

**National Instrument 43-101 Technical Report**  
on the  
**Broken Handle Project**

**Greenwood Mining Division**  
**British Columbia, Canada**

**NTS Map Sheet 082E08 and 082E09**

**Latitude 49.505°N Longitude- 118.414° W**

**UTM: 398150mE/5483800mN**

**(UTM Nad83 Zone 11 or EPSG 26911)**

**Prepared For: Hawthorn Resources Corporation**

**Effective Date**

**May 17, 2021**

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## Appendix I: Units of Conversion and Abbreviations

## 1. SUMMARY

This report was prepared by Coast Mountain Geological Ltd. (“CMG”) for Hawthorn Resources Corp. (“Hawthorn” or the “Issuer”). Hawthorn has an option to acquire a 75% undivided interest in the Broken Handle Project (the “Property”) from Origen Resources Inc. (“Origen” or the “Vendor”). This report describes the geoscientific background in addition to providing recommendation for advancing the Broken Handle Project.

The Property is an early-stage exploration project acquired by staking a single 2098.33 Hectare claim on January 30, 2018 over a series of suspected mineral showings, BC Minfile occurrences and reverted Crown grants approximately five kilometres south of the past-producing Franklin Camp. The Property is within the Greenwood Mining Division on the border of NTS Map Sheets 082E08 and 082E09 and approximately centred at latitude 49.505°N and longitude -118.414°W or 398150 mE/5483800mN (UTM NAD83 Zn11 – EPSG:26911).

The Property contains gold, silver, copper, lead and zinc mineralization. This mineralization occurs as polymetallic and precious metal-bearing veins, contact metamorphic (skarn) copper-lead-zinc-silver-gold occurrences and epithermal precious metal veins. There is no mineral resource or record of production within this Property.

The Property area was initially explored as a result of the Greenwood and Franklin Mining Camp discoveries in the 1890’s and early 1900’s. The Greenwood and Franklin Camps became prolific precious and base metal mining districts in southern British Columbia. The Property is underlain by BC Minfile occurrences and bedrock geologically analogous to the Franklin Camp but has undergone extraordinarily little exploration work since the 1920’s. After this first period of exploration in the early 1900’s, other showings and mineral occurrences within the tenure area were discovered in the 1970’s during the construction and extension of the primary forestry service road that transects the Property along the Granby River.

The dominant stratigraphy within the tenure area consists of Late Paleozoic metasedimentary rocks of the Harper Ranch Group that are geological equivalents to highly prospective rocks that host economic deposits in the adjoining Franklin and Greenwood Camps. The prospective Harper Ranch Group rocks are intruded by a series of Middle Jurassic granodiorite and later Late Cretaceous granitic intrusive phases that are further intruded by younger Middle Eocene Coryell alkalic to sub-alkalic plutonic rocks. Precious metal epithermal veins associated with appreciable base-metal mineralization as well as poly-metallic skarn-like lenses characterize the primary targets within the tenure area. These precious metal fissure and shear lodes are the most attractive targets within the Project boundaries because of their affinity to the economic discoveries of the Franklin Camp.

CMG was commissioned by 1218802 B.C. Ltd. (“1218802”) to facilitate two short ground-based field programs of soil geochemistry and prospecting in 2018 and 2019. In total, 741 soil and 45 rock samples were collected across the tenure area, accompanied by prospecting that led to the discovery of a variety of shallow underground workings consisting of shafts, pits and adits. Gold fire assay results from bedrock chip samples range in value from <0.005 to 23.03 ppm. Silver results also have an extensive range of values, with bedrock chip samples ranging from 1 to 973 ppm. In May of 2020, 1218802 B.C. Ltd. entered into an arm’s length purchase and sale agreement to sell an undivided 100% interest in the Property for 1,500,000 common shares of Origen, subject to a 1% net smelter royalty (“NSR”) being granted to 1218802 whereby half (0.5%) of the NSR can be purchased for \$1,000,000.

The analytical results and field observations from both seasons of work have determined that the Broken Handle Project occurs within geologically and economically comparable terrain to the Franklin Camp, and that the Property possesses significant exploration potential and prospectivity. The Author concludes that additional soil sampling, prospecting, trenching and geophysical surveys, to the amount of \$113,025 are recommended to evaluate the exploration potential further.

## 2. INTRODUCTION

### 2.1 TERMS OF REFERENCE

The report was prepared for Hawthorn Resources Corp., a privately registered company within the Province of British Columbia, to serve as a qualifying report on a qualifying property for fulfilling listing requirements on the Canadian Securities Exchange (“CSE”). Hawthorn commissioned Patrick McLaughlin (the “Author”), employed by CMG of Vancouver, B.C., to make recommendations for further work on the Broken Handle Project and to prepare a Technical Report conforming to the format and content standards of National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (“NI 43-101”), the Companion Policy to NI 43-101, and Form 43-101F1. The purpose of this report is to summarize information on the Issuer’s acquisition and to support it as a qualifying property.

### 2.2 SCOPE

The Author has constructed this report based on:

1. Publicly available technical data from technical reports, ARIS publications, the B.C. Property File and Gator registration systems listed in Section 28 of this report.
2. Observations and personal inspections of the Broken Handle Project between August 16, 2019 to August 23, 2019.
3. Work conducted by CMG on behalf of 1218802 B.C. Ltd. in 2018 and 2019.

The Author is a Qualified Person (“QP”) and considered independent of the Company as defined by National Instrument 43-101 guidelines. The Author holds no direct or indirect interest in the Issuer, Broken Handle Project or any adjoining claims.

Throughout this report the Author has attempted to use plain language. Metal and mineral abbreviations contained within this report conform to standard industry usage. Some technical terms and abbreviations which may not be familiar to the reader have inevitably been included. In such cases, a reputable geological dictionary should be consulted.

Historical exploration and mining data in British Columbia were typically documented in the Imperial System, with units of lengths expressed in feet (ft) and inches, mass in short tons (ton) and precious metal grades in ounces per short ton (oz/ton). More recent exploration and mining data is generally expressed in metric units of lengths as metres (m) or centimetres (cm), mass in metric tonnes (t), and precious metal grades in grams per tonne (gpt), or in parts per million (ppm) or parts per billion (ppb). Conversion factors between metric and Imperial units are listed in Appendix I. All costs herein are expressed in Canadian Dollars (CAD).

### **3. RELIANCE ON OTHER EXPERTS**

For the purpose of this report, the Author has reviewed the claim ownership information through the B.C. government’s Mineral Tenure Online (“MTO”) website on September 3, 2019 which conforms to the supplied data from Origen. No legal opinion was sought regarding title and the Author is not aware of any reason that would warrant one.

### **4. PROPERTY DESCRIPTION AND GENERAL LOCATION**

The Property is situated in the Boundary District of southern British Columbia near the town of Grand Forks, approximately 320 km east of Vancouver, B.C. and close to the Canada – USA border along British Columbia’s Provincial Highway 3 (Figure 1). The Property is approximately 50 km north of Grand Forks, is centered on coordinates 399100mE / 5483150mN (NAD 83, Zone 11N: EPSG 26911) or Latitude 49.505°N and Longitude -118.414°W, and straddles NTS Map sheets 082E8 and 082E9.

Historic land surveys and documents indicate that a poorly documented volume of mining activity in the form of adits, pits, trenches and shafts are developed within the Property boundaries. There are no significant waste dumps, tailings sites, historic mine buildings or other environmental liabilities to which the Property is subject.

### 4.1 MINERAL TITLE

The Property is an early-stage exploration project composed of a single 2098.33 hectare mineral claim numbered 1058060 that was originally issued on January 30, 2018. 1218802 sold a 100% interest to Origen in May 2020, subject to 1% net smelter royalty (“NSR”) being granted to 1218802. (Table 1 and Figure 2).

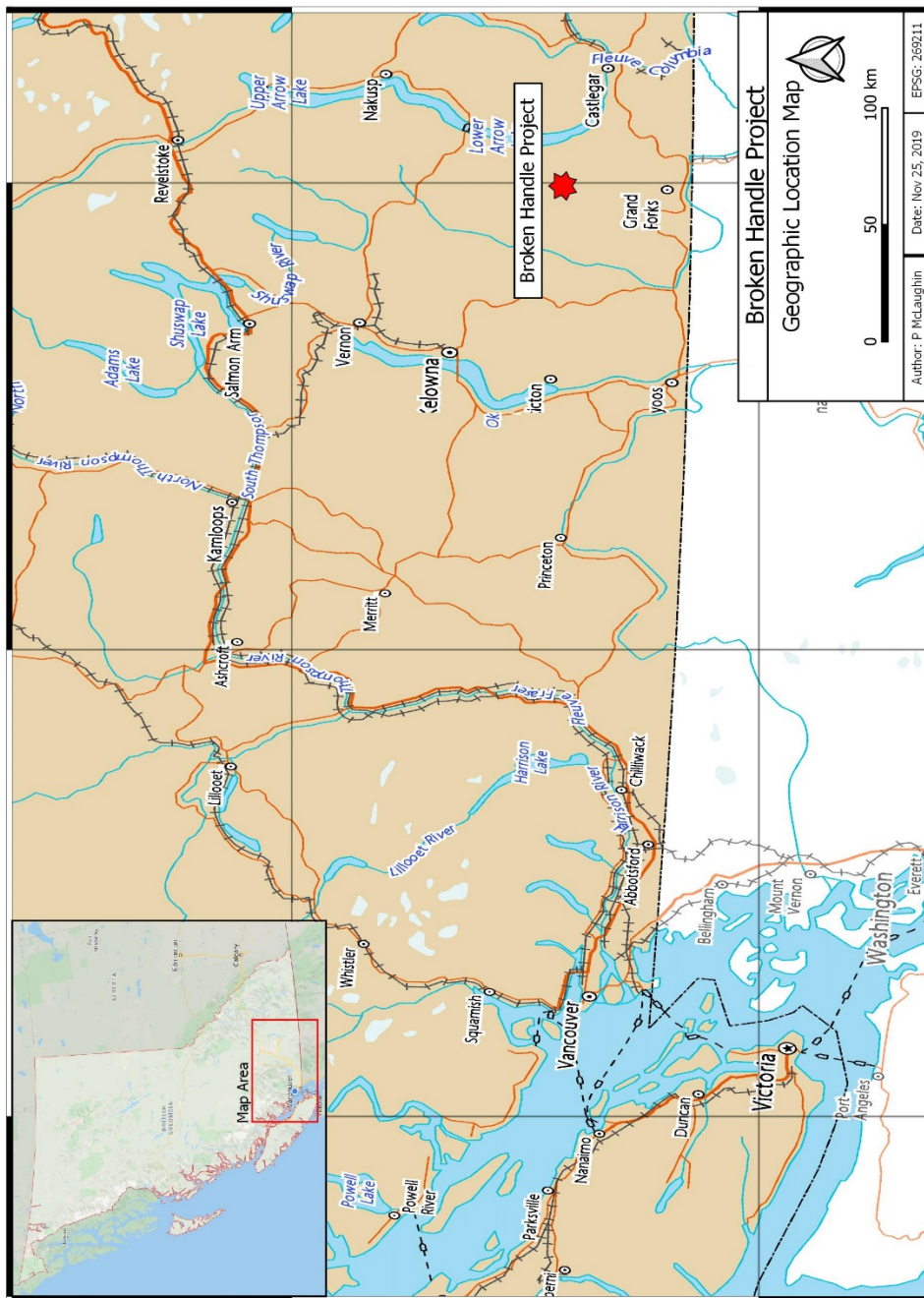


Figure 1: Broken Handle Geographic Location



On December 15, 2020, Origen granted an option to acquire a 75% undivided interest in the Property by incurring \$500,000 in exploration expenditures, paying an aggregate of \$250,000 and issuing an aggregate of 1,000,000 shares over a three-year period. Upon execution of this option, Origen will be granted a 1.5% NSR, of which Hawthorn will have the right to purchase 1.0% of the NSR for \$1,000,000 within one year of commencement of commercial production.

Table 1: The Broken Handle Mineral Claim Information Table

Claim Number	Claim Name	Owner	Date Acquired	Expiry Date	Ha
1058060	Broken Handle	1218802 B.C. Ltd.	2018-01-30	2023-10-20	2098.33
1058060	Broken Handle	Origen Resources Inc.	2020-05-11	2023-10-20	2098.33

Mineral claims within the Province of British Columbia require recognized work to maintain claim ownership.

Annual work requirements for tenures in BC are:

- \$5.00 per ha for anniversary years 1 and 2
- \$10.00 per ha for anniversary years 3 and 4
- \$15.00 per ha for anniversary years 5 and 6
- \$20.00 per ha for all subsequent anniversary years

In order to encourage exploration field work, cash-in-lieu payments are double the amount listed within the above schedule for meeting work requirements. Work in excess of annual work requirements may be banked and applied to future years. The annual work commitment for the Broken Handle mineral claim is \$10,491.65 CAD to advance the expiry date by one year; the claim is currently in good standing until October 20, 2023.

A Notice of Work (“NOW”) permit from the Ministry of Forest, Lands and Natural Resources Operations is required before commencing any activity involving mechanized disturbance. This permit will generally include a reclamation bond before final approval, and a separate permit must be issued for any timber disturbance related to the NOW. Due to the early stage of this property, no permit has been applied for nor has one been issued.

Other than the 1% NSR held by 1218802 B.C. Ltd., the Author is not aware of any further royalties, back-in rights, payments or other agreements of encumbrances to which the Broken Handle Project is subject. There are also no legal impediments or other factors to limit access, title or the ability to perform any level of work on the Property. The Author is also not aware of any environmental liabilities associated with the Property and its extent occurs over Crown land and as a result there are no competing surface rights or obstructions for legal access.

## **5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, CLIMATE AND PHYSIOGRAPHY**

### **5.1 ACCESSIBILITY**

The Property is accessed by heading north on either the North Fork or Franklin Road from Grand Forks, B.C. and continuing along this paved road through the Granby River Valley for 42 km (Figure 2). Here, at the '28-mile bridge' and the confluence of the Burrell Creek and Granby River, the paved highway changes to the gravel Gable Creek Forest Service Road ("FSR"). The Gable Creek FSR leads west for one (1) km to where it intersects the start of the Burrell Creek FSR on the right (north), which is a well-maintained all-season two-wheel-drive accessible forestry road. Access to the Property is gained by continuing for 7 km on the Burrell Creek FSR until you reach the junction with the Burrell West FSR. The eastern portion of the Property is via the Burrell Creek FSR, however access to historical reverted Crown grants on the west side of Burrell Creek are gained by driving approximately 4 km up the Burrell West FSR to the junction with the McKinley FSR.

### **5.2 CLIMATE**

The Broken Handle Project, within the Granby River Valley, is predominantly within the Interior Cedar Hemlock Biogeoclimatic Zone ("ICH") of British Columbia, which is characterized by lower to middle altitudes (400-1500m ASL) within southern B.C. This zone is also characterized by continental climates dominated by easterly moving air masses that produce wet winters and warm dry summers. The ICH generally has one of the widest variations of conifer types, and mean annual temperatures that range from 2 to 8.7°C, a range which reflects the wide latitudinal extent of this zone. Mean annual precipitation within the ICH ranges from 500-1200 mm, of which 25-50% falls as snow during the winter months.

Further south towards Grand Forks, which is lower in elevation, the biogeoclimatic zone changes from ICH to the drier Interior Douglas Fir zone ("IDF") which is characterized by warmer mean temperatures and more savannah-like conditions supporting bunchgrasses such as rough fescue. The dominant conifer species is Douglas-fir.

Due to the regional average climate conditions, most surface work is limited to May through October, however, diamond drilling and more advanced exploration can be conducted year-round.

The closest active Environment Canada weather station to the Property is located in Trail B.C.

