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Impala Canada Ltd.

Assessment Work Report
on 2018 Field Activities:
Wakinoo-Demars and Shelby properties

Thunder Bay Mining Division

Senga Lake, Orbit Lake, Shelby Lake, Eayrs Lake Areas

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Thunder Bay, Ontario

April 20, 2020

Contents

Summary

North American Palladium Ltd. (NAP) and its wholly-owned subsidiary, Lac Des Iles Mines Ltd. (LDIM) carried out various early-stage exploration work programs on a number of mineral claims in 2018. The purpose of this work was to evaluate the potential for these areas to host PGE-Cu-Ni mineralization similar to that found at Lac des Iles Mine. The work was performed by NAP staff and included grass roots prospecting and geochemical survey work. Rock samples weighing 1kg were collected for analysis in two ways: from outcrop using a typical rock hammer and chisel and from the historic Demars trench by channel saw. From July 5, 2018 to Aug 29, 2018, over the course of 18 field days, NAP staff collected 116 samples and visited 147 field stations on 14 claims. All 116 samples were sent to ALS Laboratories for analysis. This report is submitted to satisfy assessment work requirements for claims as indicated and as outlined by the Ontario Mining Act. Locations of rock samples were recorded using handheld GPS in Universal Transverse Mercator (UTM) using North American Datum (NAD) 83 Zone 16 projection. Work was completed within the Thunder Bay Mining Division in the Senga Lake, Orbit Lake, Shelby Lake, and Eayrs Lake townships/areas, on the following claims:

Table 1 List of Claims

Tenure Number	Claim Type	Status	Issued	Anniversary	Holder
147649	Single Cell Mining Claim	Active	20180410	20200627	(100) IMPALA CANADA LTD.
246653	Single Cell Mining Claim	Active	20180410	20210402	(100) IMPALA CANADA LTD.
249994	Single Cell Mining Claim	Active	20180410	20200604	(100) IMPALA CANADA LTD.
295507	Single Cell Mining Claim	Active	20180410	20200531	(50) KARL EVERETT BJORKMAN, (50) KENNETH GEORGE FENWICK
308797	Single Cell Mining Claim	Active	20180410	20210402	(100) IMPALA CANADA LTD.
535266	Multi-cell Mining Claim	Active	20181120	20210306	(100) IMPALA CANADA LTD.
535268	Multi-cell Mining Claim	Active	20181120	20210615	(100) IMPALA CANADA LTD.
535272	Multi-cell Mining Claim	Active	20181120	20200706	(100) IMPALA CANADA LTD.
535276	Multi-cell Mining Claim	Active	20181120	20200706	(100) IMPALA CANADA LTD.
535297	Multi-cell Mining Claim	Active	20181120	20210306	(100) IMPALA CANADA LTD.
535298	Multi-cell Mining Claim	Active	20181120	20210306	(100) IMPALA CANADA LTD.
581140	Multi-cell Mining Claim	Active	20200308	20210402	(100) IMPALA CANADA LTD.
581141	Multi-cell Mining Claim	Active	20200308	20210301	(100) IMPALA CANADA LTD.
581145	Multi-cell Mining Claim	Active	20200308	20200627	(100) IMPALA CANADA LTD.

This sampling program has resulted in the discovery of previously unidentified mafic to ultramafic intrusive bodies. However, no new zones of economically interesting PGE mineralization were discovered. Analysis of rocks obtained from known PGE showings will

assist in future geochemical examinations and studies of these intrusions. No additional field work on these properties is recommended at this time.

Regional Geology

Much of the following information presented in this section is sourced from the Open File Report OFR6120 Project Unit 95-014; Regional Geology of the Lac des Iles Area (Stone et al., 2003). Information presented here was also sourced from NI 43-101 Technical Report: Feasibility Study Incorporating the Life of Mine Plan for Lac des Iles Mine, Thunder Bay, Ontario, Canada (Buss et al., 2017). Additional sources are referenced appropriately.

The Greenfields Project area covered part of the eastern Central Wabigoon Subprovince and the northern margin of the Quetico Subprovince of the Superior Province of the Canadian Shield. This area can be further subdivided into crustal blocks including the Winnipeg River terrane, Marmion terrane and Western Wabigoon terrane that are thought to have developed independently through the late Mesoarchean and Neoarchean and were tectonically amalgamated 2.71 Ga (Stone et al., 2003).

The Winnipeg River terrane refers to the gneissic-plutonic domain north and east of the western Wabigoon terrane (Percival et al., 2012). Regionally, the Winnipeg River terrane includes the Winnipeg River Subprovince and north-central parts of the Wabigoon Subprovince as well as part of the Lac des Iles area. Old crustal material has been intruded and assimilated by voluminous Neoarchean felsic magmas represented by batholiths of tonalite and granite as well as mafic magmas that erupted to form greenstone belts.

The Marmion terrane consists of tonalite basement rocks (3010-2999 Ma) upon which greenstone belts formed at 2990-2715 Ma (Percival et al., 2012). Based on neodymium isotopic data, the Marmion terrane extends eastward through the Lac des Iles area despite contrary geochronological evidence. Therefore, plutonic suites in the Greenfields exploration region likely represent at least partly recycled Marmion batholith and associated 3-billion-year-old plutonic rocks.

The Western Wabigoon terrane is dominated by 2745–2720 Ma mafic volcanic rocks with large tonalitic plutons (2735–2720 Ma) and younger clastic metasedimentary sequences (2711 to <2702 Ma) carrying ancient (>3 Ga) detrital zircons that are preserved in narrow belts within volcanic sequences, and may have been deposited during deformation (Percival et al., 2012). The Lac des Iles greenstone belt extends from south of Legris Lake to south of Wakinoo Lake and also includes an east-trending sequence 2km north of Legris Lake. The greenstone sequences are typical sequences that include mafic pillowed to massive flows with minor feldspar-phyric, fragmental felsic volcanic rocks interspersed within a metasedimentary sequence of dominantly wacke-siltstone with minor conglomerate and iron formation.

The Lac Des Iles mine area is underlain by mafic to ultramafic rocks of the Lac des Iles intrusive complex (LDI-IC). The LDI-IC is the best documented of a suite of Neoarchean mafic to ultramafic intrusive bodies occurring within a sub-circular area of approximately 35 km by 40 km in the Wabigoon Subprovince (Fig. 1). The intrusions are located immediately to the north of the Quetico Subprovince and directly west of the Nipigon embayment of the Mid-continent Rift System. At the time of writing, the Company owned or had options to acquire a majority interest in most of the known Lac des Iles suite intrusions including parts or all of the following bodies: LDI-IC, Legris Lake intrusive complex, Wakinoo Lake intrusion, Demars Lake intrusion, Taman Lake intrusion, Dog River intrusion, Buck Lake intrusion, Shelby Lake Intrusion, Towle Lake intrusion and Tib Lake intrusive complex. The easternmost bodies of the Lac des Iles suite of intrusions are the LDI-IC and the Legris Lake complex. Both the LDI-IC and the Legris Lake complex appear to have been emplaced along northeast-trending splay structures (e.g., Shelby Lake fault) emanating from the Quetico Fault Zone (Fig. 1). The Quetico Fault Zone is a collisional structural boundary between the Quetico and Wabigoon subprovinces that formed during the Shebandowanian orogeny at approximately 2,695 Ma (Corfu and Stott 1986). Similarly, many of the Lac des Iles suite intrusions located in the western part of the Lac des Iles area are spatially associated with northeast to north striking faults that splay off this collisional boundary.

The intrusions range in size from 1 to 10 km and vary compositionally from leucogabbro and gabbronorite with rare anorthosite to peridotite and pyroxenite. The intrusions crosscut most rock types except for biotite granite dikes and Proterozoic-aged intrusions. Archean rocks are observed to be intruded by Proterozoic-aged (~1100 Ma) diabase dikes and sills of the Nipigon Sill Complex of the Mid-Continent Rift (MCR). They are typically medium-grained, massive, and dark grey weathering brown and locally pyroxene phyric.

Uranium-lead age determinations for zircons contained in the mafic rocks show that the Lac des Iles suite intrusions were likely emplaced between 2,699 and 2,686 Ma (Stone and Davis 2006). This age overlaps with regional sanukitoid magmatism in both the Wabigoon Terrane and the Quetico Subprovince.

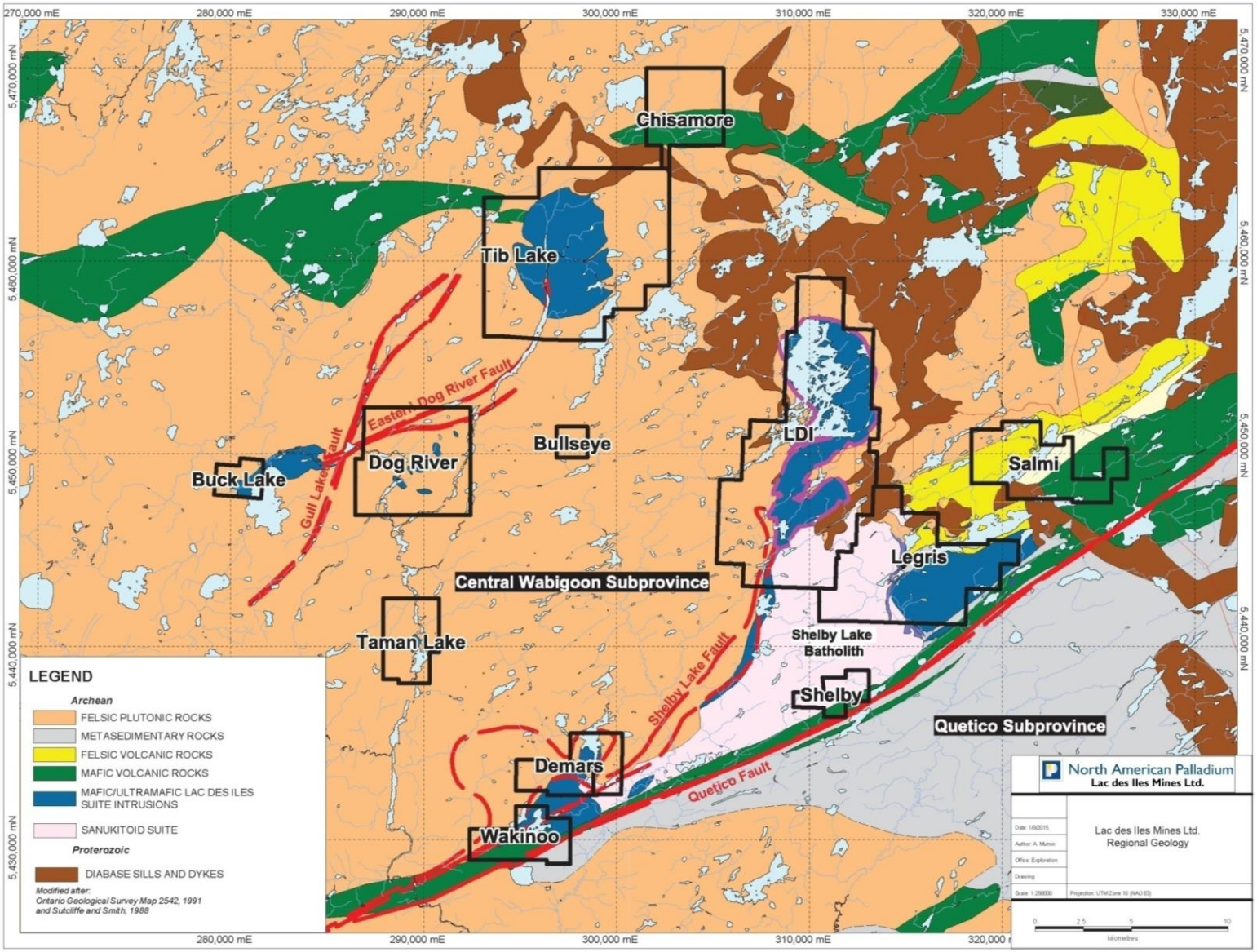

Figure 1 Regional geology of the Lac De Iles suite intrusions (Mumin 2015)

Wakinoo-Demars

Land Tenure, Location, and Access

Prospecting and field sampling was completed within the Thunder Bay Mining Division, Senga Lake and Orbit Lake area. To access the Wakinoo Lake property, head northwest on Highway 11/17 97 km, staying on Highway-17, and turn right onto Dog River Road. Continue on Dog River Road 4.5 km and stay right onto Shelby Lake Road for approximately 16 km depending on access point.

Property Geology

The Wakinoo-Demars property is situated along the southern flank of a suite of Archean mafic/ultramafic intrusions within the Wabigoon Subprovince of the southwest Superior Province. Since the discovery of mineralization in both intrusions in the 1970s, the property has undergone intermittent exploration, including significant: trenching, drilling, and various geophysical methods.

The Demars Lake Intrusion is composed primarily of feldspathic websterite and peridotite with lesser amounts of norite, gabbro, and varitextured gabbro. PGE mineralization occurs in association with brecciated and varitextured gabbroic rocks and at contacts between feldspathic-websterite and websterite or norite.

The larger Wakinoo Lake intrusion (approximately 2.7km by 4.0km) is composed of hornblende gabbro, leucogabbro, diorite, and incorporated metamorphic rocks and tonalitic country rocks. The primary showing (TexasGulf Occurrence) is hosted by a gabbro unit that occurs as a sill-like body between mafic metavolcanics and diorite/leucogabbro. Mineralization has been traced for approximately 200m along strike and down dip and is open in all directions.

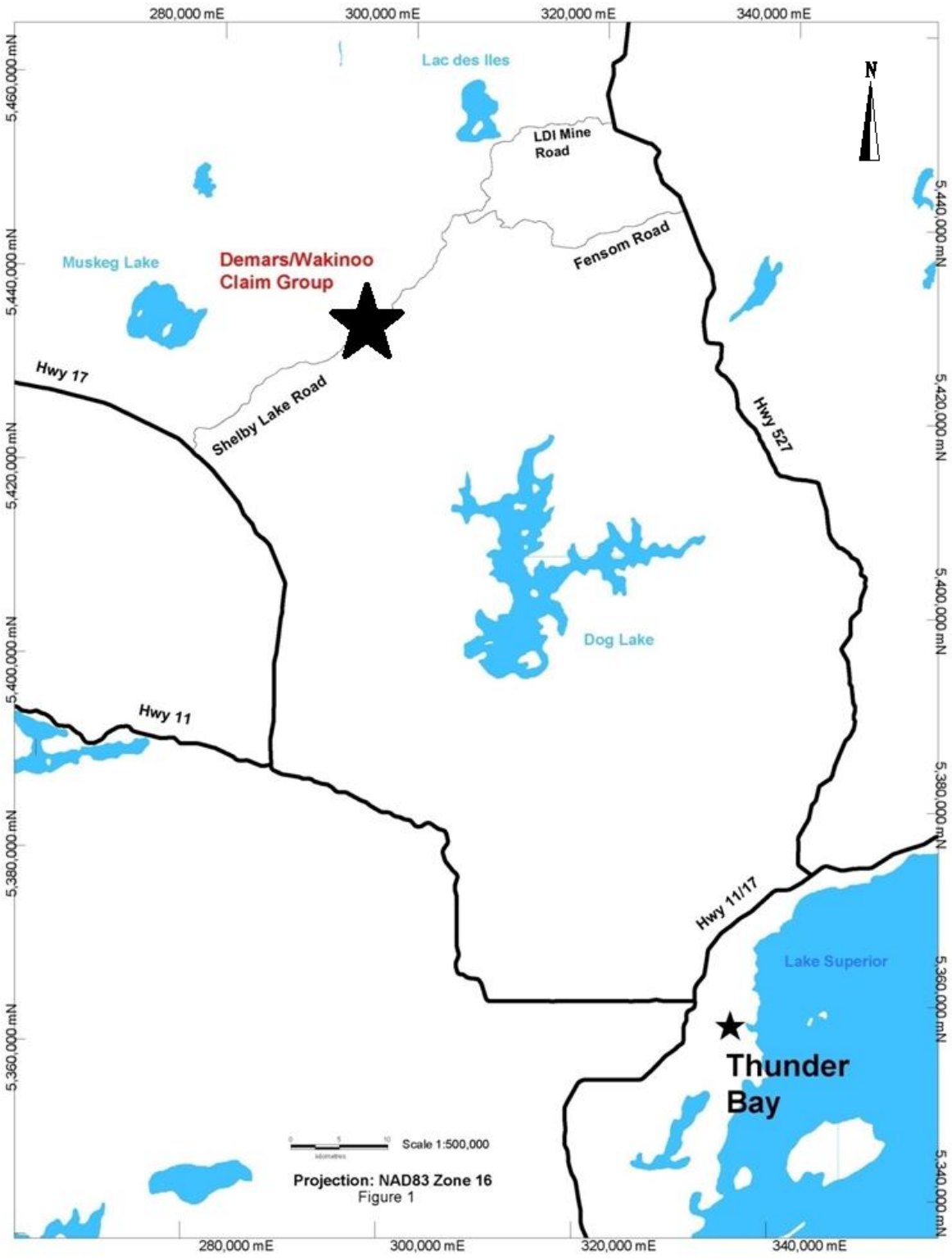

Figure 2: Wakinoo-Demars property location map.

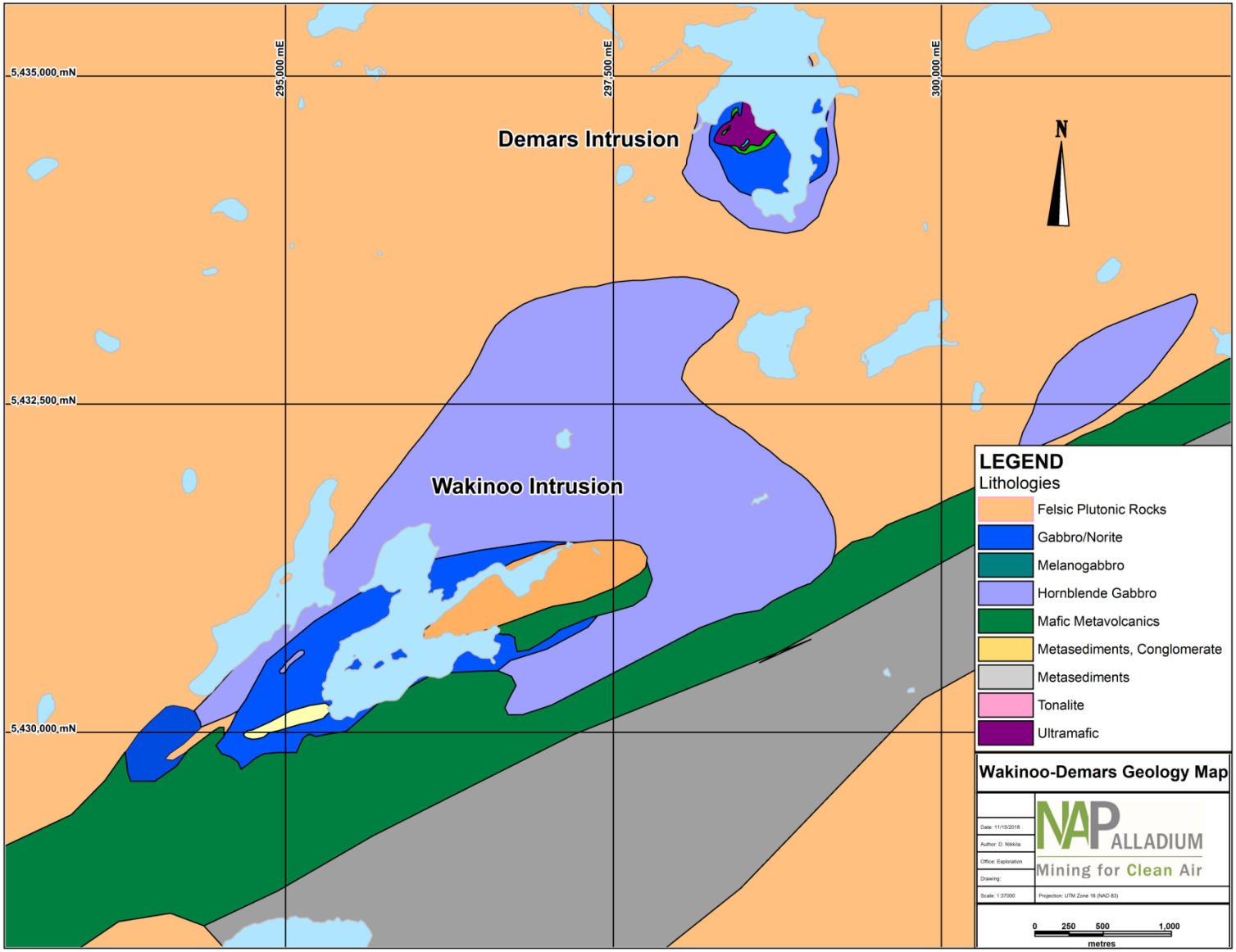

Figure 3: Wakinoo-Demars surface geology map.

Exploration History

The following excerpt was taken and modified from Smith, 2001:

1970: V.R. Henbid performed an airborne electromagnetic and magnetic survey over the Shelby Lake area.

1972: T.A. Gustafson completed mechanical stripping and trenching at the southwest end of Wakinoo Lake. A map shows a rough outline of a Cu-Ni-Pt-Pd-Au-Ag occurrence but no assays were reported.

1975- 1976: *Texas Gulf Exploration Inc.* carried out an airborne electromagnetic survey over the entire area, centered on Lac des Iles. Subsequently, they conducted a ground magnetometer and geological mapping survey in the southern portion of the property around Wakinoo Lake. Surface samples returned an assay of 0.088 oz/ton PGE. A drilling program followed this in 1976 at the southwest end of Wakinoo Lake. Six diamond drill holes were completed, and DDH WK-1 intersected 40 feet of 0.045 oz/ton PGE in hornblende gabbro over the main showing. Hole WK-3, southwest of WK-1, intersected 19 feet of 0.17 oz/ton PGE in gabbro at 356 feet down hole depth. Hole WK-5, about 500 feet southwest of WK-1, intercepted 13.5 feet of 0.03 oz/ton PGE in gabbro breccia at a depth of 212 feet.

1976: *Nomad Mines Ltd.* (J.P. Sheridan) completed five short diamond drill holes located just south of the showing near Demars Lake. Drill hole documentation indicates the five holes were drilled in a radial pattern within a metre of each other. No assays were filed. Rock types noted in the logs were metagabbros.

1986: *J.P. Sheridan* conducted a geological and geophysical program on the Orbit Lake Property, which was centred over the southwest end of Wakinoo Lake. Anomalous values of PGEs were collected in several samples and the electromagnetic survey outlined several conductive zones. Further work was recommended but was not completed.

1988: *Heenan-Senlac Resources Ltd.* performed a helicopter-borne magnetic and VLF EM survey over Wakinoo Lake. The consulting geophysicist concluded that the area is underlain by an intrusive body with associated structural features, which warranted follow-up ground work.

1988: *Heenan-Senlac Resources Ltd.* performed a geochemical humus sampling survey, a stripping and channel sampling program, and a drilling program totaling nine diamond drill holes. This program confirmed the presence of mineralization immediately around the original showing discovered by Texas Gulf Ltd., southwest of Wakinoo Lake, but did not extend the mineralization. The highest assay result from the surface showing was 9160 ppb PGE, while drill hole HSW-88-05 intersected 2023 ppb PGE over 5 feet (1.52 metres). This hole tested immediately of the surface mineralization.

1988: *Imperial Platinum Corp.* carried out a program of line cutting, geological mapping, lithogeochemical sampling, and geophysics (magnetometer and Crone VLF). The claims they worked extended from the south end of Demars Lake to east of Wakinoo Lake, and did not cover any of the known showings. The geological mapping was incomplete but indicated no

mafic intrusives, while the geophysics failed to produce any reported target recommendations for further exploration.
1987-1989: *Platinum Exploration Canada Inc.* carried out a geological, stripping and sampling program over the south end of Demars Lake. This was followed by a geophysical survey over the same area, which included total field proton magnetic and gradiometric surveys, as well as a VLF EM survey. Surface sampling included 2495 ppb PGE over 1.6m, occurring in an outcrop with the original PGE showing. The magnetometer survey aided in outlining intrusion margins while the VLF survey was less successful in delineating targets. Platinum Exploration then conducted a drill program totalling six diamond drill holes, which did not intersect any significant PGE values. No assays were filed at the MNDM office. An IP program was also carried out, but was not filed for assessment credit. 1998: Lac des Iles Mines Ltd. acquired and staked the Wakinoo Lake Property. A regional prospecting and lithogeochemical sampling program was initiated in early 1998, followed by a small trenching, sampling and mapping program. Line cutting, magnetometer and IP surveys were completed over the southwestern end of Wakinoo Lake. Several IP responses were located for follow-up exploration. The stripping and sampling program south of Demars Lake delineated an anomalous PGE area close to the original showing.

1999: Further work by *North American Palladium Ltd.* consisted of more mapping, stripping and trenching with detailed lithogeochemical sampling. At Wakinoo Lake, trenching failed to expose any bedrock in four out of five trenches due to abundant overburden, while the fifth trench exposed only Archean mafic volcanics. The IP conductors were not uncovered and remain untested. Stripping and sampling southwest of Demars Lake uncovered gabbroic to pyroxenitic bedrock in all trenches. A total of 90 samples returned anomalous PGE assays, which delineated a mineralized zone striking roughly ENE, close to the original showing (Lavigne, 1998; Kettles, 1999).

2000: *North American Palladium Ltd.* staked claim TB 1232655 in June 2000 and carried out a prospecting and sampling program in two target areas. Area 1 was thought to be underlain by gabbroic bedrock and included: Claim TB1232655, where only mafic volcanics were encountered; claim TB1215573 south of the main road, where a gabbro breccia zone was discovered; and the northeast peninsula of Wakinoo Lake on claim TB121582, where gabbroic and granitic outcrops were found; and an area at the southwest corner of Wakinoo Lake near the original showing that contains the untested IP and magnetic anomaly, which remained unexplained as no outcrop was exposed. In Area 2, south of Demars Lake, several gabbroic outcrops were discovered and sampled, returning anomalous PGE values from outcrops on claims TB12151849, TB1232853, and TB1232852.

2001: In September of 2001, *North American Palladium Ltd.* conducted lithogeochemical sampling and geologic mapping over portions of the Wakinoo Lake and Demars Lake intrusions. The program was successful in mapping and sampling previously unmapped outcrop at both intrusions.

2002: *Buck Lake Ventures* entered into an option agreement to acquire interest in the property with North American Palladium. A prospecting/sampling program was conducted from late May

to early September. In February, two diamond drill holes were completed near the showing identified by Texas Gulf Exploration Inc. in the 1970s.
2012: *Lac Des Iles Mines Ltd.* contracted Geotech Ltd. to fly a regional airborne VTEM plus and Horizontal Magnetic Gradiometer program over its Greenfields properties, including the Wakinoo/Demars properties. The data collected was used to refine the shape of the intrusive bodies in the Lac Des Iles suite, and to identify targets for the 2012 trenching and drilling programs. Several trenches were excavated, but were not sampled due to time and personnel constraints. The 2012 drilling program drilled 5 holes in the Wakinoo/Demars properties and had several large intercepts with low grade Pd+Pt mineralization, including 58m of 0.33g/t Pd, and 27m of 0.47g/t Pd (Stoltz, 2013). Peak values encountered in the drilling included 1.58g/t Pd + 0.37 g/t Pt over 1.0m and 1.22g/t Pd + 0.23 g/t Pt over 3.0m.

2013: Between January 17th and February 10th 2013, five holes totaling 1824.37m were drilled on the Wakinoo/Demars properties as a continuation of the 2012 diamond drill program. Drilling was conducted by Rodren Drilling Ltd. from Winnipeg, Manitoba, and was designed to further test and characterize the Wakinoo/Demars intrusions, as well as to test various EM anomalies identified in the 2012 VTEM survey.

2014: *Lac Des Iles Mines Ltd.* contracted Geotech Ltd. to fly an airborne ZTEM and aeromagnetic survey over 575 line km, which included the Wakinoo and Demars intrusions.

2018: *North American Palladium Ltd.* contracted Abitibi Geophysics to perform a high-resolution ground gravity survey on their Shelby/Wakinoo/Demars properties. The objectives of the survey were to map mafic-ultramafic units which host PGE-Cu-Ni magmatic sulfide mineralization and detect possible dense magmatic PGE-Cu-Ni occurrences. Four distinct gravity anomalies were successfully identified in the area.

Field Work

Initial Reconnaissance and Prospecting

General reconnaissance and prospecting was completed periodically on the Wakinoo and Demars Lake intrusions and surrounding area from July 5 to August 23, 2018 (July 5 to 7, July 24 to 25, July 27 to 30 and August 22 to 23). Historic trenches and outcrops were sampled to: confirm previously identified Pd mineralization, expand the current whole rock lithogeochemical database for the properties, and evaluate the potential of expanding prospective trenches. Exploration was also completed on a gravity anomaly target outlined in Abitibi Geophysics' 2018 high-resolution ground gravity survey performed for North American Palladium, to confirm the adequacy of this application on NAP properties and potentially identify PGE-Cu-Ni mineralization.

Three samples were collected at the "Main Showing" of the Wakinoo Lake intrusion, along with two samples within the surrounding historic trenches (Table 3). Previous grab, trench, and diamond drill hole exploration of the main showing returned multiple samples >1 g/t Pd. Overall, the main outcrop displayed sporadic, but abundant rusty gossan alteration and brecciation within the varitextured gabbro unit. Three samples were taken within or along the contact of the gabbro unit (18-JWB-19, 18-JWB-20 and 18-JWB-23), with all three hosting up to 5% sulfides and returning interesting Pd values (Table 4). The surrounding historic trenches also hosted varitextured gabbro, with only trace pyrite observed and one sample hosting 0.266 g/t Pd.

Sampling was also focused within historic trenches along the northern region/contact of the Wakinoo Lake intrusion with no recorded geochemical data. Seven samples were collected from four separate trenches which included: melanogabbro, varitextured gabbro, and gabbro breccia. No samples returned significant Pd values. However, some of these samples did correlate to positive gravity anomalies outlined in the ground gravity survey report. Four more samples were collected within the most significant positive gravity anomaly, GF-04, along the northeast limb of Wakinoo Lake. A small pyroxenite outcrop was discovered within the center of the anomaly, though all samples produced Pd values below detection level. Historically, no grab samples outside the main showing hosted Pd grades above 100 ppb. Samples collected within the 2018 exploration season correlated with this lack of anomalous values outside of the main showing.

