



BC Geological Survey  
Assessment Report  
38067



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

Assessment Report  
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: 2018 GEOCHEMICAL ASSESSMENT REPORT

TOTAL COST: \$31,557.62

AUTHOR(S): Dustin Perry, B.Sc.

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): MX-8-238

YEAR OF WORK: 2018

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): Event #5722982 / December 14, 2018

PROPERTY NAME: CATFACE

CLAIM NAME(S) (on which the work was done): 201401, 201402, 201416, 201417, 201418, 201424, 201425, 201622, 201623, 201636, 201645, 342307 & Mining Lease 345339 (97.96% of work on legacy tenures & 2.04% of work on mining lease)

COMMODITIES SOUGHT: Cu, Mo

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092F 120, 092F 231, 092F 251

MINING DIVISION: Alberni

NTS/BCGS: 92E/1E, 8E; 92F/4W, 5W / 092F021

LATITUDE: 49 ° 14 ' 45 " LONGITUDE: 125 ° 57 ' 40 " (at centre of work)

OWNER(S):

1) Catface Copper Mines Limited 2) \_\_\_\_\_

MAILING ADDRESS:

200-580 Hornby Street

Vancouver, BC V6C 3B6

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

1) Catface Copper Mines Limited 2) \_\_\_\_\_

MAILING ADDRESS:

200-580 Hornby Street

Vancouver, BC V6C 3B6

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Catface is a calc-alkalic Cu-Mo porphyry system genetically related to mid-Eocene porphyritic quartz diorite to granodiorite of the "Catface Intrusions". The Catface Intrusions cut older quartz monzonites and Triassic Karmutsen Group volcanics. Disseminated and fracture controlled chalcopyrite, bornite and molybdenite are hosted by all of these lithologies.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 00540, 00541, 00580, 27773, 28725, 31052, 31894, 35293, 36435

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping			
Photo interpretation			
<b>GEOPHYSICAL (line-kilometres)</b>			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil 220 samples / 36 element ICP-MS / AQ201		See tenure numbers on page 1	\$18,817.36
Silt			
Rock 25 samples / 36 element ICP-MS / AQ201		See tenure numbers on page 1	\$2,138.34
Other			
<b>DRILLING (total metres; number of holes, size)</b>			
Core			
Non-core			
<b>RELATED TECHNICAL</b>			
Sampling/assaying 245 / Bureau Veritas Commodities		See tenure numbers on page 1	\$7,396.12
Petrographic			
Mineralographic			
Metallurgic			
<b>PROSPECTING (scale, area)</b>			
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other Report preparation, program administration		See tenure numbers on page 1	\$3,205.80
<b>TOTAL COST:</b>			<b>\$31,557.62</b>

# **2018 GEOCHEMICAL ASSESSMENT REPORT**

**on the**

## **CATFACE COPPER PROPERTY**

**Tenure Nos. 201401, 201402, 201416, 201417, 201418, 201424, 201425, 201622, 201623,  
201636, 201645, 342307 & Mining Lease 345339**

**Alberni Mining Division**

**NTS: 92E/01E, 92E08E, 92F/04W, 92F/05W**

**BCGS Map Sheets: 092E030, 092F021**

**Latitude: 49° 14' 45" N; Longitude 125° 57' 40" W**

**UTM (NAD 83 – Zone 10): 5 459 000 N; 284 500 E**

**Owner / Operator:**



**Field Work Period: November 30 to December 9, 2018**

**Author: Dustin Perry, B.Sc.  
Orevista Exploration**

**March 11, 2019**

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## **SECTION A: REPORT**

### **INTRODUCTION**

The Catface Property is a large copper-molybdenum porphyry style deposit located on the west coast of Vancouver Island, British Columbia. The property is owned by Catface Copper Mines Limited (“CCML”), a company 100% owned by Selkirk Metals Corp., itself a wholly-owned subsidiary of Imperial Metals Corporation of Vancouver, BC. Falconbridge Limited (now Glencore Canada Corporation) discovered the mineral deposit in 1960 and completed several phases of surface and underground work on the property up until 1990 when they ceased all operations in British Columbia. The Catface Property is located in the Catface Range, approximately 13 km north-northwest of Tofino, BC.

