ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Franklin Project; Ida, MS/Crystal Copper and Union Tails - Exploration and Metallurgical Testing

TOTAL COST: $5,567.95

AUTHOR(S): Doug Warkentin
SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 5713054 – 25 Sep-18; 5719575 – 15 Nov-18; 5722354 – 9 Dec-18; 5730355 – 11 Feb-19

YEAR OF WORK: 2018

PROPERTY NAME: Franklin

CLAIM NAME(S) (on which work was done): Ida-Dane; MS; MCS; Ida NW; Cap; Union

COMMODITIES SOUGHT: Au, Ag, Cu

MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: Franklin Camp, including 082ENE003 and 082ENE004

MINING DIVISION: Greenwood
NTS / BCGS: NTS 082E09W
LATITUDE: 49 ° 34 ' 6 "
LONGITUDE: 118 ° 20 ' 30 " (at centre of work)
UTM Zone: 11 EASTING: 403000 NORTHING: 5491500

OWNER(S): Doug Warkentin

MAILING ADDRESS: 7069 McBride St., Burnaby, BC, V5E 1R1

OPERATOR(S) [who paid for the work]: Crucible Resources Ltd.

MAILING ADDRESS: 7069 McBride St., Burnaby, BC, V5E 1R1

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**) Jurassic, Eocene, Carboniferous-Permian, Penticton Group, Harper Ranch Group, Volcaniclastic Rocks, Granites, Kettle River Formation, Marron Formation, Franklin Group, Limestone Skarns, Averill Complex

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 00637, 17273, 21768, 24104, 26306, 26440, 27328, 27604, 27929, 28790, 29306, 33945, 34310, 34714, 34846, 35780, 36027, 36292, 36574

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock	11 samples ICP-MS	Ida-Dane, Ida NW, MS, MCS, Cap	$2993.22
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying	11 samples, prep and ICP analysis	Ida-Dane, Ida NW, MS, MCS, Cap	$380.55
Petrographic			
Mineralographic			
Metallurgic	4 tests, 3 solid and 13 solutions - ICPanalysis	Union	$2194.18
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
		TOTAL COST	$5,567.95

Franklin Project

Greenwood Mining Division
NTS 082E/08 and /09

Project Area Location:
UTM NAD 83: Zone 11, 403000 East, 5491500 North

Registered Owner: Doug Warkentin
Operator: Crucible Resources Ltd.

Ida, MS/Crystal Copper and Union Tails - Exploration and Metallurgical Testing

Project Tenure Numbers: **1045746, 1052520, 1052521, 1057687, 1057704, 1057845, 1058110, 1058765, 1059202, 1060339, 1060407, 1060637, 1061297, 1061298, 1064475, 1064477, 1064478 and 1064622.**

SOW Event Numbers: 5713054, 5719575, 5722354 and 5730355.

January 31, 2019

Prepared By: Doug Warkentin, P.Eng

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Introduction

Location and Access

The Franklin project lies along the Burrell Creek valley in the Christina Range of the Monashee Mountains of Southeast BC, approximately 65 km north of Grand Forks, BC. It covers part of the historic Franklin Camp, which includes the abandoned town sites of Franklin and Gloucester City. The general project location is shown in Figure 1.

The property consists of a contiguous grouping of MTO claims covering much of Mt. McKinley and Mt. Franklin, extending across Burrell Creek to the east, along Franklin Creek to the northwest and to the southern flank of Tenderloin Mountain in the northeast. The project area is crossed by the Burrell Creek Forest Service Road (FSR) which is a well-maintained all-season two wheel drive accessible road. It connects with Grand Forks via the Granby River road to the south and runs along the east side of the Burrell Creek Valley in the project area. Within the property area a forestry spur road crosses Burrell Creek and splits into multiple branches that provide access to many areas of the property on the west side of Burrell Creek. These are recently active logging roads that mostly remain in fair to good condition. The middle branch, accessing the upper part of Franklin Creek, has been decommissioned but remains passable by high clearance two-wheel drive vehicles. The other two branches, accessing the Mt. McKinley area south of Franklin Creek and the Gloucester Creek area to the north, remain as active forestry roads and are passable by two-wheel drive vehicles through much of the property, although they are prone to potential temporary blockages by fallen trees, small washouts or rock falls.

The entire area was part of a well-known exploration and mining camp in the early part of the last century, and there are therefore also many overgrown and unmaintained roads and trails accessing old workings, particularly in the areas surrounding Mt. Franklin and the north side of Mt. McKinley.

The area is mountainous, with deep valleys to the west of the broader Burrell Creek Valley. The east-facing slopes tend to be steep, while west-facing slopes are gentler. The climate is generally dry in the summer and the terrain is mainly tree-covered, but with relatively light undergrowth. The area has an interior climate, with warm dry summers and cold winters. Winter snow accumulations can be significant, and creeks are prone to flooding during spring freshet, but flows diminish greatly in the summer.

Tenure Information

The Franklin Project currently consists of 18 Mineral Titles Online claims with a total area of 2326 hectares. The project claims are adjoining and form a contiguous area covering ground along Franklin, Gloucester and Burrell Creeks, and the adjacent slopes of Mt. McKinley and Mt. Franklin. The claims cover much of the historically active Franklin mining camp, which has a long history of past exploration and has been covered by many generations of previous mineral tenures. Many claims were crown granted in the first half of the twentieth century, and the project area includes most of the reverted crown grants associated with the main Franklin and Gloucester camps. There are also a small number of crown grants that remain in good standing partly underlying the current project boundaries, as shown in Figure 4. The active crown grants principally cover the past producing Union and McKinley Mines, along with the area around the Homestake mine. Together these claims affect the title to approximately 88 hectares of the total project area. The full details of the rights associated with these crown grants have not been definitively determined, but it is assumed that they pre-empt all rights of the overlying MTO claims within their boundaries.

Figure 1 – Franklin Project Location Map

The project MTO claims are all owned by the author, and Crucible Resources Ltd. has an option to acquire 100% ownership of these claims. Claim details are shown in Table 1. Expiry dates shown in this table reflect the application of work described in this report.

Figure 2 outlines the tenures of the Franklin Project and also shows the listed Minfile showings for the camp.

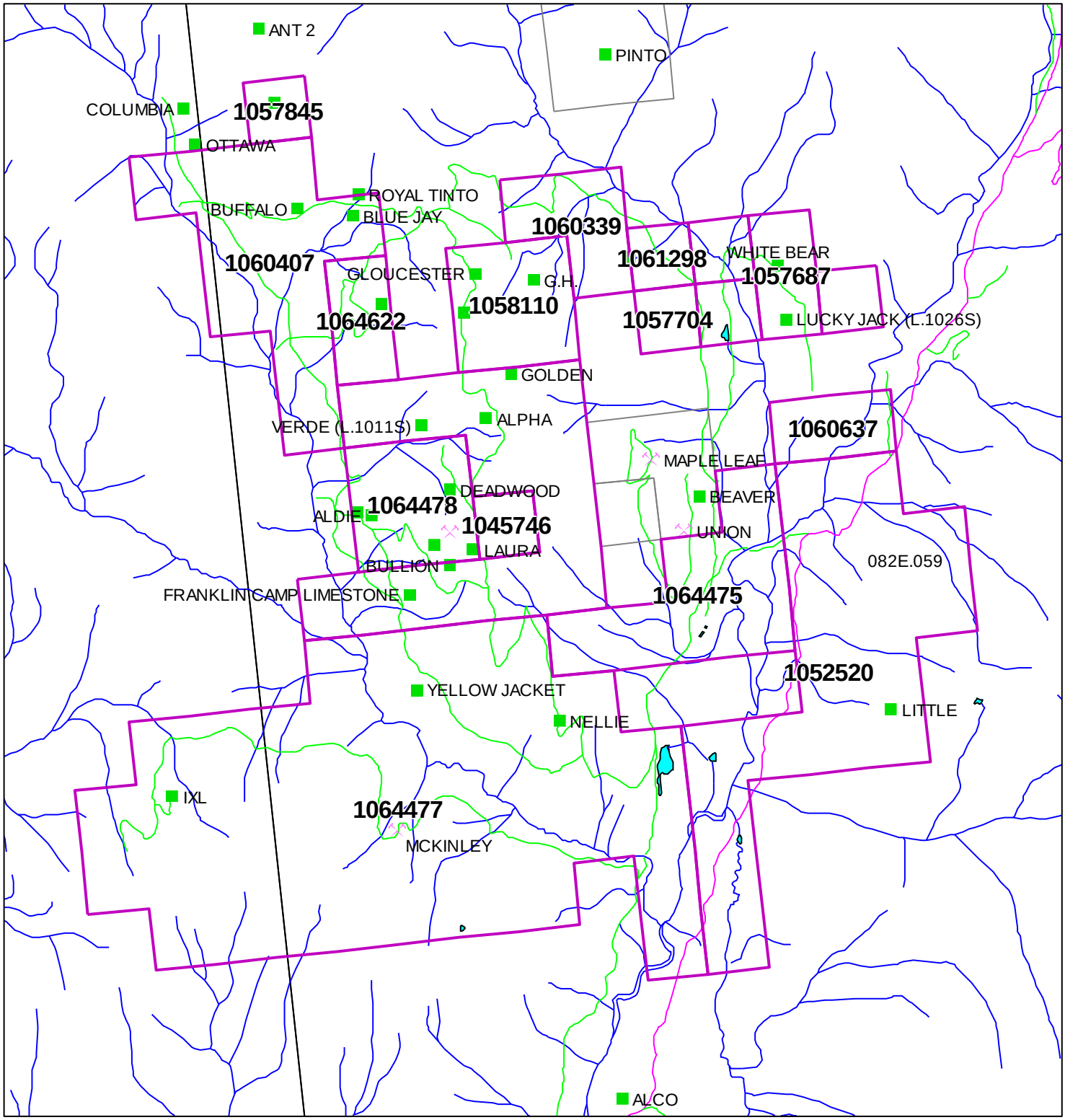


Figure 2 – Project Tenure Outline

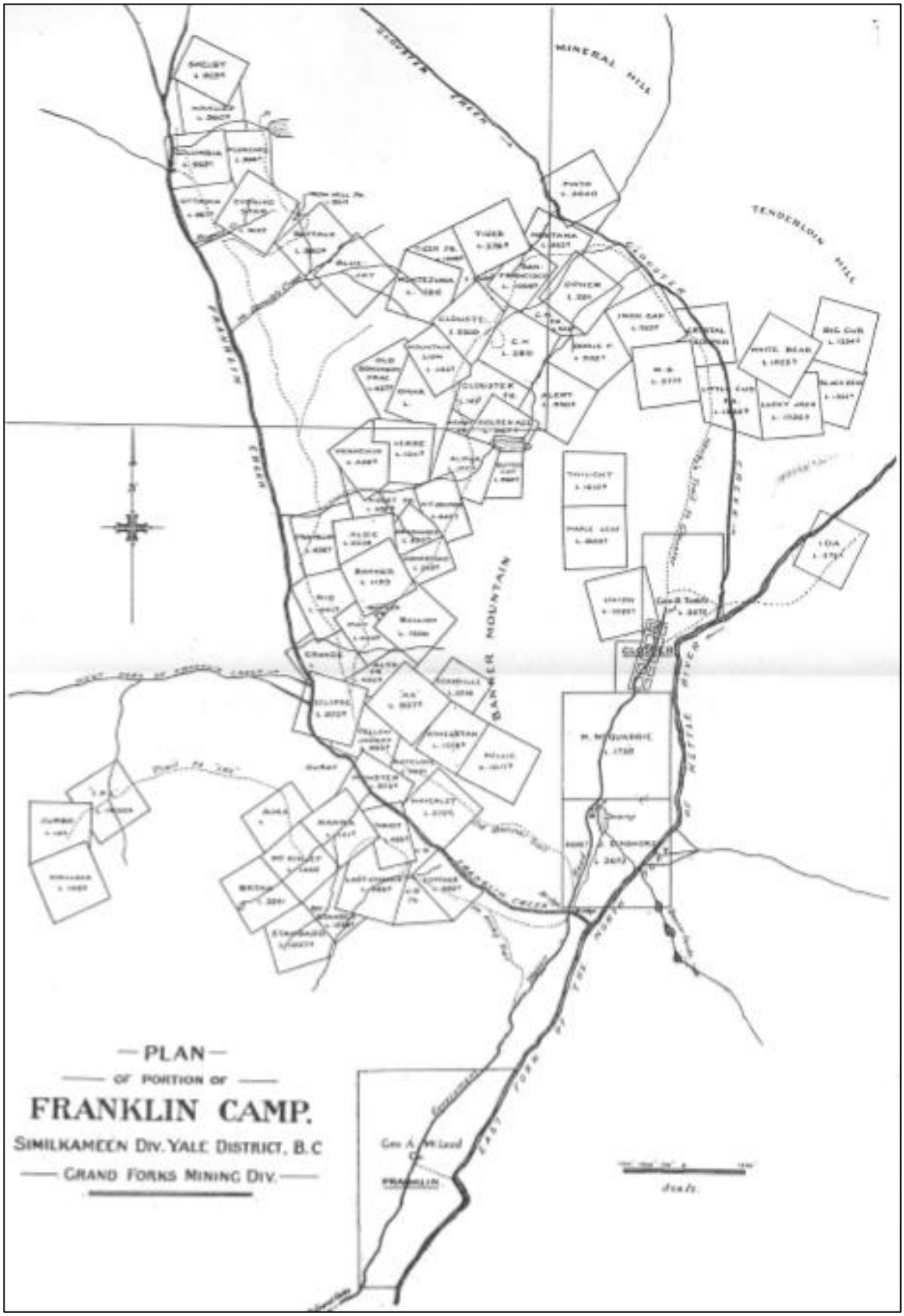


Figure 3 – Franklin Camp Historical Crown Granted Claims (Larson and Verrill, 1914)