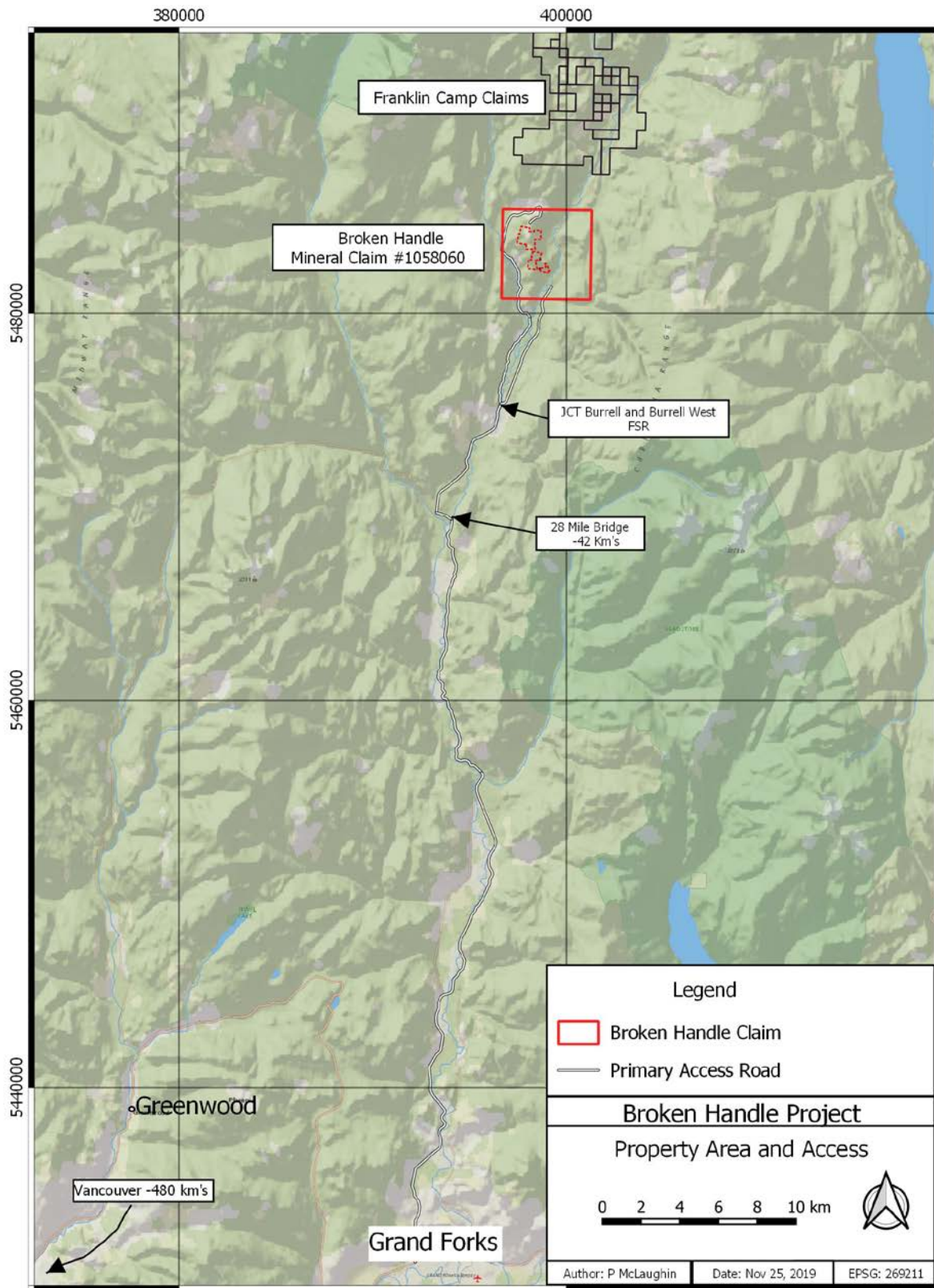


Figure 2: Property Location and Access Map

### 5.3 LOCAL RESOURCES AND INFRASTRUCTURE

The Boundary District, Greenwood Mining Division and Property area have a history rich in mining and exploration activities over the last century and as a result, experienced personnel, supplies and resources are readily available in most local municipalities. Grand Forks is less than an hour drive from the Property and has a population of 4,049 (2016 Census) with motels, hotels, gas stations and all essential necessities to sustain long-term field crews. Castlegar, a one-hour drive from Grand Forks, has a population of 9,023 (2016 Census) with excellent road and rail infrastructure and has all necessary supplies for field operations. Castlegar is host to a regional airport with daily service to Vancouver. Multiple fishing lodges and campgrounds, particularly along the Granby River Valley can also support smaller field crews for short periods of work.

The Property is an early exploration stage project with direct access to water from the Burrell Creek; other smaller named creeks and tributaries provide alternative sources. Potential sources of power to sustain a mining operation can be sourced from Grand Forks and the low voltage powerlines along the Granby River Valley. Other than topographic considerations and limitation within the current areas, there are not readily apparent construction limits to mine pits, processing facilities, tailings storage or waste disposal area, heap leach pads area or processing plant sites on the Property. Additional unencumbered mineral tenures can be added to the existing claim fabric if the need arises.

### 5.4 PHYSIOGRAPHY, TOPOGRAPHY AND WILDLIFE

Burrell Creek, a major tributary of the Granby River, flows SSW through the middle of the Property. Topographic relief within the claim area is approximately 450 m, with the highest ridge tops reaching 1180 m above sea level. All local tributaries and creeks within the claim area ultimately drain into Burrell Creek. The terrain is generally mountainous with deeper valleys to the west of Burrell Creek. East-facing slopes tend to be significantly steeper than gentler dipping west-facing slopes. Bedrock exposures are generally low, around 5%, being more prevalent on ridges and in areas of steeper topography.

Current satellite imagery shows recent logging at various locations around the Property, particularly in small local cut blocks around higher elevations surrounding the Morrell Group of reverted Crown grants. Current areas marked for logging on the Property occur on slopes east and above the Burrell FSR. Cattle have grazed here off and on in the past, but the current state of grazing is unknown.

## 6. HISTORY

### 6.1 EXPLORATION HISTORY PRIOR TO 1218802 B.C. LTD.

The Broken Handle Project was staked over open ground; however, mineral titles have been intermittently staked of varying extent over the last 40+ years designed to envelope known showings and mineral occurrences. A detailed timeline and summary of exploration and ownership is described below. References to B.C. Minfile mineral occurrences are cited within this section. However, the reader is directed to Section 7.3 for more detailed positional and technical information for individual Minfile occurrences within the tenure area.

The Property's tenure area has undergone two major periods of exploration and mining development since the turn of the 20<sup>th</sup> century. The initial period occurred from 1899 to some time before the 1920's on historical claims and reverted Crown grants west of Burrell Creek. This area is informally identified as Morell's Camp or the Morell Group, named after John Morrell and his associates from Grand Forks who staked and explored the area in 1899 (Figure 3). Exploration interest in Morrell's Camp arose simultaneously with the discovery of economic polymetallic veins of the Franklin Camp, 5 km to the north, because the Property was within geologically similar ground to the Franklin Camp discoveries. Notable references are made of Morrell's Camp in local newspaper articles in the early 1900's as well reports from the Department of Mines in the 1920's and 30's. However, mineral and exploration interest within the claim area diminished in the 1910's and lay dormant for nearly six decades until the second phase of activity that began in the 1970's, driven by new mineral discoveries identified shortly after the construction of the Burrell FSR and adjoining spur roads on the eastern portion of the Property.

**1899 to approximately 1914:** The earliest recorded exploration activity within the Property boundary comes from original Crown grant survey maps and work records uncovered from the Grand Forks City Archives and the British Columbia Provincial Archives between January and July of 2019. The historical documents list various types of development activities within the tenure area including trenches, prospecting pits, shafts and adits of varying length, however the details and location information within the records and claim survey sheets associated with the work is poorly documented. The documents suggest that the Property area comprises two groups of former Crown-granted mineral claims, collectively identified as the Morrell Group. The Silver King, Silver Queen, B.C., Copper King and U.S. mineral claims comprise the northern part of the group surveyed from 1899 onwards that were converted to Crown grants (Figure 3). During the same time period, John Morell and associates of his from Grand Forks surveyed the Juditta, Lauretto, Tripolo, Black Bear and Big Raymond mineral claims in the southern group, of which the latter three were officially Crown granted (Figure 3). The Juditta mineral claim appears to have the most work and underground development in the group, however it was never officially Crown granted and there are no maps or underground data to support the completed work.



The only digitally recorded mineral occurrence within the Morrell Group is the Silver Queen B.C. Minfile occurrence (L.1316S no. 082ESE108) listed as a Ag-Pb-Zn-Cu polymetallic vein. There are several historical references to the Silver Queen in newspapers and annual reports from the early 1900's. The Annual Report to the Minister of Mines from 1914 references the Silver Queen Crown grant and a 75-foot shaft set on a 5-foot-wide quartz vein where a grab\* sample collected from the apron of the shaft assayed 1.4 oz silver, 1.0% copper and 0.5% lead (Larson and Verrill, 1914).

Another Bulletin from 1932 indicates that Morrell's team of explorers commonly uncovered ores characteristically akin to those identified in the Union Mine in the Franklin Camp, in addition to quartz veins bearing small high-grade pockets of free gold (Galloway, 1932(a)).

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the mineral potential being evaluated

**1971:** *Kermeen, J.S. (ARIS 03124)*. Work was performed on the Van group of claims east of Burrell Creek and North of St. Annes Creek (the WSW and ZAP showings) by Cronus Mineral Limited after logging uncovered altered and mineralized granodiorite (Figure 3). Work included a geochemical survey, bulldozer trenching, drilling, blasting and sampling. Soil geochemistry was collected at the top of the B horizon on a 1000 x 1400 feet grid over the Van 1 to 4 claims. Bedrock and target geology consisted of altered granodiorite cut by late feldspar porphyry bodies. A distinct zinc anomaly 700 (N-S) by 1100 (E-W) feet emerged from the geochemistry data analysis. The best rock grab\* sample from follow-up trenching returned 0.27 % Cu, 0.50% Zn, 0.23 opt Ag and 0.003 opt Au. Claim maps, soil geochemistry results and a bulldozer trench map with results are attached to the ARIS report.

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

**1975:** *Buller, W.A. (ARIS 05513)*. W.A Buller completed a prospecting program on the LJ claims, resulting in the discovery of the LJ showing (B.C. Minfile no. 082ESE178).

**1974-1975:** *Buller, W.A. (ARIS 05535)*. Mr. Buller followed up on veins discovered along the Burrell Creek FSR that were explored in ARIS 05514. The follow-up work involved staking the WSW-1 claim and opening six small trenches and coring three backpack drill holes totalling 26'5". The work program uncovered three separate showings, collectively identified as the WSW(B.C. Minfile 082ESE177), consisting of quartz-calcite stringer veins with variable amounts of chalcopyrite, bornite, chalcocite, pyrite, galena, sphalerite and occasional smears of native copper on fractures (Figure 3). One mineralized grab\* sample from showing 2 returned 0.052 opt Au and 3.22 opt Ag. Included within the report are claim and geological maps with mineral occurrences along with drillhole location, drill logs, assay sheets and petrographic reports.

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

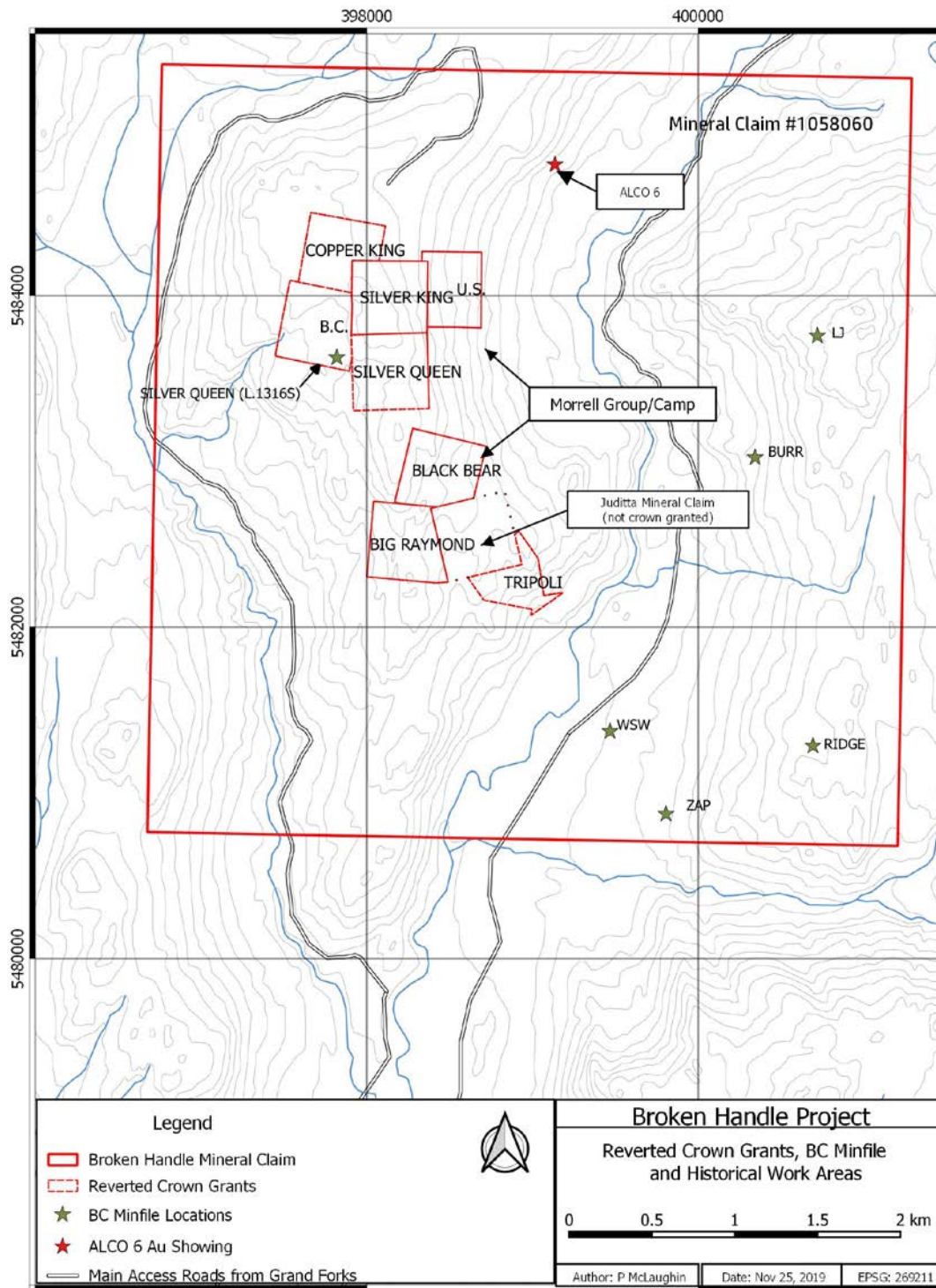


Figure 3: Historical target areas, reverted crown grants and BC Minfile locations within the Broken Handle Claim

1976: D.B. Peterson (ARIS 06018A/B). A two-part report for Rio Tinto Canadian Exploration Ltd. describing work performed on the ALCO claims, optioned from J. Nedokus. The report covers geological, geophysical, and geochemical programs and percussion drilling on the Alco, Alco 2

and Alco 3 claims that are located north of the Property's claim boundaries. The following information regarding the ALCO property is nested herein to explain the succession of exploration work that led to the discovery of a high-grade gold occurrence on the south boundary of the ALCO 6 claim that is located within the Property claim area (Figure 3).

These ALCO mineral claims were initially acquired as a copper molybdenum porphyry target when porphyry-style mineralization was identified within Nelson granodiorite intrusive rocks uncovered during blasting and construction of the Burrell Creek FSR. Results from all components of exploration during this work period were generally low and it didn't warrant further interest in the property by Rio Tinto Canadian Exploration Ltd.

**1980:** *D.W. Ferguson (ARIS 08610)*. The ALCO claims, still retained by J. Nedokus, were subsequently optioned to the exploration group of Brenda Mines Ltd. and additional claims, the ALCO 4, 5, 6, 7 and 8, were added to the group. All claims within the option agreement, save the ALCO 6, were located north of the Broken Handle property boundary.