Building on diamond drilling programs in 2008 and 2010, along with an encouraging report from an evaluation of the remaining exploration potential in 2011, CCML revisited the Hecate Bay Zone of the Catface Project in 2016 and 2018. The Hecate Bay Zone, 2 km southeast of the main Cliff Zone, remains underexplored and poorly understood. Only 13 short Winkie drill holes were completed within the prospective area in the 1960’s and the closest substantial drill holes are located 700 m to the northwest of the area targeted in 2016. A soil geochemical survey was undertaken in June, 2016, extending southeast from the previous systematic sampling by Falconbridge in the late 1980’s and over a portion of the Hecate Bay mineralization as it is currently understood. A 600 m wide zone of anomalous copper (Cu) in soils was identified, open to the northwest and southeast, and follow up prospecting and rock sampling returned grades up to 0.6% Cu in biotite-altered tonalite float samples. The Hecate Bay Zone has the potential to host substantial Cu resources but it remains poorly understood and requires additional surface work and drill testing. An additional program of soil and rock sampling was undertaken in late November and early December 2018 in order to expand the survey coverage in the area of the Hecate Bay Zone and the 2018 work is summarized in this report.

### **PROPERTY:**

The Catface Copper Property is owned 100% by Catface Copper Mines Limited (“CCML”), a private company owned 100% by Selkirk Metals Corp., a wholly-owned subsidiary of Imperial Metals Corporation. CCML is the registered owner of the mineral tenures comprising the Catface Property. Glencore Canada Corporation (formerly Xstrata / Falconbridge Limited) holds a right to “back in” to a 50.1% working interest in the Catface project at the time of a production decision by paying to CCML 150% of CCML’s aggregate expenditures on Catface, or alternatively, Glencore may revert to a 9% Net Proceeds of Production royalty.

The property is located 13 km north-northwest of Tofino, BC in the Catface Range of Vancouver Island (Figures CF-18-2 and CF-18-3). It consists of 138 mineral tenures (1 mining lease of 15 units; 130 legacy claims / 130 units; 7 cell claims / 14 cells) totaling 159 units and covering a gross area of 3,797.28 ha (Figures CF-16-3). Mining Lease 345339 covers 252.0 ha in the core area of the property and was issued on September 25, 1996 for a 30-year term expiring on September 25, 2026. A rental of \$20.00/ha or \$5,040.00 is payable annually.

The details of the mineral tenures that comprise the Property are set out in Section B of this report. The “good to dates” are based on the Statement of Exploration and Development Work registered on Mineral Titles Online on December 14, 2018 as Event #5722982 and assume that the work contained in this report will be accepted for assessment purposes.



Yukon

N.W.T.

British  
Columbia

Alberta

**CATFACE  
PROPERTY**

Pacific  
Ocean

Canada  
U.S.A.