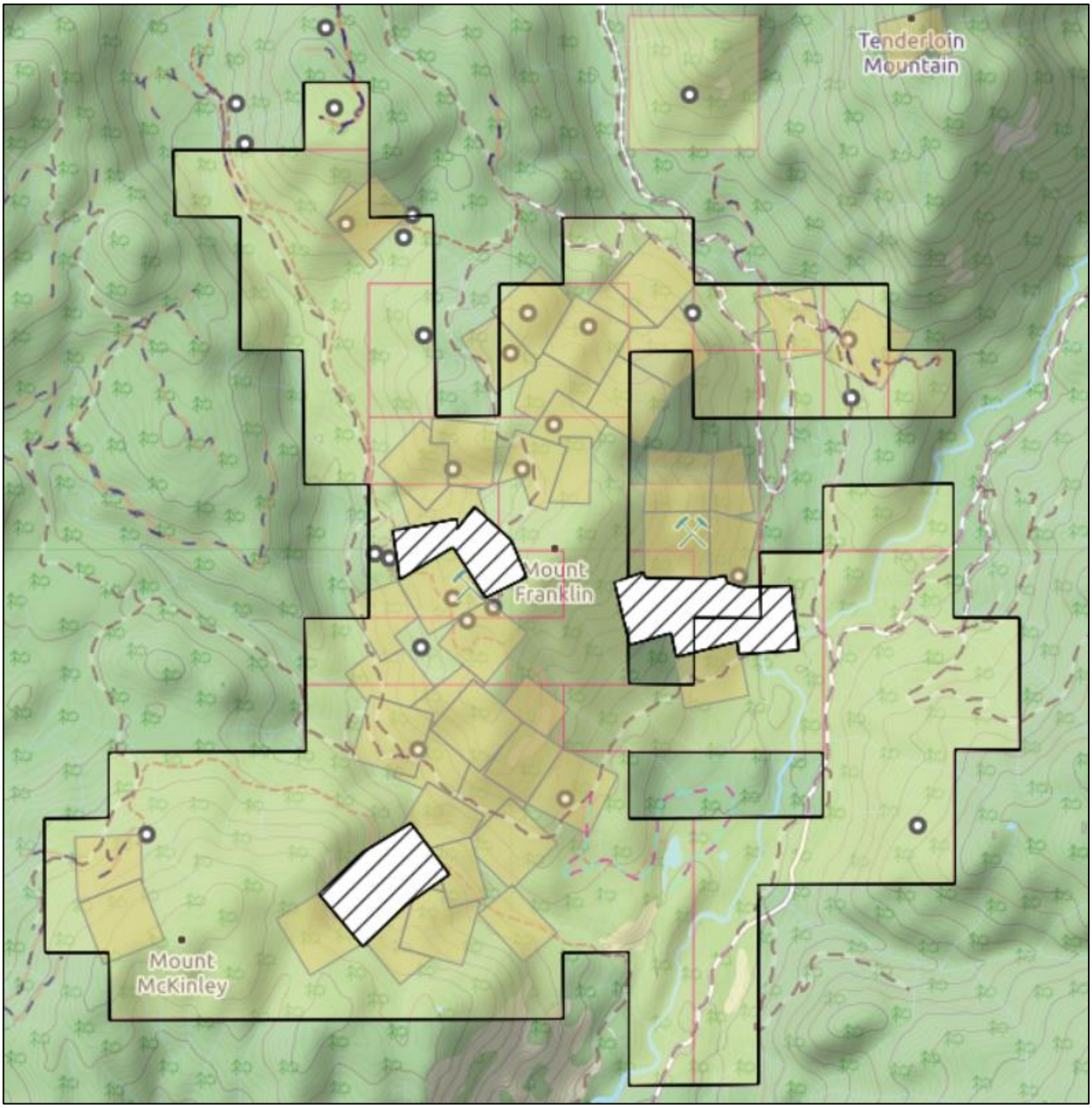


Figure 4 – Project Tenure Outline Showing Historical and Current Grown Grants

Table 1: Franklin Project Mineral Tenures

Title Number	Claim Name	Owner	Map Number	Issue Date	Good To Date	Area (ha)
1045746	UV	145582 (100%)	082E	2016/AUG/03	2019/MAR/28	20.95
1052520	IDA-DANE	145582 (100%)	082E	2017/JUN/14	2019/JUN/07	356.31
1052521	BULLION TWIN	145582 (100%)	082E	2017/JUN/14	2019/MAR/28	251.44
1057687	LUCKY BEAR	145582 (100%)	082E	2018/JAN/16	2019/MAR/28	41.90
1057704	MS	145582 (100%)	082E	2018/JAN/16	2019/MAR/28	20.95
1057845	COUGAR	145582 (100%)	082E	2018/JAN/21	2019/MAR/28	20.94
1058110	GH	145582 (100%)	082E	2018/FEB/01	2019/MAR/28	83.79
1058765	MCS	145582 (100%)	082E	2018/FEB/21	2019/MAR/28	20.95
1059202	LUCKY E	145582 (100%)	082E	2018/MAR/09	2019/MAY/10	20.95
1060339	AUFER	145582 (100%)	082E	2018/APR/29	2019/MAY/10	62.84
1060407	AVERILL NW	145582 (100%)	082E	2018/MAY/03	2019/APR/12	209.46
1060637	IDA NW	145582 (100%)	082E	2018/MAY/17	2019/JUN/07	41.90
1061297	MSSE	145582 (100%)	082E	2018/JUN/19	2019/JUN/23	20.95
1061298	CAP	145582 (100%)	082E	2018/JUN/19	2019/JUN/23	20.95
1064475	Union	145582 (100%)	082E	2017/DEC/14	2019/MAR/28	146.70
1064477	MCKINLEY	145582 (100%)	082E	2018/NOV/14	2019/MAR/28	859.43
1064478	MT BANNER	145582 (100%)	082E	2018/NOV/14	2019/MAR/28	83.81
1064622	DAVENPORT	145582 (100%)	082E	2018/NOV/21	2019/MAR/28	41.90
					Total	**2326.11**

Regional Geology

The Franklin Project covers much of the historic Franklin mining camp. The area is defined by major north-south regional faults that form a graben structure. The Granby fault, which runs to the east of the property, can be traced for more than 100 km to the south, where it forms the eastern boundary of the Republic graben in Washington State. In the Franklin camp area, this fault separates older metamorphic rocks to the east from younger intrusive rocks that surround and partly underlie the Franklin property.

While plutonic rocks are dominant regionally, the geology of the Franklin camp is more complex (Figure 3). The oldest rocks are a sequence of sediments, volcanics and related intrusives known locally as the Franklin Group. These are mapped as part of the Carboniferous Harper Ranch Group, and show strong similarities to the Brooklyn formation in the Greenwood-Grand Forks area (Caron 2004). This group includes argillite, conglomerate, chert, tuffaceous siltstone, limestone and greenstone, often showing significant alteration. The Franklin rocks are intruded by several distinct bodies of plutonic rock, including diorite/granodiorite from the Jurassic aged Nelson batholith and related bodies, as well as Jurassic aged porphyry dikes, the Jurassic Averill complex and the Eocene Coryell suite, including syenite stocks and lamprophyre dikes. Overlying the Franklin rocks and much of the intrusive rock are Eocene clastic sediments and volcanics of the Kettle River formation. In addition to sandstones and conglomerates, these rocks include tuffs and some areas of rhyolite. These are in turn overlain by andesites and trachytes of the Eocene Marron formation, which mainly occur at higher elevations.

The Franklin rocks were the main focus of early exploration in the Mt McKinley and Mt Franklin areas, particularly for precious metal-bearing quartz veins and for silicified zones and skarn deposits with high base metal values along limestone contacts. Another type of mineralization identified in the early days of exploration was the so-called 'Black Lead' zones of shear hosted massive chalcopyrite with some PGM values. These tend to form small erratic pods along contact zones of the pyroxenite phase of the Averill plutonic complex. Rare Earth Element (REE) mineralization has also been reported in these rocks, but the style of the mineralization is unknown. The Averill complex was originally correlated to the Eocene Coryell intrusives, but recent dating suggests a Jurassic age. The complex covers much of the north end of the Franklin camp and is a concentrically zoned differentiated intrusion with pyroxenite at its centre, grading outward through monzogabbro to monzonite, with trachytic syenite intruding the pyroxenite and monzogabbro along the axis of the pluton. The black lead mineralization generally occurs along the syenite-pyroxenite contacts.

Other possible styles of mineralization have been identified in more recent exploration programs, including epithermal gold and volcanogenic massive sulphide (VMS). Several areas of epithermal-style alteration and veining have been identified associated with intrusive contact zones but no significant economic mineralization has yet been identified in these areas. There are also intrusive contact zones resulting in extensive alteration that can carry base metal mineralization, but thes have seen very limited exploration. The potential for VMS mineralization has also been suggested, basd on the correlation of the Franklin rocks with similar formations along the Granby fault to the south, where economic VMS deposits have been discovered in the Belcher district in Washington State.

Local Geology

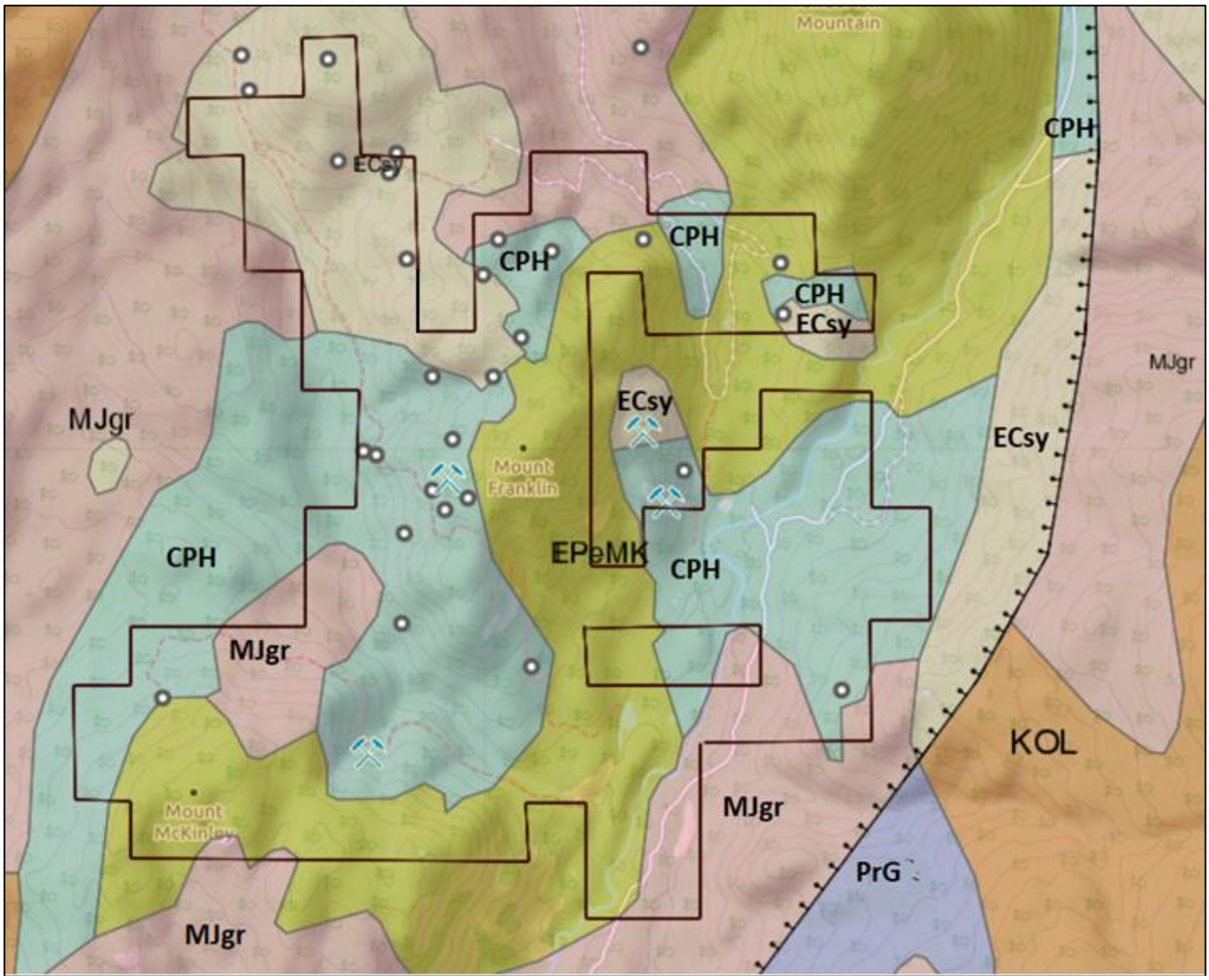
The Franklin Property itself is primarily underlain by Franklin group rocks along with the overlying Eocene sediments and volcanic rocks of the Kettle River and Marron formations. The property also includes significant intrusive contact zones in and around the Franklin rocks. To the northwest the project area also covers part of the Averill complex, including several known occurrences of the 'Black Lead' mineralization and significant exposures of pyroxenite.

The project area partly overlaps the main historic producer in the camp, the Union mine, along with historical producers the McKinley and the Homestake. The other historic producer in the camp, the Maple Leaf, lies just outside the property boundary. While the actual mine workings are covered by active crown granted mineral claims, these are small and do not necessarily cover potential extensions or parallel zones.

By far the most important ore zones discovered to date were at the Union Mine (see Table 3, below). The ore was a relatively low sulphide replacement-style vein with some adjacent zones of higher base metal sulphide content. The mineralization consisted of a zone of almost complete replacement of a limestone horizon in Franklin sediments which was later fractured into small irregular sections by multiple faults. Precious metal grades were highest at the intersections of these faults, indicating that the faulting also played a role in later mineralization. The vein did not have clear margins, with ore zones being defined almost entirely by assay. Silver grades were highest in the upper levels, with gold grades increasing in the lower mine levels. Associated minerals consisted mainly of fine-grained pyrite and other iron minerals, but in places the vein also carried galena and spahlerite.

