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Ministry of Energy, Mines & Petroleum Resources
Mining & Minerals Division
BC Geological Survey

BC Geological Survey
Assessment Report
37779

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Soil Geochemical

TOTAL COST: $12,063.09

AUTHOR(S): James Chamberlain

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): 5708518, 5719372

YEAR OF WORK: 2018

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S):

PROPERTY NAME: Russell

CLAIM NAME(S) (on which the work was done): Tenure #'s: 1042651, 1043538, 1044082, 1054271, 1054272, 1061186, 1061187
Claim Names: Russell 1, Russell 2, Russell 3, Russell 4, Russell 5, Russell 6, Russell 7

COMMODITIES SOUGHT: Cu, Zn, Mo, Au, Ag

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092HNW085

MINING DIVISION: Nicola

NTS/BCGS: 92H/14

LATITUDE: 49 ° 54 ' 07 " **LONGITUDE:** 121 ° 22 ' 43 " (at centre of work)

OWNER(S):
1) James Chamberlain (100%)
2)

MAILING ADDRESS:
3133 Arlington Ave. Saskatoon, SK S7J 2K1

OPERATOR(S) [who paid for the work]:
1) Owner
2)

MAILING ADDRESS:

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Pasayten Group, Eagle Granodiorite, Prophyry Cu-Mo, Quesnel Terrane, Mt. Lytton Batholith, Fraser Fault

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 33780, 36763

Next Page

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil	83 samples: ICP-MS, pH, pHa, EC	1061186, 1054272	$12,063.09
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	$12,063.09

Print Form

ASSESSMENT REPORT ON 2018 SOIL GEOCHEMISTRY PROGRAM ON RUSSELL Cu-Zn PROPERTY

Event Number: 5708518

BRITISH COLUMBIA

NEW WESTMINSTER MINING DIVISION

NTS M092H084

Latitude: 49°54'07.7"N, Longitude: 121°22'43.0"W

NAD83 UTM Zone 10N: 0616432 E, 5529011 N

Report By:

James Chamberlain

3133 Arlington Ave. Saskatoon, SK, S7J 2K1

November 16, 2018

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Executive Summary

The Russell Property straddles the boundary between the Intermontane and Coast belts which were juxtaposed in late Cretaceous time along the Pasayten Fault. Paleogene mafic to intermediate igneous bodies intrude the sedimentary Pasayten Group and are related to the significant Cu-Mo-Zn mineralization seen on the Russell Property at the Azurite showing, as well as at the DUC and Gossan showings to the southeast and east of the Property, respectively. Advanced geochemistry completed in 2016 provided insight of the high magmatic water content of the central Paleogene intrusive, essential for the formation of a magmatic-hydrothermal ore deposit. The mineralized Paleogene mafic to intermediate intrusive bodies on the Russell Property are situated in a favourable location at the main structure accommodating the Cretaceous collisional regime. The collisional tectonics may have influenced and provided structural pathways to allow for partial melts derived from the fertile sub-continental lithospheric mantle to reach upper crustal levels. Furthermore, the relative timing of the intrusives, being post-collisional, prior to significant transcurrent motion, and coeval with adakitic volcanics, is favourable for the development of magmatic-hydrothermal mineralized systems.

The Russell Cu-Zn Property was subject to a three day field program in June 22nd to 24th 2018 to collect soil samples for geochemical analysis including; multi-element ICP-MS analysis, pH, pHa and conductivity measurements to further advance the prospectivity of the Property. The 2018 soil sampling program consisted of two 2 km soil lines, sampled from the B soil horizon on the southern extent of the current Russell Property. The purposes of these lines were to test the geochemical response over known Paleogene intrusive and corresponding magnetic anomalies. The program identified several Inverse Difference Hydrogen, rabbit-ear anomalies and single IDH peaks, complemented with anomalous pathfinder elements including; Cu, Zn, Pb, Y, V, and Cr. The north eastern IDH anomaly appears to be approximately 300 by 500 m and directly coincident with anomalous Ca concentrations in the soil. A trenching program over the targets is recommended to further test these multi-element anomalies.

In 2012, the “Azurite Zone” showing was discovered on the current Russell Property where a feldspar porphyry intrusive hosts azurite and malachite mineralization with grab sample values up to 0.665 % Cu, 0.229% Pb, and 0.945% Zn as well as elevated gold, silver, arsenic, mercury and antimony. Nine outcrop samples were collected from the Russell Property in 2016 with seven sent for geochemical analysis. Five samples from the Azurite showing on the Property have high Zn (four samples returning >1.0% Zn), Cu (up to 2,067.1 ppm), and As (up to 833.0 ppm) values. Four samples were selected for thin section petrographic analysis, which demonstrated the strong silicic- and sericite-alteration of the Azurite showing, as well as observations of sphalerite, chalcopyrite, and tennantite responsible for the elevated metal concentrations.

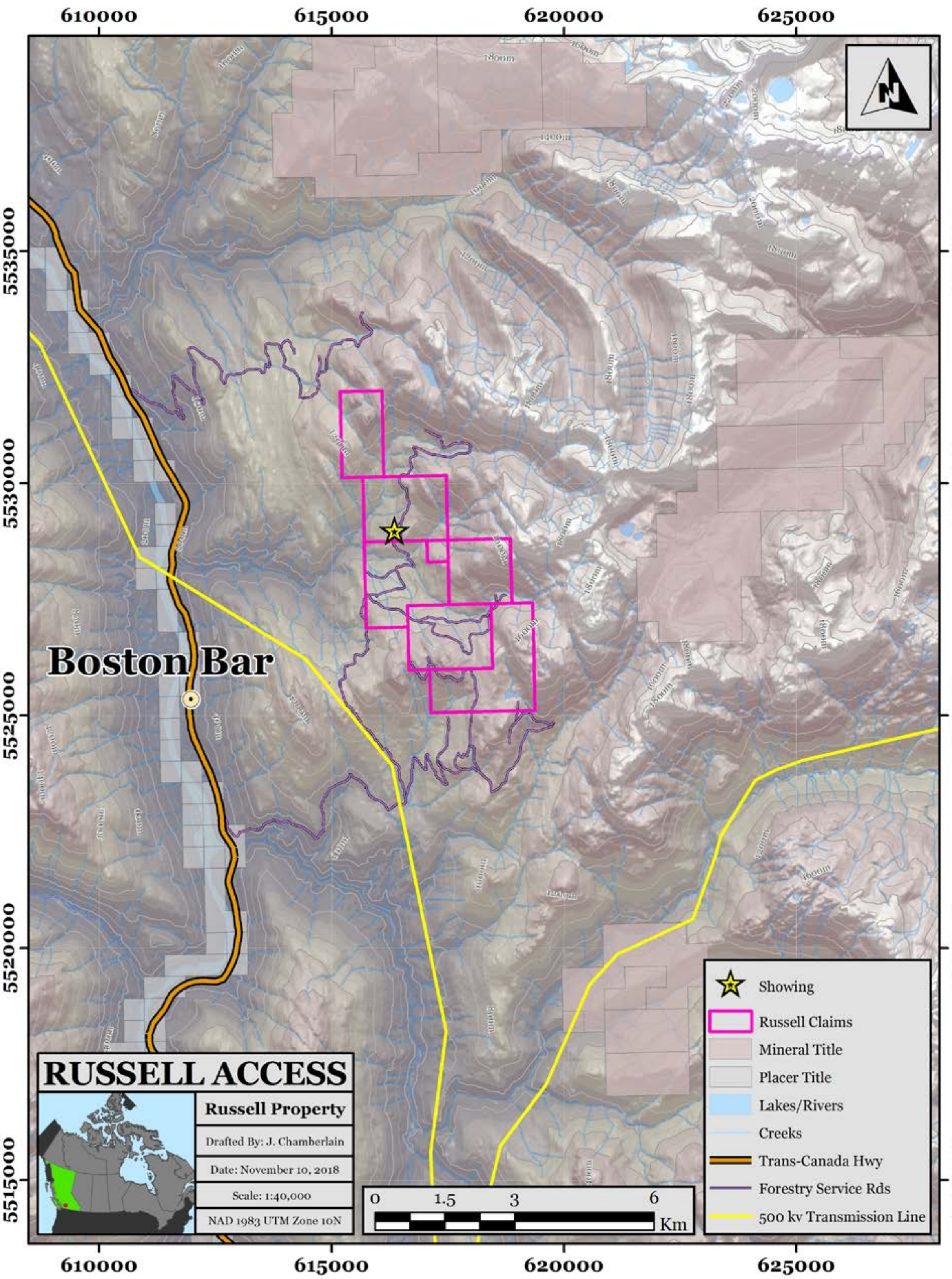

Figure 1: Location and Tenure

1.0 Introduction

1.1 Location, Access and Infrastructure

The claims are located in south-western British Columbia (Figure 1), approximately 3 km east of the town, Boston Bar and 37 kilometres southwest of the city of Merritt, BC. The property is centered at approximately 49°54'07.7"N latitude and 121°22'43.0"W longitude on NTS map sheet M092H084.

The claims are accessed from Boston Bar by heading south on the Trans-Canada Hwy for 8 km and then east on the Uztlius Creek Forest service road for approximately 5.7 km, turning north on a decommissioned forestry service road for an additional 5 km. The northern most claim (1046228) can also be access by the above mentioned route but can also be accessed heading north on the Trans-Canada Hwy for approximately 2 km, turning east via a series of switchbacks on active and decommissioned forestry service roads for roughly 7.5 km.

The Russell properties do not include infrastructure other than the logging roads and culverts. Two of B.C. Hydro's 500 kV transmission lines run adjacent to the property one is roughly 4 km from the property running from SSW to NNE and the other is less than a km on the running NNW to SSE, power can be provided relatively easily to the claims. Advance exploration and establishment of the exploration camp would require application of portable power generators. Water for potential camp and/or drilling operations can be sourced from local creeks.

1.2 Climate and Physiography

Geographically, the claims lie along the eastern edge of the pacific coastal mountains. Elevations range from to 600m to 1800m. The mineral showings are situated on a moderately steep slope southwest facing slope. Relatively thick vegetation covers most of the lower to moderately elevated areas. Most rock outcrops are limited to higher elevations and creek drainages. Seasonal exploration surveys can commence from late May and end by late October.

The project area lies within the transition zone between the rugged Coast Mountains to the west and the rolling Interior Plateau physiography province to the east. Relief is modest on the claims, generally less than 1350m, with a mean elevation of 1194 m a.s.l. Topography is dominated by rocky ridges, which transition downward into colluvium slopes, with alluvial valley bottoms.

The climate is characterized by warm summers with temperatures ranging from 10° to 25°C and cold winters typically in the -10° to -15°C. The claims are situated just west of the interior rain shadow, and as such receive abundant precipitation, ranging between 900 to 1,000 mm carrying over from the Coast Mountains. Considerable snow fall is to be expected during the winter months due to the elevations.

1.3 Property and Ownership

The Russell Property is comprised of 7 mineral claims covering 1477.91 hectares, held by James C. Chamberlain (100%). Russell 1, 2 and 3 claims are in good standings to Aug 24, 2020. Russell 4 and 5 claims are in good standings to Aug 25, 2019. Russell 6 and 7 claims are in good standings to June 14, 2020, following is a statement of work filed for work documented in this report.

TENURE NO.	CLAIM NAME	ISSUE DATE	GOOD TO DATE	AREA (HA.)
1042651	RUSSELL 1	03/07/2016	07/24/2020	249.72
1043538	RUSSELL 2	04/15/2016	07/24/2020	187.34
1044082	RUSSELL 3	05/12/2016	07/24/2020	20.81
1054271	RUSSELL 4	08/25/2017	09/25/2019	166.43
1054272	RUSSELL 5	08/25/2017	09/25/2019	333.17
1061186	RUSSELL 6	06/14/2018	06/14/2020	249.85
1061187	RUSSELL 7	06/14/2018	06/14/2020	270.60

Table 1: Tenure Description

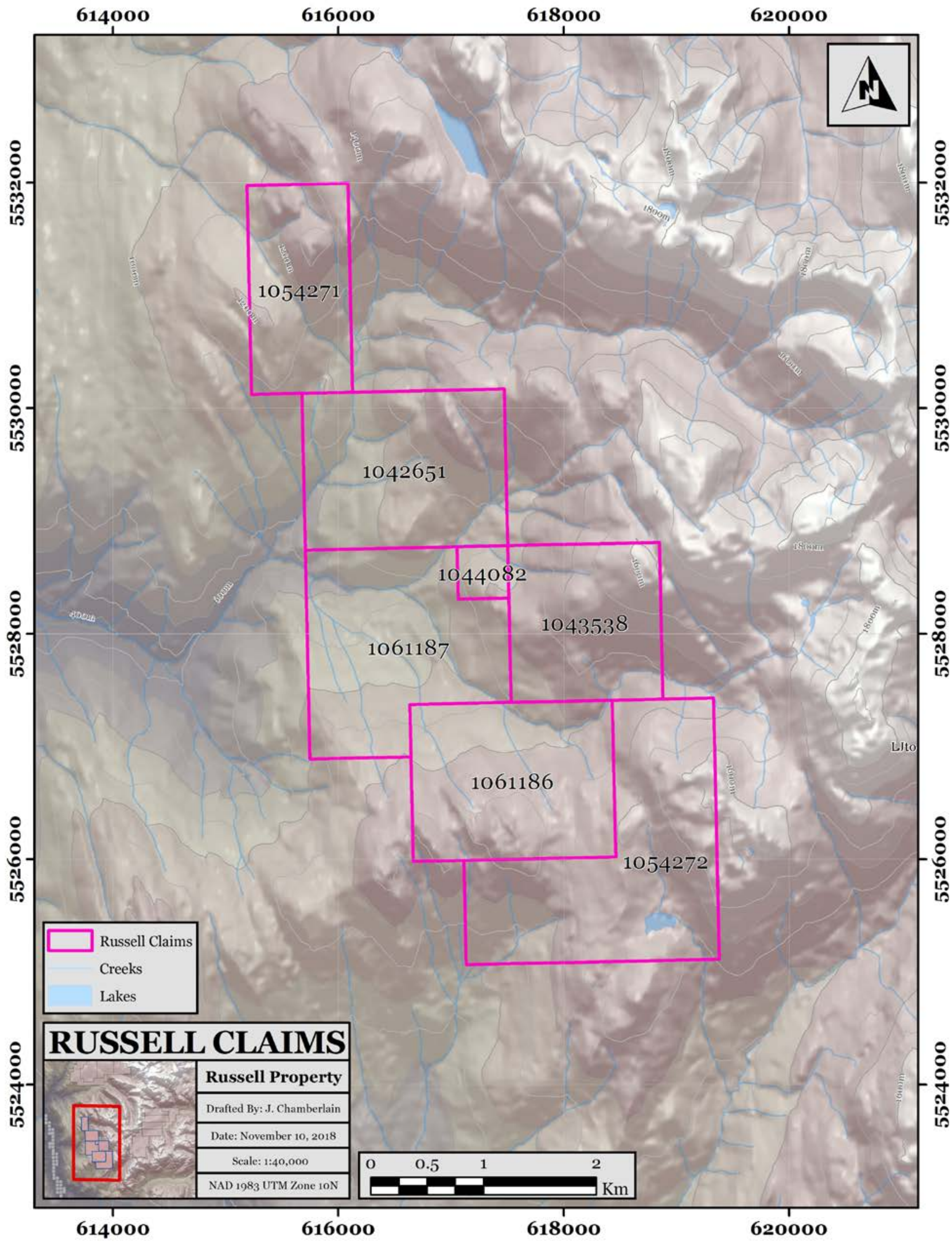

Figure 2: Tenure

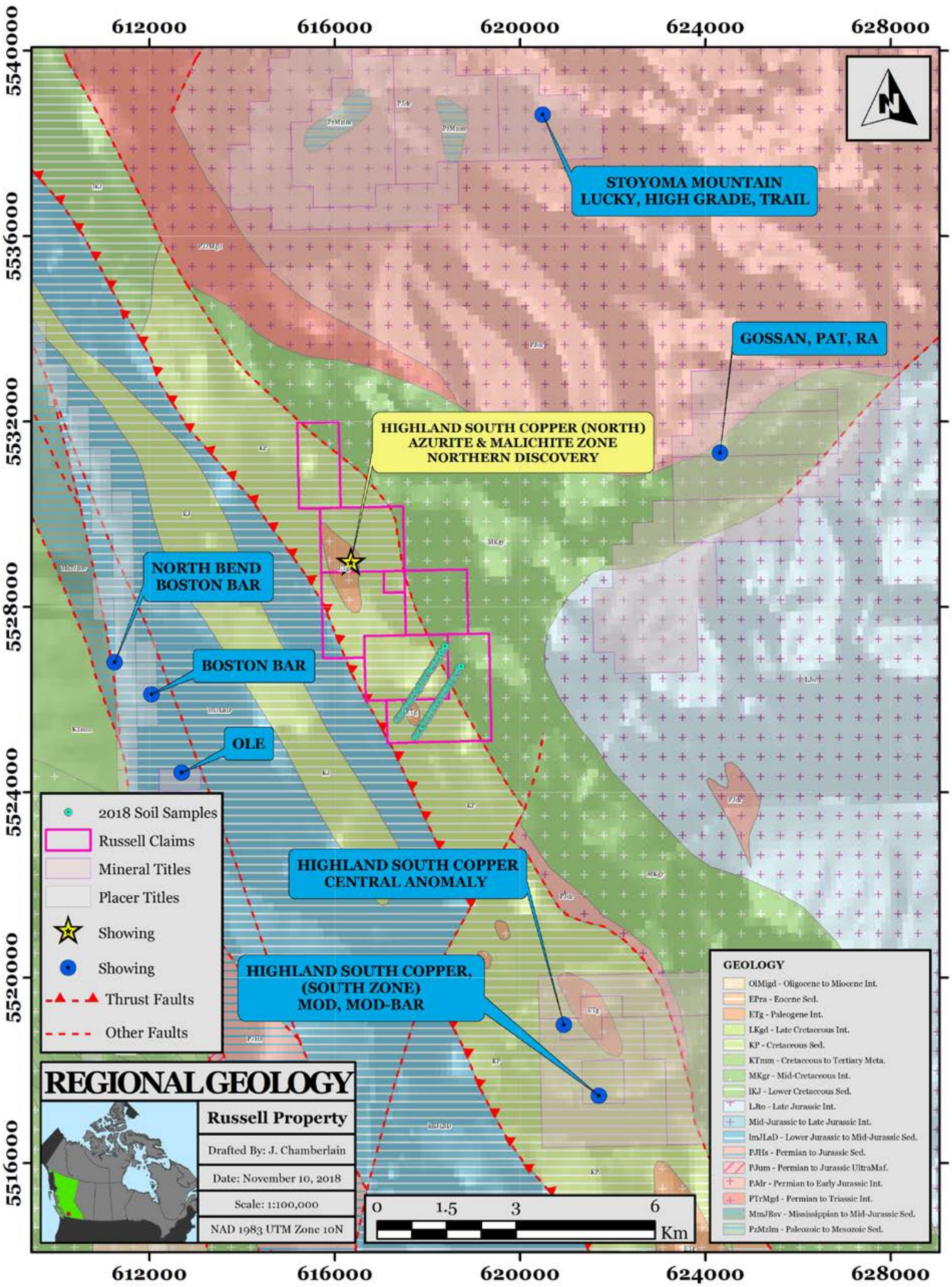

Figure 3: Regional Geology and Mineral Showings

2.0 Geology

2.1 Regional Geology

The Russell Property area was subject to 1:253,440 scale compilation mapping in 1944 by C.E. Cairnes of the Geological Survey of Canada (GSC) (Cairnes, 1944). In 1970, J.W.H. Monger of the GSC revised the area with a 1:250,000 scale compilation map and accompanying report, largely derived from detailed work done near Hope by the University of British Columbia (Monger, 1970). In 1986, G.E Ray mapped the area for the British Columbia Geological Survey (BCGS) as a part of his continuing research into the Coquihalla Gold Belt (Ray, 1986), and O'Brien visited the area in 1988 focussing on the Jurassic stratigraphy of the Methow Trough (O'Brien, 1988). In 1989, the GSC completed a series of 1:250,000 scale compilation maps of geology, fossil locations, isotopic date locations, and mineral occurrences (Monger and Lear, 1989). This geological mapping is the most complete and recent for the area, and is primarily used for the BCGS digital geology basemap (Fig. 2). There is no report to accompany this mapping, rather a sheet describing the various lithologies and structural evolution of the area (Monger and McMillan, 1989), most of the information in which stems from Monger's earlier paper (Monger, 1985). Ray (1990) performed a comprehensive study of the Hozameen fault system and the Coquihalla Gold Belt, mapping areas to the southeast to 1:20,000 scale. Greig (1992) investigated the Eagle Plutonic Complex and mapped the area to the southeast near the Needle Peak Pluton.

The Russell Property straddles the boundary of the Intermontane Belt to the east and Coast Belt to the west, demarcated by the Pasayten Fault. In the east, Early Cretaceous volcanic rocks of the Spences Bridge Group unconformably overlie both the Jurassic Cache Creek Terrane and the more broadly distributed Quesnel Terrane. The Quesnel Terrane directly to the east is a magmatic arc consisting of mafic volcanic and interstratified sedimentary rocks of the Late Triassic Nicola Group and contemporaneous intrusive rocks of the Mount Lytton Plutonic Complex (Diakow and Barrios, 2008). The Eagle Plutonic Complex intrudes the Mt. Lytton complex and is contiguous with the Okanogan Complex in northern Washington. The Eagle Plutonic Complex comprises middle to late Jurassic and mid-Cretaceous plutons forming a composite and variably deformed intrusive complex (Grieg, 1992).

West of the Pasayten Fault lies the Methow-Tyaughton Basin. The basin consists of a basal ophiolite of probable Triassic age; the Spider Peak Formation, overlain by the Lower to Middle Jurassic Ladner Group, with its volcanic-rich facies, the Dewdney Creek Formation, followed by Lower- to Upper-Cretaceous thick units of undifferentiated argillite, sandstone, and conglomerate making up the Jackass Mountain Group, and the non-marine facies equivalent Pasayten Group, at the top of the succession. The later contain detritus from the east and west terranes, the Quesnellian and Bridge River rocks, respectively, thus linking these terranes together by about mid-Cretaceous time (Monger and McMillan, 1989).

To the southwest of the Pasayten Fault, another terrane-bounding structure, the north-tending Hozameen Fault separates the Spider Peak Formation on the east and the Permian to Jurassic Hozameen Group, a highly deformed, dismembered ophiolite suite of the Bridge River terrain to the west (Ray, 1990).

Early to Middle Eocene (53-47 Ma) terrestrial volcanic and clastic sedimentary rocks of the Priceton group are found throughout the region, predominantly to the southeast of the Eagle Plutonic Complex. The volcanics have an adakitic signature that extends throughout their entire compositional range, including high-Mg# basaltic andesite. It is postulated by Ickert et al. (2009) that the source for the Princeton group may have been mafic dykes emplaced into the lithospheric mantle during Mesozoic arc magmatism and subsequently partially melted during an event of lithospheric heating in the Eocene. The heating may have been caused by upwelling asthenosphere related to a slab window or slab tear. The Eocene (48 Ma; Monger and Lear, 1989) rocks of the Needle Peak Pluton, consisting of coarse-grained biotite-hornblende monzogranite, intrude Middle Eocene clastic rocks to the southeast of the property (Greig, 1992).

As expected at the intersection of multiple geological domains, the Russell Property area is structurally diverse and complex. The approach of the Insular Superterrane led to a generally contractional regime where the structural stacking of rock units resulted in the uplift of the Intermontane Belt and the Coast-Cascade Belt to become non-marine by ca. 160 Ma and ca. 100 Ma (Monger and McMillan, 1989). The intrusion of mantle-derived magmatic rocks accompanied the transition to a transcurrent regime, which produced major lithological domain offsets such as the Fraser Fault.

