.42	11	12	4	<0.5	<3	<3	313	0.03
STD OREAS45EA	Standard				1	703	17	30	<0.3	378	50	421	22.32	11	10	3	<0.5	<3	<3	308	0.03
STD CDN-PGMS-23 Expected		496	456	2032																	
STD CDN-PGMS-19 Expected		230	108	476																	
STD OREAS45EA Expected					1.6	709	14.3	31.4	0.26	381	52	400	23.51	10	10.7	3.5				303	0.036
STD DS11 Expected					13.9	156	138	345	1.71	81.9	14.2	1055	3.2082	42.8	7.65	67.3	2.37	7.2	12.2	50	1.063
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01
BLK	Blank	<2	5	<2																	
BLK	Blank	2	<3	2																	
BLK	Blank	<2	5	<2																	
BLK	Blank				<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1	<0.01

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PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: August 30, 2017

QUALITY CONTROL REPORT WHI17000523.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
Pulp Duplicates																	
116926	Stream Sedim	0.084	15	112	0.93	46	0.284	<20	1.10	0.02	0.06	<2	<0.05	<1	<5	<5	<5
REP 116926	QC																
116929	Stream Sedim	0.081	29	94	0.70	69	0.363	<20	0.86	0.01	0.04	<2	0.29	<1	<5	<5	<5
REP 116929	QC	0.081	25	98	0.73	57	0.329	<20	0.86	0.01	0.04	<2	0.29	<1	<5	<5	<5
Reference Materials																	
STD CDN-PGMS-19	Standard																
STD CDN-PGMS-23	Standard																
STD CDN-PGMS-19	Standard																
STD DS11	Standard	0.071	19	63	0.86	421	0.095	<20	1.18	0.08	0.41	3	0.28	<1	<5	<5	<5
STD DS11	Standard	0.071	17	63	0.86	435	0.091	<20	1.14	0.07	0.40	3	0.29	<1	<5	<5	<5
STD DS11	Standard	0.069	18	56	0.83	430	0.093	<20	1.13	0.07	0.40	3	0.28	<1	5	<5	<5
STD OREAS45EA	Standard	0.032	9	969	0.11	155	0.106	<20	3.57	0.02	0.06	<2	<0.05	<1	<5	7	90
STD OREAS45EA	Standard	0.031	8	938	0.10	150	0.102	<20	3.29	0.02	0.05	<2	<0.05	<1	<5	8	85
STD OREAS45EA	Standard	0.030	8	833	0.10	140	0.103	<20	3.25	0.02	0.05	<2	<0.05	<1	<5	17	86
STD CDN-PGMS-23 Expected																	
STD CDN-PGMS-19 Expected																	
STD OREAS45EA Expected		0.029	7.06	849	0.095	148	0.0984		3.13	0.02	0.053		0.036			12.4	78
STD DS11 Expected		0.0701	18.6	61.5	0.85	417	0.0976	6	1.129	0.0694	0.4	2.9	0.2835	0.3	4.9	4.7	3.1
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Submitted By: James Rogers
Receiving Lab: Canada-Whitehorse
Received: July 31, 2017
Report Date: September 05, 2017
Page: 1 of 3

CERTIFICATE OF ANALYSIS WHI17000412.1

CLIENT JOB INFORMATION

Project: Catalyst
Shipment ID:
P.O. Number
Number of Samples: 48

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	48	Crush, split and pulverize 250 g rock to 200 mesh			WHI
FA330	48	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
EN002	48	Environmental disposal charge-Fire assay lead waste			VAN
AQ300	48	1:1:1 Aqua Regia digestion ICP-ES analysis	0.5	Completed	VAN
SHP01	48	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

Invoice To: Longford Exploration Services Ltd.
6970 Napier Street
Burnaby British Columbia V5B 2C4
Canada

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 05, 2017

CERTIFICATE OF ANALYSIS WHI17000412.1

	Method	WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
1889601	Rock	3.26	32	4	11	5	583	<3	21	0.6	40	64	541	12.50	53	<2	176	0.7	<3	<3	76
1889602	Rock	3.60	23	<3	6	8	316	<3	30	0.5	21	41	988	11.82	27	<2	167	0.7	<3	<3	67
1889603	Rock	3.64	7	6	13	2	573	<3	13	<0.3	13	18	1245	14.23	11	<2	135	<0.5	<3	<3	43
1889604	Rock	2.18	38	7	8	4	996	<3	5	<0.3	12	457	166	>40	3	<2	6	1.0	<3	<3	6
1889605	Rock	6.77	5	5	2	1	1282	<3	9	<0.3	6	158	726	24.04	4	<2	18	<0.5	<3	<3	7
1889606	Rock	2.23	8	10	6	3	2575	<3	10	<0.3	9	279	397	>40	<2	<2	7	<0.5	<3	<3	7
1889607	Rock	2.36	21	19	6	1	2802	<3	6	<0.3	8	257	199	23.53	<2	<2	3	<0.5	<3	<3	2
1889608	Rock	5.00	6	4	<2	<1	847	<3	4	<0.3	10	117	1015	17.32	<2	<2	38	0.5	<3	<3	7
1889609	Rock	2.26	6	3	12	<1	1233	<3	5	0.3	9	185	968	26.01	<2	<2	22	<0.5	<3	<3	6
1889610	Rock	6.14	11	4	3	2	513	<3	14	<0.3	35	45	849	12.97	3	<2	454	0.9	<3	<3	46
1889611	Rock	3.99	3	6	4	<1	131	<3	18	0.3	62	16	310	3.60	<2	<2	432	<0.5	<3	<3	80
1889612	Rock	3.37	2	<3	3	2	217	<3	9	<0.3	19	13	292	4.53	3	<2	98	0.6	<3	<3	42
1889613	Rock	7.15	10	8	6	<1	833	<3	13	0.4	20	92	217	14.44	<2	<2	187	0.6	<3	<3	62
1889614	Rock	6.50	5	6	14	<1	246	<3	34	0.3	22	19	247	8.24	<2	<2	266	<0.5	<3	<3	88
1889615	Rock	6.38	2	<3	<2	1	339	<3	10	<0.3	11	38	283	9.95	<2	<2	420	<0.5	<3	<3	88
1889616	Rock	2.66	17	<3	10	4	1664	<3	5	<0.3	23	615	122	>40	<2	<2	4	0.7	<3	<3	9
1889617	Rock	4.64	9	10	4	<1	879	<3	24	0.5	19	76	311	13.71	<2	<2	241	0.6	<3	<3	102
1889618	Rock	2.60	7	11	3	2	3016	<3	7	0.4	27	362	165	30.64	<2	<2	8	<0.5	<3	<3	16
1889619	Rock	3.09	<2	<3	<2	2	373	<3	10	<0.3	19	13	314	8.63	<2	<2	213	0.6	<3	<3	63
1889620	Rock	5.06	10	24	18	4	1559	<3	4	<0.3	88	622	106	>40	<2	<2	10	1.0	<3	<3	6
1889621	Rock	4.20	31	<3	<2	7	4916	<3	6	0.4	22	219	124	19.67	<2	<2	9	0.6	<3	<3	18
1889622	Rock	1.91	16	5	11	<1	2735	<3	9	0.4	43	294	256	20.28	<2	<2	2	<0.5	<3	4	10
1889623	Rock	4.59	18	<3	14	3	3091	<3	8	<0.3	48	266	191	18.21	<2	<2	73	0.9	<3	<3	35
1889624	Rock	4.40	22	<3	3	18	3312	<3	8	0.3	44	325	226	31.46	<2	<2	22	<0.5	<3	<3	20
1889625	Rock	5.75	18	<3	8	17	3320	<3	9	<0.3	44	325	216	31.09	<2	<2	22	<0.5	<3	<3	18
1889626	Rock	4.64	18	<3	<2	2	2123	<3	3	<0.3	55	378	230	31.20	<2	<2	5	<0.5	<3	<3	5
1889627	Rock	0.76	38	6	6	3	5161	<3	9	0.7	7	536	120	>40	<2	<2	2	2.2	<3	<3	3
1889628	Rock	0.28	12	5	<2	2	307	<3	25	0.3	43	36	278	4.05	4	<2	58	<0.5	<3	<3	101
1889629	Rock	0.59	4	6	2	<1	108	<3	10	<0.3	188	30	167	2.40	<2	<2	77	<0.5	<3	<3	44
1889630	Rock	2.69	6	4	17	<1	114	<3	59	0.4	66	35	843	4.52	<2	<2	18	<0.5	<3	<3	98