In its best sections, the Union mine produced some of the highest grade ore mined in BC. Ore grades were generally found to diminish with depth and to the east, and the vein was truncated by a larger fault to the west. More recent exploration has identified small ore remnants and unmined zones within the old workings, but no significant new extensions of the mineralization

have been identified since active mining ceased in the 1940's. Recent drilling to the west of the western fault boundary identified a silicified zone carrying anomalous precious metal values, but it is not clear whether this is an extension of the Union structure. Mill tailings are deposited within the Franklin property boundaries in two separate locations, to the south and east of the mine, and parts of these have been reprocessed on two separate occasions.



CPH – Carboniferous to Permian Harper Ranch Group – volcaniclastic rocks

ECsy – Eocene Coryell Plutonic Suite – syenitic to monzonitic intrusive rocks

EPeMK – Eocene Penticton Group: Marron, Kettle River, Springbrook, Marama and Skaha Formations – undivided volcanic rocks

KOL – Cretaceous Okanogan Batholith: Ladybird and Valhalla Intrusions – undivided intrusive rocks

MJqr – Middle Jurassic – granite, alkali feldspar granite intrusive rocks

MJNqd – Middle Jurassic Nelson Batholith – granodioritic intrusive rocks

PrG – Proterozoic Grand Forks Gneiss/Monashee Complex – paragneiss metamorphic rocks

Figure 5 – Regional Geology, Franklin Camp Area

There are numerous other mineral occurrences on the property. A significant band of limestone runs through the Franklin Creek valley with a north-south orientation and is associated with the high grade skarn mineralization found at the McKinley mine. Other more poorly defined occurrences have also been identified along this trend and may indicate additional skarn mineralization. At the IXL showing to the west of the McKinley Mine, shallow zones of skarn-type mineralization have also been identified. This area has seen considerable modern exploration; including trenching and drilling, which has identified significant zones of copper-gold surface mineralization in Franklin group rocks and altered porphyry intrusives in contact with small bodies of Franklin limestone. Drilling has shown that some of the best exposures of surface mineralization are cut off at shallow depths by intrusive rocks, however the mineralized rocks are covered by Eocene sediments to the east and potential thickening in this direction has not yet been tested. In addition, at least one hole has shown more significant depths of lower grade copper-gold mineralization in both Franklin volcanics and porphyry intrusives.

In the Mt Franklin area numerous smaller quartz veins have been identified in Franklin rocks, some carrying significant gold and/or base metals. The most developed occurrence in this area, the Homestake, lies within a crown grant, but several other important occurrences are also known within the project area. These include the Banner, North Banner, Bullion, Laura and Verde showings as well as some unnamed occurrences in the Twin Creek area, near the Alpha and Deadwood showings. On the southeast flank of Mt Franklin pyrite, chalcopyrite and copper carbonate mineralization occurs in Franklin rocks near the contact with Eocene volcanics at the Nellie showing. This area reportedly shows evidence of hydrothermal alteration associated with nearby intrusives. There is also reportedly copper mineralization at the Alpha showing, near the contact between the Franklin rocks and the Averill intrusives.

In the northwest part of the property the Franklin rocks are intruded by the Averill complex, and several occurrences of copper mineralization with platinum values were historically reported within the project boundaries. These include at least two styles of mineralization. The first type of occurrence is as shear zones along the pyroxenite contact at the Averill, Golden and Buffalo showings, which are typical of the Black Lead type of mineralization, while the second type consists of larger zones of pyroxenite carrying disseminated copper mineralization. This is the style at the Ottawa showing and may also be closely related to the Evening Star and Blue Jay showings, which are reported as disseminated copper in pyroxenite. The Buffalo showing may also include areas of this type of mineralization. The mineralization historically reported from the Averill complex has been primarily the Black Lead type, found in narrow and discontinuous shear zones along contact zones between pyroxenite and syenite, where copper, platinum and sometimes other precious metals appear to be concentrated by secondary hydrothermal enrichment. It has been suggested that the source of these values is enriched heavy mineral differentiated zones within the intrusive, likely within the pyroxenite phase. More recent work also points toward extensive low-grade copper mineralization within the pyroxenite, particularly where wider sections of pyroxenite are exposed in the northwest part of the complex.

The northern part of the camp, on the northeast side of the Averill intrusions, includes smaller bodies of older Franklin rocks in contact with Jurassic age granodiorite of the Nelson Batholith, and partly overlain by Kettle River sediments and Marron Formation volcanics. Some parts of this area show considerable alteration and sulphide mineralization occurs along the contacts of the granodiorite with the volcanic greenstones of the Franklin Formation. These deposits can host semi-massive sulphide bodies including pyrite and chalcopyrite. The Gloucester showing is the most developed of this type. Wider bodies of magnetite and pyrite-rich material are also reported in parts of this area at the GH and Iron Cap showings.

To the east of Burrell Creek few mineral showings were reported historically, but recent work has identified a number of mineralized exposures, including at least one previously explored mineralized shear zone in Franklin volcanics not far from a contact with granodiorite intrusive

rocks. The Dane showing includes significant gold values in addition to copper and silver values. The occurrence of zones carrying high copper and silver values with minor to significant gold values is a more common pattern of mineralization in the southern part of the camp, normally occurring in east-west striking veins or shear zones. The highest value veins in the Mt. Franklin area are more typically associated with lead and zinc mineralization, also often with high silver values. The Union veins themselves generally carried very low base metal values, with the main minerals of economic importance being gold and silver.

A short distance to the south of the property, in addition to the small east-west striking copper-bearing vein structures, there are showings of high-grade contact mineralization, intrusive related copper-zinc and copper-molybdenum mineralization, as well as epithermal-style vein systems in granodiorite which are locally reported to carry some gold values.

A summary of the documented showings occurring within the Franklin project claim area is included in Table 2.

Table 2: Franklin Project – Documented Mineral Occurrences

Name	Minfile #	Location	Minerals	Reported Grades	Width (m)	Year
Minfile showings						
Ottawa	082ENE061	Franklin Crk	Pt, Cu	2.1 g/t Pt	grab	1918
Ant Hill	082ENE085	Franklin Crk	Cu, Pd	2.4% Cu, 0.65 g/t Pd	grab	1987
Buffalo	082ENE008	McDonald Crk	Cu, Pt, Pd	6.5 g/t Pt	grab	1918
Blue Jay	082ENE054	McDonald Crk	Ag, Cu	2.7 g/t Ag, 0.24% Cu	grab	1988
Royal Tinto	082ENE010	McDonald Crk	Fe			
Averill	082ENE007	McDonald Crk	Cu, Pt, Pd	0.9 g/t Pt, 3.5 g/t Pd, 53 g/t Ag, 6.7% Cu	grab	1988
Gloucester	082ENE005	Gloucester Crk	Cu, Au, Ag	0.34 g/t Au, 12.65 g/t Ag, 1.33% Cu	4.0	1965
GH	082ENE006	Gloucester Crk	Cu, Au, Ag			
Iron Cap	082ENE058	Gloucester Crk	Fe, Cu			
Mountain Lion	082ENE055	Gloucester Crk	Pt, Cu	3.1 g/t Pt	grab	1918
Verde	082ENE020	Twin Creek	Au, As, Co	2.98 g/t Au	grab	2003
Alpha	082ENE052	Twin Creek	Au, Ag, Cu	0.68 g/t Au, 3.42 g/t Ag, 0.8% Cu	1.5	1965
Golden	082ENE053	Twin Creek	Pt, Cu	2.1 g/t Pt	grab	1918
Banner	082ENE002	Mt. Franklin	Au, Ag, Cu, Pb, Zn	9.27 g/t Au, 45 g/t Ag, 6.0% Zn, 2.1% Pb	grab	1987
Bullion	082ENE013	Mt. Franklin	Ag, Au, Cu, Pb, Zn	1.1 g/t Au, 100 g/t Ag, 2.5% Pb	grab	2003
Laura	082ENE066	Mt. Franklin	Ag, Au	56 g/t Ag, 0.14 g/t Au	grab	1987
Jimmy	082ENE042	Mt. Franklin	Ag, Pb, Zn	20.0 g/t Ag,1.94% Pb, 3.40% Zn	grab	1988
Yellow Jacket	082ENE021	Mt. Franklin	Cu, Pb, Zn			
Franklin Limestone	082ENE062	Mt. Franklin	Limestone			
Nellie	082ENE059	Mt. Franklin	Cu			
White Bear	082ENE057	Gloucester Crk	Au, Cu, Ag	0.9 g/t Au, 0.7 g/t Ag	grab	1984
Lucky Jack	082ENE056	Gloucester Crk	Pt, Cu	2.7 g/t Pt	grab	1918
Little	082ENE004	Dinsmore Crk	Pb, Zn	1.82 g/t Au, 1.9 g/t Ag	0.07	2006
IXL	082ENE033	Mt. McKinley	Cu, Au, Pb, Zn	3.85 g/t Au, 0.8% Cu	5.5	2003
Non-minfile occurrences						
Dane		Burrell Crk East	Au, Ag, Cu	2.16 g/t Au, 162 g/t Ag, 5.7% Cu	grab	2006
Ida		Burrell Crk East	Au, Ag, Cu, Co	3.6 g/t Ag, 0.10% Cu, 0.014% Co	grab	2018
Ida South		Burrell Crk East	Au, Ag	6.2 g/t Au, 304 g/t Ag	1.0	2017
MS/Crystal Copper		Gloucester Crk	Au, Ag, Cu			
United Verde		Mt. Franklin?	Au, Ag	5.5 g/t Au	shaft	1914
Golden Zone		Gloucester Crk	Au			1914
Mary Ann		Gloucester Crk	Au			1914
Evening Star		Franklin Crk	Pt, Cu, Au, Ag	$0.49 to $14.35 in Au, Cu and Ag	2-400 m	1906
Last Chance		Mt. McKinley	Au, Ag	1.9 g/t Au, 13.5 g/t Ag, 0.1% Zn	grab	2005
Jack		Mt. McKinley	Zn, Ag, Cu	17.5 g/t Ag, 2.9% Pb, 6.5% Zn	grab	2005

Property History

The property has a long history of exploration, along with a more limited history of mine development and production. None of the recorded past producing mines of the Franklin camp are directly covered by the property, as the principal past producers are located on small active crown-granted mineral claims that are partly or fully overlain by the property's MTO claims. The property covers most of the historical Franklin and Gloucester camps, which were actively explored beginning in the 1890's, and which were the source of both base metal and precious metal production (Table 3) in the first half of the last century.

Exploration in the Franklin camp area began around 1896, when the first claims were staked. The camp was very active in the early 1900's when most of the principal showings were discovered and developed with small shafts and adits. As early as 1901 the Banner vein had seen considerable development and test shipments had been made, although there is no record of the production from that property. During that same period considerable development occurred on the McKinley property and ore shipments may have been made during that period, although again there is no available record of the production.

A Mines Ministry report from 1900 includes high values in gold and silver from the Homestake and Silver Bell claims, along with high copper and gold values from the Gloucester and the Pollard claims. While the Homestake and Gloucester claims were later crown granted, the precise locations of the Silver Bell and Pollard claims are uncertain. The Silver Bell was described as lying to the west of the Homestake and hosting an extension of one of the Homestake veins, carrying 40 oz/ton silver and 0.2-1.5 oz/ton gold. The Pollard was reported as lying further north, possibly near Gloucester Creek.

Between 1900 and 1905 on the Gloucester claim a 16 meter shaft and at least one crosscut tunnel 70 meters long had been developed. The shaft was on a steeply dipping vein rich in chalcopyrite, reportedly carrying 10-13% copper and increasing in width from 0.5 meters at surface to 1.5 meters at depth. The crosscut apparently failed to intersect the vein.

Table 3. Historical Production from the Franklin Camp

Mine	Years of Operation	Production (tonnes)	Gold Production (ounces)	Historical Grades
Union	1913-89	122,555	55,525	14.1 g/t Au, 353 g/t Ag, 0.2% Zn, 0.1% Pb, 0.01% Cu
Maple Leaf	1915-16	36	2	1.7 g/t Au, 172 g/t Ag, 7.6% Cu
Homestake	1940-41	453	223	15.3 g/t Au, 30.0 g/t Ag, 0.12% Zn, 0.06% Pb
McKinley	1949	132	2	0.47 g/t Au, 215 g/t Ag, 17.1% Zn, 11.2% Pb

The first actual recorded production from the camp came from the Union property. The Union vein was discovered in 1913 when a silicified zone near earlier workings on an adjacent quartz vein carrying lead and zinc was found to be rich in gold and silver. Shipments of high grade ore began almost immediately from a large open cut, with adits later developed to access more of the ore. Development and small shipments continued from the Union vein until 1920, when operations were shut down due to the high cost of transporting ore to the smelter.

In 1914 a provincial government survey of the area included ore sampling and production data from the Union mine. The same report included sample assays from the Union and Banner claims, as well as assays from a shaft under development on the 'United Verde' claim which returned a value of 0.16 opt Au. The location of this claim has not been verified, but a search of available records from the time indicates that it was active from July 1913 to July 1922 but was never crown granted. The government report places it west of the Union mine on 'Banner Mountain' (Mt. Franklin), while contemporary news reports place it 'across the river' from the Union mine, which would suggest a location on the east side of Burrell Creek.

In 1915 and 1916 two small shipments of copper ore were made from the Maple Leaf mine, lying just north of the Union mine. At the smelter this ore was found to carry an average of 8 g/t platinum, which resulted in new interest in the Franklin Camp for its PGM potential. Following this discovery, in 1918 the federal government's munitions department carried out an evaluation of the platinum potential of the entire camp. Numerous showings of copper from 'Black Lead' and pyroxenite zones were sampled, with grades ranging from less than 1 g/t to 13 g/t Pt, with the highest grades coming from the Maple Leaf workings. Sampling from within the claim boundaries of the Franklin Project included multiple workings on the Lucky Jack claim (ranging from 1.4 g/t to 2.7 g/t Pt), a small shaft and open cut on the Mountain Lion claim (3.1 g/t Pt), a small shaft on the Golden claim (2.1 g/t Pt), a shaft dump and an adit dump at the Averill showing (both 3.1 g/t Pt), a shaft dump and open cuts at the Buffalo showing, (6.5 g/t and 2.7 g/t Pt respectively), and large open cuts on the Ottawa claim (2.1 g/t Pt). While there is very limited information about any of the samples collected, the Ottawa showing has been described as consisting of open cuts exposing pyroxenite mineralized with disseminated copper. It is not known if the 1918 platinum sample came from a selected high grade zone or from the broader disseminated mineralization.