The mid-Cretaceous to Tertiary Pasayten Fault separates the Mt. Lytton and Eagle complexes from the predominantly sedimentary rocks of the Methow Terrane. Uplift from the late Cretaceous to the early Tertiary along the Pasayten Fault provided the Mt. Lytton, Eagle, and Okanogan complexes with their similar regional structural position. The Pasayten Fault evolved from a ductile shear zone in the mid-Cretaceous to a brittle fault in the mid-Eocene. The sub-vertical Pasayten Fault records mid-Cretaceous east-side-up movement by either a reverse component of movement (east-dipping) with sinistral sense of shear (Greig, 1992), or west-dipping normal movement down-dropping to the Methow Terrane to the west (Monger and McMillan, 1989). Within the Methow Terrane, the east-verging Chuwanten Fault, places Jurassic strata over the late Cretaceous Pasayten Group and is cut by the Eocene Needle Peak Pluton, thus establishing late-Cretaceous, pre-48 Ma horizontal shortening in the area (Monger and McMillan, 1989). The Hozameen Fault, which separates the Hozameen Group from the rocks of the Methow-Pasayten Trough, is a major, steeply dipping, north-northwest-trending fracture system that exceeds 100 kilometres in length. The Hozameen Fault is apparently cut and intruded by the Eocene (50 Ma) Golden Horn Batholith to the south and cut off by the younger Fraser Fault in the north, near the Russell Property. The 300-km-long dextral Yalakom Fault northwest of Lillooet, may represent the offset continuation of the Hozameen Fault (Ray, 1990; and references therein). The Fraser-Straight Creek Fault System dextrally offsets older structures and rocks by 80-100 km, with movement occurring after 47 Ma and before 35 Ma, the oldest date from the cross-cutting Chilliwack Batholith in Washington State. The northeast trending faults, such as the Coquihalla Fault to the southeast, postdate the Needle Peak Pluton (48 Ma) and possibly the Coquihalla Volcanics (22 Ma; Monger and McMillan, 1989).

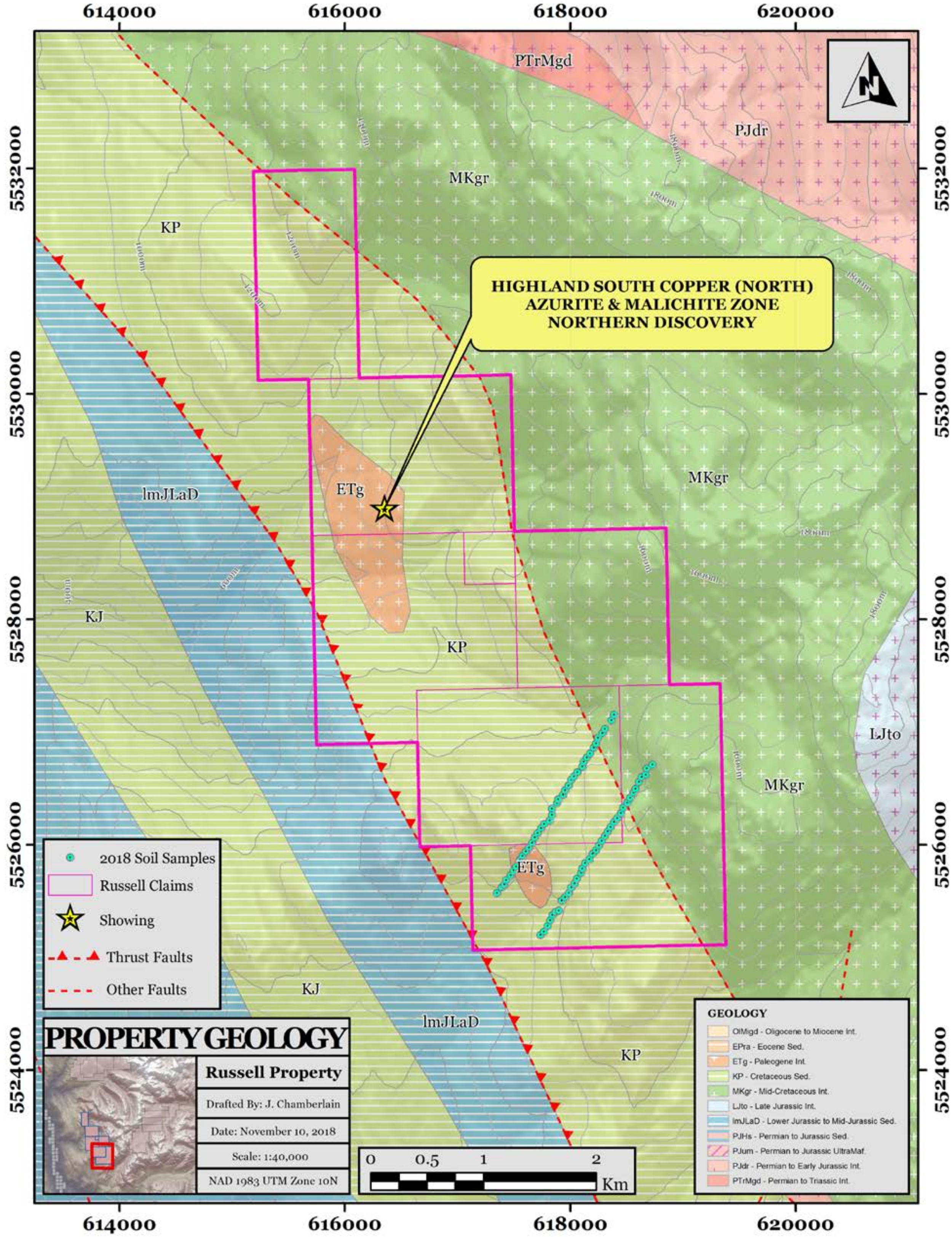

Figure 4: Property Geology

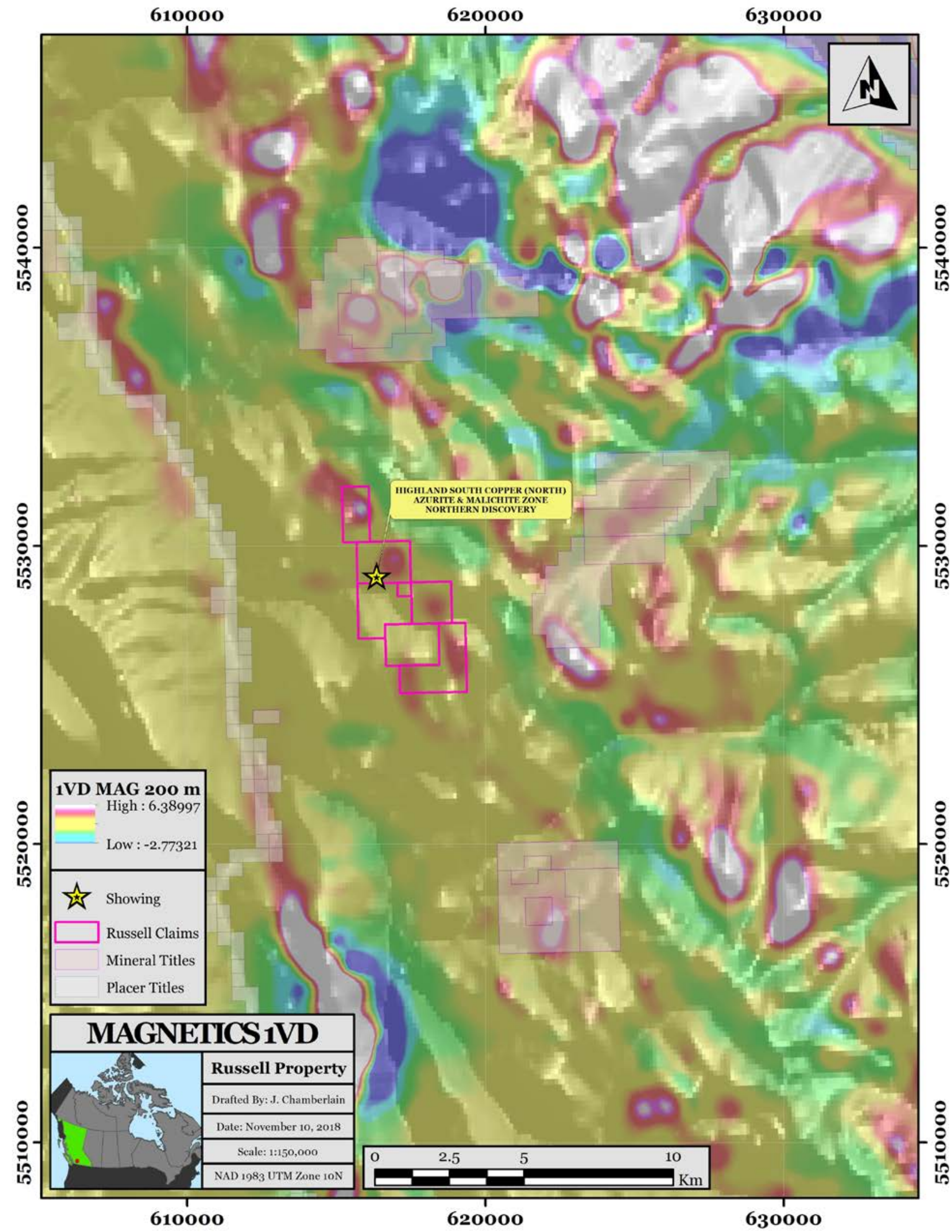

Figure 5: Regional 1VD Magnetics

2.2 Property Geology

The Russell Property straddles the Pasayten Fault, the boundary between the Mt. Lytton-Eagle Plutonic Complex to the northeast, and the Jackass Mountain and Pasayten groups to the southwest. The intermediate intrusives (Unit Etg) emplaced within and along strike of the Pasayten Group are inferred to be Paleogene in age, although the initial record of them is elusive. They are displayed in Monger's 1989 map and referenced to have been mapped by either Ray in 1986 or O'Brien in 1988. The former mapped mostly to the south with attention paid to the Hozameen Fault System thus there is little mention of the intrusives. The latter did map the current Russell Property but, again the focus was elsewhere, on the Jurassic biostratigraphy of the Methow Trough, so there are no defined intrusives in the mapping or mention of them in the report. Nevertheless there are intermediate intrusive units within the current Russell Property boundaries, and to the southeast along strike towards the Needle Peak Pluton, which are of probable Paleogene age. These intrusive units are coincident with circular magnetic high signatures in regional geophysics, and circular domes on the surface topography.

Adrian Smith summarized the current Russell Property and immediate area geology in 2012 (Assessment Report #33780):

> In General the geology on the property consisted of weakly metamorphosed interbedded shales siltstones sandstones and large beds of conglomerates. These sediments were commonly striking close to north-south with commonly steep, but variable dips both to the east and west. These sediments are up against a regionally continuous contact with a granitic batholith dated as mid cretaceous that was barren of sulphides where visible on the property. Subsequently younger aged intrusions dissect the sediments on a more local scale and seem to be composed primarily of plag phyric plugs and dykes of intermediate composition. Vesicles were also commonly noted within the plag phyric intrusives in the northern part of the property probably relative to hypabyssal nature. These later plugs dykes and or sills are reported to be of Paleogene age and commonly contain sulphides, and sporadic zones of alteration most commonly silicification and less argillic. The general composition of the younger intrusives became more mafic towards the south apparent from 1-3mm phenocrysts of amphiboles and presence of (primary?) magnetite. Furthermore to the south of the property float of a fine grained diabase intrusive was found at the base of a ridge located with the property bounds, and was shown to be carrying a noticeable amount of Cu.

A prominent northeast trending structure runs through the Property, confirmed by previous mapping. This structure dextrally offsets the Hozameen, Chuwanten, and Pasayten faults, producing a distinct topographical lineament in which Spius Creek flows. This structure also follows the mapped/inferred contact between the Eagle Plutonic Complex to the south, and the Mt. Lytton Complex to the north, and movement may be of similar age to that of the Paleogene Coquihalla Fault to the southeast.

2.3 Exploration Model

The primary exploration target within the Russell Property is a porphyry Au±Cu±Mo deposit, or related polymetallic epithermal veins, associated with the Paleogene intrusive units tracking the Pasayten Fault. The Triassic-Jurassic Highland Valley and Copper Mountain major porphyry deposits in the Quesnel Terrane are located to the northeast and southeast of the Russell Property, respectively. In addition, there are multiple gold-bearing epithermal vein systems hosted in the Cretaceous Spences Bridge Group being actively explored to the east of the Property (Diakow and Barrios, 2008). Furthermore the mid- to late-Cretaceous accretionary collision of the Intermontane and the Coast belts resulted in significant late Cretaceous mesothermal gold mineralization in the Bridge River District (Goldfarb et al., 2008). The mineralization at Bridge River is spatially and temporally related the Yalakom Fault in the district. The Hozameen Fault, and related Caroline Gold Mine to the south of the Russell Property, may represent the southerly offset continuation of the Yalakom Fault (Ray, 1990).

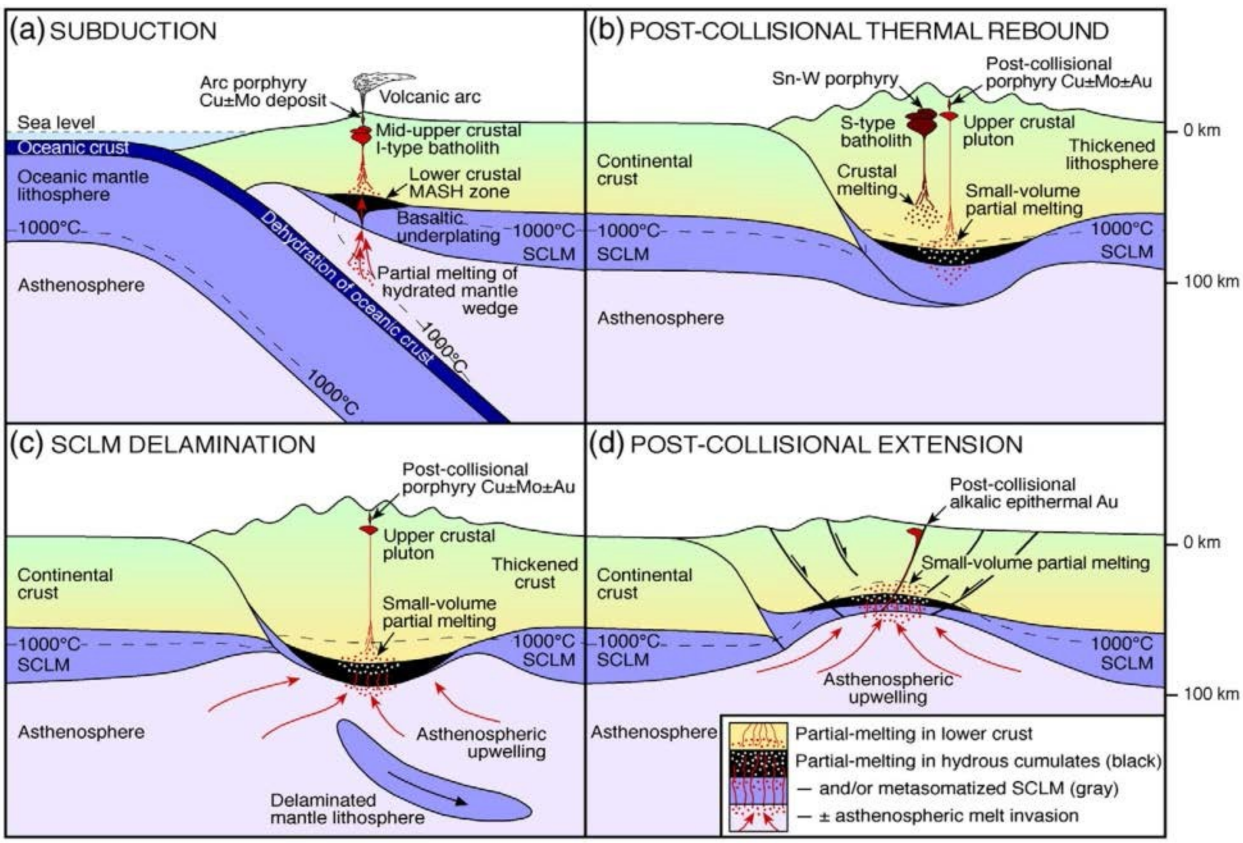

Figure 6: Porphyry development tectonic settings. From Richards (2011)

The mid- to late-Cretaceous collisional regime largely recorded by the Pasayten Fault and the Jackass-Pasayten Group sedimentary strata underlying the Russell Property appears to have provided a fertile setting for the development of post-collisional mineralized porphyry intrusions in the Paleogene period.

Arc-like magmas and related porphyry and epithermal ore deposits occur in post-subduction tectonic settings, such as subduction reversal or migration, arc collision, continent–continent collision, and post-collisional rifting. They are distinguished from their normal subduction-related counterparts by slightly higher magmatic alkali contents, and the occurrence of Au-rich deposits (Fig. 5a). Re-melting of previously subduction-modified subcontinental lithosphere and the lower crustal amphibolitic cumulate roots of former arc magmatic complexes may be triggered by crustal thickening and thermal rebound following arc or continent collision (Fig. 5b), delamination of sub-continental mantle lithosphere (Fig 5c), and/or asthenospheric upwelling during rifting of former arc crust (Fig. 5d). Sparse sulphide phases in these arc cumulates, residual from fractionation of previous arc magmas, will likely be rich in chalcophile and highly siderophile elements. During low-volume melting, these sulphide phases may re-dissolve in the mildly alkaline partial melt, and provide a source for Au-rich (±PGE) post-subduction porphyry Cu–Au and epithermal Au systems. (Richards, 2011) The Triassic-Jurassic Porphyry deposits east of the Russell Property, and the later mesothermal and epithermal gold mineralization in the area, highlighted above, emphasize that the lithosphere may be fertile and partial melts produced from it may be host to Au±Cu±Mo mineralization.

Porphyry Cu systems are commonly spatially associated with co-magmatic volcanic rocks, typically of intermediate to felsic composition, which are generally erupted subaerially, 0.5 to 3.0 Ma prior to stock intrusion and mineralization (Sillitoe, 2010). The Eocene (53-47 Ma) Princeton Volcanics to the east of the Russell Property have a “slab-window” adakitic geochemical signature (high Sr/Y and La/Yb, Ickert et al., 2009). Richards (2010) argues that the trace element characteristics of “adakites” are indicative of high magmatic water content rather than the source signature, and this explains the common association of high-Sr/Y (i.e., hydrous) magmas with magmatic–hydrothermal ore deposits. While not attempting to relate the Princeton Volcanics to the Paleogene intrusions on the Russell Property, the occurrence of adakitic volcanic rocks spatially and temporally associated with the Property is encouraging.

The presence of the Paleogene intrusions along the Pasayten Fault is likely due to the structure providing a permeable conduit for the magmas to reach upper crustal levels. The, likely younger, Fraser-Straight Creek Fault System also provides a further major terrane bounding structure activated in a transcurrent tectonic regime with substantial dextral offset. Investigation of the Jackass Mountain Group on the west side of the Fraser Fault, approximately 90 km northwest of the Russell Property, has found tertiary intrusions in the Jackass Mountain Group with significant related gold mineralization at the Watson Bar prospect (MINFILE #092O-051) and related showings.

Polymetallic Ag-rich epithermal veins are a secondary focus of exploration on the Russell Property. The Treasure Mountain Ag-Pb-Zn Mine lies approximately 55 km southeast of the Property, with mineralization thought to be associated with tertiary faulting and dykes within the Pasayten Group (Ostensoe et al., 2012). Furthermore, the Ag-Au-Zn-Pb-hosting Keystone Mine, approximately 30 km southeast, is situated near the centre of the early Tertiary quartz diorite (Keystone) stock (MINFILE #092HNW024). The intrusive is attributed to be the metal source for the vein-style mineralization and is a part of the same mapped unit that underlies the Russell Property (Unit ETg; Fig. 3).

In summary, multiple examples of both pre- and syn-Tertiary mineralization in the region enhance the prospectivity of the post-collisional Paleogene intrusive units emplaced along the trace of the terrane-bounding Pasayten Fault. The exploration will focus on both porphyry Au±Cu±Mo and related epithermal mineralization on the Property.

2.4 Blind Sulphide Exploration Model using pH and pHa

The hydrogen ion is one of the most readily available ions and is the most mobile positively charged ion. Therefore, its distribution may be expected to most closely conform to electrochemical processes. The proposed model for the response of H+ to electrochemical dispersion around an electronic conductor, where no other processes are operative is shown below in Figure 7 (Govett 1976). There's a growing body of evidence to indicate that variations in soil pH, or hydrogen ion [H+] concentrations, occur at the surface over buried sulphide mineralization. A proposed mechanism based on laboratory experiments and field tests, for the formation of metal anomalies in soil glaciolacustrine clays over massive sulphides in the Abitibi Belt, northern Quebec was conducted by Smee (1983). Smee's work showed that [H+] is released as a by-product of sulphide oxidation as the water table diffuses to the surface to form detectable acidic anomalies. As the soil system changes from a slightly oxidizing to more of a reducing environment, pH sensitive elements such as, Ca, Sr, Mg, Fe and Mn become redistributed in response to the pH shift (Geoscience 2010-08).

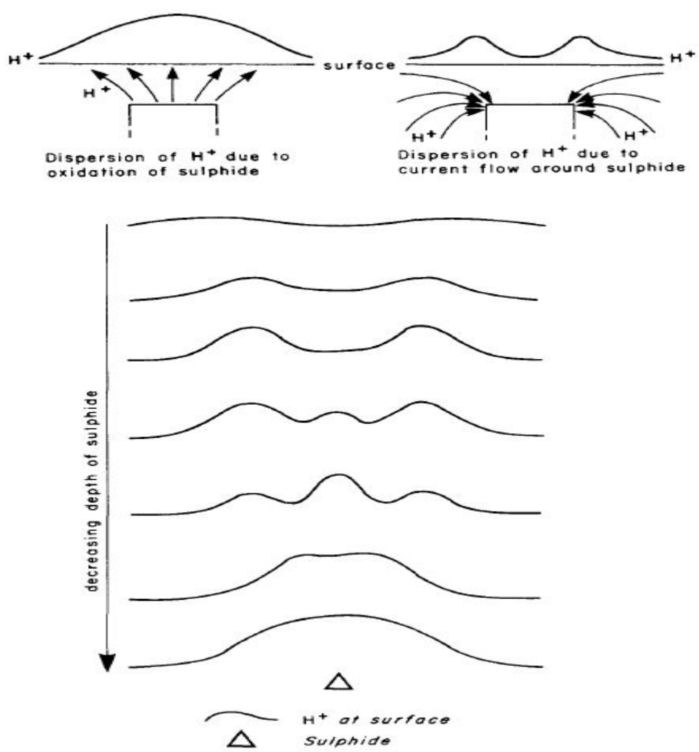

Figure 7: Proposed Distribution of H+ in Surface Soils over a Sulphide Zone (Govett 1976)

Smee (1997, 1998) proposed a similar model for ion transport and indirect anomaly formation for arid environments. Results from a multi-company sponsored orientation survey at the Marigold gold deposit in Nevada (Smee, 1998) showed that Ca concentration, in all weak leaches tested, displayed a distinctive rabbit-ear or double-peak response with the peaks occurring over the edges of the mineralization. The ratio of weak leach Ca (e.g., acetic acid or hydroxylamine HCl) to aqua-regia digested Ca showed clear residual anomalies with the same rabbit-ear form and proposed that two forms of Ca exist in the soil; one of which is easily soluble and spatially related to mineralization and a second less soluble form, which represents background carbonate. Smee (1999) concluded that near-surface Ca over oxidizing mineralization is being remobilized in response to the upward movement of H+. Reprecipitation of Ca (carbonate) occurs where pH conditions permit, in other words over the edges of the sulphide body (Geoscience 2010-08).