 **Catface**  
an Imperial Metals company

**CATFACE PROPERTY**  
Alberni Mining Division  
**BC Location Map**

Date: Feb 2019  
Scale: As Shown

Drawn By: MD

Figure:  
CF-18-1

0 125 250 500 Kilometres

280000

300000



Flores Island

Catface Property

Fandora Property

Hecate Bay

Warn Bay

Vargas Island

Meares Island

Tranquil Inlet

Tofino Inlet

Tofino

PACIFIC OCEAN

5460000

5460000

5440000

5440000

0 2 4 8 Kilometres



CATFACE PROPERTY  
Alberni Mining Division  
General Location Map

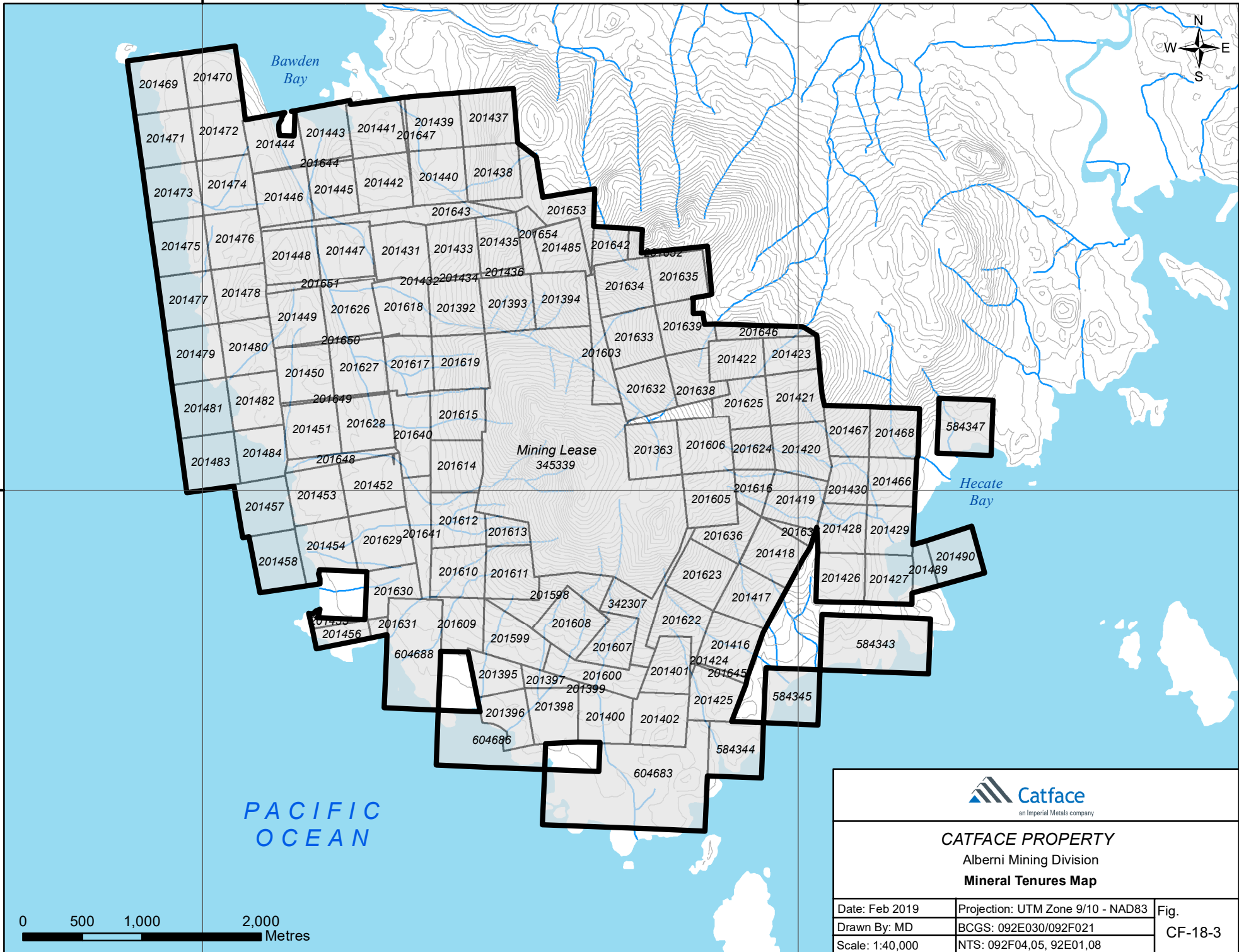
Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig. CF-18-2
Drawn By: MD	BCGS: 092E030/092F021	
Scale: 1:200,000	NTS: 092F04,05, 092E01,08	

280000

285000

5460000

5460000



PACIFIC OCEAN



**CATFACE PROPERTY**  
 Alberni Mining Division  
**Mineral Tenures Map**

Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig. CF-18-3
Drawn By: MD	BCGS: 092E030/092F021	
Scale: 1:40,000	NTS: 092F04,05, 92E01,08	