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PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 05, 2017

CERTIFICATE OF ANALYSIS WHI17000412.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889601	Rock	5.97	0.028	3	64	1.26	16	0.164	<20	1.78	0.07	0.09	<2	4.11	<1	<5	<5	6
1889602	Rock	8.05	0.040	3	35	1.49	16	0.052	<20	1.70	0.08	0.11	<2	2.83	<1	<5	<5	5
1889603	Rock	8.61	0.021	2	17	0.81	14	0.056	<20	1.09	0.07	0.09	<2	2.62	<1	<5	<5	<5
1889604	Rock	0.39	0.006	4	<1	0.11	4	0.007	<20	0.17	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889605	Rock	4.49	0.006	2	3	0.26	3	0.013	<20	0.22	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889606	Rock	0.57	0.006	3	2	0.19	4	0.010	<20	0.21	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889607	Rock	0.53	0.006	2	3	0.08	2	0.011	<20	0.14	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889608	Rock	9.63	0.004	2	2	0.29	3	0.009	<20	0.19	<0.01	0.01	<2	9.24	<1	<5	<5	<5
1889609	Rock	5.97	0.005	2	4	0.22	2	0.008	<20	0.25	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889610	Rock	7.04	0.026	3	56	1.08	19	0.088	<20	2.16	0.16	0.13	<2	4.59	<1	<5	<5	<5
1889611	Rock	2.21	0.054	3	104	2.02	39	0.137	<20	3.29	0.18	0.19	<2	1.29	<1	<5	<5	5
1889612	Rock	2.78	0.068	3	19	3.27	11	0.061	<20	4.72	0.17	0.07	<2	1.59	<1	<5	6	<5
1889613	Rock	4.29	0.035	4	32	1.05	37	0.184	<20	1.36	0.03	0.35	<2	6.41	<1	<5	<5	6
1889614	Rock	2.96	0.047	4	61	1.26	137	0.245	<20	1.98	0.05	1.08	<2	3.10	<1	<5	<5	9
1889615	Rock	2.53	0.052	3	25	1.02	42	0.203	<20	2.05	0.13	0.20	<2	3.40	<1	<5	<5	5
1889616	Rock	0.31	0.010	3	3	0.13	3	0.036	<20	0.72	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889617	Rock	2.52	0.031	3	36	1.47	35	0.182	<20	2.17	0.09	0.65	<2	6.80	<1	<5	<5	7
1889618	Rock	0.46	0.027	3	6	0.26	5	0.098	<20	0.62	0.02	<0.01	<2	>10	<1	<5	<5	<5
1889619	Rock	1.46	0.050	3	61	2.84	20	0.075	<20	3.81	0.06	0.08	<2	1.35	<1	<5	<5	<5
1889620	Rock	0.26	0.005	3	3	0.09	2	0.006	<20	0.30	0.02	<0.01	4	>10	<1	<5	<5	<5
1889621	Rock	0.44	0.011	3	5	0.32	<1	0.044	<20	0.22	<0.01	0.02	4	8.78	<1	<5	<5	<5
1889622	Rock	0.35	0.006	2	1	0.23	2	0.011	<20	0.18	0.01	<0.01	<2	>10	<1	<5	5	<5
1889623	Rock	0.74	0.030	3	20	0.53	8	0.074	<20	1.50	0.21	0.09	<2	>10	<1	<5	<5	<5
1889624	Rock	1.13	0.014	3	6	0.26	3	0.027	<20	0.42	0.02	0.02	<2	>10	<1	<5	<5	<5
1889625	Rock	1.04	0.014	3	6	0.26	3	0.024	<20	0.42	0.02	0.02	<2	>10	<1	<5	<5	<5
1889626	Rock	1.74	0.010	3	3	0.09	<1	0.007	<20	0.36	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889627	Rock	0.13	0.006	3	2	0.09	<1	0.005	<20	0.19	<0.01	<0.01	97	>10	<1	<5	<5	<5
1889628	Rock	1.27	0.054	4	82	1.53	185	0.210	<20	2.45	0.21	0.86	<2	1.67	<1	<5	<5	<5
1889629	Rock	1.22	0.039	3	132	2.42	139	0.097	<20	2.77	0.09	0.53	<2	0.57	<1	<5	<5	<5
1889630	Rock	2.06	0.046	3	76	2.18	4	0.149	<20	2.09	0.03	0.02	<2	0.20	<1	<5	<5	14