More recent work by Hamilton et al. (2004 a, b) at the Marsh zone gold prospect and the Cross Lake volcanogenic massive sulphide (VMS) prospect in Ontario showed that similar rabbit-ear patterns occur in H+ at the surface, above the edges of mineralization. They concluded that pH correlates with oxidation-reduction potential (ORP) and proposed that H+ production is a function of the redox conditions in the overburden column. In an earlier paper, Hamilton (1998) proposed the existence of reduced columns or chimneys in the overburden column above a reduced metal source. Reduction of the overburden column is postulated to occur as a result of upward migration of reduced anionic species between the top of a conductive body and the ground surface. Charge is transferred by the reaction with oxidized cationic species migrating in the other direction. This process results in the formation of an oxidation front that propagates to the surface to form a chimney or column. Within the reduced core of the chimney, oxidation of the underlying mineralization is inhibited thus limiting the amount of H+ released. At the edges, however, oxidation is enhanced thus promoting H+ accumulation at the surface over the edges of the underlying mineralization. This process results in a typical rabbit-ear response for H+, with a pronounced central low over the reduced chimney, from samples collected at the very top of the mineral soil profile (Geoscience 2010-08).

In order to determine a geochemical pattern in the soils related directly to oxidizing sulphides should include two variables: positive H+ surrounded by an increase in Ca concentration where the mobilized calcite reprecipitates. Both of these variables can be detected by initially measuring the soil slurry pH, then by adding a drop of 10 % HCl, stirring the solution for about 60 seconds and taking the pH again. Soils of lower pH (high H+ molar concentration) have mobilized the Ca and therefore the soil slurry will be relatively unbuffered. The addition of HCl to the solution will immediately drop the pH in these samples where calcite has been removed, but will have little effect where calcite been precipitated. These buffered soils should be on the edge of the low pH (high H+). The pattern from an oxidizing sulphide should therefore be an H+ high and surrounded by a small or no change in H+ concentration when HCl has been added (Smee 2009).

Plotting the variables such as pH and pHa alone can be rather difficult to distinguish any discernable patterns. In order to overcome these challenges, a method has been developed to clearly highlight the areas of calcite precipitation on a chart or plan map. The Inverse Difference Hydrogen, which can be calculated using the field measurements for both pH and pHa. This is done by first converting the pH and pHa to the concentration in moles of [H+] and [Ha+]. Next the difference between the acidified H+ in moles is subtracted by non-acidified H+. The inverse difference is calculated by (1/difference). The areas of least difference are the areas of calcite precipitation. This IDH variable produces positive peaks which are more pleasing to plot compared to that of pH and pHa (Smee 2009).

3.0 Exploration History

The surrounding area has seen considerable historical work mainly concentrated on three areas related to registered mineral showings (Fig. 2):

- Ole Ni-Cu-Ag showing (MINFILE: 092HNW029) located approximately 4 km southwest,

- Gossan Cu-Mo showing (MINFILE: 092HNW027) located approximately 6 km east,

- DUC or Mod-Bar Cu-Mo-Zn showing (MINFILE: 092HNW049) located approximately 7 km southeast.

The Ole showing is an outcropping ultramafic intrusion containing disseminated Cu and Ni mineralization, within massive pods of pyrrhotite and associated chalcopyrite and pentlandite. The area is predominantly underlain by stratified marine sedimentary argillites and siltstones of the Jurassic Ladner Group. The Ladner Group comprises the primary economic rocks of the Coquihalla Gold Belt hosting the majority of the gold mines; and the group also contains large ultramafic intrusions and dykes/sills along the entire length of the belt. In 1971, as the first recorded work on the showing, G.M Explorations ran soil sampling, magnetic, and VLF-EM surveys, and drilled four short (16 metre) diamond holes on and proximal to the showing that failed to encounter extensions of the surface mineralization at depth (Assessment Reports #3190 and #3191). In 1983, Brookmere Ventures trenched and sampled the showing returning 10.97 g/t Ag, 2.34% Cu, and 2.36% Ni from the mineralized ultramafics (A.R. #11183). In 1998, there was renewed interest in the area under the “Mara Claims” name, with a mapping and soil sampling program (A.R. #25427). In 2001, the Ole was subject to air photo interpretation (A.R. #26813). In 2005, Seamus and Tim Young optioned the Mara Property to Aries Resources who conducted a magnetometer survey with results described as insignificant in terms of outlining any potential mineralization (A.R #27774). Most recently, in 2006, an airborne EM and magnetic survey was flown over the Ole area with no EM conductors of any significant strike length detected and no EM or magnetic response from the Ole showing (A.R. #28686).

The Gossan showing to the east is an area of anomalous Cu-Mo within biotite-hornblende granodiorite (Eagle Plutonic Complex), feldspar porphyry and quartz-feldspar porphyry which have been intruded by felsic and lamprophyre dykes. The first recorded examination of the area was in 1968, when Orequest Explorations Ltd. Conducted trenching, geophysical and geochemical surveys, geological mapping, and five diamond drill holes. The holes were each drilled to 200 feet in depth and notably drillhole #2 ended in 0.42% Cu for the last 9 feet (Allen, 1969). In 1969, Murray Mining conducted an EM survey highlighting a 1,700 foot long conductor striking 065° and drilled ten vertical percussion holes intersecting pyrite but no significant Cu-Mo mineralization (Allen, 1969). In 1970, Arrow Inter-America Corp. conducted an IP survey that was described as the entire Gossan area having an increased chargeability response which rendered target recommendations to be difficult (A.R. #3052). In 1974, Brascan Resources found that better Cu mineralization is associated with pink feldspar and quartz veining through trenching a covered area, having a coincident magnetic high, chargeability low, and Cu-Mo soil anomaly (A.R. #5389). In 1976, Canadian Occidental Petroleum Ltd. Conducted a soil and stream sampling program which highlighted values of up 2,970 ppm Cu and 230 ppm Mo, and outlined an area of 2000’ x 1500’ of >500 ppm Cu surrounding an area of 2000’ x 400’ of >1000 ppm Cu (A.R. #6145). Most recently, in 2012, J.T. Shearer conducted a line of magnetometer survey and coincident soil sampling which outlined a 120 m long interval of >2,000 ppm Cu including a high of 4,640 ppm Cu (A.R. #33913).

The DUC showing is an extensive, at least 1.0 x 1.5 km, Cu-Mo soil anomaly with soil samples yielding up 3,150 ppm Cu and 115 ppm Mo. Historically there has been confusion on the geology in the area; with multiple mentions of a quartz porphyritic rhyolite, intruded by several feldspar porphyry dykes of monzonite composition, including the development of a breccia pipe with extensive sulphide mineralization. The rhyolite was later suggested to be quartz-plagioclase porphyritic dacite (A.P. #27391) or a broader phase of one of the tertiary granodiorite intrusive stocks identified in the area (A.P. #28145). Regardless of the nature of the host, it is important that the later intrusive event(s) appear to be largely responsible for the anomalous Cu-Mo mineralization in the area. In 1975, Quintana Minerals Corp. returned a chip sample 100 feet east of the breccia pipe, assayed 0.24% Cu over 105 feet (A.R. #5742). Soil geochemistry by JMT Services in 1979 and 1982 defined a 700x1000 m Cu soil anomaly of >200 ppm (up to 2,900 ppm Cu), and smaller coincident soil Mo anomaly (A.R. #8766, #9633, and #10876). In 1984, the Nicola Prospecting Syndicate conducted a program of 382 soil samples and 8 chip samples confirming anomalous Cu and Mo in the area (A.R. #13285). In 2004, Alojzy Walus collected 42 soil and 7 rock samples on the eastern edge of the original soil grid, obtaining up to 2,306 ppm Cu and 376 ppm Mo (A.R. #27391). In 2006, Southern Rio Resources ran a program of soil and rock sampling and an IP survey, and found strongly anomalous Cu and Mo values within a felsic intrusive stock and an IP anomaly with coincident soil Cu-Mo anomaly (A.R. #28145). In 2012, Natan Resources conducted a large program centred on the DUC/Mod-Bar zone and extending to the southeast and northwest. A rigorous program of soil, silt, and rock sampling returned soil samples up to 2,735 ppm Cu and up to 79 ppm Mo, resulting in a significant increase in the size of the previously identified anomaly by approximately 400 m to the north, 300 m to the west, and 200 m to the south (A.R. #33780).

The 2012 Natan Resources program led to the discovery of the “Azurite Zone” (MINFILE No. 092HNW085) on the current Russell Property where a feldspar porphyry intrusive hosts azurite and malachite mineralization. Seven rock samples collected from the mineralized showing yielded values up to 0.665 % Cu, 0.218% Cu, 0.229% Pb, and 0.945% Zn as well as elevated gold, silver, arsenic, mercury and antimony. One rock sample returned significantly elevated molybdenum content of 37.4 ppm Mo. Over the Azurite Zone 118 soil samples returned slightly elevated amounts of Cu, Mo, Pb, and Zn. The silt sampling program returned elevated Cu values (up to 27 ppm Cu) collected just south of the “Azurite Zone”. The showing was described as a series of localized zones of intense argillic alteration within a greater zone of silicified intermediate plag-phyric intrusive. Within and proximal to the intense argillic alteration were high concentrations of Cu, Zn, Pb, and As. Minerals identified in the field at this showing were azurite, malachite, sphalerite, arsenopyrite, and pyrite. The exposed portion of the silicified intrusive could be traced over at least 600 m along deactivated road cut bank (A.R. #33780).

Nine outcrop samples were collected from the Russell Property in 2016 with seven sent for geochemical analysis. Five samples from the Azurite showing on the Property have high Zn (four samples returning >1.0% Zn), Cu (up to 2,067.1 ppm), and As (up to 833.0 ppm) values. Four samples were selected for thin section petrographic analysis, which demonstrated the strong silicic- and sericite-alteration of the Azurite showing, as well as observations of sphalerite, chalcopyrite, and tennantite responsible for the elevated metal concentrations (A.R. # 36763).

4.0 Procedures and Methodology

4.1 Introduction

The author and two field assistants spent a total of five person-days on the Russell Property from June 22nd to 24th 2018 to collect soil samples for geochemical analysis including; multi-element ICP-MS analysis, pH, pHa and conductivity measurements. Limited outcrop exists on the Russell Property; therefore a deep penetrating geochemical soil survey was conducted to further advance the prospectivity of the Property. Procedures and methodology used at the Russell Property was drawn from similar studies at the Mt Milligan and Kwanika porphyry Cu-Au deposits in BC (Heberlein's 2010a, b and c). The 2018 soil sampling program consisted of a total of 83 samples, including standards and duplicates, on two 2 km long soil lines. Samples were collected from the B soil horizon approximately every 50m on the southern extent of the current Russell Property. Care was taken to exclude LFH material. Soil samples from the B horizon for lab analysis were collected and stored in HUBCO® Sentry Sample Bags in the field; up to 100 g of soil material was later transferred to Zip-Loc® bags for subsequent pH, pHa and conductivity analysis. Sample location coordinates were recorded using hand held Garmin GPSMAP 64s Worldwide with High-sensitivity GPS and GLONASS Receivers. All soil samples collected were from the B soil horizon and the location and description for each sample can be found in appendix III.

4.2 Sample Analytical Methods

All soil samples analysed for geochemistry were sent to ALS Geochemistry in Vancouver B.C. Up to 1kg of material was taken from each soil sample, dried to 60°C then dry-sieved using 80 mesh screen (PREP-41A) with both the plus and minus fractions retained. Next, 0.50g of the prepared sample was then digested using Aqua Regia in a graphite heating block. After cooling, the resulting solution is diluted with de-ionized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry (ICP-MS41).

The analysis for pH, pHa and conductivity were measured over 2 days in Vancouver following the field program, using a Hanna Instruments combination pH/TDS/EC/T° tester, HI 98130. All samples were first dried to 60°C, initially sieved with a 20 mesh and finally 80 mesh. Using a minimum of 30g, the resulting soil material was then weighed out using AMIR 500g/0.01g, high-precision digital scale, with a 1:3 ratio of material to de-ionized water. Soil solutions were then mixed for approximately 60 seconds using a 3000 rpm magnetic stirrer. Solutions were then removed and allowed to settle, pH and conductivity measurements were then completed within 30 seconds. pHa was then measured again after one drop of 10% HCl was then added to the soil slurry solution and then mixed for an additional 60 seconds and removed to let stand for 30 seconds.

Figure 8: Analytical Setup for pH, pHa and Conductivity

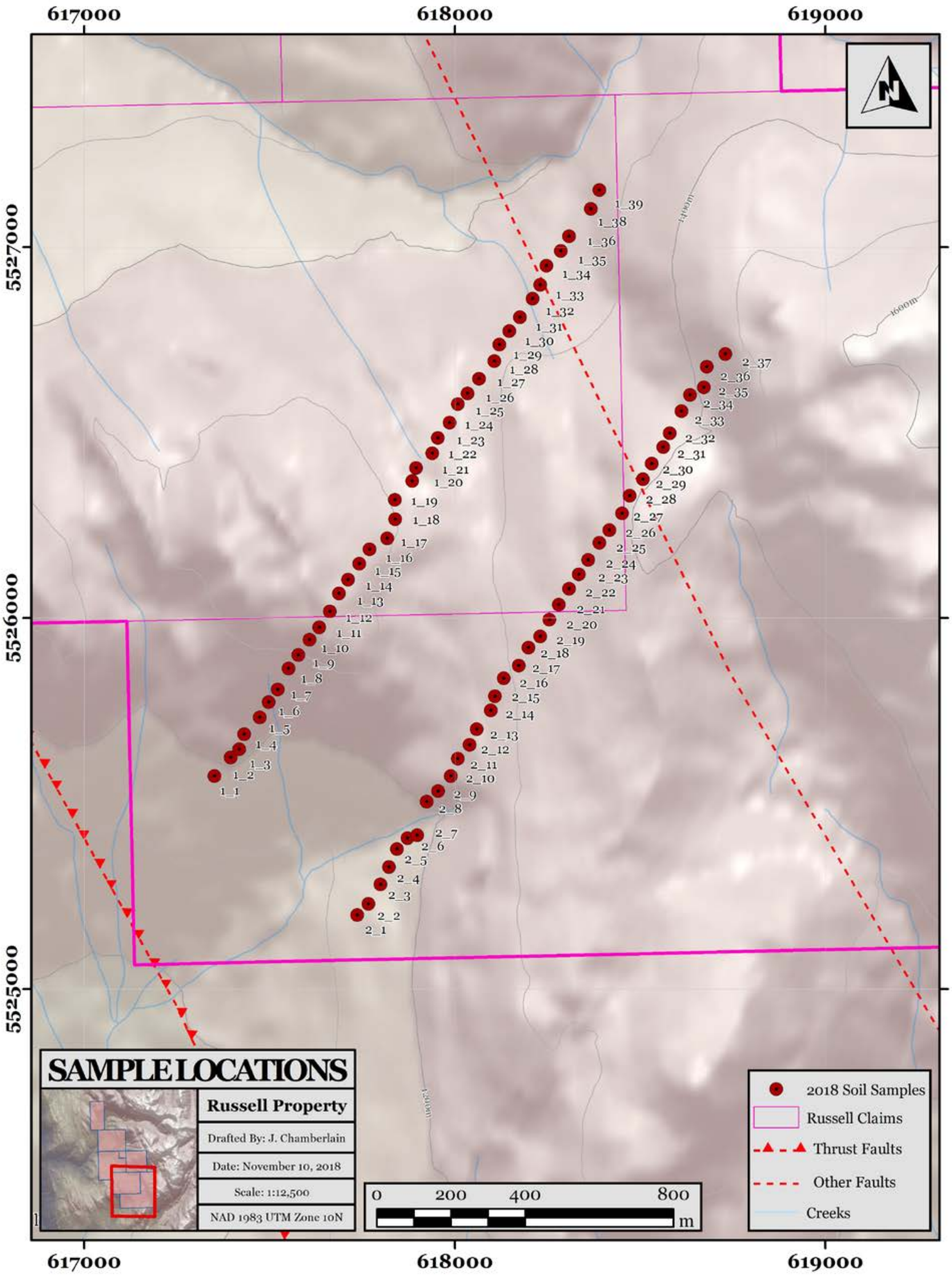

Figure 9: Sample Locations, 2018 Program

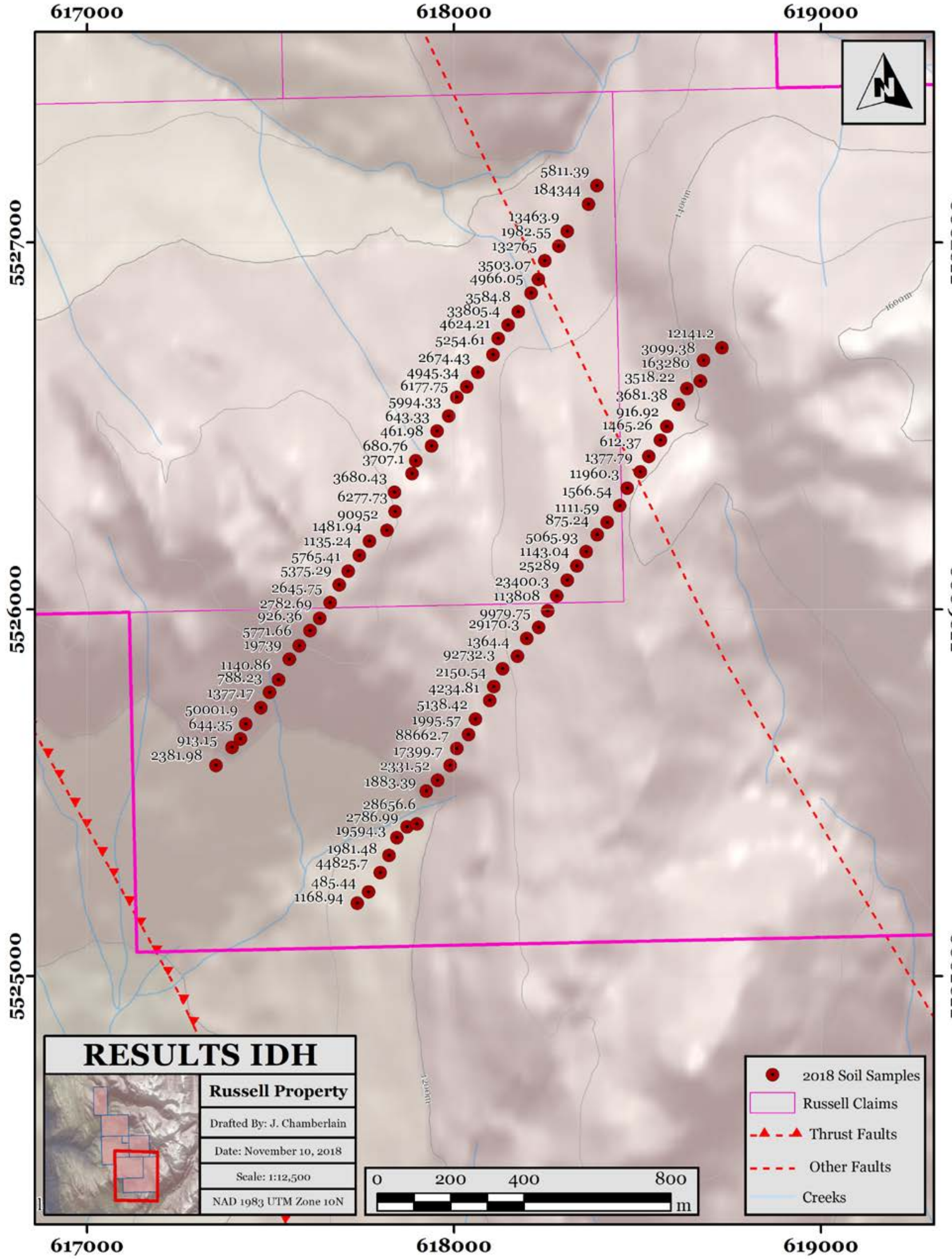

Figure 10: Inverse Difference Hydrogen

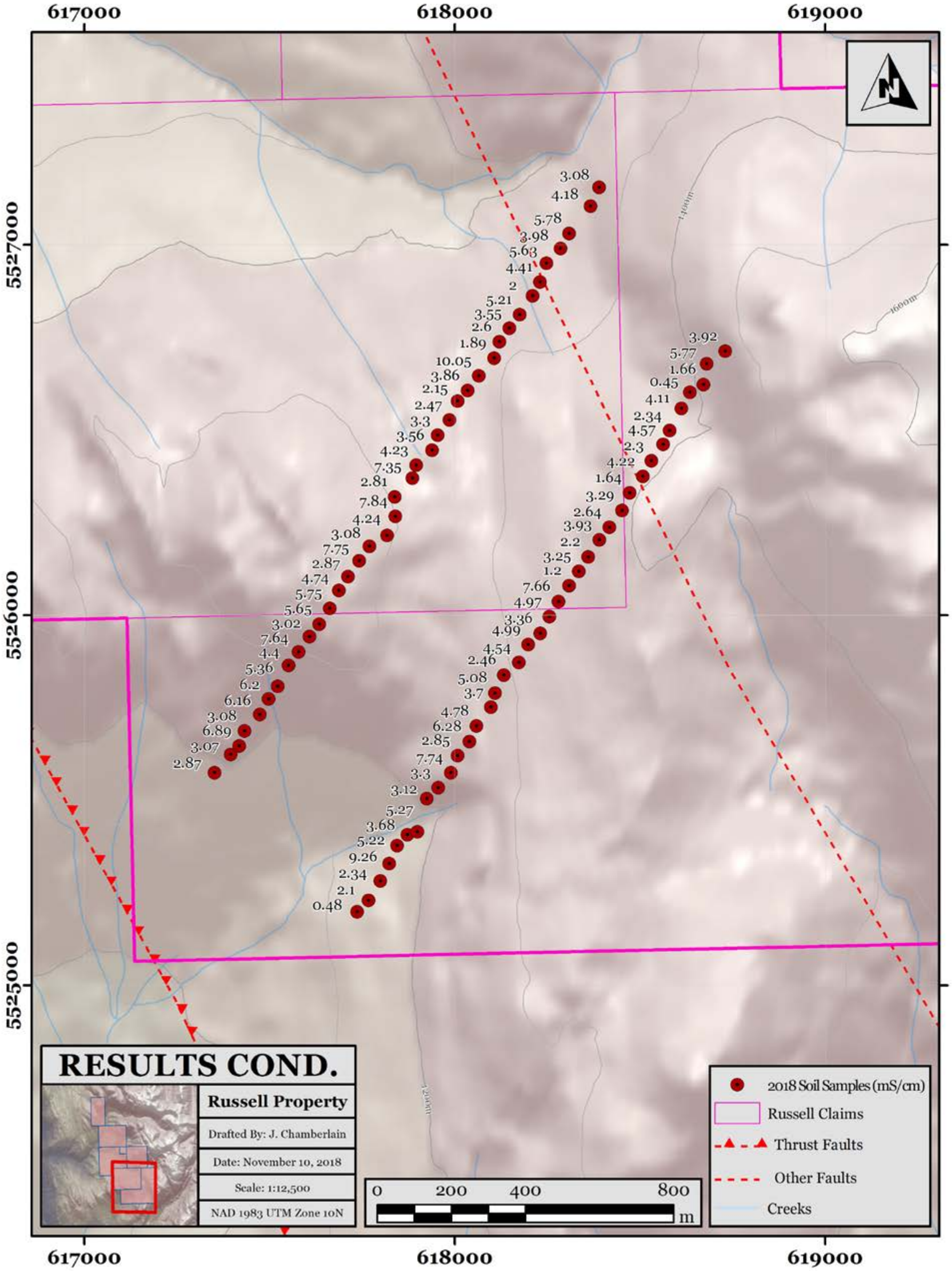

Figure 11: Field Conductivity Measurements (mS/cm)

