LONGFORD
EXPLORATION

Prospecting, Geological and Geochemical Survey Report

On the

Ellen Property

Jarvis River, Whitehorse Mining District, Yukon, Canada

Located Within:
NTS Sheet 115 A13

Centered at Approximately:
Latitude 60.85° North by Longitude 137.94° West

Claims:

ELLEN 1 - 20	YA97362-366, YB26797-799, YB27078-089,
ELLEN 25 - 37	YB27094-096, YB35480-483, YB36844-849
ELLEN 104, 181, 182	YE69424, YE69401, YE69180
ELLEN 144 - 170	YE69464 - YE69490
ELLEN 172 - 180	YE69492 - YE69500
PACER 25 - 56	YD90865-896
PACER 144, 146, 148, 150	YE33418, 420, 422, 424

Yukon Mineral Exploration Program:
Target Evaluation #18-046

Field Work Conducted:
July 6 - August 6, 2018

Report Prepared for:
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January 31, 2018

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1 Introduction

The Ellen Property comprised of 72 mineral claims (~1327 hectares) at the time of the YMEP proposal has since expanded to 108 mineral claims (~2045 hectares) with the acquisition of the adjacent Pacer claim group announced July 16, 2018. The project is located 28 km northwest of Haines Junction and 186 km from Whitehorse, Yukon Territory in the Kluane Mountains and Shakwak Valley. The topography features broad valleys, rocky ridges and rounded upland areas incised by steep creek canyons. The Ellen Property covers potential Ni-Cu-PGE mineralization associated with late Triassic ultramafic rocks and volcanogenic massive sulphide mineralization in Triassic mafic volcanic rocks; part of a belt extending northwest from the town of Haines Junction to Silver City in the Front Ranges of the Kluane Mountains.

This report was prepared to satisfy requirements for the Yukon Mineral Exploration Program (YMEP) reporting. The work program consisted of geological mapping, rock sampling, soil sampling and prospecting based on recommendations from a YMEP proposal report by Longford Exploration Services Ltd. on behalf of Group Ten Metals Inc. The work was carried out by Longford Exploration Services personnel with project management by James Rogers of Vancouver, B.C. Total expenditures before management fee and GST amounted to $75,857.82.

Group Ten Metals Inc. is a Canadian mineral resource exploration company with a portfolio of highly-prospective precious metals properties located in North America. Group Ten Metals Inc. is focused on the acquisition and development of high-quality platinum, palladium, nickel, copper and gold exploration assets in North America. The Company's holdings include the Stillwater West PGE-Ni-Cu project adjacent to Sibanye-Stillwater's high-grade Pd-Pt mines in Montana, the Catalyst Ni-Cu-PGE project adjacent to Nickel Creek Platinum's Wellgreen deposit in the Yukon Territory, and the Black Lake-Drayton Gold project in the Rainy River district of northwest Ontario.

2 Reliance on Other Experts

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

3 Summary of Previous Investigations & Recommendations

The project area has been intermittently explored since 1892, when Jack Dalton and E.J. Glave made an overland trip with four packhorses from the Chilkat River to the shores of Kluane Lake over a foot path which the Chilkat First Nations had used for the preceding two centuries as a trading route to the interior of the Yukon. Dalton established trading posts and improved the trail as far north as the Nordenskold River. Klondike prospectors used the Dalton Trail extensively during the 1898-1900 period en-route to the goldfields of the Klondike, but prospecting in the Front Ranges began around 1903 when Silver City (or Kluane) was established at the eastern end of Kluane Lake and became the center of mining activity in the region. Silver City boasted a post office, N.W.M.P. post and Mining Recorder; a wagon road led east through Champagne to Whitehorse. The threat of Japanese invasion sparked the building of the Alaska Highway in 1942 and the Haines Road followed in 1944. Improved access in the post war period brought on an exploration boom, although no lode mining production is known from the immediate project area. Placer mining has been intermittent with placer activity on Telluride and Kimberly Creeks.

The Ellen property covers the Kloo volcanogenic massive sulphide drilled prospect as documented by the Yukon Geology Program as Minfile Number 115A 041 that occurs in outcrop along the steep sided Ellen Creek gully. Exploration on the Ellen Project, undertaken from 1954 to 2017, has involved approximately 1,214m of drilling in 17 holes, hand/blast trenching, rock and soil geochemistry, electromagnetic (VLF-EM, VTEM, and horizontal loop) and magnetic geophysical surveys.

The three MINFILE occurrences of note in the vicinity of the Ellen and Pacer Claim Groups are described below:

1) The Archibald showing (MINFILE 115A036) was originally staked in 1966 by Golden Gate Exploration following an airborne magnetic survey. This showing, known locally as the Colton showing, was explored intermittently from 1988 to 1989 in conjunction with work on the northerly Decoeli showing. Gold was reported with pyrrhotite and chalcopyrite in a quartz-carbonate stockwork cutting rusty siliceous argillite in the hanging wall of a serpentinized gabbro-peridotite sill that was found to be 150 meters thick and at least 4000 meters long. A specimen from the main showing assayed 19.7 g/t Au and a nearby quartz-sericite vein returned 2.5% Cu and 1.5 g/t Au. High grade copper float was found in foliated greenstone boulders in what is now known as Thunderegg Creek. Noranda defined a gold in soil geochemical anomaly 1500 meters long and 20 meters wide with values up to 1270 ppb Au extending north to the Decoeli showing. Rock samples assayed as high as 3.1 g/t Au. Noranda abandoned the option on this showing in 1991 as part of a corporate reorganization. The main Archibald showing is now covered by the Pacer SE claim group.

2) The Decoeli showing (MINFILE 115A040) was initially staked in 1966 and ultimately optioned to Noranda in 1989 following a brief surface exploration program targeting a serpentinized peridotite-dunite-gabbro sill cutting argillite and metavolcanics of Triassic age on the northern flank of Mt. Archibald. Chalcopyrite and pyrrhotite occur in rusty silicified argillite in the hanging wall of a gabbro sill. Gold values of up to 17 g/t Au were reported in this zone. The Decoeli showing languished for a number of years, and was staked as the Haine Claims by prospector Shawn Ryan on April 20th, 2007 and is now owned by Strikepoint Gold Inc.

3) The Kloo showing (MINFILE 115A041) was first staked as the Jude claims in 1953 and optioned to Hudson Bay Mining and Smelting Company Ltd. who drilled five holes and built an access road. The property was re-staked as the MC Claims in 1962 by T. Worbetts and optioned to Canadian Barranca Mines Ltd in 1965 who added more claims, improved the road, carried out geochemical soil sampling,

geological mapping, geophysical surveying and drilled 3 holes. The property was re-staked as the Ellen Claims in 1987 by Ron Stack. The property was examined in subsequent years by Noranda Exploration Company Ltd., Total Energold Corporation and Placer Dome Exploration Ltd. and both Ron Stack and Graham Davidson added more Ellen claims.

The Ellen claims are underlain by a thick, layered felsic to mafic volcanic sequence of the Upper Triassic Bear Creek Assemblage. Volcanics are conformably overlain to the south by limestone, schist and green tuffaceous volcanics of the Upper Jurassic to Lower Cretaceous Dezadeash Formation. Mineralisation at the main showing consists of intense malachite staining and massive chalcopyrite/pyrrhotite stringers hosted in a series of thick andesitic flows and tuffs (Figure 3.1). Stringer zones show dark green to black chloritic alteration up to 30 centimeters thick. Surface sampling in 1966 returned 3.0% Cu across a width of 9.1 meters and 2.0% Cu across 4.6 meters for the south side of a creek gully. Analysis of samples of the 1966 drill core returned 3.15% Cu over 5.2 meters from hole MC66-1, 1.64% Cu over 10.4 meters (including 6.4 meters of 2.20 % Cu) in hole MC66-2 and 1.20% Cu over 5.2 meters in hole MC66-3. In 1969, hole MC69-7 intersected 1.5 meters of 0.7% Cu below the 1966 holes. Holes MC69-5 and MC69-66, stepped out 61 meters along strike to the northwest from the 1966 holes, cut 0.9 meters of 1.1% Cu and 4.3 meters of 0.6% Cu respectively. Hole MC69-4 tested an EM and magnetic anomaly to the east of the main showing and intersected graphite schist and two bands of serpentine, 7.9 meters and 9.4 meters thick, containing Ni values up to 0.11%. (Pautler 2006).

Trenching in 1989 exposed additional massive chalcopyrite in two layers of shale interbedded with andesitic tuff and banded siliceous tuff, as well as a third pyritic sulphide layer in the metavolcanic rocks over a strike length of approximately 100 meters. A 2.0 meter chip sample across the uppermost layer returned 8.55% Cu and 789 ppb Au. Specimens containing up to 990 ppb Au, 10.1 g/t Ag, 126 ppm Mo and 2,900 ppb Hg were also reported. A fourth massive chalcopyrite layer was found in 1990 and disseminated sulphides were found over a thickness of 152.4 meters.

In 1993 Probe Resources Ltd. optioned the Ellen claims and carried out rock and soil sampling, geophysical surveys and drilled 5 holes. Strong copper±gold soil geochemical anomalies (with maximum values of 4818 ppm Cu and 1340 ppb Au) were outlined in the 1993 soil survey, generally coincident with geophysical conductors outlined along the main zone of the Kloo prospect, 170m north of the main zone and 800m along strike to the southeast of the Kloo prospect.

The 1995 drilling by Probe Resources returned one 5 meter intersection grading 1.76% Cu in DDH 95-1. Holes DDH 95-2 and DDH 95-3 intersected the mineralized zone with grades of 0.88% Cu over 7.6m in DDH 95-2, down dip of DDH 95-1 and 1.96% Cu and 2.1 g/t Au over 2.1m in DDH 95-3. Holes DDH-4 & DDH-5 were drilled to the northeast on an EM anomaly intersected a serpentinite sill approximately 30 meters thick, containing disseminated chalcopyrite and pyrrhotite.

In 2001, Ron Stack and Bill Harris of Midnight Mines Ltd. carried out prospecting, hand trenching and geochemical rock sampling in areas of known mineralisation and investigated the upland plateau area northwest of the main showing. Prospecting in 2001 and 2002 revealed chalcopyrite stringer mineralisation with associated quartz/chalcopyrite veins up to 300 meters to the northwest and 200 meters to the southeast of the Kloo.

Mineralization at the main Ellen showing (Kloo) exhibits intense malachite and azurite staining on outcrops along the canyon of Ellen Creek, with several zones (up to 10m wide) consisting of chloritic volcanic rocks bearing semi-massive lenses and veins of pyrite, pyrrhotite and chalcopyrite layers (parallel to bedding and shear planes trending 110-125°/20-50°S), crosscutting stringers and breccia zones with sulphide cement (Pautler, 2007). Two horizons have been identified, the Main and Lower horizons. Results

in 2006 from trench samples at the Main horizon include 7.23% Cu, 1.01 g/t Au with 1.01 g/t Pd over 2.5m. Chalcopyrite occurrences have been traced for 800m along strike to the southeast and 500m along strike to the northwest. There are indications that the Kloo showing may represent a Besshi-style massive sulphide occurrence. (Pautler 2006).

The 2012 VTEM Survey of 304 line km identified 8 conductive zones for further exploration and a strong magnetic anomaly (possible ultramafic sill) in the southwestern property area that had not been explored. Prior to the 2018 exploration program most of the mineralization on the property was not analyzed for PGEs; sample analysis in the 2018 field program included PGEs.

The Ellen Project constitutes a property of merit based on the presence of a significant volcanogenic massive sulphide showing with high grade copper±gold values and the potential to trace the showing along strike as evidenced by the numerous chalcopyrite occurrences, anomalous copper-gold soil geochemistry and coincident geophysical anomalies (Pautler, 2007).

The proposed 2018 Ellen Project YMEP work program recommendations included:

1) Geochemistry on EM geophysical targets where conductive responses coincide with magnetic anomalies. Grid soil sampling, geological mapping and rock sampling will be undertaken on southwestern magnetic low.

2) The second soil grid will target VTEM anomaly #5 a coincidental magnetic high, and a potential ultramafic sill which needs to be examined further for potential PGE mineralization.

3) The third soil grid will target conductive zone #4 a regional near surface sub-horizontal moderate conductive layer that is found near the centre of the block. Further mapping and rock sampling will be performed along strike of the Kloo Minfile occurrences.

The 2018 program described in this report comprised 50 mandays of work completed between July 6-August 6, 2018, including collection of a total of 726 soil samples on grid soil lines targeting favourable geology and airborne geophysical anomalies above Ellen Creek. During the program geological mapping (53 geo pts), rock sampling (42 rock samples) and prospecting of the Ellen creek canyons and uplands was undertaken on traverses. Rock samples were checked with an infield XRF device and all samples were sent to Bureau Veritas in Whitehorse for analysis.

The 2018 program identified three areas of anomalous soil geochemical values somewhat coincidental with mapped intervals of more intense quartz carbonate chlorite veining and breccia in mafic volcanic rocks hosting disseminations and veinlets of pyrite, pyrrhotite and chalcopyrite mineralization.

1) The strongest copper anomaly occurs in a NW-SE orientation along the northeast facing wall of the Shakwak valley and continues onto the upland area to the southeast. This geochemical response occurs along the upper margin of an aeromagnetic anomaly where more intense quartz carbonate chlorite vein zones occur within mafic volcanic rocks of YMEP target area 1 and extend toward YMEP target area 3. The geochemical response may also reflect less overburden on the steeper slope.
2) More subtle and patchy anomalous values in copper are weakly coincidental with the margins of aeromagnetic highs, which have the regional NW/SE orientation across the upland and may be indicative of zones of more intense quartz carbonate chlorite veining identified during mapping. Overburden across the upland plateau probably masks the geochemical response in the central claim area.

3) A copper nickel and PGE + Au soil geochemical anomaly outlined in the southwest of the Ellen property (YMEP target area 2) coincidental with VTEM anomaly 5 and an aeromagnetic high. Mapping has located an ultramafic and gabbroic sill which had been postulated by previous authors. Rock sample results are consistant with samples collected from other sills in the region assaying up to 1719ppm nickel. The aeromagnetic high trends off the claims to the northwest.

The geochemical anomalies are strongest along the northeast facing wall of the Shakwak valley, an area which is heavily overgrown by alder and buckbrush and still requires further surface work. A program of mapping and sampling is recommended in this area along with some infill soil geochemistry along this trend and in the Ellen Creek gully. The initial program should further investigate VTEM anomalies 1-4 which have yet to be adequately explained. Extending the soil geochemical grid to the north is recommended to provide better coverage of the geophysical conductors although this area is partially overlain by gravel channels of Ellen Creek.

The Phase 1 program should be followed by a 1,000m drill program targeting the Kloo occurrence down dip and along strike of the main showing and include a down hole electromagnetic geophysical survey.

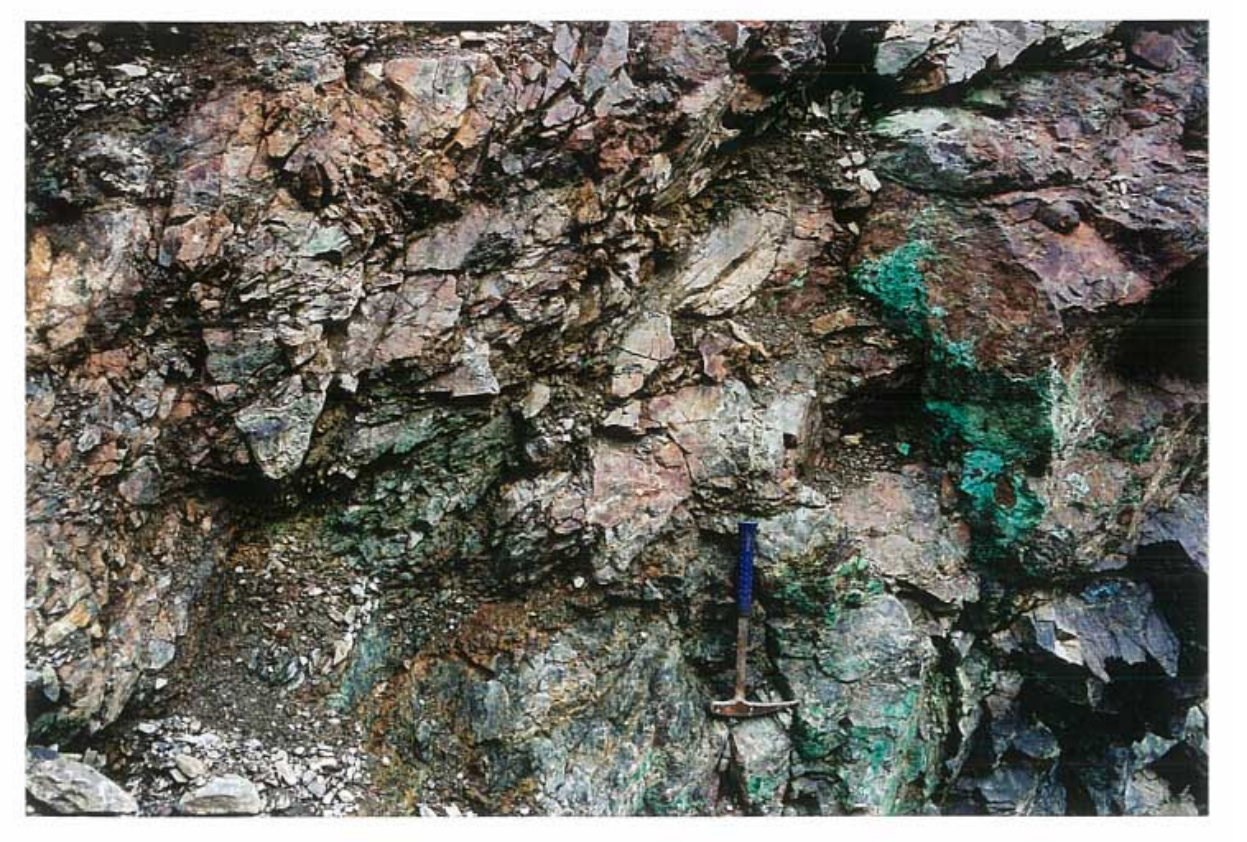

Figure 3.1 Malachite and azurite staining on outcrops along the canyon of Ellen Creek.

4 Project Purpose, Property Description and Location

4.1 Purpose

The purposes of the 2018 program were:

1. Geochemical sampling, silt sampling, geological mapping of mineral occurrences and previously identified HLEM, aeromagnetic and electromagnetic anomalies and target areas identified by historic exploration programs.
2. Prospecting, geochemical sampling and mapping of the general claim area.
3. Develop drill targets at the Kloo mineral occurrence.