In 1927 Hecla Mining Company bonded the Union and Maple Leaf properties and began to develop milling ore on the Union vein. By 1929 a 145 ton per day concentrator had been constructed and milling operations began in 1930. Full mine production lasted until 1932, when most of the known ore had been mined out, and the mine closed in 1933. In that same year a cyanidation plant was constructed to retreat the tailings, which operated from 1934-36. Lease operators produced a small amount of additional ore between 1937 and 1942. During the same period that the Union mine and mill were in operation, a small amount of ore was also produced from the nearby Homestake mine. Some ore from the Homestake was likely processed at the Union mill, but the recorded production relates only to direct ore shipments from 1941 and 1942.

In 1964 Franklin Mines Ltd acquired most of the Franklin camp and carried out geological and geophysical surveys along with limited sampling of old workings. This included sampling of the Alpha tunnel, within the current project area, which averaged 0.12% Cu and 1 g/t Ag over its entire 18 meter length, with the 3 meters before the face assaying 0.41% Cu, 5.1 g/t Ag and 0.69 g/t Au. They also mapped the Buffalo area and carried out detailed sampling of a 33 meter adit on the Buffalo claim. Samples showed minimal precious metals values, but there were copper values, including an average of 0.34% Cu over 12 meters of the tunnel toward the face. Sampling around the Averill showing returned minimal Pt assays (max. 0.14 g/t), but showed extensive low grade copper mineralization, including an average of 0.16% Cu along 16.8 meters of the Averill Tunnel. Surface sampling near the Gloucester workings showed 1.33% Cu with 12.6 g/t Ag and 0.34 g/t Au over a 4 meter sample width.

In 1968 Newmont Exploration acquired part of the camp and carried out a work program which included airborne and ground geophysics, trenching and drilling of three holes at the IXL showing in 1969. Limited information is available regarding this work program, but in general, good mineralization was encountered in trenches but this same mineralization was not found in the drill core. One of the holes reportedly encountered ultramafic rocks with disseminated chalcopyrite, but this zone was apparently not assayed.

In 1979 Pearl Resource acquired part of the camp, including the Union mine and surrounding area. Their work focused on the Union mine and included re-opening the lowest adit and a program of underground drilling in 1984.

In 1986 Longreach Resources Ltd acquired a large part of the Franklin camp and carried out an exploration program that included geochemical sampling, geophysical surveys and drilling of several targets, primarily aimed at platinum. The following year the property was renamed the Platinum Blonde property and optioned to Placer Development Limited who carried out additional drilling, prospecting and geochemical sampling over the entire property. This project was also focused mainly on PGM mineralization and the property primarily covered the northern part of the camp, overlapping much of the northern and north-western portions of the current Franklin project claims. This work identified several precious and base metal soil anomalies, some of which do not appear to have been fully investigated, including a strong and fairly extensive copper anomaly in the northwest, in an area underlain by a wide pyroxenite zone in the Averill complex rocks, and including areas covered by the historical Ottawa and Evening Star claims. Prospecting also resulted in numerous gold-bearing samples being collected in the Homestake, Deadwood, North Banner and Twin Creek areas. The latter included an assay of 16.8 g/t Au in an area below the Alpha claim, but no details of this sample were reported.

Between 1987 and 1989 Sumac Ventures ran a heap leach operation on the Union mine tailings, reportedly recovering 13,300 grams of gold and about 400,000 grams of silver from 42,500 tonnes of tailings and waste rock. The operation appears to have been terminated due to operational difficulties rather than depletion of the available values.

In 1991 Canamax conducted an airborne geophysical survey over the IXL area along with rock and soil sampling. A new zone of low-grade copper mineralization in diorite was identified about 1.5 km south of the main IXL showing.

In 1993 and 94 Sway Resources drilled up to 29 short diamond drill holes and 14 percussion holes in the Banner-Homestake area and carried out rock and silt sampling, and diamond drilled 900 meters in 8 holes at the IXL showing, but available results of this work are limited. Some high-grade drill intercepts were reported to the west of the Homestake workings at the North Banner showing, including an intercept of 11 feet (3.35 meters) grading 0.23 oz/ton (7.89 g/t) Au and another grading 1.09 oz/ton (37.4 g/t) Au over 6 feet (1.83 meters). High grade surface samples were also reported from at least two separate locations on the Deadwood Crown Grant, and possibly outside of the Deadwood claim to the north.

In 2001 Tuxedo Resources Ltd. acquired much of the south and west portions of the Franklin camp and an airborne geophysical survey was flown that year. In 2003 rock sampling, soil geochemistry, trenching and a small drill program were carried out in the IXL and Banner-Homestake areas. Good mineralization was encountered, but the extent was limited. In addition, there was at least one strong gold and base metal soil anomaly identified in the North Deadwood area that has not been fully explored. A single drill hole showed significant widths of low grade gold mineralization below the IXL trenches.

In 2004 Solitaire Minerals carried out trenching and a limited drill program in the Union and Maple Leaf areas. Drilling failed to clearly identify a western extension of the Union vein, but a promising silicified zone carrying anomalous precious metal values was intersected under a cap of overlying volcanic rocks. Work on the Maple Leaf crush zone, to the north of the old Maple Leaf workings, identified low grade gold mineralization with intermittent bands of high grade base metal mineralization that also carried higher gold grades.

Also in 2004, New Cantech Ventures conducted an 11 hole, 1741 meter drill program at the IXL showing, indicating that encouraging surface mineralization encountered in trenches was generally

cut off at shallow depths by feldspar porphyry and syenite intrusions. Follow-up work in 2005 by Nanika Resources Inc. found evidence of new mineralized zones to the east, near the McKinley mine, mainly based on samples showing good zinc grades, but also occasional samples with good copper, silver and gold grades at the Jack and Last Chance showings. No follow-up work was reported.

In 2006 and 2007 Yankee Hat Minerals conducted limited rock sampling and prospecting in the Dane and Little area and conducted an airborne geophysical survey covering much of the Franklin camp, including some less-explored areas to the east of Burrell Creek. Few strong targets were identified with the exception of a relatively strong conductivity target to the south of the Dane showing. A small subcrop sample of gold in quartz was also found somewhat further to the south, a few hundred meters northwest of the probable location of the Little showing.

Sampling by Crucible Resources between 2012 and 2016 confirmed the presence of high grade copper-gold-silver mineralization at the Dane showing, while limited soil sampling showed only slightly anomalous base metal values in the area below the showings. Samples carrying gold and silver with low base metals were found in the Ida area, a short distance north of the Dane showing. A small occurrence of copper-gold mineralization was identified near the Nellie showing, and in the northwest multiple occurrences of copper mineralization were located and sampled, with some showing minor gold and PGM values as well. The old Union tailings were sampled and some significant gold and silver values were found to remain despite previous reprocessing operations.

Follow-up work in 2017 on the new occurrence found in the Ida area returned values of 6.2 g/t Au and 304 g/t Ag of a 1 meter outcrop exposure. A nearby sample of vein material assayed 1.43 g/t Au while sampling of other vein material in the area also returned some minor base and precious metal values.

Summary of Work

This report covers site work and metallurgical testwork carried out in the late spring and summer of 2018. A site visit was made in June 2018 which included an initial investigation of portions of the historical MS and Crystal Copper claims, as well as a traverse in the Ida area to the north of the recently discovered gold-silver occurrence in that area. One day was spent in each of these two areas sampling and prospecting, including mapping of any historical workings found. At the Ida the work identified alteration and mineralization in outcrops and located an undocumented exploration shaft. In the Crystal Copper area, a short traverse was run along the northeast side of Gloucester Creek, while in the MS area prospecting was mainly along exposed road cuts, although one small well mineralized trench was also investigated on the hillside to the west of the access road. A total of 11 rock samples were collected including five from the Ida area, two in the Crystal Copper area and four in the MS area. Samples included float, dump rock and chip samples from outcrop.

Continuing metallurgical testwork on composite samples of historical tailings from the Union mine investigated methods for improving gold and silver extraction from samples from the main tailings site, using a combination of flotation and non-cyanide gold leaching methods. This work continued to add to the understanding of the potential for non-cyanide precious metal recovery from this property and incorporated flotation techniques which more accurately define the average grade of the samples tested when free-milling or ‘nuggety’ gold is present, giving erratic values from conventional assaying.

Work Program

Sampling, Testing and Data Collection

Two days of site work were conducted on June 19th and 20th, 2018, which included work in the Ida area on the east bank of Burrell Creek, the Crystal Copper area along the east bank of Gloucester Creek and the MS area across and above Gloucester Creek to the southwest. This work was principally reconnaissance prospecting in areas that have received little attention in recent decades. On June 19th two traverses were run in the lower Gloucester Creek valley. The first was a short investigation of outcropping bluffs along the creek on the old Crystal Copper crown grant. Two chip samples were collected. Later the same day exposures along and near a section of inactive forestry road was investigated on the hillside above the creek. Four samples were collected in this area, including float rock, a chip sample and a sample of dump material from a historical prospecting pit. On June 20th a traverse was run on the hillside above Burrell Creek in the area covered by the historical Ida crown grant. This work was all conducted a short distance to the north of the recently identified Ida South showing. A total of five samples were collected, including chips from outcrop or sub-crop, vein float and dump material from old workings. Sampling is described in more detail below, and all locations are shown on the maps in Appendix 1.

Metallurgical testing was carried out using a previously prepared composite sample from the main Union mine tailings area made using a series of tailings samples collected in 2013. The composite has been used in earlier gold extraction testing and was therefore suitable as a baseline to evaluate a number of alternative processing options. The work reported here tested a combination of flotation and non-cyanide leaching for gold and silver extraction, including parallel comparative tests of leach accelerants. Analytical results for the original tailings samples and the composite (FRT Comp #1) are shown in Table 5. Due to past issues with cyanide use in re-processing at the site, all extraction test work has focused on non-cyanide gold and silver recovery methods.

All rock samples from site, as well as the flotation concentrate and tailings leach residues from metallurgical testing were digested in aqua regia using a 0.5 gram sample. Samples were then analyzed with a 36 element scan by ICP-MS. Solution sample from Metallurgical testing were analyzed by ICP-ES. All solid samples were analysed by Bureau Veritas Commodities Canada Ltd (formerly Acme Analytical Laboratories Ltd.) in Vancouver, while solution samples were analyzed by Kemetco Research Inc. in Richmond.

Details of the site sampling and metallurgical testwork carried out are described below. Sample details and assays are summarized in Table 4 and full analytical results are included in the Appendix.

MS/Crystal Copper Areas - Rock Sampling

A total of 6 samples were collected from two separate areas near Gloucester Creek in the northeast part of the camp. The initial traverse was north from the bridge crossing for the Mt. Franklin FSR. The area is near a contact between Franklin formation rocks and Eocene arkosic sediments. Both units are exposed in this area, and there is extensive alteration in some exposures. Shears and minor quartz veining were noted in several locations. Two samples were collected from a cliff outcrop of altered arkose. The first (CR180619-1) was from a wide exposure of altered arkose with iron staining and containing coarse disseminated pyrite. The second (CR180619-2) was from a mineralized shear zone in the same rock unit about 5 meters to the north. Both samples carried anomalous copper levels, but no other values of significance.

The Mt. Franklin FSR runs south and then loops back north higher on the hillside west of Gloucester Creek. On the higher road level, to the west of the Crystal Copper claim, prospecting was carried out along the road and to a lesser degree along the clearcut slope above the road. Above the road the slope is relatively shallow, with relatively few bedrock exposures and numerous large boulders that generally appeared to originate from the steeper slopes of Mt. Franklin to the west. Attempts to find previously reported exploration pits in the area resulted in the location of one such small pit exposing highly sheared and silicified volcanics carrying patches of heavy pyrite mineralization just a few meters west of the road. A sample of dump material including pyritic quartz (CR180619-3) was anomalous in copper and cobalt but minimal precious metals values.

Further along the road, mineralized float showing significant malachite staining was noted at the foot of a high rock cut. A sample of the float (CR180619-4) carried copper value (0.66%) with some accompanying precious metal values (10.8 g/t Ag, 0.39 g/t Au). The outcrop appeared to be in a contact zone between Franklin volcanics and weathered arkose, and cut by mafic dykes. The source of the float was not clear, and a chip sample across 2 meters of sheared and altered volcanics along the contact (CR180619-5) did not show significant copper or precious metal values. Interestingly, both of these samples did carry strongly anomalous vanadium values however (971 and 666 ppm respectively). These appear to be the highest vanadium values reported from the Franklin camp.

One final sample was collected in this area (CR180619-4A). This sample was collected from the edge of a large float boulder of granodiorite showing significant malachite staining. This sample did show somewhat elevated copper, but no other values of significance.

Ida Area - Rock Sampling

The traverse run north of the new Ida South showing covered forested slopes above the east bank of Burrell Creek. This area was historically covered by the Ida crown grant and lies between the main Burrell Creek FSR and the creek. While there is heavy forest cover in the area, there are numerous narrow outcrops exposed on the steep slopes. Rocks in this area appear to be mainly Franklin volcanics, often showing silicification, with zones of pyritic alteration. The small and discontinuous nature of the outcrops and subcrop makes it difficult to identify larger structures or continuity of zones of alteration, but rock chip samples were collected from three widely spaced zones of silicification with varying levels of mineralization and limonitic staining.

The traverse was run from north to south, with the first sample (CR180620-1) coming from an exposure of iron-stained quartz with some pyrite. This sample did not carry significant values. To the southwest a similar zone was seen over a smaller exposure. This material (CR180620-2) had a more brecciated appearance and included quartz vein material and patchy sulphides, including minor chalcopyrite. Values were again low, but somewhat elevated in copper. The final outcrop was further to the south and consisted of fractured quartz in Franklin volcanics with minor sulphides and oxidation products. The sample (CR180619-4) was lacking in base metal values but did have a slightly elevated gold content. Between samples 2 and 4, a lightly mineralized piece of quartz vein float was collected on a steep hillside (CR180619-3) which was low grade but anomalous in gold and silver. The source for this float was not found.