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 05, 2017

CERTIFICATE OF ANALYSIS WHI17000412.1

	Method	WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
1889631	Rock	2.95	9	<3	2	1	1705	<3	8	0.7	17	56	138	11.86	<2	<2	40	<0.5	<3	<3	20
1889632	Rock	1.54	13	<3	5	<1	866	<3	11	0.5	10	18	236	13.56	10	<2	29	<0.5	<3	<3	36
1889633	Rock	2.96	17	<3	12	1	1230	<3	6	<0.3	11	387	183	25.17	<2	<2	5	0.8	<3	<3	4
1889634	Rock	1.46	42	<3	11	3	1359	<3	7	0.4	24	244	644	25.77	3	<2	6	1.1	<3	<3	2
1889635	Rock	2.39	17	<3	14	6	2681	<3	9	<0.3	35	239	252	27.44	<2	<2	3	<0.5	<3	<3	11
1889636	Rock	2.13	5	<3	4	<1	113	<3	10	<0.3	21	19	204	2.76	<2	<2	458	<0.5	<3	<3	64
1889637	Rock	1.48	18	<3	3	2	390	<3	10	<0.3	11	18	194	14.09	8	<2	88	0.8	<3	<3	29
1889638	Rock	3.12	8	4	5	1	1033	<3	15	<0.3	48	187	1281	12.97	10	<2	11	<0.5	<3	<3	37
1889639	Rock	2.48	8	<3	10	4	169	<3	15	0.3	46	27	230	2.91	<2	<2	141	<0.5	<3	<3	82
1889640	Rock	1.23	6	7	7	4	91	5	47	1.3	72	22	271	2.94	6	<2	26	1.5	<3	<3	58
1889641	Rock	1.35	3	13	29	<1	18	<3	40	<0.3	44	25	286	4.08	<2	<2	67	<0.5	<3	<3	156
1889642	Rock	1.90	12	17	34	<1	195	<3	47	<0.3	50	24	460	6.09	<2	<2	20	<0.5	<3	<3	134
1889643	Rock	1.52	16	4	5	17	44	<3	85	<0.3	15	11	681	2.24	30	<2	83	1.0	<3	<3	26
143301	Rock	1.57	11	12	17	<1	419	<3	7	0.6	28	28	186	4.03	<2	<2	17	<0.5	<3	<3	128
143302	Rock	2.00	46	3	18	<1	619	<3	10	0.8	36	19	193	4.16	<2	<2	31	<0.5	<3	<3	121
143303	Rock	2.61	33	<3	14	3	4781	<3	9	0.6	9	575	93	>40	12	<2	2	<0.5	<3	<3	7
143304	Rock	1.65	6	<3	6	2	63	<3	22	0.4	2	12	202	3.14	<2	<2	277	<0.5	<3	<3	43
143305	Rock	1.56	9	13	26	<1	403	<3	116	<0.3	4	27	1055	8.51	<2	3	12	<0.5	<3	<3	82

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 05, 2017

CERTIFICATE OF ANALYSIS WHI17000412.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
1889631	Rock	0.90	0.030	2	14	0.33	15	0.108	<20	1.64	0.11	0.07	<2	7.52	<1	<5	<5	<5
1889632	Rock	1.11	0.027	2	11	0.33	5	0.135	<20	1.31	<0.01	0.02	<2	4.90	<1	<5	<5	<5
1889633	Rock	0.28	0.014	4	3	0.55	<1	0.023	<20	0.45	0.02	<0.01	<2	>10	<1	<5	<5	<5
1889634	Rock	2.21	0.004	2	3	0.16	<1	0.007	<20	0.42	<0.01	0.02	<2	>10	<1	<5	<5	<5
1889635	Rock	0.55	0.013	5	3	0.18	<1	0.025	<20	0.27	<0.01	<0.01	<2	>10	<1	<5	<5	<5
1889636	Rock	2.63	0.059	2	38	0.89	25	0.096	<20	4.27	0.48	0.09	<2	0.59	<1	<5	<5	<5
1889637	Rock	10.00	0.021	3	13	1.12	3	0.070	<20	0.99	0.02	0.03	<2	9.02	<1	<5	<5	<5
1889638	Rock	11.51	0.021	4	23	0.11	1	0.031	<20	0.89	<0.01	<0.01	6	3.57	<1	<5	8	<5
1889639	Rock	1.51	0.050	4	61	1.03	137	0.157	<20	2.07	0.39	0.42	<2	1.19	<1	<5	<5	7
1889640	Rock	2.88	0.078	4	111	1.05	12	0.162	<20	1.03	0.08	0.03	<2	1.04	<1	<5	<5	<5
1889641	Rock	1.11	0.067	3	50	1.96	19	0.333	<20	2.45	0.14	0.18	<2	0.20	<1	<5	<5	<5
1889642	Rock	0.72	0.084	3	76	1.76	13	0.282	<20	1.79	0.10	0.09	<2	1.16	<1	<5	<5	7
1889643	Rock	17.28	0.015	3	12	9.11	6	0.021	47	0.92	<0.01	0.09	<2	0.84	<1	<5	<5	<5
143301	Rock	0.93	0.056	2	57	0.88	5	0.558	<20	1.36	0.11	0.03	<2	1.70	<1	<5	<5	5
143302	Rock	1.19	0.058	2	40	0.71	8	0.505	<20	1.53	0.09	0.06	<2	0.42	<1	<5	<5	<5
143303	Rock	0.17	0.004	3	2	0.19	2	0.012	<20	0.37	<0.01	<0.01	>100	>10	<1	<5	<5	<5
143304	Rock	1.94	0.083	5	<1	0.97	29	0.099	<20	3.20	0.26	0.18	<2	1.71	<1	<5	<5	<5
143305	Rock	2.50	0.135	9	4	1.15	11	0.347	<20	1.98	0.06	0.05	<2	0.61	<1	<5	<5	19

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Project: Catalyst
Report Date: September 05, 2017