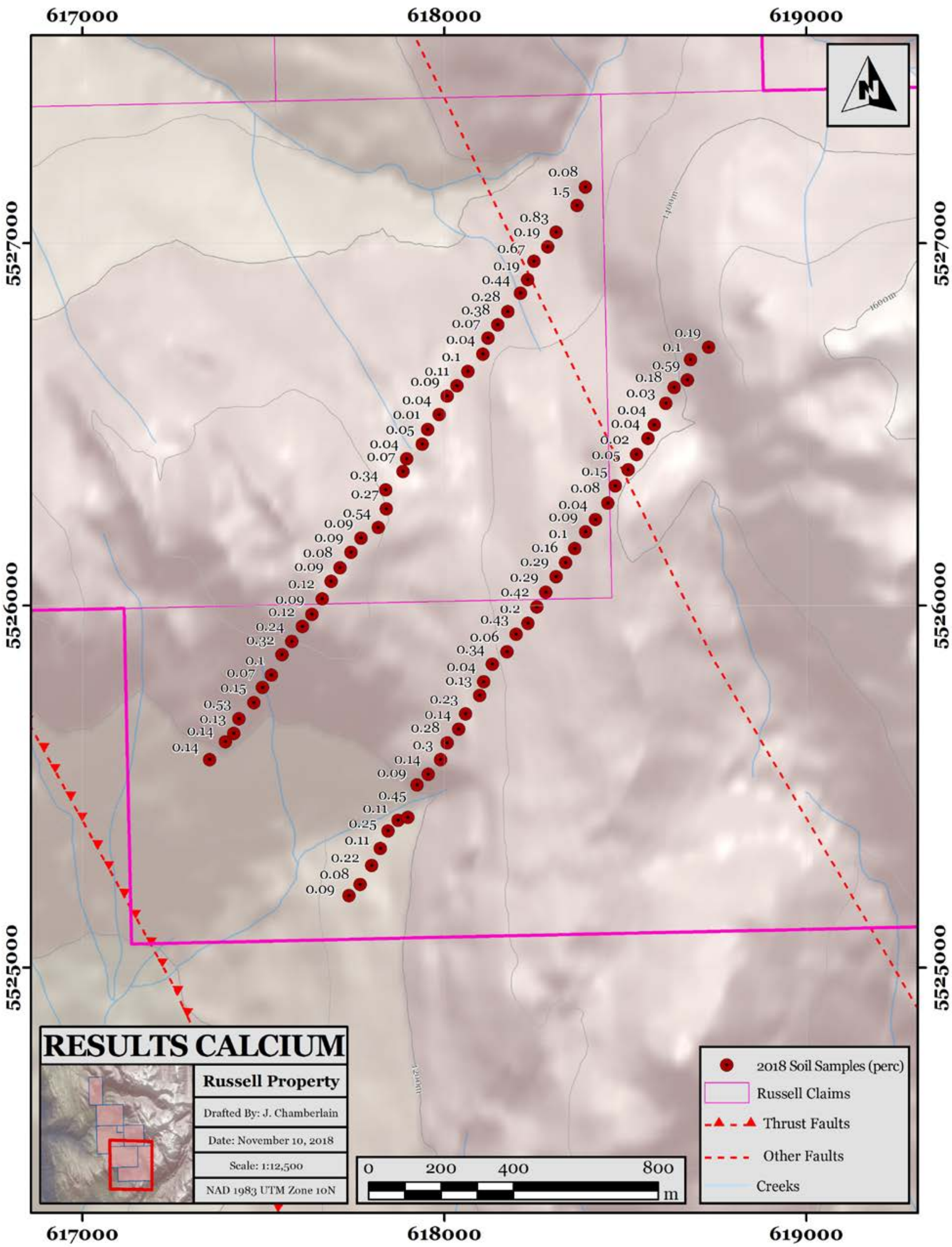

Figure 12: Results Calcium (perc)

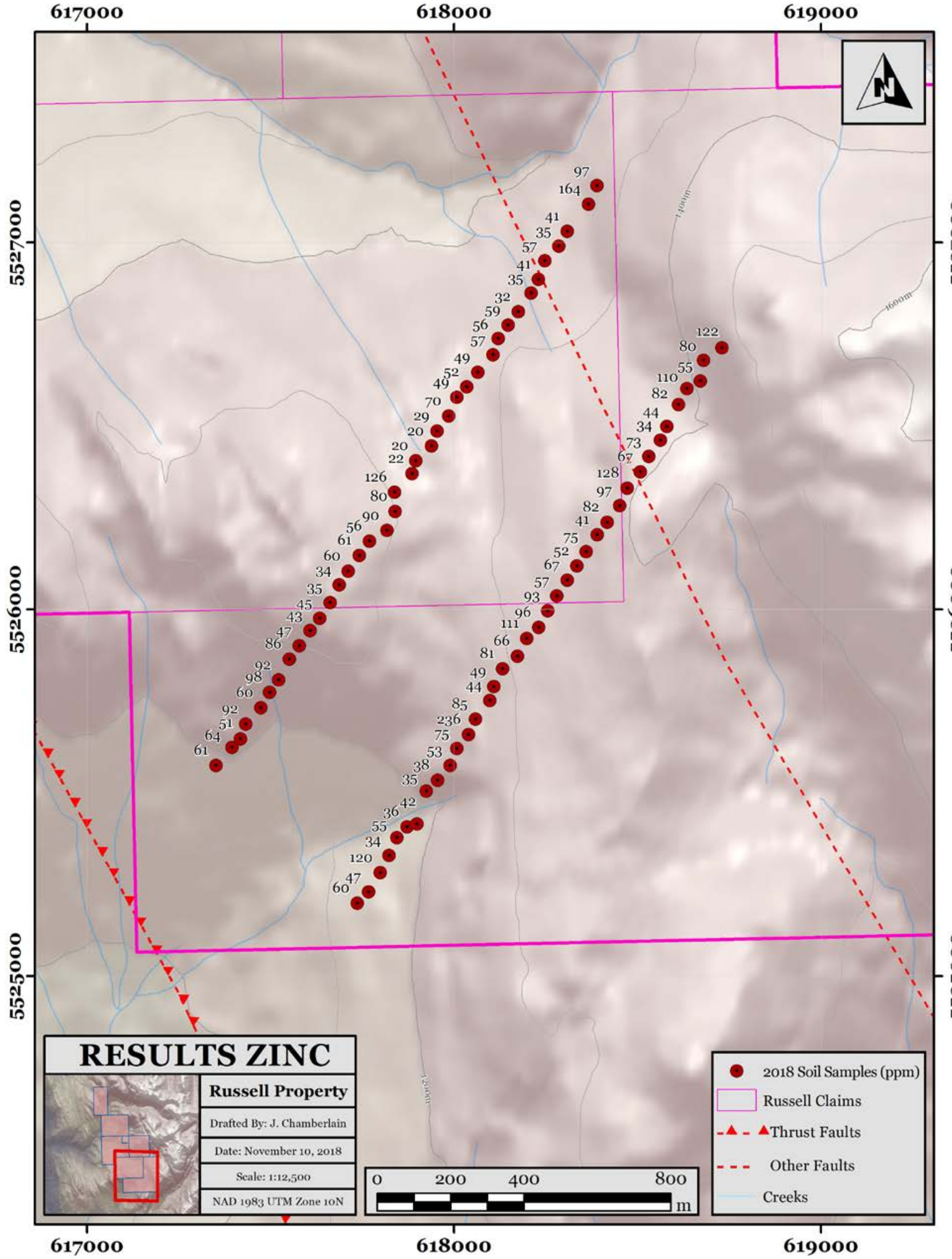

Figure 13: Results Zinc (ppm)

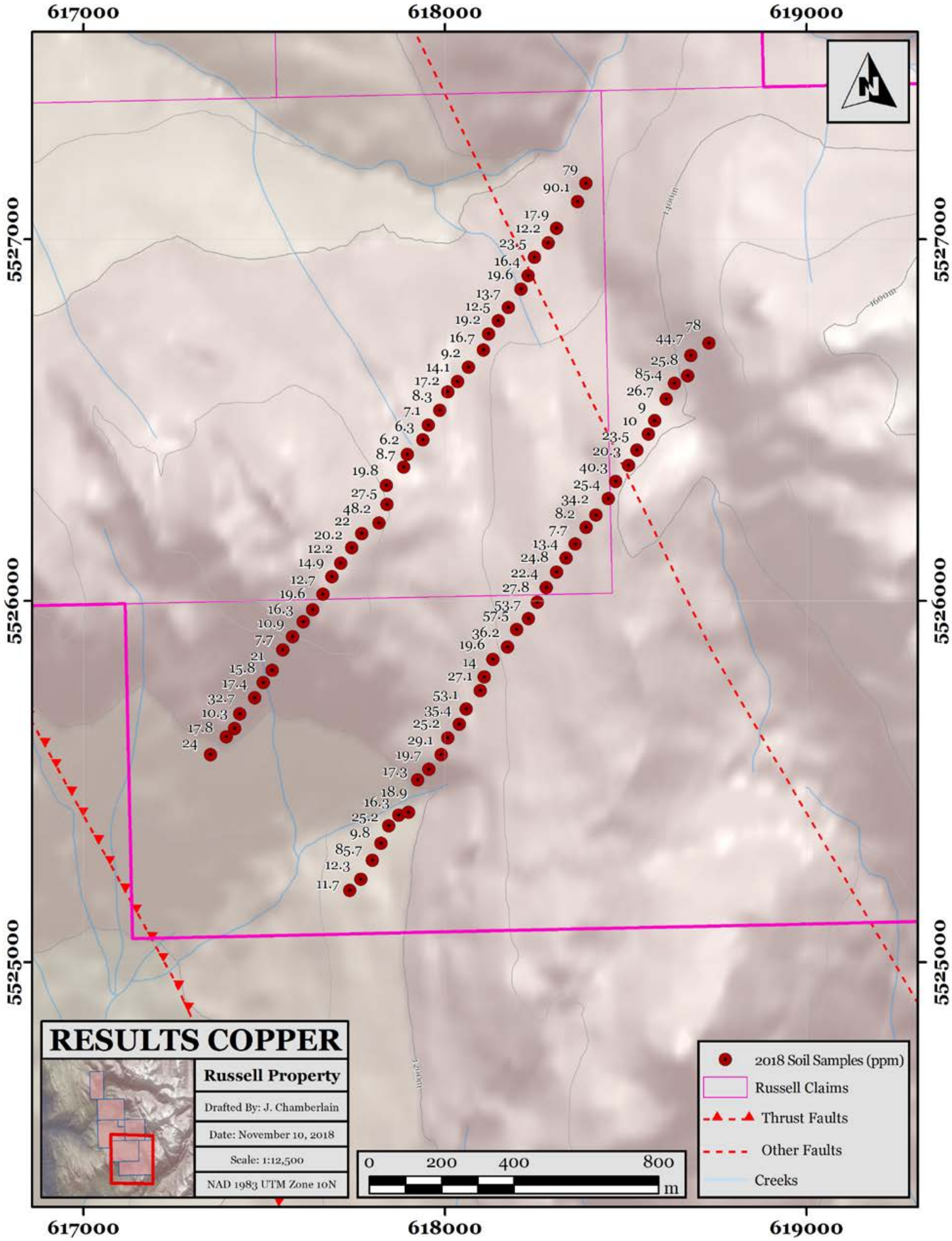

Figure 14: Results Copper (ppm)

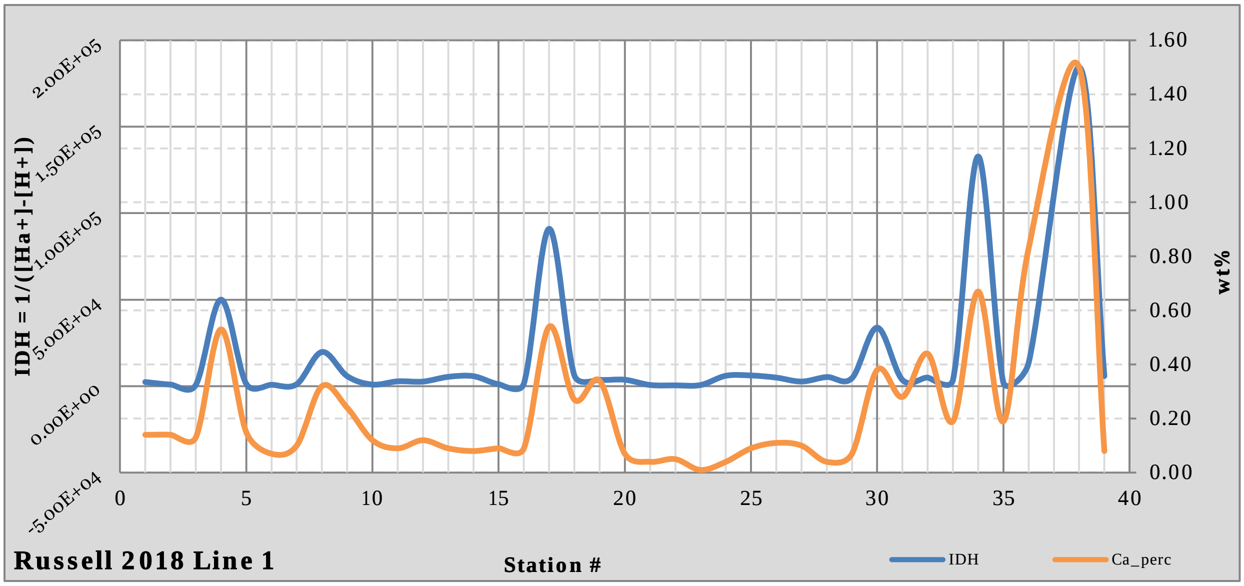

Figure 15: Graph of the Inverse Difference Hydrogen and Calcium (wt%), Russell 2018 Line 1

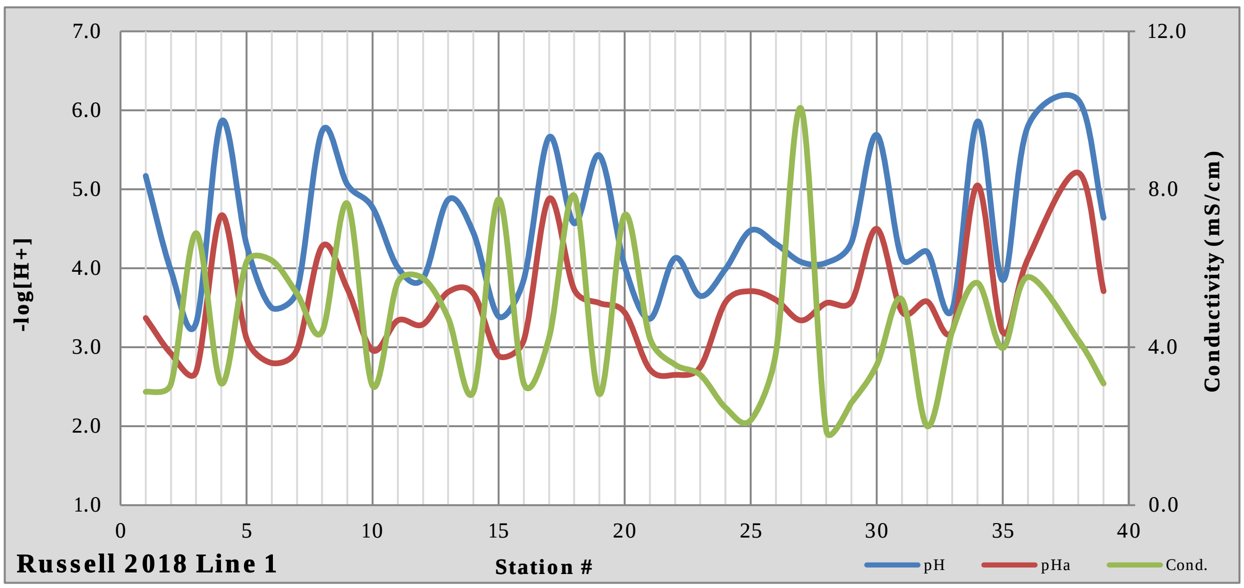

Figure 16: Graph of Field Measurements: pH, pHa and Conductivity, Russell 2018 Line 1

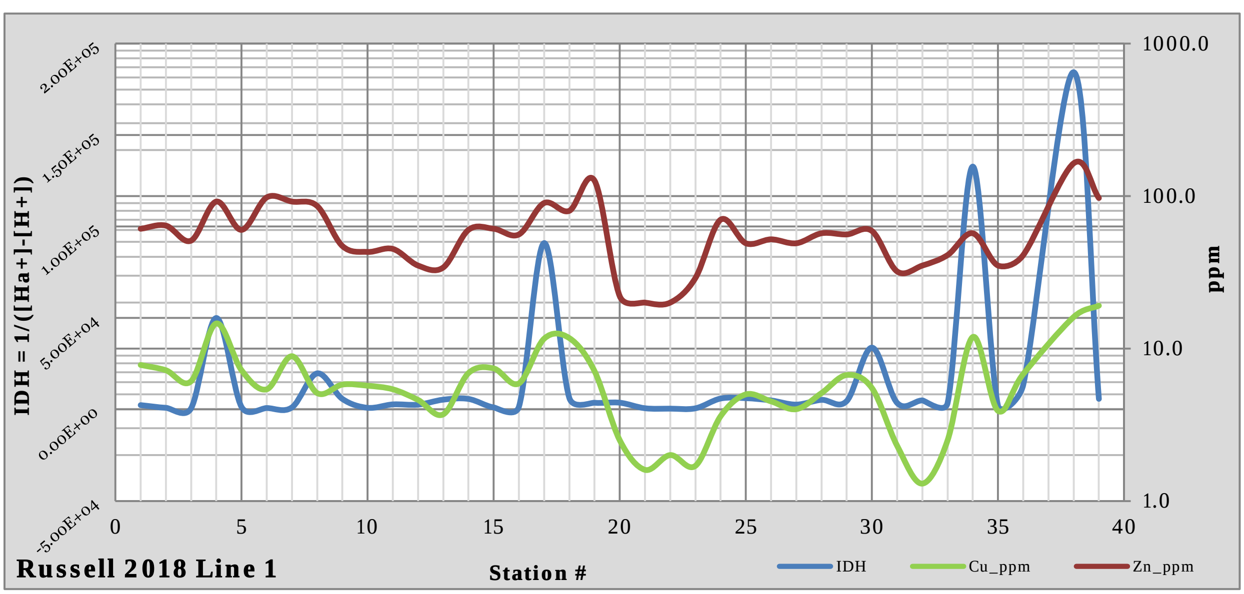

Figure 17: Graph of Inverse Difference Hydrogen, Copper and Zinc Results (ppm), Russell 2018 Line 1

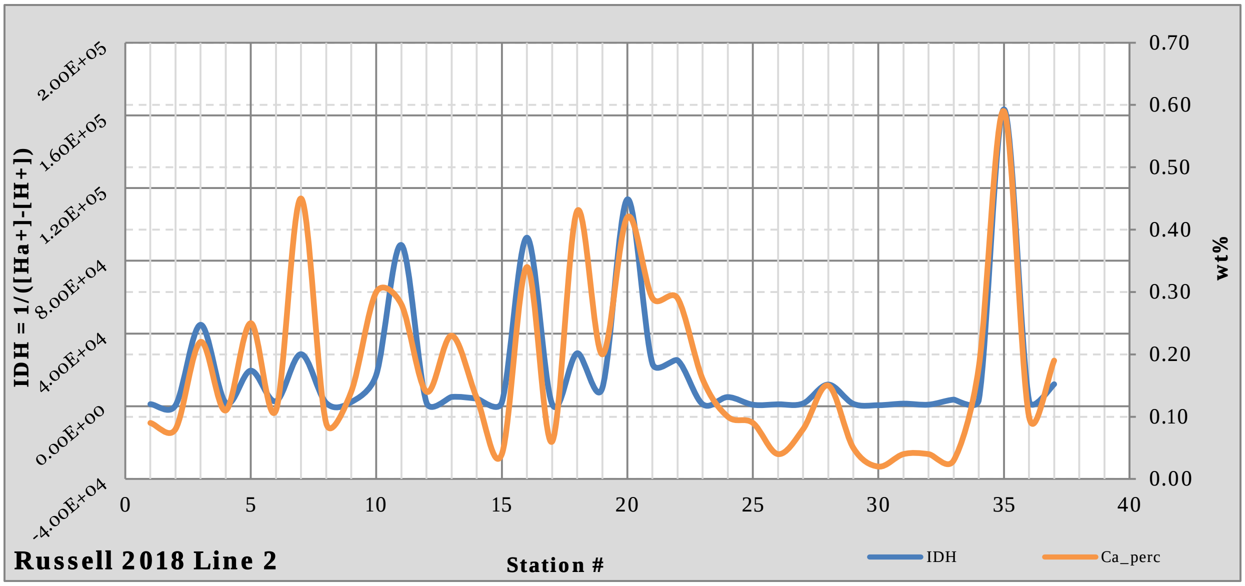

Figure 18: Graph of the Inverse Difference Hydrogen and Calcium (wt%), Russell 2018 Line 2

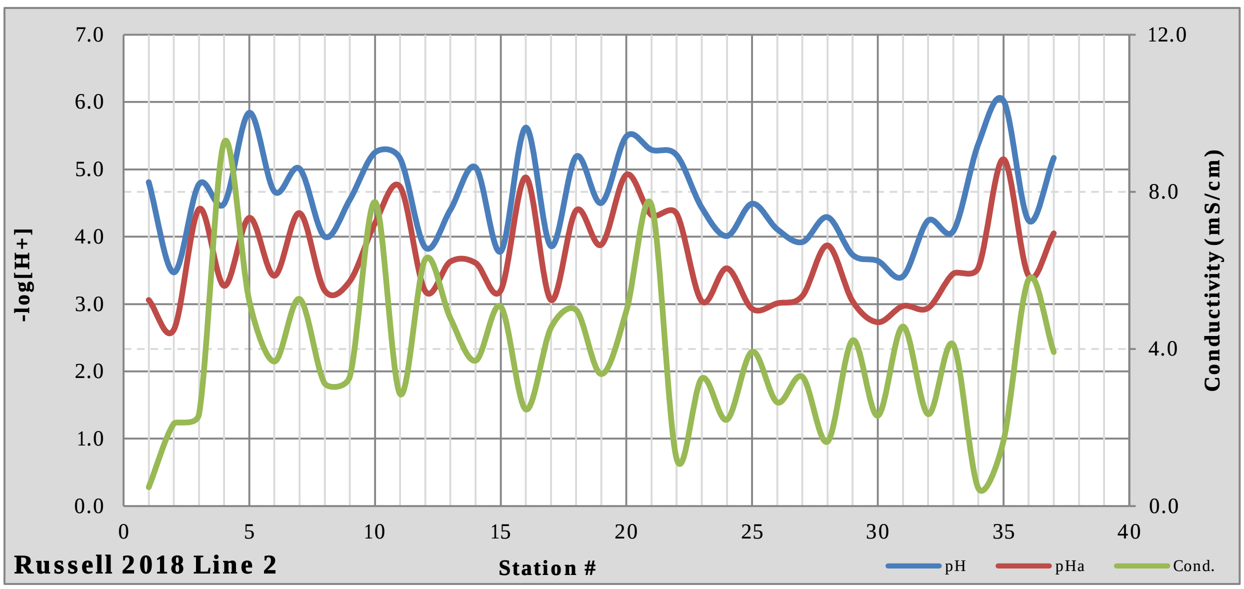

Figure 19: Graph of Field Measurements: pH, pHa and Conductivity, Russell 2018 Line 2