Near the top of a ridge at the south end of the area prospected a wide, steeply inclined shaft was found. This is presumed to be the main Ida workings and the dump showed heavily oxidized Franklin rocks along with some mineralized quartz and patches of massive sulphide. A sample of mineralized material from the dump (CR180619-5) showed copper values (0.10%) with slightly anomalous precious metals. This material was also relatively enriched in cobalt (137 ppm).

Table 4 – Rock Sample Descriptions and Analytical Results

Sample #	Date	Description	UTM East	UTM North	Width (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
	Ida Area - Rock									
CR180620-1	2018-06-20	Altered volcanics with quartz and pyrite	403511	5491071	3.0	0.022	<0.2	0.008	0.000	0.005
CR180620-2	2018-06-20	Pyritic shear in volcanics, minor quartz	403440	5490950	0.3	0.026	1.1	0.041	0.001	0.009
CR180620-3	2018-06-20	Quartz vein float with minor pyrite and limonite	403466	5490885	-	0.052	9.4	0.008	0.004	0.006
CR180620-4	2018-06-20	Highly silicified volcanics with pyrite, limonite	403419	5490787	1.0	0.069	0.2	0.009	0.001	0.006
CR180620-5	2018-06-20	Old shaft dump - quartz with py, cpy, mal	403447	5490787	-	0.035	3.6	**0.097**	0.001	0.005
	MS-Crystal Copper Area - Rock									
CR180619-1	2018-06-19	Altered intrusive, narrow quartz with sulphides	402415	5492545	1.5	0.018	0.4	0.038	0.000	0.004
CR180619-2	2018-06-19	Silic. shear in intrusive, quartz breccia, py, mal	402415	5492550	2.0	0.006	0.3	0.064	0.001	0.003
CR180619-3	2018-06-19	Silic. volcanics with heavy pyrite - small pit	402300	5492200	-	0.019	0.9	0.055	0.000	0.000
CR180619-4	2018-06-19	Altered volcanic float with py and mal	402192	5492413	-	0.391	**10.8**	**0.659**	0.001	0.008
CR180619-4A	2018-06-19	Chip from granitic boulder with some mal stain	402182	5492422	-	0.034	0.6	0.050	0.000	0.004
CR180619-5	2018-06-19	Chips across volcanic side of contact	402192	5492413	2.0	0.010	0.2	0.017	0.000	0.005

Union Tails – Metallurgical Testing

Sampling of the tailings from the Union mine has shown that significant gold and silver values remain despite past reprocessing operations. Previous metallurgical work has shown promise using non-cyanide methods to extract gold, but silver extraction has been low. In the most recent work, tests using a combination of flotation and leaching have shown positive extraction results while also confirming sample grades through the back-calculation of head grades based on recovered gold and silver. Tests on various tailings composites have consistently shown higher calculated gold grades than those based solely on assays. Because the tests use much larger samples than typical assays, this testing provides valuable new information on the true grade of precious metal bearing samples where segregation of values within the sample can result in underestimated grades with normal assay methods.

For the current work program a series of tests were conducted to continue to refine the float-leach flowsheet, including controlling leach conditions to increase silver recovery. These tests used an original composite of higher grade samples collected from the main tailings area on the property. This composite was prepared in 2014 from samples collected in 2013, as ndicated in Table 5. This provided a feed material with a head grade (calculated from assays) of approximately 1.2 g/t Au and 58 g/t Ag. The original sample grades and the assayed composite grade are both included in Table 5.

Table 5 – Metallurgical Composite

Sample #	Date	Description	UTM East	UTM North	Au g/t	Ag g/t	Cu %	Pb %	Zn %
	Union Area - Tailings Composite								
CR130704-T1	2013-07-04	Tailings pile 1 - southwest (0.3 m depth)	401924	5489803	1.73	87.7	0.009	0.03	0.06
CR130704-T2	2013-07-04	Tailings pile 2 - crest	401984	5489784	1.32	66.0	0.007	0.02	0.05
CR130704-T3	2013-07-04	Tailings pile 3 - lower slope	402023	5489685	1.22	60.0	0.009	0.02	0.06
CR130704-T4	2013-07-04	Tailings pile 3 - northeast slope	402071	5489733	0.24	16.2	0.005	0.02	0.06
CR130704-T6	2013-07-04	Tailings pile 1 - northeast	402021	5489860	2.10	79.5	0.006	0.01	0.04
FRT Comp #1	*2014*	*Initial Main Tailings Composite*			*1.20*	*57.8*	*0.008*	*0.02*	*0.06*

The approach for investigating the remaining recovery potential from site tailings has focused on alternatives to cyanide leaching due to environmental issues with previous operations that used cyanide at the site. Testing to date has shown that flotation and salt-based leaching both have

potential as processing methods, and recent work has focused on a possible combination of the two methods. The current testing utilized an initial float test on a ground sample of the tailings composite using low doses of precious metal collectors and a frother. The concentrate produced in this float was cleaned to remove slimes and the float tails were composited and split into smaller test lots for leach testing. The flotation concentrate and two tails test lots were subjected to salt leaching to test gold and silver recovery under enhanced leaching conditions. Back-calculated head grades from each leach test were then used to calculate the flotation recoveries and the overall head grade of the composite sample. Detailed test reports for each test conducted are provided in Appendix 2.

As noted, in addition to evaluating the extraction potential, these tests provide grade confirmation for gold values present in the tailings samples, which can be subject to nugget effect. Calculated gold grades have been consistently higher than the assayed grade, but the magnitude has varied from test to test. For the current work the back-calculated head grade was 1.27 g/t Au, which was 6% higher than the calculated head. The flotation gave low precious metal recoveries to the concentrate but the grades were high for both gold and silver. The concentrate contained 35.7 g/t Au and 958 g/t Ag, representing about 10% recovery for each. Recovery was not the main objective, as the float tails were also being subjected to extraction testing. The float concentrate should include much of the coarser and/or metallic gold and silver particles that could be problematic for standard assaying.

The leach tests carried out on the flotation products were aimed at comparing methods of enhancing the leach extraction and kinetics. Multiple stages of leaching on the concentrate resulted in improved silver recoveries of 32%, but gold recovery was low, likely due to the relatively short retention time used. The comparative tests on the tails showed a clear difference with the second test (T2) achieving 49% gold recovery, compared with 33% in T1. Test T2 used a higher oxidation potential, which appeared to have a positive effect, but recoveries did not reach the maximum levels obtained in previous work, so further optimization of conditions is needed.

Interpretation of Results

Site Work

The MS and Crystal Copper areas have been recently added to the project and no previous work has been done there by the current owner. Relatively little exploration has been reported from this part of the Franklin camp since the early part of the last century. Both areas showed promise for copper mineralization based on the strongly anomalous values in several of the samples. The mineralized float rock found near a roadside outcrop in the MS area was particularly encouraging and included precious metal values. This sample consisted of several relatively coarse pieces of float, but its source could not be located on the outcrop. Identifying the source of this material should be a priority for follow-up work in this area. The elevated vanadium levels in the float and the roadcut exposure was also of some interest. This is a type of mineralization not previously reported in the Franklin camp and although the values obtained in these samples are likely sub-economic (up to 0.17% V_2O_5), the size and grade potential of this occurrence has not yet been defined.

In the Ida area locating the Ida shaft was the most significant outcome of this work. Values from the dump material were not high, but the anomalous cobalt value could add value to any stronger copper mineralization found in the area. Also of note was that most samples collected in this area showed some low level copper and/or precious metal values, supporting continued follow-up work in the Ida area.

Metallurgical Testing

The metallurgical testing of the main tailings composite was successful in confirming the significant gold values remining in the tails, with a back-calculated head slightly higher than the assayed values (1.27 g/t Au). Flotation confirmed the potential to produce high grade concentrates but did not optimize recovery. Subsequent non-cyanide leach testing showed better silver extraction than in previous work, suggesting potential for investigating enhanced leaching conditions to unlock more of the value in the tailings. Overall gold recoveries were not high from these tests, but follow-up work to combine the enhanced silver recovery with previous test conditions giving better gold recovery may prove to further improve the potential for this process.

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Author's Qualifications

I, Douglas Warkentin, P.Eng., a professional engineer with a business address at 7069 McBride St., Burnaby, B.C., certify that:

I have been a Registered Member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia since 1992.

I am a graduate of the University of British Columbia, Vancouver, B.C. and hold a degree of Bachelor of Applied Science in Mining and Mineral Process Engineering.

I have practiced my profession as a Metallurgist and Mineral Process Engineer for 31 years.

I am currently employed as a Metallurgical Engineer by Kemetco Research Inc., Vancouver B.C., and have previously been employed as a Mineral Process Engineer by Vista Mines Inc., Coastech Research Inc., NTBC Research Corp., Biomet Mining Ltd., Blue Sky Mines Ltd., and Vizon Scitec Inc. I have also served as a Director of Duncastle Gold Corp., a TSX-Venture listed company.

Since 2001 I have acted as an independent engineering consultant for a number of mining clients.

I am a qualified person for the purposes of National Instrument 43-101 in relation to metallurgical testing and evaluation programs.

I directly conducted or supervised all sampling, sample handling and preparation related to the Franklin Project that is described in this report.

I am the sole author of this report.

I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report, the omission to disclose which would make this report misleading.

Dated at Vancouver, B.C., this 31st day of January 2019.

Doug Warkentin, PEng.
Metallurgical Engineer

Statement of Costs

Site Exploration, Research and Sampling

Logistics and Site Labour		
Doug Warkentin:	June 19-21, 2018 (32 hours @ $55/hr)	$1760.00
Transportation (mileage plus fuel)		$323.01
Accommodation (2 nights)		$207.90
Food and Supplies (3 days)		$42.32