QUALITY CONTROL REPORT WHI17000412.1

	Method	WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
Pulp Duplicates																					
1889602	Rock	3.60	23	<3	6	8	316	<3	30	0.5	21	41	988	11.82	27	<2	167	0.7	<3	<3	67
REP 1889602	QC		22	4	5																
1889614	Rock	6.50	5	6	14	<1	246	<3	34	0.3	22	19	247	8.24	<2	<2	266	<0.5	<3	<3	88
REP 1889614	QC					<1	249	<3	33	<0.3	22	19	246	8.35	<2	2	266	<0.5	<3	<3	88
1889619	Rock	3.09	<2	<3	<2	2	373	<3	10	<0.3	19	13	314	8.63	<2	<2	213	0.6	<3	<3	63
REP 1889619	QC		<2	<3	<2																
1889623	Rock	4.59	18	<3	14	3	3091	<3	8	<0.3	48	266	191	18.21	<2	<2	73	0.9	<3	<3	35
REP 1889623	QC		23	<3	8																
1889633	Rock	2.96	17	<3	12	1	1230	<3	6	<0.3	11	387	183	25.17	<2	<2	5	0.8	<3	<3	4
REP 1889633	QC		11	<3	13																
1889640	Rock	1.23	6	7	7	4	91	5	47	1.3	72	22	271	2.94	6	<2	26	1.5	<3	<3	58
REP 1889640	QC					4	91	5	47	1.4	72	22	271	2.93	5	<2	26	1.5	<3	<3	59
Core Reject Duplicates																					
1889603	Rock	3.64	7	6	13	2	573	<3	13	<0.3	13	18	1245	14.23	11	<2	135	<0.5	<3	<3	43
DUP 1889603	QC		7	<3	13	2	562	<3	13	<0.3	12	18	1214	14.08	11	<2	126	<0.5	<3	<3	43
1889637	Rock	1.48	18	<3	3	2	390	<3	10	<0.3	11	18	194	14.09	8	<2	88	0.8	<3	<3	29
DUP 1889637	QC		18	<3	4	1	431	<3	10	<0.3	11	19	209	15.15	8	<2	94	0.5	<3	<3	31
Reference Materials																					
STD CDN-PGMS-19	Standard		210	106	469																
STD CDN-PGMS-19	Standard		273	122	487																
STD CDN-PGMS-23	Standard		524	489	2071																
STD CDN-PGMS-19	Standard		244	118	491																
STD DS11	Standard					12	140	131	327	1.8	73	12	963	2.94	40	7	59	2.3	7	12	46
STD DS11	Standard					13	141	129	329	1.7	73	13	977	2.98	44	8	60	2.4	7	13	47
STD OREAS45EA	Standard					2	653	13	28	0.7	349	49	388	20.00	9	11	3	0.7	<3	<3	288
STD OREAS45EA	Standard					2	668	11	30	0.6	362	51	397	21.09	11	12	3	<0.5	<3	<3	293
STD CDN-PGMS-23 Expected			496	456	2032																
STD OREAS45EA Expected						1.6	709	14.3	31.4	0.26	381	52	400	23.51	10	10.7	3.5				303

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 05, 2017

QUALITY CONTROL REPORT WHI17000412.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5
Pulp Duplicates																		
1889602	Rock	8.05	0.040	3	35	1.49	16	0.052	<20	1.70	0.08	0.11	<2	2.83	<1	<5	<5	5
REP 1889602	QC																	
1889614	Rock	2.96	0.047	4	61	1.26	137	0.245	<20	1.98	0.05	1.08	<2	3.10	<1	<5	<5	9
REP 1889614	QC	3.00	0.047	4	58	1.27	135	0.245	<20	1.98	0.05	1.08	<2	3.13	<1	<5	<5	9
1889619	Rock	1.46	0.050	3	61	2.84	20	0.075	<20	3.81	0.06	0.08	<2	1.35	<1	<5	<5	<5
REP 1889619	QC																	
1889623	Rock	0.74	0.030	3	20	0.53	8	0.074	<20	1.50	0.21	0.09	<2	>10	<1	<5	<5	<5
REP 1889623	QC																	
1889633	Rock	0.28	0.014	4	3	0.55	<1	0.023	<20	0.45	0.02	<0.01	<2	>10	<1	<5	<5	<5
REP 1889633	QC																	
1889640	Rock	2.88	0.078	4	111	1.05	12	0.162	<20	1.03	0.08	0.03	<2	1.04	<1	<5	<5	<5
REP 1889640	QC	2.95	0.077	4	111	1.07	12	0.171	<20	1.04	0.08	0.03	<2	1.05	<1	<5	<5	<5
Core Reject Duplicates																		
1889603	Rock	8.61	0.021	2	17	0.81	14	0.056	<20	1.09	0.07	0.09	<2	2.62	<1	<5	<5	<5
DUP 1889603	QC	8.35	0.020	2	17	0.81	13	0.054	<20	1.08	0.07	0.09	<2	2.60	<1	<5	<5	<5
1889637	Rock	10.00	0.021	3	13	1.12	3	0.070	<20	0.99	0.02	0.03	<2	9.02	<1	<5	<5	<5
DUP 1889637	QC	9.97	0.023	3	12	1.23	4	0.077	<20	1.10	0.03	0.04	<2	9.32	<1	<5	<5	<5
Reference Materials																		
STD CDN-PGMS-19	Standard																	
STD CDN-PGMS-19	Standard																	
STD CDN-PGMS-23	Standard																	
STD CDN-PGMS-19	Standard																	
STD DS11	Standard	0.98	0.066	16	58	0.82	409	0.083	<20	1.07	0.07	0.37	2	0.25	<1	<5	<5	<5
STD DS11	Standard	0.99	0.067	16	59	0.82	416	0.087	<20	1.09	0.07	0.38	2	0.25	<1	<5	<5	<5
STD OREAS45EA	Standard	0.03	0.028	8	892	0.09	138	0.094	<20	3.14	0.02	0.05	<2	<0.05	<1	<5	10	80
STD OREAS45EA	Standard	0.03	0.028	8	912	0.09	139	0.097	<20	3.27	0.02	0.05	<2	<0.05	<1	<5	9	83
STD CDN-PGMS-23 Expected																		
STD OREAS45EA Expected		0.036	0.029	7.06	849	0.095	148	0.0984		3.13	0.02	0.053		0.036			12.4	78

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 05, 2017

QUALITY CONTROL REPORT WHI17000412.1

		WGHT Wgt kg 0.01	FA330 Au ppb 2	FA330 Pt ppb 3	FA330 Pd ppb 2	AQ300 Mo ppm 1	AQ300 Cu ppm 1	AQ300 Pb ppm 3	AQ300 Zn ppm 1	AQ300 Ag ppm 0.3	AQ300 Ni ppm 1	AQ300 Co ppm 1	AQ300 Mn ppm 2	AQ300 Fe % 0.01	AQ300 As ppm 2	AQ300 Th ppm 2	AQ300 Sr ppm 1	AQ300 Cd ppm 0.5	AQ300 Sb ppm 3	AQ300 Bi ppm 3	AQ300 V ppm 1
STD DS11 Expected						13.9	156	138	345	1.71	81.9	14.2	1055	3.2082	42.8	7.65	67.3	2.37	7.2	12.2	50
STD CDN-PGMS-19 Expected			230	108	476																
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	7	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank					<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1
BLK	Blank					<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1
BLK	Blank		<2	<3	3																
Prep Wash																					
ROCK-WHI	Prep Blank		<2	4	<2	<1	3	<3	31	<0.3	<1	3	486	1.61	<2	2	18	<0.5	<3	<3	20
ROCK-WHI	Prep Blank		<2	<3	<2	<1	3	<3	29	<0.3	<1	3	493	1.61	<2	3	18	<0.5	<3	<3	21

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Project: Catalyst
Report Date: September 05, 2017