A 60.65 line-km grid was established to facilitate a geochemical and geological mapping survey. A total of 1120 soils, seven silts and five rock samples were collected, and the results indicated that the strongest geochemical responses, particularly Cu and Mo, were isolated to Nelson granodiorite between the Union Mine road and Nicoll Creek.

**1981:** *N.Pitcher (ARIS 09682)*. Brenda Mines Ltd. completed a four-hole BQ coring program totalling 313 m on the ALCO claims; none of the drillholes are within the property boundary. Drillhole 1 was cored 125 metres west of Burrell Creek and had the most prospective mineralization with low-grade results. The remaining three holes had no interesting results and no further work was recommended for the ALCO property.

**1989:** *Coffin, D. (ARIS 19504)*. David and Eric Coffin staked the Burrell Property east of Burrell Creek in two claims, the Shorts and Chewmi claims. The aim was to re-establish the location of and sample the WSW and BURR showings. The work program also included ground magnetic and VLF-EM surveys and a soil geochemical grid overlying a prominent SE-NW trending VLF anomaly. Resampling the WSW showing produced values up to 1.6 ppm Au, 29.7 ppm Ag and anomalous lead and zinc results. A total of 59 rock\* samples were collected which contained anomalous concentrations of copper and zinc. Five silt samples were collected from St. Anne's Creek's alluvial fan, and 29 soils samples were collected over select geophysical targets and analyzed by 31-element ICP and AA for gold. The geochemistry results highlighted several multi-element trends that require follow-up.

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

**1991:** *Coffin, D. (ARIS 22015)*. The Coffin brothers returned to the Burrell Property, now composed of the Chewmi, Shorts and recently acquired Annes 1 through 4 mineral claims, to



perform follow-up work from 1989. Work included prospecting, soil geochemistry, geological mapping, grid establishment and a VLF-EM survey.

The Ridge and LJ showings were resampled, with anomalous gold results of 0.5 and 1.99 ppm at the Ridge veins and 12.3 and 2.8 ppm from the LJ veins\*.

Of notable interest from this period of work is the discovery of the ZAP showing approximately 400 m ESE to SE of the WSW occurrence. The showing consists of a small blackened pod of a polymetallic replacement vein with smithsonite and pyrite. A couple of select grab\* samples from this occurrence contained 7.99 ppm gold and 263 ppm silver, with minor amounts lead, zinc, cadmium and copper.

A grid was established over these occurrences where 10 km of VLF-EM was completed using the Annapolis Main transmitter. The VLF survey identified a moderate to strong response 400 m long in alignment with the ZAP and WSW showings.

Recommendation for further work included expanding the property area to facilitate large-scale soil and geophysical surveys. Coffin (1992) also suggested that the proposed grid have two orientations to help with anomaly recognition across the RIDGE/LJ and WSW/ZAP vein-set orientations.

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

**1992:** *Coffin, D. (ARIS 22907)*. The Burrell Property, now further enhanced with 92 claims totalling 2300 ha southeast of the property were examined in detail by Coffin to determine the nature of alteration encountered on his original claim group. A thorough evaluation of well exposed areas of the property determined that remnants of the Eocene Marron volcanic sequence are extensive along the Granby Fault and are also the host to a majority of the previously identified alteration and mineralization occurrences.

Coffin characterizes the occurrences in to two primary deposit types, copper-gold-silver skarn deposits that are an alteration product of Permo-Triassic limestone in direct contact with intrusions of the Cretaceous granodiorite suite, or gold-silver polymetallic epithermal quartz veins within Eocene and older rocks adjacent to and within regional fault structures. Both deposit types are related to past-producing mines in the region with extensive mining histories.

The RIDGE veins were further prospected and an additional 20 or more individual veins were located along a total strike length of 400 m in a N-S direction. Areas of massive silica float were also noted, however assay data from both veins and float did not return any elevated gold results.

Coffin also determined that epithermal style chlorite, quartz and feldspar alteration was identified along a 3.5 km strike of the Tertiary Granby-Burrell Fault Zone. Most of the alteration

material occur within Eocene Marron Volcanic rocks in close proximity to similarly aged granite and syenite intrusions. A comparison of greenstone and adjacent rocks, which had previously been considered of Permian-Triassic or Jurassic age, within the regional Marron sequence concluded that the greenstone rocks are a part of and lower altered section of the Marron sequence.

**1994:** *Coffin, D. (ARIS 23464)*. In 1993, Coffin further conducted 7.1 line-km's of gridding north of St. Annes Creek over which VLF-EM, ground magnetic and geochemical surveys were completed surrounding the WSW and ZAP showings. The main VLF trend identified in the 1991 survey, thought to connect the ZAP and WSW showings, was gridded in greater detail. Results for VLF-EM were favorable, showing good correlation with and expanding upon the historic survey. Ground magnetics were deemed inconclusive, with tighter sample density recommended as a follow up.

**2002:** *Cannon, S.W. (ARIS 27061)*. A small 2-hole ARQTK core (AQ thin kerf) drilling program totalling 50.5 m was conducted on the southwest corner of the ALCO 6 claim, located within the Broken Handle tenure area (Figure 3). The two holes were cored adjacent to the old Franklin Camp road in a road cut where blast material was noted to contain significant galena, sphalerite and pyrite. Along with elevated sulphides, vein material within the road cut was sampled as bedrock grabs and assayed, revealing highly anomalous results of 242.5 and 235.6 ppm Au, as well as several other samples assaying better than 31 ppm Au\*.

The first hole, 1-D-2002 failed to intersect any mineralization and the only lithology was granodiorite. The second hole 2-B3-2002 intercepted three silicified zones containing serpentine and pyrite between 52 and 72 feet. Assays of the silicified zone returned low grade results. The first hole was drilled within 4 m of the gold bearing structure in the road cut and the second hole was drilled nearly perpendicular to the first 100 feet away. The drilling failed to intersect anything remotely similar in tenor or geology to the very anomalous material sampled from the road cut.

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the mineral potential being evaluated

**2014:** *Warkentin, D. (ARIS 34836)*. The area Warkentin targeted within the Broken Handle project tenure area was the Franklin South project that included the reverted Crown grants and mineral claims within the Morrell Group. Warkentin, in conjunction with work at his Franklin Camp claim group to the north, collected samples from the apron of the Silver Queen shaft and an unnamed shaft located presumably on the historic C.P.R. Crown grant for metallurgical testing. The samples collected by Warkentin from the Silver Queen shaft produced numbers consistent with those tested in the Minister of Mines report from 1914, with resultant assay numbers of 44 ppm silver and 0.53% Cu.

Metallurgical studies conducted by Warkentin are described in greater detail within Section 13.

## 6.2 1218802 B.C. LTD. WORK PROGRAMS

### 6.2.1 2018 SOIL GEOCHEMICAL AND PROSPECTING PROGRAM OVERVIEW

A crew of three people executed a short three-day prospecting and geochemical reconnaissance program on the Property between October 16, 2018 to October 18, 2018. Little detailed exploration work had taken place on the Property west of Burrell Creek in virtually a century and as a result, two days were utilized for prospecting the Crown grant area of the Morrell Group. The primary objective of the reconnaissance work was to capture, catalogue and sample old workings and assess the level of development within the target area.

A three-line east-west trending soil orientation grid with a line spacing and station density of 200 and 25 meters respectively was positioned over the Silver Queen Minfile occurrence (Figure 4). A total of 121 B horizon soil samples were collected over one day utilizing the sampling protocols outlined in Section 11.1.

The results from this period of work have been combined with 2019 exploration data and are collectively evaluated in greater detail below in Section 6.2.3.

The remaining two days were spared for prospecting, where a total of 15 various bedrock, float and grab\* samples were collected in areas noted to have anomalous visible mineralization or from waste material or bedrock near to historical workings. Samples were collected by following the procedures outlined in Section 11.1. The observations and analytical results derived from prospecting were used to advance the understanding of the property's mineral potential and trend of historical exploration activities.

\*The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated.

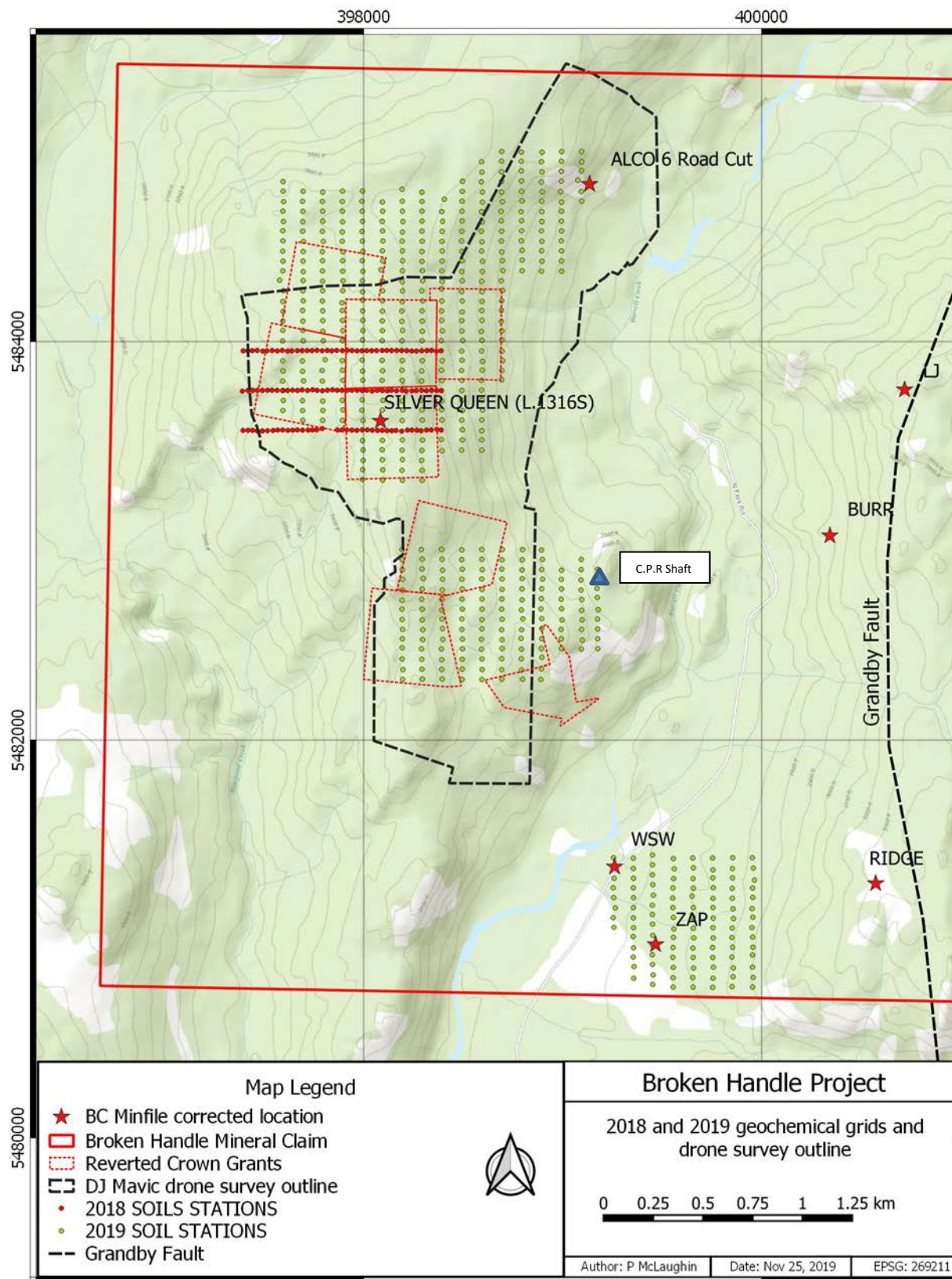


Figure 4: 2018 and 2019 Geochemical sample locations along with aerial extent of drone survey

## 6.2.2 2019 SOIL GEOCHEMICAL AND PROSPECTING PROGRAM OVERVIEW

Preceding any field team mobilization and follow-up work, a small, unmanned drone survey was flown over prospective ground west of Burrell Creek. The survey was designed to provide the prospecting teams with high-resolution air photos to examine for waste dumps, trenches, rock cuts and other cultural phenomenon that would concentrate prospecting efforts for future work. A total of 54.5 line-km of grid were flown by a DJI Mavic Pro with a georectified photomosaic orthophoto deliverable that was stitched together using DroneDeploy™, a web-based grid planning and data generating software (Figure 4).

The north trending Granby Fault is interpreted as the primary feature controlling mineralization within the region and guided the initial design of the 2018 soil survey, however, prospecting during the 2018 work identified that the majority of historical exploration and development within Morell Group of claims and reverted Crown grants are primarily driven on east-west trending, steeply dipping veins, fissures and shears. As a result, the proposed follow-up soil grid was reoriented in a north-south direction. The proposed >700 site geochemical program had a line spacing of 100 m and station density of 50 m and was divided amongst two grids. The primary grid of 600+ stations was positioned over Morell's Camp and the ALCO high-grade gold showing. A smaller grid of 100+ stations was draped over the WSW and ZAP showings east of Burrell Creek. The soil sampling grids and site density were developed over the most prospective ground to facilitate a systematic but cursory evaluation of the area for prospecting.

A four-person field crew, including the Author for a portion of the work program, returned to the Property between August 16, 2019 to August 24, 2019 to conduct the follow up-work. Three crew members collected a total of 620 soil geochemical samples, including 15 duplicates and 15 replicates during this period (Figure 4). Areas were prioritized over the course of the program by paring down low priority sections of each grid to accommodate the budget. A detailed analysis of geochemical results is presented in the following sections.

The Author utilized his entire time on site from August 16, 2019 to August 23, 2019 to revisit areas of interest discovered in 2018, visit priority sites identified from the drone survey and to also evaluate workings and cultural artifacts. A total of 29 bedrock, float and grab\* samples were collected from various target areas throughout the Property while visiting. The results and discussion from rock sampling and prospecting is presented in the following sections.

\*The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated



### 6.2.3 2018-2019 SOIL RESULTS AND INTERPRETATION

The Property area and surveyed grids lie within glaciated and covered terrain, however the grids were designed over generally elevated areas having well-developed residual soil with a thin to absent till cover. Additionally, the two grids are geographically separated by Burrell Creek, but it is assumed that surficial material and soil development are geologically and geochemically analogous to each other. As a result of the grid design, the classification and recognition of geochemical anomalies are interpreted to be true with very little mechanical transportation.

A basic statistical summary of chalcophile transition (Cu, Zn, Ag) and heavy metals (Pb, Bi) on all 741 soil samples from both seasons of work are presented in Table 3. Both the 2018 and 2019 data sets were collected, prepared and analyzed under the same workflow and thus are appropriate to evaluate collectively. As part of the data analysis the Max, Min, Median, Mean and Mode were used as a quick tool to evaluate specific element distributions. Several statistical methods were used to threshold element anomalies, with ultimately percentile being used to plot and review results. These results are also listed in Table 3.

**Table 2: Basic statistical analysis of primary target elements from soil geochemistry results**

	Ag ppm	Au ppm	Cu ppm	Pb ppm	Zn ppm	Bi ppm
Minimum	0.05	0.001	1	1	17	0.08
Mode	0.13	0.001	12.5	14	82	0.2
Median	0.19	0.002	17.1	15.4	84	0.23
Mean	0.228989	0.004526	21.3993	19.49649	103.1879	0.277
Maximum	1.78	0.449	260.9	519.1	1048	7.56
80th Percentile	0.3	0.003	26.72	22.3	134	0.31
90th Percentile	0.389	0.005	36.16	28.98	172.8	0.39
95th Percentile	0.51	0.0089	47.03	37.89	226.3	0.5

The distribution and timing of auriferous enrichment and its correlation to base-metal mineralization within the camp and Property area are interpreted to be unrelated and at this time poorly understood. After a quick review, the relationship of silver and base metal results when compared to gold is observed as non-linear. As a result, the gold results were reviewed independently of other data.