## **LOCATION AND ACCESS:**

The Catface Copper property is centered on Catface Mountain, on the western edge of the Catface Peninsula, west coast of Vancouver Island, southwestern British Columbia. The town of Tofino is approximately 13 km south-southeast of the property. Access to the Catface Peninsula is possible by boat, fixed-wing aircraft or helicopter. A ferry or boat is required to move vehicles and equipment from Tofino across Bedwell Sound to the Catface Peninsula. Water taxis are also employed to move personnel on a daily basis from either Ahousaht or Tofino to either Whitepine Cove or Hecate Bay. They are then transported by vehicle to the jobsite on Catface Mountain. The barge facility at Hecate Bay on the east side of the property remains in good order, but the boat docking facilities have not been maintained since logging and shake/shingle activity ceased on the Catface Peninsula and in the Cypre River area. A short gravel airstrip near the Hecate Bay dock facilities could accommodate wheeled plane access with a limited amount of upgrading, while floatplanes can land in the relatively protected confines of Hecate Bay itself. A 10 km logging and mining access road extends from Hecate Bay into the central portion of the property.

The property is located at the corner of four NTS map sheets 92E/01, 92E/08, 92F/04 and 92F/05, and the BCGS map sheets are 092E030 and 092F021. The centre of the 2018 work area is 49° 14' 45" North latitude and 125° 57' 40" West longitude while the UTM coordinates are 284 500 E, 5 459 000 N (NAD 83, Zone 10).

## **CLIMATE, TOPOGRAPHY AND VEGETATION:**

The climate of the region is classified as West Coast Marine, with mild but wet winter seasons and cool drier summers. Mean annual precipitation is 3,235 mm as rain, and 536 mm of snow. The annual temperature range varies from -15.0°C to 32.8°C, with a mean of 9.0°C (Knight Piésold, 2004). Temperatures are moderated by the proximity of the ocean so that prolonged periods of freezing weather are unusual.

The heavy rainfall that is common in this area can deliver large volumes of water over short periods of time, much of which is intercepted by the forest canopy. The remainder normally runs off rapidly through the soil. Hydrologic data has been collected for Bawden Creek (also referred to in earlier references as Irishman Creek), which runs through the centre of the property. This data indicates that the flow can be highly variable, with the mean annual high flows in December and low flows in July – August.

The Catface Property is located in the Clayoquot Sound region of western Vancouver Island. This area is dominated by the Estevan Coastal Plain, a gently undulating terrain that has been broken into numerous islands and peninsulas by inlets and channels. Steep, highly dissected rocky hills are formed by outliers of the Westcoast intrusive complex that form the Vancouver Island Mountains. The Catface Peninsula is a heavily treed peninsula 4 to 8 km wide. Recently significant areas of forest land have been harvested within the property boundaries and nearby areas. The Catface Range contains two subdued mountain tops, the South Peak with an elevation of 880 m and the North Peak with an elevation of 960 m. Property elevations range from sea level (0 m) to 960 m at the North Peak.

Catface Mountain is covered in a typical assemblage of west coast second growth vegetation consisting of thick stands of western hemlock, red cedar, Douglas fir and white pine. There is a thick undergrowth of salal and salmonberry throughout the area.

## **HISTORY:**

The earliest mention of exploration work on the Catface Peninsula is from the 1898 Annual Report of the Minister of Mines of British Columbia which reported the collaring of a 6 m adit into a highly fractured and altered shear zone containing copper staining.

In 1960 Gerald Davis and two partners climbed to the base of a copper stained cliff, visible from the sea, and sampled oxidized copper material from a fault zone. Sampling later that year located fresher material and recognized extensive copper and molybdenum mineralization, prompting Falconbridge to stake the first claims.

The claims were explored by Falconbridge between 1960 and 1969 through prospecting, mapping, geophysical surveys, soil and rock geochemistry and 11,777 m (38,628 ft) of surface diamond drilling. The success of this work led to the decision to collar an adit in 1970, which was ultimately driven 857 m (2,811 ft) into the Cliff Zone. Underground diamond drilling commenced in 1971 and totaled 7,212 m (23,655 ft).