QUALITY CONTROL REPORT WHI17000412.1

		AQ300 Ca % 0.01	AQ300 P % 0.001	AQ300 La ppm 1	AQ300 Cr ppm 1	AQ300 Mg % 0.01	AQ300 Ba ppm 1	AQ300 Ti % 0.001	AQ300 B ppm 20	AQ300 Al % 0.01	AQ300 Na % 0.01	AQ300 K % 0.01	AQ300 W ppm 2	AQ300 S % 0.05	AQ300 Hg ppm 1	AQ300 Tl ppm 5	AQ300 Ga ppm 5	AQ300 Sc ppm 5
STD DS11 Expected		1.063	0.0701	18.6	61.5	0.85	417	0.0976	6	1.129	0.0694	0.4	2.9	0.2835	0.3	4.9	4.7	3.1
STD CDN-PGMS-19 Expected																		
BLK	Blank																	
BLK	Blank																	
BLK	Blank																	
BLK	Blank	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5
BLK	Blank																	
Prep Wash																		
ROCK-WHI	Prep Blank	0.51	0.036	5	2	0.43	65	0.074	<20	0.79	0.07	0.09	<2	0.14	<1	<5	<5	<5
ROCK-WHI	Prep Blank	0.49	0.037	5	2	0.45	57	0.073	<20	0.81	0.08	0.08	<2	0.12	<1	<5	<5	<5

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
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Submitted By: James Rogers
Receiving Lab: Canada-Whitehorse
Received: August 07, 2017
Report Date: September 25, 2017
Page: 1 of 3

CERTIFICATE OF ANALYSIS WHI17000524.1

CLIENT JOB INFORMATION

Project: Catalyst
Shipment ID:
P.O. Number
Number of Samples: 56

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	49	Crush, split and pulverize 250 g rock to 200 mesh			WHI
FA330	49	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
EN002	49	Environmental disposal charge-Fire assay lead waste			VAN
AQ300	49	1:1:1 Aqua Regia digestion ICP-ES analysis	0.5	Completed	VAN
SHP01	49	Per sample shipping charges for branch shipments			VAN
MA370	2	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Longford Exploration Services Ltd.
6970 Napier Street
Burnaby British Columbia V5B 2C4
Canada

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 25, 2017

CERTIFICATE OF ANALYSIS WHI17000524.1

	Method	WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
143306	Rock	1.74	325	5	5	4	>10000	4	49	3.1	29	103	385	>40	3	<2	11	3.8	<3	<3	37
143307	Rock	0.86	8	14	15	<1	310	4	51	<0.3	37	24	297	7.60	<2	<2	76	<0.5	<3	<3	179
143308	Rock	0.91	3	10	25	<1	127	6	42	<0.3	545	61	1154	4.91	47	<2	61	0.8	<3	<3	93
143309	Rock	0.95	6	12	16	<1	134	<3	52	<0.3	45	24	391	4.03	2	<2	55	0.6	<3	<3	132
143310	Rock	1.10	8	9	12	<1	42	<3	41	<0.3	70	35	763	4.68	<2	<2	76	0.6	<3	<3	190
143311	Rock	1.26	3	4	4	<1	95	<3	70	<0.3	38	25	1440	4.88	4	2	26	0.6	<3	<3	171
143312	Rock	0.89	6	22	17	<1	65	<3	40	<0.3	1024	87	812	5.93	<2	<2	60	0.6	<3	<3	21
143313	Rock	1.04	5	7	5	<1	61	<3	27	<0.3	25	26	473	3.19	<2	<2	113	<0.5	<3	<3	78
143314	Rock	0.91	7	6	6	1	12	11	19	<0.3	25	5	1343	3.07	6	<2	301	<0.5	<3	<3	8
143315	Rock	1.33	7	11	21	<1	568	<3	48	<0.3	71	34	682	6.37	2	<2	27	<0.5	<3	<3	273
143316	Rock	2.62	5	7	15	<1	4493	<3	24	0.9	38	20	380	4.03	2	<2	19	0.6	<3	<3	190
143317	Rock	1.03	4	4	9	<1	>10000	<3	15	1.2	21	12	246	2.99	4	<2	16	0.5	<3	<3	145
143318	Rock	1.26	6	7	9	<1	151	<3	9	<0.3	8	12	212	2.58	<2	<2	45	<0.5	<3	<3	55
143319	Rock	0.96	7	3	19	<1	145	<3	44	<0.3	77	30	492	4.44	6	<2	76	<0.5	<3	<3	106
143320	Rock	1.05	5	3	6	<1	292	<3	49	0.6	22	26	381	6.06	5	<2	11	<0.5	<3	<3	469
143321	Rock	0.69	<2	3	3	<1	46	<3	28	<0.3	82	30	724	3.72	5	<2	47	0.6	<3	<3	71
116901	Rock	0.51	3	8	35	<1	82	<3	23	<0.3	76	23	297	3.64	<2	<2	66	<0.5	<3	<3	110
116902	Rock	1.63	14	13	20	<1	347	<3	48	0.3	50	25	266	4.42	<2	<2	95	<0.5	<3	<3	162
116903	Rock	0.87	<2	3	4	<1	8	<3	<1	<0.3	2	1	546	0.48	<2	2	78	<0.5	<3	<3	10
116904	Rock	0.99	8	17	26	<1	133	<3	43	<0.3	29	18	364	3.98	<2	<2	99	<0.5	<3	<3	158
116905	Rock	0.85	19	7	13	<1	487	<3	44	0.4	39	22	376	4.64	<2	<2	49	0.6	<3	<3	180
116906	Rock	0.11	5	10	9	<1	31	<3	21	<0.3	124	20	326	2.52	<2	<2	37	<0.5	<3	<3	87
116907	Rock	2.18	10	6	8	<1	355	<3	24	<0.3	49	25	284	3.67	<2	<2	299	0.6	<3	<3	127
116908	Rock	0.74	4	12	14	<1	12	<3	35	<0.3	58	29	458	4.73	<2	<2	21	0.6	<3	<3	173
116910	Rock	1.48	8	14	25	<1	192	<3	48	<0.3	1078	92	817	6.35	<2	<2	51	<0.5	<3	<3	29
116918	Rock	1.64	<2	3	4	<1	28	<3	28	<0.3	43	19	260	2.77	12	<2	127	<0.5	<3	<3	95
116920	Rock	1.56	3	16	16	<1	102	<3	33	<0.3	56	23	331	3.49	<2	<2	119	<0.5	<3	<3	114
116922	Rock	0.73	5	5	12	<1	98	<3	48	<0.3	1228	100	767	6.66	2	<2	34	<0.5	<3	<3	31
116923	Rock	2.26	6	6	19	<1	124	<3	50	<0.3	980	85	786	6.15	<2	<2	64	<0.5	<3	<3	34
116924	Rock	1.09	6	<3	17	<1	114	<3	52	<0.3	1597	117	979	7.69	<2	<2	22	<0.5	<3	<3	36