4.2 Location, Physiography and Climate

The Ellen Property is located in the Southwest Yukon, 28km northwest of Haines Junction on NTS map sheet 115 A/13 in the Whitehorse Mining District at latitude 60° 52'N and longitude 137°58'W (Figure 1). The property is situated 8 km west of the Alaska Highway and is accessible via a road which leaves the highway approximately 1 km north of the Jarvis River Bridge. This road crosses the Jarvis River and continues past the property to placer mines located on Kimberly Creek. An old tote road connects the Ellen claims to the Kimberly Creek road 250 m west of the Jarvis River crossing. The 1990 camp, with a 14 by 16 foot tent frame is situated at UTM coordinates 6751729mN, 339596mE, NAD 83, Zone 8.

The project lies along the west margin of the Shakwak Valley in the Kluane Ranges of the St. Elias Mountains. The Shakwak Valley is a deep northwest-southeast oriented depression stretching for several hundred kilometers from northwestern British Columbia to Alaska. In the Jarvis River area, the valley is 8 to 10 km wide, bounded on the west side by the rugged Kluane Ranges which rise to 2588m. The property is located at the northern end of the prominent massif of Mt. Decoeli covering an alpine plateau incised by a deep creek gully (Ellen Creek) a tributary of the Jarvis River. The plateau is bounded on the east by a steep north facing slope which descends to the low lying Shakwak Valley floor. Elevations on the property range from 815m along the Jarvis River in the north to 1737m on the north flank of Mt. Decoeli.

The Kloo mineral occurrence is located in a rugged steep sided gully (Ellen Creek), oriented perpendicular to the Shakwak Valley. Outcrop is abundant in the gully and on steeper slopes, however the surrounding uplands are covered with glacial till. Vegetation below the alpine plateau consists of spruce and poplar forest with moderate to thick ground cover broken by tundra. Water is available from tributaries of the Jarvis River. The Haines Junction area has a northern interior climate strongly influenced by the St. Elias Mountains. The area is known for high winds which constantly blow from the mountains into the Shakwak Valley. Winter temperatures average –20°C while summer temperatures average 20°C but range up to 30°C. The exploration season extends from May to October.

4.3 Access

The Alaska Highway forms the northeastern boundary of the project area, and the Haines Highway extends south from Haines Junction ~300 km to the deep-water port of Haines, Alaska.

Airstrips are located at Haines Junction and Silver City with charter helicopter and fixed wing services available at Haines Junction and seasonally from Silver City. Commercial accommodation is available in Haines Junction and Silver City, and the former remains the best venue for staging exploration in the project area with most of the support that early stage exploration requires.

An 8.5 km trail leads to a clearing on the claims used for past exploration programs. The trail is passable by pickup truck across the Jarvis River where seasonal water levels sometimes prevent crossing. The trail deteriorates southwest of the Jarvis River leading up to the old campsite and will require work if it is to be used in the future.

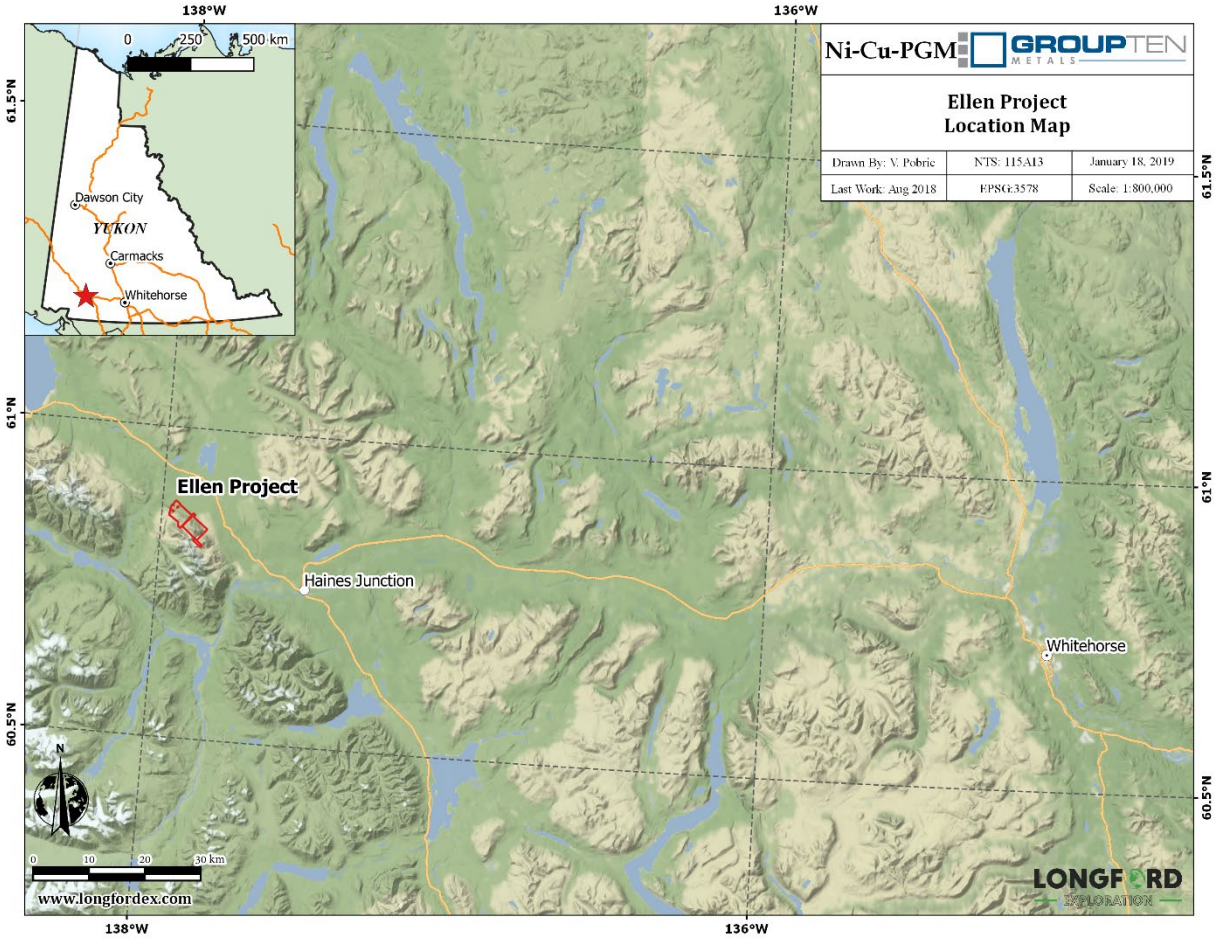

Figure 4.1 Ellen project location map.

4.4 Mineral Titles

The property consists of 73 claims owned by Group Ten Metals Inc (Table 4.1) and 36 claims under option from Longford Exploration Services Ltd. Ryan Versloot of Longford Exploration filed an Application to Group Mineral Claims (YQMA Form 12) in respect of these claims and adjoining claims on August 17, 2018.

The 73 mineral claims under the focus of the YMEP #18-046 grant and subsequent 36 claims under option are:

Table 4.1 Ellen and Pacer mineral titles summary.

Claim Name	Grant Numbers	Owner	No of claims	Grouping Certificate	Expiry Date*
ELLEN 1 - 20	YA97362-366, YB26797-799, YB27078-089	Group Ten Metals Inc.	20	HW07666	2023-11-05
ELLEN 25 - 37	YB27094-096, YB35480-483, YB36844-849	Group Ten Metals Inc.	13	HW07666	2022-11-05
ELLEN 104, 181, 182	YE69424, YE69401, YE69180	Group Ten Metals Inc.	3	HW07666	2022-11-05
ELLEN 144 - 170	YE69464 - YE69490	Group Ten Metals Inc.	27	HW07666	2022-11-05
ELLEN 172 - 180	YE69492 - YE69500	Group Ten Metals Inc.	9	HW07666	2022-11-05
PACER 25 - 56	YD90865-896	Longford Exploration Services Ltd.	32	HW07666	2023-11-05
PACER 144, 146, 148, 150	YE33418, 420, 422, 424	Longford Exploration Services Ltd.	4	HW07666	2023-11-05

The claims were staked in accordance with the Yukon Quartz Mining Act on claim sheet 115A/13, available for viewing in the Whitehorse Mining Recorder's Office (Figure 4.2).

First Nations have settled land claims in this area with the western portion of the property occurring within Champagne-Aishihik First Nations surveyed land. The claims are grandfathered and do not revert to the First Nation unless claims lapse. The remaining land in which the mineral claims are situated is Crown Land. The mineral claims fall under the jurisdiction of the Yukon Government.

A mineral claim holder is required to perform assessment work and is required to document this work to maintain the title as outlined in the regulations of the Yukon Quartz Mining Act. The amount of work required is equivalent to $100.00 of assessment work per quartz claim unit per year. Alternatively, the claim holder may pay the equivalent amount per unit per year to the Yukon Government as "Cash in Lieu" to maintain title to the claims.

Preliminary exploration activities do not require permitting, but significant drilling, trenching, blasting, cut lines, and excavating may require a Mining Land Use Permit that must be approved under the Yukon Environmental Socioeconomic Assessment Act (YESSA), under applicate class III and class I notification.

Figure 4.2 Ellen project claims map.

5 Geological Description

5.1 Regional Geology

The regional geology of the area has been summarized from Gordey and Makepeace (2003), Israel and van Zeyl (2005) and Israel and Cobbett (2008). The Ellen Property is situated between the Denali Fault and the Shakwak Valley in a wedge of Triassic volcanic and sedimentary rocks of the Bear Creek Assemblage and the Dezadeash clastic succession (JKD) adjoining the Wrangell Terrane (WR), part of the Insular Super Terrane (see Figure 5.1- Regional Geology Map). The Wrangell and Alexander terranes were together by the mid-Jurassic and formed the basement beneath at least part of Wrangellia by Early Pennsylvanian time. Overlap assemblages north of the Denali Fault include the Late Triassic Bear Creek Assemblage, Israel et al (2014).

The Wrangell Terrane consists of Devonian to Permian arc volcanic, clastic and platform carbonate rocks (PH) overlain by Triassic oceanic rift tholeiitic basalt (uTN), and carbonate rocks and associated igneous bodies of the Kluane Mafic-Ultramafic Complex (uTu), thought to represent feeders to the Triassic flood basalts. The Alexander terrane south of the area is composed of lower Paleozoic volcanic and sedimentary rocks (CPS1, ODG2 and OSDB). The latter includes a large package of limestone (OSDB1). Post accretionary units include Jura-Cretaceous sedimentary rocks (JKD – Dezadeash Group), overlapping Wrangellia and Alexander Terranes, and Tertiary felsic to mafic volcanic rocks with interbedded terrestrial sedimentary rocks of the Bear Creek Assemblage (uTB) that underlie the Ellen property. Intrusions in the region include Jura-Cretaceous (JKS), Cretaceous (EKK) and Neogene plutons (EKP).

The major structural feature of the area is the Denali Fault, a large fault zone that lies southwest of the property. It is a northwest trending strike-slip fault with a dextral sense of motion with an offset in the order of 350 km. The northwest trending Duke River Fault separates Wrangellia from the Alexander Terrane. The area mapped as Upper Triassic Bear Creek Assemblage (uTB) and Dezadeash Group (JKD), northeast of the Denali Fault includes the Ellen, Pacer and Haine properties (see Table 5.1 - Table of Formations).

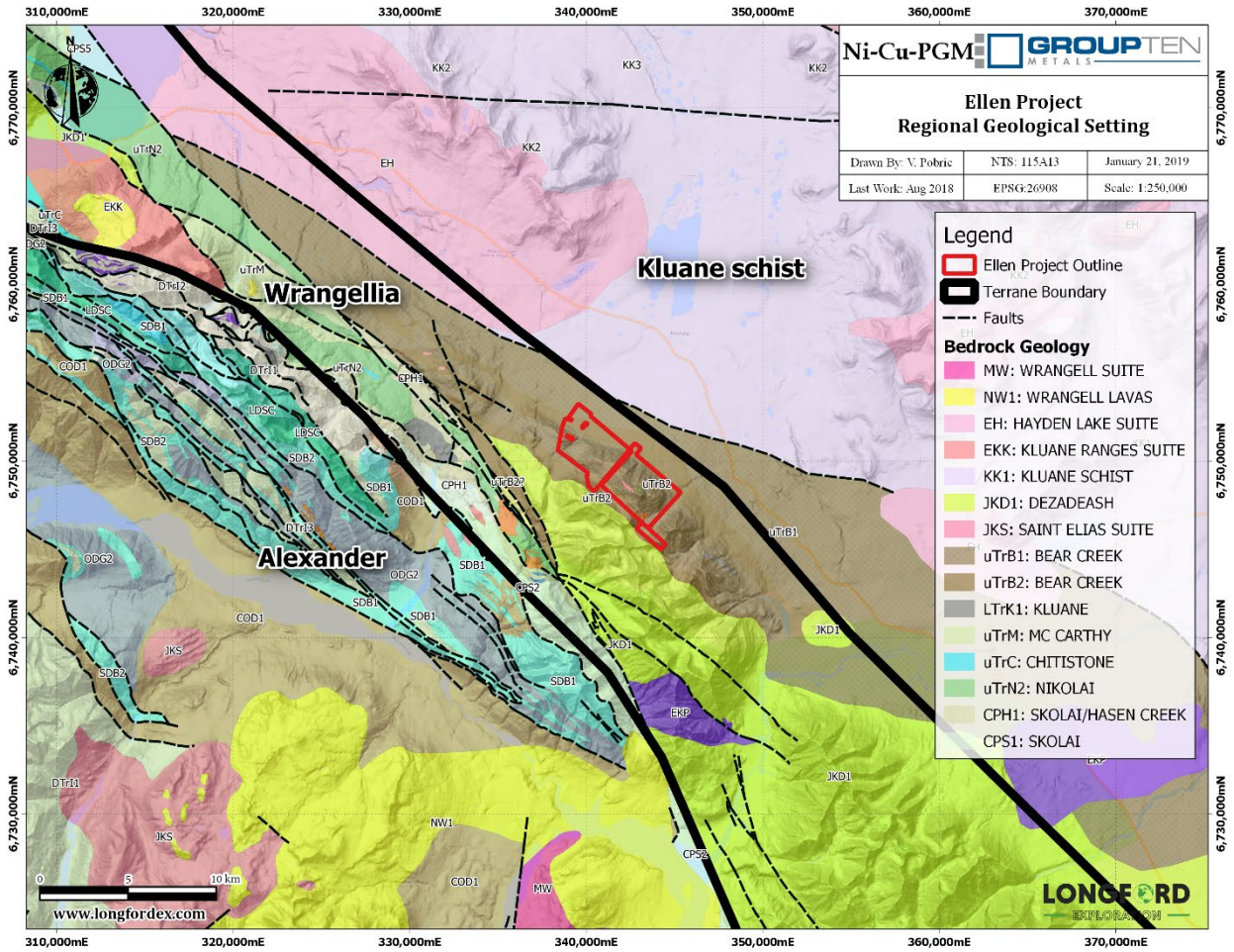

Figure 5.1 Ellen project regional geology map.

Table 5.1 Table of Formations (after Open File 2014-18, YGS).

Q – Quaternary	Unconsolidated alluvium, colluvium and glacial deposits.
NW, Miocene to Pliocene Wrangell Lavas	NW1 - Extensive volcanic unit, volumetrically significant but not associated with mineralization. Occur on the southwest side of Wrangellia overlapping onto the Alexander Terrane. Abundant west of the Donjek River and typically form piles 400-1000m thick. Mafic to felsic volcanic rock with NW2 – volcanic conglomerate.
MW, Mid to late Miocene Wrangell Suite	MW - Youngest intrusions in the area. Related to the Wrangell Lavas. Felsic to mafic composition.
OT, Oligocene Tkope Suite	OT-Homogeneous granite with lesser granodiorite, diorite and gabbro. Subvolcanic rhyolite, rhyodacite and dacite.
EKK, EKP, Early Cretaceous Kluane Ranges Suite	EKK, EKP - medium to coarse-grained, biotite-hornblende granodiorite, quartz diorite, quartz monzonite and hornblende diorite. Minor diorite and gabbro. Pegmatite and porphyry dykes.

JKD, Early Cretaceous Dezadeash Formation	JKD - lithic greywacke, sandstone, siltstone, shale, argillite and conglomerate, rare tuff.
JKS, Jurassic, ST. Elias Suite	JKS - coarse grained hornblende-biotite granodiorite and quartz diorite.
uTM, Late Triassic McCarthy Fm.	uTM - Conformably overlies the Nikolai Group, varying in thickness from zero to several hundred metres. Argillaceous limestone and argillite; massive limestone, limestone breccia and well-bedded limestone, gypsum and anhydrite. (McCarthy, Chitistone and Nazina limestone).
uTu, Late Triassic Kluane Ultramafic Suite.	Preferentially intrudes at or near the Hasen Creek-Station Creek contact. uTu - peridotite, dunite and clinopyroxenite, layered intrusions, locally with gabbroic chilled margins.(Kluane-type mafic-Ultramafics Gabbro-Diabase Sills) uTmg - Maple Creek gabbro. Fine to coarse grained diabase and gabbro sills and dykes. Intrudes the Skolai Group and locally the Kluane ultramafic suite.
uTN, Late Triassic Nikolai formation	uTN3 – thinly bedded grey limestone and argillite. uTN – dark green to maroon amygdaloidal basalt and basaltic andesite flows, locally pyroxene and plagioclase phyric. (Nicolai Greenstone) uTN1 – light to dark green volcanic breccia, pillow lava and basal conglomerate.
uTB, Late Triassic Bear Creek Assemblage	uTBm - strongly foliated to massive intermediate to mafic metavolcanic rocks, lesser metaclastics, volcaniclastics and carbonate horizons uTBs – meta-siltstone, mudstone and sandstone; phyllitic to schistose, pyritic. uTBv – strongly foliated to intermediate to mafic metavolcanic rocks, greenschist.
PH, Mississippian to Permian Hasen Creek Fm.	PH – fine-grained clastic rocks. Lower part contains volcaniclastics, rare basalts, rare chert beds and chert-pebble conglomerate. PHc – limestone, locally fossiliferous, massive to bedded.
CS, Mississippian to Permian Station Creek Fm.	CS - dark green basalt flows, pillows, pillow breccia, local magnetite-rich jasper. CSvt – bedded to massive chert, tuff. CSv – interbedded volcanic breccia, volcaniclastics; minor basalt flow. CSvt – laminated volcanic tuff and volcanoclastic siltstone.