Methodology

Grab samples were chipped free using a masonry chisel and hammer, then packaged in individually labelled plastic sample bags. As a backup, the bags also included sample tags generated by ALS Limited (ALS). The plastic bags were then taped closed, packaged with three to four sample bags in each rice bag, and transported by NAP personnel to the ALS facility in Thunder Bay. For quality control purposes, a total of six blanks and standards were inserted per batch of seventy-eight samples. See appendices for assay certificates.

Samples were prepared at ALS laboratory using package PREP-31, which is detailed as “crush to 70% less than 2mm, riffle split off 250g, pulverize split to better than 85% passing 75 microns” by ALS (2018). Platinum, palladium, and gold were determined using package PGM-ICP23, which involves “standard lead oxide collection fire assay and . . . ICP-AES finish.” Selenium was analyzed using package Se-MS46, which requires an analyte range from 0.003-100 ppm and a 25g sample, using aqua regia digestion and ICP-MS analysis. For all samples, a complete characterization package was used (CCP-PKG01), which combines multiple methods of analysis including: “whole rock analysis, trace elements by fusion, aqua regia digestion for the volatile trace elements, carbon and sulfur by combustion analysis, and several detection limit options for base metals . . . Minimum sample size is 10 g” according to ALS (2018). All analysis procedures suggest submitting four times the nominal sample weight for efficient service (ALS 2018).

Mapping and Channel Sampling at Demars Main Trench

In 2012, LDI extended the main Demars showing area from two intersecting narrow trenches to a large round exposure measuring roughly 2000 m². This exposure was not sampled or mapped in detail at that time. As part of the 2018 program, 70 channel samples were obtained from the showing at a 5 m grid spacing. In addition, a 1:300 scale geological map was produced (Figure 4). The purpose of this work was to better delineate the mineralized zone at surface, previously defined by clusters of anomalous historic PGE samples with grades in excess of 1 g/t Pd + Pt.

Geology

South Varitextured Gabbro

The trench area is bisected by a 1 to 2 m wide, vertically dipping, dark grey aphanitic intermediate dike striking 050°. Asymptotic fractures from and brittle structures parallel to this dike suggest it was emplaced along a late fault. South of this dike, the rocks are predominately medium- to coarse-grained varitextured gabbro (GAB-Vt). In weathered exposure, this rock has a pale white appearance with mafic minerals altered to chlorite. Several small dark green ultramafic dikes (or possibly deformed inclusions) occur in this unit and are presumed to originate from a pyroxenite protolith. These isolated features, comprising 5 to 10% of the total volume, display strong ductile deformation and are typically elongated or sheared parallel the main structural fabric of the outcrop (050 to 060° strike). Evidence of centimetre-scale magmatic layering roughly parallel to this direction can be found throughout this unit. One particularly striking exposure of vertically dipping magmatic flow banding, exhibiting both grain-size and composition sorting over tens of centimetres, can be found in the southwest corner of the trench. No sulfide was observed in this unit.

North Pyroxenite and Gabbronorite

The northern portion of the trench is a mélange of dark grey to black, medium-grained, often brecciated pyroxenite (PYXT) and grey, medium-grained “fresh looking” gabbronorite (GBNR).

The PYXT unit contains less than 10% translucent plagioclase and often exhibits irregular "blocky" breccia textures from centimetre to metre scale. Fracture-controlled chlorite alteration halos up to 10 cm thick occur in numerous orientations and can easily be conflated with the black matrix material observed between PYXT blocks. The GBNR occurs mostly at the north end of the trench and contains 10 to 30% translucent grey plagioclase. In contrast to the PYXT unit, grain boundaries can be easily discerned by hand lens. The contact between units is not clear in outcrop, but appears to follow the same general 050 to 060° structural trend observed elsewhere in the trench. Locally, PYXT appears to grade into the GBNR, marked by a gradual increase in plagioclase over a few metres. The GBNR may be a more evolved composition of the same magma. Sulfides observed in these units were typically disseminated pyrite, generally 0.1 to 0.2% of total volume.

Gabbro and Varitextured Gabbro Breccia

A roughly 8 by 15 m plug of starkly homogeneous medium-grained gabbro (GAB) extends from the central dike/fault zone and embays the PYXT unit to the north. A thin lens of varitextured gabbro breccia (GAB-VBx) is located along the eastern margin of this isolated GAB unit. Historic channel sample lines are localized predominately on this GAB-VBx unit. It contains abundant visible disseminated sulfide, up to 5% of total volume, and grades up to 1.5 ppm Pd (from the 2018 sampling program). It is likely that most, if not all of the high grade PGE samples from past programs were obtained from this small area.

The northeastern limb of the trench contains a thin shelf of sporadically distributed GAB-Vt and GAB-VBx rocks, often hosting sparse 1 to 2 cm sulfide blebs (<2% of total volume). The sulfide blebs are generally round suggesting that the sulfide minerals separated from the silicate magma as immiscible droplets. This unit is also frequently interspersed with strongly chloritized and deformed ultramafic inclusions. The northern contact between this unit and the neighboring PYXT is obscured by sand and gravel overburden, but is presumed to strike roughly 055°.

Structures

Numerous small fractures, shears, ultramafic inclusions, veins and small dikes observed in the Demars trench dip vertically or steeply to the northwest and strike in the 055° direction. It is presumed that this orientation coincides with the original magmatic contact between the GAB rocks to the south and the ultramafic rocks to the north and was exploited as a plane of weakness by post emplacement deformation. Subsequent ductile shearing and brittle faulting events have been activated along this contact, likely resulting in the emplacement of the central intermediate dike. A thin, but laterally continuous shear zone also occurs in this orientation at the north end of the trench. This structure roughly coincides with the gradational PYXT-GBNR contact. A late 50 cm felsic dike extends across the entire trench, striking 065°. It appears to cross cut all lithologies and structures.

In the northeast portion of the trench, a 5 metre-wide preferentially-weathered gossan and fracture zone extends from the central intermediate dike, and strikes roughly north-northwest through the PYXT. This fracture zone appears to truncate or offset the central dike, but does not extend south into the GAB-Vt. It may predate the final activation of the main 055° fault.

Metals

In total, 74 samples were taken from the Demars main showing (70 channel samples, 4 grab samples). Results for the channel samples are shown in Table 6 while those of the grab samples are included in Table 4 (SampleID numbers R982380 through R982383). Only three channel samples returned high grade Pd results (1 to 1.71 ppm Pd). Two of these samples were taken from a narrow sulfide-rich GAB-VBx zone (R982251 and R982264), and one occurred in the northern PYXT unit (R982266).

Two PYXT samples collected from the southwest corner of the trench, near the central 055° striking dike, also contain anomalous grades of Pd (0.23 to 0.26 ppm). The PYXT rocks observed in the north portion of the trench contain elevated background PGE concentrations, ranging from 70 to 100 ppb Pd. Ultramafic rocks previously sampled over a roughly 200 by 200 m area south of the main showing also display this range of background values.

Methodology

Channel sampling was conducted August 1 to August 4, 2018, with sample intervals marked out on the bedrock by North American Palladium Ltd staff. Cutting was performed using a Husquvarna water-cooled cut-off saw equipped with a diamond blade. Two parallel saw kerfs were cut four to five centimetres apart and eight to ten centimetres deep. Samples approximately 30 cm in length and 1kg in weight, were chipped free using a masonry chisel and hammer, then packaged in individually labelled plastic sample bags (as a backup, the bags also included an ALS-generated sample tag). The plastic bags were then taped closed, packaged three to four to a rice bag, and transported to the ALS facility in Thunder Bay by NAP personnel. For quality control purposes, a total of six blanks and standards were inserted per batch of seventy-eight samples. For future reference, aluminum tags inscribed with the appropriate sample number were tucked into the starting saw kerf.

Samples were prepared at ALS laboratory using package PREP-31, which is detailed as “crush to 70% less than 2mm, riffle split off 250g, pulverize split to better than 85% passing 75 microns” by ALS (2018). Platinum, palladium, and gold were determined using package PGM-ICP23, which involves “standard lead oxide collection fire assay and . . . ICP-AES finish.” Selenium was analyzed using package Se-MS46, which requires an analyte range from 0.003-100 ppm and a 25g sample, using aqua regia digestion and ICP-MS analysis. For all samples, a complete characterization package was used (CCP-PKG01), which combines multiple methods of analysis including: “whole rock analysis, trace elements by fusion, aqua regia digestion for the volatile trace elements, carbon and sulfur by combustion analysis, and several detection limit options for

base metals . . . Minimum sample size is 10 g" according to ALS (2018). All analysis procedures suggest submitting four times the nominal sample weight for efficient service (ALS 2018).

Trench mapping was conducted August 22 to 23, 2018 by staff from North American Palladium Ltd. A grid was created on the outcrop, the baseline being created with three points (one on each end and one in the middle). The trench was then surveyed using a tape measure and the average of three or more handheld Garmin 64 GPS control points. Field trench maps were scanned, georeferenced, and digitized using MapInfo Professional and Encom Discover software packages.

Conclusions and Recommendations

No new drilling or trenching at Demars is advised at this time. Mineralization observed at the main Demars showing lacks the volume potential required for an economically viable ore body. The mineralized zone is well constrained geographically by existing trenching exposures and drill holes.

A detailed magnetometer survey (either walking/ground mag or drone mag) would greatly assist in delineating the various northeast trending contacts of the pyroxenite, gabbronorite, melanogabbro, and gabbro units observed in many trenches. Deflections or disruptions in these contacts may signify the locus or loci of high grade Pd mineralization either by emplacement of breccia-type or remobilized fracture-controlled type PGE-rich sulfide accumulations. Results from this survey may prompt additional trenching or drilling in prospective locations. It would also help to delineate boundaries of less desirable areas, including the barren peridotite unit to the north and areas outside the intrusive contact to the west.

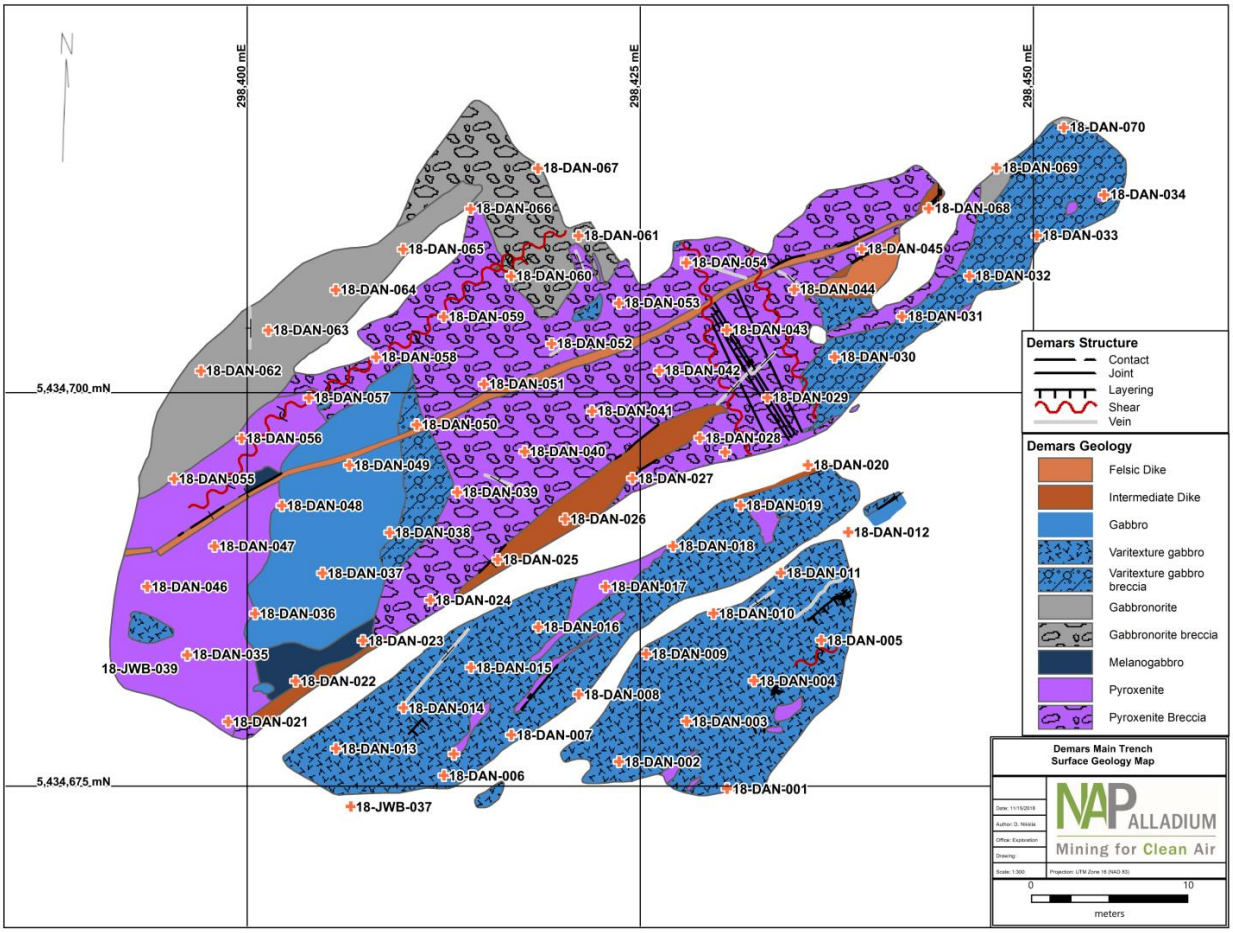

Figure 4: Demars main trench surface geology map.

Shelby

Land Tenure, Location, and Access

Prospecting, field sampling, and geophysical work was completed within the Shelby Lake, Orbit Lake, Eayrs Lake and Shelby Lake area. To access the Shelby Lake property from Thunder Bay, head northwest on Highway 11/17 97 km and turn right onto Dog River Road. Continue on Dog River Road 4.5 km and stay right onto Shelby Lake Road approximately 16 km depending on access point.

Property Geology

The Shelby Lake Property comprises the Towle Lake and Shelby Lake intrusive complexes which are relatively narrow, elongate gabbro-dominated intrusions, occurring along the eastern and southern margins of the Lac des Iles district. Intrusions appear to have been emplaced along pre-existing zones of structural weakness and exhibit marginal breccia zones and multiple intrusive events. Exploration programs confirmed the presence of three geologically significant zones of PGM mineralization closely associated with disseminated sulphide within the Towle Lake Intrusion including the Powder Hill, the Stinger and the Vande zones. The Vande zone mineralization is at 3.5 km northeast of Stinger and exhibits a geologically complex series of PGE-bearing gabbro breccias and gabbro intrusive phases.

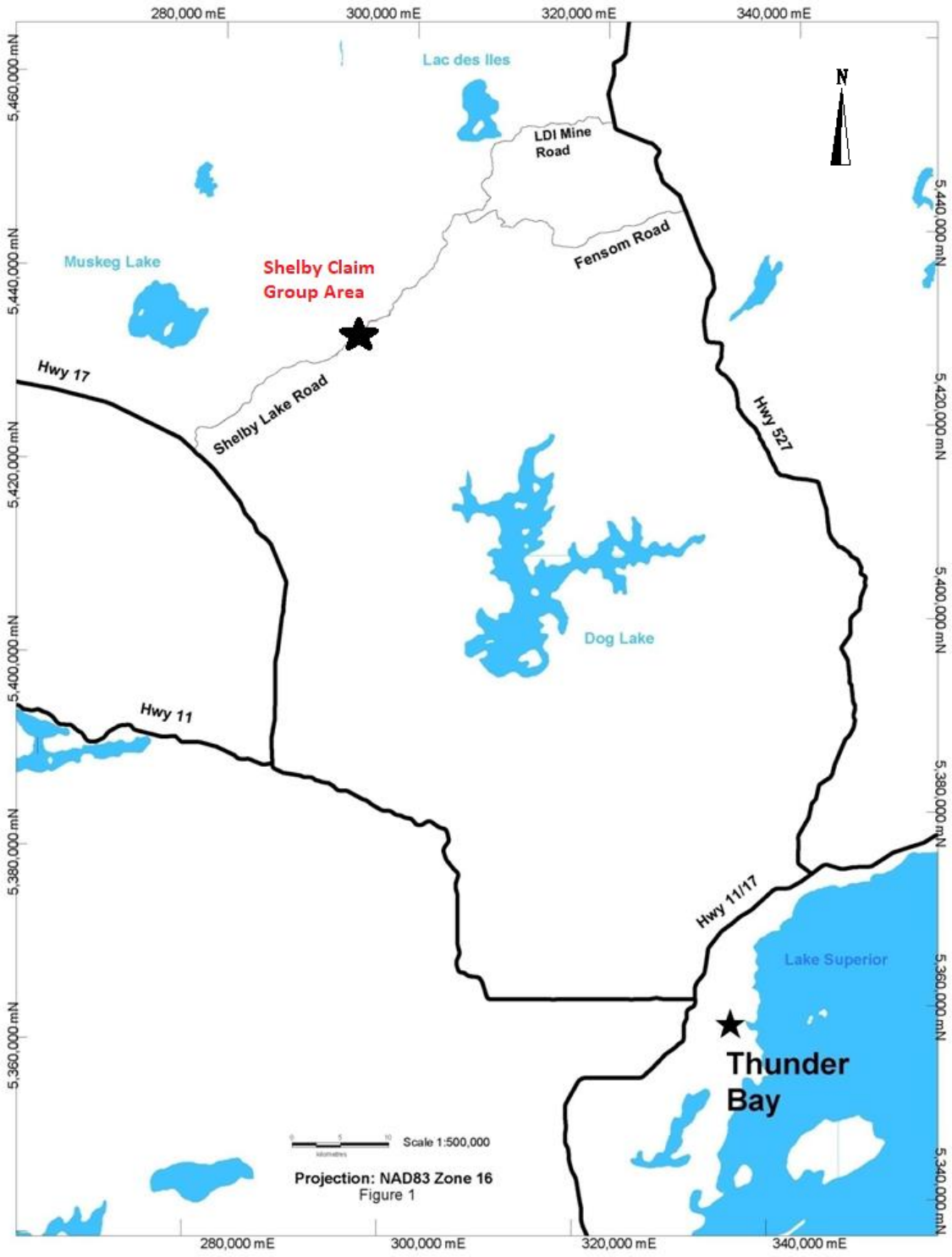

Figure 5: Shelby property location map.

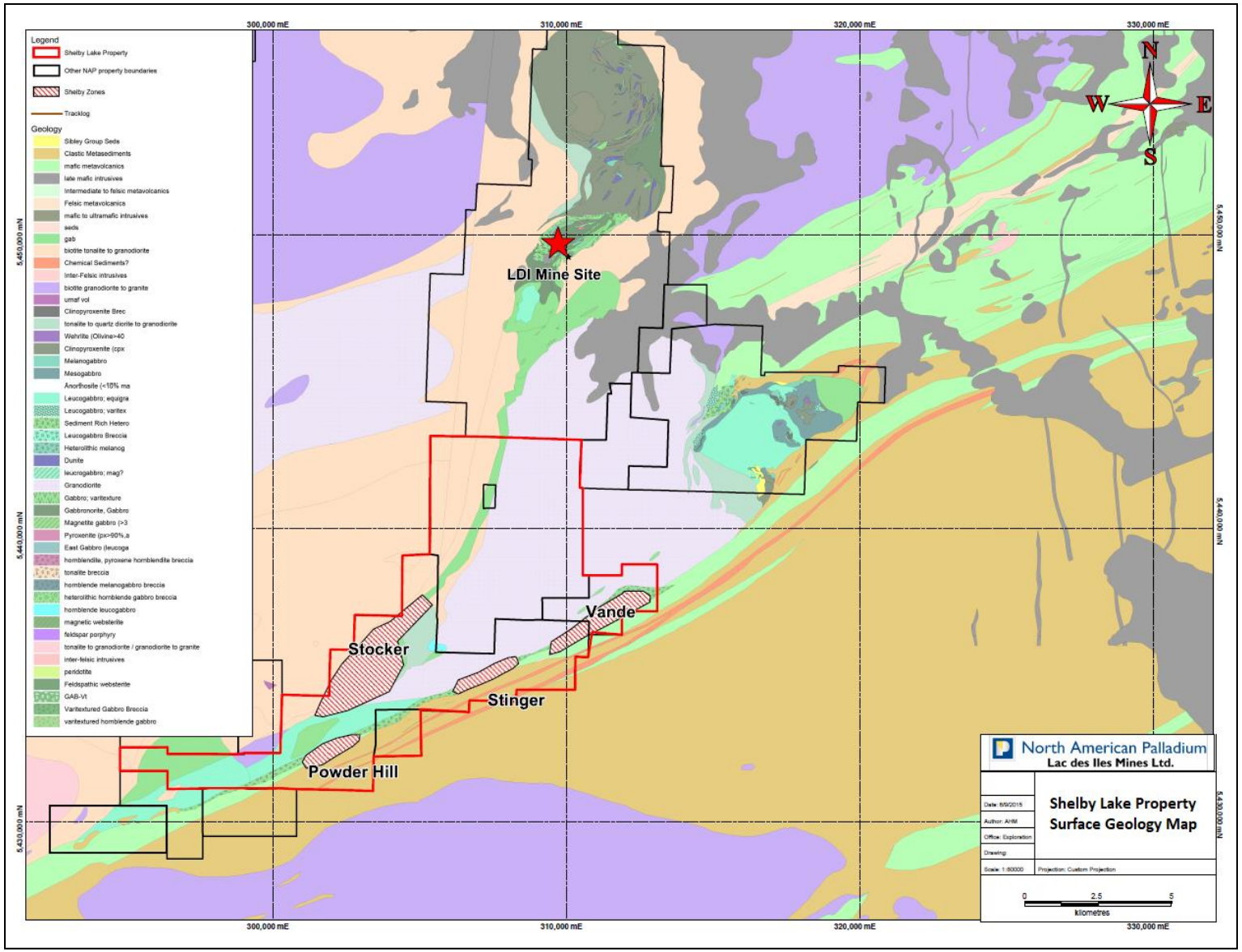

Figure 6: Shelby Lake property – surface geology map (modified from Mumin 2015).

Exploration History

The following excerpt was taken and modified from Wagner, 2003:

1970-72: V.R. Henbid and T.A. Gustafson conducted a survey which covered the western third of the South Legris property, northern half of the Shelby Lake Property, and the majority of the Lac Des Iles River Property. It identified several weak EM anomalies in and immediately northeast of the northeastern corner of the South Legris Property. Ground follow-up indicated that these anomalies were associated with the gabbro contact in this area and topographic lineaments. No significant mineralization was identified.

1975: Texas Gulf Inc. conducted a regional airborne EM and Magnetic survey which included the western third of the South Legris property, northern half of the Shelby Lake Property and majority of the Lac Des Iles River Property. This survey identified and defined the magnetic high associated with the Shelby Lake Intrusion.

1986: American Platinum Incorporated conducted an airborne EM and Magnetic survey over the western half of the Lac Des Iles River Property and conducted ground exploration and drill testing on the adjacent Demars and Wakinoo Lake Properties.

1989: An assessment report by B. Fowler noted the presence of chalcopyrite mineralization within mafic volcanic rocks on the south side of Shelby Creek at the eastern edge of the South Legris Property. Assays of up to 5.4% Cu, 33 ppm Ag and 50 ppb Au were returned from several small pits and trenches. This is the only recorded occurrence of mineralization on the three properties prior to Platinum Group Metals Ltd. involvement.

2000: The *Ontario Government*, as part of their Operation Treasure Hunt initiative, released a detailed airborne magnetic and electromagnetic survey which covered the extension of the Towle Lake Intrusive Complex onto the Shelby Lake property.

Also in June 2000, *New Millennium Metals* discovered geologically significant PGM mineralization at Powder Hill on the south-central portion of the property through mapping and prospecting. Grab samples from this isolated outcrop returned grades of up to 2.25 g/t Pd+Pt+Au and 0.3% copper. A follow-up trenching program (0.9 hectares in two trenches) was conducted during the fall 2000. Trenching subsequent channel sampling across this zone returned two mineralized intervals averaging 0.39g/t Pd+Pt+Au and 0.12 g/t Pd+Pt+Au over 2 metres.

Between late 2000 and early 2001, *Platinum Group Metals Ltd* and *New Millennium Metals Corp* conducted an Induced Potential (IP)/Magnetometer survey and drill program in the Powder Hill area. Twelve holes totaling 1,043 metres were completed. Nine intersected an open-ended, stratiform zone of Pt-Pd-Au-Cu mineralization over a strike length of 600 metres. Mineralization in excess of 1 g/t Pd, with a high of 2.83 g/t Pd over 1.2 metres, occurs over a maximum width of 5.65 metres.

2001: *Platinum Group Metals Ltd.'*s mapping and detailed prospecting program, focused on the Towle Lake magnetic trend, resulted in the discovery of the high-grade Stinger Zone located 6.5-

km northeast of Powder Hill on the Shelby Lake Property. Grab samples from the discovery outcrop at Stinger returned up to 7.95 g/t Pt+Pd+Au, 130 ppb Rh and 0.6% Cu. Subsequent trenching of the Stinger Zone in the fall of 2001 identified similar mineralization over a strike length of 55 metres in the Main Trench area with grades from saw cut channel samples of up to 4.19 g/t Pt+Pd+Au over 1.7 metres and mineralized widths of up to 1.35 g/t over 6.4 metres.

Also in 2001, Platinum Group Metals discovered the Vande Zone through mapping and prospecting on their South Legris Property. Channel sampling at the discovery outcrop reportedly resulted of 0.36g/t Pd+Pt+Au over 50 metres including 1.22g/t Pd+Pt+Au over 2 metres. Follow-up drilling returned thick intersections of low grade Pt+Pd+Au mineralization (including separate intervals of 9.36 metres grading 0.13 g/t Pt+Pd+Au and 8.48 metres grading 0.24 g/t Pt+Pd+Au in hole ST03).

2002: *Platinum Group Metals Ltd.* completed a two-part diamond drilling and trenching program on the Shelby Lake intrusion. Highlights of the 2002 exploration program included drill intercepts grading 1.06 g/t Pt+Pd+Au over 19.2 metres including 4.92 g/t Pt+Pd+Au over 3.1 metres from the Stinger Zone, in addition drill intercepts grading 0.45g/t Pt+Pd+Au over 13.7 metres including 1.23 g/t Pt+Pd+Au over 3.7 metres from the Vande Zone. A 10-14 m wide PGM mineralized zone grading 0.24 to 0.36 g/t Pt+Pd+Au is associated with the northern contact of the Shelby Lake Intrusion (Shelby Contact Zone) and extending the strike length of the PGM mineralized systems in the Stinger and Vande areas to 700 metres respectively. Surface trenching and drilling has traced the Shelby Contact Zone for 2.3 km along the northern contact of the Shelby Lake Intrusion.

2003: *Platinum Group Metals Ltd* undertook a 3040 metre diamond drilling program which tested the extensions of the Powder Hill and Stinger mineralized zones. The program was successful in extending the Powder Hill PGM Zone for 1800 metres to the northeast for a total strike length of 2.4 kilometres and the PGM mineralized Stinger Zone for 700 metres to the northeast for a total strike length of 1.4 kilometres. A single hole drilled to test an IP anomaly along the projected strike extension of the Shelby Contact Zone failed to intersect any significant mineralization.

2006-2007: *Platinum Group Metals Ltd* completed seven diamond drill holes for a total of 1729 meters. These holes were designed to test the extension of the Stinger stratigraphy in the Stinger Area and intrusive contact within the Shelby Lake shear zone. Hole SH07-07 contained 2.45 g/t Pd+Pt+Au over 5.90 metres including 4.30 g/t Pd+Pt+Au over 1.50 metres.

2009: Two 679 metre and one 300 metre diamond drill holes were completed in the Vande and Stinger zones respectively. Clark Exploration was contracted by *Platinum Group Metals* to manage the program. No significant intervals were intersected.

2010 (Modified from Patrie 2010): The magnetometer and induced polarization (IP) surveys on the Shelby Lake grid were carried out between 27 April 2010 and 6 May 2010. The geophysical surveys were carried out by *Dan Patrie Exploration Ltd.*, an experienced geophysical contractor. The magnetometer survey identified a NNE-trending linear, positive magnetic feature varying in

width from about 250 m to 400 m. The IP survey chargeability results show anomalous zones of increased chargeability from 2 to 4x background charge across significant widths, and with two apparent trends, NNE and northeasterly (060°).
2018: North American Palladium contracted Abitibi Geophysics to perform a high-resolution ground gravity survey on their Shelby/Wakinoo/Demars properties. The objectives of the survey were to map mafic-ultramafic units which host PGE-Cu-Ni magmatic sulfide mineralization and detect possible dense magmatic PGE-Cu-Ni occurrences. Four distinct gravity anomalies were successfully identified in the area.

Field Work

Initial Reconnaissance and Prospecting

General reconnaissance and prospecting was completed periodically on the Shelby Lake intrusions and surrounding area from July 28 to August 29, 2018. Crews collected a total of 9 samples from the Shelby Lake property for whole rock geochemical and precious metal analyses. An overview of PGE and base metal results are provided in Table 13.

The main focus of the exploration work in the area was to test positive anomalies outlined in Abitibi Geophysics' 2018 high-resolution ground gravity survey, and confirm the adequacy of this application on NAP properties and potentially identify PGE-Cu-Ni mineralization. Seven gravity high targets with varying density contrasts were identified in the field area, with three (GF-01a, GF-02a and GF-03a) identified as prominent dense sources (Chemam 2018). Field work in the area provided mixed results, with a variety of lithologies observed and no PGE-Cu-Ni mineralization identified.

Target GF-01a confirmed the presence of mafic intrusives, with three outcrops of leucogabbro, hornblende-gabbro, and gabbro observed. The GF-01b anomaly could not be explained, as no outcrops were observed within the center of the anomaly, and only three felsic intrusive outcrops were observed along a similar strike. GF-02a was the strongest anomaly in the area, which correlated well to large outcrops of ultramafic material (peridotite and pyroxenite) located within the center of the anomaly. GF-02b, a slightly weaker anomaly west of GF-02a, was also identified as pyroxenite. Anomalies GF-03a and GF-03c were left relatively unexplained, with no outcrops observed within the gravity highs and intermediate volcanic rocks observed in the surrounding area. GF-03b provided mixed results. Intermediate volcanic rocks were identified within the bulls-eye of the anomaly, however, multiple outcrops of gabbro and gabbro breccia were observed along a topographic ridge roughly coincident with the anomaly.