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 25, 2017

CERTIFICATE OF ANALYSIS WHI17000524.1

	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	MA370
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc	Cu
	Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5	0.001
143306	Rock	1.68	0.004	4	7	0.41	4	0.025	<20	0.53	0.02	0.01	7	0.09	<1	<5	<5	<5	2.399
143307	Rock	1.72	0.050	2	94	0.88	42	0.351	<20	2.42	0.35	0.08	<2	0.06	<1	<5	<5	<5	
143308	Rock	8.12	0.034	5	838	4.87	51	0.125	<20	2.84	0.02	0.12	<2	<0.05	<1	<5	<5	11	
143309	Rock	2.03	0.043	4	36	1.75	35	0.165	<20	3.45	0.39	0.13	<2	<0.05	<1	<5	<5	5	
143310	Rock	3.76	0.051	2	95	3.27	13	0.329	<20	3.42	0.03	0.03	<2	<0.05	<1	<5	<5	18	
143311	Rock	2.09	0.094	6	22	2.88	23	0.328	<20	3.07	0.07	0.04	<2	<0.05	<1	<5	<5	14	
143312	Rock	1.02	0.027	4	189	12.23	62	0.057	20	2.24	0.19	0.15	<2	<0.05	<1	<5	<5	<5	
143313	Rock	2.57	0.060	2	38	1.15	10	0.177	<20	1.58	0.09	0.04	<2	1.20	<1	<5	<5	<5	
143314	Rock	28.32	0.012	12	5	2.23	270	0.001	<20	0.31	0.01	0.04	<2	1.07	<1	<5	<5	<5	
143315	Rock	5.27	0.062	3	85	3.65	5	0.332	32	5.06	0.03	<0.01	<2	<0.05	<1	<5	<5	26	
143316	Rock	8.30	0.048	2	15	1.00	7	0.226	41	5.80	<0.01	<0.01	<2	<0.05	<1	<5	16	13	
143317	Rock	7.61	0.044	2	10	0.53	6	0.187	38	4.94	0.01	<0.01	3	<0.05	<1	<5	14	11	1.477
143318	Rock	1.25	0.084	5	2	0.57	24	0.138	<20	1.56	0.13	0.10	<2	0.92	<1	<5	<5	<5	
143319	Rock	2.04	0.033	2	13	2.12	27	0.112	27	4.08	0.45	0.10	<2	<0.05	<1	<5	<5	<5	
143320	Rock	3.05	0.104	6	1	1.30	12	0.299	1708	2.39	0.06	0.01	<2	<0.05	<1	<5	<5	<5	
143321	Rock	2.75	0.046	3	89	3.11	20	0.040	<20	3.15	0.13	0.14	<2	<0.05	<1	<5	<5	10	
116901	Rock	1.37	0.061	2	150	1.95	23	0.267	26	2.49	0.17	0.13	<2	0.25	<1	<5	<5	<5	
116902	Rock	1.13	0.063	3	77	2.20	35	0.241	<20	2.41	0.18	0.28	<2	0.05	<1	<5	<5	<5	
116903	Rock	22.56	0.004	1	4	9.54	5	0.012	<20	0.31	<0.01	0.01	<2	<0.05	<1	<5	<5	<5	
116904	Rock	1.89	0.060	3	25	1.14	9	0.211	<20	2.60	0.34	0.10	<2	0.12	<1	<5	<5	6	
116905	Rock	1.70	0.053	3	30	1.28	15	0.276	<20	1.98	0.38	0.12	<2	0.14	<1	<5	<5	7	
116906	Rock	2.22	0.041	2	363	2.73	64	0.118	<20	3.10	0.11	0.15	<2	0.06	<1	<5	<5	6	
116907	Rock	2.28	0.069	3	58	2.00	37	0.199	<20	4.05	0.42	0.19	<2	0.44	<1	<5	<5	6	
116908	Rock	3.21	0.050	2	41	2.85	11	0.258	<20	4.20	0.04	0.09	<2	<0.05	<1	<5	<5	14	
116910	Rock	0.93	0.032	5	211	11.12	70	0.068	<20	2.53	0.21	0.18	<2	0.13	<1	<5	<5	<5	
116918	Rock	1.41	0.077	4	55	1.14	254	0.162	<20	2.59	0.20	0.28	<2	0.51	<1	<5	<5	<5	
116920	Rock	4.06	0.046	1	51	0.97	33	0.298	<20	3.90	0.53	0.13	<2	0.71	<1	<5	<5	6	
116922	Rock	0.86	0.022	4	247	14.72	86	0.059	31	2.07	0.11	0.12	<2	0.10	<1	<5	<5	<5	
116923	Rock	1.22	0.029	5	114	10.93	87	0.072	<20	2.59	0.27	0.18	<2	0.06	<1	<5	<5	<5	
116924	Rock	0.61	0.019	4	263	17.98	38	0.052	35	1.58	0.05	0.09	<2	0.14	<1	<5	<5	6	

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6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
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CERTIFICATE OF ANALYSIS WHI17000524.1

	Method	WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
116934	Rock	1.03	<2	8	13	<1	83	<3	24	<0.3	55	21	384	2.66	<2	<2	408	<0.5	<3	<3	132
116935	Rock	1.30	<2	4	9	<1	6198	<3	2	1.4	4	<1	97	0.70	10	<2	14	0.6	<3	<3	85
116936	Rock	1.08	10	3	<2	<1	24	<3	21	<0.3	2	13	330	3.58	<2	<2	102	<0.5	<3	<3	97
116937	Rock	0.86	<2	6	7	<1	55	<3	26	<0.3	221	37	169	2.54	14	<2	282	<0.5	<3	<3	58
116938	Rock	1.44	<2	<3	4	1	87	<3	23	<0.3	41	25	292	2.79	<2	<2	125	<0.5	<3	<3	86
116939	Rock	1.09	<2	<3	8	1	190	<3	30	<0.3	146	34	476	3.48	<2	<2	84	<0.5	<3	<3	71
116940	Rock	1.11	<2	10	9	<1	36	8	108	<0.3	31	7	185	3.56	11	<2	27	<0.5	<3	<3	94
116941	Rock	1.73	3	<3	5	2	40	8	137	0.6	45	10	379	4.81	23	<2	21	<0.5	<3	<3	95
116942	Rock	1.76	3	7	10	<1	115	<3	74	0.3	85	33	944	6.23	3	<2	43	<0.5	<3	<3	200
116943	Rock	0.84	2	<3	15	<1	103	<3	59	<0.3	65	32	1078	4.81	<2	<2	105	<0.5	<3	<3	183
116944	Rock	1.23	3	6	15	<1	82	<3	44	<0.3	94	34	780	4.70	2	<2	65	<0.5	<3	<3	129
116945	Rock	1.53	4	9	10	<1	89	<3	44	<0.3	109	31	487	4.29	10	<2	33	<0.5	<3	<3	103
1189644	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1189645	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1189646	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1189647	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1189648	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1189649	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1189650	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
1889644	Rock	0.64	8	7	15	<1	297	<3	38	<0.3	41	25	188	5.66	<2	<2	309	<0.5	<3	<3	231
1889645	Rock	0.81	<2	4	12	<1	2	<3	15	<0.3	73	10	291	2.59	<2	<2	763	<0.5	<3	<3	76
1889646	Rock	0.46	<2	5	7	<1	18	<3	12	<0.3	53	11	298	2.21	<2	<2	616	<0.5	<3	<3	70
1889647	Rock	0.56	9	8	16	1	3497	10	9	0.5	27	352	570	>40	4	<2	4	4.4	<3	<3	6
1889648	Rock	1.03	9	<3	17	3	143	<3	30	<0.3	41	25	235	4.53	<2	<2	108	<0.5	<3	<3	158
1889649	Rock	1.25	22	10	18	<1	417	<3	41	0.4	42	23	266	4.36	<2	<2	103	<0.5	<3	<3	160
1889650	Rock	1.14	6	10	20	<1	281	<3	26	<0.3	54	28	269	10.31	<2	<2	57	<0.5	<3	<3	174