Subsequent work programs included extensive metallurgical testing by Lakefield Research, and also test work at the Tasu Mine facility operated by Falconbridge. An in house resource estimate and pit design study was completed in 1972. This data was re-checked by Sumitomo in 1973 when they conducted additional bench tests on the ore.

In 1989 the project was reactivated as a result of more favorable metal prices and the advantageous location of the deposit. All the old data was re-evaluated to assess the likelihood of locating additional resources in the area. A limited drill program tested outlying IP anomalies peripheral to the Cliff Zone mineralization. At this time available core was re-assayed to determine the precious metal content of the ore. The adit was reopened and re-sampled at 10 ft intervals along the entire length.

Doublestar Resources Ltd. acquired the Catface Property and the shares of Catface Copper Mines Limited from Falconbridge in January 2000, but no substantive fieldwork was carried out by Doublestar other than some baseline environmental studies in 2004.

Selkirk Metals Corp. acquired its interest in the property in 2007 following its acquisition of Doublestar and the subsequent amalgamation of the two firms in 2009.

A diamond drilling program was conducted in 2008 that saw the completion of 2,383 m in eight holes, six in the Cliff Zone and two in the Hecate Bay Zone. The program served to confirm the historic grade data for the Cliff Zone deposit, provide fresh samples for metallurgical and environmental testing, further delineate the historically defined Cliff zone mineralization and test the potential of the Hecate Bay Zone. Assay results from the program confirmed the historic copper grades and expanded the higher-grade bornite-bearing core of the Cliff Zone.

To reduce the need for constant helicopter support for exploration drilling activities on the Catface property, Selkirk Metals Corp. sought and was granted approval to reactivate the access road located on the west side of Catface Mountain. Road reactivation began in October 2009 and was completed in March 2010. Upon completion of the road an enclosed core-processing shed was constructed on the spur road 500 m northwest of the Cliff Zone adit.

Selkirk Metals Corp., with its 100% stake in Catface Copper Mines Limited, became a wholly-owned subsidiary of Imperial Metals Corporation through a merger in November 2009.

Exploratory diamond drilling resumed from May through September 2010, with 3,548 m of drilling completed in 13 holes. Of the 13 diamond holes collared, 7 were terminated prior to reaching a satisfactory target depth due to adverse ground conditions. The drilling program confirmed historic copper grades along the length of the Cliff Zone with a hole sub-parallel to the adit (driven in 1970 by Falconbridge) and extended the known Cliff Zone mineralization to the southeast as well as confirming the presence of a high grade breccia body within the Irishman Creek Zone.

During the period from June 2010 through February 2011 a property scale evaluation was completed to assess the remaining exploration potential of the Catface project. Geological reconnaissance mapping at 1:25,000 scale was carried out in conjunction with examination of diamond drill core, drilling maps and sections, and strip logs from the drilling conducted in 2010.

A short reconnaissance mapping and prospecting program was completed in November 2014 targeting the lower Irishman (Bawden) Creek area and the Hecate Bay Zone (HBZ). A narrow (~5 m) silicified porphyritic dacite dike containing low grade Cu mineralization and interpreted to belong to the Eocene Catface intrusions was observed 150 northwest of the Irishman Creek Zone. Low grade disseminated Cu mineralization within weakly silica-biotite altered tonalite was confirmed within the Hecate Bay Zone.

During the June of 2016, a three day field program was completed in the HBZ. The field program was designed to extend historic Falconbridge soil surveys to the south. The field program was successful at delineating a 600m wide area with anomalous copper geochemistry in addition to zoned copper and molybdenum anomalies. The surveyed area remained open down slope and to the northeast.

A second visit in November of 2016 was conducted to follow up the geochemical anomalies. Unfortunately prospecting within the creek drainages including the one where several poorly documented historic Falconbridge drill holes were located was impossible due to high stream flow. The majority of the rock samples taken were float samples of quartz-diorite/tonalite and Karmutsen volcanics. Sampling returned values up to 0.6% Cu within silica and biotite altered tonalite with disseminated and veined chalcopyrite.