As a result of the analyses, narrow Zn-Pb-Ag and Cu soil anomalies can clearly be delineated from the resultant processed data within the sampling area, which is not unusual given the nature of the deposit model. The narrow anomalies are clearly in alignment with E-W trending vein sets identified within the historical workings. The elemental response and anomalies from Table 2 are individually classified in Figure 5 through Figure 9 .

Gold results within the soil dataset are spatially fragmented with little continuity between lines, save results from the three east-west trending 2018 soil lines over the Silver Queen and Silver King Crown grants. The anomalies along these east-west lines are low, to the east and slightly downslope of known workings but they occur across multiple stations. The multi-station anomalies are a potential response related to mechanical dispersion from the waste dumps, however the soil lines are oriented parallel to known trends and the distance across multiple station are not likely a mechanical response and could indicate the subsurface continuation of the known veins. The central line in the group also has a multi-station trend of low anomalies that possibly reflects the response of other veins under cover. An isolated, but highly anomalous result of 0.449 ppm is located >200 m downslope of the Silver King workings that will also require further investigation.

The copper results show a broad spread of anomalies within the Silver Queen and Silver King reverted Crown grants, appearing strongest in sample locations along strike of the known veins. This anomaly response seems to be largely coincidental with the gold results described above.

There is a broad, moderate to strong zinc and lead anomaly within a recent clear-cut north of the Copper King and Silver King reverted Crown grants. Granodioritic outcrops dominate the landscape within the anomaly area, so at this time it is difficult to determine the nature of the response and anomaly.

Soil anomalies within the grid over the ZAP and WSW mineral occurrences to the southeast are restricted to individual sampling stations with little continuity. The lack of continuity in between individual anomalies in this area may be greatly affected by a heavier till cover which exacerbates the poorly understood geological relationship between the two showings. More sampling would be recommended when additional bedrock and mineralization information can be gathered to outline a more effective grid design for the area.

#### 6.2.4 ROCK SAMPLING AND PROSPECTING RESULTS AND INTERPRETATION

During the 2018 season, an extensive array of underground and exploratory development was identified by prospecting teams. However, while visiting the Grand Forks archives in between work programs, it was determined that a greater amount of development had occurred at the turn of the 20th century than this initial cursory phase of field work assessed. As a result, additional prospecting was recommended to compliment the 2019 soil sampling work. The catalogue of underground and exploratory workings discovered over both seasons of prospecting are highlighted in Figure 14. Most of the workings were located within the boundaries of reverted Crown grants, with a few exceptions described below. The Silver King, Silver Queen, Black Bear and Big Raymond have an abundance of workings within the reverted Crown grants, but the Juditta mineral claim had the greatest volume of workings out of all the turn of the century mineral claims.

A total of 44 various rock sample types, 15 from 2018 and 29 from 2019, were collected while prospecting. The gold and silver results of all samples are identified in Table 3 and the location details for each sample are highlighted in Figure 11. Even though the gold values from the 2018 samples are low it is important to reinforce that the selected sampling is not representative of the material being mined. Silver results from grab\* samples collected from the Silver Queen waste dump and a shaft which Warkentin (2014) identified as the C.P.R. shaft within the CN mineral claim contained 38ppm and 81.56 ppm Ag respectively (Figure 11). \*The reader is cautioned that grab samples by their very nature are selective and not representative of the material being evaluated

The precious metal results from several target areas from 2019 are quite promising. Of significant interest are grab\* samples that assayed 23.03 and 10.89 ppm Au associated with 973 and 621 ppm Ag, respectively, from the ZAP showing. The results from both samples are noticeably higher than Coffins (1991) results of 7 ppm Au. Several samples collected from the ALCO #6 road cut attempting to duplicate exceptional gold results of 235 and 242 ppm Au were unsuccessful. Bedrock composite chip samples from the showing only assayed up to 1 ppm Au and the most anomalous sample was an oxidized grab\* sample collected from the apron of material exposed from historical blasting on the ALCO #6 showing assayed 7.17 ppm Au and 12ppm Ag. Additional sampling from the ALCO #6 showing is needed to identify the source of highly anomalous historical assay results.

\*The reader is cautioned that grab samples by their very nature are selective and not representative of the material being evaluated

A considerable discovery occurred on the last field day that adds significant merit to the overall prospectivity of the Broken Handle project. The Author and members of the soil team stumbled upon the remnants and principal area of John Morrell's exploration and mining camp. The Author believes the area, which has no MinFile information and located halfway down the shared boundary of the Juditta mineral claim and Big Raymond reverted Crown grant, hasn't been identified by any exploration group since the 1920's or 30's. (Figure 10).

The series of workings were unmistakably the locus of John Morrell's prospecting and mining activities at the turn of the century and from a cursory evaluation, a minimum of 7 shafts, test pits and a main adit were developed into a multi-meter wide ENE trending vein(s). The poly-metallic veins are hosted in the Harper Ranch Group of rocks at the main site and laterally extend east into an intrusive phase of the Middle Jurassic syenite up to an estimated strike length of 250 m. Although heavily overgrown, the workings are the most developed on the Property and the material and ore extracted from these workings are likely those where the exceptional grades reported in the historical literature are located. Several grab\* samples were collected from shafts waste piles that contained highly appreciable values of silver that ranged from 1 to 363ppm.



Gold results from fire assay ranged from 0.05 to 0.53ppm, however, it is important to emphasize the limited time used to evaluate this exciting new discovery in the Juditta claim and that samples were collected from waste dumps and are not representative of the primary economic material from the site.

The discovery of John Morrell's camp and the extent of activity within the Juditta mineral claim and surrounding reverted Crown grants require a more detailed evaluation than the current project timeline and budget permitted. This area should be considered a high priority exploration target for any subsequent work program.

\*The reader is cautioned that grab samples by their very nature are selective and not representative of the material being evaluated

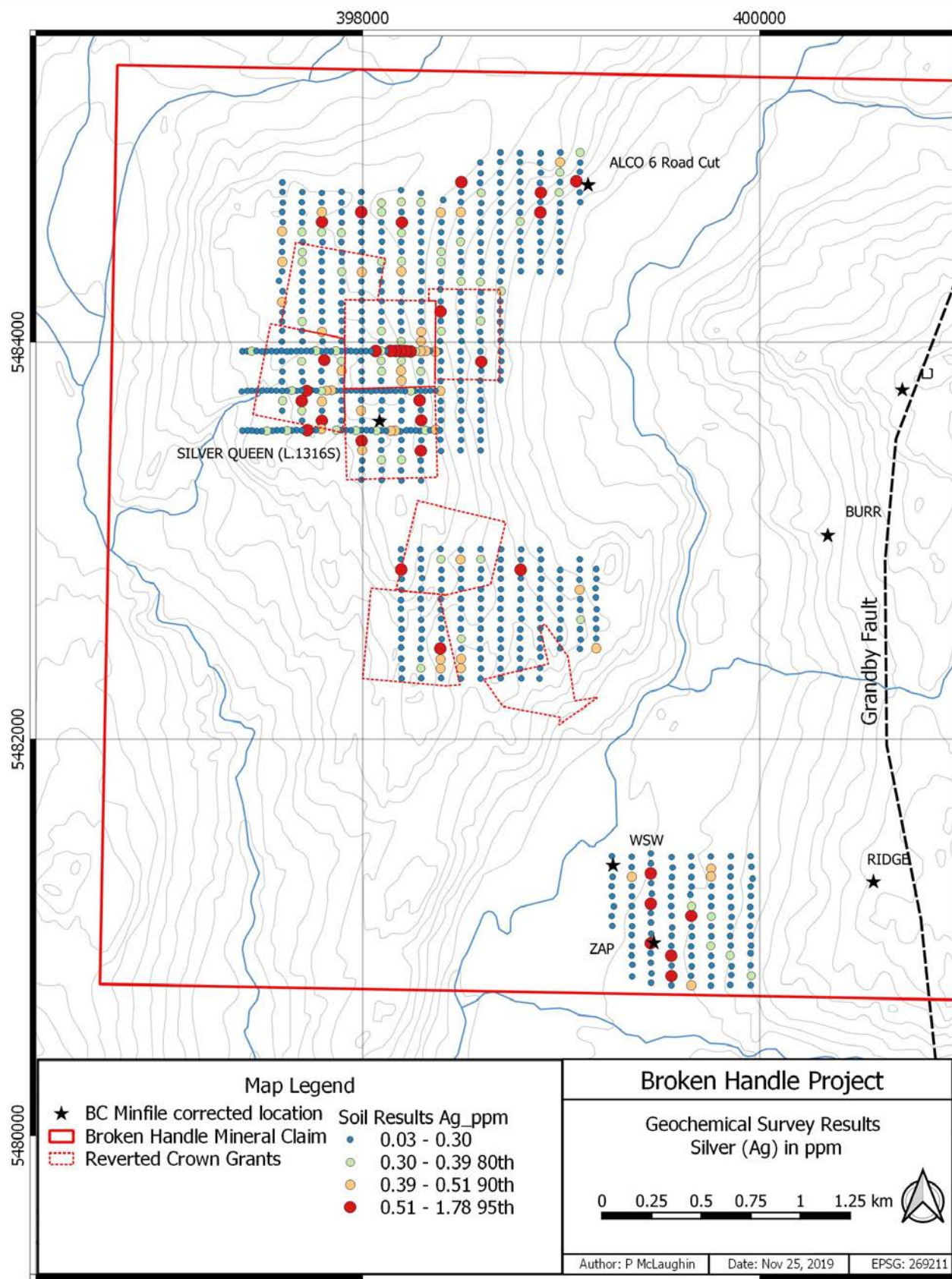


Figure 5: 2018 and 2019 Soil results for Silver (Ag)