Methodology

Rock samples were chipped free from outcrop using a masonry chisel and hammer, then packaged in individually labelled plastic sample bags. As a backup, the bags also included sample tags generated by ALS. The plastic bags were then taped closed, packaged with three to four sample bags in each rice bag, and transported by NAP personnel to the ALS facility in Thunder Bay. For quality control purposes, a total of six blanks and standards were inserted per batch of seventy-eight samples. See appendices for assay certificates.

Samples were prepared at ALS laboratory using package PREP-31, which is detailed as "crush to 70% less than 2mm, riffle split off 250g, pulverize split to better than 85% passing 75 microns" by ALS (2018). Platinum, palladium, and gold were determined using package PGM-ICP23, which involves "standard lead oxide collection fire assay and . . . ICP-AES finish." Selenium was analyzed using package Se-MS46, which requires an analyte range from 0.003-100 ppm and a 25g sample, using aqua regia digestion and ICP-MS analysis. For all samples, a complete characterization package was used (CCP-PKG01), which combines multiple methods of analysis including: "whole rock analysis, trace elements by fusion, aqua regia digestion for the volatile trace elements, carbon and sulfur by combustion analysis, and several detection limit options for base metals . . . Minimum sample size is 10 g" according to ALS (2018). All analysis procedures suggest submitting four times the nominal sample weight for efficient service (ALS 2018).

Conclusions and Recommendations

All positive gravity anomalies outlined within the Abitibi Geophysics ground gravity survey were tested in the field by North American Palladium geologists. Mafic-ultramafic intrusions were confirmed in multiple localities. However, no Pd mineralization was noted in any outcrops, and no further surface geochemical analysis is recommended moving forward.

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Statement of Expenditures

Table 2: Total Costs

	Cost	Number of Units	Units	Cost/unit
Personnel	$ 22,400	56	days	$ 400.00
Transportation (200km/day for 18 days)	$ 1,440	3600	km	$ 0.40
Fuel (0.2L/km for 1 truck at $1.5/L)	$ 1,080	3600	km	$ 0.30
Safety Supplies and Equipment	$ 1,500	1	trips	$ 1,500.00
Analysis	$ 12,327	116	samples	
Report Writing	$ 1,937	1	report	
Total	$ 40,684			
Total Cost Per Sample	$ 350			

Table 3: Costs by Claim

Property	Claim_ID	Number of Samples	Cost by Claim
Shelby	249994	1	$ 350
Shelby	535266	1	$ 350
Shelby	535268	3	$ 1,050
Shelby	535272	1	$ 350
Shelby	535276	4	$ 1,400
Shelby	535297	2	$ 700
Shelby	535298	6	$ 2,100
Wakinoo-Demars	147649	2	$ 700
Wakinoo-Demars	246653	1	$ 350
Wakinoo-Demars	295507	7	$ 2,450
Wakinoo-Demars	308797	3	$ 1,050
Wakinoo-Demars	581140	1	$ 350
Wakinoo-Demars	581141	79	$ 27,650
Wakinoo-Demars	581145	5	$ 1,750

Sample List

Table 4: List of all samples and stations with descriptions. Coordinates in UTM NAD83 Z16.

Property	Claim	Sample	Station	Northing	Easting	Rock Type	Sulfide	Comments
Shelby	535298	R982400	18-JWB-057	5433057	301578	PYXT		small oc ridge at edge of clear cut/regen. thick lichen cover. fresh surface is black with 95% or more fresh black pyxt crystals
Shelby	535298	R982401	18-JWB-058	5433110	301650	PER		ne limb of 75m outcrop ridge extending from previous sample. large 2-3cm pits in weathered surface. over 30% 1-3cm black olivine crystals in fine to medium grained emerald green cpx. weak serpentine alteration obscures grain boundaries making mineral estimate difficult
Shelby	535298	R982402	18-JWB-059	5433098	301609	PER		middle of large ultramafic ridge between previous two samples. similar pitted weathered surface, with 2-3cm concave pits marking chemical erosion of unstable olivine. up to 30% black coarse grained to pegmatitic olivine in med grained green pyx matrix
Shelby	535298	R982403	18-JWB-060	5432958	300745	GAB		5-10m high NE trending ridge with extensive lateral extent. grey to grey pink medium grained equi-granular gab with moderate potassic alteration. contains sparse xenoliths of med grained pyxt
Shelby	535298	R982404	18-JWB-061	5432766	300596	MGAB		south face of ridge in open clear cut. 65% green pyroxene with remainder plag, weak chorite and potassic alteration. dark green pyxt xenolith observed with angular sides, partially assimilated.
Shelby	535298	R982405	18-JWB-063	5432693	300708	LGAB		20 to 25m high cliff in open clear cut. notable k alteration in fresh surface. weathered surface resembles typical med grained salt and pepper gabbro appearance. 50/50 mafic to felsic, mostly pyxn with rare biotite. plag strongly altered, unit resem
Shelby	535298		18-JWB-064	5432717	300742	GRDR		continuing along large cliff in open cut, similar appearance as previous but with potted weathered surface. quartz and biotite obvious in broken surface. 20-30% biotite plus hornblende. minor kspar present. contact with previous LGAB not observed
Shelby	535297	R982406	18-JWB-065	5433364	302103	GRAN		5m flat oc in pine plantation/regen. possible sanukitoid: notable k alteration in fresh surface. weathered surface resembles med

								grained salt and pepper gabbro appearance. 50/50 mafic to felsic, mostly hornblende with rare biotite.
Shelby	535297		18-JWB-066	5433492	302181	GRAN		top of 20m high cliff, with low flat ground all around, topo high for the area. similar pink medium grained intrusive as previously observed. possible sanukitoid granite or strongly k altered hgab. not mineralized. large topographic high could explain
Shelby	535297	R982407	18-JWB-067	5433397	302031	HGAB		near sw end of oc ridge extending from previous sample. 65% black hornblende, remainder is light pink kspar and trace emerald green pyxns. possibly forms a continuum from previously observed felsic intrusive
Shelby	249994	R982408	18-JWB-068	5431949	299726	PYXT		10m oc, 1m high ledge in pine plantation/regen. 90% dark green to black pyxns with 10% plag. weak chlorite and epidote alteration. in contact with small exposure of medium grained hgab, possible inclusion, contact not observed
Shelby	273149		18-JWB-069	5432164	299384	GRDR		flat 10m oc exposure and small ridge on road. weathered surface at road shows signature pitted surface (weathered biotite pits) and white appearance of gndr country rock in area. abundant biotite, remainder is quartz plag and hornblende.
Shelby	535299		18-JWB-070	5430978	299618	IVOL		1m ledge of oc forming rapids in river. flat oc with strong foliation/volcanic layering visible in weathered surface ,sparse felsic veins are raised 1 cm from host rock. abundant quartz and mm-scale foliation in fresh surface
Shelby	535299		18-JWB-071	5431072	299555	IVOL		10m high oc hill in immature poplar regen. grey well foliated ivol with grey red gossan, similar to previous stop
Shelby	213606		18-JWB-072	5431202	299408	MVOL		5m round exposure in pine regen. dark green weathered surface, more shallow dip and more mafic than previous. rock is cleaving off of oc along foliation plane
Shelby	535266		18-JWB-074	5432321	301743	IVOL		near south end of narrow powder hill trench. no outcrop exposure south of trench, rock is similar to ivol to south, in contact with gab and gabmt in trench to north. large outcrop hill in otherwise very sandy terrain could explain gravity anomaly.
Shelby	535266	R982410	18-JWB-075	5432225	301356	GAB		301370e, 5432225n. north side of powder hill west trench/hill. fine to med grained gab with weakly developed vt texture in exposures nearby. 65% pyxns, remainder is weakly na altered plag

Shelby	535272	R982291	18-JWB-077	5438234	305852	SCH	0.1% Pyrite	2m oc exposure near trail. unit is in contact with med grained white grdr country rock. abundant biotite, strongly schistose with 25-30% felsic mineral, composition unclear
Shelby	535272		18-JWB-078	5437976	305788	GRAN		5m flat exposure at margin of clear cut and swampy area. pink gneissic granite, likely similar composition to previous location
Shelby	535272		18-JWB-079	5437982	305725	GRDR		large oc hill in pine regen. strongly gneissic granodiorite in contact with pink granite unit preciously observed. n-s contact. previously mapped gabbro in area is likely this grdr unit, quartz is present and felsic minerals are abundant overall
Shelby	535264		18-JWB-080	5436701	304886	GRDR		20-30 long oc with gradual slopes, well exposed from logging road activity. weathered surface is well pitted, 0.5cm biotite clusters are 10-15% of total with remainder fin to med grained hornblende plus plag with minor quartz
Shelby	535268		18-JWB-081	5437172	305235	GRAN		5m tall oc ridge beside small gully in mature pine and spruce forest. 1-2mm hornblende, kspar and quartz in roughly equal proportions
Shelby	535271		18-JWB-082	5437467	305034	GRAN		10m flat round oc at edge of regen. 1-3mm kspar and hornblende with minor quartz. moderately magnetic. weak chlorite alt
Shelby	535297		18-JWB-083	5432931	303016	IVOL		30m long 5m wide outcrop hill in pine regen. dark grey well foliated intermediate volcanic, likely tuff.
Shelby	535297		18-JWB-084	5432971	302810	GRDR		25m long 5m high outcrop knob in pine regen. grey weakly foliated felsic intrusive. abundant quartz and plag with minor hornblende and very fine disseminated biotite. conductivity measurements high given previous zero values on all measurements to da
Shelby	535276		18-JWB-085	5432816	303989	MTSD		very large topo high in area. cliff is laterally extensive for tens of meters in both directions along strike. strongly foliated light grry metasediment with very thin chloritic ribbons parallel to mm-scale bedding. strike 58, dip 80
Shelby	535276		18-JWB-086	5433249	303975	MTSD		large oc exposure along shoreline due to low water in beaver pond. laminated light grey metasediments in contact with concordant intermediate tuff unit to northwest. layering and strong foliation parallel to regional 060 strike
Shelby	535276	R982292	18-JWB-087	5433403	304120	GAB	0.1% Pyrite	top of oc ridge running parallel to beaver pond shore. dark green strongly chlorite alt melagabbro with 0.1% diss pyrite. abundant

								pyxns, plag is translucent grey although difficult to discern due to majority fine grain size
Shelby	535276	R982293	18-JWB-088	5433453	304218	GAB-Bx		top of large oc ridge. distinct breccia textures observed under overturned tree. irregular deformed blocks of pyxt in gab matrix. moderate chlorite alt. thin felsic veins. plag is mostly translucent grey
Shelby	535276	R982294	18-JWB-089	5433525	304278	GAB		large oc ridge at top. 1-3mm crystals, plag is translucent grey fresh but creamy white in weathered surface, 25-30% of total. chlorite alteration obscures pyxns, possible both opx and cpx present. massive texture
Shelby	535276	R982295	18-JWB-090	5433606	304355	GAB-Bx	0.1% Pyrite	end of long oc cliff. brittle breccia textures with blocks of med grained dark green pyxt and fine to med gr gabbro, as previously observed. trace py.
Shelby	535280		18-JWB-091	5435496	304131	GRDR		3m flat exposure in pine regen. grey gndr with abundant quartz. black hornblende crystals appear 'fresh', 30% of total. biotite and magnetite also observed. weak to moderately magnetic
Shelby	535268	R982296	18-JWB-092	5435782	304353	LGAB	0.1% Pyrite	3m flat oc in open clear cut. 1-2mm crystals, presumably translucent grey plag, although possible quartz, difficult to discern due to grainsize, locally mapped as HB LGAB, with but possibly GRDR. sample taken for coverage. Vari-textured fine to med g
Shelby	535268	R982297	18-JWB-093	5435711	303777	HGAB		2m round knob on top of small hill, possibly large buried boulders. dark grey hgab with up to 70% mafics, minor biotite. plag is mostly creamy white Na variety. 5cm fine grained grdr vein/dike observed, contact nearby?
Shelby	535264		18-JWB-094	5436043	303892	GRDR		2m ledge on small exposure in open clear cut. similar appearance to previously observed grdr but fine grained. both plag and quartz observed, minor biotite. weakly magnetic. sparse med grained hornblende, mafics 30-40% of total
Shelby	535268		18-JWB-095	5435877	303981	GRDR		2m flat exposure in open clear cut. fine grained and difficult to discern felsic minerals, roughly 50%. similar to previous grdr, although significantly more biotite, with very reflective in fresh broken surface.

Shelby	535268	R982298	18-JWB-096	5435900	303754	GAB		small flat oc exposure beside road. 65-70% mafics as black 2mm by 4mm laths. clear grey plag is also frequently seen as crystal laths, with weakly defined foliation. weak Na, Chl alteration
Shelby	535280		18-JWB-097	5435372	303535	GRAN		1m moss covered exposure in mature pine and spruce bush. abundant quartz and kspar, 20-30% mafic minerals with minor biotite
Wakinoo-Demars	581141	R982411	18-DAN-001	5434675	298431	GAB-Vt		
Wakinoo-Demars	581141	R982412	18-DAN-002	5434677	298424	GAB-Vt		
Wakinoo-Demars	581141	R982413	18-DAN-003	5434679	298428	GAB-Vt		
Wakinoo-Demars	581141	R982414	18-DAN-004	5434682	298432	GAB-Vt		
Wakinoo-Demars	581141	R982415	18-DAN-005	5434684	298437	GAB-Vt		
Wakinoo-Demars	581141	R982416	18-DAN-006	5434676	298413	GAB-Vt		
Wakinoo-Demars	581141	R982417	18-DAN-007	5434678	298417	MGAB	0.2% Pyrrhotite + Chalcopyrite	Potential mafic GABVT
Wakinoo-Demars	581141	R982418	18-DAN-008	5434681	298421	GAB-Vt	5% Magnetite	
Wakinoo-Demars	581141	R982419	18-DAN-009	5434683	298425	GAB-Vt		
Wakinoo-Demars	581141	R982420	18-DAN-010	5434686	298430	GAB-Vt		
Wakinoo-Demars	581141	R982421	18-DAN-011	5434689	298434	GAB		Magmatic layering with f.g mafic laminae & f.g GAB to c.g cumulus pyroxene
Wakinoo-Demars	581141	R982422	18-DAN-012	5434691	298438	GAB-Vt		
Wakinoo-Demars	581141	R982425	18-DAN-013	5434677	298406	GAB-Vt		

Wakinoo-Demars	581141	R982426	18-DAN-014	5434680	298410	GAB-Vt		
Wakinoo-Demars	581141	R982427	18-DAN-015	5434683	298414	GAB-Vt		
Wakinoo-Demars	581141	R982428	18-DAN-016	5434685	298419	GAB-Vt	0.2% Pyrrhotite + Magnetite	
Wakinoo-Demars	581141	R982429	18-DAN-017	5434688	298423	GAB-Vt		
Wakinoo-Demars	581141	R982430	18-DAN-018	5434690	298427	GAB-Vt		
Wakinoo-Demars	581141	R982431	18-DAN-019	5434693	298431	GAB-Vt		
Wakinoo-Demars	581141	R982432	18-DAN-020	5434695	298436	GAB		
Wakinoo-Demars	581141	R982433	18-DAN-021	5434679	298399	PYXT	0.1% Pyrite	
Wakinoo-Demars	581141	R982434	18-DAN-022	5434682	298403	MGAB		Dominantly pyroxene composition, with sections of increased intercumulus Pl
Wakinoo-Demars	581141	R982435	18-DAN-023	5434684	298407	MGAB		Similar to -434, but an increase of f.g intercumulus Pl within groundmass (approx. 70/30 mafic-felsic comp)
Wakinoo-Demars	581141	R982436	18-DAN-024	5434687	298412	MGAB		Same unit as -435
Wakinoo-Demars	581141	R982437	18-DAN-025	5434689	298416	MGAB		Same composition as previous MGAB
Wakinoo-Demars	581141	R982439	18-DAN-026	5434692	298420	DYKE	0.3% Pyrite	Sheared/well foliated unit, with alternating bands of mafic/felsic material. Difficult to cut. X-cut primary litho's at outcrop.
Wakinoo-Demars	581141	R982440	18-DAN-027	5434695	298425	PYXT	0.2% Pyrite + Pyrrhotite	
Wakinoo-Demars	581141	R982441	18-DAN-028	5434697	298429	PYXT		
Wakinoo-Demars	581141	R982442	18-DAN-029	5434700	298433	PYXT		

Wakinoo-Demars	581141	R982443	18-DAN-030	5434702	298437	GAB-Vt	0.5% Pyrrhotite + Chalcopyrite	
Wakinoo-Demars	581141	R982444	18-DAN-031	5434705	298442	PYXT	0.2% Pyrite	
Wakinoo-Demars	581141	R982445	18-DAN-032	5434707	298446	GAB-Vt	0.7% Pyrite + Pyrrhotite	Possible sample was taken at contact of PYXT and GAB-Vt
Wakinoo-Demars	581141	R982446	18-DAN-033	5434710	298450	GAB	0.3% Pyrite + Pyrrhotite	
Wakinoo-Demars	581141	R982447	18-DAN-034	5434713	298455	PYXT	0.7% Chalcopyrite + Pyrite	
Wakinoo-Demars	581141	R982448	18-DAN-035	5434683	298396	PYXT	1% Magnetite + Pyrite	
Wakinoo-Demars	581141	R982449	18-DAN-036	5434686	298401	GAB		
Wakinoo-Demars	581141	R982450	18-DAN-037	5434689	298405	GAB		
Wakinoo-Demars	581141	R982251	18-DAN-038	5434691	298409	GAB-Vt	0.5% Pyrrhotite + Chalcopyrite	
Wakinoo-Demars	581141	R982252	18-DAN-039	5434694	298413	PYXT	0.2% Pyrite + Pyrrhotite	
Wakinoo-Demars	581141	R982254	18-DAN-040	5434696	298418	PYXT	0.3% Pyrrhotite + Chalcopyrite	
Wakinoo-Demars	581141	R982255	18-DAN-041	5434699	298422	PYXT	0.3% Pyrite + Pyrrhotite	Localized sections host c.g blebs of Plag (gives VT appearance)
Wakinoo-Demars	581141	R982256	18-DAN-042	5434701	298426	MGAB		Resembles PYXT but increased Plag content visible on weathered surface
Wakinoo-Demars	581141	R982257	18-DAN-043	5434704	298431	PYXT	0.2% Pyrite + Pyrrhotite	

Wakinoo-Demars	581141	R982258	18-DAN-044	5434707	298435	PYXT	0.2% Pyrite	
Wakinoo-Demars	581141	R982259	18-DAN-045	5434709	298439	MGAB	0.5% Pyrite + Pyrrhotite	
Wakinoo-Demars	581141	R982260	18-DAN-046	5434688	298394	MGAB	0.1% Pyrite	bronzite, possibly GBNR
Wakinoo-Demars	581141	R982261	18-DAN-047	5434690	298398	MGAB	0.1% Pyrite	translucent grey plag
Wakinoo-Demars	581141	R982262	18-DAN-048	5434693	298402	GAB		
Wakinoo-Demars	581141	R982263	18-DAN-049	5434695	298406	GAB		
Wakinoo-Demars	581141	R982264	18-DAN-050	5434698	298411	GAB-Vt	0.5% Pyrite	
Wakinoo-Demars	581141	R982265	18-DAN-051	5434701	298415	PYXT		
Wakinoo-Demars	581141	R982266	18-DAN-052	5434703	298419	PYXT	0.1% Chalcopyrite	
Wakinoo-Demars	581141	R982267	18-DAN-053	5434706	298424	PYXT	0.1% Pyrite	alteration obscures grain boundaries, possible olivine present (peridotite)
Wakinoo-Demars	581141	R982271	18-DAN-054	5434708	298428	PYXT		
Wakinoo-Demars	581141	R982272	18-DAN-055	5434695	298395	PYXT		portion of sample resembles mine block NOR
Wakinoo-Demars	581141	R982273	18-DAN-056	5434697	298400	NOR		bronzite, resembles mine block NOR
Wakinoo-Demars	581141	R982274	18-DAN-057	5434700	298404	MGAB		
Wakinoo-Demars	581141	R982275	18-DAN-058	5434702	298408	MGAB		
Wakinoo-Demars	581141	R982276	18-DAN-059	5434705	298412	PYXT		
Wakinoo-Demars	581141	R982277	18-DAN-060	5434707	298417	MGAB		

Wakinoo-Demars	581141	R982278	18-DAN-061	5434710	298421	MGAB	0.1% Pyrite	
Wakinoo-Demars	581141	R982279	18-DAN-062	5434701	298397	MGAB		
Wakinoo-Demars	581141	R982280	18-DAN-063	5434704	298401	MGAB		resembles other MGAB, but no Na alteration of plag
Wakinoo-Demars	581141	R982281	18-DAN-064	5434707	298406	MGAB		
Wakinoo-Demars	581141	R982282	18-DAN-065	5434709	298410	PYXT		
Wakinoo-Demars	581141	R982283	18-DAN-066	5434712	298414	MGAB		
Wakinoo-Demars	581141	R982284	18-DAN-067	5434714	298418	MGAB		
Wakinoo-Demars	581141	R982285	18-DAN-068	5434712	298443	MGAB		
Wakinoo-Demars	581141	R982286	18-DAN-069	5434714	298448	PYXT		
Wakinoo-Demars	581141	R982287	18-DAN-070	5434717	298452	PYXT		
Wakinoo-Demars	295507	R982367	18-JWB-019	5429995	295230	GAB-Vt	5% Pyrrhotite + Chalcopyrite	middle of small main showing with thick rusty gossan. vt texture is obvious in weathered surface. 5% interstitial sulfide often as small blebs, poss Pn present. generally med grained and consistent vt texture throughout. 50 50 plag to pyrxns
Wakinoo-Demars	295507	R982368	18-JWB-020	5429994	295241	MVOL	5% Pyrite + Chalcopyrite	along contact with shear zone (strike 44, dip 60, approx 10-30 cm wide), brecciated Gab to NW and a more homogeneous unit to the SE. Sample is dominantly f.g, with 80-90% mafic mins, 5-10% pl, 5% sulfides and <5% m.g subhedral red Garnets.
Wakinoo-Demars	295507	R982369	18-JWB-021	5429975	295235	GAB-Vt	0.1% Pyrite	South end of OC, f.g-c.g with equal Pl-Pyrx and minor hbl? Mod Chl alt. foliation striking 60, dip 90. 0.1% Py
Wakinoo-Demars	295507	R982370	18-JWB-022	5429991	295224	MGAB		west end of outcrop clear contact with more melanocratic unit. finer grained than surrounding gabvt and schistose in appearance. strongly chloritic. sparse plag crystals are slightly larger than pyxn

Wakinoo-Demars	295507	R982371	18-JWB-023	5430001	295235	GAB-Vt	2% Chalcopyrite + Pyrite	patchy mineralization on rusty surface, area not channel sampled. rare patches of biotite. gab vt is slightly coarser grained here
Wakinoo-Demars	295507	R982372	18-JWB-024	5430000	295258	GAB-Vt	1% Pyrite	in old trench near flooded with section. fairly fresh gab with patchy Py. some rusty gossan
Wakinoo-Demars	295508		18-JWB-025	5430106	295024	DIOR		Within overgrown trench, minimal exposure. Potential Brecciated raft within seds layer. Cobble like material or assimilated felsic intrusive observed. strong mag
Wakinoo-Demars	295507	R982373	18-JWB-026	5429992	295174	GAB-Vt		North side of outcrop along shelf, tough to get sample. contact with MV noted to the south. x-cutting c.g GAB pods and veins observed. Rock is fresh with euhedral green pyroxene throughout, approx 60/40 mafic to felsic comp
Wakinoo-Demars	581145	R982374	18-JWB-027	5432639	297755	GAB-Vt		south end of WD12-10N trench. beautiful vt texture on surface, with rare coarse grained veins/dikes. irregular ductile deformation with thin felsic veining and large pegmatite 'pods' nearby. strongly magnetic.
Wakinoo-Demars	581145		18-JWB-028	5432723	297730	DIKE		North end of WD12-10N trench. fine grained mafic dike with abundant biotite. adjacent gab unit had strong potassic alteration of plag. contact is not exposed in trench
Wakinoo-Demars	581145	R982375	18-JWB-029	5432705	297731	MGAB		Along shear zone near southern end of trench. well foliated mafic mins with rounded felsic mins within. contact with Gabvt to north and Gab to south not visible
Wakinoo-Demars	581145		18-JWB-030	5432545	297679	GAB		middle of WD12-10S. strong ductile deformation with irregular blocks of fine grained mafic material, likely to mafic volcanic protolith, often exhibiting abundant biotite large rotated garnet crystals. thin leucocratic vari-textured unit with N-S strike
Wakinoo-Demars	130934		18-JWB-031	5432521	297667	GRAN		Near south end of WD12-10S. medium grained felsic intrusive with abundant biotite, quartz, resembling granodiorite country rock. immediate area of trench is complex structurally with many irregular blocks of mafic volcanic composition occasionally wit
Wakinoo-Demars	581145	R982376	18-JWB-032	5432817	296993	GAB-Vt		near south end of WD12-09 trench. very fresh looking gabvt. rare coarse grained pyx crystals. grainsize varies over a few cms but rock had a generally homogeneous appearance. weakly developed foliation at 304

Wakinoo-Demars	581145	R982377	18-JWB-033	5432961	296903	GAB-Vt		middle of WD12-09 trench. mostly coarse grained gabvt with abundant coarse grained hbld, presumed to be an alteration product, stands proud in weathered surface. strongly magnetic. rock is similarly fresh looking as previous. centimeter scale garnet
Wakinoo-Demars	581145	R982378	18-JWB-034	5433164	296778	GAB	0.1% Pyrite	near north end of WD12-9. fresh looking med grained gab. strongly magnetic. weakly saussuritized. weak to moderately foliated. immediately adjacent to contact with small grey feld porphyry and gneissic granodiorite country rock. edge of mafic intru
Wakinoo-Demars	581145		18-JWB-035	5433262	296723	GRDR		extreme north end of WD12-09 trench. strongly foliated granodiorite gneiss country rock. fabric strikes 270. patchy potassic alteration
Wakinoo-Demars	581142		18-JWB-036	5433473	297637	GAB		north end of WD12-08 at gab intrusion contact with granodiorite gneiss country rock. thin fine grained low angle mafic dike near obscured contact. 1-2m of locally developed mylonite parallel to dike
Wakinoo-Demars	581141	R982380	18-JWB-037	5434674	298407	GAB-Vt		west side of main demars showing. med to coarse gab vt, slightly more melanocratic than typical, with textbook flow sorting, compositional and grainsize sorting over 10-20cm cycles.
Wakinoo-Demars	581141	R982381	18-JWB-038	5434677	298413	PYXT		near west side of main demars trench. dike or injection of med grain pyxt containing small blocks of surrounding the gabvt. 5-10 % sparse plag, apparently sodic altered. distribution of pyxt unit is sporadic at the this side of trench. limited sampling
Wakinoo-Demars	581141	R982382	18-JWB-039	5434683	298396	PYXT	0.2% Pyrrhotite	nw corner of main demars trench. med grained pyxt, well fractured parallel to main structural fabric of oc, in 050 to 060 strike. patchy Po locally observed
Wakinoo-Demars	581141	R982383	18-JWB-040	5434696	298430	PYXT	7% Pyrite + Chalcopyrite	middle of main demars trench, mineralized pyxt near contact with 2m felsic dike that bisects the oc at 050 strike. moderate chlorite, 5-10% py and cpy in patches.
Wakinoo-Demars	581141	R982384	18-JWB-041	5434758	298433	PYXT	0.1% Pyrite	Located within N end of northern trench, very grown in. Sample taken beside historic sample 3JDX-98-289. Mg reflective blue-green min identified
Wakinoo-Demars	581141	R982385	18-JWB-042	5434624	298384	PYXT		in WD12-03 trench. pyxt unit with 10% white plag sparsely distributed. appears to become more plag rich towards west end of

								trench. nearby, subtle angular and rounded blocks of possible peridotite composition, marked by pitted weathered surface
Wakinoo-Demars	581141	R982386	18-JWB-043	5434657	298479	PYXT		Along ledge in old trench (1998). Grown in, similar pyxt to prev sample
Wakinoo-Demars	581141	R982387	18-JWB-044	5434429	298469	PYXT		south end of WD12-04 trench. trench is un-sampled. pyxt with patches of increased plag, generally 10-15%, possibly mgab. local k alteration in feldspars
Wakinoo-Demars	581141	R982388	18-JWB-045	5434360	298458	MGAB		north end of WD12-05. fairly fresh mgab, contact with previous pyxt possibly near trench intersection where irregular magmatic breccia was observed. but clearly more plag up to 20%. rare hornblend crystals. some 1cm irregular felsic veining.
Wakinoo-Demars	147649	R982394	18-JWB-046	5432315	296946	GAB-HBx		east end of WDTR12-11. complex heterolithic breccia with clear e-w fabric. generally ductile deformation at contacts. fragments range from gab to mgab with rare ultramafics. nearby, large frqgment of conglomerate has been partially incorporated
Wakinoo-Demars	118886		18-JWB-047	5432320	296466	GAB		weat end of WDTR12-11. bland egab. fresh plag, translucent grey. 50/50 felsic to mafic minerals. rare biotite
Wakinoo-Demars	246653	R982395	18-JWB-048	5431754	295983	GAB		south face of small ridge, just north of lake. similar rock to previous but non-magnetic and slightly coarser grained. moderate potasic alteration
Wakinoo-Demars	581143		18-JWB-049	5431541	295656	GRAN		1m oc ledge along topo ridge in clear cut regen. hematite staining on fractures and in patches. up to 30 per hornblende, with obvious quartz and k spar. minor plag also present. possible raft or embayment of country rock.
Wakinoo-Demars	308797	R982396	18-JWB-050	5431071	296267	PYXT		1m ledge along lake shore at gravity anomaly 4. coarse grained to pegmatitic pyxt with 5 to 10 per inter-cumulus kspar and irregular epidote veinlets. rough weathered surface
Wakinoo-Demars	308797	R982397	18-JWB-051	5431037	296175	GRAN		small exposure on lake shore. well foliated intrusive unit with med grained kspar crystals in chlorite altered fine grained mafic matrix. possible mixed contact bw previous pyxt unit and felsic intrusive country rock
Wakinoo-Demars	581140	R982398	18-JWB-052	5431088	296105	MGAB		rocky point with broken up outcrop just below the surface. sample taken from large loose rock in situ. similar to coarse grained pyxt

								previously sampled but finer grained and with more kspar, up to 25%. irregular epidote veinlets, occasionally parallel
Wakinoo-Demars	140286		18-JWB-053	5431379	296286	GRDR		10m long by 1m high whale back oc in mature bush. grdr with up to 10% med grained hornblende. mostly creamy white plag. strongly magnetic. weak foliation. unit is in contact with fine grained biotite schist of unknown size, possible dike
Wakinoo-Demars	140286		18-JWB-054	5431403	296495	GRAN		10m high oc ridge. moderately foliated granite, with 10% hornblende. small aplite dike observed
Wakinoo-Demars	308797		18-JWB-055	5431021	296494	GRDR		near north end of WDTR12-13. grey to dark grey rock resembles gabbro in weathered surface. up to 20% of felsics medium grained felspar, mostly plag and quartz. strongly foliated with abundant biotite. granodiorite to quartz diorite.
Wakinoo-Demars	308797	R982399	18-JWB-056	5431014	296496	HGAB		middle of WDTR12-13. dark grey to blackish in weathered surface. mostly emerald green mineral presumed to be cpx, and black mineral with well-formed cleavages likely hornblende. minor translucent plag. rare pink spar crystals and pink felsic veinlets
Wakinoo-Demars	147649	R982393	18-JWB-076	5432296	296634	GAB		Middle of WDTR-12-11. Along rock ledge in trench, difficult to get sample. Some pods/veins of felsic material.