### **REGIONAL GEOLOGY:**

The West Coast of Vancouver Island is underlain by the Wrangellia Terrane, an exotic assemblage accreted to the North American Cordillera in the Mesozoic, and the West Coast Complex. The Paleozoic (Late Devonian) Sicker Group is the oldest member of the Wrangellia Terrane and underlies all other lithologies. The Sicker Group is defined by two main assemblages of marine arc deposition: The Nitinat and the McLaughlin Ridge Formations.

The Nitinat Formation is dominantly an andesite-basalt metavolcanic suite with associated volcanic breccias and agglomerates. The younger McLaughlin Ridge is characterized by volcanoclastic sandstones, pillow lavas, and felsic volcanics with minor debris flow indications (Brandon, M.T., 1985). Carboniferous to Permian shallow marine deposited strata of bioclastic limestone, sandstone, and shale of the Buttle Lake Group conformably overlie the Sicker Group. The unconformable Middle Triassic Karmutsen Formation volcanics (basaltic pillow lavas, flows, and breccias) complete with a suite of hypabyssal sills and dykes, lie atop. A Late Triassic shallow marine sequence of Limestone (Quatsino Formation) overlies the Karmutsen, and is in turn overlain by thinly banded units of calcareous metasediments and argillites of the Parson's Bay Formation (Gunning, 1932).

All these lithologies are unconformably overlain by the thick Bonanza Volcanic sequence. These rocks consist chiefly of variably colored (red, green, and maroon) welded to massive dacitic tuffs and pyroclastic

andesites. The Bonanza units trend prevalently northwest and are in turn intruded by the Lower Jurassic Island Intrusions; the cause of associated regional and contact metamorphism.

The West Coast Complex lies on the extreme western margin of Vancouver Island. The Complex is composed of a chaotic assemblage of lithologies defined by melanges of Lower Cretaceous mudstones, sandstones, and cherts overlying an older Volcanic Arc Complex. The northwest striking West Coast Fault separates this Mesozoic complex from the aforementioned Paleozoic and associated rocks of the rest of the Wrangellia Terrane on Vancouver Island (Brandon, M.T., 1985).

### **PROPERTY GEOLOGY:**

The Catface copper-molybdenum porphyry deposit is related to a suite of Eocene equigranular to porphyritic diorite to tonalite stocks and dykes. These intrusives, referred to as the Catface intrusions, occur within Paleozoic-Mesozoic(?) mafic intrusive basement, Triassic metavolcanic and sedimentary rocks, and Jurassic(?) monzogranite. Diorites and gabbros of the Westcoast Complex make up the mafic intrusive basement and are dominant throughout the western part of the property (Figure CF-16-5). These lie in fault contact with the Upper Permian Sicker or Vancouver Group (assigned to the Triassic Karmutsen Group) volcanic suite consisting of basalts, andesitic flows, tuff breccias and agglomeratic rocks that are locally weakly hornfelsed near the intrusive contacts. A large NNW-elongate stock of Jurassic(?) monzogranite intrudes these two units and is centered along the fault contact between them (McDougall, 1976; Muller, 1981; Nilsson, 2001 and Riedell, 2011).

Much of the following property scale description is summarized from the 2011 Catface geological mapping and drilling review completed by B. Riedell for CCML.

The Eocene Catface intrusions form a cupola of equigranular to porphyritic diorite, quartz diorite, dacite and tonalite stocks, dykes and hydrothermal breccias temporally bracketing the mineralizing episode. Within this cupola the tonalite porphyry phase, with its favourable porphyritic texture, disseminated sulphides, irregular A-style (early, high-temperature) quartz-sulphide veinlets and central location relative to the Cu-Mo ore zone, very likely represents the principle mineralizing intrusion.