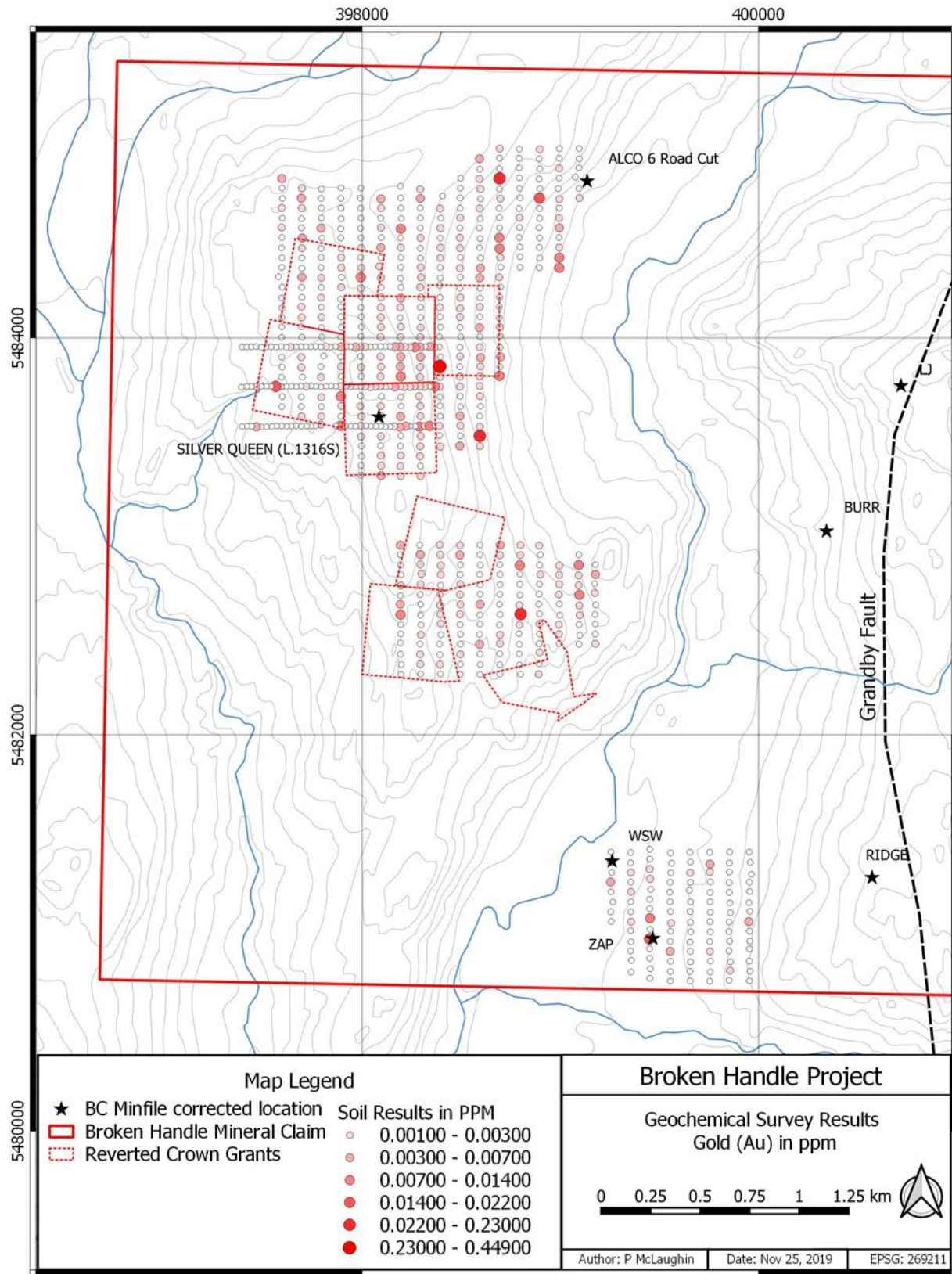


Figure 6: 2018 and 2019 geochemical results for Au



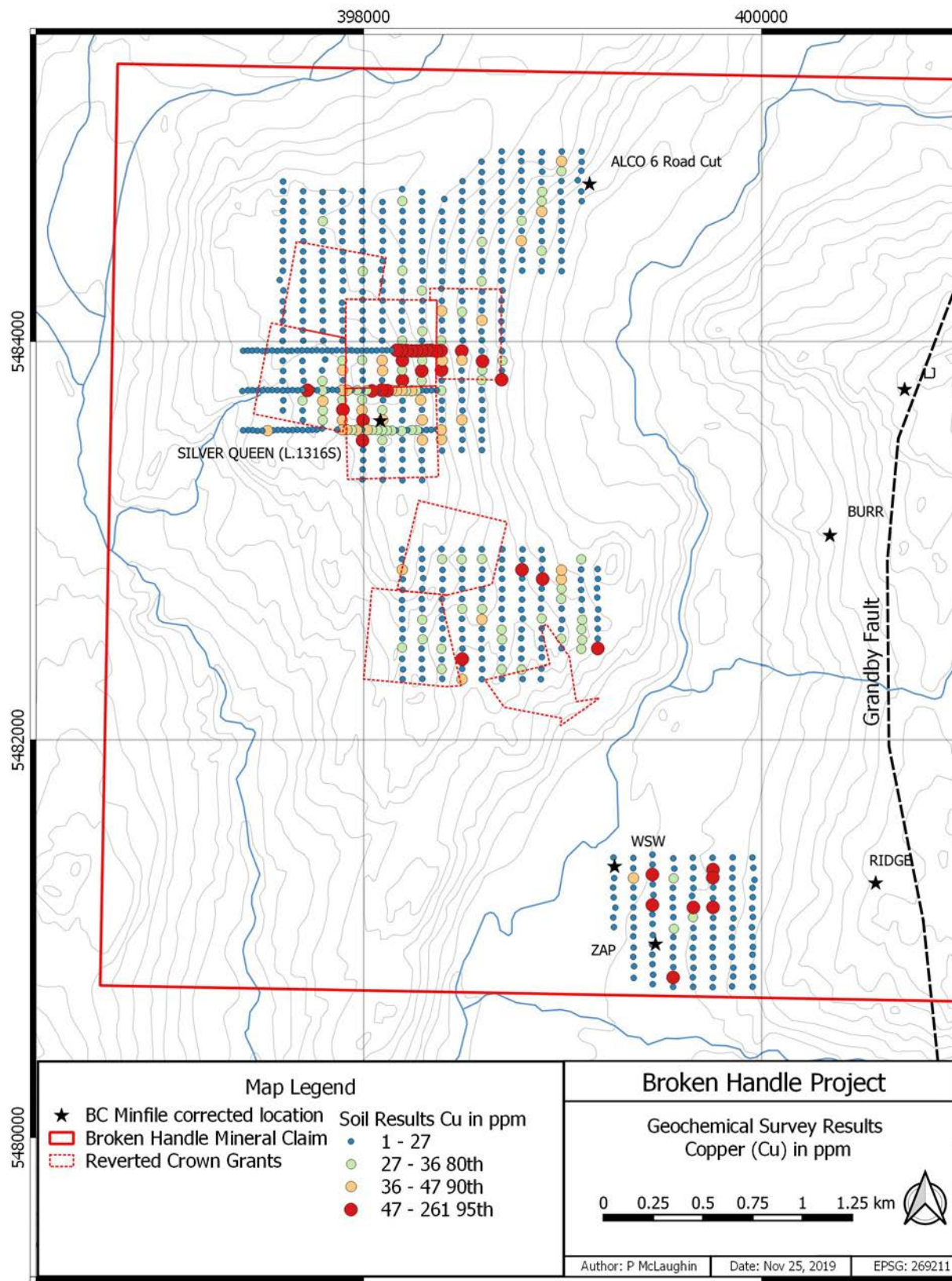


Figure 7: 2018 and 2019 geochemical results for Cu

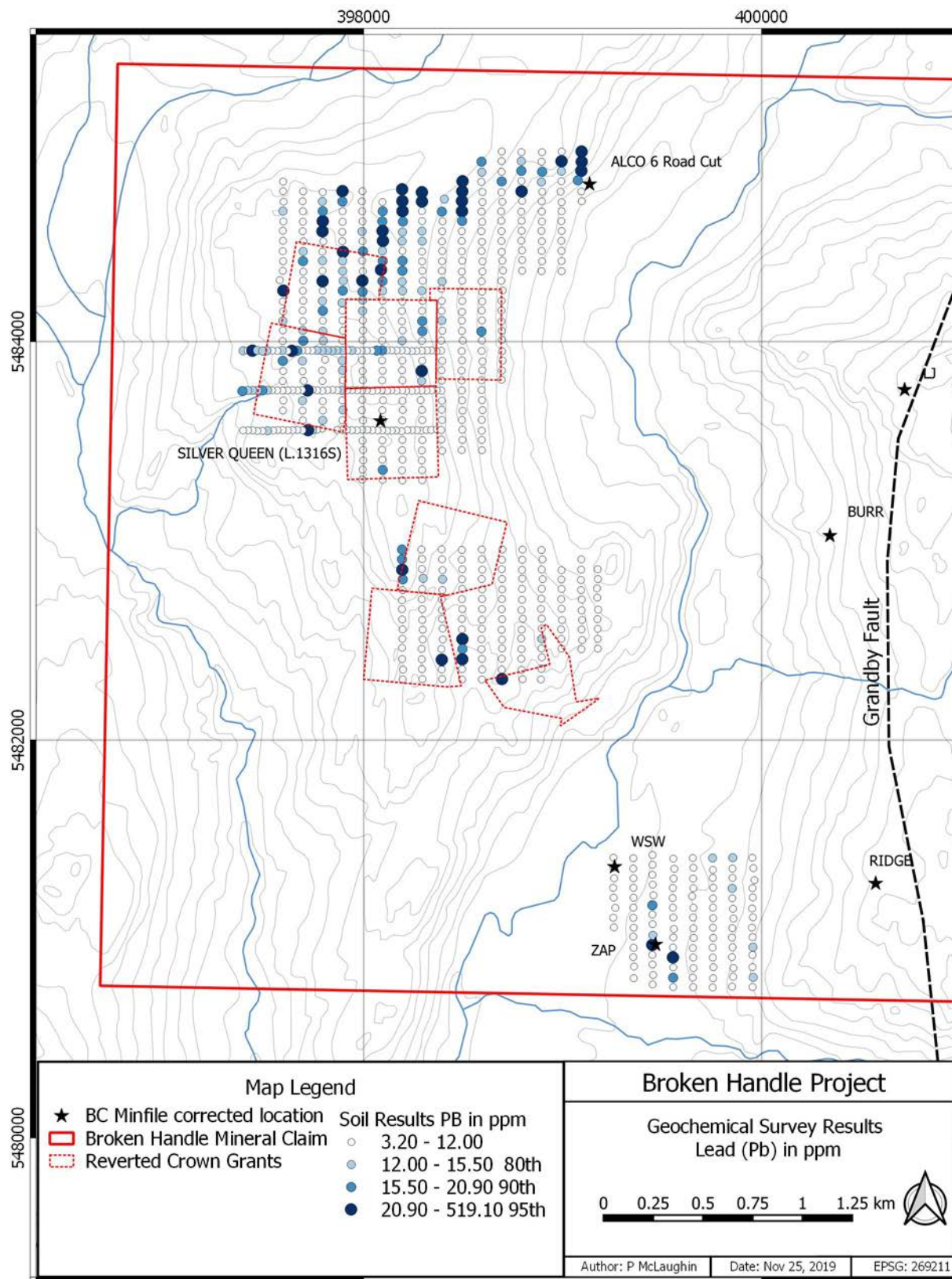


Figure 8: 2018 and 2018 geochemical results for lead (Pb)



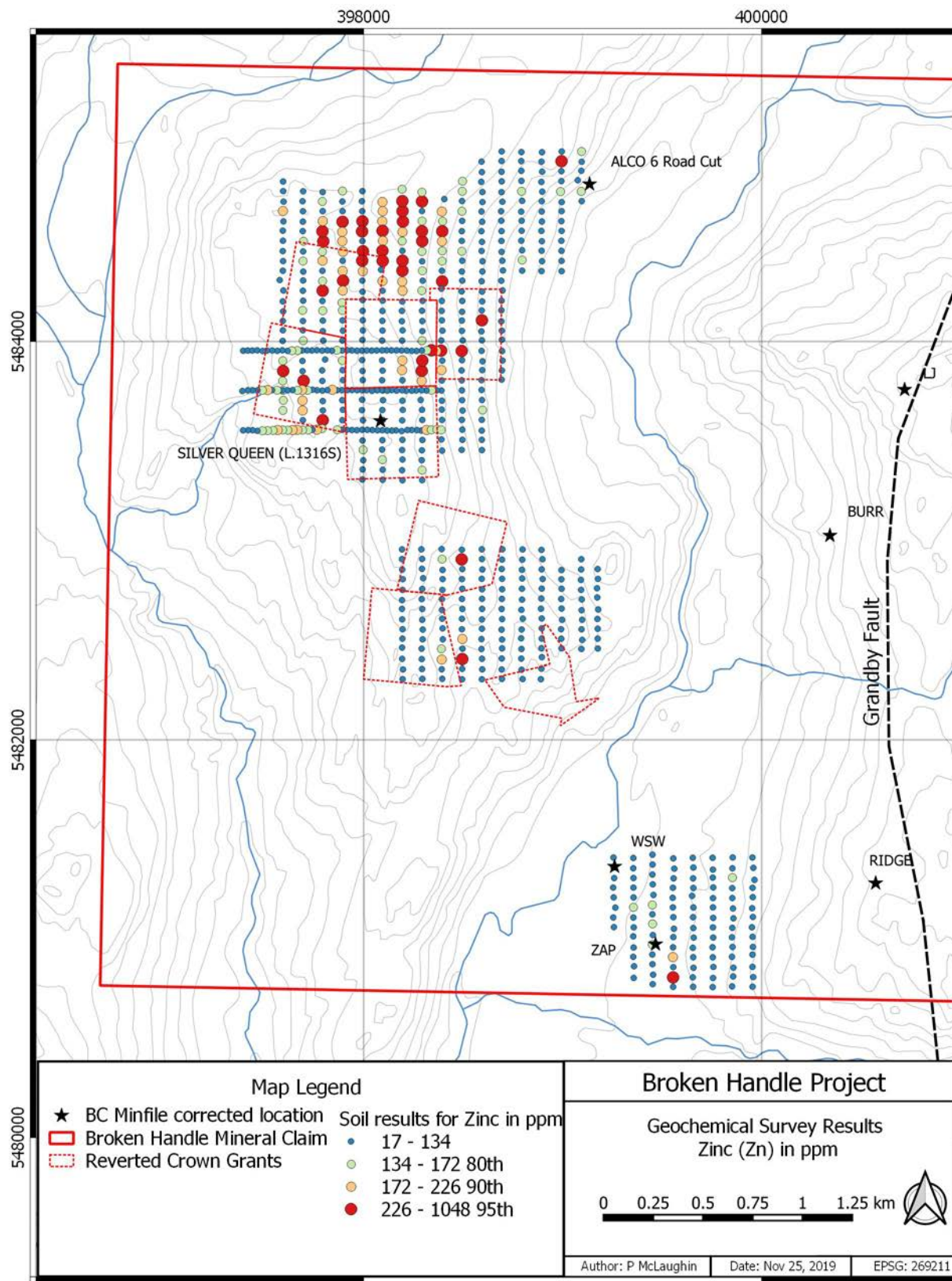


Figure 9: 2018 and 2019 geochemical results for Zinc (Zn) in ppm

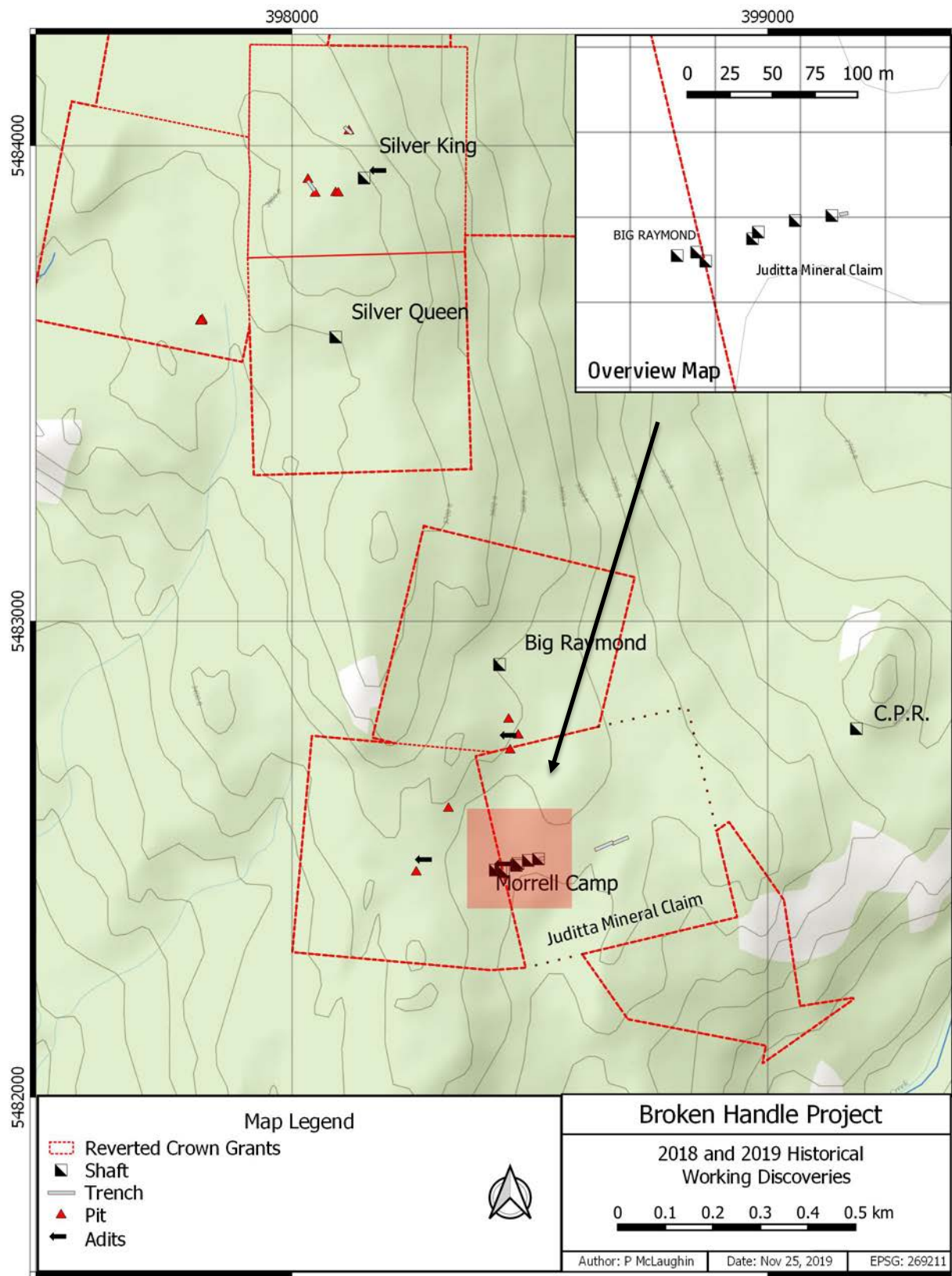


Figure 10: Level of development and historical work within boundaries of the Morrell Group

Table 3: Table of base and precious metal results for 2018 and 2019 rock samples

2018 Samples	Type	Au_ppm IMS117	Ag ppm IMS117	Cu ppm_ IMS117	Pb ppm IMS117	Zn ppm IMS117
1751912	grab	0.143	0.73	11.1	78.6	35
1751913	grab	0.075	58.6	15030	8.6	95
1751914	grab	0.02	4.32	196.5	6.5	37
1751915	grab	0.056	1.26	93.2	4.9	25
1751916	grab	0.022	0.79	88.8	7.9	37
1751917	grab	0.001	0.78	235.6	5.6	53
1751918	grab	0.002	0.08	13.2	0.9	11
1751919	grab	0.162	81.56	4798.7	13900	112
1751920	grab	0.007	6.62	280.5	209.1	81
1751921	grab	0.001	0.24	52.2	6.3	76
1751922	grab	0.001	0.74	270.4	8.4	31
1751923	grab	0.043	38	1178.5	23.2	59
1751924	grab	0.002	0.35	85.8	3.6	32
1751925	grab	0.027	7.83	1133.9	10.3	70
1751926	grab	0.012	0.45	6.8	5.3	17
2019 Samples	Type	Au ppm FA and Met Scrn	Ag ppm ICP140	Cu_ppm ICP-140	Pb ppm ICP140	Zn ppm ICP140
1069520	grab	0.022	12	3080	<50	30
1069521	grab	0.097	63	15320	<50	120
1069522	grab	0.101	17	650	1010	190
1069523	grab	0.031	32	1430	1070	200
1069524	grab	0.057	12	530	620	50
1069525	grab	0.043	6	270	330	100
1069526	grab	0.97	6	170	730	13990
1069527	float	0.044	7	3070	1570	170
1069528	0.4m cont c hio	0.01	1	10	420	40
1069529	0.5m cont ship	0.009	1	10	380	100
1069530	grab	0.021	1	70	630	180
1069531	grab	23.03	973	520	360	9740
1069532	grab	10.89	621	370	570	9520
1069533	grab	0.094	8	3110	800	110
1069534	grab	0.101	1	500	760	30
1069535	float	0.01	<1	40	560	60
1069536	grab	0.031	3	120	410	140
1069537	grab	0.449	315	15780	200	860
1069538	grab	0.405	234	2680	150	180
1069539	float	0.477	11	1410	850	640
1069540	0.05 m chip	1.06	3	40	290	400
1069541	grab	7.17	12	150	310	5680
1069542	grab	0.05	1	30	500	90
1069543	grab	0.05	342	630	<50	36560
1069544	grab	0.53	363	6160	60	42350
1069545	grab	0.43	44	7910	60	1.13
1069546	grab	0.05	30	320	60	1.392
1069547	grab	0.05	1	20	280	0.011
1069548	1m cont. chip	0.23	5	50	590	0.008

\*The reader is cautioned that grab samples by their very nature are selective and not representative of the material sampled.