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	Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	MA370
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc	Cu
	Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5	0.001
116934	Rock	3.73	0.052	2	47	1.85	2	0.278	<20	3.16	0.04	<0.01	<2	<0.05	<1	<5	<5	5	
116935	Rock	8.33	0.006	<1	5	0.12	2	0.038	<20	5.34	<0.01	<0.01	<2	<0.05	<1	<5	22	<5	
116936	Rock	1.81	0.095	4	1	0.83	63	0.169	<20	2.63	0.18	0.15	<2	0.86	<1	<5	<5	<5	
116937	Rock	2.56	0.042	1	152	2.11	100	0.115	<20	5.08	0.22	0.30	<2	0.54	<1	<5	7	<5	
116938	Rock	2.09	0.055	3	84	1.31	184	0.205	<20	3.04	0.24	0.13	<2	0.35	<1	<5	5	<5	
116939	Rock	2.85	0.034	2	261	2.21	92	0.148	<20	2.32	0.14	0.11	<2	1.20	<1	<5	5	<5	
116940	Rock	0.29	0.066	9	48	1.59	19	0.105	<20	1.93	0.08	0.10	<2	0.21	<1	<5	7	8	
116941	Rock	0.43	0.027	7	45	1.63	334	0.160	<20	1.84	0.04	0.12	<2	1.56	2	<5	6	7	
116942	Rock	3.69	0.217	7	154	3.10	505	0.429	<20	3.22	0.12	0.06	<2	0.26	<1	<5	10	19	
116943	Rock	2.31	0.032	3	122	2.27	3398	0.192	<20	2.00	0.05	0.02	<2	0.12	<1	<5	9	21	
116944	Rock	4.16	0.027	2	53	1.99	84	0.046	<20	4.23	0.38	0.17	<2	<0.05	<1	<5	7	13	
116945	Rock	1.73	0.033	3	18	2.43	44	0.095	22	3.39	0.20	0.14	<2	<0.05	<1	<5	6	<5	
1189644	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1189645	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1189646	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1189647	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1189648	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1189649	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1189650	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
1889644	Rock	2.45	0.067	4	54	2.59	67	0.184	<20	5.27	0.62	0.36	<2	0.12	<1	<5	12	<5	
1889645	Rock	2.66	0.035	1	186	1.79	23	0.133	<20	4.62	0.48	0.09	<2	<0.05	<1	<5	7	<5	
1889646	Rock	2.81	0.041	1	142	1.43	29	0.121	<20	4.50	0.61	0.08	<2	0.11	<1	<5	7	<5	
1889647	Rock	2.05	0.007	1	<1	0.16	4	0.010	<20	0.22	<0.01	<0.01	<2	>10	<1	21	24	<5	
1889648	Rock	1.05	0.069	2	47	1.67	11	0.271	<20	1.99	0.14	0.12	<2	0.93	<1	<5	<5	<5	
1889649	Rock	1.07	0.069	2	50	1.78	9	0.264	<20	2.07	0.15	0.10	<2	0.21	<1	<5	<5	<5	
1889650	Rock	1.32	0.054	1	102	1.37	17	0.427	<20	1.82	0.11	0.15	<2	0.35	<1	<5	5	<5	

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Client: **Longford Exploration Services Ltd.**
6970 Napier Street
Burnaby British Columbia V5B 2C4 Canada

Project: Catalyst
Report Date: September 25, 2017

QUALITY CONTROL REPORT WHI17000524.1

	Method	WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
	Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
Pulp Duplicates																					
143306	Rock	1.74	325	5	5	4	>10000	4	49	3.1	29	103	385	>40	3	<2	11	3.8	<3	<3	37
REP 143306	QC																				
143315	Rock	1.33	7	11	21	<1	568	<3	48	<0.3	71	34	682	6.37	2	<2	27	<0.5	<3	<3	273
REP 143315	QC		6	7	19																
116904	Rock	0.99	8	17	26	<1	133	<3	43	<0.3	29	18	364	3.98	<2	<2	99	<0.5	<3	<3	158
REP 116904	QC					<1	130	<3	43	<0.3	29	18	362	3.92	<2	<2	98	<0.5	<3	<3	157
116934	Rock	1.03	<2	8	13	<1	83	<3	24	<0.3	55	21	384	2.66	<2	<2	408	<0.5	<3	<3	132
REP 116934	QC		2	7	13																
116944	Rock	1.23	3	6	15	<1	82	<3	44	<0.3	94	34	780	4.70	2	<2	65	<0.5	<3	<3	129
REP 116944	QC		4	10	16																
116945	Rock	1.53	4	9	10	<1	89	<3	44	<0.3	109	31	487	4.29	10	<2	33	<0.5	<3	<3	103
REP 116945	QC					<1	90	<3	44	<0.3	110	31	495	4.33	9	<2	34	<0.5	<3	<3	103
Core Reject Duplicates																					
116936	Rock	1.08	10	3	<2	<1	24	<3	21	<0.3	2	13	330	3.58	<2	<2	102	<0.5	<3	<3	97
DUP 116936	QC		10	4	7	<1	24	<3	22	<0.3	2	13	337	3.62	<2	<2	99	<0.5	<3	<3	99
Reference Materials																					
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD CDN-PGMS-19	Standard		242	74	436																
STD CDN-PGMS-23	Standard		526	449	2190																
STD CDN-PGMS-19	Standard		223	81	424																
STD CDN-PGMS-19	Standard		231	108	480																
STD CDN-PGMS-23	Standard		447	437	1952																
STD DS11	Standard					13	149	144	334	1.8	81	13	1054	3.21	45	7	66	2.1	8	8	50
STD DS11	Standard					13	146	139	347	1.7	78	13	1028	3.14	41	9	62	2.2	6	11	48
STD OREAS45EA	Standard					2	709	12	31	0.3	402	55	419	25.42	13	8	4	<0.5	<3	<3	312
STD OREAS45EA	Standard					2	685	13	30	0.5	364	52	406	20.89	11	11	3	0.7	<3	<3	300
STD OREAS45EA Expected						1.6	709	14.3	31.4	0.26	381	52	400	23.51	10	10.7	3.5				303