A NNW-elongate zone of K-silicate (dominantly biotitic) alteration occurs at the centre of the exposed system and correlates well with the extent of >0.1% estimated Cu mineralization. This K-silicate alteration is visible within intrusive rocks as brown biotite replacement of mafic minerals with minor overprinted chlorite, and minor K-feldspar vein envelopes, while the intruded Karmutsen volcanics form dark grey hornfels with fine black to brownish-black biotite pervasively replacing the rock groundmass, as clots, and as envelopes along quartz veinlets. Quartz veining is relatively weak compared with other porphyry systems and is typically around 5 vol% up to a maximum of 15 vol%. Intrusive rocks outside the central K-silicate zone show weak to moderate chlorite-epidote alteration and weak hornfelsing of Karmutsen volcanics extends ~2 km from the K-silicate zone before grading into regional "greenstone" (epidote-chlorite± zeolites) metamorphism. Sericitic alteration is poorly developed within the Catface porphyry system.

Within the western part of the 2.5 by 2 km biotite-dominated alteration and disseminated chalcopyrite system there is a more strongly mineralized core, referred to as the Cliff Zone, which carries the majority of the mineral resource. The Cliff Zone is 700 by 700 m in extent and comprised of chalcopyrite + pyrrhotite ± bornite ± molybdenite ± pyrite forming a compact shell-like body capping the tonalite porphyry intrusion and averages approximately 1.5 vol% total sulphides. Based on drilling on sections 2S and 6S, there is strong evidence that the tonalite stock plunges approximately 65 degrees to the east or northeast (Figure CF-16-4). This suggests, that the core of the system has undergone post-mineral rotation 25 degrees to the west-southwest.

The highest Cu grades (0.5-1.5+ %) occur in monzogranite and especially Karmutsen volcanic wall rocks within 100 - 200 m of the tonalite contacts. Outside of this higher Cu grade core zone, a chalcopyrite+pyrite+pyrrhotite zone is present and the extent of visible chalcopyrite and estimated >0.1% Cu is 3.5 by 2.0 km. Pyrite gradually increases moving further outboard to form a weak pyrite halo of 1.5-3.0 vol% total sulphides, with the zone of >1.5% pyrite extending from 2 to 4+ km from the centre of the system (Figure CF-16-5).

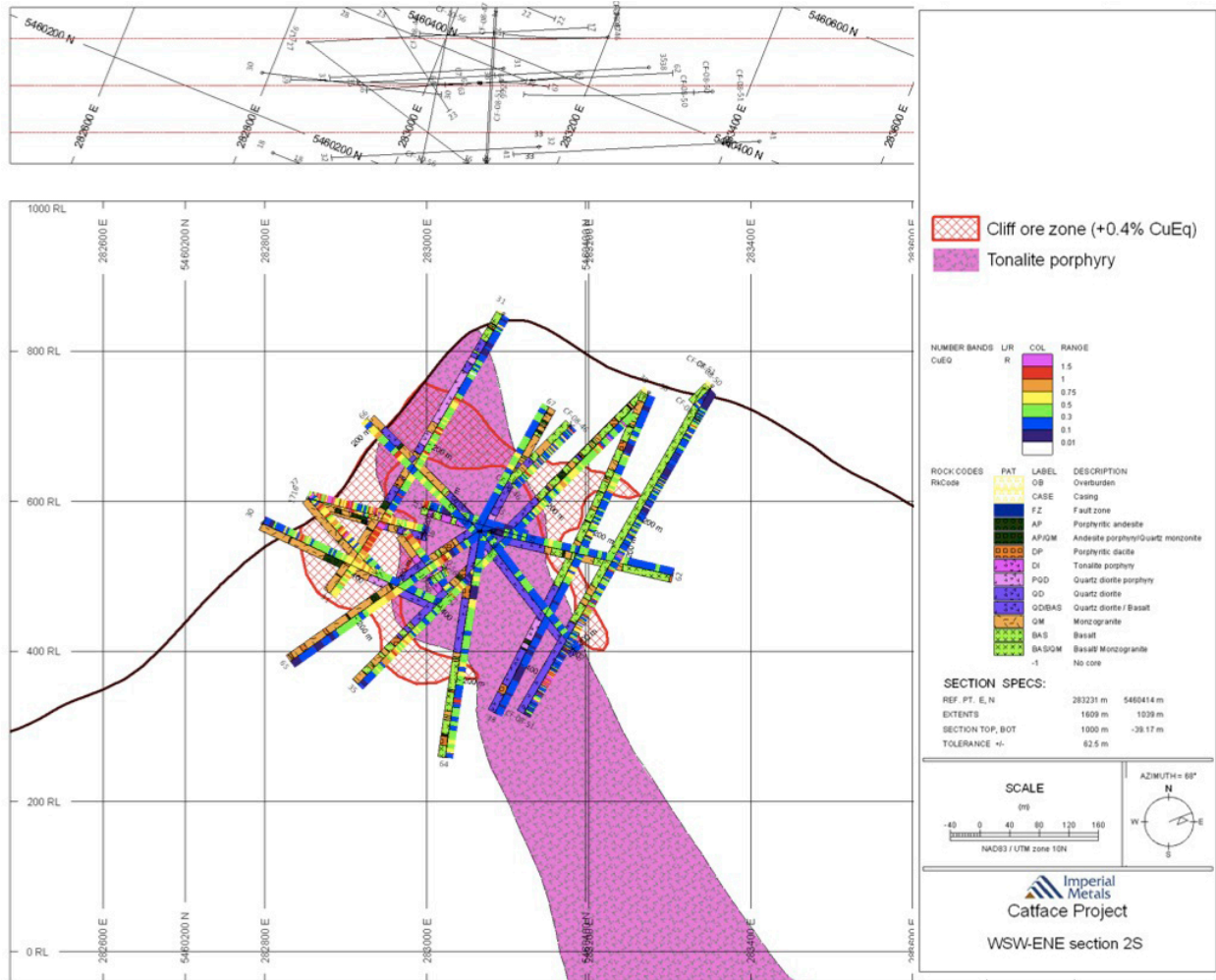
**Table 1. Rock Units of the Catface Project from Reidell (2011).**