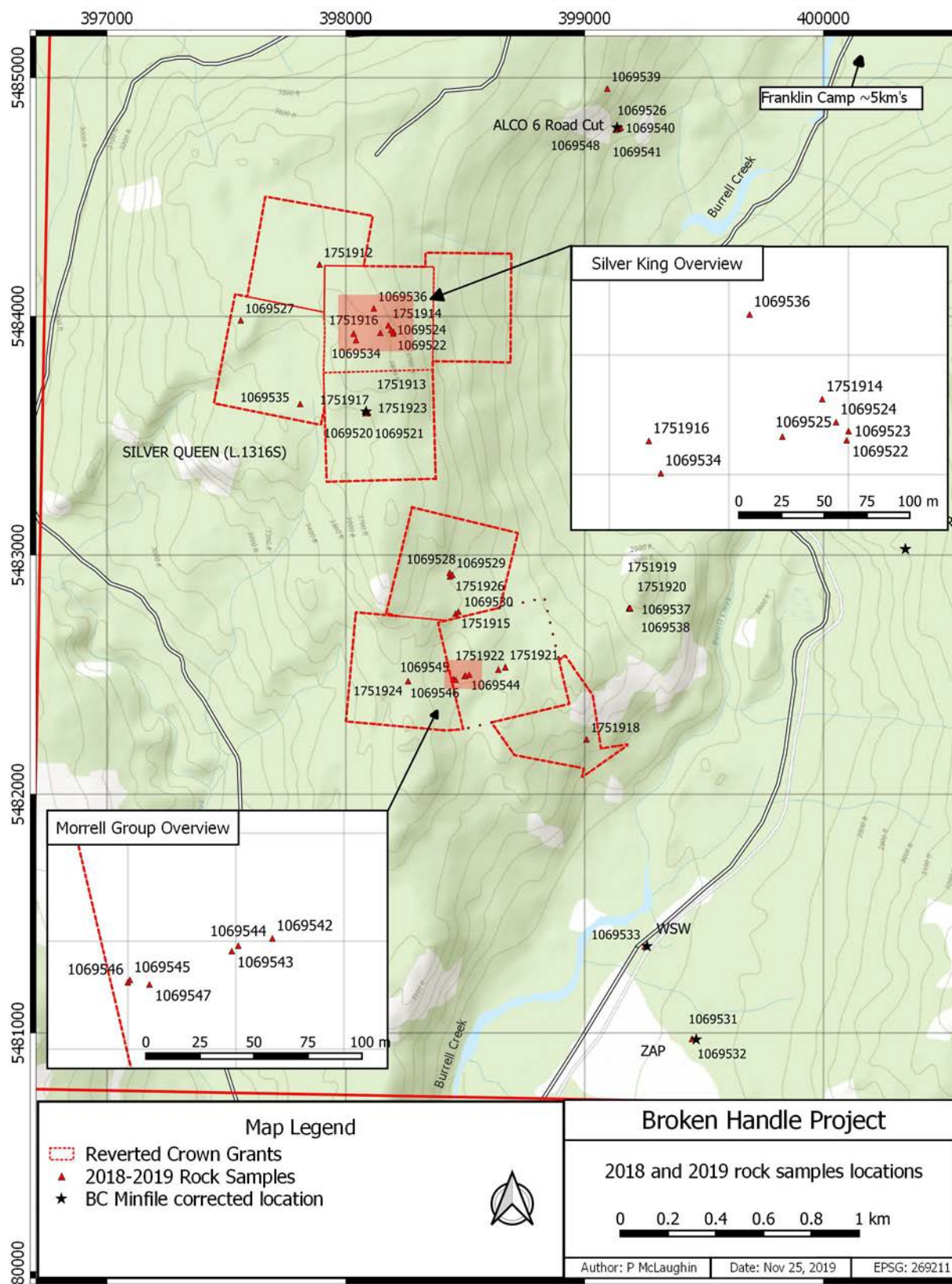


Figure 11: 2018 and 2019 rock sample locations within Property Area (with inset for Silver King and Morrell Group)

### 6.3 MINING HISTORY AND PRODUCTION

No historical production records exist, nor is the Author aware of any past-producing mines within the Broken Handle Project and tenure area. Exploration and development activity within the region originated in the Franklin Camp at the end of the 19th century with the discovery of the Union and Homestake veins. As early as 1901, the Banner Vein had seen development, but it wasn't until the discovery of the Union Vein in 1913, after a drillhole was bored to test the silver and lead potential of the segmented vein near existing workings identified elevated gold and silver values in a silicified pocket, that significant attention was paid to the area. Table 4 highlights production numbers from producing deposits in the Franklin Camp.

\*Cautionary Note: The content of this section is for information purposes only. A Qualified Person has not verified the sampling, analytical and other test data underlying this historical production information.

Table 4: Historical Production from the Franklin Camp

Mine	Years of Operation	Production (metric tonnes)	Gold Production (ounces)	Historical Grades
Union Mine	1913-1989	122,555	55,525.0	14.1 g/t Au, 353 g/t Ag, 0.2% Zn, 0.1% Pb
Maple Leaf Mine	1915-1916	36	2.0	1.7 g/t Au, 172 g/t Ag, 7.6% Cu
Homestake Mine	1940-1941	453	223.0	15.3 g/t Au, 30.0 g/t Ag, 0.12% Zn
McKinley Mine	1949	132	2.0	0.47 g/t Au, 215 g/t Ag, 17.1% Zn, 11.2% Pb

\*BC Minfile Production Reports

## 7. GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 REGIONAL GEOLOGY

The oldest rocks in the region are high-grade metamorphic rocks of the Grand Forks or Monashee Gneissic Complex. They are distinctively exposed above the Granby River valley to the east along ridges and mountain tops and represent the basement rocks exposed in the footwall of the major, normal, north-trending Granby Fault that is described in greater detail below (Figure 12).

Stratigraphically above the gneissic basement rocks and more prevalent north of the Property in the Franklin Camp, are Late Paleozoic metasedimentary quartzites, chert, and argillites, the latter of which Drysdale (1915) observed plant impressions, and metavolcanic tuffs and various altered equivalents of the Harper Ranch Group. The Harper Ranch group of rocks are geological equivalent to the Franklin Group identified by Drysdale (1915) in the Franklin Camp as well as the Brooklyn Formation from the Greenwood Camp. This Late Paleozoic succession is directly related to economically significant veins in the Franklin Camp and has remarkable stratigraphic and

lithological similarity to the Carboniferous and Permian Anarchist Group in adjacent regions and the Triassic Brooklyn Formation in the Greenwood Area, which are equally fundamental hosts to economic deposits in their respective areas.

The Harper Ranch Group rocks are intruded by a series of Middle Jurassic intrusive phases of the Nelson Plutonic Suite that are composed dominantly of granodiorite, lesser quartz-diorite and less commonly granite (Figure 12). This suite of intrusive phases ranges from massive and equigranular to porphyritic with large, subhedral, beige to pink feldspar phenocrysts in a medium- to coarse grained granodiorite matrix.

The Nelson plutonic rocks are intruded by Late Cretaceous granites of the Okanagan Batholith that form the primary axis of the nearby ranges. The Late Cretaceous granites, similar to rocks farther east defined by Little (1960) as the Valhalla plutonic rocks, are difficult to distinguish from granitic rocks of the Nelson plutonic suite.

The youngest intrusive rocks in the region are alkalic to sub-alkalic plutonic rocks of the Middle Eocene Coryell Intrusions that underlie a large part of the region but are dominantly restricted to the Granby and Kettle River faults. These intrusions range from coarse-grained pink syenite with less than 10% biotite/hornblende to coarse-grained monzonite.

Up to several hundred metres of Eocene, dominantly detrital sediments from the Kettle River Formation of the Penticton Group unconformably overlie the Harper Ranch Group and all intrusive phases described above. This unit contains feldspathic grit with rare plant fossil material and crossbedding, ripple marks and small scour structures which indicate a shallow-water or alluvial fan deposit (Drysdale, 1915). Clasts and detrital material within this succession are dominated by the material from the underlying Harper Ranch Group, however Caron (2005) identified clasts of mafic alkalic intrusions of the Averill Plutonic Complex for which Drysdale (1915) identified as Eocene in age. Subsequently, K-Ar dating by Keep (1989) indicates Jurassic ages.



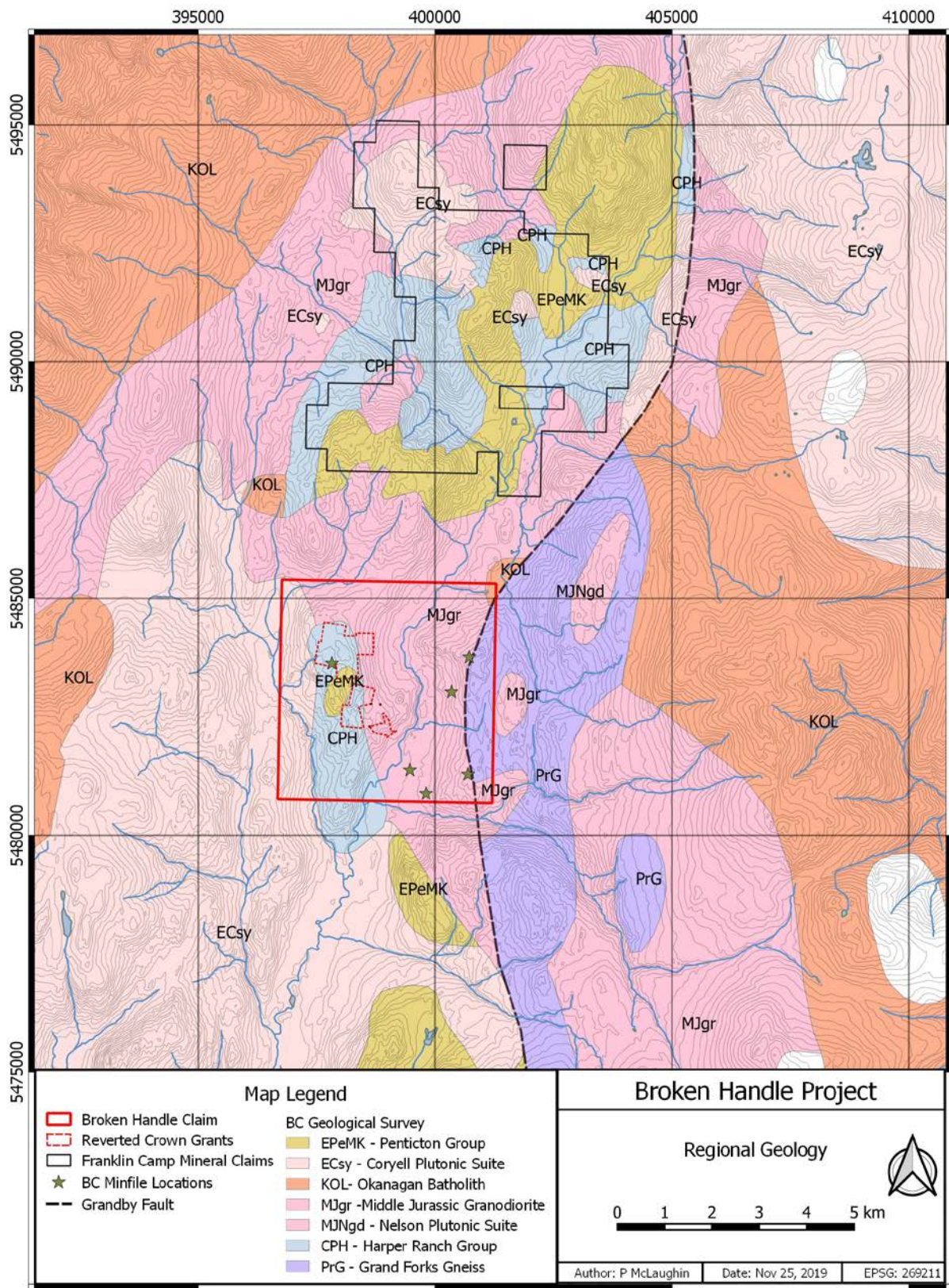


Figure 12: Broken Handle Project regional geology

The Averill Plutonic Complex, located solely within the Franklin Camp, comprises five primary phases of mafic alkalic intrusions ranging in composition from pyroxenites to syenites that are spatially associated with mineralization in the camp. No exposures of mafic alkalic intrusion of this type are identified within the Property claim area.

The Harper Ranch Group and Kettle River Formation are contemporaneously overlain, with unconformable relationships identified locally, by the Eocene Marron Group volcanic rocks that vary in composition from alkalic basalt to trachyte and range from well-banded tuffs to blocky tephra flows (Drydale, 1915 and Figure 12). The Marron group of rocks outcrop at higher elevations across the Property or at the top of depressed graben structures.

The major structures in the region are dominated by north- and northwest trending, shallow dipping normal faults indicating a period of extension during the Tertiary Period in southern B.C. The faults and graben structures within the valley played a large role in the distribution of intrusive bodies and related mineralization.

## 7.2 PROPERTY GEOLOGY

The 2098.33-hectare tenure area comprises only a small sector of the region and as a result the exposed bedrock geology is limited. The Property is structurally divided by the north-trending, normal Granby Fault where the basement rocks of the Grand Forks Complex are exposed in the uplifted horst of the Granby Fault at the highest elevations to the east (Figure 13).

The hangingwall rocks of the Granby Fault graben are composed predominantly of various intrusive phases of the Nelson Plutonic suite and to a lesser extent syenites of the Coryell Plutonic suite. Overlying these intrusives, covered by the Morrell Group of reverted Crown grants, lies a 5 by 1 km north-south oriented pendant of Late Paleozoic sedimentary rocks of the older Harper Ranch Group and younger Marron Group volcanic rocks.

The Eocene-aged Marron Group of undivided volcanic rocks that overly the Harper Ranch group have been strictly observed within the Morrell Group of mineral claims and reverted crown grants and is reflected in the publicly available Government spatial data (Figure 13).