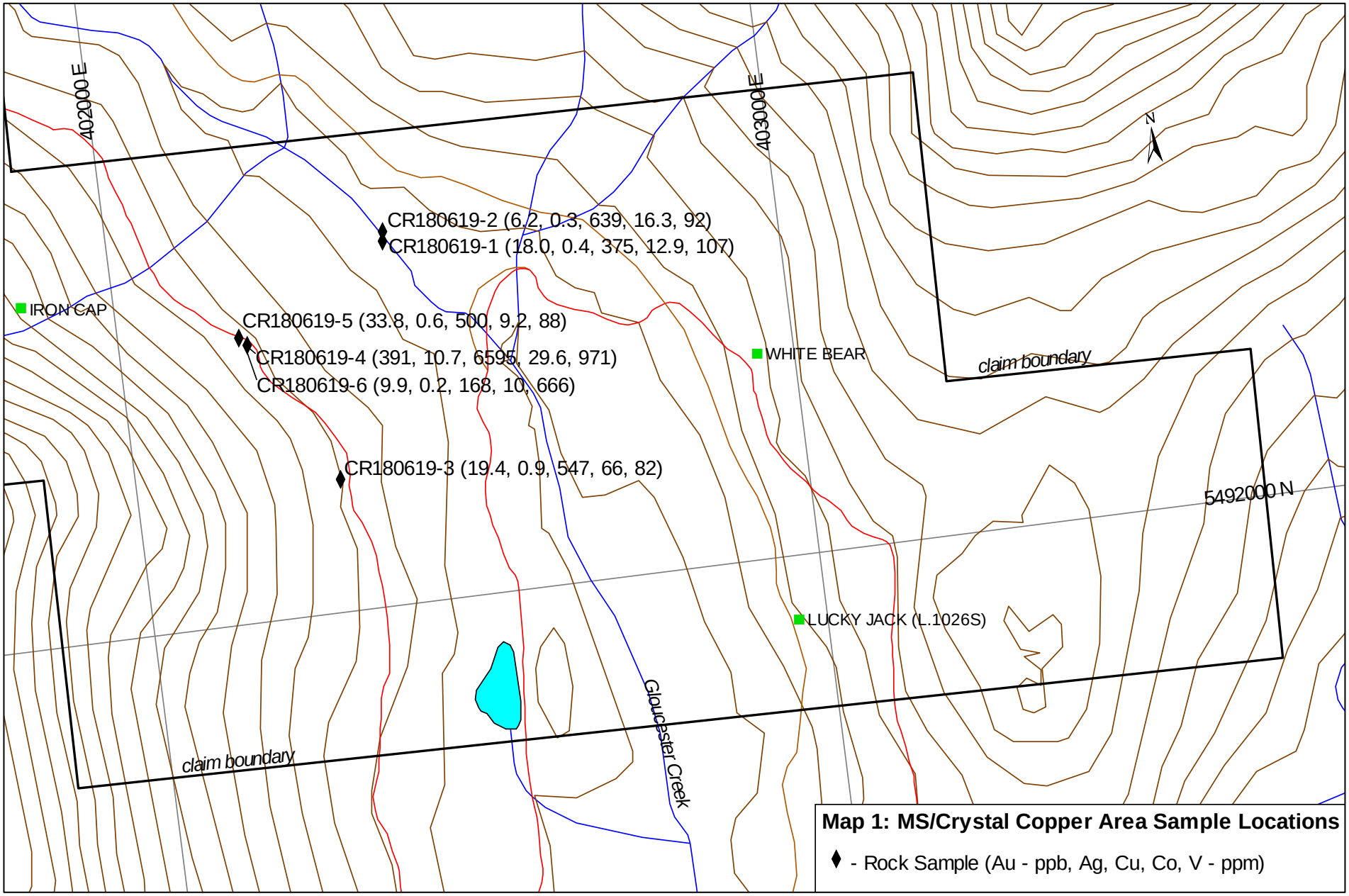
Metallurgical Testwork

Laboratory Testing (4 tests @ $412.50/test)		$1650.00

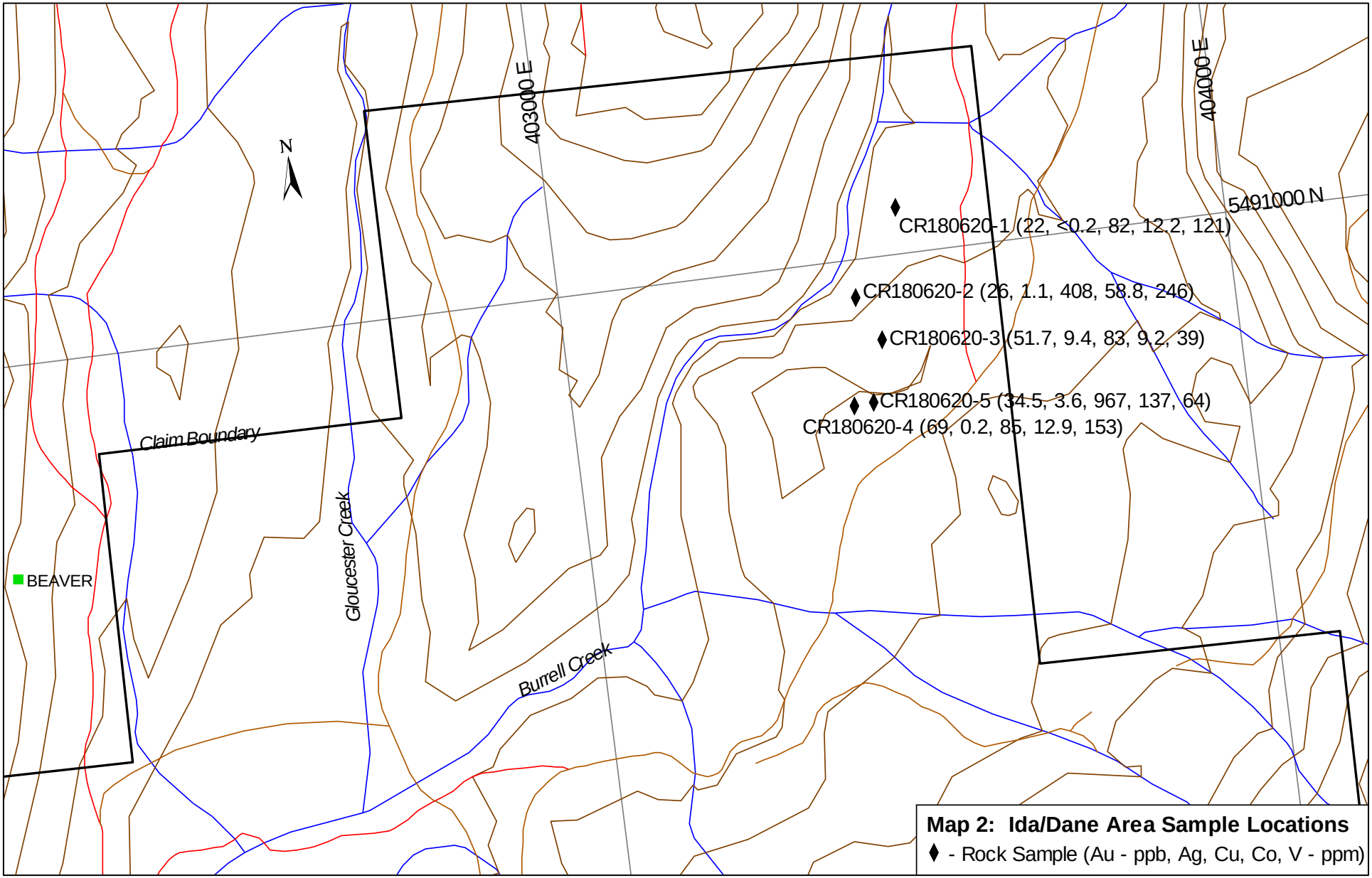
Sample Analysis

Sample Preparation	(11 samples @ $13.38/sample)	$147.13
	(3 samples @ $8.55/sample)	$25.65
Sample Assaying	(8 samples @ $17.01/sample)	$136.08
	(6 samples @ $24.37/sample)	$148.38
	(1 sample @ $12.50/sample)	$12.50
	(13 samples @ $35.00/sample)	$455.00
Report Preparation		$660.00
Total Cost		**$5,567.95**

Appendix 1 – Sample Location Map


402000 E
403000 E
N
CR180619-2 (6.2, 0.3, 639, 16.3, 92)
CR180619-1 (18.0, 0.4, 375, 12.9, 107)
IRON CAP
CR180619-5 (33.8, 0.6, 500, 9.2, 88)
CR180619-4 (391, 10.7, 6595, 29.6, 971)
CR180619-6 (9.9, 0.2, 168, 10, 666)
WHITE BEAR
claim boundary
CR180619-3 (19.4, 0.9, 547, 66, 82)
5492000 N
LUCKY JACK (L.1026S)
Gloucester Creek
claim boundary
Map 1: MS/Crystal Copper Area Sample Locations
- Rock Sample (Au - ppb, Ag, Cu, Co, V - ppm)

Scale 1:8,000


N
403000 E
404000 E
5491000 N
CR180620-1 (22, <0.2, 82, 12.2, 121)
CR180620-2 (26, 1.1, 408, 58.8, 246)
CR180620-3 (51.7, 9.4, 83, 9.2, 39)
CR180620-5 (34.5, 3.6, 967, 137, 64)
CR180620-4 (69, 0.2, 85, 12.9, 153)
Claim Boundary
Gloucester Creek
Burrell Creek
BEAVER
Map 2: Ida/Dane Area Sample Locations
♦ - Rock Sample (Au - ppb, Ag, Cu, Co, V - ppm)

Scale 1:8000

Appendix 2 – Metallurgical Test Reports

Flotation Test Report

Test: FL4 **Date:** 20 Jul-18
Feed: FRT Comp 1
Grind: 0.5 min in rod mill (50% charge, 65% solids)

Conditions:

Stage	Reagents added, grams per tonne							Time, minutes			pH
	A3418A	A208	Na_2CO_3			DF250	MIBC	Grind	Cond.	Froth	
Grind								0.5			
Condition	24	20	440						3		8.61
Rougher							84			5	9.59
											9.05
Cleaner 1	4						28			6	8.98
Cleaner 2						14	14			4	8.91
Cleaner 3							14			3.5	8.81
Total	*28*	*20*	*440*	*0*	*0*	*14*	*140*	*0.5*	*3*	*18.5*	

Metallurgical Balance

Product	Weight		Assays						% Distribution					
	g	%	Au (g/t)	Ag (g/t)	Cu (%)	Fe (%)	Pb (%)	Zn (%)	Au	Ag	Cu	Fe	Pb	Zn
Cleaned Concentrate	2.38	0.42	35.72	958	0.14	4.87	0.08	0.21	11.6	9.5	2.8	0.8	1.6	1.7
Combined Float Tails	570.9	99.58	1.13	38.0	0.02	2.51	0.02	0.05	88.4	90.5	97.2	99.2	98.4	98.3
Head (calc.)	573.2	100.0	1.27	41.8	0.02	2.52	0.02	0.05	100.0	100.0	100.0	100.0	100.0	100.0
Head (assay)			1.20	57.8	0.01	2.64	0.02	0.06						

Leach Extraction Test Report

Test: FL4 C1 **Date:** 26-Jul-18
Sample: FRT Comp #1 Float Concentrate **Project:** I0603

Test Conditions

Solids: 2.38 g
Solution: 50 g
Solids Content: 4.54 %
Grind: 1.5 min
Temp: amb. (15 °C)
pH: alk
Duration: 25 hrs

Notes: Concentrate leach testing using $NH_4Cl/NH_4OH/CaCl_2$ w $CuSO_4$

Tare: 104.35 g

Head Grade	**Au**	**Ag**	Pb	Zn	
Calculated:	35.72	958.4	765	2134	g/t
Assayed:	n/a	n/a	n/a	n/a	g/t

Leach Solution Data

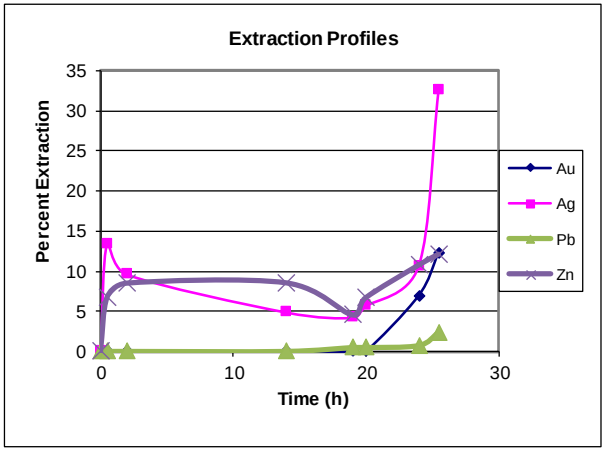
Time (hrs)	Gr. Wt. (g)	Slurry (g)	pH	$CuSO_4$ (g)	NH_4OH (g)	NH_4Cl (g)	$CaCl_2.2H_20$ (g)	Sol'n Vol. (mL)	Sample (mL)	Au (mg/L)	Ag (mg/L)	Pb* (mg/L)	Zn (mg/L)	Au (mg)	Ag (mg)	Pb (mg)	Zn (mg)
0	157.0	52.7	11.16	0.25	1.75		11.08										
0.5	157.0	52.7	10.59		0.28			45.0	5.0	0.00	6.81	0.0	7.6	0.00	0.31	0.00	0.34
2	171.7	67.4	10.74					60.1	5.0	0.00	3.09	0.0	6.6	0.00	0.22	0.00	0.43
14	179.1	74.7	10.70		0.14			68.1	5.0	0.00	0.92	0.0	5.3	0.00	0.11	0.00	0.43
19	175.7	71.3	10.75	0.12	0.35			61.5	61.6	0.00	0.70	0.1	2.2	0.00	0.10	0.01	0.23
20	200.9	96.6	10.04	0.32	1.56	2.14	4.41	90.6	10.0	0.00	1.24	0.0	2.4	0.00	0.13	0.01	0.34
24	215.4	111.0	9.69	0.20	3.59	1.50	7.54	104.5	104.5	0.06	0.97	0.0	1.7	0.01	0.24	0.01	0.55
25.5	161.6	57.2	9.69					52.7		0.09	9.44	0.6	1.3	0.01	0.74	0.04	0.61
Total				0.89	7.67	3.64	23.03										

Solids

Time (hrs)	Wt (g)	Au (g/t)	Ag (g/t)	Pb (g/t)	Zn (g/t)	Au (mg)	Ag (mg)	Pb (mg)	Zn (mg)
25.5	2.441	30.57	631	728	1829	0.1	1.5	1.8	4.5

Leach Results

Time (hrs)	Au Dist. (%)	Ag Dist. (%)	Pb Dist. (%)	Zn Dist. (%)	$CuSO_4$ Cons. (kg/t)	NH_4OH Cons. (kg/t)	NH_4Cl Cons. (kg/t)	$CaCl_2.2H_20$ Cons. (kg/t)
0	0.0	0.0	0.0	0.0	105.04	735.29	0.00	4655.5
0.5	0.0	13.4	0.0	6.8	105.04	852.94	0.00	4655.5
2	0.0	9.6	0.0	8.5	105.04	852.94	0.00	4655.5
14	0.0	4.9	0.0	8.5	105.04	911.76	0.00	4655.5
19	0.0	4.2	0.5	4.6	155.46	1058.82	0.00	4655.5
20	0.0	5.7	0.5	6.7	289.92	1714.94	899.16	6508.4
24	6.9	10.7	0.7	10.7	373.95	3223.18	1529.41	9676.5
25.5	12.2	32.5	2.3	12.1	373.95	3223.18	1529.41	9676.5
Residue	87.8	67.5	97.7	87.9				
Total	100.0	100.0	100.0	100.0				



* Values below detection limit shown as zero

Leach Extraction Test Report

Test: FL4 T1 **Date:** 02-Aug-18
Sample: FRT Comp #1 Float Tails **Project:** I0603

Test Conditions

Solids:	60 g	**Notes:**	Tails leach optimization testing using $NH_4OH/CaCl_2$ w $CuSO_4$
Solution:	75 g		with accelerant #1
Solids Content:	44.44 %		
Grind:	1.5 min		
Temp:	amb. (15 °C)		
pH:	alk		
Duration:	96 hrs	Tare:	104.35 g

Head Grade	**Au**	**Ag**	Pb	Zn	
Calculated:	0.91	37.4	170	496	g/t
Assayed:	1.20	57.8	190	559	g/t

Leach Solution Data

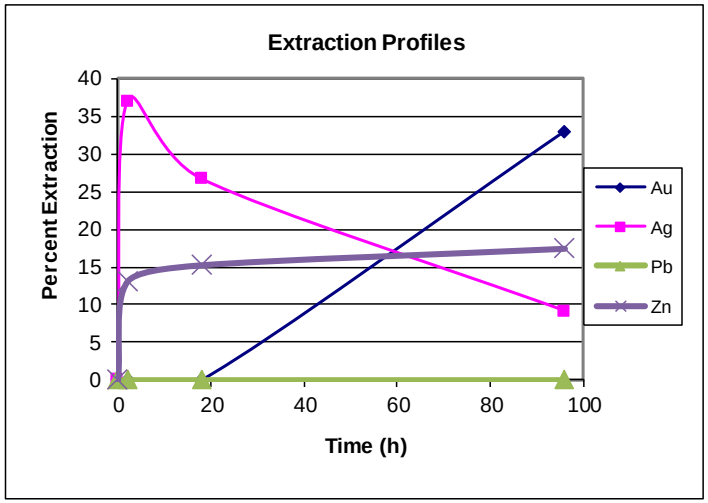
Time (hrs)	Gr. Wt. (g)	Slurry (g)	pH	$CuSO_4$ (g)	NH_4OH (g)	NH_4Cl (g)	$CaCl_2.2H_20$ (g)	Sol'n Vol. (mL)	Sample (mL)	Au (mg/L)	Ag (mg/L)	Pb* (mg/L)	Zn (mg/L)	Au (mg)	Ag (mg)	Pb (mg)	Zn (mg)
0	261.0	156.7	10.01	0.40	4.22	2.68	18.41										
2	271.1	166.8	9.94		0.28			98	5.0	0.00	8.46	0.0	39.7	0.000	0.83	0.00	3.90
18	289.8	185.4	10.01					116	5.0	0.00	4.78	0.0	37.5	0.000	0.60	0.00	4.55
96	311.3	207.0	10.76					139		0.00	1.01	0.0	34.8	0.018	0.21	0.00	5.21
Total				0.40	4.50	2.68	18.41										