Daily Field Work Summary

Date: July 5-7, 2018

Crew: J. Brown, D. Nikkila, D. Campbell

Target Location/Summary/Objective:

Wakinoo-Demars – The objective is to investigate historic trenches and outcrops for general reconnaissance and evaluate potential of expanding prospective trenches. Sampling is to be completed in areas displaying intriguing Pd mineralization and/or favourable lithologies without whole rock geochem data available. Access to the area from Thunder Bay is via HWY17 to Dog River Rd, followed by a right turn on Shelby Rd. This road is in good condition and can be travelled by truck to within close proximity of trenches. 21 samples taken from 26 field stations.

July 5, 2018

Arrived in the field at 10:00am with clear skies and a strong wind. The first stop of the day was at the Main Texas Gulf Showing within the middle of the Wakinoo intrusion (easily accessed by walking trail). Previous grab/trench/DDH samples contained multiple assays with > 1 ppm Pd. Overall, the outcrop displayed sporadic, but abundant rusty gossan alteration and brecciation within GABVT unit. Five samples were taken within this outcrop of GABVT, MGAB, and MVOL (with m.g-c.g garnets), with the VT and MVOL displaying up to 5% interstitial to disseminated Py-Ccp-(Po-Pn). Following lunch, the team traversed to various historic trenches surrounding the main outcrop, all of which being strongly grown in. Two more samples were taken in GABVT.

Total Samples: 7 **Total Stations: 8**

July 6, 2018

Arrived in the field at 10:00am. Weather was hot and sunny with minimal wind. Overall aim of the day was to evaluate historic trenches focused along the northern region/contact of the Wakinoo intrusion. The first stop was at trench WD12-10N where two samples (GABVT, MGAB) and 3 field stations were taken. The trench had great exposure and transitioned through multiple units. At the south end, well preserved GABVT (f.g-c.g, x-cutting pegmatite veins/pods) with variable gossan alteration was present. Heading north, sections of f.g-m.g GAB intercalated with cyclic veins of f.g-c.g GABVT observed, along with continuous units of GABVT previously mentioned. Increased ductile deformation and mafic composition observed as you traversed north (trench ends in MGAB followed by mafic dike). The second stop was along trench WD12-10S, where two field stations were taken in GAB and GRAN. Variable gossan alteration observed (with only 0.1% Py in fresh surfaces), along with abundant garnet (up to 3cm) within MVOL rafts. After lunch, trench WD12-09 was visited (approx. 650m in length), where three samples (four field stations) were marked. At south end, well preserved GABVT (similar to WD12-10N) was observed, followed by c.g homogeneous GAB, GAB-Bx, and GABVT. No mineralization noted. Trench ended in foliated GRDR country rock. A final field stop was made at trench WD12-08, which displayed unmineralized GABVT, and a contact with GRDR at northern end of trench.

Total Samples: 5 **Total Stations: 9**

July 7, 2018

Arrived in field at 10:00am, another hot and sunny day. The team traversed up to main Demars showing in the northern section of the intrusion, noting a SE trending trench en route which displayed cut lines in MGAB with no samples taken (grabs showed anomalous Pd values). The main showing was also sporadically grab sampled with a couple sampled trench lines. The geology of the outcrop was dynamic,

with homogeneous and brecciated units of PYXT, MGAB, and GABVT (with well-preserved magmatic layering). Multiple injections and recharge of magma required to produce texture/structure observed, suggesting possible conduit and/or breccia zone for Demars intrusion. Strong gossan alteration apparent throughout localized within ultramafic units. Four samples were taken (1 VT, 3 PYXT), with one sample displaying >5% patchy Py-Ccp. A more in-depth channel sampling program is recommended for the outcrop. Following this stop, five more samples (4 PYXT, 1 MGAB) were taken in historic trenches with anomalous Pd grades but no geochem or had not been sampled altogether. Three were within 100m of main showing (all PYXT) while two were taken within middle/SW section of intrusion (PYXT and MGAB). No mineralization was noted.
Total Samples: 9 **Total Stations: 9**

Date: July 24-25, 2018
Crew: J. Brown, D. Nikkila
Target Location/Summary/Objective:
Wakinoo – The objective is to investigate gravity highs outlined in Abitibi's 2018 high-resolution ground gravity survey report, specifically GF-04 located north of Wakinoo Lake. Sampling is to be completed within positive anomalies and/or favourable lithologies. Access to the area from Thunder Bay is via HWY17 to Dog River Rd, followed by a right turn on Shelby Rd. This road is in good condition and can be travelled by truck. 6 samples taken from 10 field stations.

July 24, 2018
Arrived in the field at 9:30am. Weather was hot and sunny. The first stop was at the East-West trending WDTR-12-11 trench. The trench had not previously been sampled, and the western limb was situated within a positive gravity anomaly. The western section of the trench displayed equigranular GAB with a gradual increase in VT (and pegmatite material) and a decrease in magnetic susceptibility readings as you head east. Within the eastern section of the trench, an intense heterolithic GAB-Bx is observed, displaying variable xenolith compositions and textures (ex. MGAB, porphyritic GAB) within a GAB matrix. One GAB sample was taken in a central portion of the trench along with another at the eastern edge in GAB-Bx. A traverse was completed in the afternoon to a gravity high along the north shore of Wakinoo Lake, with one sample of GAB taken outside the gravity high and GRAN noted along the gravity high edge.
Total Samples: 3 **Total Stations: 5**

July 25, 2018
Arrived in the field at 10:00am. Weather was overcast with rain at lunch, and shifting to sun in the afternoon. The goal of the day was to identify rocks producing the gravity high along a NE limb of Wakinoo Lake. The first stop was within the center of the gravity high, where coarse-grained pyroxenite with no mineralization was identified (18-JWB-050). Following this stop, a traverse of the surrounding shoreline was completed, with two samples taken at outcrops of felsic intrusive and gabbro, still within the positive anomaly.
Total Samples: 3 **Total Stations: 5**

Date: July 27-30, 2018
Crew: J. Brown, D. Nikkila
Target Location/Summary/Objective:
Wakinoo – The objective is to investigate gravity highs outlined in Abitibi's 2018 high-resolution ground gravity survey report which includes targets: GF-02a, -2b, -3a, and -3c. Sampling is to be completed within positive anomalies and/or favourable lithologies. Access to the area from Thunder Bay is via

HWY17 to Dog River Rd, followed by a right turn on Shelby Rd. This road is in good condition and can be travelled by truck. 11 samples taken from 19 field stations.

July 27, 2018
Arrived in the field at 1:30pm. Late start as team travelled to mine beforehand for safety meeting. Weather was pleasant. The only stop of the day was at trench WDTR-12-13 (approximately 100m long) northeast of Wakinoo Lake. The trench had previously not been sampled, but samples of GAB, DIOR, and GAB-Hbl in surrounding rocks have been noted. One field station of GRDR (with 20% felsic minerals & abundant biotite) and one sample of HGAB (pyroxene and hornblende present within groundmass) were taken by team within the trench.
Total Samples: 1 **Total Stations: 2**

July 28, 2018
Arrived in field at 9:30am. Weather was overcast in morning but transitioned to hot and sunny. Team was able to drive within close proximity of target GF-02a (strongest anomaly in area). Within the central gravity high of GF-02a, three samples of ultramafic units (peridotite and pyroxenite) were taken, which coincided well with samples previously taken in area (PYXT, Py-GAB/MGAB). Peridotite units displayed strong pocketing on surface with 1-3cm olivine phenocrysts within pyroxene dominant groundmass. No sulfides observed. During the afternoon, the team traversed WSW along anomaly. Outcrops were only located in strong topographic highs, with remaining areas covered by sand and boulders. Gravity highs may be explained by topographic changes in area (density contrasts between sand and bedrock). Three samples and one field station of varying lithology (GAB, MGAB, GRDR) taken within borders of strongest gravity highs, typically along ledges of large outcrop exposures. No exposure within furthest west anomaly of GF-02a.
Total Samples: 6 **Total Stations: 7**

July 29, 2018
Arrived in field at 9:30am. Weather was hot and sunny. Started the day by traversing to eastern most gravity high of GF-02a. Two samples and one field station of HGAB and GRAN were taken within/surrounding the anomaly, with granite displaying sanukitoid features of strong K-alteration and abundant Hbl in groundmass. The second part of the day was spent traversing into GF-02b, a slightly weaker anomaly West of -02a. Abundant samples were taken in the surrounding area (although it is skeptical whether these were outcrops or boulders) and identified as GAB and GAB-Py. One sample was taken within outcrop at center of anomaly and identified as pyroxenite with no sulfides visible.
Total Samples: 3 **Total Stations: 4**

July 30, 2018
Arrived in field at 10:00am. Weather was hot and sunny. The team traversed south to target GF-03c (with one field station of GRDR noted along trail outside any anomaly). No outcrop was found within the main gravity high, but three field stations of intermediate to mafic meta-volcanics were identified in surrounding area. The second half of the day was spent at anomaly GF-03a, which is within close proximity to Powder Hill showing. One field station was taken within IVOL at edge of gravity high in a historic trench, and one sample was taken at the Powder Hill showing (outside of gravity high) within a GAB unit.
Total Samples: 1 **Total Stations: 6**

Date: August 1-4, 2018

Crew: J. Brown, D. Nikkila

Target Location/Summary/Objective:

Demars: Laid out the grid and cut 70 channel samples at Demars main trench. No issues to report, all equipment (and staff) performed flawlessly.

August 1, 2018

Team arrived in the work area and transported channel sampling gear to the Demars main showing using a UTV. Minor trail rehab work was required. A 5m spaced sample grid was laid out over the large outcrop.

Total Samples: 10 **Total Stations: 10**

August 2, 2018

Team arrived in the field around 10am and started channel sampling. The workers took turns cutting and chiseling out samples.

Total Samples: 20 **Total Stations: 20**

August 3, 2018

Team arrived in the field around 10am and started channel sampling. The workers took turns cutting and chiseling out samples.

Total Samples: 20 **Total Stations: 20**

August 4, 2018

Team arrived in the field around 10am and started channel sampling. The workers took turns cutting and chiseling out samples.

Total Samples: 20 **Total Stations: 20**

Date: August 22-23, 2018

Crew: J. Brown, D. Nikkila

Target Location/Summary/Objective:

Demars: The objective is to complete a surface geology map of the main trench at the Demars intrusion. This map encompasses channel sampling previously completed at the trench. Access to the area from Thunder Bay is via HWY17 to Dog River Rd, followed by a right turn on Shelby Rd. This road is in good condition and can be travelled by truck.

August 22, 2018

Arrived in the field 11:00am. Late start as team travelled to mine beforehand for safety meeting. Weather was pleasant. The main Demars trench was divided into seven sections to be mapped over 2 days. Sections of two historic trenches intersecting the area had previously been mapped, but only covered a fraction of the outcrop now exposed and displayed minimal detail. The team completely mapped two sections of the trench, with progress made on another two. GABVT was the dominant unit identified in the southern portion of the map, with xenoliths of pyroxenite and flow banding textures identified.

August 23, 2018

Arrived in the field at 9:30am. Weather was pleasant. The remained of the trench was mapped, along with a point data infill and structural overview completed on the entire outcrop. In contrast to the

southern section, units of: PYXT, PYXT-BX, MGAB, GAB, GBNR, AND GAB-VBX were identified, along with two dikes which cross-cut a majority of the northern section of the map. Multiple shear zones and mineralized sections of PYXT and GAB-VBX were also noted. A finalized map was produced afterwards via Datamine Discover.

Date: Aug 27-29, 2018
Crew: J. Brown, D. Defranceschi
Target Location/Summary/Objective:

The objective was to investigate gravity highs outlined in Abitibi's 2018 high-resolution ground gravity survey report, specifically GF-01a, 01b, and 03b, located in the north west portion of the Shelby property. Samples were taken within positive anomalies and/or favourable lithologies. Access to the area from Thunder Bay is via HWY17 to Dog River Rd, followed by a right turn on Shelby Rd. This road is in good condition and can be travelled by truck. 8 samples taken from 21 field stations.

Summary:

Aug 27, 2018
Arrived in the field at 10:30am, following a Safety Check-In at the minesite. Weather was cloudy and cool. Access to the NE portion of gravity anomaly GF01-B was gained by walking in a bush road off of Shelby Lake Rd. Once at the target area, the team looped back to the SW, traversed parallel to the trail, and then returned to the truck. One mafic schist outcrop was observed and sampled. Two felsic intrusive outcrops were noted, but not sampled.
The team then relocated the truck to the south and traversed SE to the GF-01B gravity anomaly proper. After reaching the target zone, the team turned SW, followed the general trend of the gravity anomaly, and then returned to Shelby road by traversing to the NW. Three felsic intrusive outcrops were observed, but not sampled. This gravity anomaly (density contrast) was NOT explained by the outcrops observed.
Total Samples: 1 **Total Stations: 6**

Aug 28, 2018
Arrived in the field at 9:30am. Weather was cold and rainy. The team traveled to the area of GF-03b anomaly by following Shelby Rd to a south-east trending splay road called Orbit Rd. This road was followed, keeping left at all turns, to the south of GF-03b. In the morning, the team traversed to the bulls-eye gravity anomaly SW of GF-03b. Two outcrops were observed, but not sampled: a strongly foliated and layered intermediate volcanic, and a massive granodiorite (country rock). No mafic intrusive rock was observed in this area, however the gravity anomaly could be explained by a hidden, dense mafic volcanic unit, as part of the volcanic stratigraphy, located at or near the contact with the felsic intrusive rocks to the NW.
In the afternoon, the team relocated to the NE, using a road/trail splaying from original access road, to the SE. This trail allowed better access, roughly 500m south of the GF-03b anomaly proper. The team started by traversing north to the western end of the target area. Metasediments, locally intermixed with concordant intermediate volcanic layers were observed, with particularly good exposure witnessed

along the north shore of a substantial beaver pond. The gravity anomaly is roughly coincident with a NE-SW trending topographic ridge. This ridge was followed to the NE, and 4 outcrops of GAB and GAB-Bx were observed and sampled. Some striking breccias textures are present, often with strongly chlorite-altered pyroxenite inclusions. At the end of the day, the team traverse due south to the trail and returned to the truck.

Total Samples: 4 **Total Stations: 8**

Aug 29, 2018

Arrived in the field at 9:00am. Weather was sunny and cool. The team travelled to GF-01a by following Shelby Rd northeast and making a right turn on a recently improved bush trail, near the Stocker Zone (Shelby Property). This road allowed truck access to the heart of the anomaly. The team spent the day criss-crossing the anomaly area with tightly-spaced (200m) traverses. For the most part, the terrain was open clear-cut with very little outcrop exposure. The cover is predominately sand and large boulders. Some glacial erratic boulders were observed to be up to 10m in size, and positioned on top of the sandy ground. Much of the historic samples in this area, including over the Stocker zone, were taken from float. Three mafic outcrops were observed and sampled: LGAB, HGAB, and GAB. Four felsic intrusive outcrops were observed but not sampled, including granodiorite and granite country rocks.

Total Samples: 3 **Total Stations: 7**

Daily Work Log

Table 5: Work Log

Date	Worker	Work Area	Nature of Work
5-Jul	Jami Brown	Wakinoo-Demars	Reconnaisance and prospecting at Wakinoo "Texas gulf" main showing and immediate area
5-Jul	Doug Nikkila	Wakinoo-Demars	Reconnaisance and prospecting at Wakinoo "Texas gulf" main showing and immediate area
5-Jul	Dana Campbell	Wakinoo-Demars	Reconnaisance and prospecting at Wakinoo "Texas gulf" main showing and immediate area
6-Jul	Jami Brown	Wakinoo-Demars	Reconnaisance and prospecting in central intrusion area between Wakinoo and Demars, un-sampled trenches WD12-(09-12)
6-Jul	Doug Nikkila	Wakinoo-Demars	Reconnaisance and prospecting in central intrusion area between Wakinoo and Demars, un-sampled trenches WD12-(09-12)
6-Jul	Dana Campbell	Wakinoo-Demars	Reconnaisance and prospecting in central intrusion area between Wakinoo and Demars, un-sampled trenches WD12-(09-12)
7-Jul	Jami Brown	Wakinoo-Demars	Reconnaisance and prospecting at Demars main showing and immediate area
7-Jul	Doug Nikkila	Wakinoo-Demars	Reconnaisance and prospecting at Demars main showing and immediate area
7-Jul	Dana Campbell	Wakinoo-Demars	Reconnaisance and prospecting at Demars main showing and immediate area
8-Jul	Jami Brown	Wakinoo-Demars	Data compilation and summaries
8-Jul	Dana Campbell	Wakinoo-Demars	Sample preparation for Wakinoo
8-Jul	Dana Campbell	Wakinoo-Demars	Data compilation and summaries
23-Jul	Jami Brown	Wakinoo-Demars	Data compilation and field planning for Wakinoo Gravity anomalies
23-Jul	Doug Nikkila	Wakinoo-Demars	Data compilation and field planning for Wakinoo Gravity anomalies
24-Jul	Jami Brown	Wakinoo-Demars	Prospecting trench WDTR12-11 and north portion of GF-04
24-Jul	Doug Nikkila	Wakinoo-Demars	Prospecting trench WDTR12-11 and north portion of GF-04
25-Jul	Jami Brown	Wakinoo-Demars	Prospecting GF-04 and immediate area
25-Jul	Doug Nikkila	Wakinoo-Demars	Prospecting GF-04 and immediate area
26-Jul	Jami Brown	Wakinoo-Demars	Data compilation and field planning
26-Jul	Doug Nikkila	Wakinoo-Demars	Data compilation and field planning
27-Jul	Jami Brown	Wakinoo-Demars	Prospecting trench WDTR12-13 (near Wakinoo Lake)
27-Jul	Doug Nikkila	Wakinoo-Demars	Prospecting trench WDTR12-13 (near Wakinoo Lake)

28-Jul	Jami Brown	Shelby	Prospecting GF-02a and immediate area
28-Jul	Doug Nikkila	Shelby	Prospecting GF-02a and immediate area
29-Jul	Jami Brown	Shelby	Prospecting GF-02b and immediate area
29-Jul	Doug Nikkila	Shelby	Prospecting GF-02b and immediate area
30-Jul	Jami Brown	Shelby	Prospecting GF-03a, GF-03c and immediate area
30-Jul	Doug Nikkila	Shelby	Prospecting GF-03a, GF-03c and immediate area
31-Jul	Jami Brown	Wakinoo-Demars	Data compilation and field planning for Demars main showing channel sampling
31-Jul	Doug Nikkila	Wakinoo-Demars	Data compilation and field planning for Demars main showing channel sampling
1-Aug	Jami Brown	Wakinoo-Demars	Demars channel sampling
1-Aug	Doug Nikkila	Wakinoo-Demars	Demars channel sampling
2-Aug	Jami Brown	Wakinoo-Demars	Demars channel sampling
2-Aug	Doug Nikkila	Wakinoo-Demars	Demars channel sampling
3-Aug	Jami Brown	Wakinoo-Demars	Demars channel sampling
3-Aug	Doug Nikkila	Wakinoo-Demars	Demars channel sampling
4-Aug	Jami Brown	Wakinoo-Demars	Demars channel sampling
4-Aug	Doug Nikkila	Wakinoo-Demars	Demars channel sampling
5-Aug	Jami Brown	Wakinoo-Demars	Data compilation and sample preparation
5-Aug	Doug Nikkila	Wakinoo-Demars	Sample preparation for Demars
20-Aug	Jami Brown	Wakinoo-Demars	Data compilation and field preparation for trench mapping
21-Aug	Jami Brown	Wakinoo-Demars	Data compilation and field preparation for trench mapping
21-Aug	Doug Nikkila	Wakinoo-Demars	Data compilation and field preparation for trench mapping
22-Aug	Jami Brown	Wakinoo-Demars	Trench mapping Demars main trench
22-Aug	Doug Nikkila	Wakinoo-Demars	Trench mapping Demars main trench
23-Aug	Jami Brown	Wakinoo-Demars	Trench mapping Demars main trench
23-Aug	Doug Nikkila	Wakinoo-Demars	Trench mapping Demars main trench
24-Aug	Jami Brown	Wakinoo-Demars	Digitizing Demars Trench map
25-Aug	Jami Brown	Wakinoo-Demars	Digitizing Demars Trench map
26-Aug	Jami Brown	Shelby	Data compilation and field preparation for gravity targets
27-Aug	Jami Brown	Shelby	Prospecting GF01-B
27-Aug	Derek Defranceschi	Shelby	Prospecting GF01-B
28-Aug	Jami Brown	Shelby	Prospecting GF03-B
28-Aug	Derek Defranceschi	Shelby	Prospecting GF03-B
29-Aug	Jami Brown	Shelby	Prospecting GF01-A
29-Aug	Derek Defranceschi	Shelby	Prospecting GF01-A

Certificate of Qualification

I, Jami Brown, P. Geo, residing at 77 Pine Street, Thunder Bay, Ontario, P7A 5X2, do hereby certify that:

- I am employed as a Project Geologist with Impala Canada Ltd.
- I am a graduate of the University of Toronto, Canada with a B.Sc. (Honours) in Geology (2010).
- I am currently a member in good standing with the Association of Professional Geoscientists of Ontario (Membership number 2674).
- I have practiced my profession continuously since May 1, 2010.
- As of the date of this certificate, to the best of my knowledge, the accompanying report is factual.

Jami Brown, B.Sc., P. Geo
APGO #2674
Project Geologist
Impala Canada

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-AUG-2018
Account: NAPEHZEU

CERTIFICATE TB18176729

Project: Gfields

P.O. No.: 178845

This report is for 40 Rock samples submitted to our lab in Thunder Bay, ON, Canada on 23-JUL-2018.

The following have access to data associated with this certificate:

DAVID BENSON	LIONNEL DJON	JILL MAXWELL
DAVE PECK	KATHRYN STINSON	LDIM WEBTRIEVE

SAMPLE PREPARATION

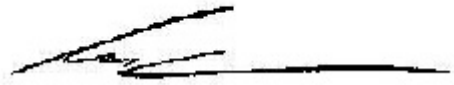
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
LOG-21	Sample logging - ClientBarCode
PUL-31	Pulverize split to 85% <75 um
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
LOG-23	Pulp Login - Rcvd with Barcode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
C-IR07	Total Carbon (Leco)	LECO
S-IR08	Total Sulphur (Leco)	LECO
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES
PGM-ICP23	Pt, Pd, Au 30g FA ICP	ICP-AES
Se-MS46	Super Trace Se 25g AR by ICP-MS	ICP-MS

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

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

Signature: 

Colin Ramshaw, Vancouver Laboratory Manager

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Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
R982351		1.99	20.1	0.52	0.17	25.0	20.5	0.19	0.23	<0.002	0.01	0.05	<0.01	0.01	0.05	31.6
R982352		0.17	46.7	12.60	20.5	6.11	6.69	2.14	0.63	0.034	1.25	0.19	0.16	0.03	0.02	1.21
R982353		2.05	50.0	16.85	8.57	8.54	8.43	2.46	1.76	0.079	0.36	0.13	0.06	0.04	0.04	2.46
R982354		2.05	47.8	15.20	9.84	7.62	9.14	1.74	1.12	0.088	0.38	0.15	0.06	0.03	0.03	6.33
R982355		3.02	50.0	18.70	8.25	7.76	6.36	2.76	1.50	0.016	0.33	0.11	0.10	0.05	0.04	2.31
R982356		2.56	52.3	11.85	15.05	4.95	10.30	1.64	1.09	0.034	0.62	0.23	0.08	0.02	0.03	2.70
R982357		0.68	44.0	17.25	14.00	7.38	10.10	1.20	1.54	0.033	0.39	0.18	0.03	0.05	0.04	3.68
R982358		3.69	45.1	19.75	13.65	5.38	3.37	3.63	1.87	0.007	0.85	0.10	0.12	0.07	0.07	4.50
R982359		2.35	45.5	20.1	13.95	8.99	2.80	3.52	0.55	0.006	0.62	0.13	0.09	0.06	0.02	2.18
R982360		1.89	45.9	19.75	12.45	9.48	2.67	3.52	0.72	0.006	0.44	0.13	0.08	0.05	0.03	2.33
R982361		2.89	44.6	12.00	20.6	5.08	9.44	1.50	0.50	0.083	0.93	0.29	0.15	0.03	0.02	3.79
R982362		1.83	46.0	12.65	18.95	6.91	8.69	2.23	0.43	0.071	1.05	0.27	0.23	0.05	0.02	2.15
R982363		1.98	52.4	17.10	9.20	8.67	5.76	2.35	1.64	0.019	0.53	0.17	0.20	0.05	0.06	1.53
R982364		1.83	45.7	20.5	10.75	8.68	6.34	2.26	1.80	0.043	0.47	0.13	0.08	0.07	0.04	2.74
R982365		1.14	36.9	18.15	25.1	9.19	3.28	2.02	0.66	0.004	1.85	0.12	0.05	0.05	0.02	0.96
R982366		0.18	46.2	12.65	20.7	6.27	6.74	2.18	0.61	0.032	1.23	0.18	0.15	0.03	0.02	1.19
R982367		3.65	44.3	17.40	12.80	11.25	6.32	1.88	0.75	0.061	0.44	0.11	0.03	0.04	0.02	2.76
R982368		2.46	46.9	16.55	9.97	11.80	7.79	1.55	1.20	0.035	0.31	0.13	0.02	0.04	0.03	2.29
R982369		1.38	48.5	16.65	10.15	11.95	7.56	2.08	0.26	0.022	0.32	0.14	0.05	0.04	0.01	0.87
R982370		1.53	50.6	11.65	9.85	9.16	13.15	1.43	0.70	0.140	0.28	0.17	0.05	0.03	0.02	2.32
R982371		1.23	47.6	20.00	8.42	9.96	6.49	2.57	1.06	0.028	0.25	0.10	0.04	0.06	0.03	2.19
R982372		1.44	48.7	17.75	9.87	10.45	8.20	2.16	1.15	0.038	0.24	0.13	0.03	0.05	0.02	2.11
R982373		0.76	49.8	16.25	9.64	11.95	7.99	2.38	0.38	0.016	0.40	0.14	0.07	0.04	0.01	1.16
R982374		2.52	49.8	18.45	14.00	7.72	2.64	4.12	0.51	0.002	1.16	0.26	0.44	0.10	0.04	0.25
R982375		1.22	50.8	18.80	11.35	7.69	2.85	4.34	0.81	0.005	1.11	0.23	0.25	0.09	0.04	0.87
R982376		1.82	48.1	18.75	14.45	7.47	2.37	4.23	0.70	<0.002	1.44	0.24	0.53	0.08	0.03	0.80
R982377		1.67	44.3	19.60	14.65	9.82	3.85	3.04	0.45	0.003	1.45	0.15	0.98	0.09	0.02	0.59
R982378		2.18	43.9	15.95	17.30	8.95	7.11	2.10	1.55	0.028	1.40	0.19	0.06	0.03	0.03	1.96
R982379		2.19	18.75	0.17	0.22	28.2	20.5	0.08	0.02	<0.002	0.01	0.05	0.02	0.02	0.04	32.3
R982380		1.94	47.6	15.15	11.35	7.36	9.72	3.00	0.67	0.028	0.63	0.19	0.02	0.06	0.01	3.16
R982381		1.29	49.5	5.95	11.55	13.95	14.75	0.30	0.14	0.105	0.51	0.23	0.05	0.03	<0.01	1.72
R982382		2.10	50.9	4.21	11.55	11.90	17.65	0.47	0.13	0.114	0.33	0.24	0.03	0.01	<0.01	2.07
R982383		1.91	48.1	4.50	12.65	10.65	17.70	0.30	0.06	0.148	0.30	0.24	0.02	<0.01	<0.01	3.56
R982384		1.40	49.2	4.55	10.60	15.55	15.75	0.55	0.16	0.109	0.38	0.20	0.04	0.01	<0.01	1.36
R982385		2.00	50.9	8.17	9.95	14.40	14.50	0.97	0.55	0.089	0.31	0.21	0.01	0.02	0.01	1.90
R982386		2.57	50.1	5.00	10.10	15.15	16.00	0.61	0.37	0.104	0.33	0.20	0.04	0.01	0.01	1.03
R982387		2.10	47.1	9.09	10.45	13.30	12.60	0.99	0.39	0.076	0.42	0.21	0.03	0.03	0.01	1.97
R982388		1.65	49.0	11.20	10.60	11.95	10.50	1.69	0.89	0.051	0.53	0.18	0.07	0.03	0.03	1.53
R982389		0.18	46.5	12.70	20.8	6.32	6.78	2.18	0.61	0.033	1.23	0.19	0.17	0.03	0.02	1.22
R982390		1.87	54.8	17.10	11.35	6.11	4.31	3.11	1.10	0.016	0.82	0.14	0.28	0.05	0.04	1.46