The west-dipping normal Granby Fault is the main structural feature controlling mineralization within the tenure area and studies conducted by Laberge and Pattison (2007) indicate depth



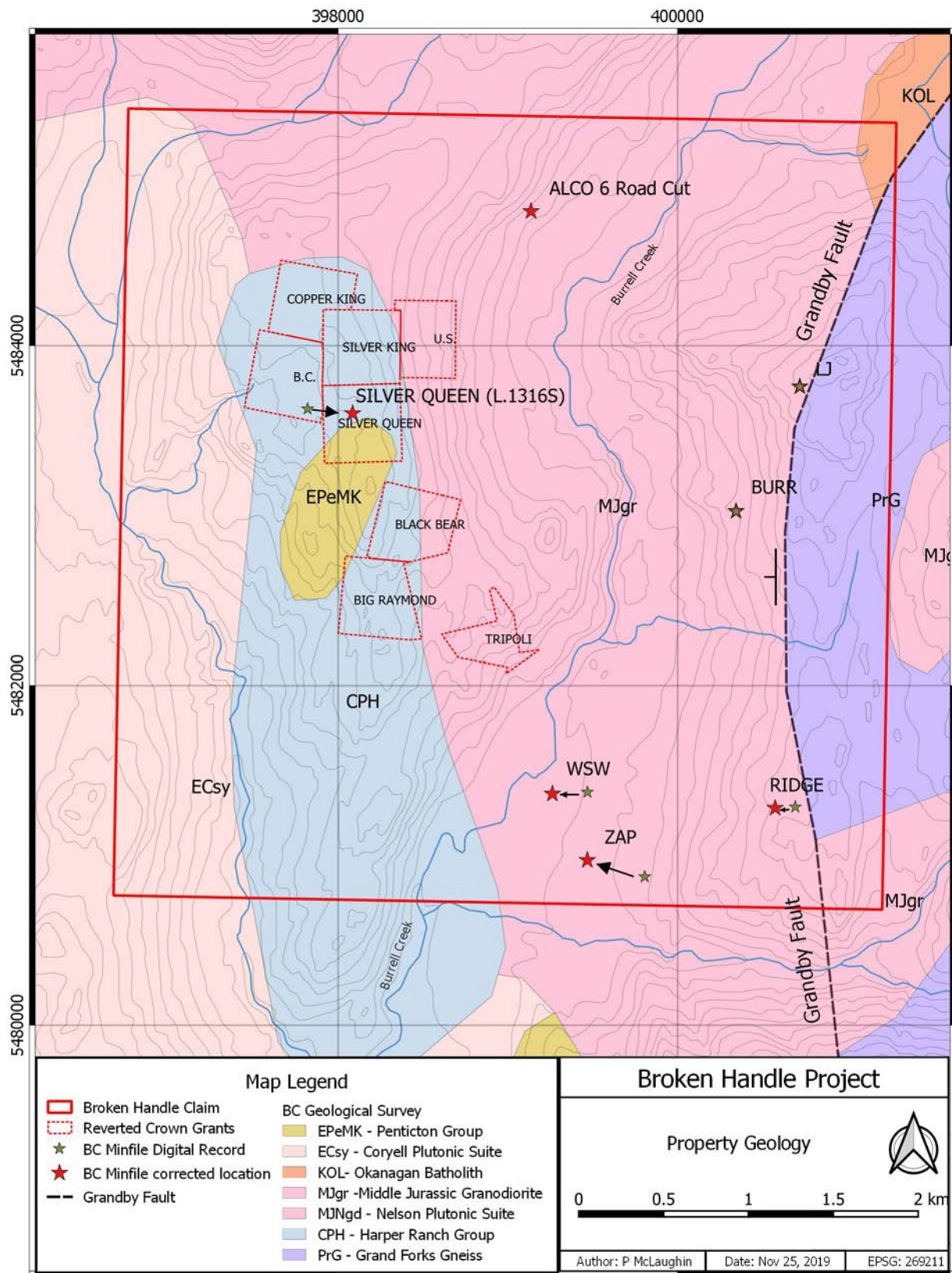


Figure 13: Property geology map of the Broken Handle Project including corrected location details of known BC Minfile occurrences within the tenure area.

contrasts along the fault are as significant as 5 kilometres in places. The Granby Fault juxtaposes Coryell intrusive rocks within the hangingwall to high-grade metamorphic rocks of the Grand Forks Complex of the footwall within the tenement boundaries. This high-level brittle structure is marked by brecciation, localized chloritic alteration and minor splays or various attitudes that are more prevalent north of the Property in the Franklin Camp.

Mineralization and mineral occurrences west of Burrell creek observed within historical workings appear to be related to steeply dipping E-W polymetallic sulphide-bearing shear and fissure veins hosted within a variety of green to limey green metasedimentary rocks of the Harper Ranch and Penticton Group rocks. Contact hydrothermal alteration, where present, occurs in the form of silicification and skarn-like mineral assemblages where lodes are in direct contact with limey horizons within Harper Ranch Group rock types.

### 7.3 MINERALIZATION

Several styles of mineralization have been identified within the Property boundary that are characterized by six Minfile occurrences. B.C. Minfile occurrences contain geological, location and economic information on a collection of metallic, coal and industrial minerals as well as deposits, showings and other forms of developed projects across the province of British Columbia. The positional information on each occurrence is often to some degree inaccurate and they have to be officially surveyed. The B.C. Minfile occurrence location information on the property have positional discrepancies of up to 400 metres for some showings however, after reviewing historical reports and maps, the Author is greatly confident in determining the locations of the Silver Queen, ZAP, ALCO 6, WSW and RIDGE showings. A description of MinFile occurrences on the Property are described herein and the locations of which are illustrated in Figure 13.

**Silver Queen (L.1316S) (082ESE108).** A 1.5 metre quartz vein is exposed on surface containing pyrite, chalcopyrite and galena. A shaft reported to be 22.8 metres deep was sunk on the vein but is full of water. The claims reverted shortly before or after World War Two. The Silver Queen is incorrectly located within the B.C. MinFile records and its location is 275 m farther ESE. The Silver Queen is characterized as a Ag-Pb-Zn +/- Au polymetallic vein. New location 398085mE/548360mN (EPSG 26911).

**LJ (MINFILE No. 082ESE178)** – Magnetite, pyrite, galena and chalcopyrite occur in shattered quartz veinlets in sheared and silicified granodiorite. Tourmaline and native gold have also been noted. Grab\* samples from the area in 1992 by Coffin assayed 9.72 g/t Au and 2.62 g/t Au (Coffin, 1992). The LJ Minfile is characterized as a Ag-Pb-Zn +/- Au polymetallic vein.

\* The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the mineral potential being evaluated

**BURR** - Pyrite, sphalerite and chalcopyrite occur in a highly-fractured east-west trending zone in porphyritic granodiorite. Assay data has not been located.

**RIDGE** - A 250 m x 500 m siliceous/argillic alteration zone is found in intrusive rocks near the Granby fault. A series of narrow pyritic quartz veins flank the zone with grab\* samples assaying up to 1.99 g/t Au with lead and copper (Coffin, 1992). 20 veins have been discovered to date. New location 400573mE/5481279mN.

\*The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

**ZAP** – A blackened and heavily oxidized stringer pod of chalcopyrite, galena and sphalerite mineralization with smithsonite and minor pyrite occurs within intermediate volcanic rocks. The showing consists of a 40 cm long vein approximately five up to 10 cm-wide pods of polymetallic sulphide mineralization. Grab\* samples have assays with results up to 6.27 g/t Au and 245.9 g/t Ag associated with elevated lead, zinc and copper numbers (Coffin, 1992). New location 399465mE/5480975mN.

\*The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

**WSW (082ESE177)**– Chalcopyrite, bornite, chalcocite, pyrite, galena and sphalerite occur in quartz-calcite veins within greenstone/limestone. Native copper has been noted along joint planes. Grab\* sample assays have run up to 0.66 g/t Au, 87.6 g/t Ag, 1.48% Pb and 5.66% Zn (Coffin, 1992). New location 399261mE/5481362mN.

\*The reader is cautioned that grab samples by their very nature are selective and therefore not representative of the material being evaluated

## 8. DEPOSIT TYPES

Mineralization and their associated deposit models within the region, and the primary focus for current work in the tenure area, is summarized below and largely focuses on the detailed studies of the Franklin Camp and Burrell Creek area by Drysdale, and other subsequent workers within recent provincial government assessment reports.

Drysdale (1915) and others recognized that the economic mineralization within the region can be broadly classified into four categories, of which the three listed below are within the Broken Handle claim boundary. The deposit types described below are referenced from British Columbia Mineral Deposit Profiles, which is a summary of the types of mineral deposits in B.C. and includes a description of host rocks, mineralogy, alteration, tectonic setting, association, genetic models and exploration guides along with economic examples with grade and tonnage.

In order of historical importance, these four types are present on the Property:



1. **I05-** Polymetallic Veins Ag-Pb-Zn +/- Au: Clastic metasediment-hosted silver-lead-zinc veins along with silver/base metal deposits. The primary economic fissures and sheared lodes within the Property boundaries tend to have steeply dipping geometries predominantly in an east-west direction, have formed within structurally controlled, high-angle zones to the Granby Fault in the late Paleozoic Harper Ranch Group of rocks. The timing of mineralization does not appear to be directly related to intrusive rocks, may have formed after the deposition of the Kettle River Formation and during the events relating to the Marron volcanic flows. The Union Mine in the Franklin Camp and the reverted Crown grants in Morrell's Camp are characteristic of this type.
2. **K01:** Contact metamorphic (Skarn): Copper-lead-zinc-silver-gold deposits. Limestone and marble lenses within the Anarchist Group in contact with intrusive bodies of the Paleozoic rocks afford skarn development. Peatfield (2001) has referred to these types of mineralized occurrences as "Poly-metallic skarn" types. Ray (1995) describes these contact-driven metasomatic deposits as copper-sulphide dominant that are genetically associated with skarn-like gangue minerals where felsic plutonic rocks are in contact with continental margin carbonate sequences similar to the Paleozoic Harper Ranch Group.
3. **I01-** Au Quartz Veins: Eocene epithermal gold mineralization which characterizes the RIDGE, BURR and LJ Minfile mineral occurrences east of Burrell Creek. These types display quartz veining with some degree of brecciation or fracturing associated with pyrite mineralization and primarily occur along north to northwest trending faults related the Granby fault or subsidiary splays.

## 9. CURRENT EXPLORATION

The Issuer has conducted no exploration on the Property since their acquisition.

## 10. DRILLING

No current drilling has been conducted on the Property that the Author is aware of.

## 11. SAMPLING METHODOLOGY, PREPARATION, ANALYSIS AND SECURITY

### 11.1 SAMPLING PROCEDURES AND SAMPLE SECURITY

Soil sampling team members were assigned predefined sample locations in UTM co-ordinates that were pre-loaded to their individual GPS unit. Location information was captured using Garmin 64s instruments. Soil samples were collected by digging a shallow hole through the vegetative cover and B horizon using Geotools. An approximate 300 to 500-gram sample of the B horizon, or the material most representative of the B horizon was placed into a Kraft paper bag

and labelled with the line, station and a unique ID number. Duplicate and replicate samples were collected and inserted in to the sampling stream at a rate of 2.5% each.

Due to the effects of recent logging and heavy equipment work within the sampling grid, samplers were provided a little latitude and could deviate from the planned site up to a circular radius of 12 m from the proposed site if a less disturbed soil could be collected otherwise.

Soil station ID and number, 3D co-ordinates (UTM NAD83, Zone 11N also identified as spatial reference system EPSG 26911), soil type, sample depth, colour, moisture, percent clay, silt, sand and rocks, slope direction and angle, cover, parent material type, bedrock lithology and general comments comprise the list of categorical data captured during the sampling process at each site. Each soil sample site was marked by a piece of flagging tape labelled with the appropriate sample number that was hung on the nearest shrub or tree.

Approximately 2 kg of material was collected and placed in a polyethylene bag for all rock samples. The site was marked with a string of flagging labelled with the sample numbers hung from a nearby shrub or tree and an additional piece of flagging tape marked with the sample number was wrapped around a representative specimen of the collected samples and placed back on the ground where it was collected. A general lithological description accompanied each sample, when possible, along with 3D co-ordinates (EPSG: 26911) and comments on any surrounding structures.

All rock and soil samples were brought back to camp outside of Grand Forks, unpackaged, organized for completeness and re-packaged into polyethylene bags where the sample sequence of the contained material was written on the outside of the bag.

The polyethylene bags of samples were further packed in standard rice bags in sequential order and appropriately labelled with the MSA Labs address in Langley and the CMG office address in Vancouver.

To maintain a best practice protocol for sample chain of custody, rock and soil samples from both 2018 and 2019 work programs were driven from Grand Forks and hand-delivered, along with sample submittal and requisition forms, by CMG personnel to MSA Labs receiving door in Langley.

It is of the Authors opinion that the sampling procedures, selected sample medium, sample preparation and analytical procedures are appropriate for the work that was conducted.

## 11.2 LABORATORY PREPARATION AND ANALYTICAL PROCEDURES

MSA Laboratories at Unit 1, 20120 102<sup>nd</sup> Avenue in Langley is an ISO 17025:2005 accredited laboratory with 25+ years of experience analyzing geological materials. MSA Labs holds no direct or indirect interest in the Property.

Soil samples from both seasons of work were prepared using MSA Labs prep PRP-757 where samples are dried and screened to 80 mesh. The plus (+) fraction is discarded and the minus (-) fraction is sent for analysis. All samples were analyzed by code IMS-117 which requires that a 20-gram subsample is collected from the minus fraction and subjected to a dilute aqua-regia digestion of hydrochloric and nitric acids and analyzed using an ICP-MS and ICP-ES for a suite of 39-elements (Figure 14). This dilute digestion ensures the soil sample matrix of refractory minerals remain undissolved creating a better anomaly to background contrast for anomaly recognition.

**Multi-element ICP-MS and ICP-ES (39 elements) Trace Level – Aqua Regia**

DETECTION RANGE (IN PPM UNLESS OTHERWISE NOTED)						CODE
Ag	0.05 - 100	Ga	0.1 - 10,000	Sb	0.05 - 10,000	
Al	0.01% - 25%	Hg	0.01 - 10,000	Sc	0.1 - 10,000	
As	0.2 - 10,000	K	0.01% - 10%	Se	0.2 - 1,000	
Au	1 ppb - 25 ppm	La	0.5 - 10,000	Sr	0.5 - 10,000	
B	10 - 10,000	Mg	0.01% - 25%	Te	0.05 - 500	Dilute aqua regia
Ba	10 - 10,000	Mn	5 - 50,000	Th	0.2 - 10,000	IMS-116 0.5g
Bi	0.05 - 10,000	Mo	0.05 - 10,000	Ti	0.005% - 10%	IMS-117 20g
Ca	0.01% - 25%	Na	0.01% - 10%	Tl	0.05 - 10,000	IMS-118 40g
Cd	0.05 - 1,000	Ni	0.01 - 10,000	U	0.05 - 10,000	
Co	0.1 - 10,000	P	10 - 10,000	V	1 - 10,000	
Cr	1 - 10,000	Pb	0.2 - 10,000	W	0.05 - 10,000	
Cu	0.2 - 10,000	Re	0.005 - 50	Y	0.5 - 500	
Fe	0.01% - 50%	S	0.01% - 10%	Zn	2 - 10,000	

Figure 14: MSA Labs IMS-117 analytical suite of elements

Rock samples from 2018 were prepared by code PRP-915 whereby the entire sample is dried and crushed to where 70% of the sample passes screening at 2 mm. Each rock sample was subsequently subjected to two analytical techniques, a multi-element ICP (IMS-117) and metallic screen analysis (MSC-500) detailed below.

1) IMS-117. A 500 g sub-sample was collected from the initial crush and further pulverized using a chromium-steel ring pulverizer where 85% of the subsample passed 75 µm. A 20 g aliquot from the pulp was subjected to a dilute aqua-regia mixture of acids and analyzed by a 39-element ICP-MA and ICP-ES trace level package (Figure 7). No rock samples exceeded the upper limits of detection for this package.

2) MSC-550. A 500 g sub-sample from the initial rock sample crush was sent for metallic screen analysis (MSC-550). Samples are prepared to ensure particle separation, homogeneity and representation by this method which is regarded as a more accurate quantitative tool for metallic minerals, particularly gold, than simple fire assay. The entire 500 g sub-sample is pulverized and screened to 106 µm using a ro-tap assembly. The entire plus (+) fraction, presumably metallic

grains if present, is assayed to extinction by fire assay followed by a gravimetric finish. Two 50 g aliquots from the minus (-) fraction are riffled and submitted to the lab for analysis by 50 g fire assay with a gravimetric finish. Final assays are weight ratioed back to the initial representative sample weight.

Rock samples from 2019 were submitted to MSA Labs with the prep code (PRP-915). However, the majority of samples from this follow up season were noted to have an abundance of polymetallic sulphides. As a result, a 33-element ore-grade ICP package (ICP-140) with a true aqua-regia digestion was used for the multi-element analysis (Figure 15). Two separate precious metal analyses were used on rock samples from 2019. Exploration grab samples from float, small blast pits, adits and trenches were assayed for gold by fire assay using a 30 g fusion size with an atomic absorption spectroscopy (AAS) finish (FAS-111) with detection limits of 0.005-10 ppm Au. Samples assumed to contain elevated precious metals, particularly those from the ALCO 6 high-grade gold occurrence and the workings around the Morell Camp, were subject to a fire assay with a 30 g fusion size and a gravimetric finish (FAS-415) with detection limits of 0.05 to 1,000 ppm Au.