Solids

Time (hrs)	Wt (g)	Au (g/t)	Ag (g/t)	Pb (g/t)	Zn (g/t)	Au (mg)	Ag (mg)	Pb (mg)	Zn (mg)
96	59.58	0.61	34.2	171	412	0.0	2.0	10.2	24.5

Leach Results

Time (hrs)	Au Dist. (%)	Ag Dist. (%)	Pb Dist. (%)	Zn Dist. (%)	$CuSO_4$ Cons. (kg/t)	NH_4OH Cons. (kg/t)	NH_4Cl Cons. (kg/t)	$CaCl_2.2H_20$ Cons. (kg/t)
0	0.0	0.0	0.0	0.0	6.67	70.26	44.67	306.8
2	0.0	37.0	0.0	13.1	6.67	74.92	44.67	306.8
18	0.0	26.6	0.0	15.3	6.67	74.92	44.67	306.8
96	33.0	9.2	0.0	17.5	6.67	74.92	44.67	306.8
Residue	67.0	90.8	100.0	82.5				
Total	100.0	100.0	100.0	100.0				



* Values below detection limit shown as zero

Leach Extraction Test Report

Test: FL4 T2 **Date:** 02-Aug-18
Sample: FRT Comp #1 Float Tails **Project:** I0603

Test Conditions

Solids: 60.01 g
Solution: 75 g
Solids Content: 44.45 %
Grind: 1.5 min
Temp: amb. (15 °C)
pH: alk
Duration: 96 hrs

Notes: Tails leach optimization testing using $NH_4OH/CaCl_2$ w $CuSO_4$ with accelerant #2

Tare: 97.25 g

Head Grade	**Au**	**Ag**	Pb	Zn	
Calculated:	1.35	38.5	164	487	g/t
Assayed:	1.20	57.8	190	559	g/t

Leach Solution Data

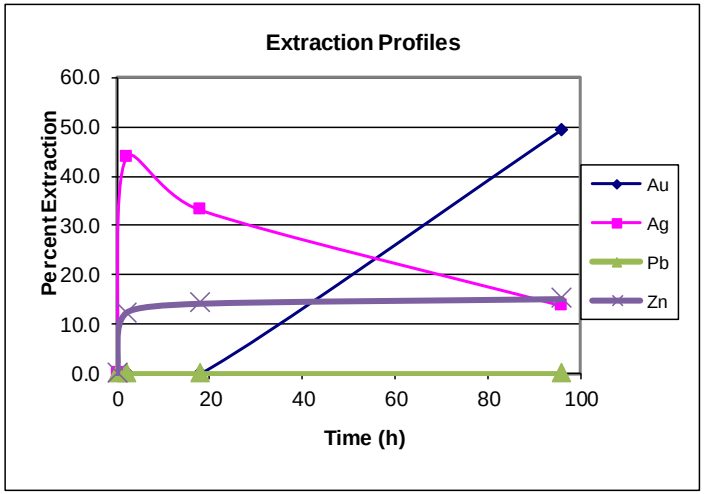
Time (hrs)	Gr. Wt. (g)	Slurry (g)	pH	$CuSO_4$ (g)	NH_4OH (g)	NH_4Cl (g)	$CaCl_2.2H_2O$ (g)	Sol'n Vol. (mL)	Sample (mL)	Au (mg/L)	Ag (mg/L)	Pb* (mg/L)	Zn (mg/L)	Au (mg)	Ag (mg)	Pb (mg)	Zn (mg)
0	251.0	153.8	10.02	0.40	3.67	2.70	18.42										
2	262.2	165.0	9.87		0.32			96	5.0	0.00	10.52	0.0	37.7	0.000	1.01	0.00	3.61
18	271.8	174.6	9.93		0.42			105	5.0	0.00	6.76	0.0	37.7	0.000	0.76	0.00	4.16
96	278.2	181.0	9.85					112	5.0	0.00	1.80	0.0	36.1	0.040	0.32	0.00	4.43
Total				0.40	4.41	2.70	18.42										

Solids

Time (hrs)	Wt (g)	Au (g/t)	Ag (g/t)	Pb (g/t)	Zn (g/t)	Au (mg)	Ag (mg)	Pb (mg)	Zn (mg)
96	59.66	0.69	33.4	165	416	0.0	2.0	9.8	24.8

Leach Results

Time (hrs)	Au Dist. (%)	Ag Dist. (%)	Pb Dist. (%)	Zn Dist. (%)	$CuSO_4$ Cons. (kg/t)	NH_4OH Cons. (kg/t)	NH_4Cl Cons. (kg/t)	$CaCl_2.2H_2O$ Cons. (kg/t)
0	0.0	0.0	0.0	0.0	6.67	61.08	44.99	306.9
2	0.0	43.7	0.0	12.4	6.67	66.44	44.99	306.9
18	0.0	33.1	0.0	14.2	6.67	73.44	44.99	306.9
96	49.4	13.7	0.0	15.1	6.67	73.44	44.99	306.9
Residue	50.6	86.3	100.0	84.9				
Total	100.0	100.0	100.0	100.0				



* Values below detection limit shown as zero

Appendix 3 – Assay Reports

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Submitted By: Doug Warkentin
Receiving Lab: Canada-Vancouver
Received: July 10, 2018
Report Date: July 31, 2018
Page: 1 of 2

CERTIFICATE OF ANALYSIS VAN18001666.1

CLIENT JOB INFORMATION

Project: Fr-Nv
Shipment ID:
P.O. Number
Number of Samples: 16

SAMPLE DISPOSAL

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

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	16	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ200	10	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
AQ250_EXT	6	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Crucible Resources Ltd.
745 East 30th Ave
Vancouver British Columbia V5V 2V8
Canada

CC:

JEFFREY CANNON
Geochemistry Department Supervisor

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv
Report Date: July 31, 2018

CERTIFICATE OF ANALYSIS VAN18001666.1

	Method	WGHT	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	1	0.01	0.001
CR180618-1	Rock	1.71	8.0	21.1	18.5	23	0.5	2.1	2.0	104	1.97	7.6	2.2	7.3	12	<0.1	<0.1	0.3	5	0.07	0.018
CR180618-2	Rock	1.16	14.4	36.6	8.0	75	0.4	10.0	1.7	223	2.35	<0.5	1.5	6.3	29	0.8	0.1	0.4	246	0.19	0.066
CR180618-3	Rock	1.50	68.7	26.2	8.2	44	0.3	9.2	2.8	495	2.99	0.7	1.4	9.3	12	0.1	0.2	0.4	69	0.15	0.054
CR180618-4	Rock	1.33	7.0	14.3	232.2	555	5.5	4.6	1.3	164	2.58	67.5	12.9	2.5	29	6.3	0.4	17.0	12	0.05	0.045
CR180618-5	Rock	0.96	8.2	10.5	7.7	57	0.3	7.6	4.8	234	1.40	5.3	<0.5	4.1	23	1.4	<0.1	0.4	119	0.24	0.069
CR180619-1	Rock	1.38																			
CR180619-2	Rock	1.62																			
CR180619-3	Rock	2.00																			
CR180619-4	Rock	1.61																			
CR180619-4A	Rock	0.29																			
CR180619-5	Rock	1.61																			
CR180620-1	Rock	1.61	1.2	81.5	2.7	46	<0.1	22.2	12.2	775	3.15	44.8	22.0	1.1	43	<0.1	0.8	0.4	121	1.02	0.112
CR180620-2	Rock	0.63	1.4	407.8	11.6	90	1.1	25.9	58.8	1052	11.15	47.4	26.0	0.3	58	0.1	2.5	0.6	246	1.13	0.100
CR180620-3	Rock	1.33	5.9	83.4	36.3	55	9.4	19.1	9.2	302	2.07	37.5	51.7	0.5	5	0.1	2.6	0.3	39	0.13	0.042
CR180620-4	Rock	0.59	10.8	85.3	7.4	55	0.2	15.0	12.9	654	3.32	47.5	69.0	0.7	42	0.2	1.1	0.1	153	0.83	0.101
CR180620-5	Rock	3.01	8.0	966.8	12.3	45	3.6	15.5	137.0	419	10.66	61.1	34.5	0.2	24	0.2	1.7	0.4	64	0.48	0.026

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
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Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv
Report Date: July 31, 2018

CERTIFICATE OF ANALYSIS VAN18001666.1

	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ250	AQ250	AQ250
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Mo	Cu	Pb
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	0.01	0.01	0.01
CR180618-1	Rock	8	3	0.11	23	0.007	<20	0.40	0.044	0.16	0.1	<0.01	0.5	<0.1	0.77	3	5.0	<0.2			
CR180618-2	Rock	10	72	0.88	149	0.135	<20	1.41	0.063	0.72	0.3	<0.01	8.4	0.8	0.12	7	13.3	<0.2			
CR180618-3	Rock	13	54	1.09	186	0.176	<20	1.62	0.052	0.86	0.8	<0.01	8.5	0.6	0.17	8	3.0	<0.2			
CR180618-4	Rock	9	4	0.02	89	0.001	<20	0.12	0.002	0.11	13.6	<0.01	0.9	<0.1	0.39	<1	5.1	0.5			
CR180618-5	Rock	6	46	0.34	54	0.027	<20	0.52	0.034	0.14	2.7	<0.01	2.4	0.1	0.15	3	1.9	<0.2			
CR180619-1	Rock																		3.63	375.17	4.89
CR180619-2	Rock																		2.50	639.18	5.84
CR180619-3	Rock																		6.83	547.49	4.32
CR180619-4	Rock																		2.41	6594.88	7.41
CR180619-4A	Rock																		0.36	499.73	2.67
CR180619-5	Rock																		0.45	167.53	3.78
CR180620-1	Rock	8	44	1.26	103	0.129	<20	1.22	0.057	0.09	0.2	<0.01	10.5	<0.1	0.21	5	0.6	0.3			
CR180620-2	Rock	3	37	1.53	251	0.020	<20	2.04	0.046	0.13	0.3	<0.01	15.9	0.1	2.38	11	6.7	1.1			
CR180620-3	Rock	4	22	0.34	43	0.023	<20	0.54	0.005	0.07	0.2	<0.01	4.0	<0.1	0.10	3	1.7	0.4			
CR180620-4	Rock	4	29	0.72	99	0.036	<20	1.24	0.073	0.12	0.3	<0.01	11.0	<0.1	0.17	6	0.9	<0.2			
CR180620-5	Rock	4	13	0.30	62	0.002	<20	0.91	0.003	0.06	9.3	<0.01	3.7	<0.1	3.30	6	7.6	0.8			

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv
Report Date: July 31, 2018

CERTIFICATE OF ANALYSIS VAN18001666.1

	Method	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
	Analyte	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg
	Unit	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%
	MDL	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001	0.5	0.5	0.01
CR180618-1	Rock																				
CR180618-2	Rock																				
CR180618-3	Rock																				
CR180618-4	Rock																				
CR180618-5	Rock																				
CR180619-1	Rock	42.5	412	6.3	12.9	520	4.90	5.8	1.2	18.0	5.0	46.3	0.14	0.52	1.11	107	0.59	0.110	9.3	9.3	0.80
CR180619-2	Rock	30.4	303	6.2	16.3	477	5.51	3.2	1.7	6.2	3.7	24.7	0.09	0.82	0.38	92	0.25	0.076	10.6	10.1	0.62
CR180619-3	Rock	28.5	872	32.6	66.0	323	7.53	14.9	0.6	19.4	1.0	40.5	0.03	0.79	0.39	82	0.24	0.055	2.2	42.3	0.42
CR180619-4	Rock	77.0	10751	36.5	29.6	737	14.43	5.0	1.2	390.9	4.6	111.2	0.47	0.95	0.60	971	1.24	0.139	5.9	7.0	0.84
CR180619-4A	Rock	37.6	568	4.7	9.2	690	4.16	1.3	1.2	33.8	4.1	44.9	0.11	0.29	0.22	88	0.93	0.102	9.6	9.1	1.01
CR180619-5	Rock	48.3	177	21.0	10.0	935	11.00	6.7	1.2	9.9	4.4	51.6	0.15	0.55	0.13	666	0.82	0.166	9.1	10.4	1.05
CR180620-1	Rock																				
CR180620-2	Rock																				
CR180620-3	Rock																				
CR180620-4	Rock																				
CR180620-5	Rock																				

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv
Report Date: July 31, 2018

CERTIFICATE OF ANALYSIS VAN18001666.1

		Method	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Analyte	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	Nb	Rb	Sn
		Unit	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	0.02	0.1	0.1
CR180618-1	Rock																					
CR180618-2	Rock																					
CR180618-3	Rock																					
CR180618-4	Rock																					
CR180618-5	Rock																					
CR180619-1	Rock		225.8	0.033	<20	1.33	0.029	0.15	0.3	8.4	0.06	0.94	8	0.5	1.23	7.4	1.00	0.1	0.04	0.03	7.6	0.4
CR180619-2	Rock		795.8	0.014	<20	1.21	0.027	0.20	5.2	4.0	0.06	0.37	<5	0.9	0.22	5.6	0.99	<0.1	0.05	0.03	10.1	0.2
CR180619-3	Rock		10.5	0.078	<20	1.10	0.021	0.03	0.2	5.1	0.04	3.38	6	30.1	0.40	5.1	0.30	0.3	0.11	0.15	1.7	0.2
CR180619-4	Rock		99.2	0.125	<20	1.35	0.040	0.05	0.3	4.7	<0.02	0.64	<5	2.4	0.32	11.1	0.23	0.4	0.18	0.06	2.2	1.8
CR180619-4A	Rock		252.2	0.056	<20	1.41	0.025	0.13	<0.1	8.3	0.04	<0.02	<5	<0.1	0.03	6.9	1.03	0.2	0.05	0.03	7.2	0.5
CR180619-5	Rock		82.5	0.098	<20	1.70	0.043	0.07	0.1	7.4	0.03	0.03	<5	<0.1	0.03	11.9	0.61	0.3	0.17	0.06	4.0	1.1
CR180620-1	Rock																					
CR180620-2	Rock																					
CR180620-3	Rock																					
CR180620-4	Rock																					
CR180620-5	Rock																					