5.2 Regional Mineralization

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

1. Basal accumulations of massive sulphides

2. Disseminated sulphides at the gabbro-ultramafic contact in each intrusion

3. PGE and Au rich zones associated with hydrothermal quartz-carbonate alteration at the edges of the sills and extending into the country rock.

4. Disseminated and lesser net textured or massive sulphides in the ultramafic core of each sill.

The most common sulphide minerals are pyrrhotite, pyrite, pentlandite and chalcopyrite; the common oxide minerals are limonite, magnetite and ilmenite. Figures 5.2 and 5.3 illustrate mineral occurrences associated with Upper Triassic ultramafic sills and volcanic rocks. The best known deposit and the sole producer in the belt is Nickel Creek Platinum Corp. Wellgreen Deposit (Minfile 115G024). At Wellgreen

the platinum group metals combine with As, Sb, Te, Bi, Ni, S, Co and Fe to form minerals and alloys. Sperrylite (PtAs2) and Sudburyite (PdSb) are two of the more abundant minerals (Hulbert, 1997). The Wellgreen Deposit, produced almost 200,000 tonnes of Ni-Cu-PGE ore in 1972 and 1973 and hosts reserves of 49.9 million tonnes grading 0.36% Ni, 0.35% Cu, 0.51 g/t Pt and 0.34 g/t Pd. The Kluane Belt nickel-copper-PGE occurrences are particularly enriched in the rarer platinum group elements osmium, iridium, ruthenium and rhodium.

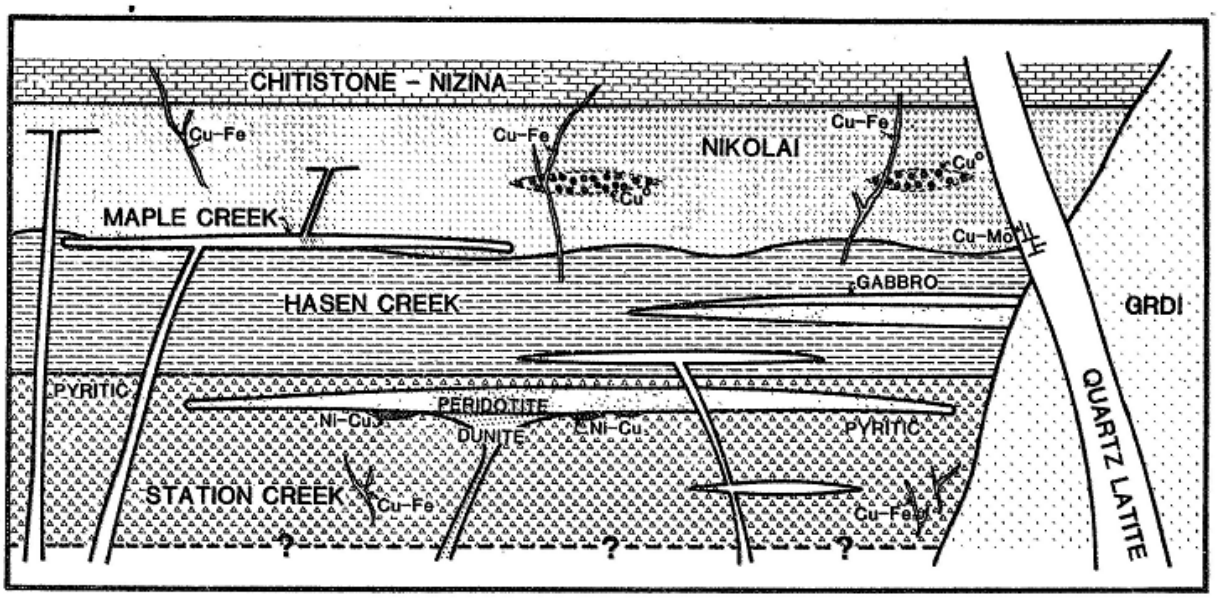

Figure 5.2 Cross section of mineral occurrences in the Kluane Ranges (from Campbell W., 1981).

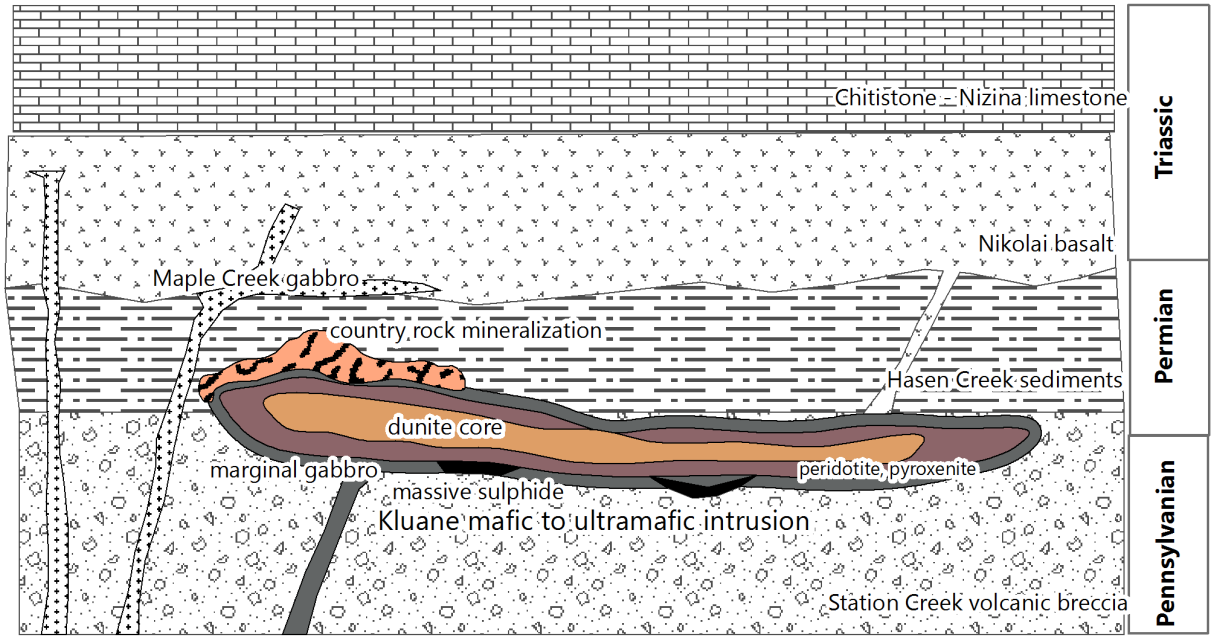

Figure 5.3 Deposit model for the Kluane Belt (modified from Hulbert, 1997).

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

1. Skarn ores developed in Permian carbonates at Wellgreen.
2. Ni-rich ores within the footwall in the White River sill.
3. Cu-rich mineralization in shear zones and deformed intervals of Nikolai basalt.
4. Cyprus type volcanogenic massive sulphide (VMS) mineralization in mafic volcanic rocks.

The Kloo, Telluride and Nunatak minfile occurrences in the Jarvis River area represent potential VMS occurrences within Upper Triassic mafic volcanic rocks with model characteristics summarized by Pautler J., 2007:

> "The main deposit model for the Ellen property is volcanic hosted copper-gold massive sulphide, possibly of the Cyprus type. The following characteristics of the Cyprus massive sulphide deposit model are primarily summarized from Höy (1995).
>
> Deposits of this type typically comprise one or more concordant lenses of massive pyrite and chalcopyrite (sometimes brecciated or banded) hosted by mafic volcanic rocks, underlain by a well-developed pipe-shaped stockwork zone. The stockwork zone consists of a cross-cutting zone of intense alteration with disseminated, vein and stockwork mineralization and hydrothermally altered wallrock. The lenses may be overlain by or associated with chert layers, locally brecciated and containing disseminated sulphides. Lenses commonly occur in tholeiitic or calcalkaline marine basalts, commonly pillowed, near a transition with overlying argillaceous sediments generally within ophiolitic complexes formed at oceanic or back-arc spreading ridges and possibly within marginal basins above subduction zones or near volcanic islands within an intraplate environment. Many lenses appear to be structurally controlled, aligned near steep normal faults.
>
> Ore mineralogy includes pyrite, chalcopyrite, magnetite, sphalerite, with lesser marcasite, galena, pyrrhotite, cubanite, stannite-besterite, hematite in a gangue of talc, chert, magnetite and chlorite. Alteration consists of chlorite, talc, carbonate, sericite and quartz veins in the core of the stringer zone, sometimes with an envelope of weak albite with illite alteration. Goethite alteration of the top of the sulphide layer may occur. Pyritic horizons occur distally and can be useful regional indicators."

The Telluride volcanogenic massive sulphide showing, on the Ultra Property 22km northwest of the Ellen property has reported sample values of 3.23% Cu, 6.75% Zn, 17.8 Ag, 0.15 Au over a 4m width and the Nunatak zone 3km along strike to the southeast of the Telluride occurrence has recorded assay values of 11.54% Cu, 1514 ppm Zn and 7.2 g/t Ag over a 3m width (Pautler J., 2007).

6 Historical Work

Exploration on the Ellen Project, undertaken from 1954 to 2017, has involved approximately 1,214m of drilling in 17 holes, hand/blast trenching, rock and soil geochemistry, electromagnetic (VLF-EM, VTEM, and horizontal loop) and magnetic geophysical surveys.

A summary of the work completed by various operators, as documented in Yukon Minfile, various government publications of the Yukon Geological Survey or its predecessor (Mineral Industry Reports and Yukon Exploration and Geology) and the Geological Survey of Canada and company publications (primarily available as assessment reports filed with the government) is tabulated below:

Table 6.1 Exploration History (Ellen & Pacer claims).

pre 1950 Discovery of chalcopyrite in greenstone on tributary of Jarvis River, early claim posts located, see Figure 6.1 (Davidson,1995).
1953-5 An electromagnetic survey, construction of road to within 500m of showing and diamond drilling of 323m in 5 holes in 1954, all by Hudson Bay Mining and Smelting Company under option from Mr. R. Reber (Deklerk, 2009).
1965-71 Program of geochemistry, geological mapping and ground geophysics (Baird, 1969), completion of road to showing, 101m of diamond drilling in 4 holes in 1966 (with results of 3.15% Cu over 5.2m and 2.2% Cu over 6.4m reported) and 333m in 4 additional holes in 1969 (with results of 1.1% Cu over 0.9m from MC-5 and 0.66% Cu over 4.3m from MC-6, 61m along strike to the northwest) (Canadian Barranca Mines Limited, 1969). Work was performed by Canadian Barranca Mines Limited under option from Mr. T. Worbetts.
1987-1990 Hand/blast trenching, geological mapping, prospecting, soil and rock geochemistry and a horizontal loop electromagnetic geophysical survey by Mr. Ron Stack and Mr. Harris, delineating volcanogenic massive sulphide copper±gold mineralization over a strike length of 75m (Davidson, 1988-1990).
1993-1996 Geological and geochemical surveys, horizontal loop electromagnetic and VLF-EM geophysical surveys, excavator and hand trenching and diamond drilling of 457m in 5 holes by Probe Resources Limited. The drill program intersected 1.76% Cu, 0.3 g/t Au over 5.5m in DDH 95-1 and 1.96% Cu, 2.1 g/t Au over 2.1m in DDH 95-3. A 12 to 15m wide intersection of a serpentinite sill in DDH 95-4 -5 returned an average of 0.17% Ni. The surface program outlined strong copper soil geochemical anomalies coincident with geophysical conductors around the main zone, located widespread concordant chalcopyrite-pyrite-quartz mineralization downstream and along strike from the main showing and delineated new showings to the southeast (Davidson, 1993 and 1995).
2001-2006 Prospecting, geochemical sampling and hand trenching on new showings by Mr. Bill Harris and Mr. Ron Stack and by the author in 2006 (Craig, 2001, 2002, 2005, and Pautler, 2007). Results from 2006 include 7.23% Cu, 1.01 g/t Au and 1.01 g/t Pd over 2.5m (Pautler, 2007).
2011 Field program on the Ellen Project consisted of locating significant old hand trenches, with concurrent geological mapping and geochemical sampling done by Jean Paulter, Ron Stack and Bill Harris.
2012 Brokenstone engaged the services of Geotech Ltd. To undertake versatile time domain electromagnetic (VTEM) a survey over the Ellen Property. The geophysical surveys consisted of helicopter borne EM using the versatile time-domain electromagnetic (VTEM) system with Z component measurements and aeromagnetics using a cesium magnetometer. A total of 304 line-km of geophysical data were acquired during the survey.
2017: During the 2017 field program a total of 16 rock samples, 68 soils were collected on the Pacer block in addition to preliminary property-scale lithological and structural mapping and prospecting from August 20-23rd, 2017. Soil sample results on the Pacer SE block in 2017 were weakly to moderately anomalous in copper and nickel while corresponding to a geophysical anomaly mapped as ultramafic.

Figure 6.1 Early claim post above Ellen Creek.

6.1 Previous Geology and Mineralization

The Ellen Project is primarily underlain by 110˚/30˚ to 50˚ south trending greenstone mainly foliated mafic volcanic rocks, with interbedded phyllite, quartz sericite schist and clastic beds, most likely belonging to the Late Triassic Bear Creek Assemblage (Open File 2014-18, YGS) which has similarities and is contemporaneous with the Nikolai volcanics of the Wrangellia Terrane. An abundance of chlorite, epidote ± serpentine occur as alteration products of clino- and othopyroxenes, amphiboles and feldspar. Small sections of fibrous chlorite and serpentine are seen in various areas throughout the greenstone. Diorite, gabbro and fine-grained peridotite sills of the Kluane Mafic-Ultramafic Suite have been emplaced along thrust faults at the base of the Late Triassic greenstone. The above units are unconformably overlain by Upper Jurassic to Lower Cretaceous Dezadeash Group clastic sedimentary rocks in the southern property area.

The Bear Creek Assemblage has locally been divided to; (uTBm) strongly foliated to massive intermediate to mafic metavolcanic rocks, lesser metaclastics, volcaniclastics and carbonate horizons; (uTBs) meta-siltstone, mudstone and sandstone, phyllitic to schistose and pyritic; (uTBv) strongly foliated to intermediate to mafic metavolcanic rocks and greenschist. The overlying Dezadeash Formation sediments mapped at the southwest extent of the Ellen property, consist of (JKD) lithic greywacke, sandstone, siltstone, shale, argillite and conglomerate with rare tuff. Intrusive rocks of the Kluane Ultramafic Suite

include (uTu) peridotite, dunite and clinopyroxenite as layered intrusions, locally with gabbroic chilled margins and (uTmg) Maple Creek gabbro consisting of fine to coarse grained diabase and gabbro sills and dykes.

Mineralization at the main showing is exposed as intense malachite and azurite stained outcrops along the canyon of Ellen Creek (Figure 6.2, Figure 6.3), with several zones up to 10m wide consisting of semi-massive pyrite and chalcopyrite layers (parallel to bedding and shear planes trending 110-125˚/20-50˚S) crosscutting stringers and breccia zones with sulphide cement (Pautler, 2015). Two horizons have been identified, the Main and Lower horizons. Results in 2006, from the Main horizon include 7.23% Cu, 1.01 g/t Au with 1.01 g/t Pd over 2.5m. Chalcopyrite occurrences have been traced for 800m along strike to the southeast and 500m along strike to the northwest.

Figure 6.2 Chloritic volcanic rock with patchy azurite and malachite staining at Ellen (Kloo) showing.

In 2011 J. Pautler describes the main Ellen showing “significant copper-gold values were obtained from an unmapped open cut on the Lower horizon of the Kloo prospect, on the east side of Ellen Creek with 3.70% Cu, 1.19 g/t Au over 5.22m, including 6.25% Cu, 2.13 g/t Au over 2.5m (Figure 6.4). Pits 01-1 and 01-2, approximately 370m easterly on trend along the Lower horizon from the above open cut (on the bank of Ellen Creek), could not be located due to thick bush, but appear to lie further to the east than traversed. Pit 02-2 was re-located in 2011 and appears to represent the continuation of the Main horizon, 400m along strike to the east of the exposure in Ellen Creek. The easterly trending and 35°S dipping mineralization returned 3.21% Cu, 92 ppb Au. A stringer zone was observed below the Lower horizon in this area with greenstone cut by chalcopyrite bearing quartz veins and chalcopyrite stringers carrying 6926 and 4475 ppm Cu, respectively. Pit 02-1, not located in 2011, is 220m further to the east along strike of the Main horizon with previous results of 5.65% Cu and 120 ppb Au.”

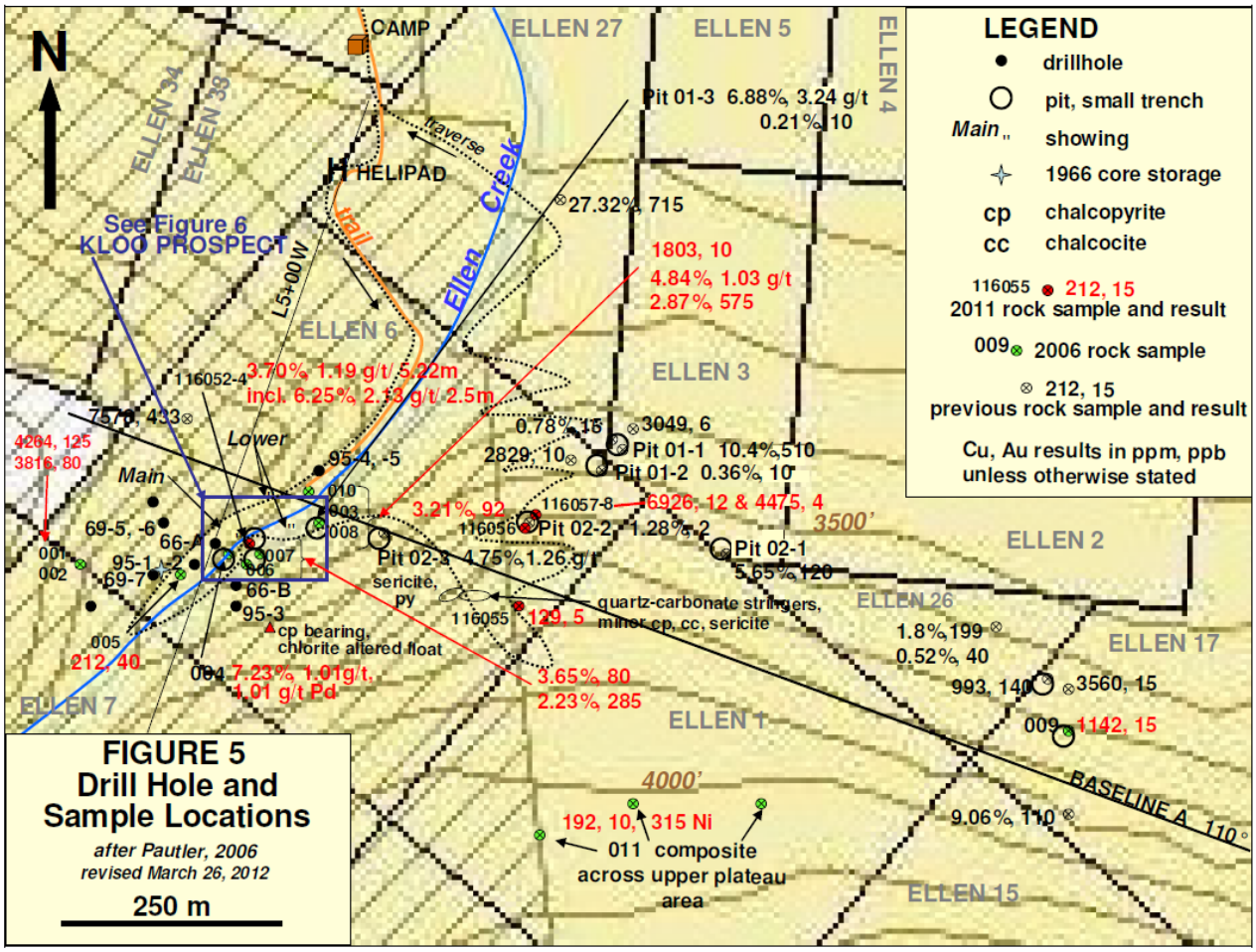

Figure 6.3 Drill Hole and previous sample locations at the Kloo occurrence (Pautler, J., 2012).