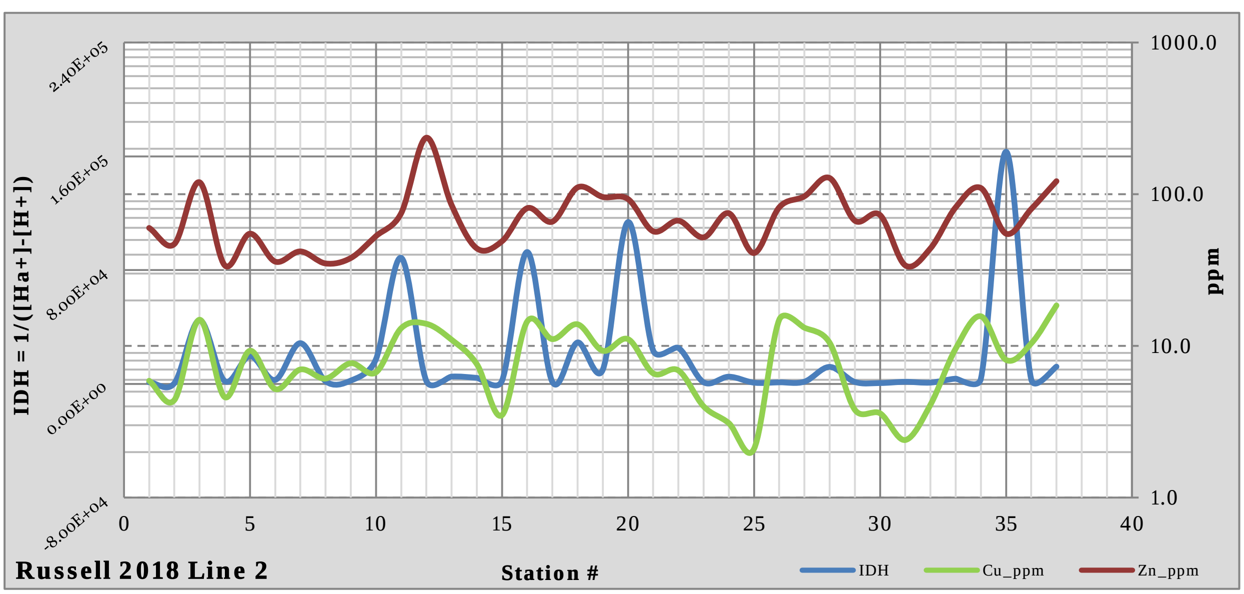

Figure 20: Graph of Inverse Difference Hydrogen, Copper and Zinc Results (ppm), Russell 2018 Line 2

5.0 Results

5.1 Geochemistry

Lab_Num	Line_Stn	pH	pHa	[H+]	[Ha+]	IDH	Cond.	Cu_ppm	Zn_ppm	Pb_ppm	As_ppm	Ca_perc	Mo_ppm	Y_ppm	V_ppm	Cr_ppm
Y097939	1_1	5.17	3.37	6.76E-06	4.27E-04	2.38E+03	2.87	7.80	61.00	7.40	9.10	0.14	0.57	2.47	49.00	19.00
Y097920	1_2	3.97	2.92	1.07E-04	1.20E-03	9.13E+02	3.07	7.20	64.00	7.40	6.30	0.14	0.64	1.50	55.00	22.00
Y097940	1_3	3.31	2.69	4.90E-04	2.04E-03	6.44E+02	6.89	6.10	51.00	8.10	6.80	0.13	0.42	1.03	40.00	13.00
Y097941	1_4	5.86	4.67	1.38E-06	2.14E-05	5.00E+04	3.08	14.60	92.00	6.40	6.80	0.53	0.46	11.65	54.00	31.00
Y097938	1_5	4.30	3.11	5.01E-05	7.76E-04	1.38E+03	6.16	7.20	60.00	15.50	11.60	0.15	0.64	1.32	40.00	14.00
Y097942	1_6	3.50	2.80	3.16E-04	1.58E-03	7.88E+02	6.20	5.40	98.00	7.10	10.90	0.07	0.61	1.93	49.00	15.00
Y097937	1_7	3.71	2.97	1.95E-04	1.07E-03	1.14E+03	5.36	8.90	92.00	10.20	4.60	0.10	0.60	2.74	66.00	21.00
Y097919	1_8	5.74	4.28	1.82E-06	5.25E-05	1.97E+04	4.40	5.10	86.00	6.10	1.60	0.32	0.56	1.16	29.00	14.00
Y097935	1_9	5.06	3.74	8.71E-06	1.82E-04	5.77E+03	7.64	5.80	47.00	13.60	5.90	0.24	0.57	1.27	43.00	15.00
Y097917	1_10	4.77	2.96	1.70E-05	1.10E-03	9.26E+02	3.02	5.70	43.00	4.40	5.70	0.12	0.48	1.56	49.00	16.00
Y097934	1_11	4.01	3.34	9.77E-05	4.57E-04	2.78E+03	5.65	5.40	45.00	6.20	7.30	0.09	1.02	1.34	56.00	17.00
Y097933	1_12	3.87	3.29	1.35E-04	5.13E-04	2.65E+03	5.75	4.60	35.00	5.50	5.60	0.12	0.46	1.30	48.00	14.00
Y097916	1_13	4.87	3.70	1.35E-05	2.00E-04	5.38E+03	4.74	3.70	34.00	5.60	7.10	0.09	0.60	1.88	61.00	16.00
Y097915	1_14	4.45	3.68	3.55E-05	2.09E-04	5.77E+03	2.87	6.90	60.00	6.90	6.70	0.08	0.55	1.49	58.00	19.00
Y097932	1_15	3.39	2.89	4.07E-04	1.29E-03	1.14E+03	7.75	7.40	61.00	7.20	13.00	0.09	1.26	1.33	71.00	44.00
Y097931	1_16	3.86	3.09	1.38E-04	8.13E-04	1.48E+03	3.08	5.90	56.00	8.80	11.20	0.09	0.54	1.50	57.00	19.00
Y097929	1_17	5.66	4.88	2.19E-06	1.32E-05	9.10E+04	4.24	11.60	90.00	6.70	15.70	0.54	0.90	53.00	46.00	43.00
Y097914	1_18	4.57	3.73	2.69E-05	1.86E-04	6.28E+03	7.84	11.70	80.00	6.10	8.90	0.27	0.61	15.10	45.00	25.00
Y097912	1_19	5.43	3.56	3.72E-06	2.75E-04	3.68E+03	2.81	7.10	126.00	7.90	7.80	0.34	1.11	17.45	48.00	27.00
Y097911	1_20	4.03	3.44	9.33E-05	3.63E-04	3.71E+03	7.35	2.50	22.00	6.60	6.60	0.07	0.68	1.03	69.00	18.00
Y097910	1_21	3.36	2.72	4.37E-04	1.91E-03	6.81E+02	4.23	1.60	20.00	5.80	5.50	0.04	0.46	0.72	59.00	11.00
Y097928	1_22	4.13	2.65	7.41E-05	2.24E-03	4.62E+02	3.56	2.00	20.00	7.20	4.40	0.05	0.99	1.04	67.00	13.00
Y097909	1_23	3.65	2.75	2.24E-04	1.78E-03	6.43E+02	3.30	1.70	29.00	4.40	2.90	0.01	0.37	0.50	29.00	9.00
Y097908	1_24	3.99	3.57	1.02E-04	2.69E-04	5.99E+03	2.47	3.60	70.00	9.10	4.10	0.04	0.52	1.21	51.00	15.00
Y097927	1_25	4.48	3.71	3.31E-05	1.95E-04	6.18E+03	2.15	5.00	49.00	9.70	5.00	0.09	0.62	4.53	49.00	17.00
Y097926	1_26	4.31	3.60	4.90E-05	2.51E-04	4.95E+03	3.86	4.50	52.00	5.20	5.70	0.11	0.39	3.29	49.00	16.00
Y097907	1_27	4.08	3.34	8.32E-05	4.57E-04	2.67E+03	10.05	4.00	49.00	6.00	5.20	0.10	0.43	1.19	51.00	19.00
Y097906	1_28	4.07	3.56	8.51E-05	2.75E-04	5.25E+03	1.89	5.10	57.00	7.00	6.90	0.04	0.62	1.23	64.00	18.00
Y097925	1_29	4.33	3.58	4.68E-05	2.63E-04	4.62E+03	2.60	6.70	56.00	6.90	5.40	0.07	0.45	2.28	60.00	19.00
Y097905	1_30	5.69	4.50	2.04E-06	3.16E-05	3.38E+04	3.55	5.50	59.00	6.00	4.50	0.38	0.61	3.43	49.00	14.00
Y097904	1_31	4.12	3.45	7.59E-05	3.55E-04	3.58E+03	5.21	2.30	32.00	6.00	5.20	0.28	0.61	1.45	50.00	12.00
Y097924	1_32	4.21	3.58	6.17E-05	2.63E-04	4.97E+03	2.00	1.30	35.00	12.40	9.30	0.44	0.63	1.48	21.00	6.00
Y097903	1_33	3.48	3.21	3.31E-04	6.17E-04	3.50E+03	4.41	2.50	41.00	7.80	5.40	0.19	0.72	1.18	42.00	12.00
Y097902	1_34	5.86	5.05	1.38E-06	8.91E-06	1.33E+05	5.63	11.90	57.00	8.50	5.90	0.67	0.47	4.69	42.00	19.00
Y097923	1_35	3.85	3.19	1.41E-04	6.46E-04	1.98E+03	3.98	3.90	35.00	7.80	5.70	0.19	0.65	2.77	52.00	16.00
Y097901	1_36	5.80	4.12	1.58E-06	7.59E-05	1.35E+04	5.78	6.80	41.00	9.90	8.80	0.83	0.67	7.38	37.00	16.00
Y097921	1_38	6.13	5.21	7.41E-07	6.17E-06	1.84E+05	4.18	16.10	164.00	7.70	8.50	1.50	2.24	50.20	57.00	47.00
Y097922	1_39	4.64	3.71	2.29E-05	1.95E-04	5.81E+03	3.08	19.10	97.00	2.80	15.50	0.08	1.21	5.69	330.00	25.00

Table 2: Summary Geochemistry, Russell 2018, Line 1

Table 2 shows the highlights of the geochemistry results from line 1, from the 2018 soil sampling program on the Russell Property. All the samples were collected from the B soil horizon. Sample Y097921 returned the highest Zn, Mo, Cr and Ca values at 164.00 ppm, 2.24 ppm, 47.00 ppm and 1.5 % respectively. Sample Y097922, returned the highest Cu and V values at 19.10 ppm and 330.00 ppm respectively. Sample Y097929, returned the highest Y values at 53.00 ppm and also included elevated Cu, Zn, As, Ca and V. Figures 15, 16 and 17 displays an IDH rabbit-ear anomaly, approximate 300 m across from station 34 to 39 and is complemented with anomalous pathfinder elements. Figure 15 also coincident anomalies in the geochemical response of both Ca and IDH.

Lab_Num	Line_Stn	pH	pHa	[H+]	[Ha+]	IDH	Cond.	Cu_ppm	Zn_ppm	Pb_ppm	As_ppm	Ca_perc	Mo_ppm	Y_ppm	V_ppm	Cr_ppm
Y097975	2_1	4.81	3.06	1.55E-05	8.71E-04	1.17E+03	0.48	5.90	60.00	4.40	6.10	0.09	0.45	1.08	44.00	14.00
Y097949	2_2	3.47	2.62	3.39E-04	2.40E-03	4.85E+02	2.10	4.40	47.00	6.60	4.10	0.08	0.36	0.97	41.00	14.00
Y097974	2_3	4.78	4.41	1.66E-05	3.89E-05	4.48E+04	2.34	14.90	120.00	16.30	8.90	0.22	0.95	28.70	52.00	23.00
Y097948	2_4	4.49	3.27	3.24E-05	5.37E-04	1.98E+03	9.26	4.60	34.00	4.20	4.50	0.11	0.39	0.81	35.00	10.00
Y097973	2_5	5.84	4.28	1.45E-06	5.25E-05	1.96E+04	5.22	9.30	55.00	6.40	5.10	0.25	0.54	9.09	45.00	16.00
Y097947	2_6	4.67	3.42	2.14E-05	3.80E-04	2.79E+03	3.68	5.20	36.00	5.20	5.40	0.11	0.39	1.10	40.00	12.00
Y097972	2_7	5.01	4.35	9.77E-06	4.47E-05	2.87E+04	5.27	7.00	42.00	8.30	4.20	0.45	0.43	9.73	29.00	12.00
Y097946	2_8	4.00	3.20	1.00E-04	6.31E-04	1.88E+03	3.12	6.10	35.00	5.00	5.60	0.09	0.39	1.74	41.00	15.00
Y097971	2_9	4.55	3.34	2.82E-05	4.57E-04	2.33E+03	3.30	7.70	38.00	4.90	5.50	0.14	0.40	2.93	38.00	14.00
Y097945	2_10	5.25	4.20	5.62E-06	6.31E-05	1.74E+04	7.74	6.70	53.00	4.70	6.80	0.30	0.68	8.98	39.00	16.00
Y097969	2_11	5.16	4.74	6.92E-06	1.82E-05	8.87E+04	2.85	13.10	75.00	9.80	9.20	0.28	0.97	17.50	46.00	20.00
Y097944	2_12	3.84	3.19	1.45E-04	6.46E-04	2.00E+03	6.28	14.00	236.00	53.10	32.70	0.14	1.59	7.41	37.00	12.00
Y097968	2_13	4.40	3.63	3.98E-05	2.34E-04	5.14E+03	4.78	11.00	85.00	9.70	7.90	0.23	0.84	22.70	49.00	22.00
Y097943	2_14	5.03	3.61	9.33E-06	2.45E-04	4.23E+03	3.70	7.60	44.00	7.10	8.20	0.13	0.54	3.32	37.00	16.00
Y097950	2_15	3.78	3.20	1.66E-04	6.31E-04	2.15E+03	5.08	3.50	49.00	8.50	8.90	0.04	1.11	1.11	54.00	16.00
Y097976	2_16	5.62	4.88	2.40E-06	1.32E-05	9.27E+04	2.46	14.50	81.00	5.60	7.70	0.34	0.90	5.93	45.00	17.00
Y097951	2_17	3.86	3.06	1.38E-04	8.71E-04	1.36E+03	4.54	11.10	66.00	10.10	8.60	0.06	0.82	2.03	46.00	19.00
Y097977	2_18	5.19	4.39	6.46E-06	4.07E-05	2.92E+04	4.99	13.90	111.00	8.50	5.60	0.43	0.62	17.60	47.00	31.00
Y097952	2_19	4.50	3.88	3.16E-05	1.32E-04	9.98E+03	3.36	9.30	96.00	8.20	5.80	0.20	0.41	34.80	44.00	20.00
Y097953	2_20	5.49	4.92	3.24E-06	1.20E-05	1.14E+05	4.97	11.10	93.00	5.90	5.90	0.42	0.67	13.75	48.00	22.00
Y097955	2_21	5.29	4.32	5.13E-06	4.79E-05	2.34E+04	7.66	6.60	57.00	3.70	4.90	0.29	0.49	7.98	36.00	14.00
Y097956	2_22	5.21	4.34	6.17E-06	4.57E-05	2.53E+04	1.20	6.90	67.00	5.30	4.20	0.29	0.48	13.30	36.00	18.00
Y097957	2_23	4.43	3.04	3.72E-05	9.12E-04	1.14E+03	3.25	4.00	52.00	7.70	6.10	0.16	0.44	1.60	50.00	16.00
Y097958	2_24	4.01	3.53	9.77E-05	2.95E-04	5.07E+03	2.20	3.10	75.00	7.80	1.80	0.10	0.43	2.21	24.00	8.00
Y097960	2_25	4.49	2.93	3.24E-05	1.17E-03	8.75E+02	3.93	2.10	41.00	7.40	3.60	0.09	0.41	0.80	43.00	11.00
Y097961	2_26	4.11	3.01	7.76E-05	9.77E-04	1.11E+03	2.64	14.90	82.00	6.90	10.10	0.04	0.79	2.12	104.00	103.00
Y097962	2_27	3.92	3.12	1.20E-04	7.59E-04	1.57E+03	3.29	13.20	97.00	9.80	54.40	0.08	2.34	4.32	73.00	41.00
Y097963	2_28	4.29	3.87	5.13E-05	1.35E-04	1.20E+04	1.64	10.50	128.00	9.20	32.20	0.15	1.78	3.10	58.00	12.00
Y097964	2_29	3.73	3.04	1.86E-04	9.12E-04	1.38E+03	4.22	3.80	67.00	12.30	9.40	0.05	0.83	1.46	53.00	15.00
Y097965	2_30	3.64	2.73	2.29E-04	1.86E-03	6.12E+02	2.30	3.60	73.00	11.50	14.40	0.02	0.51	2.57	64.00	14.00
Y097966	2_31	3.41	2.97	3.89E-04	1.07E-03	1.47E+03	4.57	2.40	34.00	8.40	6.20	0.04	0.66	0.95	52.00	12.00
Y097967	2_32	4.24	2.94	5.75E-05	1.15E-03	9.17E+02	2.34	4.10	44.00	7.40	5.80	0.04	0.61	1.15	48.00	14.00
Y097983	2_33	4.08	3.45	8.32E-05	3.55E-04	3.68E+03	4.11	9.60	82.00	9.40	8.80	0.03	0.59	3.22	53.00	19.00
Y097982	2_34	5.38	3.54	4.17E-06	2.88E-04	3.52E+03	0.45	15.70	110.00	2.60	11.60	0.18	0.54	2.52	131.00	14.00
Y097981	2_35	6.02	5.15	9.55E-07	7.08E-06	1.63E+05	1.66	8.10	55.00	6.30	8.30	0.59	0.47	4.44	67.00	21.00
Y097980	2_36	4.24	3.42	5.75E-05	3.80E-04	3.10E+03	5.77	10.40	80.00	4.10	7.10	0.10	0.32	1.65	99.00	11.00
Y097978	2_37	5.17	4.05	6.76E-06	8.91E-05	1.21E+04	3.92	18.50	122.00	2.90	10.90	0.19	0.37	4.53	134.00	15.00

Table 3: Summary Geochemistry, Russell 2018, Line 2

Table 3 shows the highlights of the geochemistry results from line 2, from the 2018 soil sampling program on the Russell Property. All the samples were collected from the B soil horizon. Sample Y097944 returned the highest Zn and Pb values at 236.00 ppm and 53.10 ppm respectively. Sample Y097978, returned the highest Cu and V at 18.50 ppm and 134.00 ppm respectively and included elevated Zn. Sample Y097961, returned the highest Cr values at 103.00 ppm and also included elevated Zn and V. Sample Y097962, returned the highest Mo values at 2.34 ppm and also included elevated As, Zn, and V. Figures 18, 19 and 20 display an IDH peak/anomaly, towards the N.E. end of line 2. This IDH peak/anomaly is approximate 100 m across from station 34 to 36 and is complemented with anomalous pathfinder elements and supported by an IDH rabbit-ear anomaly on the N.E. end of line 1. Figure 18 also displays coincident anomalies in the geochemical response of both Ca and IDH.

6.0 Discussions and Interpretations

The Russell Property straddles the boundary between the Intermontane and Coast belts which were juxtaposed in late Cretaceous time along the Pasayten Fault. Paleogene mafic to intermediate igneous bodies intrude the sedimentary Pasayten Group and are related to the significant Cu-Mo-Zn mineralization seen on the Russell Property at the Azurite showing, as well as at the DUC and Gossan showings to the southeast and east of the Property, respectively. The Russell Cu-Zn Property was subject to a three day field program in June 22nd to 24th 2018 to collect soil samples for geochemical analysis including; multi-element ICP-MS analysis, pH, pHa and conductivity measurements to further advance the prospectivity of the Property. The 2018 soil sampling program consisted of two 2 km soil lines, sampled from the B soil horizon on the southern extent of the current Russell Property. The purposes of these lines were to test the geochemical response over known Paleogene intrusive and corresponding magnetic anomalies. This program shows that soil pH and conductivity measurements can be effective at detecting sulphide mineralization through thick transported overburden in a temperate boreal forest environment. These inexpensive field methods have the advantage over other geochemical techniques in that they provide much quicker results in the field. The presence of zones of acidity over the edges of the reduced chimney at the soil surface causes changes in the distribution of certain pH sensitive elements such as Ca. The program identified several Inverse Difference Hydrogen rabbit-ear anomalies and single IDH peaks, complemented with anomalous pathfinder elements including; Cu, Zn, Pb, Y, V, and Cr. The north eastern IDH anomaly appears to be approximately 300 by 500 m and exhibit near perfect correlation with resulting anomalous soil Ca. A trenching program over the targets would be recommended to further test these multi-element anomalies.

7.0 Recommendations

There is opportunity to further map and prospect the Russell Property in hopes to characterize the intrusive bodies, as well as to investigate the hosting sedimentary sequence and favourable cross-cutting structures within. Porphyry deposits typically display a complex magnetic fabric indicative of variable alteration and magnetite destruction or mineralization. A ground-based magnetic survey is recommended to increase the resolution of the main magnetic high associated with the central mineralized intrusive body, and may be employed over other magnetic highs on the property if the mapping program deems them to be prospective (Fig. 4). A ten person-day program consisting of overview mapping using natural drainages for outcrop exposure and a limited ground-based magnetometer and VLF-EM survey is recommended to assess the magnitude of the Azurite showing mineralization, as well as to potentially discover further mineralization associated with the Paleogene intrusive bodies on the Russell Property. Further follow-up and infill soil sampling program is also recommended to determine footprint of the IDH anomaly observed on the N.E. end of both 2018 soil geochemical lines on the Russell Property.

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9.0 Appendices

Appendix I: Cost Statement

FIELD WORK		8		$3,300.00	**$3,300.00**
Personnel	**Dates**	**Days**	**Rate**	**Subtotal**	
James Chamberlain, Geologist	June 22nd-24th, 2018	3	$500.00	$1,500.00	
Megan Binner, Geologist	June 22nd-24th, 2018	3	$450.00	$1,350.00	
Jeremy Hrudka, Geologist	June 24th, 2018	1	$450.00	$450.00	
OFFICE STUDIES		4		$2,000.00	**$2,000.00**
	Personnel	**Days**	**Rate**	**Subtotal**	
Report preparation	James Chamberlain	2	$500.00	$1,000.00	
Cartography/Drafting	James Chamberlain	2	$500.00	$1,000.00	
ANALYTICAL				$3,467.50	**$3,467.50**
	Laboratory	**No.**	**Rate**	**Subtotal**	
pH and conductivity analysis soils	James Chamberlain	2	$500.00	$1,000.00	
Admin Fee - BAT-01	ALS Canada Ltd.	1	$35.80	$35.80	
Dry, Sieve (180 µm) - PREP-41A	ALS Canada Ltd.	82	$1.60	$131.20	
Weight Charge (kg) - PREP-41A	ALS Canada Ltd.	24.68	$2.50	$61.70	
Ultra-Trace Aqua Regia ICP-MS - ME-MS41	ALS Canada Ltd.	83	$25.55	$2,120.65	
Pulp Login - LOG-23	ALS Canada Ltd.	1	$0.65	$0.65	
GST - R100938885	ALS Canada Ltd.	1	$117.50	$117.50	
EQUIPMENT				$1,943.96	**$1,943.96**
	Supplier	**No.**	**Rate**	**Subtotal**	
pH & conductivity meter, standards	Hanna Instruments	1	$478.80	$478.80	
Sample Bags, Compasses, Wildlife Protection	Deakin Industry	1	$530.99	$530.99	
GPS, Sieve, Mag Stirrer, Scale	Amazon	1	$593.27	$593.27	
Glassware & De-Ion H2O	West Lab	1	$161.29	$161.29	
2 way-radios, Acid, Shovels, Pails, ect...	Canadian Tire-BC	1	$179.61	$179.61	
TRANSPORTATION				$734.76	**$734.76**
		Days	**Rate**	**Subtotal**	
Truck Rental		4	$148.69	$594.76	
Fuel				$140.00	
ACCOMMODATION / MEALS				$506.31	**$506.31**
		Days	**Rate**	**Subtotal**	
Hotel - Charles Hotel (Boston Bar)		3	$86.25	$258.75	
Meals		3	$247.56	$247.56	
MISCELLANEOUS				$110.56	**$110.56**
		No.	**Rate**	**Subtotal**	
Sample Shipment to ALS		1	$43.27	$43.27	
Miscellaneous		1	$67.29	$67.29	
TOTAL EXPENDITURES					**$12,063.09**

Table 4: Cost Statement

Appendix II: Statements of Qualifications

I, James Chamberlain of Saskatoon, Saskatchewan do hereby certify that,

1. I am a graduate of the University of Saskatchewan, B.Sc. Geology – 2017

2. I have practiced my professions as an exploration geologist, within Saskatchewan, British Columbia, and the Northwest Territories, continuously since 2015.