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

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Project: Gfields

CERTIFICATE OF ANALYSIS TB18176729

Sample Description	Method	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
	Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.01	0.01	0.5	0.1	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2	0.01
R982351		98.43	8.65	0.01	481	1.4	<10	0.60	0.09	0.06	0.03	0.6	0.06	<5	<0.2	0.01
R982352		98.26	0.08	1.66	213	27.5	250	1.01	2.40	1.30	1.05	15.8	2.97	<5	2.2	0.49
R982353		99.78	0.06	0.03	352	17.1	580	1.40	1.48	0.84	0.65	15.9	1.69	<5	1.4	0.30
R982354		99.53	0.82	0.01	273	15.6	640	3.34	1.39	0.79	0.62	14.6	1.66	<5	1.1	0.32
R982355		98.29	0.08	0.06	379	21.9	120	1.23	1.49	0.69	0.84	17.0	1.76	<5	0.8	0.26
R982356		100.89	0.02	0.12	248	17.2	240	0.86	1.43	0.82	0.51	14.0	1.55	<5	1.6	0.30
R982357		99.87	0.04	0.12	319	11.3	230	2.03	0.73	0.36	0.50	15.9	0.71	<5	0.8	0.15
R982358		98.47	0.66	2.68	571	16.3	50	1.63	0.95	0.57	0.85	20.8	1.29	<5	0.7	0.21
R982359		98.52	0.06	2.30	166.0	12.7	40	2.76	1.31	0.76	0.78	22.2	1.69	<5	0.5	0.27
R982360		97.56	0.02	2.63	222	12.8	40	1.84	1.51	0.88	0.83	21.1	1.63	<5	1.0	0.31
R982361		99.01	0.35	1.54	168.5	24.0	570	4.45	3.21	1.77	1.00	16.3	3.52	<5	1.3	0.63
R982362		99.70	0.01	1.05	177.5	27.3	510	0.85	3.37	2.00	1.07	19.1	3.86	<5	1.0	0.69
R982363		99.68	0.03	0.02	508	28.6	140	2.27	2.10	1.18	0.72	16.4	2.33	<5	1.9	0.44
R982364		99.60	0.02	0.04	399	21.6	330	2.59	1.23	0.82	0.66	19.0	1.86	<5	1.2	0.27
R982365		98.35	0.04	0.44	166.5	9.4	30	1.51	0.86	0.48	0.48	29.1	1.10	<5	0.8	0.17
R982366		98.18	0.07	1.77	215	27.1	240	1.00	2.67	1.39	1.14	16.3	2.90	<5	2.3	0.50
R982367		98.16	<0.01	2.71	160.0	8.3	450	9.43	1.05	0.69	0.58	16.1	1.13	<5	0.4	0.21
R982368		98.62	0.02	0.97	295	5.5	250	7.59	1.17	0.67	0.51	16.6	1.14	<5	0.3	0.23
R982369		98.60	0.07	0.07	85.7	8.7	160	1.34	1.13	0.67	0.45	15.5	1.22	<5	0.8	0.22
R982370		99.55	<0.01	<0.01	206	7.6	1020	3.83	1.05	0.77	0.42	11.8	1.21	<5	0.7	0.22
R982371		98.80	<0.01	0.26	233	9.2	200	9.40	0.71	0.35	0.51	17.1	0.67	<5	0.4	0.13
R982372		100.90	0.01	0.15	165.5	6.8	280	11.70	0.93	0.53	0.45	15.0	0.92	<5	0.4	0.18
R982373		100.23	0.01	<0.01	122.5	11.7	120	2.05	1.38	0.88	0.54	16.2	1.65	<5	0.9	0.30
R982374		99.49	<0.01	0.03	296	36.0	10	0.46	2.46	1.25	2.57	21.5	3.77	<5	0.7	0.51
R982375		99.24	0.03	0.06	324	23.0	40	1.15	2.08	1.03	2.48	21.5	2.80	<5	0.4	0.40
R982376		99.19	0.03	0.05	292	30.7	10	1.83	2.24	1.06	2.67	23.1	3.51	<5	0.4	0.42
R982377		98.99	0.01	0.07	162.0	30.3	20	0.88	2.34	1.01	1.70	21.6	3.60	<5	0.3	0.44
R982378		100.56	0.02	0.22	317	13.1	210	1.71	1.61	0.88	0.72	21.8	1.73	<5	0.8	0.29
R982379		100.38	8.77	<0.01	367	3.2	<10	0.42	0.11	0.07	0.03	0.5	0.11	<5	<0.2	0.02
R982380		98.95	0.01	0.11	115.5	4.8	200	0.39	0.97	0.62	0.42	13.6	1.05	<5	0.5	0.19
R982381		98.79	0.03	<0.01	13.6	11.8	690	0.05	2.30	1.37	0.64	9.6	2.64	<5	1.0	0.45
R982382		99.60	0.01	0.09	29.3	7.0	820	0.07	1.50	0.93	0.45	9.7	1.64	<5	0.8	0.34
R982383		98.23	<0.01	2.04	7.6	4.7	960	0.08	1.32	0.75	0.33	7.3	1.28	<5	0.6	0.29
R982384		98.46	0.04	0.07	31.8	7.7	780	0.90	2.03	1.18	0.53	7.7	2.09	<5	0.8	0.44
R982385		101.99	0.06	0.02	111.5	6.8	650	0.85	1.70	1.03	0.51	9.7	1.87	<5	0.6	0.38
R982386		99.05	0.09	0.03	99.2	7.1	750	0.45	1.76	1.17	0.48	8.0	1.96	<5	0.8	0.39
R982387		96.67	0.09	0.07	80.5	8.6	520	0.68	1.92	1.06	0.60	10.6	2.27	<5	0.7	0.40
R982388		98.25	0.04	0.05	240	11.8	370	0.93	1.82	1.14	0.63	12.9	2.05	<5	0.9	0.40
R982389		98.78	0.08	1.66	220	26.6	240	0.95	2.48	1.36	1.05	16.6	2.75	<5	2.4	0.50
R982390		100.69	0.08	0.14	313	38.8	100	2.16	3.59	2.20	1.08	20.8	4.20	<5	1.6	0.75

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

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-AUG-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18176729

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.1	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
R982351		1.0	0.01	1.0	0.5	0.12	3.4	0.12	<1	127.5	<0.1	0.01	0.15	<0.01	0.45	5
R982352		12.5	0.20	7.2	13.9	3.43	16.6	3.07	4	263	0.4	0.41	1.63	0.17	0.47	121
R982353		7.9	0.11	2.1	8.6	2.12	67.3	1.82	1	336	0.1	0.26	1.44	0.12	0.49	125
R982354		8.0	0.13	1.6	8.4	1.95	40.4	1.85	1	292	0.1	0.28	1.10	0.12	0.30	141
R982355		11.4	0.10	1.9	10.2	2.63	49.2	2.20	1	426	0.1	0.24	1.95	0.10	0.66	106
R982356		7.5	0.18	2.3	8.3	2.18	40.6	1.69	1	194.5	0.1	0.28	2.03	0.15	0.56	233
R982357		5.9	0.06	0.9	4.9	1.25	70.2	1.13	1	481	<0.1	0.11	0.48	0.06	0.21	188
R982358		8.3	0.06	1.6	7.6	1.89	53.3	1.60	1	540	0.1	0.19	0.42	0.08	0.12	285
R982359		6.1	0.12	1.2	7.0	1.65	14.5	1.57	1	469	0.1	0.23	0.18	0.12	0.11	214
R982360		6.1	0.13	1.1	7.1	1.68	20.8	1.48	1	427	0.1	0.24	0.34	0.12	0.20	174
R982361		9.3	0.26	3.7	17.0	3.62	12.5	4.01	1	223	0.1	0.51	0.16	0.24	0.08	264
R982362		11.9	0.27	2.6	16.9	3.76	11.2	3.80	1	385	0.1	0.53	0.27	0.28	0.10	335
R982363		13.8	0.18	4.5	15.1	3.49	52.5	2.76	1	366	0.3	0.35	2.65	0.15	0.89	136
R982364		10.4	0.07	2.3	11.7	2.61	77.4	2.04	1	597	0.1	0.28	2.03	0.09	0.56	277
R982365		4.4	0.07	1.8	4.7	1.17	25.7	0.94	1	457	0.1	0.14	0.61	0.07	0.16	1470
R982366		12.4	0.20	7.3	13.3	3.33	16.8	2.80	4	270	0.4	0.45	1.58	0.19	0.47	122
R982367		3.9	0.09	0.9	4.8	1.10	36.2	1.20	1	375	0.1	0.18	0.63	0.09	0.07	164
R982368		2.6	0.08	0.2	3.8	0.81	54.6	0.98	1	395	<0.1	0.20	0.11	0.09	0.20	175
R982369		3.8	0.10	1.4	5.2	1.17	6.0	1.12	1	365	0.1	0.20	0.79	0.10	0.18	220
R982370		3.6	0.11	1.0	4.9	1.11	27.5	1.19	<1	272	0.1	0.17	0.53	0.10	0.13	175
R982371		4.5	0.06	0.9	4.1	1.09	49.7	0.82	1	482	0.1	0.10	0.64	0.06	0.14	101
R982372		3.0	0.07	0.6	3.8	0.90	70.2	0.96	1	439	<0.1	0.14	0.34	0.08	0.10	139
R982373		5.2	0.12	1.3	6.7	1.53	12.7	1.69	<1	362	0.1	0.24	0.84	0.12	0.20	278
R982374		15.4	0.14	4.3	20.3	4.79	7.9	4.33	<1	722	0.3	0.47	0.40	0.18	0.19	54
R982375		10.8	0.14	2.7	13.6	3.13	18.1	3.05	<1	654	0.2	0.34	0.43	0.14	0.16	157
R982376		13.3	0.10	2.1	19.8	4.13	17.1	4.14	<1	694	0.2	0.43	0.83	0.12	0.26	25
R982377		12.9	0.10	1.2	18.8	4.22	8.9	3.91	<1	748	0.1	0.40	0.47	0.12	0.16	168
R982378		5.9	0.14	1.6	7.8	1.74	54.2	1.95	1	284	0.1	0.25	0.50	0.12	0.16	717
R982379		2.9	0.02	0.6	0.9	0.26	1.4	0.07	<1	192.0	<0.1	0.01	0.12	0.02	0.34	<5
R982380		2.3	0.08	0.6	3.2	0.71	25.9	1.03	1	460	<0.1	0.17	0.25	0.07	0.07	425
R982381		4.4	0.17	1.0	8.5	1.80	0.9	2.42	1	166.5	0.1	0.40	0.56	0.19	0.15	326
R982382		2.6	0.11	1.0	5.2	1.13	0.9	1.56	1	66.1	0.1	0.29	0.43	0.13	0.30	232
R982383		1.6	0.11	0.5	3.9	0.80	0.3	1.18	<1	19.2	<0.1	0.20	0.24	0.13	0.05	203
R982384		2.8	0.14	0.6	6.4	1.31	4.3	2.10	1	49.4	<0.1	0.33	0.31	0.18	0.08	312
R982385		2.7	0.14	0.5	5.5	1.12	20.7	1.61	1	162.0	<0.1	0.31	0.24	0.17	0.06	286
R982386		2.8	0.14	0.7	5.7	1.13	11.6	1.65	1	63.8	<0.1	0.32	0.34	0.14	0.08	298
R982387		3.8	0.14	0.6	6.5	1.41	13.7	1.90	1	254	<0.1	0.31	0.21	0.16	0.06	312
R982388		5.1	0.16	1.4	7.6	1.68	27.8	1.97	<1	257	0.1	0.31	0.55	0.15	0.18	316
R982389		12.5	0.17	7.3	14.3	3.25	16.5	3.12	4	272	0.4	0.42	1.48	0.18	0.46	127
R982390		17.6	0.25	4.3	22.0	5.02	34.0	4.52	1	418	0.3	0.69	1.89	0.27	0.87	269

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CERTIFICATE OF ANALYSIS TB18176729

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
	Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	1	0.1	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
R982351		<1	0.6	0.05	5	1.1	0.03	0.008	<0.005	<0.001	0.10	0.4	0.01	0.06	<0.5	<0.5
R982352		3	13.3	1.30	87	4.0	0.77	0.012	0.070	0.006	0.34	5.2	0.54	0.10	2.1	0.9
R982353		1	7.9	0.79	56	0.7	0.02	<0.005	0.005	<0.001	<0.05	0.2	0.01	0.02	<0.5	<0.5
R982354		1	8.1	0.83	39	0.3	0.02	<0.005	0.019	<0.001	<0.05	<0.2	0.01	0.06	<0.5	<0.5
R982355		<1	7.6	0.61	29	0.6	0.07	<0.005	0.007	<0.001	0.10	0.2	0.15	0.02	<0.5	<0.5
R982356		2	9.0	0.99	57	0.9	0.03	<0.005	0.005	<0.001	<0.05	<0.2	0.02	0.02	<0.5	<0.5
R982357		<1	3.7	0.45	25	0.6	0.01	<0.005	<0.005	<0.001	<0.05	0.3	0.01	0.03	<0.5	<0.5
R982358		1	5.6	0.46	31	0.4	1.13	0.008	0.075	0.003	<0.05	5.8	0.93	0.34	5.2	0.8
R982359		1	7.3	0.71	20	0.6	0.29	0.016	0.014	0.001	<0.05	5.4	0.85	0.22	2.7	<0.5
R982360		<1	8.2	0.79	40	0.7	0.40	<0.005	0.023	0.002	<0.05	6.1	1.19	0.19	4.4	0.9
R982361		<1	17.1	1.68	47	3.4	0.15	<0.005	0.032	0.002	0.07	1.6	0.10	0.10	0.6	<0.5
R982362		1	17.1	1.73	39	0.4	0.05	<0.005	0.014	0.001	<0.05	1.5	0.12	0.13	0.6	0.6
R982363		<1	12.6	1.27	84	0.4	0.02	<0.005	0.008	<0.001	<0.05	<0.2	<0.01	0.10	<0.5	<0.5
R982364		1	7.7	0.67	44	0.6	0.01	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	0.05	<0.5	<0.5
R982365		1	4.7	0.42	25	0.4	0.02	<0.005	0.006	0.001	<0.05	0.5	0.01	0.03	<0.5	<0.5
R982366		3	13.1	1.12	96	4.3	1.01	0.009	0.067	0.005	0.39	5.1	0.83	0.10	1.9	0.9
R982367		1	5.7	0.57	12	0.2	2.56	0.006	0.023	0.001	<0.05	7.9	1.32	0.10	4.6	0.7
R982368		1	6.2	0.55	7	0.1	1.07	<0.005	0.012	0.002	<0.05	2.7	0.51	0.08	2.2	0.6
R982369		1	6.2	0.58	25	0.1	0.04	<0.005	0.009	<0.001	<0.05	0.5	0.07	0.02	<0.5	<0.5
R982370		<1	6.4	0.68	25	<0.1	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	0.02	<0.5	<0.5
R982371		1	3.7	0.40	17	<0.1	0.36	<0.005	0.007	0.001	<0.05	0.9	0.28	0.06	0.6	<0.5
R982372		4	4.9	0.51	13	<0.1	0.58	<0.005	0.005	<0.001	<0.05	0.4	0.16	0.05	<0.5	<0.5
R982373		1	8.0	0.87	30	<0.1	0.03	<0.005	0.006	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5
R982374		<1	12.7	0.99	19	0.2	0.01	<0.005	0.016	<0.001	<0.05	<0.2	0.02	0.02	<0.5	<0.5
R982375		1	10.3	0.93	15	0.3	0.02	<0.005	0.017	<0.001	<0.05	<0.2	0.02	0.02	<0.5	<0.5
R982376		1	10.9	0.72	15	0.7	0.03	<0.005	0.011	<0.001	0.07	<0.2	0.01	0.02	<0.5	<0.5
R982377		<1	10.9	0.70	9	0.2	0.02	<0.005	0.008	0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
R982378		1	8.3	0.76	26	0.2	0.05	<0.005	0.014	<0.001	<0.05	0.3	0.01	0.02	<0.5	<0.5
R982379		1	0.9	0.12	<2	0.5	0.03	<0.005	<0.005	<0.001	0.08	0.4	<0.01	0.04	<0.5	<0.5
R982380		1	5.2	0.50	15	0.1	0.06	<0.005	0.007	0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
R982381		1	11.9	1.18	33	0.1	0.04	<0.005	0.006	<0.001	<0.05	0.2	0.02	<0.02	<0.5	<0.5
R982382		1	8.8	0.88	22	0.1	0.30	<0.005	0.006	<0.001	<0.05	<0.2	0.14	<0.02	<0.5	<0.5
R982383		1	7.5	0.74	16	1.4	0.47	<0.005	<0.005	0.010	<0.05	3.9	0.13	<0.02	0.5	<0.5
R982384		2	11.0	1.09	22	0.2	0.01	<0.005	0.005	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	<0.5
R982385		1	9.5	1.04	17	0.1	0.01	<0.005	0.005	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982386		1	9.7	0.91	20	0.1	0.01	<0.005	0.006	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982387		1	10.3	0.97	18	0.2	0.06	<0.005	0.008	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
R982388		1	10.0	1.10	29	0.2	0.01	<0.005	0.006	<0.001	<0.05	<0.2	0.01	0.02	<0.5	<0.5
R982389		3	13.8	1.29	108	3.9	0.79	0.008	0.066	0.006	0.30	5.5	0.57	0.09	1.9	0.8
R982390		<1	20.6	2.09	75	0.8	0.03	<0.005	0.017	<0.001	<0.05	0.3	0.02	0.09	<0.5	<0.5

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

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-AUG-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18176729

Sample Description	Method	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	PGM-ICP23	PGM-ICP23	PGM-ICP23	Se-MS46
	Analyte	Co	Cu	Li	Mo	Ni	Pb	Sc	Zn	Au	Pt	Pd	Se
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	1	1	10	1	1	2	1	2	0.001	0.005	0.001	0.003
R982351		<1	1	40	<1	<1	3	<1	53	<0.001	<0.005	<0.001	0.005
R982352		111	4440	20	4	4230	25	12	101	0.080	0.293	0.577	4.38
R982353		47	41	20	<1	219	<2	17	64	<0.001	<0.005	0.012	0.045
R982354		50	38	50	<1	237	3	20	74	0.002	<0.005	0.009	0.033
R982355		51	114	20	<1	352	11	10	66	0.022	0.095	0.543	0.180
R982356		92	88	20	1	204	2	17	112	<0.001	<0.005	0.003	0.118
R982357		88	109	30	<1	203	<2	7	94	<0.001	<0.005	0.001	0.156
R982358		134	5160	20	1	1615	7	14	96	0.158	0.364	2.14	5.18
R982359		129	4460	10	<1	1825	7	18	63	0.187	0.297	1.375	5.06
R982360		124	6350	20	<1	1540	12	15	81	0.340	0.314	1.040	5.48
R982361		82	983	10	1	245	5	24	165	0.021	0.005	0.023	1.275
R982362		97	876	10	1	246	7	33	158	0.033	0.007	0.008	1.255
R982363		33	15	30	<1	56	<2	18	84	0.007	<0.005	0.003	0.016
R982364		54	91	30	<1	133	6	5	70	<0.001	<0.005	<0.001	0.084
R982365		96	433	20	<1	68	3	19	94	0.001	<0.005	0.004	0.332
R982366		110	4370	20	5	4150	23	12	99	0.076	0.293	0.579	4.15
R982367		110	6890	10	<1	1830	3	23	76	0.112	0.314	3.00	6.81
R982368		67	3460	10	<1	732	<2	30	63	0.076	0.078	0.618	2.40
R982369		64	216	10	<1	245	4	29	56	0.008	0.022	0.013	0.371
R982370		50	22	20	<1	244	<2	30	74	<0.001	0.008	0.022	0.007
R982371		38	1170	20	<1	292	3	10	54	0.024	0.036	0.464	0.770
R982372		39	727	20	1	232	2	24	52	0.003	0.026	0.266	0.200
R982373		49	13	10	<1	131	<2	36	63	<0.001	<0.005	0.001	0.011
R982374		19	23	20	1	5	5	24	130	0.002	<0.005	0.001	0.037
R982375		20	43	10	<1	39	6	24	147	<0.001	<0.005	<0.001	0.076
R982376		18	21	20	1	5	4	18	147	<0.001	<0.005	0.001	0.036
R982377		39	38	20	<1	23	4	11	99	<0.001	<0.005	<0.001	0.086
R982378		64	103	30	<1	58	3	29	116	<0.001	<0.005	<0.001	0.193
R982379		<1	1	30	<1	<1	<2	<1	23	<0.001	<0.005	<0.001	0.003
R982380		64	41	40	<1	91	2	29	98	<0.001	<0.005	<0.001	0.075
R982381		58	6	10	<1	205	5	64	81	<0.001	0.013	0.011	0.006
R982382		64	61	10	<1	332	<2	53	125	<0.001	0.148	0.234	0.064
R982383		97	555	10	<1	1885	35	52	104	<0.001	0.070	0.158	3.17
R982384		57	55	10	<1	245	2	68	57	0.005	0.061	0.098	0.525
R982385		51	39	30	<1	209	2	59	73	0.006	0.061	0.090	0.044
R982386		56	39	10	<1	244	<2	67	56	0.018	0.053	0.101	0.040
R982387		53	77	20	<1	187	<2	55	66	0.002	0.057	0.069	0.087
R982388		49	74	20	<1	151	<2	48	66	0.008	0.032	0.043	0.103
R982389		112	4340	20	4	4190	23	12	99	0.073	0.294	0.605	4.01
R982390		36	50	20	1	57	3	18	102	<0.001	<0.005	0.003	0.135

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

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-AUG-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18176729

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Thunder Bay located at 645 Norah Crescent, Thunder Bay, ON, Canada

Applies to Method:				
	CRU-31	CRU-QC	LOG-21	LOG-23
	PUL-31	PUL-QC	SPL-21	WEI-21

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:				
	C-IR07	ME-4ACD81	ME-ICP06	ME-MS42
	ME-MS81	OA-GRA05	PGM-ICP23	Se-MS46
	S-IR08	TOT-ICP06		

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

CERTIFICATE TB18203471

Project: Gfields

P.O. No.: 178845

This report is for 98 Rock samples submitted to our lab in Thunder Bay, ON, Canada on 20-AUG-2018.

The following have access to data associated with this certificate:

DAVID BENSON	LIONNEL DJON	JILL MAXWELL
DAVE PECK	KATHRYN STINSON	LDIM WEBTRIEVE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
LOG-21	Sample logging - ClientBarCode
PUL-31	Pulverize split to 85% <75 um
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
LOG-23	Pulp Login - Rcvd with Barcode

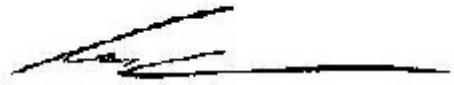
ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
C-IR07	Total Carbon (Leco)	LECO
S-IR08	Total Sulphur (Leco)	LECO
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES
Cu-OG62	Ore Grade Cu - Four Acid	
Ni-OG62	Ore Grade Ni - Four Acid	
PGM-ICP23	Pt, Pd, Au 30g FA ICP	ICP-AES
Se-MS46	Super Trace Se 25g AR by ICP-MS	ICP-MS

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

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

Signature:



Colin Ramshaw, Vancouver Laboratory Manager

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THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
R982251		3.13	47.6	11.35	11.95	9.87	12.90	1.29	0.58	0.134	0.21	0.19	0.02	0.02	0.01	3.07
R982252		3.18	51.3	3.75	10.10	16.00	16.65	0.42	0.13	0.131	0.33	0.20	0.02	<0.01	<0.01	1.65
R982253		0.09	47.1	12.60	20.6	6.31	6.61	2.19	0.64	0.034	1.27	0.20	0.17	0.03	0.02	1.23
R982254		2.37	51.3	4.71	11.45	14.25	16.10	0.57	0.27	0.114	0.33	0.23	0.01	0.01	0.01	0.83
R982255		3.04	52.2	4.36	11.15	14.35	16.80	0.54	0.29	0.161	0.32	0.21	0.03	0.01	0.01	1.28
R982256		1.32	52.0	8.11	9.66	13.80	14.55	0.77	0.90	0.095	0.32	0.21	0.01	0.02	0.04	0.88
R982257		2.07	52.0	5.07	10.65	15.40	15.70	0.65	0.25	0.113	0.38	0.22	0.03	0.01	0.01	0.35
R982258		1.72	52.0	6.92	9.49	14.65	14.60	0.87	0.64	0.098	0.32	0.20	0.02	0.01	0.02	1.66
R982259		1.67	52.9	4.99	10.70	14.00	15.25	0.79	0.25	0.102	0.36	0.23	0.02	0.01	<0.01	1.69
R982260		2.40	51.2	4.82	10.45	15.05	15.70	0.56	0.27	0.124	0.37	0.19	0.02	0.01	0.01	2.20
R982261		2.15	51.9	5.32	10.10	15.25	15.65	0.69	0.26	0.107	0.37	0.21	0.03	0.01	0.01	1.82
R982262		2.31	51.1	16.75	7.26	10.00	7.95	2.54	1.54	0.053	0.24	0.14	0.03	0.06	0.04	2.50
R982263		1.67	50.7	16.90	7.64	10.00	8.33	2.42	1.35	0.078	0.26	0.14	0.03	0.06	0.04	2.74
R982264		2.98	48.4	13.40	11.20	10.50	11.20	1.62	0.80	0.093	0.21	0.18	0.02	0.04	0.02	2.97
R982265		1.70	52.0	5.30	10.25	15.60	15.60	0.68	0.31	0.110	0.35	0.22	0.03	0.01	0.01	0.83
R982266		1.51	50.3	4.65	11.60	10.90	20.1	0.32	0.09	0.181	0.26	0.25	0.03	<0.01	<0.01	3.02
R982267		1.84	52.4	3.81	9.56	13.80	18.75	0.32	0.07	0.286	0.30	0.21	0.02	<0.01	<0.01	2.26
R982268		0.15	33.3	10.30	25.5	4.97	6.73	1.61	0.36	0.049	0.88	0.14	0.11	0.02	0.01	7.01
R982269		1.28	21.6	0.19	0.16	27.5	21.0	0.10	0.09	<0.002	0.01	0.05	<0.01	0.01	0.01	29.6
R982270		0.09	48.0	12.85	21.0	6.41	6.73	2.25	0.65	0.035	1.28	0.20	0.17	0.03	0.02	1.30
R982271		1.52	51.9	4.97	11.40	11.80	17.30	0.59	0.16	0.139	0.29	0.24	<0.01	<0.01	<0.01	2.22
R982272		2.09	50.8	5.44	10.15	14.95	15.30	0.71	0.39	0.102	0.37	0.21	0.04	0.01	0.01	1.13
R982273		2.02	50.0	5.93	10.00	14.95	15.10	0.74	0.39	0.115	0.36	0.19	0.02	0.01	0.01	1.80
R982274		1.58	51.8	7.14	9.46	13.60	14.15	1.10	0.19	0.091	0.32	0.21	0.02	0.02	<0.01	1.83
R982275		1.96	50.1	7.35	9.69	14.10	14.00	0.89	0.43	0.091	0.32	0.21	0.03	0.02	0.01	1.71
R982276		1.94	51.3	4.57	10.50	15.45	15.75	0.60	0.21	0.110	0.37	0.22	0.03	0.01	<0.01	0.58
R982277		2.00	50.9	7.66	9.80	14.20	14.35	0.73	0.78	0.094	0.31	0.21	0.02	0.02	0.02	0.52
R982278		1.40	50.5	7.44	9.65	13.90	14.15	0.98	0.41	0.090	0.31	0.21	0.02	0.02	0.01	1.87
R982279		2.51	50.4	7.30	9.31	14.10	13.95	0.88	0.40	0.090	0.32	0.20	0.02	0.02	0.01	1.70
R982280		2.02	50.6	7.62	9.73	13.85	14.40	0.77	0.78	0.091	0.33	0.20	0.02	0.02	0.03	0.51
R982281		1.57	51.8	7.57	9.94	14.70	14.55	0.79	0.74	0.096	0.34	0.22	0.01	0.02	0.02	0.59
R982282		2.13	51.7	4.73	10.55	15.55	15.45	0.63	0.19	0.106	0.37	0.22	0.02	0.01	0.01	0.10
R982283		1.44	51.0	7.29	9.63	14.35	14.30	0.76	0.30	0.092	0.32	0.21	0.02	0.02	0.01	2.05
R982284		1.80	52.0	7.50	10.00	14.65	14.45	0.76	0.62	0.096	0.32	0.21	0.02	0.02	0.01	0.42
R982285		1.62	50.5	10.45	8.57	13.05	12.60	0.88	0.66	0.074	0.27	0.18	0.02	0.03	0.02	2.21
R982286		1.29	51.6	5.99	10.65	14.40	14.75	0.50	0.17	0.113	0.35	0.22	0.02	0.02	<0.01	1.81
R982287		1.88	52.0	5.52	10.15	14.60	15.15	0.60	0.20	0.121	0.37	0.22	0.03	0.01	<0.01	1.63
R982288		0.15	33.4	10.00	25.2	4.94	6.64	1.58	0.37	0.050	0.87	0.14	0.11	0.02	0.01	6.99
R982391		1.16	19.70	0.16	0.15	26.0	20.8	0.04	0.07	<0.002	0.01	0.05	0.01	0.01	0.01	31.4
R982392		0.09	47.1	12.45	20.4	6.15	6.55	2.16	0.63	0.034	1.24	0.19	0.15	0.03	0.02	1.32