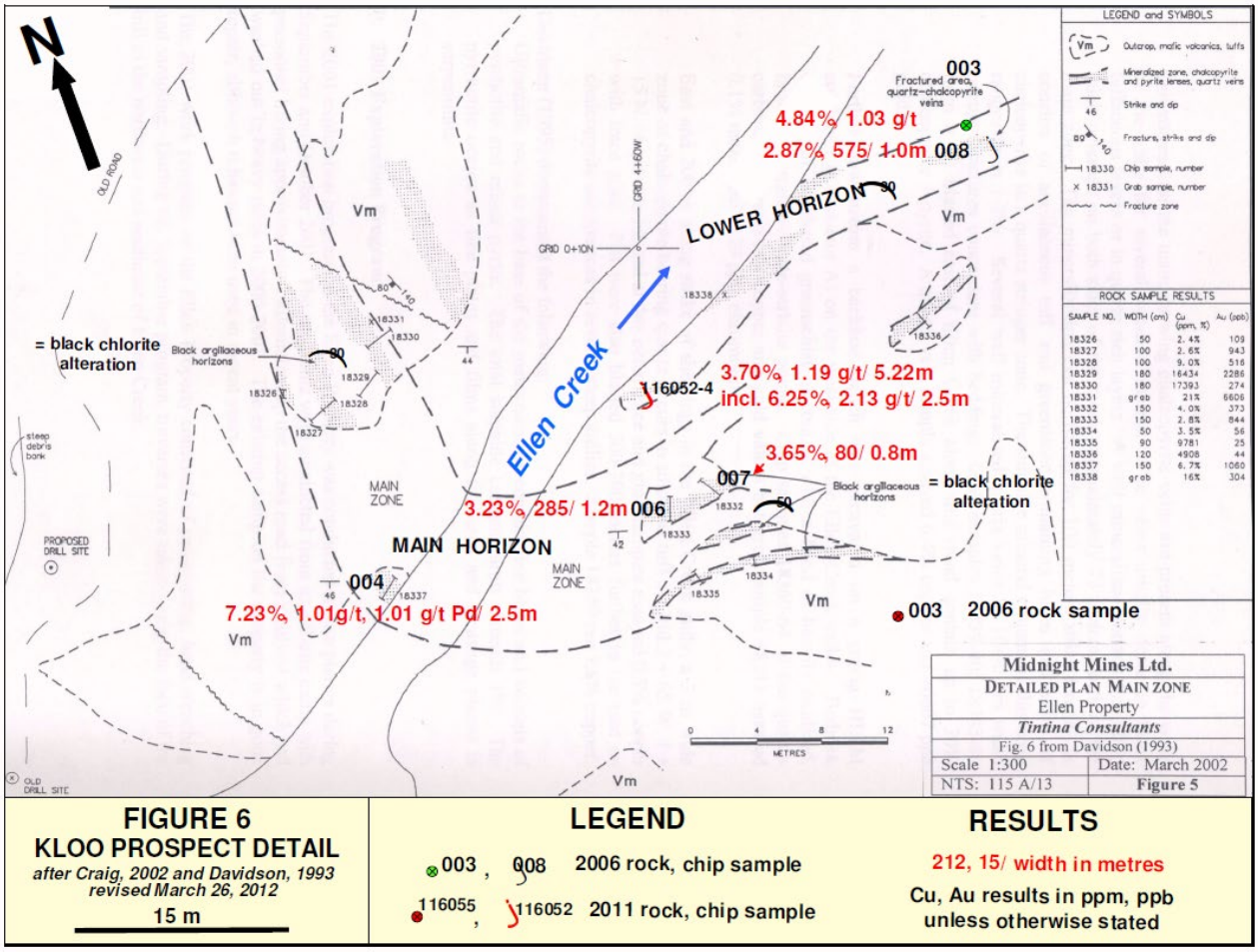

Figure 6.4 Detail of previous (1993-2012) rock samples at the Kloo occurrence (Pautler, J., 2012).

Figure 6.5 Malachite and azurite staining in chloritic volcanic rock exposed in blast pit on the east side of Ellen Creek canyon.

6.2 Previous Geochemistry

Canadian Barranca Mines Limited completed rock and soil geochemistry over the showing in 1966 returning results from rock samples of 3.0% Cu over 9.1m on the northwest side of the creek and 2.0% Cu over 4.6m on the southeast side *(Deklerk, 2009).* Soil results could not be found. From 1989 to 2001, inclusive, 85 rock samples are documented from the property. In 1989 chip samples from the main Kloo showing returned values of 8.55% Cu over 2m and 4.68% Cu, 780 ppb Au over 1m *(Davidson, 1989)*. Rock sampling in 1990 traced the main zone for a 75m strike length, with maximum values from grab samples of 18.3% Cu and 6.63 g/t Au *(Davidson, 1990)*.

In 1993, Probe Resources Limited conducted a 682 sample soil geochemical survey (collected at 50m spacings on lines 100m apart on a 36 line km cut line grid with a 110º trending baseline) and collected 51 rock samples in 1993. The soil survey returned maximum values of 4818 ppm Cu and 1340 ppb Au and outlined strong copper ± gold geochemical anomalies generally coincident with conductors outlined in the geophysical survey along the main zone, 170m north of the main zone and 800m along strike to the southeast of the main zone (Davidson, 1993). The soil samples from this program were not analyzed for PGE's or located with GPS.

6.3 Previous Geophysical Surveys

Results from initial EM, VLF-EM and magnetometer surveys undertaken in 1954 and 1967 have not been found. In 1969, a 35km magnetometer survey noted two areas of increased magnetic intensity near Ellen Creek. In 1990, a 28 line km Omni magnetic survey and a 7 line km electromagnetic survey (2 line km HLEM and 5 line km VLF-EM) were carried out over portions of the cut line grid. The horizontal loop electromagnetic survey outlined a conductor tracing the main zone (Kloo occurrence) 100m to the east. Two similar parallel conductors were outlined on the upland 300m southeast of the Kloo showing along strike (Davidson, 1990).

Geophysical surveying entailing 25 line km of VLF-EM and 11 line km of HLEM during the 1993 program by Amerok Geophysics on behalf of Probe Resources Limited. Three conductors, labelled A, B & C on Figure 6.6 were outlined; A-along the main zone for a 200m total strike extent, B-170m north of the main zone, and C-700m along strike to the southeast of the main zone. Conductors A and B remained open to the west and Conductor C to the east due to limitations of the grid. In 2012, a VTEM airborne survey (304 line km) outlined five HLEM target locations (Figure 6.6).

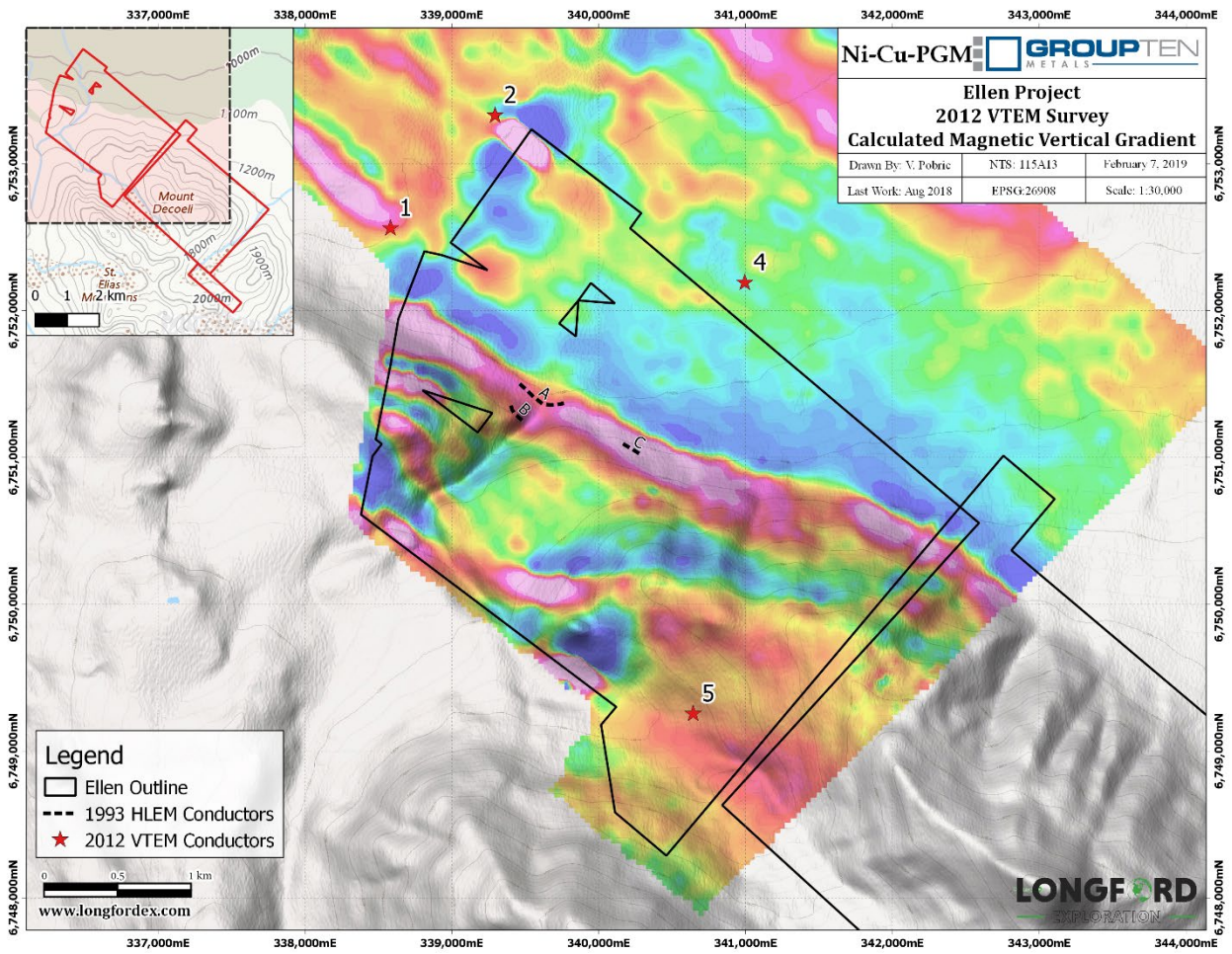

Figure 6.6 2012 VTEM survey calculated magnetic vertical gradient and conductive zones.

The helicopter-borne versatile time domain electromagnetic (VTEM) geophysical survey undertaken by Geotech Ltd. identified 5 conductive anomalies in the Ellen claim area summarized from the Geotech report (2012) as follows:

"Conductive zone #1 is a steeply dipping, structural conductor of approximately 1900m long. The good conductive structure is oriented SE-NW, and it is associated with the magnetic low. According to detail resistivity depth imaging, the top of EM response is about 50m deep. The structure seems to be continuing past the NW edge of the block, and it is on the SW edge of the block, so further investigation is recommended.

Conductive zones #2 & 3 are gently dipping moderate conductive structures and/or lithological conductors that seem to feed into conductive zone #4. Zones #2 & 3 are oriented SE-NW, and they are about 2100m long each. Zone #3 is associated with the magnetic high. According to detail resistivity depth imaging the top of the conductors varies in depth from near surface to about 50m deep. Zone #4 is a regional subhorizontal moderate conductive layer that is found near the centre of the block. According to detail resistivity depth imaging the subhorizontal lithologic conductor is approximately near surface.

Conductive zone #5 is good conductive structural conductor that is gently dipping to the south. The conductive zone is oriented almost E-W, and its length/ size is unknown because it is both on the edge

and the unsurveyed part of the block. The zone is associated with the magnetic high. According to detail resistivity depth imaging, the top of EM response is near surface."

In July 2017, Aurora Geosciences Ltd. released reprocessed geophysical imagery for map sheet 115 A. Magnetic highs from this data not covered by the earlier local surveys are associated with mapped intrusive units and soil geochemical anomalies. A map of the reprocessed data is presented in Figure 6.7.

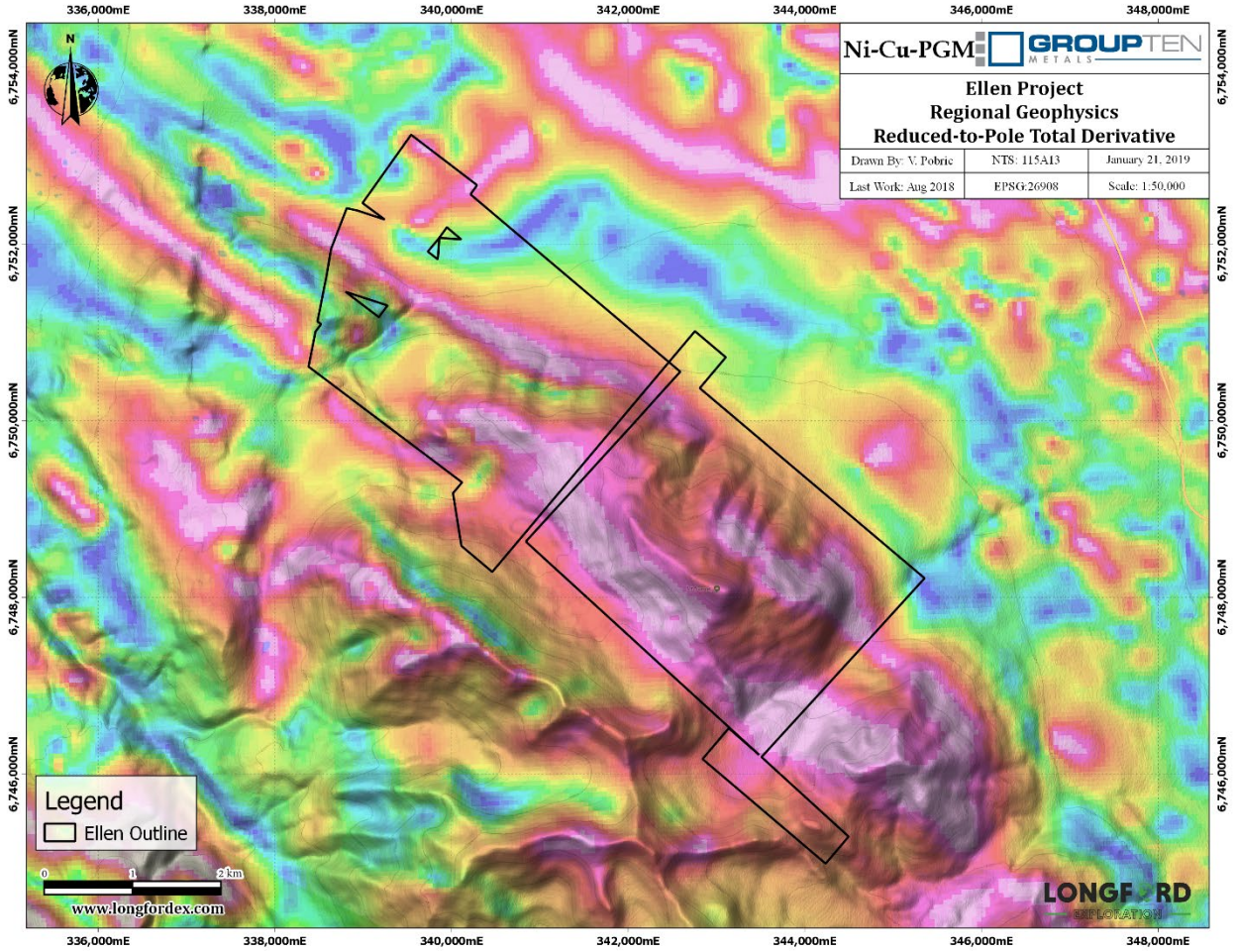

Figure 6.7 2017 Reprocessed aeromagnetic map of the Ellen project.

6.4 Exploration Targets (YMEP)

The Ellen Project area is highly prospective for potential copper-gold VMS associated with differentiated mafic volcanic rocks and nickel-copper-PGE mineralization associated with late Triassic Ultramafic intrusives. Evaluation of HLEM, magnetic and EM targets for potential VMS mineralization by geochemical sampling and geological mapping and advancement of these targets to drill stage was the primary goal of the 2018 field program (Figure 6.8). Additional mapping, rock geochemical sampling, detailed prospecting and infill soil geochemistry with GPS locations was recommended to trace potential copper-gold mineralization further to the northwest and southeast of the known occurrences and to evaluate the overall claim area for PGE potential.