**Multi-element ICP-ES (33 elements) Ore Grade – Aqua Regia**

DETECTION RANGE (IN % UNLESS OTHERWISE NOTED)					CODE
Ag	1 - 1,500ppm	Fe	0.05 - 50	Pb	0.001 - 5
Al	0.05 - 50	Ga	0.005 - 5	S	0.05 - 10
As	0.001 - 10	Hg	0.001 - 5	Sb	0.001 - 5
Ba	0.005 - 5	K	0.05 - 50	Sc	0.001 - 5
Be	0.001 - 5	La	0.005 - 5	Sr	0.001 - 5
Bi	0.001 - 5	Mg	0.05 - 50	Ti	0.05 - 50
Ca	0.05 - 50	Mn	0.01 - 25	Tl	0.005 - 5
Cd	0.001 - 1	Mo	0.001 - 5	V	0.001 - 5
Co	0.001 - 5	Na	0.05 - 50	W	0.005 - 5
Cr	0.001 - 5	Ni	0.001 - 5	Zn	0.001 - 15
Cu	0.001 - 10	P	0.005 - 25	Zr	0.001 - 2

Individual elements available upon request

ICA-6xx\*

\*insert element symbol for (xx).

Figure 15: MSA Labs ICP-140 Multi-element ICP-ES ore grade analysis used for rock samples in 2019

### 11.3 QA/QC

The scale of the work program in 2018 was too small to warrant the development of an internal QA/QC program. That being said, MSA Labs conducts a rigorous series of internal QA/QC lab data verification processes that include using duplicates, industry certified blanks and standards within their testing. MSA Labs internal QA/QC measures incorporate different control samples at a rate of approximately 1 in 12 client samples and are evaluated for accuracy prior to the release of results.

Field replicate and duplicate soil control samples were inserted into the sampling stream at 2.5% each during the 2019 work. Replicate samples were collected from a separate site approximately 1 meter away from and utilized the exact same collection procedures as the site being replicated. Duplicate samples are characterized by the sampler collecting a representative B horizon sample from the same site as the sample being duplicated. This level of quality assurance would only qualify the reproducibility of soil results and it is of the Author's opinion that the rigorous internal QA/QC practices already employed by MSA Labs are appropriate for the early exploration stage of the Broken Handle Project.

## **12. DATA VERIFICATION**

No data verification procedures were applied by the Author of this report. Very little modern exploration work has been conducted on the Property and the majority of the historical, late 19<sup>th</sup> to early 20<sup>th</sup> century workings in the Morrell Camp are heavily overgrown and collapsed and the associated mineralization is poorly exposed. Most of the historical exploration and development work are assumed to have been conducted utilizing best industry practices at the time. It is of the Author's opinion that the adequacy of the data is of sufficient quality for the purposes of this report.

## **13. MINERAL PROCESSING AND METALLURGICAL TESTING**

The Broken Handle Project is a very early-stage exploration project and metallurgical studies are not deemed necessary. However, Warkentin (2014), a Metallurgist and Mineral Process Engineer and a registered Member of the Association of Professional Engineers and Geoscientists ("APEGBC") at the time of his reporting, is a "Qualified Person" in relation to metallurgical testing and evaluation programs by NI 43-101 standards, conducted a limited preliminary testing program on samples from the Franklin Camp and select material from within the tenure area. The objectives were aimed at getting current metallurgical data for gold and silver grade to ultimately generate recovery data relative to sample mineralogy.

Warkentin collected 2 samples within the tenure area. One sample collected from the apron of the Silver Queen shaft waste dump and the other from what Warkentin identifies as the 'C.P.R.' claim (Figure 4). The Author could not locate any references to this claim within the historical records, but did visit the sample site and shaft referenced in his report.

Warkentin conducted flotation work on the original pulverized assay pulps to test the samples amenability to simple processing methods and also as a method for assessing assay variability, especially for precious metals. Only the sample collected from the C.P.R. shaft had assay results available for reporting, however, Warkentin determined that base metal recoveries were relatively low which he explained by oxidation and weathering of sulphide-bearing ores. The most



surprising result was gold which showed a strong gold recovery to a rougher flotation concentrate with a calculated head grade of 1800 ppb that was nearly 18 times greater than the assayed grade of 65ppb. This result from the high flotation process, if not spurious, a product of contamination or laboratory error, would be consistent with larger discrete particles of free gold that could be lost in a finer assay digestion. His evaluation revealed new gold potential for the C.P.R. showing.

#### **14. MINERAL RESOURCE ESTIMATES**

No mineral resource estimates of any kind have been undertaken on the Broken Handle Project, nor is such work deemed necessary at this point.

#### **15. MINERAL RESERVE ESTIMATES**

No mineral reserve estimates of any kind have been undertaken on the Broken Handle Project, nor is such work deemed necessary at the point.

#### **16. MINING METHODS**

No studies on mining methods have been carried out

#### **17. RECOVERY METHODS**

No studies on recovery methods have been undertaken on the Broken Handle Project to date.

#### **18. PROJECT INFRASTRUCTURE**

Given the early exploration stage nature of the Broken Handle Project, no studies have been done to summarize the infrastructure and logistics requirements typically required for an advanced project.

#### **19. MARKET STUDIES AND CONTRACTS**

No market studies or contracts have been carried out on the Broken Handle Project.

#### **20. ENVIRONMENTAL, PERMITTING AND SOCIAL OR COMMUNITY IMPACT STUDIES**

No environmental, permitting, and social or community impact studies have been undertaken.

#### **21. CAPITAL AND OPERATING COSTS**

No capital and operating costs studies have been conducted.

## **22. ECONOMIC ANALYSIS**

No economic analyses have been carried out.

## **23. ADJACENT PROPERTIES**

There are no claim blocks adjoining the Broken Handle Project.

## **24. OTHER RELEVANT DATA**

The Author is not aware of any other relevant data or information other than that presented in this report and recorded in Section 28.

### **24.1 DATABASE**

A digital database containing topography, geochemical survey location, sample locations and geological (regional and property) has been prepared by the Author as part of this study. All known historical results within the tenure area have been compiled into a single digital system. This digital database will allow for continued project analysis and serve as a base for the addition of any new exploration data.

The exploration data is available in many different digital format types including Excel, csv or ESRI ArcGIS Shape or MAPINFO Table file formats.

## **25. INTERPRETATION**

There is no current work from the Issuer where interpretations can be drawn in any further detail than those from work conducted by 1218802 B.C. Ltd.

## **26. CONCLUSIONS**

The 2018 and 2019 exploration programs were successful in determining that the Property area is host to an abundance of historical workings designed to develop base and precious metal bearing veins analogous to the Franklin Camp. The reverted Crown grants and Minfile occurrences in the Morrell Group west of Burrell Creek were the primary attraction for staking at the turn of the century, however, it has become readily evident from field investigations around the Morrell Group and new discoveries east of Burrell creek that Property's prospectivity and mineral potential is significantly broader spatially and geologically than initially understood.

The terrain, geochemical survey design and subsequent analyses are an effective tool for delineating poly-metallic veins with multi-element geochemical anomalies lining up well with known occurrences within the Property area. A follow-up program of 1000 additional samples with an identical grid design to the 2019 program should cover the remaining prospective extent of the Harper Ranch Group of rocks beyond the extent of current geochemical coverage in order to identify additional targets hidden under cover. Anomalies and targets identified from these

two phases of work and soil grids detailed within this report, particularly those that are along strike of known workings, should be covered with higher density samples as infill lines along strike of known veins to further delineate their subsurface extents.

The omission of the Morrell Camp within the digital provincial MinFile inventory is the critical factor to this target area maintaining a low profile over the last century, pressing previous operators to focus on less attractive exploration targets within the Morrell group, like the Silver Queen MinFile. The Author feels the discovery of Morrell's camp during the 2019 season of work adds considerable value to the project area and that the likelihood of re-discovering precious-metal-bearing lodes within the tenure area like those described in the historical literature is high.

The veins and fissure systems identified within the Morrell Camp are unique in that the current deposit model suggests that the most prospective target stratigraphy for hosting veins are the Harper Ranch and Penticton Group rocks. The fissures and lodes developed by Morell on the Juditta mineral claim occur at the stratigraphic base of the Harper Ranch Group of sediments and occurs below the contact and extend east into and are hosted within the Middle Jurassic granodiorites/monzonite intrusive suites. All the samples collected from the shaft that Warkentin (2014) identified as the C.P.R claim indicate a significant strike potential of up to 700 meters if the lodes in the Morrell camp and Juditta mineral extend into the Middle Jurassic granodiorite suite.

Analytical results and geological observations from the WSW and ZAP showings discovered in the 1970's east of Burrell Creek indicate that the area is also prospective to host mineralization analogous to the Morrell Camp. The gold results from the ZAP showing are very encouraging, however the extent of surficial material around the showing will necessitate the use of large shovels/mattocs or a small excavator in order to diligently assess the showing in the future.

The structures hosting veins and fissures observed to date may be extensive and of sufficient width to respond well to VLF and magnetic surveys and therefore a test survey is recommended over the Morrell Camp and the Silver Queen and Silver King. If preliminary results look attractive, a larger grid can be draped over the full extent of the Morrell Camp of reverted Crown grants within the scope of the next or a follow up phase of exploration activity.

## **27. RECOMMENDATIONS**

Based on a thorough review of publicly available historical data and results from current work by CMG on behalf of 1218802 described in Section 6.2, a \$113,025 work program comprising additional soil sampling, prospecting and a magnetic-VLF geophysical survey grid are recommended. The scope of work for the recommended budget should entail:

1. B-horizon soil geochemistry surveys by extending existing soil grids beyond current boundaries over prospective terrain in addition to high density infill lines along strike of primary vein occurrences like those within the Morrel Group and Silver King and Queen reverted Crown grants.
2. Additional mapping, prospecting and geological support is needed whilst soil sampling teams systematically traverse new grids.
3. Detailed mapping and rock sampling are needed to facilitate a comprehensive assessment of the Morrell Camp. Primary exploration targets like the ALCO 6 and WSW and ZAP showings need to be further evaluated given the results from recent work. The RIDGE, BURR and LJ Minfile occurrences should also be evaluated.
4. A small-scale ground magnetic and VLF test grid approximately 5-10-line km in size, dependent upon line spacing parameters, is recommended over the Morrell Group of reverted Crown grants. The results from this preliminary survey would aim in supporting a larger grid over the rest of the Property.

A second stage of work is coarsely outlined below. The specific work of the follow-up program will be strongly influenced by the results from phase 1 outlined above but in general the scope of work is designed to utilize surface methods for outlining the extents of the most attractive targets. An approximate budget of \$106,183 is estimated for the following list of recommended work. Subsurface diamond drilling may be an alternative option if the results from Phase 1 are compelling enough to advance the project in that manner.

1. 500-600 soil samples defined as infill samples to be collected along the prospective extension of primary target areas identified from the 2018 and 2019 work in addition to any anomalous results or trends identified from Phase 1.
2. Additional prospecting could be done to locate the remaining Minfile occurrences not yet observed on the Property.
3. Trenching with a small excavator or hand tools is required to evaluate the geological significance of highly anomalous bedrock sample results from the ZAP Minfile occurrence. The surface occurrence is in a low area with till cover.
4. A Property-wide ground magnetic and VLF grid over the reverted Crown grants and other prospective targets, including sufficient aerial coverage to encapsulate the most prospective terrain.

## 27.1 COST ESTIMATE

Broken Handle Project		
Phase 1		
Item	Descriptions	Costs (CAD)
<b>Soil Survey</b>		
~1000 soil samples	Analytical Costs @\$35/unit	\$ 35,000.00
Geological Support	3 soil samplers @\$450/day for 14 days	\$ 18,900.00
Field Supplies	Consumables	\$ 3,100.00
Room and Board	48 Man days ~\$135/day	\$ 6,480.00
Truck Rentals	1 Truck for 14 days @ \$150/day + fuel	\$ 4,620.00
ATV Rentals x2	2 for 14 days @ \$125/day	\$ 3,500.00
<b>Mapping/Sampling</b>		
Rock Samples 50 @\$45/sample	~50 @\$45/sample	\$ 2,250.00
Geological Support and Prj Mgmt	12 Days @\$800	\$ 9,600.00
Room and Board	10 days @\$135/day	\$ 1,350.00
<b>Geophysical Surveys</b>		
MAG and VLF	5-10 Line Km's over the Morrell Camp (2 units	\$ 7,550.00
	including survey support and deliverables	
<b>Reporting Costs</b>	15 days @\$800/day	\$ 10,400.00
	Phase Sub-Total	\$ 102,750.00
	Contingency (10%)	\$ 10,275.00
	<b>TOTAL</b>	<b>\$ 113,025.00</b>
Phase 2		
<b>Soil Survey</b>		
~600 soil samples	Analytical Costs @\$28/unit	\$ 16,800.00
Geological Support	2 soil samplers @\$500/day for 12 days	\$ 12,000.00
Supervisor	1 Pgeo for mapping and oversight	\$ 6,400.00
Field Supplies	Consumables	\$ 2,740.00
Meals and Accommodation	32 Man days ~\$135/day	\$ 4,320.00
Truck Rentals	2 Trucks for 14 days @ \$150/day + fuel	\$ 4,620.00
ATV Rentals x2	2 for 14 days @ \$125/day	\$ 2,000.00
<b>Trenching</b>		
Excavator Rental	Prospecting and Mapping	\$ 2,250.00
Geological Support	2-3 days	\$ 2,400.00
<b>Geophysical Surveys</b>		
MAG and VLF	50 Line Km's over the Morrell Camp	\$ 35,000.00
	including survey support and deliverables	
<b>Reporting Costs</b>	10 days @\$800/day	\$ 8,000.00
	Phase Sub-Total	\$ 96,530.00
	Contingency (10%)	\$ 9,653.00
	<b>TOTAL</b>	<b>\$ 106,183.00</b>



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## 29. APPENDIX I

### Units of Conversion and Abbreviations

#### Abbreviations:

ppb	part per billion
ppm	part per million
g	gram
g/t	gram per tonne
opt	(troy) ounce per short ton
oz/t	(troy) ounce per short ton
Moz	million ounces
Mt	million tonnes
t	metric tonne (1000 kilograms)
st	short ton (2000 pounds)

#### Conversions:

1 gram	=	0.0322 troy ounces	
1 troy ounce	=	31.104 grams	
1 ton	=	2000 pounds	
1 tonne	=	1000 kilograms	
1 gram/tonne	=	1ppm	= 1000ppb
1 troy ounces/ton	=	34.29 gram/tonne	
1 gram/tonne	=	0.292 troy ounces/ton	
1 kilogram	=	32.151 troy ounces	= 2.205 pounds
1 pound	=	0.454 kilograms	
1 inch	=	2.54 centimeters	
1 foot	=	0.3048 metres	
1 metre	=	39.37 inches	= 3.281 feet
1 mile	=	1.609 kilometres	
1 acre	=	0.4047 hectares	
1 sq mile	=	2.59 square kilometres	
1 hectare	=	10,000 square metres	= 2.471 acres

### **30. DATE AND SIGNATURE PAGE**

This technical report on the Broken Handle Project is prepared for Hawthorn Resources Corporation with an effective date of May 17, 2021. Patrick McLaughlin, P. Geo., is the qualified person responsible for all sections of this technical report.

Date of Signing: April 8th, 2022

(Signed) "*Patrick McLaughlin*"  
Patrick McLaughlin, P. Geo.  
Coast Mountain Geological Ltd.



### 31. CERTIFICATE OF QUALIFIED PERSON

I, Patrick McLaughlin, P.Ge., as the sole author of the technical report titled “National Instrument 43-101 Technical Report on the Broken Handle Project”, with an effective date of May 17, 2021 prepared for Hawthorn Resources Corporation (the “Technical Report”), do hereby certify that:

1. I am employed at Coast Mountain Geological Ltd. of 488-625 Howe St, Vancouver, BC V6C 2T6.
2. I am a professionally registered Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia (EGBC) and have been a member since 2015 (Registration #41479).
3. I have read the definition of “qualified person” set out in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
4. I conducted a personal inspection of the Broken Handle Project from August 16, 2019 to August 23, 2019.
5. I am the sole author of and am responsible for the entire Technical Report.
6. I am independent of Hawthorn Resources Corporation, as defined in section 1.5 of NI 43-101.
7. I have had no prior involvement with the property that is the subject of the Technical Report.
8. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 17, 2021

Date of Signing: April 8<sup>th</sup>, 2022

(Signed) “Patrick McLaughlin”

Patrick McLaughlin, P. Geo.