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

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
	Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.01	0.01	0.5	0.1	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2	0.01
R982251		99.19	0.02	0.68	144.0	3.5	900	0.58	0.84	0.47	0.37	10.7	0.99	<5	0.4	0.20
R982252		100.68	0.18	0.08	39.2	8.2	1010	0.84	1.58	0.94	0.53	6.6	2.21	<5	0.6	0.36
R982253		99.00	0.08	1.76	237	28.5	220	0.97	2.67	1.49	1.05	17.2	3.00	<5	2.4	0.51
R982254		100.18	0.06	0.49	73.3	6.8	860	0.48	1.86	0.85	0.49	7.0	1.91	<5	0.6	0.34
R982255		101.71	0.17	0.25	74.6	7.3	1310	1.23	1.77	0.91	0.48	7.9	1.89	<5	0.6	0.32
R982256		101.37	0.03	0.02	343	7.8	650	2.12	1.77	0.96	0.41	9.4	1.54	<5	0.7	0.34
R982257		100.83	0.02	0.03	71.4	8.5	740	1.20	2.05	1.22	0.49	8.0	2.14	<5	0.8	0.38
R982258		101.50	0.03	0.02	165.5	6.5	630	0.80	1.76	0.88	0.48	8.6	1.94	<5	0.7	0.34
R982259		101.29	0.12	0.05	39.6	11.0	770	0.29	2.00	1.20	0.55	9.5	2.21	<5	1.0	0.38
R982260		100.97	0.02	0.13	67.3	7.8	800	1.24	1.75	1.01	0.52	7.8	2.07	<5	0.8	0.38
R982261		101.73	0.04	0.02	52.4	7.8	810	0.49	1.92	1.05	0.50	8.6	2.00	<5	0.7	0.37
R982262		100.20	0.03	0.01	413	6.4	350	4.29	1.07	0.72	0.47	17.2	1.05	<5	0.5	0.21
R982263		100.69	0.02	0.02	417	7.7	500	4.05	1.06	0.65	0.51	13.8	1.15	<5	0.7	0.20
R982264		100.65	0.01	0.75	231	3.9	590	2.08	0.93	0.41	0.26	12.0	0.84	<5	0.2	0.14
R982265		101.30	0.04	0.02	73.3	7.7	860	0.68	1.63	1.07	0.61	7.7	2.14	<5	0.7	0.36
R982266		101.70	0.09	0.03	15.2	5.5	1440	0.24	1.34	0.84	0.41	7.0	1.41	<5	0.6	0.26
R982267		101.79	0.13	0.04	14.7	6.1	2230	0.14	1.35	0.81	0.49	6.6	1.78	<5	0.6	0.30
R982268		90.99	0.10	9.12	138.5	17.8	350	0.77	1.80	1.07	0.75	12.5	2.02	<5	1.6	0.39
R982269		100.32	8.19	<0.01	123.5	1.9	10	1.50	0.15	0.07	<0.03	0.4	0.07	<5	<0.2	0.02
R982270		100.93	0.08	1.75	230	26.5	220	0.95	2.47	1.49	1.00	15.3	2.64	<5	2.4	0.44
R982271		101.01	0.08	0.07	24.2	5.7	1110	0.24	1.42	0.84	0.41	7.3	1.50	<5	0.6	0.27
R982272		99.61	0.05	0.04	107.5	8.6	690	0.79	1.92	1.10	0.50	8.5	1.96	<5	0.7	0.42
R982273		99.62	0.03	0.02	113.5	8.2	780	0.65	2.08	1.23	0.46	8.9	2.32	<5	0.8	0.35
R982274		99.93	0.07	0.03	19.6	7.2	720	0.18	1.62	1.08	0.52	9.8	1.91	<5	0.7	0.32
R982275		98.95	0.08	0.01	89.4	6.6	590	0.74	1.71	0.95	0.49	9.1	1.50	<5	0.5	0.32
R982276		99.70	0.02	0.02	41.6	7.4	850	0.63	2.11	1.08	0.57	8.3	2.10	<5	0.7	0.38
R982277		99.61	0.02	0.02	226	6.8	630	2.05	1.74	0.91	0.46	9.5	1.56	<5	0.7	0.32
R982278		99.56	0.08	0.02	68.6	6.8	720	0.56	1.59	0.90	0.51	9.4	1.74	<5	0.6	0.36
R982279		98.70	0.08	0.02	87.0	7.5	590	0.51	1.61	0.96	0.44	8.7	1.77	<5	0.7	0.35
R982280		98.95	0.02	0.02	345	7.7	640	2.32	1.85	1.17	0.52	9.8	1.80	<5	0.7	0.37
R982281		101.39	0.02	0.02	172.5	6.4	580	1.75	1.65	1.03	0.38	8.5	1.62	<5	0.5	0.31
R982282		99.64	0.01	0.02	56.8	7.2	750	0.35	1.98	1.18	0.49	7.7	1.92	<5	0.8	0.45
R982283		100.35	0.01	0.01	44.0	6.6	660	0.34	1.76	1.02	0.53	9.0	1.74	<5	0.7	0.36
R982284		101.08	0.04	<0.01	131.5	6.3	670	1.88	1.68	1.05	0.57	9.2	1.81	<5	0.7	0.36
R982285		99.51	0.04	0.02	146.5	7.7	530	1.19	1.60	0.89	0.48	10.9	1.47	<5	0.6	0.28
R982286		100.59	0.10	0.01	27.5	7.7	800	0.16	1.70	1.13	0.52	9.1	2.08	<5	0.7	0.39
R982287		100.60	0.07	0.02	21.1	7.7	870	0.22	1.69	1.01	0.42	8.6	2.06	<5	0.6	0.35
R982288		90.32	0.09	9.00	116.5	14.8	360	0.76	1.75	1.02	0.78	12.0	1.73	<5	1.6	0.36
R982391		98.41	8.61	<0.01	123.0	0.9	<10	0.43	<0.05	0.06	<0.03	0.5	0.05	<5	<0.2	0.02
R982392		98.42	0.08	1.68	212	24.9	240	0.92	2.57	1.44	1.12	14.9	2.70	<5	2.2	0.57

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.1	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
R982251		1.2	0.09	<0.2	3.0	0.55	24.0	1.18	4	190.5	<0.1	0.18	0.10	0.08	<0.05	156
R982252		3.0	0.11	1.4	6.4	1.30	5.5	2.06	<1	43.6	0.4	0.30	0.34	0.13	0.06	191
R982253		12.7	0.19	7.3	16.2	3.56	16.6	3.79	5	261	0.4	0.40	1.78	0.16	0.44	116
R982254		2.5	0.14	0.7	6.2	1.15	9.4	1.80	<1	70.9	0.2	0.28	0.21	0.15	0.07	217
R982255		2.9	0.12	0.7	6.3	1.25	11.7	2.01	<1	58.6	0.2	0.26	0.29	0.16	0.07	209
R982256		2.8	0.13	0.6	6.7	1.28	37.1	2.18	2	136.0	<0.1	0.22	0.23	0.12	0.10	263
R982257		3.1	0.16	0.7	7.4	1.45	7.6	1.93	2	70.0	<0.1	0.27	0.35	0.16	0.08	287
R982258		2.4	0.12	0.5	6.2	1.12	23.4	1.93	2	108.0	<0.1	0.26	0.28	0.14	0.12	253
R982259		4.4	0.16	1.0	7.7	1.59	5.9	2.09	1	72.7	0.2	0.33	0.59	0.16	0.44	273
R982260		2.9	0.13	0.5	6.7	1.29	10.3	1.87	<1	47.8	0.2	0.36	0.34	0.19	0.10	239
R982261		3.0	0.15	0.6	6.1	1.25	7.4	2.05	<1	65.7	0.2	0.35	0.28	0.17	0.09	266
R982262		2.8	0.05	0.5	4.5	0.89	63.7	1.00	2	475	<0.1	0.17	0.19	0.09	0.05	157
R982263		3.5	0.08	0.6	5.2	1.12	49.5	1.28	1	455	<0.1	0.14	0.36	0.09	0.10	137
R982264		1.6	0.06	0.2	2.9	0.54	28.4	0.82	1	272	<0.1	0.10	0.12	0.10	<0.05	138
R982265		2.9	0.13	0.5	6.3	1.23	10.6	1.78	1	82.7	0.2	0.29	0.27	0.15	0.10	274
R982266		2.3	0.10	0.5	4.5	0.97	2.3	1.29	<1	43.1	0.3	0.26	0.25	0.12	0.07	171
R982267		2.1	0.12	0.5	5.3	1.01	0.8	1.58	<1	28.1	0.2	0.29	0.26	0.13	<0.05	178
R982268		7.6	0.14	5.2	10.2	2.33	11.5	2.37	9	194.0	0.3	0.27	1.10	0.15	0.38	81
R982269		1.5	0.01	0.5	0.6	0.20	5.5	0.11	1	118.0	<0.1	0.01	0.17	0.02	0.21	<5
R982270		11.7	0.18	6.4	14.9	3.44	16.1	2.92	4	261	0.4	0.35	1.49	0.19	0.43	113
R982271		2.5	0.11	0.6	4.9	0.98	3.1	1.36	<1	55.0	0.2	0.24	0.32	0.12	0.11	198
R982272		2.9	0.15	0.5	7.5	1.49	14.5	2.32	1	78.3	<0.1	0.25	0.28	0.16	0.19	285
R982273		2.8	0.12	0.5	6.8	1.32	14.0	2.20	1	73.4	<0.1	0.27	0.25	0.16	0.09	278
R982274		3.2	0.10	0.6	6.0	1.23	4.9	1.51	<1	184.0	0.2	0.32	0.30	0.16	0.09	249
R982275		2.6	0.11	0.4	6.0	1.17	13.1	1.83	1	134.0	<0.1	0.23	0.20	0.13	0.14	253
R982276		2.9	0.14	0.5	6.3	1.28	6.5	1.87	<1	54.6	0.2	0.34	0.39	0.18	0.09	287
R982277		2.5	0.10	0.4	6.1	1.02	31.0	1.75	1	156.5	<0.1	0.26	0.25	0.11	0.07	257
R982278		2.8	0.11	0.5	5.7	1.12	10.4	1.50	<1	153.5	0.2	0.32	0.27	0.14	0.13	263
R982279		2.6	0.13	0.6	6.4	1.21	12.1	2.10	1	164.0	<0.1	0.27	0.41	0.13	0.16	243
R982280		2.6	0.16	0.4	6.6	1.15	33.7	1.98	2	162.0	<0.1	0.26	0.22	0.17	0.07	267
R982281		2.1	0.11	0.4	5.9	1.06	27.2	1.67	<1	141.5	<0.1	0.26	0.23	0.15	0.06	251
R982282		2.5	0.15	0.4	6.5	1.24	5.2	2.20	1	63.4	<0.1	0.33	0.30	0.16	0.08	318
R982283		2.4	0.13	0.4	5.2	0.97	8.6	1.73	1	173.0	<0.1	0.27	0.23	0.13	0.08	273
R982284		2.2	0.14	0.4	5.3	0.99	23.5	1.79	1	156.5	<0.1	0.26	0.22	0.15	0.05	286
R982285		3.3	0.11	0.7	5.7	1.15	28.0	1.35	1	267	0.1	0.24	0.44	0.09	0.14	213
R982286		3.1	0.15	0.5	6.7	1.32	3.2	1.87	1	119.5	<0.1	0.30	0.31	0.14	0.07	285
R982287		2.8	0.10	0.5	6.2	1.22	4.6	1.75	1	88.1	0.2	0.29	0.30	0.13	0.14	248
R982288		6.7	0.12	5.0	9.1	1.82	10.1	1.93	5	172.5	0.3	0.30	1.09	0.14	0.40	83
R982391		0.7	0.01	0.2	0.5	0.11	2.2	0.06	<1	114.0	<0.1	0.01	0.17	<0.01	0.22	6
R982392		11.1	0.21	7.2	12.5	3.07	15.8	3.47	4	248	0.4	0.45	1.54	0.23	0.47	118

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
	Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	1	0.1	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
R982251		1	5.1	0.60	7	0.2	0.36	<0.005	0.008	0.002	<0.05	1.8	0.35	0.03	1.7	0.9
R982252		<1	9.5	0.91	17	0.2	0.01	<0.005	<0.005	0.001	<0.05	<0.2	0.01	0.02	<0.5	1.0
R982253		4	13.5	1.36	92	3.9	0.87	0.010	0.064	0.006	0.37	5.4	0.73	0.11	1.9	1.6
R982254		<1	8.8	0.91	17	0.3	0.01	<0.005	<0.005	0.002	<0.05	1.2	0.04	0.05	<0.5	1.2
R982255		<1	9.5	1.01	20	0.2	0.04	<0.005	0.005	0.001	<0.05	0.6	0.08	0.04	<0.5	0.9
R982256		1	9.0	0.91	18	0.1	0.01	<0.005	<0.005	<0.001	<0.05	0.2	0.01	0.03	<0.5	0.8
R982257		1	10.0	0.86	22	0.1	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.03	<0.5	1.0
R982258		1	9.1	0.78	16	0.2	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.02	0.02	<0.5	0.9
R982259		4	11.1	1.20	33	0.1	0.06	<0.005	0.005	<0.001	<0.05	<0.2	0.04	<0.02	<0.5	1.1
R982260		<1	10.1	0.97	21	0.2	0.06	<0.005	0.007	<0.001	<0.05	0.5	0.10	0.03	<0.5	1.0
R982261		1	10.5	0.93	22	0.1	0.03	<0.005	0.005	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	0.9
R982262		1	5.6	0.51	14	<0.1	0.03	<0.005	<0.005	0.001	<0.05	<0.2	0.01	0.03	<0.5	<0.5
R982263		1	5.4	0.56	22	<0.1	0.03	<0.005	0.006	<0.001	<0.05	<0.2	0.01	0.03	<0.5	0.7
R982264		1	4.2	0.55	8	0.2	0.45	<0.005	0.009	0.001	<0.05	1.8	0.32	0.03	1.0	0.9
R982265		<1	10.2	0.92	23	0.2	0.01	<0.005	0.005	<0.001	<0.05	0.2	0.01	0.02	<0.5	0.8
R982266		<1	7.4	0.66	17	0.3	0.07	<0.005	0.006	<0.001	0.20	0.2	0.04	<0.02	<0.5	1.1
R982267		1	8.2	0.87	19	0.4	0.02	<0.005	0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	0.9
R982268		3	9.9	0.82	68	14.1	0.94	0.152	0.109	0.023	2.76	23.4	4.78	0.16	4.1	3.7
R982269		1	0.9	0.11	3	1.2	0.02	<0.005	<0.005	<0.001	0.10	0.2	<0.01	0.12	<0.5	<0.5
R982270		3	12.9	1.18	92	4.9	0.78	0.006	0.071	0.006	0.44	5.4	0.67	0.10	1.9	2.0
R982271		<1	7.3	0.60	19	0.1	0.10	<0.005	0.005	<0.001	<0.05	0.2	0.05	<0.02	<0.5	0.8
R982272		1	10.6	1.02	21	0.1	0.02	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	0.02	<0.5	1.0
R982273		1	10.2	0.95	21	0.1	<0.01	<0.005	0.005	<0.001	<0.05	<0.2	0.01	0.02	<0.5	0.9
R982274		1	9.3	0.95	22	<0.1	0.07	<0.005	<0.005	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	0.9
R982275		1	8.7	0.75	17	<0.1	0.03	<0.005	0.005	<0.001	<0.05	<0.2	0.02	0.02	<0.5	1.0
R982276		<1	10.7	1.01	23	<0.1	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5
R982277		1	8.8	0.81	17	0.1	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	0.03	<0.5	<0.5
R982278		<1	9.0	0.85	19	0.2	0.03	<0.005	<0.005	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	<0.5
R982279		1	8.6	0.88	19	0.1	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982280		1	9.5	0.85	19	<0.1	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	0.02	<0.5	<0.5
R982281		<1	8.4	0.79	16	0.2	0.01	<0.005	<0.005	<0.001	0.19	0.4	0.01	0.02	<0.5	<0.5
R982282		<1	10.6	1.22	23	<0.1	<0.01	<0.005	<0.005	<0.001	<0.05	0.3	0.01	0.02	<0.5	<0.5
R982283		<1	8.7	0.83	21	0.2	0.03	<0.005	<0.005	<0.001	<0.05	0.3	0.02	<0.02	<0.5	<0.5
R982284		1	9.2	0.94	19	0.1	<0.01	<0.005	<0.005	<0.001	<0.05	0.3	0.01	0.03	<0.5	<0.5
R982285		1	7.6	0.83	22	<0.1	0.01	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
R982286		1	9.4	1.10	20	0.1	0.05	<0.005	<0.005	<0.001	<0.05	0.3	0.02	<0.02	<0.5	<0.5
R982287		2	9.3	0.88	21	0.1	0.05	<0.005	0.005	<0.001	<0.05	0.3	0.04	<0.02	<0.5	<0.5
R982288		3	9.1	1.06	68	13.1	0.99	0.141	0.096	0.019	2.37	20.4	4.07	0.15	3.8	2.2
R982391		2	0.5	0.03	3	1.2	0.05	<0.005	<0.005	<0.001	0.13	1.1	0.01	0.06	<0.5	<0.5
R982392		4	12.6	1.30	95	4.1	0.78	0.012	0.062	0.005	0.36	5.1	0.45	0.10	2.1	0.7

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THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
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CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62	PGM-ICP23	PGM-ICP23	PGM-ICP23	Se-MS46
	Analyte	Co	Cu	Li	Mo	Ni	Pb	Sc	Zn	Cu	Ni	Au	Pt	Pd	Se
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
	LOD	1	1	10	1	1	2	1	2	0.001	0.001	0.001	0.005	0.001	0.003
R982251		104	2680	20	<1	1080	13	31	82			0.157	0.234	1.710	1.610
R982252		66	81	10	<1	201	2	59	63			<0.001	0.031	0.027	0.133
R982253		122	4760	20	5	4700	25	13	113			0.138	0.308	0.578	4.46
R982254		90	536	10	<1	587	<2	65	69			0.014	0.171	0.121	1.075
R982255		76	480	10	<1	392	<2	59	70			0.052	0.127	0.121	0.624
R982256		56	59	20	<1	228	<2	64	59			0.008	0.036	0.063	0.063
R982257		62	34	10	<1	249	<2	73	64			0.007	0.041	0.077	0.051
R982258		56	40	20	<1	233	<2	66	56			0.006	0.044	0.074	0.038
R982259		57	27	10	<1	256	<2	71	101			0.001	0.050	0.094	0.044
R982260		70	389	20	<1	337	2	68	71			0.031	0.055	0.060	0.404
R982261		59	31	30	<1	255	4	70	68			0.002	0.048	0.085	0.040
R982262		36	10	30	1	144	<2	27	66			<0.001	0.005	0.003	0.020
R982263		38	20	30	3	169	<2	25	60			<0.001	<0.005	0.003	0.018
R982264		83	2070	40	<1	904	2	24	76			0.062	0.245	1.580	1.605
R982265		58	34	20	<1	236	4	71	58			0.001	0.057	0.097	0.041
R982266		85	145	10	<1	357	2	50	95			0.023	0.794	0.999	0.128
R982267		68	119	10	<1	234	6	50	86			0.007	0.010	0.005	0.086
R982268		974	>10000	10	3	>10000	13	8	140	1.615	4.64	0.293	0.823	3.39	17.95
R982269		<1	16	40	<1	41	2	<1	46			<0.001	<0.005	<0.001	0.011
R982270		120	4720	20	4	4590	23	13	113			0.060	0.300	0.611	4.50
R982271		72	104	10	<1	313	<2	53	78			0.009	0.092	0.126	0.135
R982272		60	45	20	<1	257	<2	71	64			0.004	0.044	0.083	0.063
R982273		59	39	30	1	256	<2	70	63			0.004	0.062	0.083	0.053
R982274		55	3	10	<1	226	3	63	74			0.001	0.039	0.065	0.015
R982275		59	19	20	1	244	<2	68	82			0.002	0.038	0.076	0.022
R982276		60	38	10	<1	243	3	73	61			0.002	0.040	0.074	0.040
R982277		51	36	20	<1	209	2	60	52			0.008	0.045	0.079	0.050
R982278		51	17	10	<1	211	3	60	71			0.002	0.045	0.076	0.025
R982279		49	32	10	<1	199	<2	57	53			0.003	0.034	0.065	0.037
R982280		53	50	20	<1	215	<2	62	53			0.006	0.045	0.079	0.058
R982281		53	33	20	<1	215	<2	63	53			0.001	0.043	0.071	0.056
R982282		59	48	10	<1	239	<2	71	57			0.006	0.052	0.088	0.066
R982283		53	37	10	<1	215	3	62	56			0.004	0.045	0.073	0.020
R982284		54	42	20	<1	207	<2	61	52			0.006	0.046	0.075	0.056
R982285		47	6	20	<1	182	<2	49	58			0.001	0.021	0.027	0.006
R982286		54	16	10	<1	203	<2	62	71			<0.001	0.043	0.043	0.014
R982287		54	33	10	<1	246	<2	65	68			0.003	0.062	0.107	0.032
R982288		929	>10000	10	4	>10000	15	8	130	1.620	4.68	0.274	0.815	3.42	17.35
R982391		1	12	20	<1	26	7	<1	25			<0.001	<0.005	<0.001	0.007
R982392		114	4450	20	5	4370	22	12	103			0.047	0.292	0.590	4.17

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

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
R982393		1.40	50.4	19.20	13.60	7.29	2.07	4.54	0.48	0.002	1.46	0.25	0.41	0.10	0.04	0.42
R982394		1.69	55.2	18.20	9.43	6.90	2.80	5.00	0.76	0.002	0.73	0.19	0.24	0.08	0.06	0.81
R982395		1.73	51.9	17.55	13.70	7.11	1.84	4.48	0.78	0.002	1.18	0.27	0.41	0.09	0.05	0.31
R982396		1.21	51.7	8.14	8.31	10.00	16.25	1.43	0.44	0.182	0.39	0.15	0.11	0.02	0.01	2.73
R982397		1.32	60.2	15.05	6.91	4.02	4.38	4.16	2.20	0.011	0.54	0.10	0.21	0.05	0.05	2.23
R982398		1.57	48.6	11.05	11.15	9.64	11.65	1.85	1.53	0.128	0.92	0.18	0.54	0.07	0.08	2.22
R982399		2.01	51.7	8.69	8.89	9.04	15.45	1.18	0.87	0.281	0.30	0.14	0.09	0.01	0.03	2.40
R982400		2.51	49.4	7.27	10.95	11.35	15.35	1.23	0.63	0.216	0.65	0.18	0.25	0.01	0.01	1.35
R982401		2.03	51.5	7.27	8.62	9.54	17.25	1.26	1.16	0.312	0.46	0.15	0.09	0.02	0.03	1.66
R982402		2.24	52.6	6.59	8.30	9.35	17.15	1.32	0.76	0.300	0.47	0.15	0.07	0.02	0.02	1.94
R982403		1.64	49.3	18.15	7.64	9.66	6.69	3.35	1.56	0.048	0.71	0.11	0.28	0.10	0.04	1.83
R982404		1.68	49.5	11.55	9.80	9.80	12.30	2.05	0.90	0.243	0.55	0.18	0.18	0.05	0.02	1.91
R982405		1.56	51.6	16.80	7.68	7.46	6.49	3.08	2.92	0.046	0.76	0.10	0.32	0.08	0.12	2.01
R982406		1.60	52.4	15.15	7.29	7.04	7.60	4.01	1.46	0.072	0.61	0.12	0.27	0.06	0.04	2.01
R982407		1.61	49.7	11.10	9.43	10.25	12.00	2.07	0.93	0.149	0.62	0.15	0.20	0.05	0.05	1.54
R982408		1.56	48.1	7.75	8.10	13.95	15.95	0.64	0.35	0.316	0.41	0.15	0.11	0.04	0.01	2.50
R982409		0.15	33.1	9.93	25.1	4.83	6.60	1.58	0.37	0.049	0.87	0.13	0.11	0.02	0.01	7.27
R982410		2.06	54.1	13.15	6.90	9.52	8.95	2.72	0.95	0.043	0.50	0.12	0.21	0.10	0.02	1.56
R982411		2.11	44.8	16.90	10.05	9.51	11.20	1.26	1.17	0.089	0.14	0.14	0.01	0.03	0.02	3.64
R982412		2.00	48.7	16.90	7.58	10.70	8.86	2.09	1.06	0.082	0.21	0.14	0.01	0.05	0.02	3.05
R982413		2.22	49.4	18.85	6.59	10.25	7.12	2.23	1.71	0.059	0.25	0.12	0.03	0.05	0.04	2.80
R982414		3.45	49.3	12.60	10.30	8.91	12.05	2.02	0.67	0.135	0.27	0.19	0.05	0.03	0.01	2.92
R982415		1.83	47.4	17.80	7.50	13.65	7.26	1.68	0.67	0.057	0.22	0.13	0.03	0.07	0.02	2.76
R982416		1.88	47.9	16.80	9.28	10.45	8.16	2.63	0.52	0.037	0.35	0.15	0.02	0.08	0.02	2.80
R982417		1.27	46.1	14.15	12.35	6.67	12.50	1.93	0.98	0.075	0.31	0.22	0.01	0.03	0.04	4.66
R982418		2.81	46.6	18.20	10.50	8.32	7.97	1.85	1.96	0.029	0.45	0.14	0.01	0.04	0.04	3.46
R982419		1.96	51.7	15.35	8.60	8.65	9.01	3.72	0.42	0.030	0.20	0.16	0.01	0.06	0.01	2.55
R982420		2.38	50.0	16.05	8.41	9.46	9.26	2.88	0.80	0.035	0.30	0.18	0.02	0.08	0.02	2.94
R982421		2.28	49.6	14.35	10.55	10.70	10.65	2.05	0.86	0.049	0.24	0.19	<0.01	0.03	0.02	2.49
R982422		2.27	49.4	17.55	8.32	11.55	8.46	1.62	1.61	0.043	0.22	0.16	<0.01	0.04	0.04	2.74
R982423		1.74	18.95	0.67	0.26	27.7	19.30	0.26	0.25	<0.002	0.01	0.05	<0.01	0.03	0.03	33.0
R982424		0.09	47.5	12.95	21.4	6.48	6.72	2.18	0.63	0.036	1.28	0.20	0.14	0.03	0.03	1.31
R982425		1.77	51.2	17.65	8.76	5.89	9.07	4.07	0.85	0.020	0.32	0.15	0.02	0.05	0.02	3.66
R982426		1.32	48.3	16.25	9.63	11.45	8.94	2.56	0.24	0.027	0.44	0.17	<0.01	0.16	0.01	3.09
R982427		1.16	47.3	17.50	11.15	7.37	8.84	2.73	1.37	0.021	0.53	0.17	<0.01	0.05	0.04	3.92
R982428		1.52	47.3	19.40	10.45	3.78	9.51	3.82	1.15	0.029	0.47	0.17	<0.01	0.04	0.03	4.76
R982429		1.84	49.2	9.64	9.79	13.55	13.50	0.99	0.11	0.078	0.33	0.21	0.01	0.08	0.04	2.65
R982430		1.99	46.0	14.10	9.81	17.30	9.92	0.42	0.06	0.036	0.19	0.20	<0.01	0.27	0.01	2.45
R982431		1.81	48.9	8.55	10.35	14.85	13.45	0.37	0.08	0.066	0.35	0.24	0.01	0.14	<0.01	2.13
R982432		2.00	45.7	16.85	9.71	18.30	7.55	0.52	0.10	0.024	0.33	0.20	0.01	0.29	0.01	2.35

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
	Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.01	0.01	0.5	0.1	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2	0.01
R982393		100.26	0.01	0.03	346	28.6	10	2.53	2.49	1.11	3.31	22.8	3.43	<5	0.6	0.45
R982394		100.40	0.01	0.01	559	33.8	10	0.66	2.22	1.40	2.04	21.6	2.98	<5	1.1	0.48
R982395		99.67	<0.01	0.02	456	44.9	10	1.97	3.26	1.76	3.53	22.3	4.79	<5	1.4	0.66
R982396		99.86	<0.01	0.01	121.0	26.2	1340	0.28	1.85	1.11	0.78	11.2	2.48	<5	1.7	0.40
R982397		100.11	<0.01	0.01	476	47.9	80	0.69	3.25	1.60	1.22	18.8	3.83	<5	4.2	0.63
R982398		99.61	<0.01	0.01	705	149.0	980	0.88	6.14	2.69	3.74	18.6	11.60	<5	6.9	1.16
R982399		99.07	<0.01	0.01	231	20.5	2050	0.72	1.15	0.80	0.55	10.7	1.76	<5	1.5	0.29
R982400		98.85	0.02	<0.01	112.5	58.3	1620	1.18	3.00	1.43	1.67	13.8	5.20	<5	2.6	0.53
R982401		99.32	0.01	0.01	251	35.8	2280	1.97	2.02	1.18	1.26	10.2	3.67	<5	1.6	0.40
R982402		99.04	0.02	0.03	210	34.2	2210	0.91	2.06	1.03	1.00	9.4	3.24	<5	2.2	0.34
R982403		99.47	0.04	0.01	326	54.7	340	1.75	3.06	1.50	1.88	21.9	5.11	<5	1.9	0.57
R982404		99.03	0.01	0.01	229	50.6	1810	2.85	2.38	1.17	1.27	16.4	3.32	<5	2.3	0.47
R982405		99.47	0.01	0.01	1105	73.2	330	4.72	3.10	1.59	1.89	21.8	5.48	<5	3.9	0.57
R982406		98.13	0.04	0.01	337	68.9	530	1.09	2.71	1.63	1.73	19.4	4.65	<5	3.3	0.51
R982407		98.24	<0.01	0.01	417	61.1	1120	0.88	2.86	1.52	1.77	15.4	4.82	<5	2.1	0.60
R982408		98.38	0.20	0.01	85.0	33.2	2310	0.59	1.94	0.76	1.17	9.0	3.53	<5	1.6	0.38
R982409		89.97	0.09	9.16	109.5	14.7	340	0.69	1.70	1.02	0.73	11.0	1.87	<5	1.6	0.38
R982410		98.84	0.01	0.02	222	56.5	310	1.76	3.25	1.89	1.33	14.6	4.24	<5	3.0	0.63
R982411		98.96	0.01	0.01	193.0	3.2	630	2.52	0.47	0.38	0.32	13.7	0.39	<5	<0.2	0.11
R982412		99.45	<0.01	0.01	201	4.8	580	1.55	0.86	0.50	0.44	15.9	0.90	<5	0.4	0.16
R982413		99.50	0.01	0.01	326	7.7	410	3.38	0.81	0.57	0.41	16.1	0.90	<5	0.5	0.17
R982414		99.46	0.01	0.01	127.0	9.4	970	0.88	0.92	0.69	0.42	11.9	1.19	<5	0.8	0.22
R982415		99.25	0.02	<0.01	149.0	6.3	390	2.08	0.67	0.50	0.42	16.6	0.76	<5	0.4	0.15
R982416		99.20	<0.01	0.07	216	5.0	260	1.25	0.70	0.46	0.33	15.7	0.93	<5	0.4	0.13
R982417		100.03	0.01	0.15	321	7.1	520	1.12	0.87	0.54	0.40	13.6	0.92	<5	0.3	0.19
R982418		99.57	0.02	<0.01	357	3.2	210	2.38	0.37	0.21	0.29	17.1	0.41	<5	<0.2	0.11
R982419		100.47	0.01	0.01	56.4	6.4	210	0.82	1.06	0.45	0.52	14.9	1.13	<5	0.3	0.23
R982420		100.44	<0.01	0.03	151.0	7.3	250	0.84	1.21	0.72	0.45	14.5	1.23	<5	0.5	0.24
R982421		101.78	0.03	0.02	154.0	4.3	350	1.42	0.94	0.50	0.35	13.9	0.83	<5	0.4	0.19
R982422		101.75	0.03	<0.01	364	4.2	300	5.03	1.00	0.65	0.43	15.1	0.97	<5	0.3	0.18
R982423		100.51	9.08	0.01	211	5.5	10	1.07	0.20	0.10	0.04	0.9	0.14	<5	<0.2	0.05
R982424		100.89	0.08	1.70	206	25.6	240	1.04	2.73	1.38	1.05	15.9	2.89	<5	2.2	0.54
R982425		101.73	0.02	0.01	144.5	7.4	140	0.59	0.89	0.50	0.38	13.4	0.88	<5	0.5	0.15
R982426		101.27	0.04	<0.01	44.2	4.2	180	0.14	0.92	0.51	0.42	16.5	0.87	<5	0.2	0.18
R982427		100.99	0.01	0.02	336	3.6	150	2.00	0.84	0.56	0.35	16.2	0.91	<5	0.2	0.16
R982428		100.91	0.01	0.03	243	3.1	200	1.23	0.73	0.45	0.28	15.7	0.76	<5	0.2	0.16
R982429		100.18	0.08	0.01	344	6.7	550	0.38	1.59	0.90	0.37	11.8	1.56	<5	0.6	0.30
R982430		100.77	0.07	<0.01	105.5	4.9	250	0.10	0.94	0.68	0.36	23.8	0.96	<5	0.4	0.20
R982431		99.49	0.04	<0.01	10.8	9.2	500	0.04	1.41	0.82	0.45	15.6	1.75	<5	0.6	0.28
R982432		101.94	0.04	<0.01	59.7	3.5	160	0.11	0.79	0.47	0.38	21.6	0.71	<5	0.2	0.18