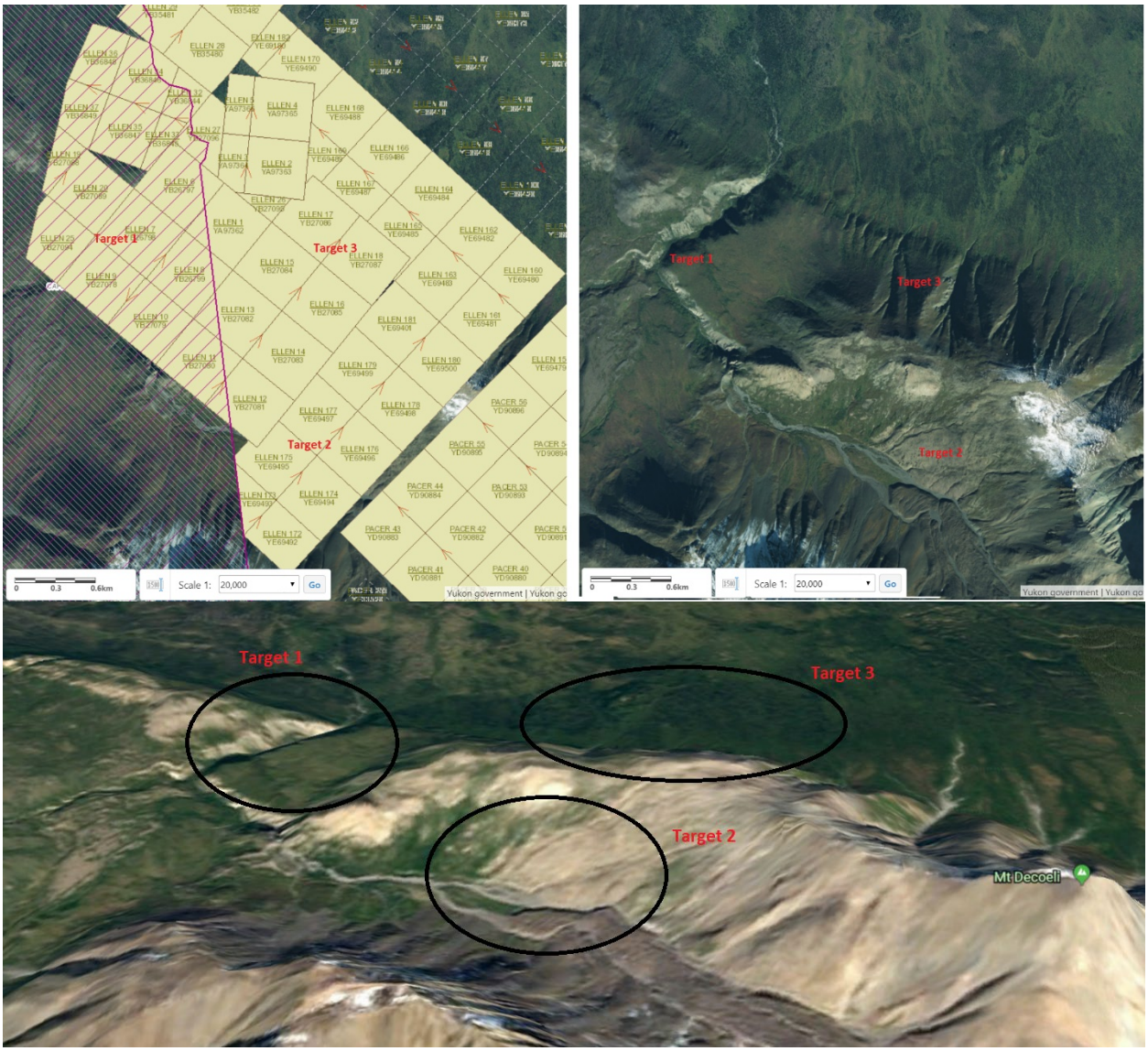

Figure 6.8 Proposed work targets for 2018 program: Target 1 Kloo Minfile and conductive zone #1, Target 2 conductive zone #5 and possible PGE mineralization, Target 3 conductive zone #4.

7 2018 Exploration Program

A Longford Exploration field crew mobilized to Haines Junction on July 29, 2018 and set up camp at the Kluane RV Campground (Alaska Hwy, Haines Junction, YT Y0B 1L0). Field personnel included: geologists Graham Davidson, Ryan Versloot, Paul Leach and student geologist Matt Martinolich. Project manager James Rogers, supervised the YMEP program from the Longford Exploration office in Vancouver, B.C. A total of 50 mandays were spent on the field work as detailed in the daily summary in Appendix B.

During the 2018 work program a total of 726 soil samples were collected on grid soil lines targeting the VTEM geophysical anomalies on the upland plateau above Ellen Creek and on the northeast facing slope of the Shakwak Valley. Soil sampling conditions were generally fair except on north facing slopes where areas of permafrost, swamp and rocky overburden were encountered. South facing slopes generally had better quality soil.

Samples were collected using soil augers in an attempt to sample below organic, ash and permafrost layers. The target soil horizon was the B horizon, but immature soil development in many areas and shallow permafrost meant that sample quality was not ideal. In some cases, the soils were developing on glacial material and were too young to have formed B horizons. Average sample depth was 0.46 m, with a wide range from 0.15 to 1.0 m. It was often necessary to dig several holes to get a good sample. Soil descriptions show that while some samples were from the B horizon, many were mixtures of A, B and C horizons.

The field crew recorded GPS readings at all sample sites and data on the sample site characteristics; including soil type, depth, slope, vegetation and moisture content. After the fieldwork was completed information from the sample form was entered into an MS Excel spreadsheet. The samples were sealed in a kraft bag for delivery directly to Bureau Veritas Laboratories in Whitehorse, Yukon. Samples were dried and sieved to 80 mesh (SS80) and a 0.5g split was analyzed for 33 elements by Aqua Regia ICP-ES (AQ300) as well as a 30g split analyzed for Au, Pt, Pd by Fire Assay ICP-ES (FA330). Analytical certificates can be found in Appendix D.

A total of 42 rock samples were collected and an additional 53 geological points were recorded during traverses around the property. Rock descriptions and GPS coordinates were recorded for each sample and geological reference point then entered into an MS Excel spreadsheet (Appendix B). Rock samples were packaged in numbered plastic bags, secured with plastic zap straps and packed into a rice bag for delivery to Bureau Veritas Laboratories in Whitehorse. Samples were crushed to less than 2mm after which a 250g split was pulverized to below 75µm (PRP70-250) and a 0.5g split was analyzed for 33 elements by Aqua Regia ICP-ES (AQ300) as well as a 30g split analyzed for Au, Pt, Pd by Fire Assay ICP-ES (FA330). Analytical certificates can be found in Appendix C.

Geological mapping of outcrops in the Ellen Creek drainage and surrounding upland plateau utilized helicopter set out traverses. The geologic mapping and prospecting program was conducted by Graham Davidson, Paul Leach and Ryan Versloot. Mapping was focused on tracing sulphide mineralization in mafic chloritic volcanic rock and in zones of quartz-carbonate-chlorite veining, collecting samples summarized in Tables 7.1, 7.2 & 7.3. Ultramafic rocks found in outcrop above upper Ellen Creek were sampled and tested with an XRF device and 16 spot readings recorded at GPS locations (Table 7.4). The historic Kloo massive sulphide occurrences (Ellen showing) exposed in outcrop and in several old blast pits along the lower Ellen Creek canyon was checked and sampled. Traverses along strike of the Kloo to the northwest and southeast encountered dense buck brush with minimal bedrock exposure. Outcrop is generally restricted to several narrow steep sided gullies on the northeast facing wall of the Shakwak Valley.

7.1 Geological Mapping and Prospecting

Outcrop on the claims was primarily in the upper and lower creek canyons of Ellen Creek incising a broad upland area. Outcrop is also present on higher ridges below Mt. Decoeli and in gullies along the steep northeast facing slope of the Shakwak Valley. Meta-sedimentary and meta-volcanic rocks of the Upper Triassic Bear Creek Assemblage make up the majority of the bedrock (Figure 7.1). On the western margin of the claims a sill of the Upper Triassic Kluane Ultramafic Suite was found in outcrop and is also outlined by the aeromagnetic survey. The Bear Creek Assemblage is locally intruded by Kluane Ranges Suite diorite and quartz feldspar porphyry dykes. Rock sample results are shown in Figures 7.2 and 7.3.

Outcrop in the lower Ellen Creek canyon and along the northeast facing slope of the Shakwak Valley consists of green brown and dark green black mafic volcanic with schistose intervals containing chlorite and sericite. Zones of quartz carbonate chlorite veining parallel the dominant foliation at 135/40 host minor blebs and veinlets of pyrite and chalcopyrite. Occasionally the mafic volcanic rocks are brecciated with gabbroic inclusions and serpentine veins and lenses +/- quartz carbonate alteration. The quartz carbonate chlorite veining occurs in orientations cross-cutting and parallel to the foliation. Minor bornite and patchy malachite and azurite stains occur within the quartz carbonate veins.

Rock sample K736180, a grab of massive sulphide at the Kloo occurrence assayed 22% copper and 6.2 g/t gold. Other samples along strike were of quartz-carbonate-chlorite veining with spotty pyrite, pyrrhotite and chalcopyrite veins and blebs in mafic volcanic and schistose meta-volcanic rocks. Areas of more intense veining are marked on Figure 7.1 and appear to be somewhat coincidental with the EM geophysical responses and with geochemical anomalies at least on the Shakwak Valley wall. Sample results from sites in the lower Ellen Creek canyon are summarized in Table 7.1 and samples collected along the northeast facing slope of the Shakwak Valley are summarized in Table 7.2.

Table 7.1 Select rock sample locations and descriptions from samples collected on traverses around lower Ellen Creek canyon.

Sample Number	Location (E)	Location (N)	Description	Cu (ppm)	Ni (ppm)	PGE + Au (ppb)
K736180	0339470E	6751150N	Mafic volcanic (basalt), Nikolai volcanic, chloritic, massive sulphides cpy + po + malachite + azurite	>100k	30	6205
K736181	0339589E	6751264N	Mafic volcanic (basalt), Nikolai volcanic, trace sulphides py + cpy + po + malachite + azurite	3880	40	85
K736182	0339584E	6751285N	Quartz-carbonate veining in mafic volcanic, minor py+cpy, chlorite alteration, red-brown weathering. Bedding measurement taken from argillite 158/40.	300	25	31
1319620	0338892E	6750589N	Mafic volcanic, chloritic, trace serpentine, quartz-carbonate veining, 2% cpy + py, trace malachite	448	60	30
1319621	0338823E	6750661N	Andesite, chloritic, breccia in part, quartz-carbonate veins, trace cpy + py	213	41	22
1319622	0338836E	6750664N	Meta-volcanic, brown weathering, schistose in part, quartz-carbonate	241	30	24

			veining and lenses, breccia, trace cpy + malachite			
1319623	0339122E	6750660N	Meta-volcanic, chloritic, quartz-carbonate veining and lenses, trace py	194	30	49
1319624	0339180E	6750909N	Meta-volcanic, chloritic, brown weathering, quartz-carbonate veining and lenses, trace cpy + py	1039	52	55
1319629	0338729E	6751152N	Mafic volcanic, green, quartz-carbonate-chlorite veins, trace sulphides	215	21	4.5
1319630	0338801E	6751137N	Mafic volcanic, green, quartz-carbonate-chlorite veins, 2-5% py + cpy, malachite, azurite	3648	29	106
1319631	0339147E	6751006N	Andesite, green, quartz-carbonate-chlorite veins, breccia, trace py + cpy	237	26	9
1319632	0339313E	6751131N	Meta volcanic, green, quartz-carbonate-chlorite veins, serpentine veins and lenses, trace py + cpy	274	28	18
1319635	0338441E	6750429N	Volcanic breccia, green grey, gabbroic inclusions, trace py + po, malachite	372	49	13
1319646	0339532E	6751291N	Meta volcanic, green grey, white grey weathering, quartz-chlorite veining and breccia, trace py + cpy	268	23	16.5

Table 7.2 Select rock sample locations and descriptions from samples collected on traverses on northeast facing slope of the Shakwak Valley.

Sample Number	Location (E)	Location (N)	Description	Cu (ppm)	Ni (ppm)	PGE + Au (ppb)
1319636	0340057E	6751058N	Gabbroic rock with bands of serpentine, quartz carbonate veins, trace of chalcopyrite, malachite	151	11	5.5
1319637	0340060E	6751090N	Gabbro, quartz carbonate alteration, epidote bands, serpentine, trace chalcopyrite blebs	222	9	35
1319639	0338783E	6751168N	dark green andesitic volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite	464	16	19
1319640	0338758E	6751194N	dark green andesitic volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite	439	27	17
1319641	0338714E	6751203N	dark green volcanic, chloritic, quartz carbonate chlorite veins, 2-5% chalcopyrite	210	25	22
1319642	0330723E	6751209N	dark green volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite and pyrite	176	23	34

1319643	0338653E	6751253N	dark green volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite and pyrite	117	41	26
1319644	0338629E	6751278N	medium grey schistose meta volcanic, narrow quartz carbonate veins with 5-10% chalcopyrite in the veins	2271	61	31
1319645	0338946E	6751348N	dark grey metavolcanic, epidote, trace pyrite and chalcopyrite	166	28	22

Traverses across the upland area of the claims mapped and sampled outcrop of Bear Creek Assemblage meta sediment and meta volcanic rocks primarily exposed on resistant ridges and in narrow creek gullies. Preliminary mapping located several higher areas of resistive outcrops with surrounding cliffs consisting of (uTBv) grey brown to green weathering volcanic rock and breccia with inclusions of quartz sericite schist and greenschist. Quartz carbonate lenses and boudins elongated in the northwest-southeast regional orientation are common. Also present are more recessive meta-sedimentary rocks (uTBs) usually dark grey, brown and black phyllite, argillite and quartz sericite schist that are rusty weathering with common quartz boudins and pyrite. Sample 1319611 of a rusty weathering felsic tuff assayed 1.15% copper. Select rock samples from the upland area are summarized in Table 7.3.

Abundant white quartz float was seen across the upland and one large pod (20x40m) of bull quartz outcrops at the contact between black phyllite and buff metavolcanic rock. No visible sulphide mineralization was observed in the quartz and samples 1319693-694 returned background gold values. A similar large lense of quartz was seen 2 km to the northwest just outside the claims on a tributary of Ellen Creek but was not sampled.

A small airborne magnetic high on the western edge of the property was checked and found to be an ultramafic sill of the Kluane Ultramafic Suite. The sill is fine grained black peridotite and dark green gabbro with a white quartz carbonate alteration interval at the footwall contact with rocks of the Bear Creek Assemblage. The airborne magnetic anomaly trends northwest of the property boundary and abundant peridotite float is found across the upland and on the Ellen claims to the northeast of this anomaly.

The area of the ultramafic outcrop was sampled and tested with an XRF to determine nickel content of the sill. Results are tabulated below in Table 7.4.

Table 7.3 Select rock sample locations and descriptions from samples collected on traverses on upper Ellen Creek canyon and upland plateau.

Sample Number	**Location (E)**	**Location (N)**	**Description**	**Cu (ppm)**	**Ni (ppm)**	**PGE + Au (ppb)**
1319608	0340896E	6749876N	Dark Bear Creek Assemblage metased, rusty weathering, trace pyrite, quartz boudins	16	32	15.5
1319609	0341715E	6749816N	Feldspar porphyry dyke, limonitic, 1-3% po + py	73	7	9.5
1319610	0341735E	6749788N	Light grey volcanic with feldspar phenocrysts, quartz carbonate veining, 1-3% po + py	106	11	11.5
1319611	0341730E	6749154N	Light grey siliceous tuff, rusty weathering in part	11540	6	42
1319612	0341224E	6749614N	Quartz sericite schist, rusty weathering	22	16	9.5

1319613	0339995E	6749749N	White bull quartz, minor limonite stain, trace open box-work, waxy appearance	30	3	5.5
1319614	0339982E	6749743N	Massive bull quartz dyke, limonitic weathering	14	5	5
1319615	0340684E	6749408N	Rusty weathering phyllite to quartz sericite schist, trace pyrite	72	34	9.5
1319616	0339926E	6749589N	Gabbro, grey-green, medium grained, trace quartz carbonate veins, epidote, 2% disseminated po + py	11	1639	22.5
1319617	0339925E	6749660N	Gabbro, grey-green, medium grained, trace quartz carbonate veins, epidote, trace serpentine, magnetic (3)	3	1662	5.5
1319618	0339925E	6749660N	Peridotite, fine grained, black, dusty blue tinge, 1-2% po + py , magnetic (2)	4	1293	5.5
1319619	0339928E	6749635N	Gabbro, grey, fine grained, quartz-carbonate alteration zone	1	1180	6.5
1319625	0339874E	6749624N	Gabbro, dark grey green, serpentine, minor quartz carbonate veining, trace po + py	2	1269	5.5
1319626	0339841E	6749579N	Gabbro, dark grey green, serpentine, minor quartz carbonate veining, magnetic (3)	3	1719	6
1319627	0339454E	6749774N	Meta volcanic, grey, chloritic, quartz carbonate veining, trace py	293	53	25
1319628	0339862E	6749639N	Quartz diorite, medium grained, grey, trace py + cpy	2	9	6
1319633	0338441E	6750429N	Meta gabbro, green black, white grey weathering, medium grained, carbonate alteration, trace serpentine, trace py	5	101	21

Table 7.4 XRF test locations, descriptions and values from ultramafic sill above upper Ellen Creek canyon.