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6970 Napier Street
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QUALITY CONTROL REPORT WHI17000524.1

		Method	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	MA370
		Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc	Cu
		Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%
		MDL	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.01	0.01	2	0.05	1	5	5	5	0.001
Pulp Duplicates																				
143306	Rock		1.68	0.004	4	7	0.41	4	0.025	<20	0.53	0.02	0.01	7	0.09	<1	<5	<5	<5	2.399
REP 143306	QC																			2.414
143315	Rock		5.27	0.062	3	85	3.65	5	0.332	32	5.06	0.03	<0.01	<2	<0.05	<1	<5	<5	26	
REP 143315	QC																			
116904	Rock		1.89	0.060	3	25	1.14	9	0.211	<20	2.60	0.34	0.10	<2	0.12	<1	<5	<5	6	
REP 116904	QC		1.88	0.060	3	24	1.13	9	0.208	<20	2.58	0.34	0.10	<2	0.12	<1	<5	<5	6	
116934	Rock		3.73	0.052	2	47	1.85	2	0.278	<20	3.16	0.04	<0.01	<2	<0.05	<1	<5	<5	5	
REP 116934	QC																			
116944	Rock		4.16	0.027	2	53	1.99	84	0.046	<20	4.23	0.38	0.17	<2	<0.05	<1	<5	7	13	
REP 116944	QC																			
116945	Rock		1.73	0.033	3	18	2.43	44	0.095	22	3.39	0.20	0.14	<2	<0.05	<1	<5	6	<5	
REP 116945	QC		1.77	0.033	3	18	2.44	44	0.097	23	3.41	0.21	0.14	<2	<0.05	<1	<5	7	<5	
Core Reject Duplicates																				
116936	Rock		1.81	0.095	4	1	0.83	63	0.169	<20	2.63	0.18	0.15	<2	0.86	<1	<5	<5	<5	
DUP 116936	QC		1.99	0.098	4	<1	0.84	58	0.166	<20	2.71	0.17	0.15	<2	0.88	<1	<5	<5	<5	
Reference Materials																				
STD CDN-ME-14	Standard																			1.267
STD CDN-ME-9	Standard																			0.677
STD CDN-PGMS-19	Standard																			
STD CDN-PGMS-23	Standard																			
STD CDN-PGMS-19	Standard																			
STD CDN-PGMS-19	Standard																			
STD CDN-PGMS-23	Standard																			
STD DS11	Standard		1.05	0.073	16	57	0.87	432	0.088	<20	1.14	0.07	0.40	4	0.26	<1	6	<5	<5	
STD DS11	Standard		1.05	0.069	17	60	0.87	431	0.087	<20	1.09	0.07	0.39	3	0.28	<1	<5	<5	<5	
STD OREAS45EA	Standard		0.03	0.031	7	899	0.09	145	0.101	<20	3.34	0.02	0.06	<2	<0.05	<1	12	9	85	
STD OREAS45EA	Standard		0.03	0.030	8	905	0.09	144	0.097	<20	3.22	0.02	0.05	<2	<0.05	<1	<5	10	83	
STD OREAS45EA Expected			0.036	0.029	7.06	849	0.095	148	0.0984		3.13	0.02	0.053		0.036			12.4	78	

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QUALITY CONTROL REPORT WHI17000524.1

		WGHT	FA330	FA330	FA330	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300	AQ300
		Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Th	Sr	Cd	Sb	Bi	V
		kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.01	2	3	2	1	1	3	1	0.3	1	1	2	0.01	2	2	1	0.5	3	3	1
STD DS11 Expected						13.9	156	138	345	1.71	81.9	14.2	1055	3.2082	42.8	7.65	67.3	2.37	7.2	12.2	50
STD CDN-PGMS-19 Expected			230	108	476																
STD CDN-PGMS-23 Expected			496	456	2032																
STD CDN-ME-14 Expected																					
STD CDN-ME-9 Expected																					
BLK	Blank					<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1
BLK	Blank					<1	<1	<3	<1	<0.3	<1	<1	<2	<0.01	<2	<2	<1	<0.5	<3	<3	<1
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	4	<2																
BLK	Blank		<2	<3	5																
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank																				
Prep Wash																					
ROCK-WHI	Prep Blank		2	<3	<2	<1	2	<3	31	<0.3	<1	3	509	1.65	<2	3	22	<0.5	<3	<3	20
ROCK-WHI	Prep Blank		3	3	3	<1	3	<3	35	<0.3	<1	3	549	1.77	<2	2	16	<0.5	<3	<3	20

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		AQ300 Ca % 0.01	AQ300 P % 0.001	AQ300 La ppm 1	AQ300 Cr ppm 1	AQ300 Mg % 0.01	AQ300 Ba ppm 1	AQ300 Ti % 0.001	AQ300 B ppm 20	AQ300 Al % 0.01	AQ300 Na % 0.01	AQ300 K % 0.01	AQ300 W ppm 2	AQ300 S % 0.05	AQ300 Hg ppm 1	AQ300 Tl ppm 5	AQ300 Ga ppm 5	AQ300 Sc ppm 5	MA370 Cu % 0.001
STD DS11 Expected		1.063	0.0701	18.6	61.5	0.85	417	0.0976	6	1.129	0.0694	0.4	2.9	0.2835	0.3	4.9	4.7	3.1	
STD CDN-PGMS-19 Expected																			
STD CDN-PGMS-23 Expected																			
STD CDN-ME-14 Expected																			1.221
STD CDN-ME-9 Expected																			0.654
BLK	Blank	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5	
BLK	Blank	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.01	<0.01	<2	<0.05	<1	<5	<5	<5	
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		<0.001
Prep Wash																			
ROCK-WHI	Prep Blank	0.55	0.038	5	1	0.47	61	0.070	<20	0.87	0.08	0.10	<2	<0.05	<1	<5	<5	<5	
ROCK-WHI	Prep Blank	0.47	0.038	5	2	0.52	44	0.065	<20	0.86	0.07	0.09	<2	0.07	<1	<5	<5	<5	