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Finalized Date: 11-SEP-2018
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Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.1	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
R982393		12.3	0.11	5.7	19.1	3.92	11.7	3.88	1	853	0.3	0.42	0.53	0.13	0.15	24
R982394		16.1	0.21	6.5	18.9	4.37	14.1	4.31	<1	693	0.3	0.43	0.45	0.22	0.11	68
R982395		18.8	0.26	5.5	26.4	6.02	15.6	6.12	<1	726	0.4	0.67	1.07	0.23	0.73	44
R982396		10.3	0.21	3.0	14.6	3.63	12.2	3.22	1	141.0	0.2	0.38	1.86	0.17	0.35	102
R982397		20.0	0.24	6.5	26.2	6.20	62.5	5.62	1	398	0.4	0.61	3.13	0.24	0.81	100
R982398		57.1	0.29	13.6	87.4	20.4	37.8	17.40	2	578	0.6	1.34	3.46	0.35	0.78	188
R982399		10.0	0.12	2.5	11.0	2.75	27.4	2.09	1	113.0	0.1	0.23	2.18	0.11	0.38	109
R982400		19.7	0.18	6.2	37.1	8.62	11.1	7.49	1	111.0	0.3	0.60	0.96	0.20	0.24	205
R982401		11.9	0.13	3.8	25.9	5.46	27.5	5.15	1	175.0	0.2	0.39	1.15	0.16	0.25	131
R982402		11.4	0.10	4.0	21.3	4.82	18.2	4.74	1	181.0	0.2	0.43	1.41	0.14	0.29	131
R982403		20.4	0.16	4.2	36.7	8.12	39.4	7.47	1	855	0.2	0.64	0.56	0.20	0.10	154
R982404		19.0	0.20	4.6	27.0	6.95	21.2	5.29	1	444	0.2	0.45	0.54	0.19	0.18	171
R982405		28.1	0.19	5.3	42.6	10.15	86.6	8.54	1	686	0.3	0.64	3.30	0.17	0.81	137
R982406		27.8	0.17	5.5	39.0	9.37	42.8	7.73	1	526	0.3	0.59	1.62	0.19	0.43	132
R982407		21.4	0.18	5.2	39.2	8.93	21.4	7.36	1	387	0.3	0.59	0.81	0.21	0.24	173
R982408		13.7	0.10	2.5	22.0	4.67	7.0	4.23	1	327	0.1	0.46	0.99	0.13	0.28	150
R982409		6.5	0.12	4.9	7.9	1.94	9.7	1.75	2	164.5	0.3	0.28	0.96	0.10	0.32	77
R982410		24.3	0.24	4.6	31.1	7.30	24.7	6.16	2	809	0.2	0.60	2.17	0.26	0.58	114
R982411		1.6	0.04	<0.2	2.1	0.40	51.8	0.31	<1	259	<0.1	0.07	0.05	0.03	<0.05	83
R982412		2.1	0.07	0.5	3.2	0.71	43.4	0.73	1	396	<0.1	0.13	0.19	0.08	0.07	134
R982413		3.4	0.09	0.7	4.0	0.91	75.4	1.03	<1	417	0.1	0.15	0.40	0.06	0.12	122
R982414		4.4	0.11	1.5	5.0	1.23	30.1	1.11	<1	243	0.1	0.13	0.97	0.09	0.26	149
R982415		2.8	0.07	0.6	3.1	0.80	26.4	0.83	<1	566	<0.1	0.13	0.31	0.07	0.08	116
R982416		2.3	0.08	0.5	2.7	0.68	28.2	0.70	<1	638	0.1	0.16	0.24	0.06	0.05	242
R982417		3.6	0.07	0.6	4.3	0.97	37.1	1.00	<1	204	<0.1	0.13	0.80	0.10	<0.05	213
R982418		1.6	0.04	0.2	1.8	0.42	82.3	0.45	<1	317	<0.1	0.07	0.18	0.04	<0.05	368
R982419		3.2	0.06	0.2	4.3	0.89	20.3	1.10	<1	529	<0.1	0.16	0.29	0.08	0.25	149
R982420		3.3	0.09	0.6	5.0	1.04	31.6	1.16	<1	672	<0.1	0.21	0.45	0.11	0.21	173
R982421		1.9	0.07	0.3	3.1	0.66	30.1	0.77	2	284	<0.1	0.16	0.17	0.08	0.08	175
R982422		1.8	0.08	<0.2	3.3	0.68	68.6	0.96	<1	361	<0.1	0.18	0.07	0.06	<0.05	157
R982423		4.5	0.03	0.6	1.3	0.49	5.3	0.12	<1	260	<0.1	0.03	0.14	0.03	0.30	<5
R982424		11.4	0.15	7.1	14.1	3.17	15.9	2.65	5	251	0.4	0.46	1.47	0.21	0.48	122
R982425		4.2	0.06	0.6	4.0	0.96	33.6	1.05	<1	479	<0.1	0.15	0.44	0.06	0.09	221
R982426		2.4	0.09	0.9	3.1	0.61	7.7	0.87	1	1315	<0.1	0.16	0.14	0.08	0.38	294
R982427		1.8	0.07	0.2	3.1	0.55	52.1	0.97	<1	403	<0.1	0.12	0.13	0.07	<0.05	392
R982428		1.5	0.06	<0.2	2.4	0.46	41.8	0.95	<1	331	<0.1	0.13	<0.05	0.05	<0.05	352
R982429		2.5	0.10	0.6	5.5	1.06	1.2	1.65	<1	651	<0.1	0.25	0.26	0.11	0.14	256
R982430		2.9	0.09	0.5	3.6	0.78	0.6	0.88	1	2190	<0.1	0.17	0.14	0.06	0.17	201
R982431		5.2	0.12	0.9	6.8	1.42	0.5	1.59	1	1200	0.2	0.24	0.30	0.14	0.34	201
R982432		1.7	0.06	1.0	2.9	0.50	0.7	0.69	<1	2320	<0.1	0.12	0.14	0.05	0.20	269

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
	Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	1	0.1	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
R982393		1	11.1	0.79	22	0.4	0.08	<0.005	0.011	<0.001	<0.05	0.2	0.01	0.04	<0.5	<0.5
R982394		<1	11.9	1.21	56	0.2	0.01	<0.005	0.010	<0.001	<0.05	0.3	0.01	0.02	<0.5	<0.5
R982395		1	17.5	1.40	58	0.2	0.15	<0.005	0.017	<0.001	<0.05	0.4	0.02	0.07	<0.5	<0.5
R982396		1	10.1	1.05	51	0.1	0.02	<0.005	<0.005	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
R982397		<1	17.1	1.72	171	0.3	0.05	<0.005	0.009	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
R982398		1	28.6	2.21	304	0.3	0.02	<0.005	0.009	<0.001	<0.05	0.3	0.01	<0.02	<0.5	<0.5
R982399		1	6.9	0.75	49	<0.1	0.04	<0.005	<0.005	<0.001	<0.05	0.2	0.02	<0.02	<0.5	<0.5
R982400		1	14.6	1.13	68	0.1	0.02	<0.005	0.005	<0.001	<0.05	0.2	<0.01	0.04	<0.5	<0.5
R982401		<1	9.9	0.97	57	0.2	0.01	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	0.13	<0.5	<0.5
R982402		<1	9.3	0.73	75	0.3	0.03	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	0.07	<0.5	<0.5
R982403		<1	14.2	1.14	57	0.1	0.01	<0.005	0.007	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
R982404		<1	12.7	1.28	73	0.1	0.02	<0.005	<0.005	<0.001	<0.05	0.2	0.01	0.02	<0.5	<0.5
R982405		1	15.5	1.28	154	0.3	0.05	<0.005	0.007	<0.001	<0.05	0.3	<0.01	0.03	<0.5	<0.5
R982406		1	13.7	1.15	130	0.2	0.03	<0.005	0.006	<0.001	<0.05	<0.2	0.01	0.02	<0.5	<0.5
R982407		<1	14.0	1.29	50	0.1	0.03	<0.005	0.005	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
R982408		1	9.2	0.80	57	0.2	0.06	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
R982409		2	8.8	0.93	59	12.8	0.93	0.135	0.095	0.018	2.39	19.8	3.99	0.14	4.1	2.4
R982410		1	16.2	1.62	104	0.4	0.02	<0.005	<0.005	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
R982411		<1	2.5	0.29	4	<0.1	0.01	<0.005	<0.005	<0.001	<0.05	0.3	0.01	0.02	<0.5	<0.5
R982412		1	4.4	0.54	11	<0.1	0.01	<0.005	<0.005	0.001	<0.05	0.2	0.01	0.02	<0.5	<0.5
R982413		<1	4.9	0.59	18	<0.1	0.01	<0.005	<0.005	0.002	<0.05	0.3	<0.01	0.04	<0.5	<0.5
R982414		1	5.3	0.61	31	0.1	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5
R982415		1	4.0	0.41	14	0.1	0.01	<0.005	<0.005	<0.001	<0.05	0.3	<0.01	0.02	<0.5	<0.5
R982416		1	4.0	0.48	11	<0.1	0.03	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
R982417		1	4.6	0.55	11	0.2	0.03	<0.005	0.006	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
R982418		<1	2.1	0.20	4	<0.1	<0.01	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	0.04	<0.5	<0.5
R982419		1	4.9	0.54	9	<0.1	0.02	<0.005	0.005	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
R982420		1	6.0	0.51	18	0.1	0.02	<0.005	0.005	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
R982421		<1	5.0	0.55	15	<0.1	0.02	<0.005	<0.005	<0.001	<0.05	0.2	0.02	0.02	<0.5	<0.5
R982422		1	4.7	0.57	8	<0.1	0.01	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	0.03	<0.5	<0.5
R982423		1	1.7	0.25	7	0.7	0.06	<0.005	<0.005	<0.001	0.08	1.1	0.01	0.10	<0.5	<0.5
R982424		4	12.7	1.24	92	4.4	1.03	0.011	0.065	0.006	0.34	5.4	0.63	0.10	1.9	0.5
R982425		1	4.5	0.47	17	<0.1	0.02	<0.005	0.006	<0.001	<0.05	<0.2	0.01	0.02	<0.5	<0.5
R982426		1	4.7	0.49	7	0.1	0.04	<0.005	0.006	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982427		1	4.5	0.40	8	<0.1	0.02	<0.005	0.007	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5
R982428		1	3.7	0.43	6	0.1	0.02	<0.005	0.009	<0.001	<0.05	0.2	0.01	0.02	<0.5	<0.5
R982429		<1	7.8	0.84	18	<0.1	0.05	<0.005	<0.005	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
R982430		1	5.1	0.39	16	<0.1	0.05	<0.005	0.006	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982431		1	7.8	0.90	21	<0.1	0.05	<0.005	0.005	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982432		1	4.0	0.43	5	<0.1	0.08	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62	PGM-ICP23	PGM-ICP23	PGM-ICP23	Se-MS46
	Analyte	Co	Cu	Li	Mo	Ni	Pb	Sc	Zn	Cu	Ni	Au	Pt	Pd	Se
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
	LOD	1	1	10	1	1	2	1	2	0.001	0.001	0.001	0.005	0.001	0.003
R982393		12	19	20	1	8	2	16	134			<0.001	<0.005	<0.001	0.029
R982394		19	34	20	<1	15	3	16	121			<0.001	<0.005	<0.001	0.033
R982395		13	25	20	1	5	2	30	186			<0.001	<0.005	<0.001	0.030
R982396		59	2	30	<1	383	<2	34	74			0.002	<0.005	0.002	0.004
R982397		25	58	30	<1	42	3	16	83			<0.001	<0.005	0.004	0.019
R982398		51	15	20	<1	280	3	27	128			<0.001	0.005	0.002	<0.003
R982399		64	21	30	<1	666	<2	33	70			<0.001	0.014	0.019	0.009
R982400		63	4	10	<1	368	<2	38	103			<0.001	0.006	0.003	0.004
R982401		61	48	20	<1	539	2	28	69			<0.001	0.005	0.001	0.018
R982402		61	36	10	<1	477	<2	32	67			<0.001	0.010	0.006	0.024
R982403		34	2	20	<1	140	<2	16	74			<0.001	<0.005	0.002	<0.003
R982404		54	21	20	<1	325	2	32	97			<0.001	0.009	0.004	0.004
R982405		35	8	20	<1	137	2	15	93			<0.001	<0.005	0.001	0.003
R982406		36	67	20	<1	161	<2	19	89			<0.001	<0.005	0.002	0.012
R982407		52	69	20	<1	290	<2	32	92			<0.001	<0.005	0.004	0.009
R982408		57	44	20	<1	373	<2	48	64			<0.001	<0.005	0.001	0.005
R982409		987	>10000	10	4	>10000	16	9	138	1.585	4.46	0.235	0.802	3.44	17.60
R982410		35	19	10	<1	147	<2	31	57			<0.001	0.006	0.004	0.010
R982411		74	10	40	<1	417	<2	10	67			<0.001	0.010	0.019	0.011
R982412		45	2	40	1	177	<2	25	65			<0.001	<0.005	0.003	0.003
R982413		33	4	30	4	106	<2	20	45			<0.001	<0.005	0.001	0.007
R982414		61	9	30	1	256	4	20	87			<0.001	<0.005	0.003	0.008
R982415		35	12	20	1	111	<2	22	50			<0.001	<0.005	0.001	0.009
R982416		48	4	30	<1	114	<2	25	65			<0.001	<0.005	<0.001	0.019
R982417		72	29	50	<1	181	31	22	134			<0.001	<0.005	0.001	0.091
R982418		52	9	30	1	116	<2	18	67			<0.001	<0.005	0.002	0.005
R982419		44	2	30	<1	118	<2	25	74			0.005	<0.005	0.003	0.004
R982420		44	37	30	<1	123	<2	29	100			<0.001	<0.005	0.002	0.009
R982421		56	19	20	1	148	<2	26	72			0.001	0.048	0.055	0.012
R982422		43	13	30	<1	109	2	28	57			<0.001	<0.005	0.004	0.008
R982423		<1	1	40	<1	<1	6	<1	35			<0.001	<0.005	0.001	0.005
R982424		116	4470	20	5	4410	23	12	106			0.064	0.314	0.604	4.38
R982425		47	5	50	<1	141	<2	24	79			<0.001	<0.005	0.003	0.004
R982426		44	2	40	<1	111	<2	31	96			<0.001	<0.005	0.001	<0.003
R982427		52	41	50	<1	97	<2	37	85			<0.001	<0.005	0.001	0.047
R982428		54	37	80	<1	113	<2	25	99			<0.001	<0.005	0.004	0.038
R982429		53	<1	20	<1	186	<2	53	92			0.004	0.005	0.011	<0.003
R982430		33	1	20	<1	133	2	32	83			<0.001	<0.005	0.004	<0.003
R982431		47	<1	20	<1	205	<2	53	112			<0.001	0.007	0.007	<0.003
R982432		28	<1	20	<1	112	3	36	58			<0.001	<0.005	0.002	<0.003

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Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
R982433		1.23	44.9	7.58	12.90	8.32	19.05	0.32	0.08	0.151	0.44	0.34	0.01	<0.01	<0.01	5.16
R982434		1.88	50.8	6.90	10.80	12.35	16.65	0.44	0.17	0.159	0.28	0.24	0.02	0.05	<0.01	2.74
R982435		1.69	50.3	7.95	10.45	13.05	15.30	0.56	0.06	0.087	0.34	0.23	0.01	0.06	<0.01	3.07
R982436		1.64	49.9	7.71	9.87	13.60	14.40	1.03	0.49	0.091	0.31	0.21	0.01	0.02	0.01	2.13
R982437		1.71	53.3	8.88	9.18	12.10	13.35	1.78	0.36	0.078	0.28	0.22	0.01	0.02	<0.01	1.68
R982438		0.15	33.5	10.30	25.7	4.98	6.75	1.61	0.38	0.051	0.90	0.14	0.11	0.02	0.01	6.98
R982439		1.57	45.2	22.5	10.85	9.32	3.96	2.62	1.91	0.005	0.82	0.15	0.19	0.05	0.05	2.91
R982440		1.75	50.7	5.32	11.60	14.30	15.25	0.54	0.16	0.113	0.41	0.24	0.03	0.01	<0.01	2.06
R982441		1.36	49.9	5.89	10.40	15.00	15.15	0.67	0.27	0.118	0.35	0.22	0.03	0.01	0.01	1.91
R982442		1.75	51.6	5.12	10.30	15.10	15.50	0.71	0.30	0.117	0.40	0.21	0.02	0.01	0.01	0.45
R982443		2.21	47.8	17.30	8.78	8.03	9.21	1.94	1.45	0.039	0.12	0.15	<0.01	0.04	0.04	3.24
R982444		1.58	49.2	10.85	12.20	6.12	14.90	0.93	0.69	0.065	0.20	0.22	0.01	0.02	0.01	3.56
R982445		1.46	46.4	17.60	9.34	8.75	9.59	1.64	1.36	0.107	0.14	0.14	<0.01	0.04	0.03	3.67
R982446		2.97	49.6	20.8	6.68	10.25	7.42	2.08	1.21	0.032	0.13	0.12	<0.01	0.05	0.04	2.64
R982447		1.22	50.8	4.90	13.90	9.35	17.45	0.30	0.13	0.094	0.32	0.27	0.02	<0.01	<0.01	2.70
R982448		2.22	49.1	3.92	10.65	14.30	16.70	0.41	0.09	0.080	0.32	0.21	<0.01	<0.01	<0.01	2.43
R982449		2.42	50.2	17.05	7.81	9.13	8.46	2.58	1.64	0.061	0.23	0.15	0.02	0.05	0.04	2.57
R982450		3.50	50.4	17.05	7.88	8.57	8.86	2.48	1.66	0.093	0.25	0.15	0.03	0.05	0.04	2.98

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

ALS Canada Ltd.
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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
	Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.01	0.01	0.5	0.1	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2	0.01
R982433		99.25	0.03	0.01	16.7	4.4	1180	0.05	1.80	1.16	0.29	11.6	1.72	<5	0.8	0.33
R982434		101.60	0.02	<0.01	5.6	6.6	1190	0.05	1.26	0.73	0.44	9.7	1.46	<5	0.6	0.22
R982435		101.47	0.02	<0.01	26.9	12.1	620	0.07	1.95	1.14	0.56	12.2	1.96	<5	0.7	0.34
R982436		99.78	0.05	0.03	98.3	6.9	640	0.42	1.84	0.99	0.45	9.2	1.63	<5	0.6	0.30
R982437		101.24	0.02	0.03	36.8	5.9	540	0.23	1.57	0.86	0.44	10.1	1.73	<5	0.6	0.28
R982438		91.43	0.11	9.31	108.5	15.5	350	0.77	1.77	0.95	0.74	11.4	1.89	<5	1.4	0.37
R982439		100.54	0.08	0.18	390	12.0	40	8.42	0.66	0.30	0.94	34.2	0.89	<5	<0.2	0.13
R982440		100.73	0.04	0.02	29.2	10.5	780	0.28	2.01	1.26	0.69	9.5	2.34	<5	1.0	0.37
R982441		99.93	0.08	0.03	73.6	7.8	830	0.33	1.92	1.07	0.57	8.6	1.91	<5	0.7	0.34
R982442		99.85	0.03	0.03	78.3	11.1	850	0.49	2.16	1.21	0.61	8.6	2.24	<5	0.9	0.45
R982443		98.14	0.03	0.70	377	3.0	280	4.42	0.45	0.32	0.28	15.1	0.41	<5	<0.2	0.09
R982444		98.98	0.01	0.14	113.5	4.9	470	1.30	0.63	0.41	0.23	11.2	0.53	<5	0.4	0.14
R982445		98.81	0.01	0.86	222	3.3	750	3.23	0.46	0.24	0.29	14.5	0.45	<5	0.2	0.08
R982446		101.05	0.01	0.23	358	4.0	230	5.52	0.40	0.27	0.24	16.9	0.48	<5	0.2	0.09
R982447		100.23	0.01	0.29	18.8	5.1	710	0.14	1.26	0.85	0.26	7.9	1.34	<5	0.6	0.24
R982448		98.21	0.17	0.21	22.8	5.9	590	0.16	1.64	0.96	0.45	7.3	1.86	<5	0.6	0.30
R982449		99.99	0.02	0.03	351	9.4	440	2.26	1.18	0.65	0.64	15.0	1.32	<5	0.4	0.20
R982450		100.49	0.01	0.02	351	7.5	610	1.70	1.01	0.49	0.39	15.0	0.96	<5	0.5	0.18

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.1	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
R982433		2.1	0.15	0.4	4.3	0.91	0.5	1.20	<1	23.9	0.2	0.30	0.25	0.17	0.05	236
R982434		3.2	0.11	0.5	4.4	1.00	0.7	1.41	1	412	0.2	0.22	0.23	0.10	0.14	184
R982435		7.3	0.11	0.4	8.1	1.61	0.6	2.21	<1	492	<0.1	0.28	0.21	0.13	0.13	289
R982436		2.6	0.11	0.4	5.7	1.02	15.0	1.64	1	140.0	<0.1	0.27	0.24	0.12	0.07	263
R982437		2.1	0.13	0.5	4.5	0.92	7.4	1.43	<1	205	<0.1	0.24	0.19	0.12	0.13	221
R982438		6.7	0.12	4.9	9.2	1.99	9.5	2.12	3	166.5	0.3	0.33	0.91	0.13	0.33	77
R982439		5.7	0.05	0.2	6.2	1.34	78.0	1.11	<1	420	<0.1	0.11	<0.05	0.04	<0.05	197
R982440		3.6	0.16	0.6	8.7	1.57	2.8	2.36	1	84.9	<0.1	0.34	0.33	0.12	0.11	252
R982441		2.8	0.11	0.4	6.2	1.21	7.5	2.00	<1	72.4	<0.1	0.29	0.22	0.14	0.10	265
R982442		4.1	0.15	0.7	8.2	1.57	8.9	2.40	<1	73.0	<0.1	0.37	0.49	0.16	0.17	289
R982443		1.5	0.03	<0.2	1.8	0.40	55.6	0.45	<1	332	<0.1	0.09	0.11	0.03	<0.05	93
R982444		1.9	0.07	0.6	2.6	0.61	27.1	0.55	<1	139.0	<0.1	0.09	0.38	0.07	0.06	139
R982445		1.7	0.03	0.2	1.8	0.42	55.3	0.48	<1	336	<0.1	0.07	0.12	0.02	<0.05	103
R982446		2.1	0.05	0.2	2.4	0.49	48.9	0.41	<1	438	<0.1	0.06	0.17	0.03	<0.05	85
R982447		2.0	0.11	0.6	3.7	0.83	1.8	1.31	<1	21.8	0.1	0.21	0.42	0.11	0.12	223
R982448		1.9	0.13	0.3	5.5	1.10	2.3	1.70	<1	41.3	0.2	0.28	0.15	0.12	<0.05	215
R982449		4.0	0.08	3.4	6.0	1.30	59.1	1.49	<1	404	<0.1	0.19	0.39	0.07	0.05	165
R982450		3.4	0.07	1.1	4.4	0.92	61.4	1.05	<1	364	<0.1	0.14	0.38	0.09	0.09	134

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556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
	Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	1	0.1	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
R982433		1	9.7	1.05	23	0.1	0.70	<0.005	<0.005	<0.001	<0.05	0.2	0.20	<0.02	<0.5	<0.5
R982434		1	7.0	0.71	19	<0.1	0.12	<0.005	<0.005	<0.001	<0.05	<0.2	0.03	<0.02	<0.5	<0.5
R982435		1	8.6	0.89	20	0.1	0.11	<0.005	0.008	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	<0.5
R982436		2	8.6	0.79	16	0.1	0.04	<0.005	0.005	<0.001	<0.05	0.2	0.03	<0.02	<0.5	<0.5
R982437		1	7.3	0.80	16	<0.1	0.04	<0.005	0.005	<0.001	<0.05	0.2	0.02	<0.02	<0.5	<0.5
R982438		3	8.7	0.89	66	14.7	1.04	0.136	0.100	0.021	2.38	22.4	4.22	0.16	4.0	2.4
R982439		1	3.5	0.30	5	0.2	0.02	<0.005	0.010	<0.001	<0.05	0.4	0.04	0.05	<0.5	<0.5
R982440		<1	10.4	1.09	26	0.1	0.07	<0.005	0.006	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	<0.5
R982441		1	9.4	0.87	20	0.1	0.03	<0.005	0.005	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5
R982442		1	10.3	1.10	30	0.1	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5
R982443		1	2.5	0.31	5	0.1	0.05	<0.005	<0.005	0.002	<0.05	1.8	0.14	0.12	<0.5	<0.5
R982444		<1	3.3	0.44	11	0.2	0.03	<0.005	<0.005	0.001	<0.05	0.3	0.01	0.03	<0.5	<0.5
R982445		1	2.1	0.31	8	0.2	0.09	<0.005	<0.005	0.003	<0.05	1.7	0.10	0.22	<0.5	<0.5
R982446		<1	2.3	0.23	6	0.1	0.04	<0.005	<0.005	0.001	<0.05	0.8	0.08	0.11	<0.5	<0.5
R982447		<1	6.7	0.77	21	<0.1	0.11	<0.005	0.005	0.002	<0.05	1.4	0.06	0.26	<0.5	<0.5
R982448		1	9.1	0.94	17	0.2	0.02	<0.005	<0.005	0.001	<0.05	0.5	0.01	<0.02	<0.5	<0.5
R982449		1	5.5	0.66	10	<0.1	0.03	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5
R982450		<1	4.7	0.56	16	0.2	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	0.02	<0.5	<0.5

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

Sample Description	Method	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62	PGM-ICP23	PGM-ICP23	PGM-ICP23	Se-MS46
	Analyte	Co	Cu	Li	Mo	Ni	Pb	Sc	Zn	Cu	Ni	Au	Pt	Pd	Se
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
	LOD	1	1	10	1	1	2	1	2	0.001	0.001	0.001	0.005	0.001	0.003
R982433		76	13	50	<1	502	<2	79	185			0.008	0.142	0.254	0.014
R982434		62	1	20	<1	316	<2	49	108			<0.001	0.061	0.055	0.003
R982435		52	1	30	<1	228	<2	61	100			<0.001	0.025	0.038	0.007
R982436		54	28	20	1	221	4	61	106			0.002	0.047	0.090	0.034
R982437		50	2	10	<1	191	4	55	93			<0.001	0.022	0.037	0.007
R982438		992	>10000	10	3	>10000	17	9	139	1.595	4.49	0.320	0.807	3.46	17.55
R982439		33	94	30	<1	55	<2	11	141			<0.001	<0.005	0.001	0.088
R982440		59	43	20	<1	230	2	67	110			0.002	0.059	0.100	0.019
R982441		58	24	20	<1	235	<2	65	72			<0.001	0.050	0.075	0.026
R982442		57	34	10	<1	236	<2	67	60			0.002	0.058	0.100	0.042
R982443		86	643	20	<1	453	<2	20	51			0.057	0.039	0.079	1.430
R982444		83	171	30	<1	335	<2	29	94			0.003	0.044	0.076	0.303
R982445		91	878	20	<1	617	<2	16	54			0.018	0.020	0.040	1.355
R982446		51	340	30	<1	261	<2	16	42			0.019	0.017	0.034	0.538
R982447		90	579	10	1	398	<2	55	80			0.007	0.060	0.102	1.195
R982448		72	214	10	<1	214	9	58	85			0.004	0.060	0.050	0.336
R982449		36	20	30	<1	143	2	26	65			0.001	0.005	0.008	0.023
R982450		36	28	30	<1	141	7	23	72			0.001	<0.005	0.005	0.019

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 11-SEP-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18203471

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Thunder Bay located at 645 Norah Crescent, Thunder Bay, ON, Canada

Applies to Method:			
CRU-31	CRU-QC	LOG-21	LOG-23
PUL-31	PUL-QC	SPL-21	WEI-21

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:			
C-IR07	Cu-OG62	ME-4ACD81	ME-ICP06
ME-MS42	ME-MS81	ME-OG62	Ni-OG62
OA-GRA05	PGM-ICP23	Se-MS46	S-IR08
TOT-ICP06			

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 24-OCT-2018
Account: NAPEHZEU

CERTIFICATE TB18255366

Project: NAPEHZEU_TB18203471

This report is for 20 Rock samples submitted to our lab in Thunder Bay, ON, Canada on 11-OCT-2018.