XRF Site	Location (E)	Location (N)	Description	Cr (ppm)	Ni (ppm)
18-1	0339921E	6749599N	Peridotite, fine to medium grained, black	n/a	1557
18-2	0339921E	6749599N	Gabbro, medium grained, dark green	n/a	1978
18-3	0339921E	6749599N	Gabbro, dark grey green, medium grained, quartz carbonate veining	n/a	1941
18-4	0339921E	6749599N	Peridotite, black, fine grained, silicified in part	n/a	918
18-5	0339921E	6749599N	Gabbro, medium grained, grey, 2-4% pyrite	n/a	2315
18-6	0339911E	6749599N	Serpentinized gabbro, trace sulphides	n/a	1830
18-7	0339925E	6749626N	Gabbro, fine grained, grey green, quartz carbonate veining, white alteration at top of sill, fuchsite mica	5209	1417
18-8	0339925E	6749626N	Quartz carbonate from alteration zone	3083	1560
18-9	0339925E	6749626N	Gabbro, medium grey, foliated	1921	918
18-10	0339874E	6749624N	Gabbro, dark grey green, minor quartz carbonate veining, trace pyrrhotite + pyrite, magnetic (4), minor fuchsite	5228	2029
18-11	0339874E	6749624N	Gabbro dark grey green, less alteration	2963	1462

18-12	0339863E	6749629N	Quartz diorite, chloritic, minor pyrite	n/a	n/a
18-13	0339863E	6749629N	Peridotite, fine grained, black-grey, minor quartz carbonate veining	983	905
18-14	0339867E	6749660N	Bear Creek Assemblage metavolcanic , buff to brown weathering, trace pyrite, quartz carbonate veining	234	87
18-15	0339841E	6749579N	Gabbro, green black, trace quartz carbonate veining	735	1798
18-16	0339841E	6749579N	Gabbro, green black, fine to medium grained, magnetic (3-4)	1962	2062

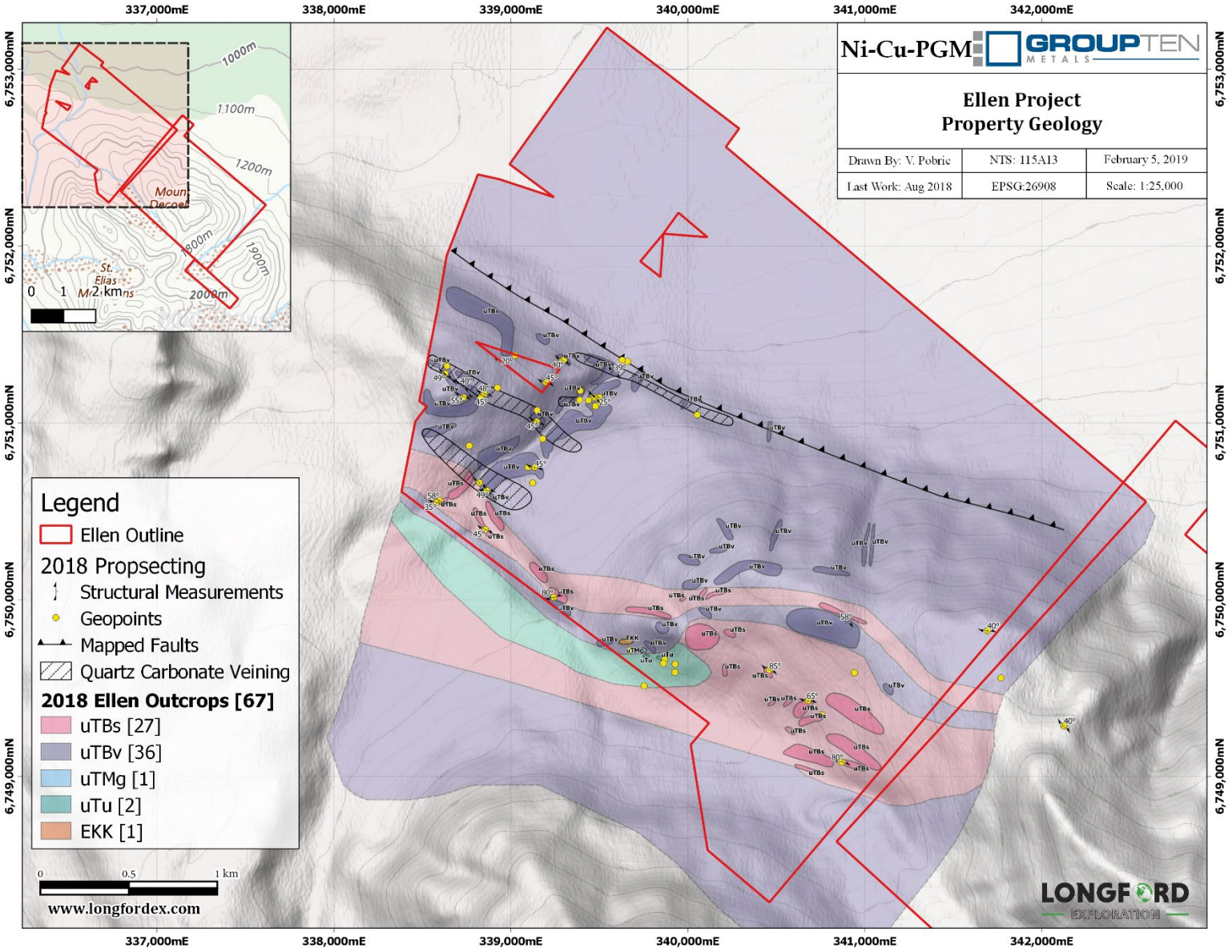

Figure 7.1 2018 Ellen property geological mapping.

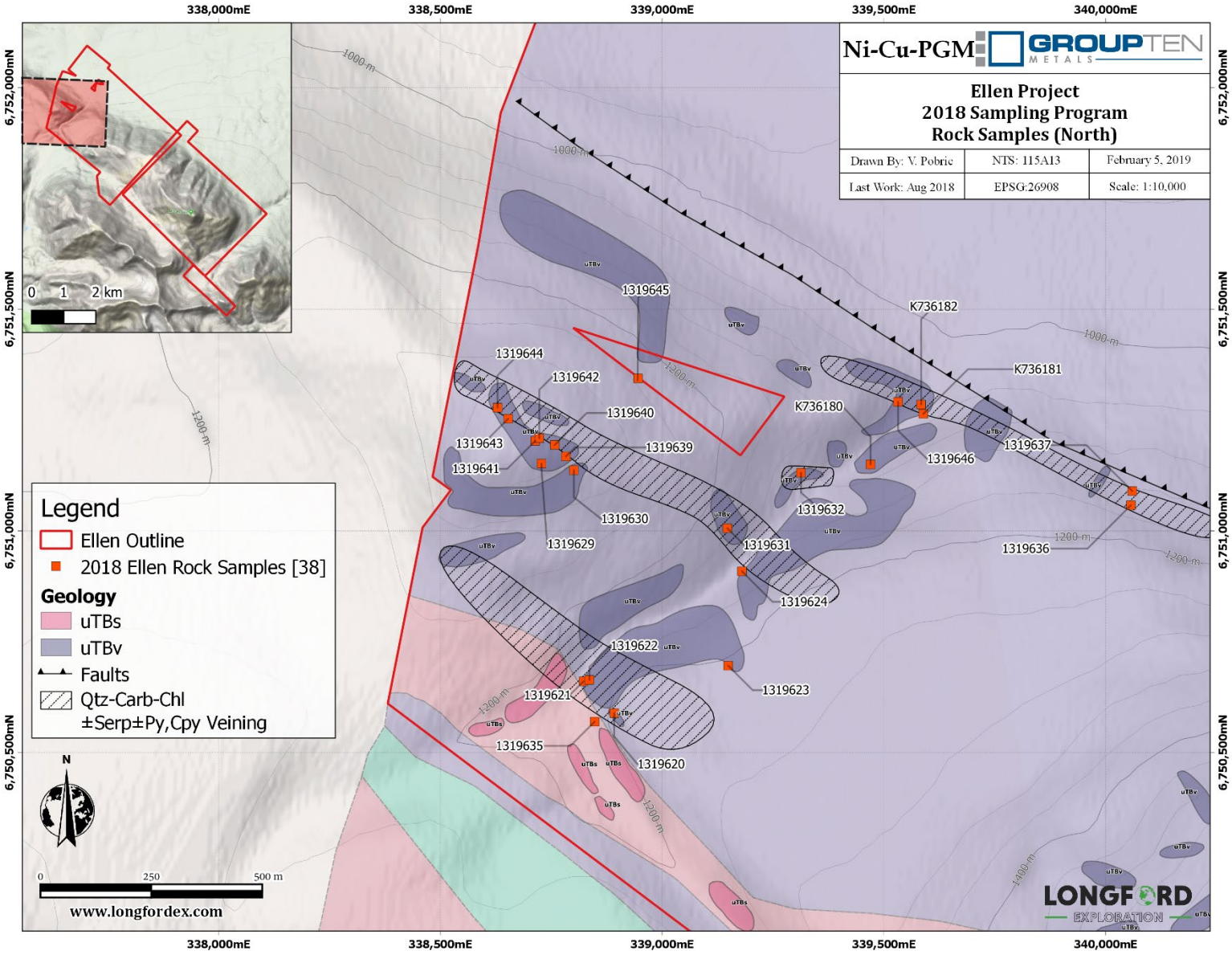

Figure 7.2 Rock sample locations in northwest zone.

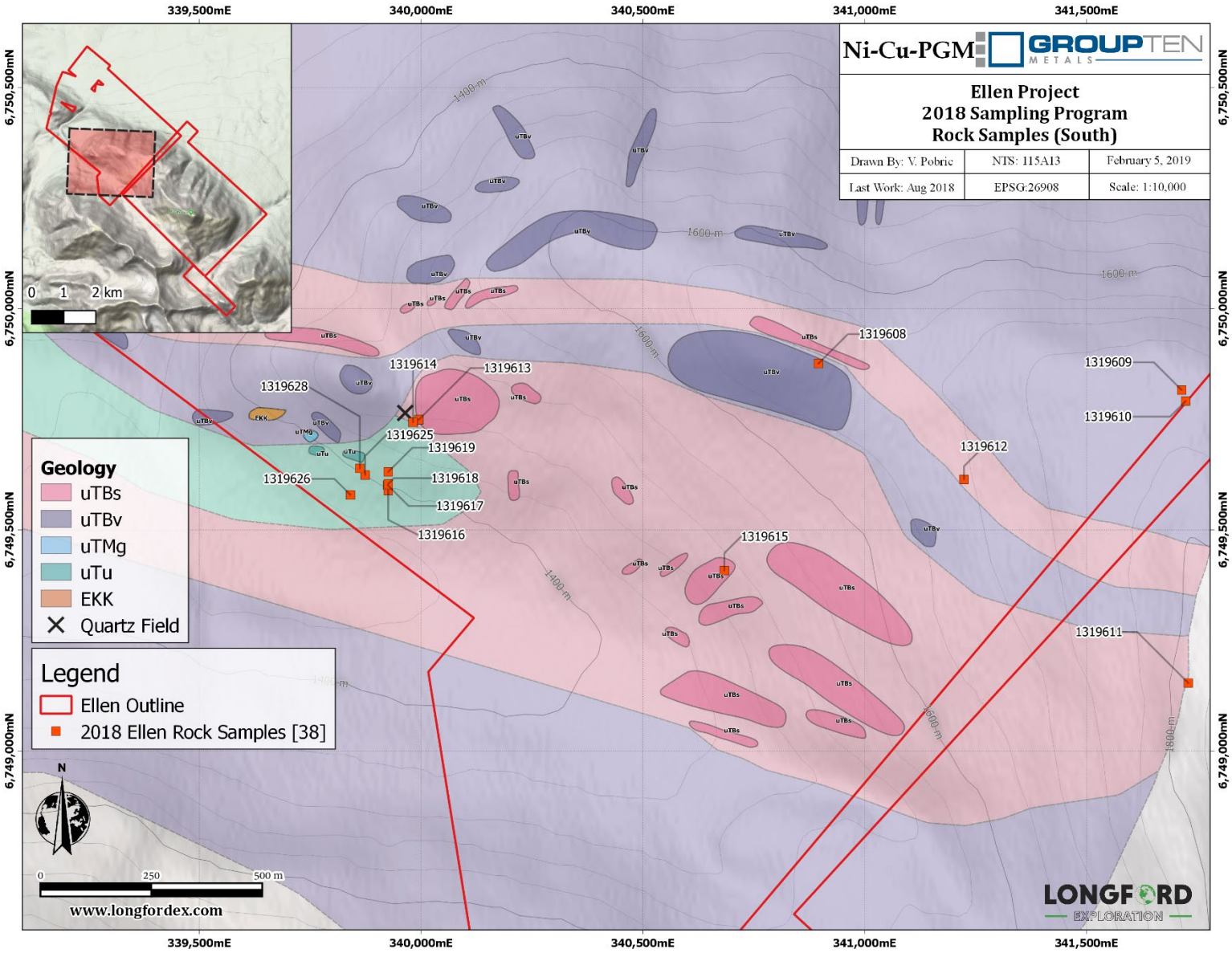

Figure 7.3 Rock sample locations in southeast zone.

7.2 Soil Geochemical Survey

Longford field crews collected 726 soil samples on grid soil lines with sample intervals at 50m along lines approximately 100m apart over the upland area around Ellen Creek and northeast facing slope of the Shakwak Valley as recommended in the YMEP application. The samples were submitted for analysis to the Bureau Veritas lab in Whitehorse, Yukon.

The soil sample results and locations are shown for copper, nickel, and gold, platinum and palladium in Figures 7.4 – 7.6 respectively. Analytical certificates can be found in Appendix D.

The geochemical response for copper shows moderately anomalous values in areas of less overburden and somewhat coincidental with intervals of more intense quartz carbonate chlorite veining and breccia hosting disseminations and veinlets of pyrite, pyrrhotite and chalcopyrite mineralization. The strongest copper anomaly occurs in a NW-SE orientation along the northeast facing wall of the Shakwak valley and continues onto the upland area to the southeast. This geochemical response is partially coincidental with HLEM anomaly B & C, VTEM anomaly 1 and mapped quartz carbonate chlorite vein zones within YMEP target area 1 and extends toward YMEP target area 3.

More subtle and patchy anomalous values in copper have the regional NW/SE orientation across the upland and partially align with zones of more intense quartz carbonate chlorite veining identified during mapping.

A copper nickel and PGE + Au soil geochemical anomaly is outlined in the southwest of the Ellen property (YMEP target area 2) near VTEM anomaly 5 and an aeromagnetic high. Mapping has located an ultramafic and gabbroic sill which had been postulated by previous authors. The aeromag high trends off the claims to the northwest.

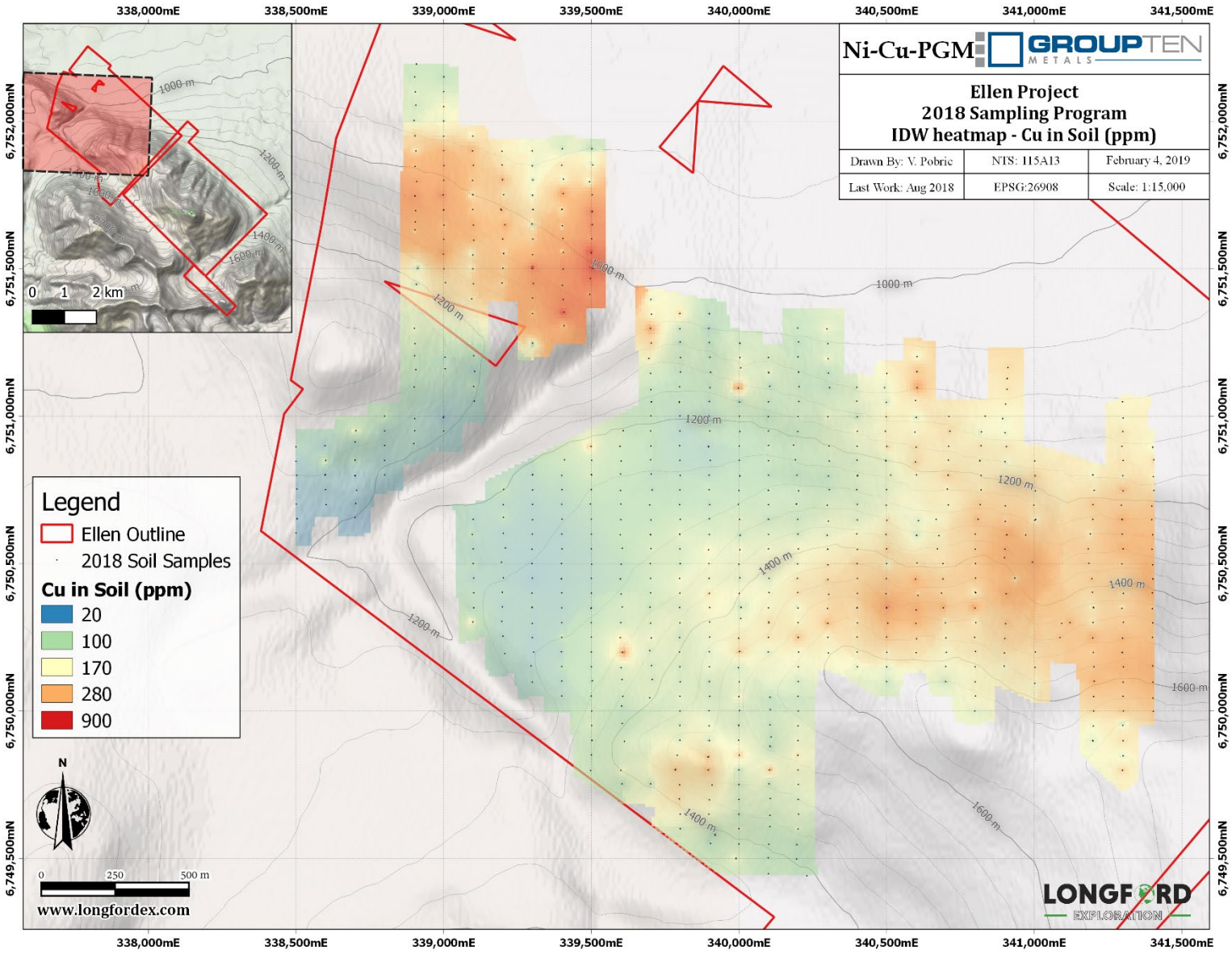

Figure 7.4 2018 Cu in soil results (ppm).