3. I am currently employed as a prospector/ exploration geologist with GeoMinEx Consultants Inc.

4. I am a member of Canadian Institute of Mining.

5. I hold a 100% interest in the Russell Property.

6. I am the author of this report titled SOIL GEOCHEMISTRY PROGRAM ON RUSSELL Cu-Zn PROPERTY.

7. This report is based on my personal knowledge of the district, and examination of the property from June 22nd to 24th.

Dated this 14th day of Nov. 2018, in Saskatoon, Saskatchewan.

James Chamberlain B.Sc.

Appendix III: Sample Locations

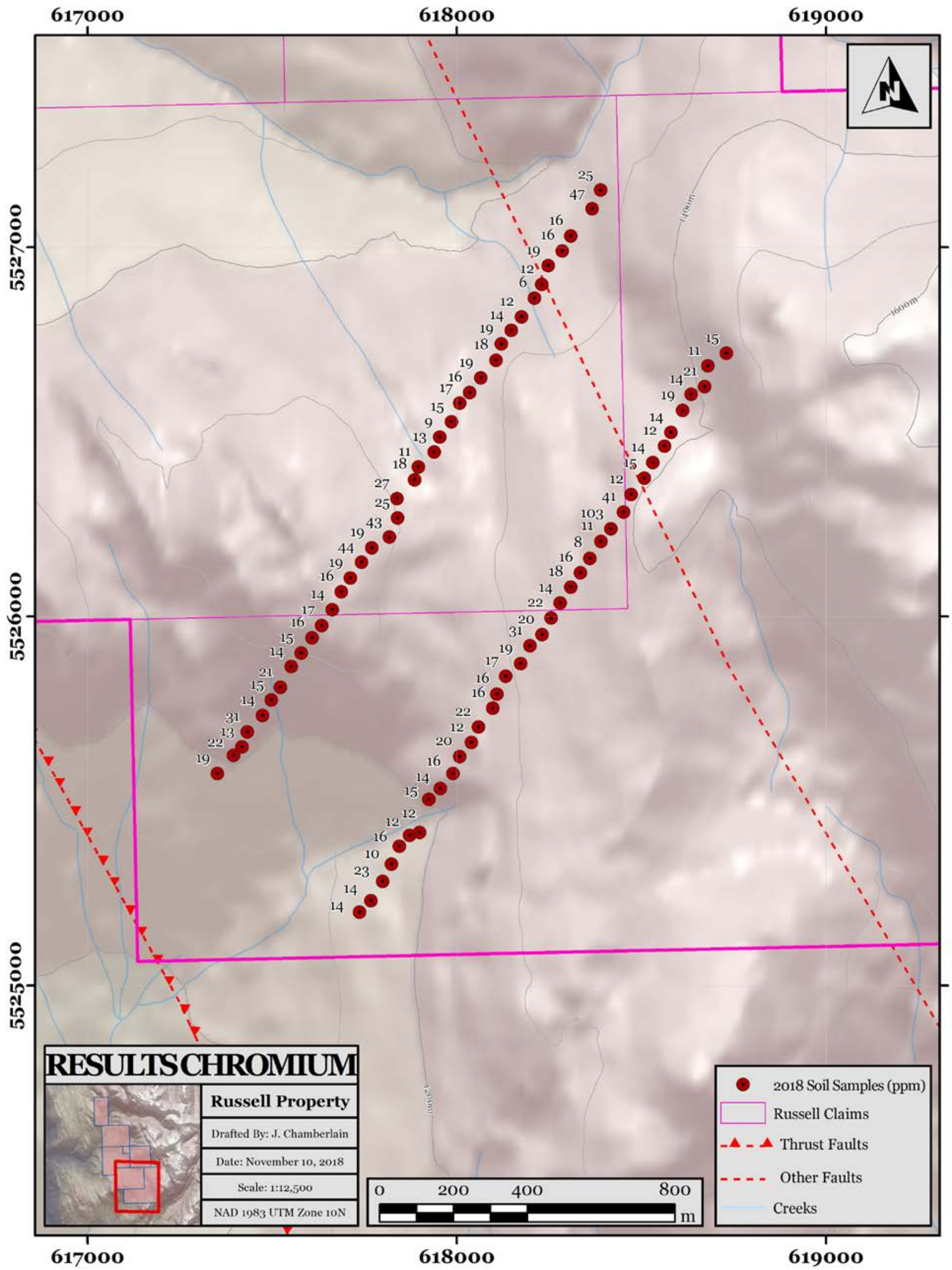
Lab_Num	Field_Num	Northing	Easting	Latitude	Longitude	Line	Stn	Line_Stn
Y097939	RS25M	5525574.4	617351.6	49.8711	-121.3669	1	1	1_1
Y097920	RS26M	5525623.9	617395.1	49.8715	-121.3663	1	2	1_2
Y097940	RS27M	5525646.2	617418.2	49.8717	-121.3659	1	3	1_3
Y097941	RS27J	5525687.0	617432.3	49.8721	-121.3657	1	4	1_4
Y097938	RS17M	5525731.8	617474.1	49.8725	-121.3651	1	5	1_5
Y097942	RS19J	5525773.3	617498.0	49.8728	-121.3648	1	6	1_6
Y097937	RS16M	5525807.3	617522.2	49.8731	-121.3644	1	7	1_7
Y097919	RS17J	5525863.9	617551.8	49.8736	-121.3640	1	8	1_8
Y097935	RS15M	5525900.7	617578.4	49.8740	-121.3636	1	9	1_9
Y097917	RS16J	5525941.5	617608.1	49.8743	-121.3632	1	10	1_10
Y097934	RS14M	5525975.5	617634.4	49.8746	-121.3628	1	11	1_11
Y097933	RS13M	5526018.2	617662.8	49.8750	-121.3624	1	12	1_12
Y097916	RS15J	5526066.1	617687.5	49.8754	-121.3621	1	13	1_13
Y097915	RS14J	5526103.8	617712.1	49.8758	-121.3617	1	14	1_14
Y097932	RS12M	5526146.3	617742.4	49.8761	-121.3613	1	15	1_15
Y097931	RS11M	5526185.6	617769.9	49.8765	-121.3609	1	16	1_16
Y097929	RS10M	5526214.5	617817.8	49.8767	-121.3602	1	17	1_17
Y097914	RS13J	5526266.4	617839.5	49.8772	-121.3599	1	18	1_18
Y097912	RS12J	5526319.2	617838.3	49.8777	-121.3599	1	19	1_19
Y097911	RS11J	5526369.9	617885.4	49.8781	-121.3592	1	20	1_20
Y097910	RS10J	5526404.5	617895.8	49.8784	-121.3591	1	21	1_21
Y097928	RS09M	5526444.6	617939.0	49.8788	-121.3585	1	22	1_22
Y097909	RS09J	5526485.5	617954.4	49.8791	-121.3582	1	23	1_23
Y097908	RS08J	5526526.6	617985.9	49.8795	-121.3578	1	24	1_24
Y097927	RS08M	5526577.3	618008.2	49.8800	-121.3574	1	25	1_25
Y097926	RS07M	5526605.9	618034.7	49.8802	-121.3571	1	26	1_26
Y097907	RS07J	5526645.6	618065.2	49.8806	-121.3566	1	27	1_27
Y097906	RS06J	5526693.2	618106.7	49.8810	-121.3560	1	28	1_28
Y097925	RS06M	5526737.4	618120.3	49.8814	-121.3558	1	29	1_29
Y097905	RS05J	5526774.2	618147.5	49.8817	-121.3554	1	30	1_30
Y097904	RS04J	5526810.7	618175.7	49.8820	-121.3550	1	31	1_31
Y097924	RS05M	5526861.3	618210.3	49.8825	-121.3545	1	32	1_32
Y097903	RS03J	5526898.8	618230.6	49.8828	-121.3543	1	33	1_33
Y097902	RS02J	5526949.7	618247.3	49.8833	-121.3540	1	34	1_34
Y097923	RS04M	5526989.7	618286.0	49.8836	-121.3535	1	35	1_35
Y097901	RS01J	5527029.7	618308.8	49.8840	-121.3531	1	36	1_36
Y097921	RS01M	5527103.6	618367.0	49.8846	-121.3523	1	38	1_38
Y097922	RS02M	5527154.5	618389.9	49.8851	-121.3520	1	39	1_39

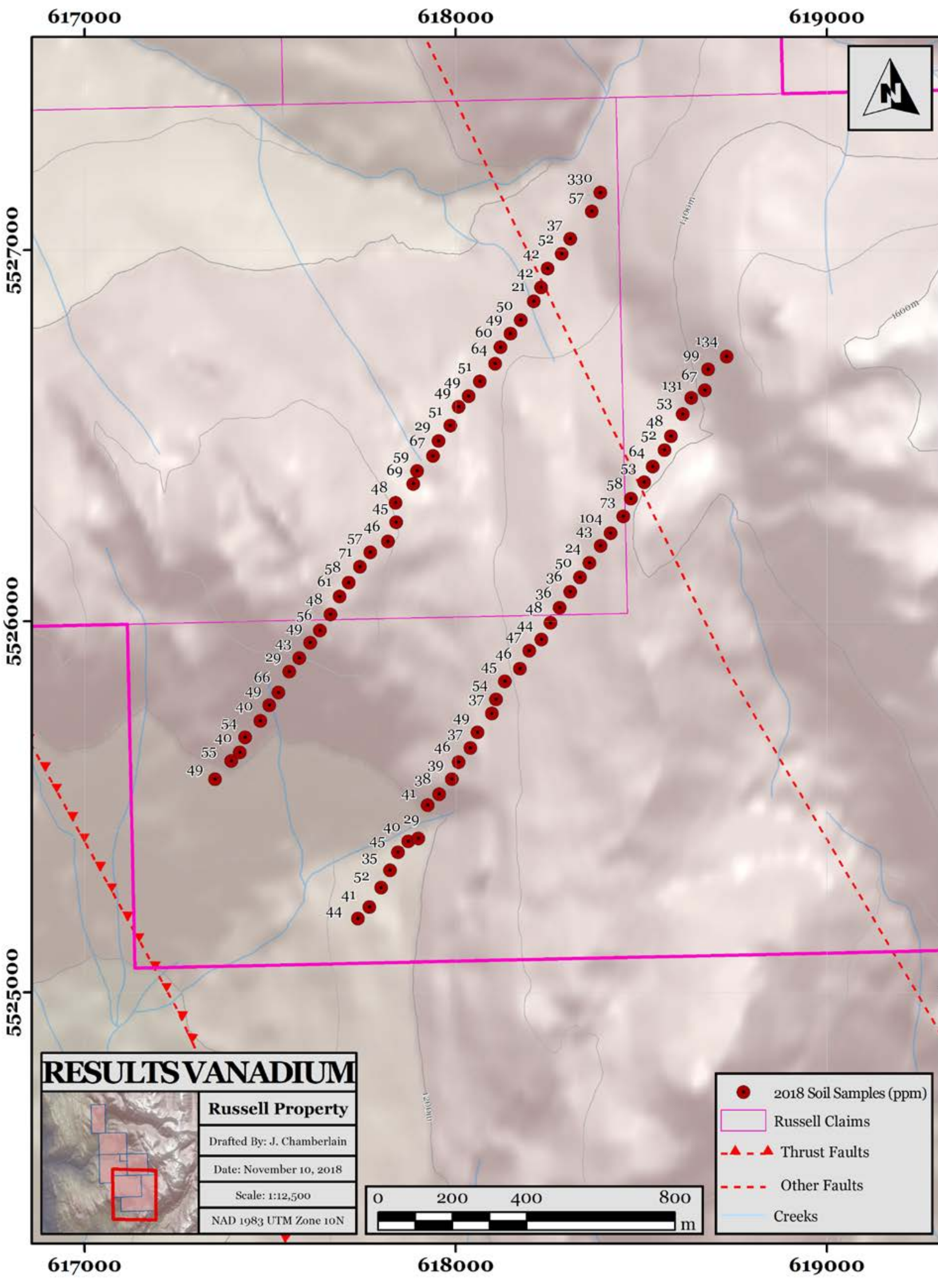
Table 5: Sample Locations, Russell 2018, Line 1

Lab_Num	Field_Num	Northing	Easting	Latitude	Longitude	Line	Stn	Line_Stn
Y097975	RS26J	5525199.1	617736.6	49.8676	-121.3616	2	1	2_1
Y097949	RS24M	5525229.7	617767.1	49.8679	-121.3612	2	2	2_2
Y097974	RS25J	5525281.9	617799.4	49.8684	-121.3607	2	3	2_3
Y097948	RS23M	5525328.9	617822.8	49.8688	-121.3604	2	4	2_4
Y097973	RS24J	5525377.6	617844.2	49.8692	-121.3601	2	5	2_5
Y097947	RS22M	5525406.7	617872.2	49.8695	-121.3597	2	6	2_6
Y097972	RS23J	5525414.5	617899.0	49.8695	-121.3593	2	7	2_7
Y097946	RS21M	5525504.9	617924.5	49.8703	-121.3589	2	8	2_8
Y097971	RS22J	5525533.9	617955.4	49.8706	-121.3585	2	9	2_9
Y097945	RS20M	5525574.0	617989.6	49.8709	-121.3580	2	10	2_10
Y097969	RS21J	5525620.7	618008.0	49.8714	-121.3577	2	11	2_11
Y097944	RS19M	5525658.2	618039.9	49.8717	-121.3573	2	12	2_12
Y097968	RS20J	5525700.3	618058.8	49.8721	-121.3570	2	13	2_13
Y097943	RS18M	5525751.5	618097.6	49.8725	-121.3565	2	14	2_14
Y097950	RS28M	5525789.6	618108.6	49.8729	-121.3563	2	15	2_15
Y097976	RS28J	5525838.1	618132.3	49.8733	-121.3559	2	16	2_16
Y097951	RS29M	5525871.8	618172.7	49.8736	-121.3554	2	17	2_17
Y097977	RS29J	5525920.3	618198.7	49.8740	-121.3550	2	18	2_18
Y097952	RS30M	5525950.4	618230.7	49.8743	-121.3545	2	19	2_19
Y097953	RS31M	5525995.7	618255.4	49.8747	-121.3542	2	20	2_20
Y097955	RS32M	5526036.2	618280.3	49.8750	-121.3538	2	21	2_21
Y097956	RS33M	5526079.2	618308.7	49.8754	-121.3534	2	22	2_22
Y097957	RS34M	5526118.1	618335.0	49.8758	-121.3530	2	23	2_23
Y097958	RS35M	5526157.1	618360.1	49.8761	-121.3527	2	24	2_24
Y097960	RS36M	5526203.1	618390.2	49.8765	-121.3522	2	25	2_25
Y097961	RS37M	5526237.3	618417.3	49.8768	-121.3519	2	26	2_26
Y097962	RS38M	5526282.6	618451.5	49.8772	-121.3514	2	27	2_27
Y097963	RS39M	5526329.7	618472.0	49.8776	-121.3511	2	28	2_28
Y097964	RS40M	5526374.2	618508.0	49.8780	-121.3506	2	29	2_29
Y097965	RS41M	5526416.4	618531.3	49.8784	-121.3502	2	30	2_30
Y097966	RS42M	5526461.2	618562.8	49.8788	-121.3498	2	31	2_31
Y097967	RS43M	5526498.1	618580.3	49.8791	-121.3495	2	32	2_32
Y097983	RS34J	5526557.5	618611.6	49.8797	-121.3491	2	33	2_33
Y097982	RS33J	5526601.3	618634.6	49.8801	-121.3487	2	34	2_34
Y097981	RS32J	5526622.0	618671.8	49.8802	-121.3482	2	35	2_35
Y097980	RS31J	5526677.9	618680.4	49.8807	-121.3481	2	36	2_36
Y097978	RS30J	5526712.2	618730.4	49.8810	-121.3474	2	37	2_37

Table 6: Sample Locations, Russell 2018, Line 2

Appendix IV: Additional Geochemical Maps





RESULTS VANADIUM
Russell Property
Drafted By: J. Chamberlain
Date: November 10, 2018
Scale: 1:12,500
NAD 1983 UTM Zone 10N
2018 Soil Samples (ppm)
Russell Claims
Thrust Faults
Other Faults
Creeks
0
200
400
800
m
617000
618000
619000
5527000
5526000
5525000
N
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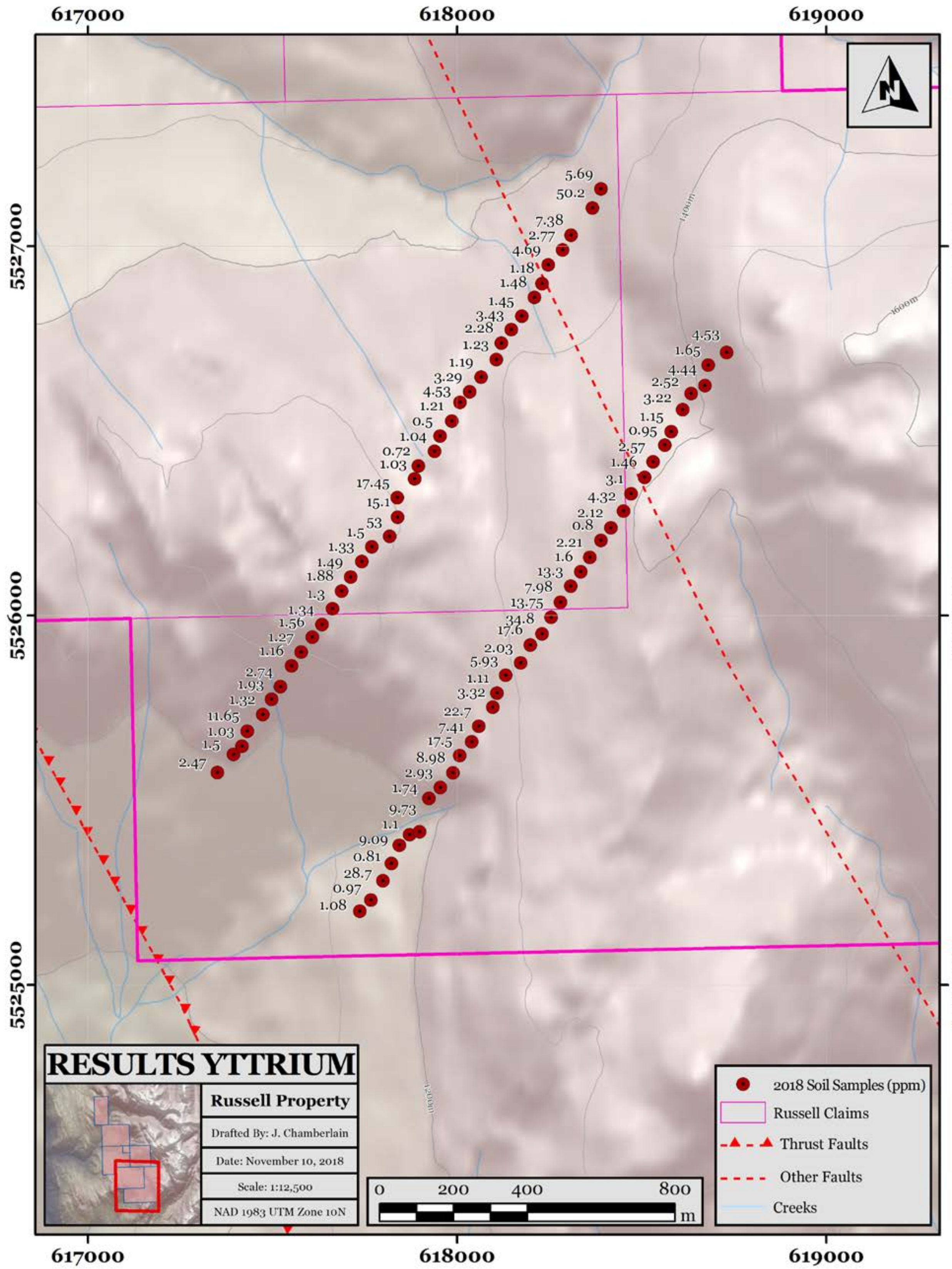
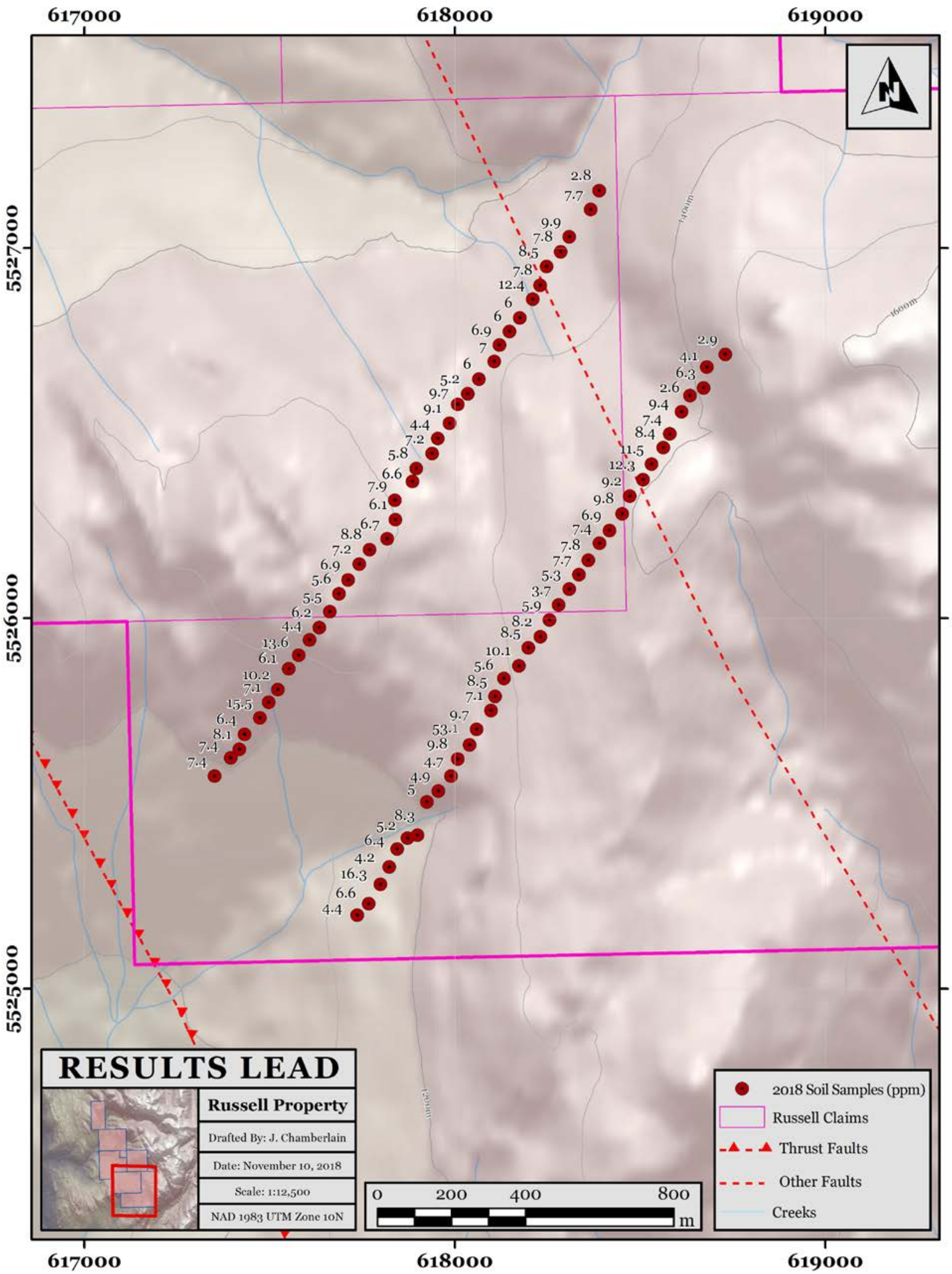


RESULTS YTTRIUM
Russell Property
Drafted By: J. Chamberlain
Date: November 10, 2018
Scale: 1:12,500
NAD 1983 UTM Zone 10N
2018 Soil Samples (ppm)
Russell Claims
Thrust Faults
Other Faults
Creeks
0 200 400 800 m
617000
618000
619000
5527000
5526000
5525000



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618000
619000
5527000
5526000
5525000
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9.9
7.8
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7.8
12.4
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6.9
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5.2
9.7
9.1
4.4
7.2
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6.7
8.8
7.2
6.9
5.6
5.5
6.2
4.4
13.6
6.1
10.2
7.1
15.5
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7.4
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4.1
6.3
2.6
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9.8
6.9
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8.5
10.1
5.6
8.5
7.1
9.7
53.1
9.8
4.7
4.9
5
8.3
5.2
6.4
4.2
16.3
6.6
4.4
RESULTS LEAD
Russell Property
Drafted By: J. Chamberlain
Date: November 10, 2018
Scale: 1:12,500
NAD 1983 UTM Zone 10N
0 200 400 800
m
2018 Soil Samples (ppm)
Russell Claims
Thrust Faults
Other Faults
Creeks

Appendix V: Laboratory Certificates

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com/geochemistry

To: **CHAMBERLAIN, JAMES**
3133 ARLINGTON AVE
SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
This copy reported on 16-NOV-2018
Account: CHMJAM

VA18154500

Project: Russell

This report is for 83 Soil samples submitted to our lab in Vancouver, BC, Canada on 28-JUN-2018.