The following have access to data associated with this certificate:

DAVID BENSON	KAITLYN CHOVANCAK	LIONNEL DJON
JILL MAXWELL	DAVE PECK	KATHRYN STINSON
LDIM WEBTRIEVE		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
FND-02	Find Sample for Addn Analysis

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES
Cu-OG62	Ore Grade Cu - Four Acid	
Ni-OG62	Ore Grade Ni - Four Acid	
PGM-ICP23	Pt, Pd, Au 30g FA ICP	ICP-AES
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES

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

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

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 24-OCT-2018
Account: NAPEHZEU

Project: NAPEHZEU_TB18203471

CERTIFICATE OF ANALYSIS TB18255366

Sample Description	Method	Cu-OG62	Ni-OG62	PGM-ICP23	PGM-ICP23	PGM-ICP23	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81
	Analyte	Cu	Ni	Au	Pt	Pd	Ag	As	Cd	Co	Cu	Li	Mo	Ni	Pb	Sc
	Units	%	%	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.001	0.001	1	5	1	0.5	5	0.5	1	1	10	1	1	2	1
R982251		0.252	0.095	135	232	1720	1.6	<5	0.6	99	2520	20	<1	979	13	29
R982252		0.007	0.018	<1	27	29	<0.5	<5	0.5	61	76	10	<1	184	2	55
R982253		0.442	0.418	54	318	607	1.8	<5	1.6	116	4530	20	4	4330	22	12
R982254		0.047	0.050	14	159	121	<0.5	<5	0.6	86	497	10	<1	509	3	60
R982255		0.043	0.033	51	121	119	<0.5	<5	1.2	73	456	10	1	348	<2	55
R982256		0.004	0.020	8	31	64	<0.5	<5	0.6	55	61	20	<1	216	<2	61
R982257		0.002	0.021	4	40	81	<0.5	<5	0.7	60	36	10	2	232	3	71
R982258		0.002	0.021	6	42	77	<0.5	<5	<0.5	54	41	20	<1	220	<2	65
R982259		0.001	0.022	<1	43	91	<0.5	<5	0.7	53	27	10	<1	224	3	65
R982260		0.036	0.030	33	53	64	<0.5	<5	0.6	67	376	20	1	316	5	64
R982261		0.001	0.023	2	43	88	<0.5	<5	1.0	55	32	20	<1	236	2	67
R982262		<0.001	0.013	<1	<5	4	<0.5	<5	<0.5	35	13	30	<1	131	<2	26
R982263		<0.001	0.015	<1	<5	6	<0.5	<5	<0.5	41	22	30	1	165	<2	24
R982264		0.191	0.079	66	236	1580	0.9	<5	0.8	81	1950	40	<1	855	5	27
R982265		0.002	0.022	2	54	104	<0.5	<5	0.7	56	34	20	1	226	2	69
R982266		0.011	0.030	23	773	1240	<0.5	<5	<0.5	77	136	10	<1	320	6	46
R982267		0.010	0.022	2	7	8	<0.5	<5	0.5	64	118	10	1	223	2	48
R982268		1.630	4.47	238	802	3440	3.8	8	3.2	963	>10000	10	4	>10000	12	8
R982269		<0.001	0.004	<1	<5	2	<0.5	<5	<0.5	1	14	40	1	20	2	<1
R982270		0.443	0.420	78	304	610	1.9	<5	0.9	116	4500	20	4	4340	23	12

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

ALS Canada Ltd.
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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 24-OCT-2018
Account: NAPEHZEU

Project: NAPEHZEU_TB18203471

CERTIFICATE OF ANALYSIS TB18255366

Sample Description	Method Analyte Units LOD	ME-4ACD81 Tl ppm 10	ME-4ACD81 Zn ppm 2
R982251		<10	75
R982252		<10	57
R982253		<10	103
R982254		<10	61
R982255		<10	63
R982256		<10	54
R982257		<10	59
R982258		<10	53
R982259		<10	90
R982260		<10	66
R982261		<10	62
R982262		<10	59
R982263		<10	57
R982264		<10	68
R982265		<10	54
R982266		<10	84
R982267		<10	79
R982268		<10	138
R982269		<10	43
R982270		<10	106

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CERTIFICATE OF ANALYSIS TB18255366

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:			
Cu-OG62	FND-02	ME-4ACD81	ME-OG62
Ni-OG62	PGM-ICP23		

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

CERTIFICATE TB18258181

Project: Gfields

P.O. No.: 178845

This report is for 22 Rock samples submitted to our lab in Thunder Bay, ON, Canada on 15-OCT-2018.

The following have access to data associated with this certificate:

DAVID BENSON	KAITLYN CHOVANCAK	LIONNEL DJON
JILL MAXWELL	DAVE PECK	KATHRYN STINSON
LDIM WEBTRIEVE		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
LOG-21	Sample logging - ClientBarCode
PUL-31	Pulverize split to 85% <75 um
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
LOG-23	Pulp Login - Rcvd with Barcode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
C-IR07	Total Carbon (Leco)	LECO
S-IR08	Total Sulphur (Leco)	LECO
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES
Cu-OG62	Ore Grade Cu - Four Acid	
Ni-OG62	Ore Grade Ni - Four Acid	
PGM-ICP23	Pt, Pd, Au 30g FA ICP	ICP-AES
Se-MS46	Super Trace Se 25g AR by ICP-MS	ICP-MS

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

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

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18258181

Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
R982289		1.51	16.70	0.05	0.11	28.1	20.7	0.02	<0.01	<0.002	<0.01	0.04	0.02	0.02	0.09	33.1
R982290		0.07	47.2	12.80	20.6	6.27	6.62	2.16	0.63	0.033	1.26	0.19	0.16	0.03	0.02	1.07
R982291		1.43	50.1	16.60	7.75	8.99	7.98	3.28	1.28	0.032	0.56	0.15	0.38	0.08	0.04	1.87
R982292		3.01	44.5	16.30	9.56	10.85	11.45	0.99	1.28	0.034	0.22	0.14	0.05	0.05	0.03	3.10
R982293		1.69	51.1	14.50	7.10	10.35	9.43	2.48	1.19	0.100	0.29	0.11	0.06	0.07	0.03	1.87
R982294		2.12	50.8	9.82	9.03	8.85	14.70	1.46	1.46	0.279	0.45	0.15	0.08	0.03	0.04	1.75
R982295		1.79	46.6	16.10	7.87	12.60	9.47	1.37	1.13	0.071	0.45	0.11	0.07	0.09	0.03	2.61
R982296		1.37	50.9	19.55	7.94	9.91	5.04	3.83	0.77	0.015	0.72	0.09	0.23	0.09	0.03	0.88
R982297		1.87	50.0	11.30	10.40	8.94	13.70	1.66	1.56	0.167	0.41	0.17	0.10	0.04	0.04	1.09
R982298		1.67	45.3	15.75	11.95	12.00	7.92	2.41	0.82	0.026	1.09	0.15	0.60	0.13	0.03	1.02
R982299		1.54	57.7	14.80	7.76	6.83	5.53	3.66	2.55	0.036	0.70	0.12	0.39	0.10	0.09	0.60
R982300		1.55	57.5	14.60	8.07	7.11	5.98	3.64	2.32	0.041	0.69	0.13	0.39	0.10	0.09	0.30
R982301		1.58	57.9	14.25	7.42	6.65	5.91	3.63	2.29	0.050	0.65	0.11	0.32	0.10	0.08	0.38
R982302		1.61	57.0	13.90	7.79	6.62	6.53	3.46	1.93	0.061	0.57	0.13	0.29	0.09	0.08	1.42
R982303		2.04	51.6	8.09	7.21	11.80	15.60	1.51	0.54	0.178	0.52	0.10	0.03	0.03	0.01	1.49
R982304		2.63	47.4	19.45	7.36	12.65	9.06	1.71	0.61	0.003	0.44	0.10	0.10	0.10	0.02	1.87
R982305		2.33	43.0	23.4	12.00	12.50	4.33	2.27	0.49	<0.002	0.65	0.09	0.27	0.13	0.02	1.56
R982306		1.71	51.0	8.04	9.27	12.25	16.25	1.40	0.24	0.236	0.48	0.14	0.01	0.03	0.01	0.97
R982307		0.15	33.4	9.94	25.7	4.87	6.57	1.57	0.39	0.048	0.88	0.14	0.11	0.02	0.01	6.80
R982308		1.50	47.8	18.90	6.58	13.95	9.33	1.41	0.25	0.007	0.38	0.09	0.07	0.12	0.01	1.51
R982309		2.19	46.3	6.79	7.66	15.65	17.30	0.96	0.38	0.155	0.32	0.14	0.08	0.03	0.01	4.09
R982310		1.82	15.90	0.07	0.09	28.9	21.2	0.02	<0.01	<0.002	<0.01	0.04	<0.01	0.02	0.01	33.7

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To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18258181

Sample Description	Method	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
	Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.01	0.01	0.5	0.1	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2	0.01
R982289		98.95	8.81	0.02	858	0.8	<10	0.21	0.06	0.04	<0.03	<0.1	0.05	<5	<0.2	0.01
R982290		99.04	0.07	1.72	225	27.9	270	1.00	2.42	1.49	1.23	17.3	3.11	<5	2.3	0.51
R982291		99.09	0.04	0.21	417	64.7	260	1.86	3.24	1.53	2.12	21.8	5.58	<5	2.4	0.54
R982292		98.55	0.02	0.01	325	14.4	280	8.03	1.23	0.71	0.51	14.8	1.46	<5	0.8	0.24
R982293		98.68	0.03	<0.01	266	25.6	780	5.89	1.40	0.79	0.71	15.1	1.58	<5	1.4	0.28
R982294		98.90	0.01	<0.01	398	30.4	2250	14.30	1.75	0.90	0.85	14.5	2.15	<5	1.5	0.37
R982295		98.57	0.05	0.01	239	24.8	550	11.35	1.69	0.90	1.02	18.1	2.62	<5	1.0	0.30
R982296		100.00	<0.01	0.05	280	74.4	120	1.47	3.94	2.17	1.73	26.5	6.01	<5	1.6	0.76
R982297		99.58	0.01	0.03	395	48.6	1320	7.59	2.22	1.22	0.96	14.9	3.10	<5	2.0	0.41
R982298		99.20	0.03	0.02	325	124.5	210	0.51	6.46	2.20	4.15	23.3	12.25	<5	2.8	0.98
R982299		100.87	0.07	0.01	875	134.5	290	2.89	4.38	2.08	2.68	21.9	8.06	<5	5.8	0.74
R982300		100.96	0.01	<0.01	851	126.5	340	2.36	4.88	1.89	2.83	21.9	7.99	<5	5.1	0.79
R982301		99.74	0.04	0.01	792	111.5	400	2.73	3.91	1.78	2.30	22.1	6.91	<5	4.4	0.68
R982302		99.87	0.02	<0.01	779	92.6	490	1.36	3.54	1.57	2.28	20.4	6.56	<5	3.9	0.66
R982303		98.71	0.02	0.02	107.5	56.6	1420	0.21	2.51	1.27	1.26	12.1	4.13	<5	2.8	0.50
R982304		100.87	0.06	0.08	184.5	29.4	30	1.18	1.43	0.73	0.93	17.1	2.34	<5	1.1	0.26
R982305		100.71	0.03	0.30	154.0	39.9	10	2.33	1.82	0.94	1.08	25.5	2.92	<5	1.0	0.35
R982306		100.33	0.05	0.07	77.3	42.2	1740	0.18	1.95	1.19	1.02	11.0	2.83	<5	1.7	0.43
R982307		90.45	0.10	9.26	114.0	16.5	360	0.74	1.92	1.15	0.83	11.8	1.99	<5	1.5	0.38
R982308		100.41	0.11	0.16	117.0	24.9	50	0.89	1.21	0.52	0.78	15.4	2.00	<5	0.7	0.24
R982309		99.87	0.77	0.06	73.0	29.4	1160	0.01	1.81	0.74	0.89	8.3	2.74	<5	1.3	0.29
R982310		99.95	8.90	0.01	109.0	1.6	<10	0.16	0.07	0.04	<0.03	0.1	0.09	<5	<0.2	0.01

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556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18258181

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.1	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
R982289		0.7	0.01	<0.2	0.3	0.08	0.5	0.10	<1	172.0	0.1	<0.01	0.07	<0.01	0.29	<5
R982290		12.6	0.17	7.5	14.0	3.42	17.0	3.02	4	269	0.6	0.45	1.55	0.23	0.54	133
R982291		24.3	0.21	4.7	42.3	9.44	35.7	8.53	2	675	0.4	0.65	0.75	0.27	0.32	150
R982292		6.7	0.08	1.3	8.3	2.00	47.6	1.76	1	392	0.2	0.22	0.75	0.09	0.42	86
R982293		11.5	0.10	2.2	12.6	3.16	42.8	2.37	1	614	0.3	0.29	1.07	0.10	0.39	103
R982294		12.6	0.12	3.0	16.0	4.04	47.1	2.75	1	290	0.3	0.30	0.52	0.13	0.24	125
R982295		10.2	0.10	1.4	16.6	3.68	47.0	3.60	1	799	0.2	0.33	0.58	0.11	0.21	136
R982296		29.5	0.31	6.2	42.6	10.30	9.9	8.28	2	793	0.4	0.78	0.63	0.34	0.18	168
R982297		20.1	0.17	4.8	21.9	6.06	50.6	4.25	1	353	0.4	0.41	1.12	0.20	0.47	149
R982298		44.2	0.21	5.3	85.7	19.05	7.0	18.40	2	1125	0.3	1.42	0.48	0.31	0.12	243
R982299		60.8	0.23	9.5	65.5	16.60	74.1	11.80	1	858	0.6	0.96	11.05	0.28	2.12	151
R982300		57.7	0.22	9.5	63.3	15.70	65.8	11.95	2	911	0.6	1.06	8.42	0.29	1.86	157
R982301		50.8	0.19	9.1	55.9	13.80	69.7	9.99	2	841	0.8	0.85	8.72	0.24	2.04	142
R982302		41.7	0.18	6.2	46.4	11.75	52.5	9.32	1	732	0.6	0.78	7.56	0.23	1.74	141
R982303		22.4	0.16	4.8	30.5	7.57	8.0	5.57	1	247	0.7	0.56	1.36	0.17	0.31	129
R982304		13.9	0.09	1.5	17.2	4.00	13.5	3.11	<1	838	0.3	0.25	0.81	0.11	0.10	151
R982305		19.7	0.10	1.4	21.9	5.24	14.3	3.55	<1	1130	0.2	0.32	0.39	0.12	0.71	282
R982306		16.0	0.17	2.0	25.9	6.10	2.6	4.45	<1	227	0.3	0.34	0.37	0.18	0.10	166
R982307		8.1	0.14	5.2	8.9	2.16	10.9	1.84	2	186.0	0.5	0.32	1.22	0.14	0.38	82
R982308		12.3	0.07	1.0	14.0	3.44	4.1	2.73	<1	1030	0.2	0.20	0.46	0.08	0.05	134
R982309		13.6	0.08	1.9	17.3	4.07	2.4	3.81	<1	224	0.4	0.30	1.75	0.09	0.15	97
R982310		1.3	<0.01	<0.2	0.7	0.20	0.4	0.10	<1	171.0	0.1	0.02	0.24	<0.01	0.18	<5

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North Vancouver BC V7H 0A7
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www.alsglobal.com/geochemistry

To: **NORTH AMERICAN PALLADIUM EXPLORATION**
556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18258181

Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
	Analyte	W	Y	Yb	Zr	As	Bi	Hg	In	Re	Sb	Se	Te	Tl	Ag	Cd
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	1	0.1	0.03	2	0.1	0.01	0.005	0.005	0.001	0.05	0.2	0.01	0.02	0.5	0.5
R982289		<1	0.4	0.04	<2	0.3	0.01	<0.005	<0.005	<0.001	0.05	<0.2	<0.01	0.02	<0.5	<0.5
R982290		4	13.4	1.32	96	3.9	0.78	0.009	0.069	0.006	0.34	5.0	0.60	0.10	1.5	1.8
R982291		<1	16.0	1.51	85	0.8	0.02	<0.005	0.007	<0.001	<0.05	<0.2	0.02	0.04	<0.5	<0.5
R982292		<1	5.9	0.60	27	0.5	0.04	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	0.03	<0.5	<0.5
R982293		1	7.0	0.69	41	0.5	0.05	<0.005	<0.005	<0.001	0.05	<0.2	0.02	0.03	<0.5	<0.5
R982294		<1	8.8	0.95	49	0.1	0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	0.13	<0.5	0.6
R982295		1	8.8	0.75	27	0.7	0.10	<0.005	0.005	<0.001	0.05	<0.2	<0.01	0.03	<0.5	<0.5
R982296		<1	20.4	1.75	45	<0.1	0.01	<0.005	0.009	<0.001	<0.05	<0.2	0.02	0.02	<0.5	<0.5
R982297		1	11.3	1.12	70	<0.1	0.03	<0.005	0.005	<0.001	<0.05	<0.2	0.02	0.20	<0.5	<0.5
R982298		<1	25.4	1.75	84	0.1	<0.01	<0.005	0.018	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	0.7
R982299		1	20.5	1.43	245	2.1	0.20	<0.005	0.011	<0.001	0.07	<0.2	0.01	0.27	<0.5	0.5
R982300		1	21.1	1.59	196	1.7	0.13	<0.005	0.011	<0.001	0.07	<0.2	<0.01	0.21	<0.5	<0.5
R982301		1	18.7	1.43	169	2.0	0.09	<0.005	0.010	<0.001	0.08	<0.2	0.01	0.24	<0.5	<0.5
R982302		1	16.7	1.36	154	1.7	0.07	<0.005	0.007	<0.001	0.06	<0.2	<0.01	0.07	<0.5	0.6
R982303		<1	12.9	1.09	90	<0.1	0.02	<0.005	<0.005	<0.001	<0.05	<0.2	0.03	<0.02	<0.5	<0.5
R982304		<1	6.7	0.59	31	<0.1	0.01	<0.005	0.006	<0.001	<0.05	0.4	0.02	<0.02	<0.5	<0.5
R982305		<1	8.8	0.85	30	0.1	<0.01	<0.005	0.012	<0.001	<0.05	<0.2	0.03	<0.02	<0.5	0.7
R982306		<1	11.0	1.01	53	<0.1	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	0.02	<0.02	<0.5	0.6
R982307		3	9.8	0.99	64	13.5	0.95	0.149	0.106	0.023	2.51	21.4	4.52	0.16	4.1	3.5
R982308		<1	5.9	0.44	21	0.2	0.01	<0.005	<0.005	<0.001	<0.05	0.3	0.03	<0.02	<0.5	0.5
R982309		1	7.4	0.54	45	<0.1	0.02	<0.005	<0.005	<0.001	<0.05	<0.2	0.01	<0.02	<0.5	<0.5
R982310		<1	0.5	0.06	<2	0.4	0.01	0.006	<0.005	<0.001	0.05	<0.2	<0.01	<0.02	<0.5	<0.5

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

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556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18258181

Sample Description	Method	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62	PGM-ICP23	PGM-ICP23	PGM-ICP23	Se-MS46
	Analyte	Co	Cu	Li	Mo	Ni	Pb	Sc	Zn	Cu	Ni	Au	Pt	Pd	Se
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
	LOD	1	1	10	1	1	2	1	2	0.001	0.001	0.001	0.005	0.001	0.003
R982289		1	1	10	1	<1	<2	<1	12			<0.001	<0.005	0.002	<0.003
R982290		114	4500	20	4	4420	28	12	107			0.074	0.299	0.611	3.86
R982291		42	84	30	<1	184	6	18	99			<0.001	<0.005	0.001	0.058
R982292		74	20	30	1	267	6	19	69			<0.001	<0.005	0.001	0.010
R982293		44	6	10	<1	232	5	29	59			<0.001	0.005	0.003	0.003
R982294		65	2	30	<1	569	4	25	94			<0.001	<0.005	<0.001	<0.003
R982295		54	28	20	<1	191	6	26	67			<0.001	<0.005	<0.001	0.005
R982296		32	70	20	<1	75	8	15	82			<0.001	<0.005	<0.001	0.048
R982297		71	42	30	1	446	2	28	89			<0.001	0.005	0.002	0.059
R982298		51	9	10	<1	129	4	29	126			<0.001	<0.005	0.001	0.005
R982299		32	84	30	<1	99	18	17	97			<0.001	<0.005	0.001	0.030
R982300		32	45	20	1	112	14	19	98			<0.001	<0.005	0.001	0.011
R982301		33	78	30	1	153	15	18	95			<0.001	<0.005	0.001	0.005
R982302		33	37	20	<1	139	11	20	102			0.001	<0.005	0.001	0.007
R982303		58	94	10	1	381	<2	31	56			0.003	0.008	0.005	0.097
R982304		47	124	20	<1	123	<2	25	49			0.001	<0.005	<0.001	0.226
R982305		44	45	10	<1	6	3	15	68			<0.001	<0.005	<0.001	0.033
R982306		72	66	10	<1	516	3	40	57			0.001	0.012	0.006	0.111
R982307		1005	>10000	10	2	>10000	17	9	143	1.630	4.58	0.242	0.785	3.45	15.80
R982308		45	215	10	<1	216	2	27	42			0.001	0.010	0.002	0.320
R982309		68	16	10	<1	480	<2	30	52			0.001	0.010	0.013	0.055
R982310		<1	2	10	<1	5	2	<1	53			<0.001	<0.005	<0.001	0.003

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

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556 TENTH AVE.
THUNDER BAY ON P7B 2R2

Finalized Date: 28-OCT-2018
Account: NAPEHZEU

Project: Gfields

CERTIFICATE OF ANALYSIS TB18258181

CERTIFICATE COMMENTS

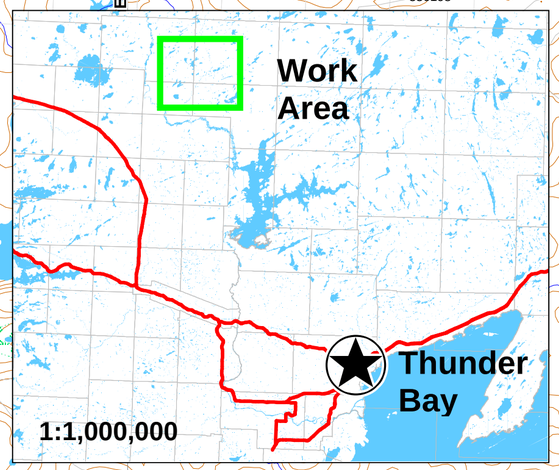
LABORATORY ADDRESSES

Processed at ALS Thunder Bay located at 645 Norah Crescent, Thunder Bay, ON, Canada

Applies to Method:				
	CRU-31	CRU-QC	LOG-21	LOG-23
	PUL-31	PUL-QC	SPL-21	WEI-21

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:				
	C-IR07	Cu-OG62	ME-4ACD81	ME-ICP06
	ME-MS42	ME-MS81	ME-OG62	Ni-OG62
	OA-GRA05	PGM-ICP23	Se-MS46	S-IR08
	TOT-ICP06			



550193 550194 550195 550196 550197 550198

300,000 mE

305,000 mE

N

Map 4

Map 5

Map 3

Map 2

Map 6

Map 7

Map 8

Map 1

Demars Lake

Senga Lake Area

Orbit Lake Area

Shelby Lake Area

Eayrs Lake Area

5,435,000 mN

5,430,000 mN

535272 535271 535275 535264 535268 535279 535277 535280 535296 535298 535297 535276 535266 535267 535300 535299 535139

581239 581240 121622 58114 133022 273147 273146 581144 581145 581142 200421 581279 342402 141691 124208 292222 273149 187725 292223 313647 130934 195764 147649 118886 246652 329744 234481 103619 253306 161646 246653 103620 316951 195765 130165 306344 203126 38320 249994 300839 213606 581143 140286 581140 242860 182943 109477 140204 194332 192796 258602 295508 295507 210973 143692 209879 288005 109406 174757 140205 239016 236012 308226 128182 257113

Legend

- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

Impala Canada

2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties

Date: 4/17/2020	
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:25000	Projection: NAD83 UTMZ16

0 0 75 150 300 5.08

kilometers

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks

Senga Lake Area
Orbit Lake Area

296,000 mE

297,000 mE

5,431,000 mN

5,430,000 mN

N

July 24, 2018

18-JWB-048 - GAB

18-JWB-049 - GRAN

July 25, 2018

18-JWB-053 - GRDR

18-JWB-054 - GRAN

18-JWB-052 - MGAB

18-JWB-050 - PYXT

18-JWB-051 - GRAN

18-JWB-055 - GRDR

18-JWB-056 - HGAB

July 27, 2018

July 5, 2018

18-JWB-025 - DIOR

18-JWB-019 - GAB-Vt

581143

140286

316952

108522

581140

308797

242860

176261

109477

140204

194332

192796

295508

295507

210973

143692

Trumper Lake

Wakinoo Lake

455

460

465

470

475

490

Impala Canada

	2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties
Date: 4/17/2020	
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:5000	Projection: NAD83 UTMZ16

0 75 150 300

metres

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

N

297,000 mE

298,000 mE

5,433,000 mN

5,432,000 mN

18-JWB-036 - GAB

18-JWB-035 - GRDR

18-JWB-034 - GAB

18-JWB-033 - GAB-Vt

18-JWB-032 - GAB-Vt

18-JWB-028 - DIKE

18-JWB-027 - GAB-Vt

18-JWB-030 - GAB

18-JWB-031 - GRAN

18-JWB-047 - GAB

18-JWB-076 - GAB

18-JWB-046 - GAB-HBx

18-JWB-048 - GAB

July 6, 2018

July 24, 2018

July 25, 2018

581145

581142

246652

118886

147649

195764

130934

313647

246653

103620

316951

195765

130165

460

455

470

450

Senga Lake Area

Impala Canada

	2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties
Date: 4/17/2020	
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:5000	Projection: NAD83 UTMZ16

0 75 150 300

metres

Senga Lake Area

Shelby Lake Area

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

Demars Lake

July 7, 2018
Aug 1-4, 2018
Aug 22-23, 2018

18-JWB-041 - PYXT
18-DAN-030 - GAB-Vt
18-DAN-031 - PYXT
18-DAN-003 - GAB-Vt
18-DAN-029 - PYXT
18-DAN-001 - GAB-Vt
18-DAN-002 - GAB-Vt
18-JWB-042 - PYXT
18-JWB-044 - PYXT
18-JWB-045 - MGAB

299,000 mE
300,000 mE
5,434,000 mN
581239
581240
121622
133022
273147
273146
455
460
475
480
485

N

Impala Canada	
	2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties
Date: 4/17/2020	
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:5000	Projection: NAD83 UTMZ16

0 75 150 300
metres

Shelby Lake Area

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

305,000 mE

306,000 mE

535271

535272

5,438,000 mN

5,437,000 mN

18-JWB-077 - SCH

18-JWB-078 - GRAN

18-JWB-082 - GRAN

18-JWB-081 - GRAN

Aug 27, 2018

Aug 27, 2018

450

455

480

480

495

535264

N

Impala Canada	
	2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties
Date: 4/17/2020	
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:5000	Projection: NAD83 UTMZ16

0 75 150 300

metres

Shelby Lake Area

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

303,000 mE

304,000 mE

305,000 mE

5,436,000 mN

5,435,000 mN

535279

535280

490

480

485

465

Rivière des Iles

18-JWB-094 - GRDR

18-JWB-096 - GAB

18-JWB-095 - GRDR

18-JWB-092 - LGAB

18-JWB-093 - HGAB

18-JWB-091 - GRDR

18-JWB-097 - GRAN

Aug 29, 2018

N

Impala Canada

2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties

Date: 4/17/2020

Author: Jami Brown

Office: Thunder Bay ON

Drawing:

Scale: 1:5000

Projection: NAD83 UTMZ16

0 75 150 300

metres

5,433,000 mN

300,000 mE

301,000 mE

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

18-JWB-060 - GAB

July 28, 2018

Rivière des Iles

18-JWB-061 - MGAB

18-JWB-064 - GRDR

18-JWB-063 - LGAB

124208

N

292222

273149

187725

18-JWB-069 - GRDR

18-JWB-075 - GAB

July 30, 2018

5,432,000 mN

18-JWB-068 - PYXT

Rivière des Iles

Rivière des Iles

Rivière des Iles

July 29, 2018

138320

249994

535266

440

460

July 30, 2018

300839

213606

Rivière des Iles

455

445

18-JWB-072 - MVOL

18-JWB-071 - IVOL

18-JWB-070 - IVOL

5,431,000 mN

Shelby Lake Area

Eayres Lake Area

Impala Canada

2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties

Date: 4/17/2020

Author: Jami Brown

Office: Thunder Bay ON

Drawing:

Scale: 1:5000

Projection: NAD83 UTMZ16

0 75 150 300

metres

Shelby Lake Area

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
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- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

304,000 mE

305,000 mE

N

Towle Lake

5,433,000 mN

535276

Aug 28, 2018

18-JWB-090 - GAB-Bx

18-JWB-089 - GAB

18-JWB-088 - GAB-Bx

18-JWB-087 - GAB

18-JWB-086 - MTSD

18-JWB-085 - MTSD

18-JWB-084 - GRDR

18-JWB-083 - IVOL

Aug 28, 2018

Aug 28, 2018

450

465

460

495

490

Impala Canada	
	2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties
Date: 4/17/2020	
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:5000	Projection: NAD83 UTMZ16

0 75 150 300

metres

Shelby Lake Area

Legend

- Samples Only
- Stations Only
- MENDM Administrative Boundaries
- Operational Alienations
- Impala Claims
- Operational Cell Claims
- MARSH
- OGS DEM Contours 5m
- Road
- Trail
- GPS Tracks
- Water Courses
- Lakes

303,000 mE

303,000 mE

N

Rivière des Iles

18-JWB-066 - GRAN

18-JWB-067 - HGAB

18-JWB-065 - GRAN

535297

July 29, 2018

18-JWB-058 - PER

18-JWB-059 - PER

18-JWB-057 - PYXT

5,433,000 mN

18-JWB-084 - GRDR

18-JWB-083 - IVOL

Aug 28, 2018

Rivière des Iles

18-JWB-074 - IVOL

July 30, 2018

18-JWB-075 - GAB

465

460

5,432,000 mN

Impala Canada	
Date: 4/17/2020	2020 Assessment Report on 2018 NAP Field Work Wakinoo-Demars and Shelby Properties
Author: Jami Brown	
Office: Thunder Bay ON	
Drawing:	
Scale: 1:5000	Projection: NAD83 UTMZ16

0 75 150 300

metres