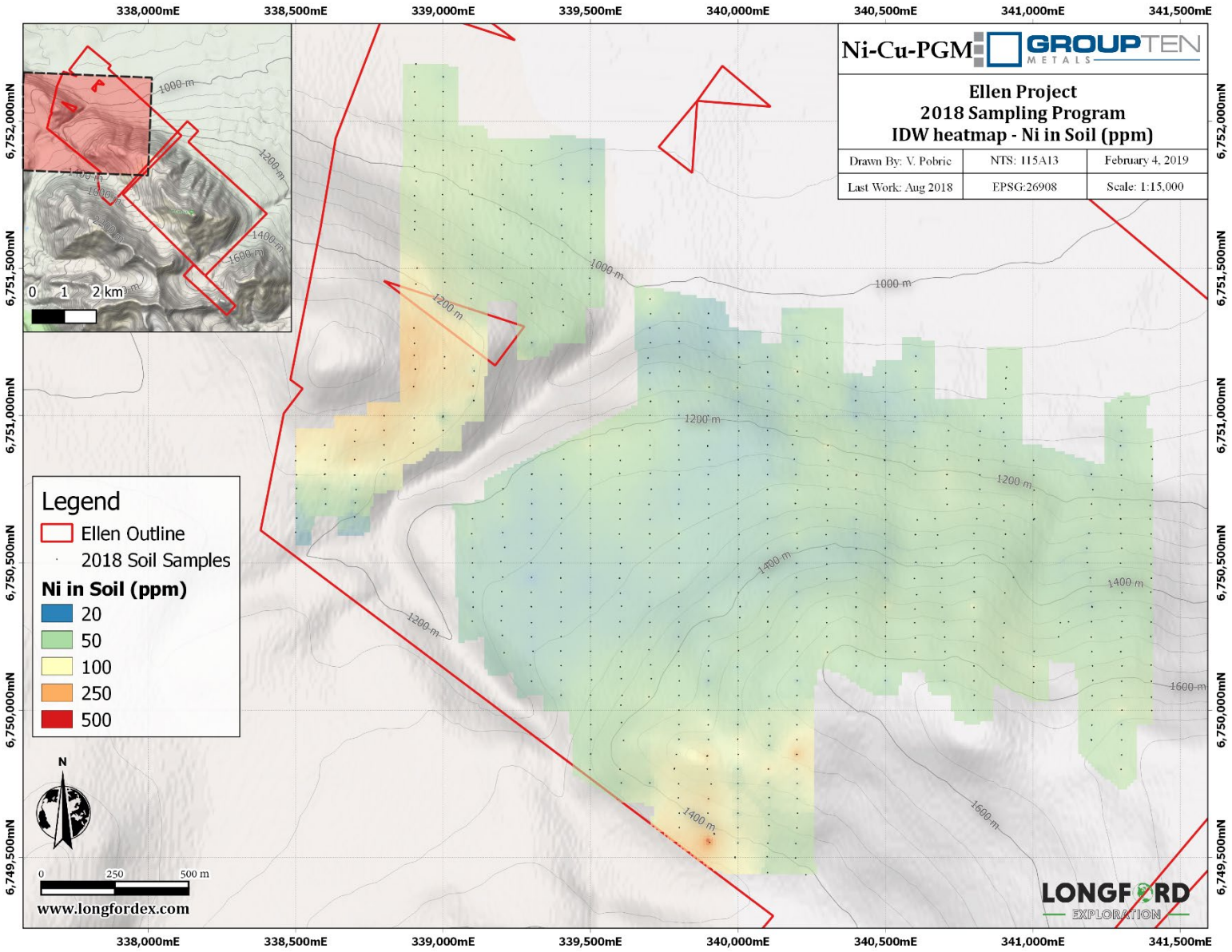

Figure 7.5 2018 Ni in soil results (ppm).

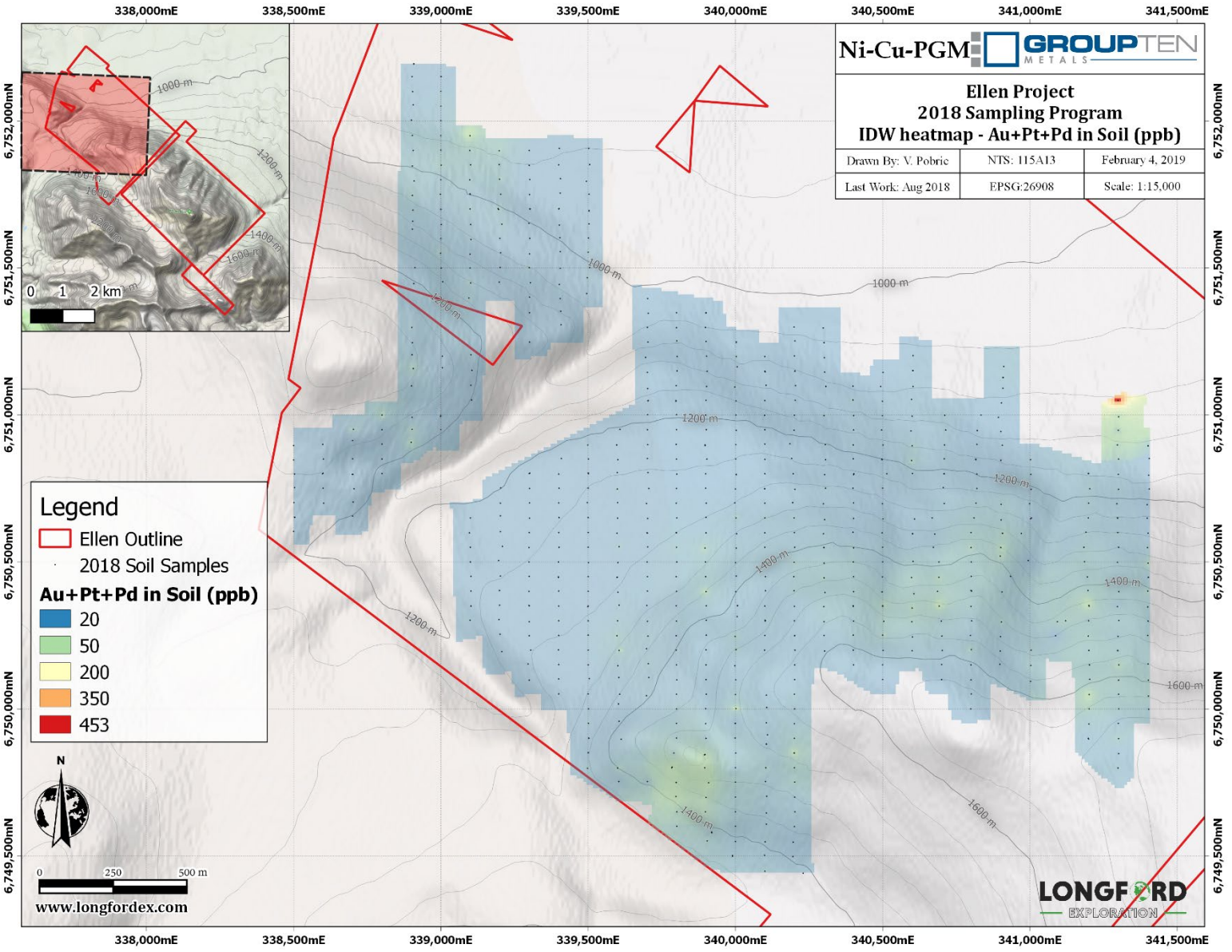

Figure 7.6 2018 Au+Pt+Pd in soil results (ppb).

8 Conclusions

The 3 goals of the Ellen YMEP program were:

1) Geochemical sampling, silt sampling, geological mapping of mineral occurrences and previously identified, HLEM, aeromagnetic and electromagnetic anomalies and target areas identified by historic exploration programs.
2) Prospecting, geochemical sampling and mapping of the general claim area.
3) Develop drill targets at the Kloo mineral occurrence.

Goals 1 & 2 were partially accomplished by soil sampling of the EM geophysical anomalies in the YMEP target areas with anomalous geochemical results obtained. Rock sampling and mapping of the general claim area identified zones of intense quartz carbonate chlorite veining and breccia somewhat coincidental with subtle NW/SE trending geochemical anomalies. Detailed mapping of the Kloo occurrence was not fully accomplished due to dense buckbrush along the lower slopes on the northeast facing wall of the Shakwak valley.

Goal 3 was advanced and a drill program is recommended to test the down dip potential on the Kloo occurrence.

The 2018 program identified three areas of anomalous soil geochemical values correlating with mapped intervals of more intense quartz carbonate chlorite veining and breccia in mafic volcanic rocks hosting disseminations and veinlets of pyrite, pyrrhotite and chalcopyrite mineralization.

1) The strongest copper anomaly occurs in a NW-SE orientation along the northeast facing wall of the Shakwak valley and continues onto the upland area to the southeast. This geochemical response is partially coincidental with the upper margin of an aeromagnetic high and HLEM anomalies B & C. Quartz carbonate chlorite vein zones occur along this trend within YMEP target area 1 that extends toward YMEP target area 3.
2) More subtle and patchy anomalous values in copper have the regional NW/SE orientation across the upland and may be indicative of zones of more intense quartz carbonate chlorite veining identified during mapping in the Ellen Creek gully. Overburden across the upland plateau probably masks the geochemical response in this area.
3) A copper nickel and PGE + Au soil geochemical anomaly outlined in the southwest of the Ellen property (YMEP target area 2) near VTEM anomaly 5 and an aeromagnetic high. Mapping has located an ultramafic and gabbroic sill which had been postulated by previous authors. Rock sample results are consistant with samples collected from other sills in the region assaying up to 1719ppm nickel. The aeromagnetic high trends off the claims to the northwest.

The geochemical anomalies are strongest along the northeast facing wall of the Shakwak valley, an area which is heavily overgrown by alder and buckbrush and still requires further mapping and sampling. A program of mapping and sampling is recommended in this area along the HLEM B & C and VTEM 1 conductors with some infill soil geochemistry along this trend and in the Ellen Creek gully.

The Phase 1 program should be followed by a 1,000m drill program targeting the Kloo occurrence down dip and along strike of the main showing and include down hole electromagnetic geophysical surveys.

9 Recommendations

9.1 Phase 1

Soil Sampling

Extend current soil grids to the north and infill in the Ellen Creek gully.

Prospecting, Mapping, Rock Sampling

Detailed mapping and sampling of the northeast facing wall of the Shakwak valley and in the areas of the EM anomalies. Map the claims of the Pacer group.

Geophysics

Re-interprete VTEM data for Ellen canyon and valley floor conductors.

Consider drones or unmanned aerial vehicles (UAVs) for magnetic surveys over inaccessible terrain. UAVs fly closer to the ground and have a tighter line spacing than a helicopter or fixed wing survey and can cover steeper terrain than a ground magnetic survey.

9.2 Phase 2

Drilling

4 x 250m holes (1,000m total) at the Kloo showing,

Downhole geophysics in new drill holes.

Budget

A Phase 1 budget of $55,000 is proposed, followed by a Phase 2 budget of $250,000

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11 Statement of Qualifications

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

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

Graham Davidson P.Geol.

APPENDIX A: Statement of Costs

DATE: August 16, 2018

LONGFORD EXPLORATION

SEND TO:

Group Ten Metals Inc.
#904-409 Granville Street
Vancouver, BC
Canada V6C 1T2
604 357-4790

Longford Exploration Services Ltd.
#460-688 West Hastings Street
Vancouver, BC
Canada V6B 1P1
778-809-7009

Ellen 2018

Personnel			Days	Rate		Line Total
	Pgeo - Davidson		9	$ 600.00	$	5,400.00
	Geologist - Versloot		14	$ 500.00	$	7,000.00
	Junior Geologist - Leach		13	$ 350.00	$	4,550.00
	Student Geologist - Martinolich		14	$ 300.00	$	4,200.00
		total man days	50	**Cat. Total**	**$**	**21,150.00**
Food and Lodging			Units	Rate		Line Total
	Food and Groceries		50	$ 60.00	$	3,000.00
	Campground site	Kluane RV & Kampground	16	$ 35.00	$	560.00
				Cat. Total	**$**	**3,560.00**
Transportation			Units/Days	Unit Price		Line Total
	Truck	1 ton with safety and recovery gear	37	$ 140.00	$	5,180.00
	Trailer	18' 7000lb covered trailer	28	$ 50.00	$	1,400.00
	Fuel	per km for truck	1165	$ 0.55	$	640.75
	Jet Ranger		10.9	$ 975.00	$	10,627.50
	Jet Fuel		1199	$ 1.55	$	1,858.45
				Cat. Total	**$**	**19,706.70**
Equipment Rentals			Units	Unit Price		Line Total
	Electronics Kit	Radios, Sat phones, GPS, per man day	50	$ 20.00	$	1,000.00
	Portable XRF with Stand	Per Day	11	$ 177.42	$	1,951.62
	Fly Camp	4 person setup, per man day	50	$ 40.00	$	2,000.00
				Cat. Total	**$**	**4,951.62**
Consumable			Units	Unit Price		Line Total
	Sample Bags		50	$ 5.00	$	250.00
	Flagging Tape		50	$ 5.00	$	250.00
	Office Consumables		50	$ 3.00	$	150.00
				Cat. Total	**$**	**650.00**
Analytical			Units	Unit Price		Line Total
	Analysis - Soil	SS80, AQ300 FA330	724	$ 30.25	$	21,901.00
	Analysis - Rock	PRP70-250, FA330, AQ300	42	$ 34.25	$	1,438.50
				Cat. Total	**$**	**23,339.50**
Post Field			Units	Unit Price		Line Total
	Assessment Report prep and work filing		1	$ 2,500.00	$	2,500.00
				Cat. Total	**$**	**2,500.00**
				Estimated Sub Total	**$**	**75,857.82**
				Management 15%	**$**	**11,378.67**
				SUB TOTAL	**$**	**87,236.49**
				GST 5 %	**$**	**4,361.82**
				Total	**$**	**91,598.32**

APPENDIX B: Rock Sample and Geosite Descriptions

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-1	K736180	339470	6751150	1085	2018-07-06	Rock	Andesite	black	chlorite	PY+CPY+PO+ Malachite +Azurite	70					Mafic volcanics (basalt), Nikolai volcanic, chloritic, massive sulphides CPY+PO+Malachite+Azurite.
ELN-2	K736181	339589	6751264	1150	2018-07-06	Rock	Andesite	green	chlorite	PY+CPY+PO+ Malachite +Azurite	2					Mafic volcanics (basalt), Nikolai volcanic, tr sulphides PY+CPY+PO+Malachite+Azurite.
ELN-3	K736182	339584	6751285	1046	2018-07-06	Rock	Andesite	green	Chlorite	PY+CPY	2		Bedding	140	39	Quartz-carbonate veining in mafic volcanics, minor PY+CPY, chlorite alteration, red-brown weathering. Bedding measurement taken from argillite 158/40.
ELN-4	1319608	340896	6749876	1715	30/7/2018	Rock	Phyllite	black	sericite	py	tr		Bedding	130	58	Rusty weathering dark grey to black metasediment, pyhllite, schist, quartz boudins and lenses, orange limontic vugs
ELN-5	1319609	341715	6749816	1781	30/7/2018	Rock	feld porphyry	tan	qtz-carb	py+po	1-2%					Tan weathering light grey feldspar porphyry dyke, limonitic fracture faces
ELN-6	1319610	341735	6749788	1784	30/7/2018	Rock	feld porphyry	tan	qtz-carb	py+po	1-2%					Felsic porphyry, feldspar phenocrysts, quartz carbonate veins, trace open vugs, limonite stain
ELN-7	1319611	341730	6749154	1824	30/7/2018	Rock	tuff	grey	sericite	py+po	0					Rusty weathering light grey felsic tuff, brecciated, quartz carbonate veining
ELN-8	1319612	341224	6749614	1704	30/7/2018	Rock	schist	black	qtz-carb	py	tr					Rusty weatjering quartz sericite schist, quartz boudins and lenses, trace pyrite
ELN-9	1319613	339995	6749749	1519	30/7/2018	Rock	Quartz	white		limonite	2-5%					White bull quartz, limonite on fractures, trace open boxwork, 30x60m area
ELN-10	1319614	339982	6749743	1521	30/7/2018	Rock	Quartz	white		limonite	2-5%					as above, bull quartz, open vugs and boxwork
ELN-11	1319615	340684	6749408	1531	31/7/2018	Rock	Phyllite	grey	qtz-sericite	py	tr					Rusty weathering grey quartz sericite schist, quartz boudins and lenses, 1-3% pyrite
ELN-12	1319616	339926	6749589	1434	31/7/2018	Rock	gabbro	green	olivine	py+po	2					Gabbro, green, medium grained, epidote, minor quartz carbonate veining

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-13	1319617	339925	6749601	1438	31/7/2018	Rock	gabbro	grey	olivine	py+po+cpy	1-2%					Gabbro, green, medium grained, epidote, minor quartz carbonate veining, magnetic (3), serpentine bands
ELN-14	1319618	339926	6749604	1438	31/7/2018	Rock	peridotite	black	serpentine	py+po	tr					Peridotite, black, fine grained, dusty blue weathering, magnetic (2)
ELN-15	1319619	339926	6749631	1453	31/7/2018	Rock	gabbro	grey	qtz-carb	py+po+cpy	2-5%					Gabbro, gray, fine grained, quartz carbonate alteration near top of sill, 1-2% pyrrhotite, weakly magnetic (2)
ELN-16	1319620	338892	6750589	1226	2018-01-08	Rock	metavolcanic	tan-green	chlorite	Py+cpy, malachite	1-2%					Metavolcanic rock, green to tan, chloritic, trace serpentine, quartz carbonate veining, trace malachite
ELN-17	1319621	338823	6750661	1206	2018-01-08	Rock	breccia	green	qtz-carb	py+cpy	1-2%					Andesitic, green-brown metavolcanic, breccia, quartz carbonate veins, chloritic, sparse chalcopyrite and malachite
ELN-18	1319622	338836	6750664	1205	2018-01-08	Rock	andesite	green	qtz-carb	py+cpy	tr					Brown weathering metavolcanic, schistose in part, breccia, quartz carbonate veins, malachite stain
ELN-19	1319623	339149	6750696	1208	2018-01-08	Rock	sericite schist	grey	qtz-carb	py+cpy	25					Chloritic volcanic rock, quartz carbonate chlorite veins, trace pyrite
ELN-20	1319624	339180	6750909	1154	2018-01-08	Rock	metavolcanic	brown	qtz-carb	py+po	1-2%					Tan to brown weathering metavolcanic rock, chloritic, quartz carbonate chlorite veining
ELN-21	1319625	339874	6749624	1443	2018-02-08	Rock	gabbro	green	serpentine	py+cpy	tr					Dark grey green gabbro, magnetic (4), serpentine and quartz carbonate veining, fuchsite
ELN-22	1319626	339841	6749579	1416	2018-02-08	Rock	peridotite	black	olivine	py+po	tr					Gabbro, black to green, fine to edium grained, olivine, minor quartz carbonate veining, magnetic (3)
ELN-23	1319627	339454	6749774	1369	2018-02-08	Rock	metavolcanic	grey	chlorite	py	tr					Medium grey metavolcanic, chloritic, quartz carbonate veining
ELN-24	1319628	339862	6749639	1442	31/7/2018	Rock	qtz diorite	grey	qtz-carb	py+po	2					Diorite outcrop beside gabbro sill, light to medium grey, trace rusty veins