The following have access to data associated with this certificate:

JAMES CHAMBERLAIN		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21	Sample logging - ClientBarCode
SCR-41	Screen to -180um and save both

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-MS41	Ultra Trace Aqua Regia ICP-MS

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

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

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com/geochemistry

To: CHAMBERLAIN, JAMES
3133 ARLINGTON AVE
SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
Y097901		0.20	0.19	1.05	8.8	<0.02	<10	470	0.34	0.11	0.83	0.38	10.70	6.8	16	0.99
Y097902		0.36	0.14	1.23	5.9	<0.02	<10	640	0.42	0.12	0.67	0.38	13.55	11.9	19	1.59
Y097903		0.38	0.11	0.71	5.4	<0.02	<10	130	0.11	0.15	0.19	0.16	9.96	2.5	12	0.73
Y097904		0.34	0.09	0.99	5.2	<0.02	<10	310	0.14	0.14	0.28	0.13	8.92	2.3	12	0.36
Y097905		0.38	0.40	2.33	4.5	<0.02	<10	250	0.27	0.15	0.38	0.26	8.75	5.5	14	0.87
Y097906		0.28	0.15	2.20	6.9	<0.02	<10	100	0.22	0.15	0.04	0.26	8.30	5.1	18	0.84
Y097907		0.30	0.08	1.64	5.2	<0.02	<10	90	0.19	0.11	0.10	0.21	6.67	4.0	19	1.14
Y097908		0.32	0.10	2.18	4.1	<0.02	<10	210	0.38	0.17	0.04	0.08	9.76	3.6	15	1.06
Y097909		0.42	0.06	1.16	2.9	0.02	<10	50	0.17	0.10	0.01	0.03	11.35	1.7	9	2.23
Y097910		0.34	0.15	0.71	5.5	<0.02	<10	30	0.07	0.17	0.04	0.13	7.88	1.6	11	0.66
Y097911		0.32	0.11	1.58	6.6	<0.02	<10	50	0.18	0.16	0.07	0.08	7.28	2.5	18	0.96
Y097912		0.34	1.05	1.90	7.8	<0.02	<10	320	0.74	0.15	0.34	0.73	17.85	7.1	27	2.73
Y097913		0.26	1.09	1.88	7.8	<0.02	<10	320	0.73	0.17	0.33	0.74	17.30	7.2	27	2.64
Y097914		0.32	0.25	1.76	8.9	<0.02	<10	280	0.49	0.11	0.27	0.34	24.9	11.7	25	1.97
Y097915		0.40	0.28	1.74	6.7	<0.02	<10	90	0.27	0.14	0.08	0.24	7.42	6.9	19	1.16
Y097916		0.42	0.11	1.44	7.1	<0.02	<10	110	0.15	0.09	0.09	0.17	7.36	3.7	16	0.83
Y097917		0.36	0.07	1.78	5.7	<0.02	<10	130	0.29	0.08	0.12	0.08	7.41	5.7	16	1.06
Y097918		0.08	1.90	2.84	70.0	11.05	<10	50	0.20	0.65	3.09	0.23	8.92	31.7	547	0.37
Y097919		0.40	0.13	1.35	1.6	<0.02	<10	590	0.29	0.15	0.32	0.25	7.44	5.1	14	1.61
Y097920		0.20	0.09	1.56	6.3	<0.02	<10	180	0.30	0.11	0.14	0.10	7.51	7.2	22	1.33
Y097921		0.24	0.45	1.88	8.5	<0.02	<10	1200	0.97	0.17	1.50	2.57	18.60	16.1	47	4.22
Y097922		0.44	0.07	2.29	15.5	<0.02	<10	120	0.68	0.08	0.08	0.14	4.97	19.1	25	5.79
Y097923		0.18	0.19	1.27	5.7	<0.02	<10	210	0.31	0.16	0.19	0.22	10.10	3.9	16	1.05
Y097924		0.12	0.47	0.48	9.3	<0.02	<10	230	0.13	0.11	0.44	0.38	4.47	1.3	6	0.24
Y097925		0.30	0.10	2.44	5.4	<0.02	<10	90	0.31	0.13	0.07	0.12	10.20	6.7	19	1.09
Y097926		0.22	0.05	1.67	5.7	<0.02	<10	380	0.42	0.10	0.11	0.08	9.82	4.5	16	1.08
Y097927		0.20	0.10	1.29	5.0	<0.02	<10	520	0.38	0.12	0.09	0.22	12.40	5.0	17	1.06
Y097928		0.24	0.11	0.86	4.4	<0.02	<10	50	0.09	0.14	0.05	0.09	8.35	2.0	13	0.96
Y097929		0.16	1.10	4.24	15.7	<0.02	<10	560	1.22	0.12	0.54	0.42	62.6	11.6	43	3.07
Y097930		0.18	1.07	4.19	16.0	<0.02	<10	580	1.28	0.11	0.54	0.41	60.5	11.6	46	3.22
Y097931		0.24	0.10	1.27	11.2	<0.02	<10	110	0.22	0.15	0.09	0.24	11.55	5.9	19	1.07
Y097932		0.24	0.13	1.53	13.0	<0.02	<10	240	0.40	0.15	0.09	0.21	9.16	7.4	44	1.47
Y097933		0.32	0.11	1.30	5.6	<0.02	<10	90	0.19	0.08	0.12	0.10	6.37	4.6	14	0.78
Y097934		0.26	0.09	1.79	7.3	<0.02	<10	100	0.32	0.11	0.09	0.08	5.53	5.4	17	1.04
Y097935		0.20	0.03	1.39	5.9	<0.02	<10	230	0.31	0.15	0.24	0.13	6.02	5.8	15	1.12
Y097936		0.08	0.31	3.53	11.6	1.36	10	20	0.15	0.11	2.62	0.10	5.46	33.9	80	0.16
Y097937		0.24	0.09	2.00	4.6	<0.02	<10	430	0.49	0.15	0.10	0.20	13.20	8.9	21	1.39
Y097938		0.26	0.06	0.85	11.6	<0.02	<10	150	0.22	0.29	0.15	0.21	6.39	7.2	14	0.64
Y097939		0.48	0.06	2.26	9.1	<0.02	<10	160	0.39	0.11	0.14	0.11	12.00	7.8	19	1.01
Y097940		0.18	0.06	0.98	6.8	<0.02	<10	190	0.24	0.11	0.13	0.19	6.04	6.1	13	0.79

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

ALS Canada Ltd.
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To: **CHAMBERLAIN, JAMES**
3133 ARLINGTON AVE
SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method / Analyte / Units / LOD	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05
Y097901		17.9	1.63	2.93	<0.05	0.05	0.17	0.017	0.06	5.1	13.0	0.22	1100	0.67	<0.01	0.27
Y097902		23.5	2.13	5.25	<0.05	<0.02	0.13	0.023	0.05	5.8	11.4	0.19	1620	0.47	<0.01	0.51
Y097903		16.4	1.74	4.93	<0.05	<0.02	0.17	0.016	0.03	3.8	14.6	0.09	84	0.72	<0.01	0.66
Y097904		13.7	1.62	5.03	<0.05	<0.02	0.10	0.014	0.03	4.5	7.8	0.10	78	0.61	<0.01	0.40
Y097905		12.5	3.12	8.42	<0.05	0.02	0.09	0.030	0.03	4.6	16.2	0.15	354	0.61	<0.01	1.12
Y097906		16.7	3.28	8.10	<0.05	0.04	0.12	0.032	0.05	3.8	15.0	0.19	218	0.62	<0.01	0.68
Y097907		9.2	2.49	6.35	<0.05	<0.02	0.08	0.024	0.03	3.1	16.8	0.16	172	0.43	<0.01	0.91
Y097908		8.3	2.86	7.85	<0.05	0.03	0.08	0.028	0.04	4.9	13.8	0.12	116	0.52	<0.01	1.08
Y097909		7.1	1.92	3.86	<0.05	<0.02	0.05	0.013	0.03	6.1	3.1	0.03	113	0.37	<0.01	0.41
Y097910		6.2	1.66	7.72	<0.05	<0.02	0.03	0.009	0.02	4.0	1.4	0.05	58	0.46	<0.01	0.79
Y097911		8.7	2.80	9.45	<0.05	<0.02	0.06	0.020	0.02	3.6	5.9	0.11	78	0.68	<0.01	1.42
Y097912		19.8	2.70	7.57	0.06	0.02	0.14	0.026	0.04	12.0	26.1	0.35	712	1.11	<0.01	0.56
Y097913		22.4	2.70	7.74	0.07	0.02	0.09	0.027	0.04	11.9	25.3	0.35	813	1.17	<0.01	0.63
Y097914		27.5	3.06	5.24	0.06	0.04	0.08	0.024	0.06	13.3	19.8	0.41	732	0.61	<0.01	0.27
Y097915		12.2	2.96	6.90	<0.05	0.02	0.06	0.026	0.03	3.4	14.0	0.17	287	0.55	<0.01	1.05
Y097916		14.9	2.96	6.58	<0.05	0.02	0.10	0.023	0.03	3.3	8.0	0.15	104	0.60	<0.01	0.90
Y097917		16.3	2.04	4.96	<0.05	0.02	0.05	0.016	0.04	3.3	8.5	0.22	129	0.48	<0.01	0.61
Y097918		116.0	3.88	7.48	0.08	0.34	0.12	0.023	0.22	4.5	28.1	3.30	574	5.86	0.04	0.08
Y097919		7.7	1.30	5.79	<0.05	<0.02	0.04	0.012	0.08	3.5	12.3	0.16	1060	0.56	0.01	0.46
Y097920		17.8	2.20	5.05	<0.05	0.03	0.10	0.022	0.05	3.5	17.1	0.25	380	0.64	<0.01	0.67
Y097921		90.1	2.71	6.22	0.08	0.06	0.19	0.031	0.05	13.3	23.2	0.40	10350	2.24	0.01	0.55
Y097922		79.0	8.50	7.25	0.06	0.02	0.08	0.056	0.04	2.0	21.0	0.11	1120	1.21	<0.01	0.26
Y097923		12.2	2.52	6.41	<0.05	<0.02	0.13	0.025	0.04	4.7	21.1	0.14	118	0.65	<0.01	1.07
Y097924		19.6	0.79	2.28	<0.05	<0.02	0.28	0.012	0.06	2.7	0.6	0.06	143	0.63	<0.01	0.11
Y097925		19.2	2.64	7.49	<0.05	0.05	0.07	0.027	0.08	4.4	12.7	0.25	469	0.45	<0.01	0.54
Y097926		14.1	2.49	6.00	<0.05	<0.02	0.23	0.020	0.04	4.4	10.9	0.20	114	0.39	<0.01	0.74
Y097927		17.2	2.24	6.16	<0.05	<0.02	0.09	0.023	0.05	7.4	8.2	0.16	305	0.62	<0.01	0.77
Y097928		6.3	2.24	7.42	<0.05	0.02	0.04	0.015	0.02	4.0	2.2	0.07	64	0.99	<0.01	1.05
Y097929		48.2	2.80	5.63	0.13	0.07	0.38	0.033	0.08	19.0	49.4	0.41	611	0.90	0.01	0.58
Y097930		47.6	2.87	5.53	0.14	0.08	0.40	0.032	0.09	20.3	49.8	0.42	621	0.90	0.01	0.55
Y097931		22.0	3.17	6.01	<0.05	<0.02	0.07	0.025	0.06	3.9	6.1	0.16	448	0.54	<0.01	0.60
Y097932		20.2	3.47	5.66	<0.05	0.02	0.05	0.027	0.12	4.1	6.2	0.10	1040	1.26	<0.01	0.32
Y097933		12.7	1.96	4.59	<0.05	<0.02	0.09	0.016	0.04	2.7	5.6	0.16	222	0.46	<0.01	0.55
Y097934		19.6	2.53	6.00	<0.05	0.03	0.08	0.022	0.04	2.9	9.8	0.19	124	1.02	<0.01	0.97
Y097935		10.9	1.83	5.71	<0.05	<0.02	0.07	0.020	0.06	2.9	7.3	0.21	727	0.57	<0.01	0.76
Y097936		161.5	5.38	9.86	0.12	0.34	0.04	0.016	0.06	2.2	10.8	2.11	714	1.26	0.04	0.10
Y097937		21.0	3.28	6.25	<0.05	0.02	0.05	0.034	0.08	6.7	9.1	0.19	1020	0.60	<0.01	0.43
Y097938		17.4	2.08	3.54	<0.05	<0.02	0.10	0.023	0.05	2.9	4.5	0.12	572	0.64	<0.01	0.35
Y097939		24.0	2.19	6.66	<0.05	0.15	0.07	0.023	0.05	3.9	8.7	0.28	322	0.57	<0.01	1.10
Y097940		10.3	1.96	4.22	<0.05	<0.02	0.07	0.016	0.04	3.0	6.3	0.10	1310	0.42	<0.01	0.59

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3133 ARLINGTON AVE
SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method Analyte Units LOD	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005
Y097901		10.5	780	9.9	8.2	0.001	0.06	0.72	3.1	1.3	0.4	73.8	<0.01	0.03	0.5	0.009
Y097902		10.0	580	8.5	10.4	<0.001	0.03	3.14	1.4	0.2	0.5	61.7	<0.01	0.02	<0.2	0.030
Y097903		5.2	300	7.8	4.2	<0.001	0.01	3.54	1.4	<0.2	0.7	19.9	<0.01	0.02	0.2	0.031
Y097904		5.0	240	6.0	2.4	<0.001	0.01	1.18	2.0	0.2	0.5	28.4	<0.01	0.03	0.5	0.017
Y097905		6.4	1170	6.0	5.4	<0.001	0.02	0.45	2.1	0.3	0.6	44.4	0.01	0.03	0.4	0.023
Y097906		9.8	1150	7.0	5.5	<0.001	0.01	0.81	3.4	0.3	0.5	10.3	<0.01	0.04	0.8	0.019
Y097907		7.7	640	6.0	5.6	<0.001	0.02	0.37	2.1	<0.2	0.5	14.7	<0.01	0.02	0.4	0.039
Y097908		7.2	700	9.1	9.1	<0.001	0.01	0.52	2.3	<0.2	0.6	9.2	0.01	0.03	1.2	0.025
Y097909		5.3	540	4.4	8.2	<0.001	<0.01	0.23	1.1	<0.2	0.4	2.8	<0.01	0.01	0.7	0.007
Y097910		3.7	430	5.8	2.8	<0.001	0.01	0.32	1.2	0.2	0.6	7.8	<0.01	0.02	0.3	0.047
Y097911		5.7	640	6.6	3.6	<0.001	0.02	0.42	1.7	0.3	0.7	10.7	0.01	0.03	0.5	0.072
Y097912		22.9	830	7.9	11.5	<0.001	0.03	0.33	2.2	0.6	0.5	39.4	<0.01	0.02	<0.2	0.037
Y097913		23.6	800	8.3	11.4	<0.001	0.03	0.34	2.3	0.6	0.7	38.3	<0.01	0.03	<0.2	0.040
Y097914		27.4	1140	6.1	11.1	<0.001	0.02	0.38	2.8	0.5	0.3	31.6	<0.01	0.02	0.5	0.012
Y097915		9.1	990	6.9	6.5	<0.001	0.01	0.30	2.6	0.2	0.6	10.2	0.01	0.02	0.8	0.037
Y097916		6.2	330	5.6	4.2	<0.001	0.01	0.35	2.4	0.3	0.4	10.9	<0.01	0.02	0.7	0.051
Y097917		11.6	370	4.4	8.7	<0.001	<0.01	0.33	2.2	0.2	0.4	13.4	<0.01	0.02	0.8	0.031
Y097918		200	280	35.3	10.6	0.003	0.90	0.39	10.5	0.9	0.3	49.6	<0.01	0.37	1.5	0.162
Y097919		7.7	830	6.1	14.0	<0.001	0.01	0.11	1.5	<0.2	0.5	26.2	<0.01	0.01	0.4	0.014
Y097920		15.5	620	7.4	8.5	<0.001	0.01	0.38	2.4	0.2	0.7	14.0	<0.01	0.02	0.8	0.031
Y097921		21.3	1240	7.7	11.6	0.005	0.09	0.76	6.2	1.4	0.5	95.4	0.01	0.02	0.2	0.047
Y097922		15.1	760	2.8	8.3	<0.001	0.01	0.83	23.7	0.3	0.6	14.8	0.01	0.02	0.4	0.008
Y097923		7.0	520	7.8	5.4	<0.001	0.03	0.89	1.6	0.2	0.6	22.9	<0.01	0.02	0.2	0.050
Y097924		5.5	770	12.4	2.0	<0.001	0.04	1.68	1.1	<0.2	0.7	49.8	<0.01	0.02	0.2	0.007
Y097925		11.5	1000	6.9	7.8	<0.001	0.01	0.38	3.8	0.3	0.5	9.9	<0.01	0.04	1.1	0.025
Y097926		9.0	410	5.2	6.2	<0.001	0.01	0.51	2.3	<0.2	0.6	19.7	<0.01	0.03	0.6	0.032
Y097927		7.8	390	9.7	5.5	<0.001	0.01	0.45	2.2	0.2	0.5	18.9	<0.01	0.03	0.4	0.047
Y097928		3.6	280	7.2	3.0	<0.001	<0.01	0.40	1.5	<0.2	0.6	8.4	<0.01	0.02	0.8	0.057
Y097929		36.9	1500	6.7	11.2	0.002	0.07	0.59	9.6	1.5	0.5	58.6	0.01	0.05	0.6	0.031
Y097930		37.7	1510	6.5	11.1	0.002	0.07	0.60	10.1	1.3	0.3	57.8	0.01	0.05	0.6	0.031
Y097931		11.2	1080	8.8	11.3	<0.001	0.02	0.39	2.2	0.2	0.6	8.8	<0.01	0.03	0.3	0.017
Y097932		26.0	1370	7.2	13.9	<0.001	0.02	0.32	3.5	0.2	0.5	11.1	<0.01	0.03	0.6	0.005
Y097933		7.3	640	5.5	5.4	<0.001	0.01	0.33	1.9	0.2	0.3	12.0	<0.01	0.02	0.6	0.026
Y097934		12.1	590	6.2	7.6	<0.001	0.02	0.43	2.2	0.2	0.6	10.7	0.01	0.02	0.8	0.031
Y097935		10.8	660	13.6	12.6	<0.001	0.02	0.31	1.5	0.2	0.5	17.7	<0.01	0.02	0.4	0.036
Y097936		79.7	390	6.4	2.5	0.002	0.23	0.10	5.9	0.6	0.3	29.2	<0.01	0.07	0.3	0.313
Y097937		16.0	950	10.2	14.0	<0.001	0.02	0.31	5.0	0.2	0.7	12.0	<0.01	0.03	1.0	0.006
Y097938		11.5	790	15.5	6.4	<0.001	0.03	0.45	1.6	<0.2	0.3	11.5	<0.01	0.03	0.2	0.012
Y097939		17.6	1580	7.4	7.7	<0.001	0.02	0.37	3.4	0.2	0.5	12.0	0.01	0.03	1.4	0.052
Y097940		8.9	1080	8.1	6.4	<0.001	0.02	0.36	1.8	0.2	0.3	9.8	<0.01	0.02	0.5	0.019

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

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Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method Analyte Units LOD	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
Y097901		0.08	1.59	37	0.09	7.38	41	1.1
Y097902		0.08	0.70	42	0.08	4.69	57	<0.5
Y097903		0.04	0.41	42	0.09	1.18	41	<0.5
Y097904		0.05	0.23	50	0.08	1.45	32	<0.5
Y097905		0.07	0.35	49	0.12	3.43	59	0.7
Y097906		0.08	0.31	64	0.08	1.23	57	1.4
Y097907		0.05	0.25	51	0.10	1.19	49	<0.5
Y097908		0.07	0.36	51	0.11	1.21	70	1.5
Y097909		0.09	0.21	29	0.06	0.50	29	<0.5
Y097910		0.04	0.17	59	0.10	0.72	20	<0.5
Y097911		0.04	0.27	69	0.13	1.03	22	0.9
Y097912		0.09	0.74	48	0.09	17.45	126	<0.5
Y097913		0.09	0.74	48	0.09	16.30	120	<0.5
Y097914		0.05	0.70	45	0.06	15.10	80	0.8
Y097915		0.05	0.31	58	0.10	1.49	60	1.0
Y097916		0.04	0.30	61	0.09	1.88	34	0.9
Y097917		0.06	0.24	49	0.06	1.56	43	1.0
Y097918		0.12	0.30	89	9.71	7.31	68	13.5
Y097919		0.08	0.18	29	0.06	1.16	86	<0.5
Y097920		0.05	0.20	55	0.07	1.50	64	1.2
Y097921		0.16	4.88	57	0.07	50.2	164	1.4
Y097922		0.07	0.31	330	0.05	5.69	97	0.6
Y097923		0.04	0.50	52	0.11	2.77	35	0.5
Y097924		0.04	0.18	21	0.05	1.48	35	<0.5
Y097925		0.10	0.37	60	0.06	2.28	56	2.0
Y097926		0.05	0.41	49	0.08	3.29	52	<0.5
Y097927		0.05	1.54	49	0.09	4.53	49	<0.5
Y097928		0.03	0.23	67	0.10	1.04	20	1.0
Y097929		0.08	3.11	46	0.13	53.0	90	1.4
Y097930		0.08	3.27	47	0.13	56.9	85	1.4
Y097931		0.06	0.30	57	0.07	1.50	56	<0.5
Y097932		0.07	0.23	71	0.06	1.33	61	<0.5
Y097933		0.04	0.20	48	0.07	1.30	35	0.6
Y097934		0.05	0.24	56	0.09	1.34	45	1.4
Y097935		0.07	0.20	43	0.10	1.27	47	<0.5
Y097936		0.02	0.07	128	1.32	11.00	67	12.6
Y097937		0.08	0.23	66	0.32	2.74	92	0.6
Y097938		0.04	0.21	40	<0.05	1.32	60	<0.5
Y097939		0.05	0.41	49	0.12	2.47	61	7.7
Y097940		0.05	0.13	40	0.07	1.03	51	0.5