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv
Report Date: July 31, 2018

CERTIFICATE OF ANALYSIS VAN18001666.1

Method		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
Analyte		Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Unit		ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
MDL		0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
CR180618-1	Rock										
CR180618-2	Rock										
CR180618-3	Rock										
CR180618-4	Rock										
CR180618-5	Rock										
CR180619-1	Rock	<0.05	1.3	10.05	22.0	0.07	<1	0.2	13.2	<10	<2
CR180619-2	Rock	<0.05	1.3	5.18	24.6	<0.02	<1	0.5	10.3	<10	<2
CR180619-3	Rock	<0.05	2.4	3.22	4.3	<0.02	2	0.1	8.2	<10	4
CR180619-4	Rock	<0.05	3.2	6.70	13.7	0.04	2	0.1	16.9	<10	<2
CR180619-4A	Rock	<0.05	0.8	11.79	20.3	0.03	<1	0.3	18.5	<10	<2
CR180619-5	Rock	<0.05	2.9	8.29	17.8	<0.02	<1	0.4	36.2	<10	<2
CR180620-1	Rock										
CR180620-2	Rock										
CR180620-3	Rock										
CR180620-4	Rock										
CR180620-5	Rock										

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Submitted By: Doug Warkentin
Receiving Lab: Canada-Vancouver
Received: November 20, 2018
Report Date: December 11, 2018
Page: 1 of 2

CERTIFICATE OF ANALYSIS VAN18003343.1

CLIENT JOB INFORMATION

Project: Fr-Nv-IrT
Shipment ID:
P.O. Number
Number of Samples: 20

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	20	Sorting, labeling and boxing samples received as pulps			VAN
AQ200	20	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
AR402	1	Aqua Regia Digestion 0.5g / 100 mL (SCH)	0.5	Completed	VAN

ADDITIONAL COMMENTS

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

Invoice To: Crucible Resources Ltd.
745 East 30th Ave
Vancouver British Columbia V5V 2V8
Canada

CC:

JEFFREY CANNON
Geochemistry Department Supervisor

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Bureau Veritas Commodities Canada Ltd.

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv-IrT
Report Date: December 11, 2018

CERTIFICATE OF ANALYSIS VAN18003343.1

	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	1	0.01	0.001	1
CR180920-G1	Rock Pulp	1.4	200.4	10.6	100	0.3	45.5	28.6	1398	5.20	11.1	1.7	1.1	17	0.3	0.3	0.2	141	0.56	0.047	7
CR180920-G2	Rock Pulp	1.0	81.4	9.2	79	0.3	28.0	18.9	1624	4.59	5.1	<0.5	1.7	7	0.2	0.2	0.2	108	0.13	0.084	5
CR180920-G3	Rock Pulp	0.9	144.7	10.0	95	0.1	41.5	21.3	583	5.39	6.1	1.3	2.0	6	0.1	0.2	0.2	140	0.16	0.119	4
CR180920-G4	Rock Pulp	0.8	149.7	10.2	91	0.2	36.6	22.9	781	4.86	4.7	1.9	2.0	7	0.2	0.4	0.2	122	0.17	0.113	6
CR180920-G5	Rock Pulp	0.8	44.7	11.1	128	<0.1	34.2	25.7	2502	6.10	2.7	1.1	1.2	13	0.2	0.2	0.2	180	0.35	0.073	4
CR180920-G6	Rock Pulp	0.8	30.3	10.1	105	<0.1	24.3	22.0	828	6.10	3.0	<0.5	1.4	7	0.1	0.2	0.2	159	0.14	0.146	4
CR180920-G7	Rock Pulp	1.5	31.1	9.2	90	0.1	22.2	20.7	701	5.03	3.2	<0.5	1.2	10	0.2	0.2	0.2	133	0.25	0.079	6
CR180920-G8	Rock Pulp	0.9	56.8	8.7	82	0.2	26.0	18.2	682	5.13	3.6	1.3	1.2	7	0.2	0.3	0.2	130	0.15	0.118	4
CR180920-G9	Rock Pulp	0.8	106.1	8.4	101	0.1	32.6	22.4	932	5.73	4.2	2.0	1.4	9	0.2	0.2	0.2	147	0.19	0.130	5
CR180920-G10	Rock Pulp	1.1	38.9	9.1	65	0.2	20.2	13.4	405	4.75	3.7	1.5	2.4	6	<0.1	0.2	0.2	108	0.11	0.132	4
CR180920-G11	Rock Pulp	0.9	68.4	8.3	73	0.2	21.1	16.9	492	3.76	5.3	2.1	2.1	7	0.2	0.2	0.2	83	0.12	0.127	6
CR180920-G12	Rock Pulp	0.4	165.5	6.2	88	<0.1	41.3	34.4	863	6.25	5.5	0.7	1.3	12	0.1	0.2	<0.1	165	0.30	0.119	5
CR180920-G13	Rock Pulp	0.3	186.2	6.7	71	<0.1	37.3	31.0	792	5.20	8.6	2.5	1.0	11	<0.1	0.3	<0.1	135	0.30	0.129	4
CR180920-G14	Rock Pulp	0.3	202.9	7.2	90	<0.1	43.9	34.2	878	6.13	6.3	<0.5	1.5	12	0.1	0.2	0.1	156	0.35	0.111	6
CR180920-G15	Rock Pulp	0.3	111.5	6.4	89	<0.1	33.7	27.7	880	5.89	4.7	<0.5	1.6	14	<0.1	0.2	0.1	144	0.30	0.177	7
CR180920-G16	Rock Pulp	0.3	138.9	8.0	78	<0.1	35.2	31.1	934	5.85	5.4	0.7	1.2	15	0.1	0.3	<0.1	142	0.40	0.168	7
CR180920-G17	Rock Pulp	0.6	291.3	8.3	120	0.3	32.8	24.4	1328	4.92	6.6	<0.5	1.3	18	0.3	0.3	0.2	104	0.41	0.182	7
FL4 - T1 Res	Rock Pulp	7.0	199.7	171.2	412	34.2	42.7	7.1	1252	2.53	19.8	611.6	0.4	84	3.2	5.6	0.1	55	3.84	0.043	3
FL4 - T2 Res	Rock Pulp	6.5	223.8	164.8	416	33.4	40.4	7.1	1267	2.51	31.3	689.9	0.4	84	3.0	5.5	0.1	55	3.91	0.044	3
FL4 - C Res	Rock Pulp	34.4	1440.2	728.3	1829	>100	453.7	165.8	2243	4.87	222.0	30571.4	0.6	173	16.3	46.1	2.5	86	11.86	0.075	6

BUREAU VERITAS MINERAL LABORATORIES Canada

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

Client: **Crucible Resources Ltd.**
745 East 30th Ave
Vancouver British Columbia V5V 2V8 Canada

Project: Fr-Nv-IrT
Report Date: December 11, 2018

CERTIFICATE OF ANALYSIS VAN18003343.1

	Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AR402
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Ag
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	2
CR180920-G1	Rock Pulp	77	1.43	96	0.307	<20	2.97	0.006	0.12	0.1	0.04	5.3	0.1	<0.05	12	<0.5	<0.2	
CR180920-G2	Rock Pulp	52	0.94	56	0.333	<20	2.85	0.005	0.08	0.2	0.07	3.9	<0.1	<0.05	11	<0.5	<0.2	
CR180920-G3	Rock Pulp	68	1.34	72	0.290	<20	3.31	0.004	0.19	0.2	0.05	4.6	0.2	<0.05	12	<0.5	<0.2	
CR180920-G4	Rock Pulp	59	1.29	89	0.252	<20	3.37	0.004	0.16	0.2	0.07	5.3	0.1	<0.05	11	<0.5	<0.2	
CR180920-G5	Rock Pulp	48	1.45	198	0.428	<20	2.72	0.006	0.25	0.2	0.03	6.8	0.2	<0.05	14	<0.5	<0.2	
CR180920-G6	Rock Pulp	22	1.41	89	0.333	<20	3.39	0.004	0.35	0.2	0.03	5.0	0.2	<0.05	14	<0.5	<0.2	
CR180920-G7	Rock Pulp	21	1.22	97	0.318	<20	3.21	0.006	0.26	0.2	0.03	4.5	0.2	<0.05	12	<0.5	<0.2	
CR180920-G8	Rock Pulp	39	1.11	67	0.296	<20	2.63	0.003	0.12	0.2	0.05	4.6	0.1	<0.05	12	<0.5	<0.2	
CR180920-G9	Rock Pulp	45	1.34	99	0.295	<20	2.90	0.004	0.17	0.2	0.05	5.3	0.1	<0.05	12	<0.5	<0.2	
CR180920-G10	Rock Pulp	33	0.82	53	0.346	<20	3.21	0.005	0.11	0.3	0.05	3.7	0.1	<0.05	12	<0.5	<0.2	
CR180920-G11	Rock Pulp	31	0.68	76	0.231	<20	3.70	0.008	0.09	0.2	0.08	4.3	<0.1	<0.05	11	<0.5	<0.2	
CR180920-G12	Rock Pulp	50	1.80	136	0.325	<20	3.40	0.003	0.33	0.2	0.02	7.6	0.1	<0.05	11	<0.5	<0.2	
CR180920-G13	Rock Pulp	47	1.37	80	0.249	<20	2.60	0.001	0.25	0.1	0.02	5.5	0.1	<0.05	9	<0.5	<0.2	
CR180920-G14	Rock Pulp	57	1.74	114	0.277	<20	3.44	0.002	0.31	0.1	0.03	7.6	0.1	<0.05	11	<0.5	<0.2	
CR180920-G15	Rock Pulp	42	1.57	108	0.253	<20	3.33	0.004	0.32	0.2	0.03	8.5	0.2	<0.05	11	<0.5	<0.2	
CR180920-G16	Rock Pulp	43	1.63	101	0.218	<20	2.99	0.002	0.31	0.1	0.02	7.7	0.1	<0.05	10	<0.5	<0.2	
CR180920-G17	Rock Pulp	47	0.94	126	0.193	<20	3.74	0.009	0.21	0.1	0.05	6.4	0.1	<0.05	10	<0.5	<0.2	
FL4 - T1 Res	Rock Pulp	74	1.05	19	0.020	<20	1.21	0.005	0.06	0.6	0.10	3.4	<0.1	0.07	5	1.3	<0.2	
FL4 - T2 Res	Rock Pulp	71	1.06	18	0.020	<20	1.20	0.006	0.06	0.5	0.10	3.7	<0.1	0.06	5	1.2	<0.2	
FL4 - C Res	Rock Pulp	443	1.60	38	0.024	<20	1.88	0.014	0.10	1.4	0.68	5.7	0.1	2.20	8	17.9	1.0	631

KEMETCO RESEARCH INC
| Kemetco Research Inc | #150 –13260 Delf Place, Richmond, BC, V6V 2M2 CANADA
| Tel: 604-273-3600 | Fax: 604-273-3609 | E-Mail: info@kemetco.com | Website: www.kemetco.com

Sample ID	I0603 FL4-C-1	I0603 FL4-C-2	I0603 FL4-C-3	I0603 FL4-C-4	I0603 FL4-T1-1	I0603 FL4-T1-2	I0603 FL4-T1-3	I0603 FL4-T2-1	I0603 FL4-T2-2	I0603 FL4-T2-3
ELEMENTS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Ag Silver	6.81	3.09	0.92	1.24	8.46	4.78	1.01	10.52	6.76	1.80
Al Aluminium	1.21	0.93	0.85	0.84	1.01	0.96	1.13	1.05	0.98	0.80
As Arsenic	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Au Gold	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B Boron	<1.	<1.	<1.	<1.	<1.	<1.	1.73	<1.	<1.	1.54
Ba Barium	2.70	2.08	1.59	1.32	3.78	2.87	2.30	3.64	3.04	2.42
Be Beryllium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bi Bismuth	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.50	<0.4	<0.4	<0.4
Ca Calcium	55792	40694	31513	24754	47210	38273	28556	48139	41139	33724
Cd Cadmium	0.16	0.13	0.11	0.05	0.37	0.34	0.30	0.41	0.38	0.34
Co Cobalt	1.96	1.52	1.16	0.18	0.34	0.38	0.36	0.41	0.38	0.35
Cr Chromium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cu Copper	1172	901	658	283	903	713	508	927	801	618
Fe Iron	0.51	0.38	0.29	<0.2	1.35	1.08	1.26	1.31	1.08	0.92
K Potassium	8.65	6.54	5.97	5.76	29.2	26.1	23.1	30.9	27.3	24.0
Li Lithium	2.37	1.74	1.35	1.17	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Mg Magnesium	2.43	1.67	1.11	1.07	4.16	2.77	1.89	4.69	3.27	2.23
Mn Manganese	0.04	0.03	0.03	0.03	1.54	0.64	0.07	0.03	<0.02	<0.02
Mo Molybdenum	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.23	<0.2	<0.2	0.23
Na Sodium	16.5	12.1	8.66	344	30.0	25.2	27.6	28.0	23.6	28.3
Ni Nickel	2.63	2.07	1.66	0.52	0.44	0.57	0.52	0.54	0.54	0.51
Pb Lead	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sb Antimony	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Se Selenium	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Si Silicon	<0.4	0.52	0.81	3.97	1.29	1.93	6.33	1.81	1.97	5.06
Sn Tin	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sr Strontium	31.9	23.4	18.1	14.4	31.3	25.1	18.1	32.0	26.7	21.5
Ti Titanium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tl Thallium	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
U Uranium	<1.	<1.	<1.	<1.	<1.	<1.	<1.	<1.	<1.	<1.
V Vanadium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zn Zinc	7.63	6.55	5.33	2.43	39.7	37.5	34.8	37.7	37.7	36.1