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-25	1319629	338728	6751152	1382	2018-03-08	Rock	metavolcanic	green	chlorite	py+cpy	tr		Bedding	118	55	Dark green chloritic mafic volcanic, common quartz carbonate veins and lenses.
ELN-26	1319630	338801	6751137	1366	2018-03-08	Rock	metavolcanic	green	qtz-carb	py+cpy	2-5%		Bedding	125	45	Dark green chloritic mafic volcanic, common quartz carbonate veins and lenses, malachite
ELN-27	1319631	339147	6751006	1226	2018-03-08	Rock	metavolcanic	grey	qtz-carb	py+cpy	tr		Bedding	120	45	Dark green chloritic mafic volcanic, common quartz carbonate veins and lenses, breccia
ELN-28	1319632	339313	6751131	1126	2018-03-08	Rock	mafic volcanic	grey	qtz-carb	py+cpy	2					Mafic volcanic, serpentine veins, chloritic, quartz carbonate veining
ELN-29	1319633	338441	6750429	1242	2018-04-08	Rock	gabbro	green	serpentine	po	tr					Black to green gabbro, white weathering, medium grained, inclusions in part,
ELN-30	1319634	338447	6750434	1241	2018-04-08	Rock	gabbro	green	qtz-carb	py	tr					Black to green gabbro, white weathering, medium grained, talc, serpentine veins
ELN-31	1319635	338848	6750570	1204	2018-04-08	Rock	volcanic	green	chloritic	py+po	tr					Volcanic breccia, gabbroic inclusions, malachite
ELN-32	1319636	340057	6751058	1163	2018-04-08	Rock	gabbro	green	serpentine	cpy+malachite	tr					Gabbroic rock with bands of serpentine, quartz carbonate veins, trace of chalcopyrite, malachite
ELN-33	1319637	340060	6751090	1140	2018-04-08	Rock	qtz diorite	green	epidote	cpy+malachite	tr					Gabbro, quartz carbonate alteration, epidote bands, serpentine, trace chalcopyrite blebs
ELN-34	1319638	337998	6751105	1239	2018-04-08	Rock	peridotite	black	qtz-carb	py+po	tr					Peridotite, black, fine grained, dusty blue weathering, magnetic (2)
ELN-35	1319639	338783	6751168	1335	2018-05-08	Rock	volcanic	green	chlorite	cpy+py	tr					dark green andesitic volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite
ELN-36	1319640	338758	6751194	1368	2018-05-08	Rock	volcanic	green	chlorite	cpy+py	tr					dark green andesitic volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite
ELN-37	1319641	338714	6751203	1372	2018-05-08	Rock	volcanic	green	chlorite	cpy+py	tr					dark green volcanic, chloritic, quartz carbonate chlorite veins, 2-5% chalcopyrite

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-38	1319642	338723	6751209	1368	2018-05-08	Rock	volcanic	green	chlorite	cpy+py	tr		Bedding	135	40	dark green volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite and pyrite
ELN-39	1319643	338653	6751253	1364	2018-05-08	Rock	volcanic	green	chlorite	cpy+py	tr		Bedding	133	49	dark green volcanic, chloritic, quartz carbonate chlorite veins, trace chalcopyrite and pyrite
ELN-40	1319644	338629	6751278	1355	2018-05-08	Rock	volcanic	grey	chlorite	cpy+py	tr					medium grey schistose meta volcanic, narrow quartz carbonate veins with 5-10% chalcopyrite in the veins
ELN-41	1319645	338946	6751348	1274	2018-05-08	Rock	Andesite	grey	epidote	cpy+py	tr		Bedding	122	20	dark grey metavolcanic, epidote, trace pyrite and chalcopyrite
ELN-42	1319646	339532	6751291	1103	2018-05-08	Rock	Andesite	grey	chlorite	cpy+py	tr					quartz carbonate vein ing in light grey metavolcanic, chlorite clots, talc, minor chalcopyrite along fractures
ELN-43		341693	6749824	1781	30/7/2018	rock	phyllite	grey	sericite				bedding	100	40	buff to light grey metasediment, quartz sericite schist
ELN-44		341820	6749757	1793	30/7/2018	rock	metavolc	buff	sericite				bedding	125	40	tan to buff quartz sericite schist
ELN-45		341770	6749557	1805	30/7/2018	rock	metased	black	graphite							grey to black metased, quartz boudins, rusty weathering intervals
ELN-46		342125	6749286	1843	30/7/2018	rock	metased	black	graphite				bedding	140	40	dark grey to black metased, rusty weathering
ELN-47		341487	6749414	1754	30/7/2018	rock	metased	black	sericite				bedding	95	80	rusty weathering black metased, quartz boudins
ELN-48		340942	6749587	1629	30/7/2018											claim posts, P1 YE69498-499, P2 YE69496-497
ELN-49		340460	6749603	1530	31/7/2018	rock	metased	black	sericite				bedding	302	85	metased, black, rusty, quartz boudins
ELN-50		340680	6749428	1525	31/7/2018	rock	metased	black	sericite				bedding	105	65	phyllite to quartz sericite schist, quartz boudins and lenses
ELN-51		340757	6749347	1534	31/7/2018	rock	metased	brn	qtz-carb							brown to reddish weatheringmetased, quartz boudins
ELN-52		340871	6749081	1532	31/7/2018	rock	metased	black	qtz-carb				bedding	292	80	grey black phyllite and quartz sericite schist
ELN-53		339927	6749589	1434	31/7/2018	rock	gabbro	green	qtz-carb	py+po	2					Gabbro, medium grained, green, magnetic (3), quartz carbonate veins

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-54		339928	6749635	1453	31/7/2018	rock	peridotite	black	serpentine	po	tr					upper edge of sill, serpentinized peridotite, fuchsite
ELN-55		339869	6749660	1450	31/7/2018	rock	metavolcanic	buff	chloritic	py+aspy	2-5%					above the UM sill, andesitic
ELN-56		339862	6749639	1442	31/7/2018	rock	quartz diorite	grey	epidote	py+cpy	tr					large quartz diorite outcrop, rusty lenses, tr malachite, minor pyrite and chalcopyrite, quartz-carbonate veining
ELN-57		339672	6749714	1424	31/7/2018	rock	peridotite	black	serpentine	po	tr					large boulder of peridotite, numerous UM boulders along slope of UM outcrop
ELN-58		338596	6750560	1243	2018-01-08	rock	metased	grey	qtz boudins				foliation	120	58	dark grey-green metasediment with quartz lenses and boudins
ELN-59		338580	6750549	1241	2018-01-08	rock	metavolcanic	green	chloritic				foliation	110	35	medium grey green metavolcanic, quartz-carbonate veins and lenses
ELN-60		338823	6750661	1206	2018-01-08	rock	andesite	green	chloritic	py+cpy	tr		foliation	134	38	green brown metavolcanic with chloritic alteration and quartz carbonate veining, breccia in part, minor cpy and malachite
ELN-61		338864	6750617	1203	2018-01-08	rock	sericite schist	brown	carb				foliation	100	49	tan-brown sericite schist, metasediment, carbonate veins and lenses
ELN-62		339123	6750660	1229	2018-01-08	rock	metavolcanic	green	chloritic	py	tr					green metavolcanic rock with quartz-carbonate veins, chloritic patches and minor pyrite
ELN-63		339135	6750748	1201	2018-01-08	rock	metavolcanic	green	chloritic	py	tr		foliation	110	45	green brown metavolcanic rock with quartz-carbonate veins, chloritic patches and minor pyrite
ELN-64		339097	6750748	1173	2018-01-08											Post 1 YB26798-799, Post 2 YB27078-079
ELN-65		339180	6750909	1154	2018-01-08	rock	metavolcanic	grey	chloritic	py	tr					start of large outcrop, light to medium grey metavolcanic rock with chloritic bands and quartz-carbonate veins, 1-2% pyrite, trace chalcopyrite
ELN-66		339389	6751129	1110	2018-01-08											old drill pad
ELN-67		339439	6751127	1092	2018-01-08											old drill pad

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-68		339753	6749512	1381	2018-02-08	rock	gabbro	green								large gabbro boulder
ELN-69		339434	6749728	1353	2018-02-08	rock	qtz-sericite schist	tan					foliation	270	68	top of upper creek canyon, large outcrops of buff to brown weathering metavolcanic rock, quartz sericite schist, quartz carbonate veins
ELN-70		339242	6750013	1252	2018-02-08	rock	argillite	black	graphite				foliation	80	80	base of upper canyon, black argillite, rusty weathering, quartz carbonate veins and boudins, limonite, extensive folding
ELN-71		338855	6750396	1203	2018-02-08	rock	metased	grey	sericite				foliation	120	45	gritty light to medium grey quartz sericite schist, quartz boudins
ELN-72		338765	6750870	1267	2018-02-08	rock	metavolcanic	green	chloritic				foliation	110	45	greenschist, foliated
ELN-73		338733	6751144	1380	2018-03-08	rock	volcanic	green	chloritic							hill top, extensive outcrop of brown to green weathering metavolcanic rock, chloritic, quartz-carbonate-chlorite veins and lenses. Abundant UM float across slope
ELN-74		338829	6751139	1352	2018-03-08	rock	gabbro	green	chloritic	py+cpy	tr					hard gabbroic interval in metavolcanic rock, chloritic, wide spread quartz-carbonate veining, olivine, malachite
ELN-75		338850	6751167	1347	2018-03-08	rock	metavolcanic	green	chloritic	cpy	tr		foliation	115	48	green brown metavolcanic rock, quartz carbonate veining, chloritic fractures, tr chalcopyrite
ELN-76		338924	6751198	1320	2018-03-08	rock	metavolcanic	brown	qtz-carb							brown to tan weathering metavolcanic rock, quartz-carbonate veins
ELN-77		339147	6751006	1226	2018-03-08	rock	metavolcanic	brown	qtz-carb							extensive quartz carbonate veining, breccia, old carved claim post P1 CCXXXIV
ELN-78		339148	6751070	1227	2018-03-08	rock	metavolcanic	grey								brown grey weathering metavolcanic, top of large outcrop
ELN-79		339198	6751227	1217	2018-03-08								foliation	115	45	old claim posts, no tags, outcrop below posts, greenschist
ELN-80		339392	6751181	1146	2018-03-08											old drill site, x ray core, hole orientation at aprox. 55deg.

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
																Winch cable and drill rods on the slope
ELN-81		339478	6751094	1111	2018-03-08											old drill site, drill azimuth 20deg., inclination at -70deg.
ELN-82		339505	6751114	1097	2018-03-08	rock	quartz sericite schist	grey								in gully on sotheast side of Ellen Ck. opposite the main showing
ELN-83		339499	6751143	1082	2018-04-08	rock	volcanics	green	chlorite	po	tr		foliation	112	25	old blast pit on hillside expoes massive sulphide band in mafic volcanics, gabbroic intervals
ELN-84		339471	6751145	1079	2018-04-08	rock	volcanics	black	chlorite	cpy +py. Malachite, azurite	05-Feb		foliation	140	39	main showing, massive chalcopyrite veins in chloritic volcanic, azurite
ELN-85		338097	6750109	1283	2018-04-08	rock	quartz	white	muscovite	py	tr					large area of bull quartz outcrop at least 10m across
ELN-86		338287	6750373	1248	2018-04-08	rock	argillite	black	graphite	py	tr		foliation	124	56	black graphitic and pyritic argillite, phyllite, rusty weathering, Bear Creek metaseds
ELN-87		338441	6750429	1242	2018-04-08	rock	gabbro	green	serpentine	py+cpy	tr					dark green to dark grey medium grained gabbro, white weathering, carbonate alteration, serpentine bands, metased inclusions
ELN-88		340053	6751045	1171	2018-04-08	rock	volcanics	green	chlorite	py	tr					chloritic andesite, quartz carbonate veins, trace pyrite
ELN-89		339660	6751347	1027	2018-04-08											old cat road, drill pad access
ELN-90		339628	6751355	1029	2018-04-08											claim posts, P1 77812-77813, P1 YB27096
ELN-91		338629	6751278	1355	2018-05-08	rock	metavolcanic	grey	chloritic	cpy	2-5%		foliation	133	49	medium grey schistose rock, andesitic, dark green chlorite bands, quartz carbonate veins with 5-10% chalcopyrite in the veins
ELN-92		338639	6751321	1337	2018-05-08	rock	quartz-carbonate	white	chloritic	cpy	tr					zone of quartz carbonate veining, breccia in metavolcanics
ELN-93		339025	6751381	1229	2018-05-08											untagged 4x4 claim post
ELN-94		339291	6751354	1160	2018-05-08	rock	metavolcanic	green	chlorite				foliation	125	40	gritty dark green volcanic rock with quartz carbonate chlorite veins, no visible sulphides

Site No.	Sample No.	Easting	Northing	Elevation (m)	Date	Sample Type	Lithology	Colour	Alteration	Sulphide/ Other	Amt per	Dip	Struct	Azi	Dip	Description
ELN-95		339299	6751354	1155	2018-05-08	rock	andesite	green	chlorite	cpy	5%					Possible extension of main showing, chalcopyrite along chloritic veins in dark andesite

APPENDIX C: Rock Analytical Certificates

See attached .PDF

APPENDIX D: Soil Analytical Certificates

See attached .PDF

APPENDIX E: Daily Summary of 2018 Ellen Program

Crew:
P.Geol. – Graham Davidson
Geologist – Ryan Versloot
Geologist - Sarah Ryan
Junior Geologist – Paul Leach
Geology Student – Matt Martinolich

July 6, 2018
Check access to Ellen claims, drive from Kluane Lake B&B down Jarvis River_Kimberly Creek road, low water on Jarvis River crossing, continue onto old trail to Ellen claims and drive to swampy section of road, park and walk on old trail to Ellen camp approximately 3.5km from parking location. Continue up Ellen Creek to canyon where old trail has been washed away. Trek along creek bank to main Ellen copper showing in outcrop on north bank of creek. Massive and disseminated pyrite + chalcopyrite over 2-5m thick interval of black weathering chloritic mafic volcanic rock. Patchy azurite and malachite stain, quartz-carbonate-chlorite veins in footwall with spotty pyrite + chalcopyrite blebs and veinlets for 10m down dip from main mineralized band. Two rock samples collected from main sulphide band and a third sample collected from zone of quartz-carbonate-chlorite veining approximately 75m downstream. (Daily Rock samples K736180-K736182).

	Task	Rock Samples	Soil Samples	Geo Points
GD	Geology, Rock Sampling.	3		
SR	Rock Sampling.			
MM	Rock Sampling.			

July 26, 2018
Soil sampling NE facing slope.
RV, MM, PL collect total of 48 samples.

July 27, 2018
Soil sampling NE facing slope.
RV, MM, PL collect total of 57 samples.

July 28, 2018
Soil sampling NE facing slope.
RV, MM, PL collect total of 63 samples.

July 29, 2018
Soil sampling NE facing slope.
RV, MM, PL collect total of 69 samples.

July 30, 2018
Helicopter set out on upland ridge of Ellen claims, traverse southeast towards Mt. Decoeli. Patchy outcrop along ridge crest consists of buff weathering Bear Creek Assemblage quartz-sericite meta-sediments and meta-volcanics with intervals of recessive grey-black weathering phyllite and argillite. Several tan weathering feldspar porphyry dykes intrude the sequence. Common quartz boudins and rusty weathering

lenses, one extensive area (20x40m) of bull quartz located at 0339982E 6749743N (Daily Rock samples 1319608-1319614).

	Task	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	6		39-44
RV	Soil Sampling.	77		
PL	Soil Sampling			
MM	Soil Sampling.			

July 31, 2018

Helicopter set out in upland area of Ellen claims, traverse southeast across upland locating mainly black-grey phyllitic meta-sediments of the Bear Creek Assemblage. Also buff to brown quartz-sericite schist forms resistant prominent outcrops and cliffs, meta-volcanics of the Bear Creek Assemblage. Common quartz boudins and rusty weathering lenses. Sub crop to outcrop of gabbro, peridotite and serpentinite located coincident with an aeromagnetic high at 0339925E 6749635N (Daily Rock samples 1319615-1319619, 131628).

	Task	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	6		45-53
RV	Soil Sampling.	79		
PL	Soil Sampling			
MM	Soil Sampling.			

Aug. 1, 2018

Helicopter set out above Ellen Creek, traverse northeast along creek gully locating outcrop of mafic meta-volcanic rock and several zones of quartz-carbonate-chlorite veining with minor pyrite and chalcopyrite, continue down gully to main showing and then to old helipad further downstream. Cut brush and trees on helipad to facilitate pick-up (Daily Rock samples 1319620-1319624).

	Task	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	4		54-63
RV	Geology, mapping & rock sampling			
PL	Soil Sampling	40		
MM	Soil Sampling.			

Aug. 2, 2018

Helicopter set out in upland above upper Ellen Creek, descend to ultramafic sill and test 16 locations with portable XRF analyzer. (Daily Rock samples 1319625-1319627).

Task	Rock Samples	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	3		64-68

RV	Soil Sampling		47	
PL	Geology, mapping & rock sampling			
MM	Soil Sampling.			

Aug. 3, 2018

Helicopter set out on hilltop west of Ellen Creek, traverse around hill across green-brown weathering mafic volcanic rocks of the Bear Creek Assemblage, then descend to Ellen Creek canyon. Intervals of quartz-carbonate-chlorite veining with 2% chalcopyrite and patchy malachite stain forms breccia in several spots. Possible gabbroic inclusions in volcanics with bands of serpentine and greenschist, minor disseminated chalcopyrite and pyrite. (Daily Rock samples 1319629-1319632).

Task	Rock Samples	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	4		69-78
RV	Soil Sampling	110		
PL	Soil Sampling.			
MM	Soil Sampling.			

Aug. 4, 2018

Helicopter set out west of Ellen Creek on aeromagnetic anomaly in area of abundant peridotite float. Possible kill zone, traverse up small branch of Ellen Creek, locate gabbroic outcrop in creek gully on boundary of claims. Traverse across plateau and then down northeast facing slope of the Shakwak Valley along small gully. Chloritic mafic volcanic rocks outcrop with bands of quartz-carbonate-chlorite veining containing minor chalcopyrite and occasional veins of serpentine and green-schist . (Daily Rock samples 1319633-1319638).

Task	Rock Samples	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	6		79-86
RV	Soil Sampling	65		
P.L.	Soil Sampling.			
MM	Soil Sampling.			

Aug. 5, 2018

Helicopter set out west of Ellen Creek above northeast facing slope of the Shakwak Valley. Sample intervals of quartz-carbonate-chlorite veining with 2-5% chalcopyrite + pyrite in chloritic mafic volcanic outcrops along the slope. Descended to helipad for pick up collecting mineralized samples from several quartz carbonate chlorite vein sections (Daily Rock samples 1319639-1319646).

Task	Rock Samples	Rock Samples	Soil Samples	Geo Points
GD	Geology, mapping, rock sampling.	8		87-91
RV	Soil Sampling	71		
P.L.	Soil Sampling.			
MM	Soil Sampling.			