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Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
Y097941		0.54	0.13	2.32	6.8	<0.02	<10	480	0.46	0.12	0.53	0.26	18.30	14.6	31	1.22
Y097942		0.44	0.36	1.23	10.9	<0.02	<10	170	0.29	0.25	0.07	0.46	9.51	5.4	15	1.01
Y097943		0.36	0.09	1.42	8.2	<0.02	<10	140	0.40	0.08	0.13	0.12	16.35	7.6	16	4.96
Y097944		0.36	0.07	1.13	32.7	<0.02	<10	270	0.56	0.86	0.14	0.42	26.1	14.0	12	2.15
Y097945		0.26	0.13	1.42	6.8	<0.02	<10	350	0.38	0.08	0.30	0.21	13.40	6.7	16	1.71
Y097946		0.26	0.07	1.19	5.6	<0.02	<10	120	0.23	0.06	0.09	0.07	8.16	6.1	15	0.79
Y097947		0.30	0.04	0.99	5.4	<0.02	<10	110	0.20	0.06	0.11	0.06	5.18	5.2	12	0.61
Y097948		0.26	0.02	0.68	4.5	<0.02	<10	100	0.17	0.05	0.11	0.06	4.16	4.6	10	0.55
Y097949		0.28	0.04	0.75	4.1	<0.02	<10	80	0.09	0.10	0.08	0.09	5.11	4.4	14	0.52
Y097950		0.22	0.19	1.11	8.9	<0.02	<10	60	0.12	0.15	0.04	0.12	13.10	3.5	16	1.67
Y097951		0.22	0.32	1.21	8.6	<0.02	<10	140	0.21	0.14	0.06	0.49	14.80	11.1	19	3.80
Y097952		0.22	0.42	1.67	5.8	<0.02	<10	800	0.77	0.15	0.20	0.58	17.70	9.3	20	3.85
Y097953		0.14	0.18	2.01	5.9	<0.02	<10	680	0.58	0.10	0.42	0.24	15.20	11.1	22	1.69
Y097954		0.14	0.17	1.94	5.5	<0.02	<10	650	0.51	0.09	0.41	0.22	14.50	10.2	21	1.60
Y097955		0.40	0.11	1.15	4.9	<0.02	<10	630	0.29	0.06	0.29	0.21	7.99	6.6	14	1.14
Y097956		0.32	0.16	1.29	4.2	<0.02	<10	640	0.58	0.09	0.29	0.39	15.00	6.9	18	1.10
Y097957		0.26	0.09	0.91	6.1	<0.02	<10	550	0.18	0.13	0.16	0.19	7.58	4.0	16	0.97
Y097958		0.34	0.05	0.92	1.8	<0.02	<10	390	0.27	0.16	0.10	0.11	11.55	3.1	8	1.17
Y097959		0.08	0.15	3.55	5.4	0.60	30	20	0.17	0.05	2.64	0.08	6.93	32.6	82	0.13
Y097960		0.34	0.04	1.01	3.6	<0.02	<10	210	0.15	0.12	0.09	0.14	6.85	2.1	11	0.86
Y097961		0.46	0.13	1.91	10.1	<0.02	<10	230	0.41	0.09	0.04	0.19	14.25	14.9	103	2.20
Y097962		0.26	0.21	1.71	54.4	<0.02	<10	730	0.41	0.16	0.08	0.42	14.15	13.2	41	1.85
Y097963		0.28	0.17	0.73	32.2	<0.02	<10	310	0.54	0.16	0.15	0.43	5.39	10.5	12	0.44
Y097964		0.38	0.24	1.68	9.4	<0.02	<10	130	0.22	0.23	0.05	0.20	8.60	3.8	15	2.08
Y097965		0.32	0.38	1.31	14.4	<0.02	<10	120	0.27	0.24	0.02	0.24	19.80	3.6	14	2.69
Y097966		0.22	0.33	1.38	6.2	<0.02	<10	60	0.16	0.15	0.04	0.11	9.41	2.4	12	0.91
Y097967		0.40	0.26	1.65	5.8	<0.02	<10	70	0.22	0.15	0.04	0.10	9.95	4.1	14	1.32
Y097968		0.26	0.68	2.36	7.9	<0.02	<10	490	0.80	0.16	0.23	0.91	40.9	11.0	22	4.77
Y097969		0.20	0.36	2.18	9.2	<0.02	<10	560	0.77	0.14	0.28	0.38	25.1	13.1	20	3.60
Y097970		0.22	0.37	2.34	11.5	<0.02	<10	600	1.00	0.14	0.29	0.36	26.7	14.9	21	3.42
Y097971		0.48	0.08	1.15	5.5	<0.02	<10	180	0.33	0.06	0.14	0.13	9.35	7.7	14	1.05
Y097972		0.22	0.11	1.48	4.2	<0.02	<10	330	0.62	0.07	0.45	0.23	16.90	7.0	12	1.19
Y097973		0.34	0.11	1.77	5.1	<0.02	<10	460	0.79	0.11	0.25	0.15	20.0	9.3	16	1.36
Y097974		0.36	0.56	2.56	8.9	<0.02	<10	560	1.22	0.38	0.22	0.73	32.8	14.9	23	2.13
Y097975		0.50	0.05	1.07	6.1	<0.02	<10	110	0.25	0.07	0.09	0.08	5.49	5.9	14	0.87
Y097976		0.48	0.15	2.05	7.7	<0.02	<10	300	0.63	0.09	0.34	0.24	19.35	14.5	17	2.41
Y097977		0.40	0.59	2.23	5.6	<0.02	<10	750	1.16	0.14	0.43	0.72	26.3	13.9	31	12.50
Y097978		0.48	0.07	2.79	10.9	<0.02	10	170	0.71	0.13	0.19	0.11	10.35	18.5	15	7.71
Y097979		0.08	0.68	2.86	30.5	2.81	20	30	0.19	0.25	2.53	0.13	6.87	31.6	211	0.22
Y097980		0.38	0.13	1.81	7.1	<0.02	<10	110	0.35	0.12	0.10	0.14	4.79	10.4	11	4.67

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

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To: **CHAMBERLAIN, JAMES**
3133 ARLINGTON AVE
SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method / Analyte / Units / LOD	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05
Y097941		32.7	2.89	5.71	0.05	0.07	0.06	0.025	0.07	7.2	17.0	0.57	1050	0.46	0.01	0.82
Y097942		15.8	2.68	4.98	<0.05	0.02	0.04	0.026	0.04	4.8	7.3	0.14	256	0.61	<0.01	0.50
Y097943		27.1	2.24	3.56	<0.05	0.03	0.13	0.021	0.06	6.7	6.8	0.24	307	0.54	<0.01	0.26
Y097944		35.4	4.31	2.31	0.05	0.04	0.11	0.110	0.10	8.6	4.4	0.17	690	1.59	<0.01	0.13
Y097945		29.1	2.21	4.11	0.05	0.02	0.09	0.020	0.05	5.5	9.0	0.25	332	0.68	<0.01	0.31
Y097946		17.3	1.74	3.60	<0.05	0.02	0.08	0.014	0.05	3.5	5.7	0.21	157	0.39	<0.01	0.39
Y097947		16.3	1.65	3.67	<0.05	<0.02	0.04	0.013	0.03	2.4	6.7	0.14	224	0.39	<0.01	0.34
Y097948		9.8	1.54	2.94	<0.05	<0.02	0.04	0.012	0.02	1.9	4.1	0.08	165	0.39	<0.01	0.38
Y097949		12.3	1.70	5.00	<0.05	<0.02	0.02	0.012	0.03	2.5	5.0	0.12	216	0.36	<0.01	0.66
Y097950		14.0	2.63	6.89	<0.05	<0.02	0.03	0.017	0.03	6.5	6.5	0.13	128	1.11	<0.01	0.83
Y097951		36.2	3.18	6.73	<0.05	<0.02	0.06	0.027	0.06	6.9	6.3	0.18	585	0.82	<0.01	0.40
Y097952		53.7	2.59	7.17	0.13	0.02	0.04	0.024	0.07	21.3	13.5	0.23	964	0.41	<0.01	0.91
Y097953		27.8	2.84	7.21	0.06	<0.02	0.10	0.026	0.07	8.1	14.9	0.35	433	0.67	<0.01	0.60
Y097954		23.5	2.77	6.95	0.05	0.02	0.07	0.024	0.06	7.7	14.0	0.35	399	0.64	<0.01	0.56
Y097955		22.4	1.77	3.93	<0.05	0.02	0.21	0.015	0.04	6.0	8.5	0.22	596	0.49	<0.01	0.28
Y097956		24.8	2.16	5.16	0.06	0.02	0.11	0.019	0.04	10.1	7.3	0.23	382	0.48	<0.01	0.40
Y097957		13.4	2.48	6.61	<0.05	<0.02	0.15	0.018	0.05	3.6	6.6	0.16	126	0.44	<0.01	0.94
Y097958		7.7	1.24	4.12	<0.05	<0.02	0.03	0.011	0.07	5.9	4.9	0.04	315	0.43	<0.01	0.64
Y097959		161.0	5.92	11.65	0.18	0.40	0.04	0.026	0.03	2.6	10.6	2.06	683	0.71	0.06	0.13
Y097960		8.2	1.61	5.55	<0.05	<0.02	0.03	0.010	0.05	3.4	2.7	0.08	80	0.41	<0.01	0.46
Y097961		34.2	4.49	9.64	<0.05	<0.02	6.26	0.038	0.05	5.7	15.2	0.31	579	0.79	<0.01	0.71
Y097962		25.4	4.02	6.84	<0.05	0.02	6.12	0.047	0.05	4.1	37.1	0.14	2820	2.34	<0.01	0.51
Y097963		40.3	4.55	2.54	<0.05	<0.02	6.51	0.042	0.06	2.0	6.7	0.07	1160	1.78	<0.01	0.12
Y097964		20.3	3.03	9.45	<0.05	<0.02	0.07	0.031	0.05	3.6	12.9	0.13	191	0.83	<0.01	1.46
Y097965		23.5	3.51	7.25	<0.05	<0.02	0.07	0.035	0.06	9.1	8.4	0.11	111	0.51	<0.01	0.69
Y097966		10.0	2.47	8.15	<0.05	<0.02	0.07	0.025	0.05	4.4	8.8	0.08	158	0.66	<0.01	1.12
Y097967		9.0	2.31	6.96	<0.05	<0.02	0.10	0.025	0.04	4.5	13.2	0.14	549	0.61	<0.01	1.07
Y097968		53.1	3.09	7.16	0.09	0.02	0.13	0.034	0.08	17.4	23.2	0.28	824	0.84	<0.01	0.78
Y097969		25.2	3.71	5.58	0.07	0.06	0.45	0.036	0.06	9.3	18.3	0.25	647	0.97	<0.01	0.63
Y097970		29.0	3.87	6.26	0.07	0.06	0.21	0.038	0.07	9.9	20.4	0.25	669	0.93	0.01	0.73
Y097971		19.7	1.75	3.70	<0.05	<0.02	0.10	0.017	0.05	4.1	7.4	0.21	351	0.40	0.01	0.41
Y097972		18.9	1.38	3.90	<0.05	<0.02	0.13	0.017	0.06	9.0	12.4	0.20	904	0.43	0.01	0.48
Y097973		25.2	2.08	6.12	<0.05	0.02	0.09	0.023	0.05	10.1	17.3	0.18	596	0.54	0.01	0.91
Y097974		85.7	3.10	7.82	0.06	0.07	0.16	0.086	0.05	16.6	25.9	0.26	1820	0.95	0.01	1.61
Y097975		11.7	1.89	4.23	<0.05	0.03	0.05	0.016	0.03	2.4	8.9	0.15	141	0.45	0.01	0.62
Y097976		19.6	2.69	6.15	<0.05	0.02	0.11	0.031	0.03	6.5	17.0	0.20	322	0.90	0.01	0.82
Y097977		57.5	2.91	6.53	0.08	0.03	0.11	0.032	0.07	16.1	19.5	0.41	1240	0.62	0.01	0.60
Y097978		78.0	4.76	10.95	<0.05	0.02	0.05	0.052	0.09	3.5	21.5	0.43	858	0.37	0.01	0.53
Y097979		136.0	4.65	9.68	0.13	0.37	0.07	0.023	0.10	2.9	17.0	2.27	591	2.53	0.06	0.09
Y097980		44.7	3.49	11.10	<0.05	<0.02	0.09	0.033	0.04	2.1	17.3	0.26	837	0.32	0.01	0.49

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SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method / Analyte / Units / LOD	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005
Y097941		26.4	640	6.4	13.5	<0.001	0.03	0.39	6.0	0.5	0.6	58.2	<0.01	0.01	0.6	0.059
Y097942		15.2	1040	7.1	10.3	<0.001	0.01	0.45	3.1	0.2	0.4	7.8	<0.01	0.02	0.8	0.011
Y097943		15.1	870	7.1	6.7	0.001	0.01	0.75	3.1	0.3	0.2	11.1	<0.01	0.02	1.0	0.011
Y097944		18.3	1040	53.1	9.0	<0.001	0.03	1.59	6.4	0.4	0.2	16.2	<0.01	0.08	1.4	<0.005
Y097945		14.0	1100	4.7	9.5	0.001	0.05	0.67	1.6	0.3	0.6	35.8	<0.01	0.02	<0.2	0.014
Y097946		10.9	410	5.0	6.8	<0.001	0.01	0.36	2.2	0.3	0.2	11.9	<0.01	0.02	0.8	0.019
Y097947		7.1	760	5.2	5.6	<0.001	0.01	0.31	1.7	<0.2	0.3	12.7	<0.01	0.01	0.5	0.015
Y097948		4.9	920	4.2	5.0	<0.001	0.01	0.29	1.4	<0.2	0.2	10.6	<0.01	0.01	0.4	0.017
Y097949		5.6	950	6.6	3.8	<0.001	0.01	0.28	1.6	<0.2	0.6	10.3	<0.01	0.01	0.6	0.033
Y097950		9.2	740	8.5	8.0	<0.001	0.01	0.67	2.2	<0.2	0.5	6.9	<0.01	0.03	0.9	0.016
Y097951		18.8	1500	10.1	11.7	<0.001	0.03	0.81	1.1	<0.2	0.5	11.0	<0.01	0.03	<0.2	0.016
Y097952		17.2	930	8.2	14.6	0.001	0.03	0.52	4.2	0.6	0.6	28.0	0.01	0.01	0.4	0.045
Y097953		15.3	1060	5.9	11.0	0.001	0.05	0.56	2.2	0.3	0.6	55.4	<0.01	0.02	0.2	0.033
Y097954		14.5	1020	5.4	10.6	<0.001	0.05	0.51	2.0	0.4	0.4	52.1	<0.01	0.02	0.2	0.033
Y097955		8.7	830	3.7	8.4	0.001	0.04	0.93	1.6	0.3	0.4	41.2	<0.01	0.01	0.2	0.015
Y097956		12.1	990	5.3	6.6	<0.001	0.06	0.55	1.4	0.5	0.4	37.1	<0.01	0.02	<0.2	0.027
Y097957		8.0	500	7.7	6.8	<0.001	0.03	0.82	1.9	0.2	0.6	24.3	<0.01	0.03	0.4	0.044
Y097958		5.1	900	7.8	11.5	<0.001	0.02	0.20	0.7	<0.2	0.6	14.2	<0.01	0.01	0.2	0.016
Y097959		67.1	460	3.0	1.3	0.002	0.17	0.23	6.9	0.3	0.4	21.8	<0.01	0.05	0.3	0.356
Y097960		5.0	500	7.4	7.7	<0.001	0.02	0.60	0.9	<0.2	0.5	16.3	<0.01	0.03	<0.2	0.016
Y097961		64.3	830	6.9	10.2	<0.001	0.02	24.5	5.1	0.2	0.7	23.3	<0.01	0.02	0.6	0.015
Y097962		26.8	830	9.8	7.2	<0.001	0.02	9.68	6.1	0.4	0.6	23.5	<0.01	0.03	0.6	0.008
Y097963		19.5	880	9.2	6.9	0.001	0.02	27.1	5.2	0.6	0.3	20.7	<0.01	0.08	0.5	<0.005
Y097964		8.9	510	12.3	8.7	<0.001	0.02	1.67	2.1	0.3	1.6	9.4	<0.01	0.03	0.6	0.020
Y097965		11.2	670	11.5	19.3	<0.001	0.01	2.41	4.0	0.2	0.6	12.2	<0.01	0.04	1.4	0.009
Y097966		5.0	1140	8.4	5.0	<0.001	0.02	0.92	1.4	0.2	0.7	8.3	<0.01	0.02	0.6	0.026
Y097967		6.7	970	7.4	6.6	<0.001	0.02	0.99	1.7	0.3	0.6	7.2	0.01	0.02	0.7	0.028
Y097968		26.0	1070	9.7	12.1	0.001	0.06	0.59	2.7	0.4	0.6	32.4	<0.01	0.04	0.2	0.029
Y097969		28.3	770	9.8	13.5	<0.001	0.03	0.93	4.9	0.3	0.5	34.6	<0.01	0.03	0.7	0.011
Y097970		32.2	790	10.6	13.4	<0.001	0.03	0.70	5.8	0.5	0.7	37.4	<0.01	0.03	0.7	0.012
Y097971		11.1	380	4.9	7.6	<0.001	0.02	0.41	2.4	0.2	0.3	19.0	<0.01	0.01	0.4	0.018
Y097972		10.1	600	8.3	7.6	<0.001	0.04	0.49	1.9	0.4	0.4	80.3	<0.01	0.01	0.2	0.021
Y097973		11.8	320	6.4	8.6	<0.001	0.01	0.29	3.1	<0.2	0.5	24.2	<0.01	0.01	0.7	0.026
Y097974		16.6	690	16.3	9.5	0.001	0.04	0.85	7.2	0.9	0.7	33.8	0.01	0.03	1.1	0.081
Y097975		8.1	710	4.4	7.8	<0.001	0.01	0.28	1.9	0.2	0.3	10.5	<0.01	0.01	0.7	0.024
Y097976		13.7	1050	5.6	8.2	<0.001	0.03	0.49	2.7	0.7	0.3	48.8	0.01	0.03	0.4	0.036
Y097977		37.9	890	8.5	12.0	<0.001	0.03	0.68	4.3	0.4	0.5	60.7	<0.01	0.02	0.3	0.020
Y097978		18.5	1660	2.9	14.8	<0.001	0.02	1.20	6.8	0.3	0.7	18.4	0.01	0.02	0.2	0.030
Y097979		93.5	340	20.4	4.6	0.002	0.42	0.29	8.2	0.6	0.3	29.4	<0.01	0.13	0.6	0.232
Y097980		9.0	1610	4.1	10.0	<0.001	0.02	2.06	2.9	0.3	0.8	12.8	<0.01	0.02	<0.2	0.019

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

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Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method Analyte Units LOD	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
Y097941		0.09	0.77	54	0.06	11.65	92	1.9
Y097942		0.06	0.20	49	0.06	1.93	98	0.5
Y097943		0.05	0.36	37	0.07	3.32	44	0.9
Y097944		0.07	0.41	37	<0.05	7.41	236	0.7
Y097945		0.05	0.72	39	0.06	8.98	53	<0.5
Y097946		0.05	0.22	41	0.05	1.74	35	0.6
Y097947		0.04	0.16	40	<0.05	1.10	36	<0.5
Y097948		0.03	0.12	35	<0.05	0.81	34	<0.5
Y097949		0.04	0.15	41	0.07	0.97	47	<0.5
Y097950		0.05	0.19	54	0.10	1.11	49	<0.5
Y097951		0.03	0.55	46	0.07	2.03	66	<0.5
Y097952		0.06	1.55	44	0.08	34.8	96	<0.5
Y097953		0.06	1.68	48	0.07	13.75	93	<0.5
Y097954		0.06	1.58	47	0.07	12.70	90	<0.5
Y097955		0.04	2.11	36	0.05	7.98	57	0.5
Y097956		0.05	1.86	36	0.05	13.30	67	<0.5
Y097957		0.04	0.39	50	0.07	1.60	52	<0.5
Y097958		0.06	0.32	24	0.08	2.21	75	<0.5
Y097959		<0.02	0.07	159	0.69	13.85	69	15.4
Y097960		0.05	0.23	43	0.08	0.80	41	<0.5
Y097961		0.07	0.30	104	0.08	2.12	82	<0.5
Y097962		0.10	0.57	73	0.10	4.32	97	0.5
Y097963		0.06	0.47	58	0.17	3.10	128	<0.5
Y097964		0.07	0.27	53	0.11	1.46	67	<0.5
Y097965		0.12	0.29	64	0.08	2.57	73	<0.5
Y097966		0.05	0.30	52	0.12	0.95	34	0.5
Y097967		0.10	0.29	48	0.12	1.15	44	0.5
Y097968		0.08	1.85	49	0.12	22.7	85	<0.5
Y097969		0.10	0.78	46	0.10	17.50	75	1.5
Y097970		0.10	0.82	46	0.11	19.90	74	1.7
Y097971		0.04	0.30	38	0.05	2.93	38	<0.5
Y097972		0.06	0.55	29	0.05	9.73	42	<0.5
Y097973		0.06	1.04	45	0.07	9.09	55	0.7
Y097974		0.11	2.42	52	0.13	28.7	120	2.6
Y097975		0.04	0.15	44	0.06	1.08	60	1.1
Y097976		0.04	0.84	45	0.08	5.93	81	0.9
Y097977		0.05	2.26	47	0.07	17.60	111	0.6
Y097978		0.09	0.46	134	0.09	4.53	122	0.5
Y097979		0.05	0.13	117	3.41	10.70	65	13.7
Y097980		0.06	0.21	99	0.10	1.65	80	<0.5

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

ALS Canada Ltd.
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To: **CHAMBERLAIN, JAMES**
3133 ARLINGTON AVE
SASKATOON SK S7J 2K1

Finalized Date: 9-JUL-2018
Account: CHMJAM

Project: Russell

CERTIFICATE OF ANALYSIS VA18154500

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
Y097981		0.44	0.20	1.69	8.3	<0.02	<10	380	0.50	0.13	0.59	0.17	16.20	8.1	21	2.03
Y097982		0.30	0.09	2.88	11.6	<0.02	<10	120	0.46	0.13	0.18	0.11	5.56	15.7	14	3.20
Y097983		0.36	0.19	2.39	8.8	<0.02	<10	130	0.63	0.17	0.03	0.22	22.2	9.6	19	1.89

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Sample Description	Method / Analyte / Units / LOD	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05
Y097981		25.8	2.71	5.94	<0.05	0.03	0.04	0.031	0.05	6.3	19.5	0.26	163	0.47	0.01	0.45
Y097982		85.4	5.00	13.70	<0.05	0.03	0.07	0.053	0.04	2.0	18.4	0.35	353	0.54	0.01	0.76
Y097983		26.7	3.08	7.03	0.05	0.04	0.18	0.035	0.07	9.1	20.4	0.25	176	0.59	0.01	0.59

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Sample Description	Method / Analyte / Units / LOD	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005
Y097981		11.8	510	6.3	11.8	<0.001	0.02	0.68	4.4	0.3	0.4	63.0	<0.01	0.02	0.8	0.008
Y097982		13.7	1280	2.6	4.7	<0.001	0.03	1.61	6.0	0.3	0.7	19.2	0.01	0.02	0.2	0.031
Y097983		16.3	720	9.4	17.4	<0.001	0.01	0.80	4.2	0.3	0.5	6.8	<0.01	0.03	2.0	0.010

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Sample Description	Method / Analyte / Units / LOD	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
Y097981		0.07	1.33	67	0.06	4.44	55	0.8
Y097982		0.04	0.34	131	0.12	2.52	110	0.6
Y097983		0.16	0.61	53	0.07	3.22	82	1.6

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CERTIFICATE OF ANALYSIS VA18154500

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).

Applies to Method: ME-MS41

LABORATORY ADDRESSES

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

Applies to Method: LOG-21 LOG-23 ME-MS41 SCR-41 WEI-21