Unit	Description	Occurrence	Age relationships	Representative example <sup>1</sup>	Previous name (McDougall, 1976; Enns, 1989)
<b>EOCENE – Catface intrusions (sequence poorly constrained)</b>					
Porphyritic dacite (Tpd)	Light to medium grey, ~10% each hb and plag phenocrysts in an aplitic to fine-grained groundmass of plag, qz, kf, altered mafic minerals	Dykes trending NW to NE	Cuts Ttp (McDougall, 1976). Late-mineral age indicated by weaker alteration-mineralization than intruded rocks	282959E / 5460985N (just SE of adit portal)	Andesite porphyry
Hydrothermal breccia (Thbx)	Commonly elongate, rounded > subangular clasts of mixed Jmg and Trk in a matrix of rock flour, qz, chl, sc, bi and coarse blebs of cp and po; matrix-supported	N-elongate tabular body ~40 m thick in Irishman Creek zone	Intermineral; some early qz-sulph veinlets truncated by breccia matrix	Hole CF-10-58 / 157-207 m	Breccia
Tonalite porphyry (Ttp)	Medium grey, crowded porphyry with ~50% phenocrysts of plag > bi, hb, qz in a fine-grained qz-plag=KF groundmass	Small stock and dykes centrally located in Cliff zone; small bodies (NNE dykes?) in Irishman Creek zone	Synmineral; cuts Jmg and Trk	Hole CF-10-56 / 488-634 m	Porphyritic quartz diorite
Fine-grained quartz diorite porphyry (Tfqdp)	Light grey; ~40% phenocrysts of plag > hb, bi, rare qz in an aplitic qz-plag groundmass. More distinctly porphyritic texture than Ttp	Dykes cutting Trk and Jmg within and especially NE of the Cliff zone	Cuts Jmg and Trk; not observed to cut Ttp	283480E / 5463217N; hole CF-10-66 / 470.9-480.2 m	Not recognized
Hecate Bay tonalite (Thbt, Thbtbx)	Medium grey, medium-grained equigranular; plag > qz, hb, bi. <i>Thbtbx</i> , intrusive breccia with up to 50% fragments of Karmutsen volcanic rocks or Westcoast Complex in a quartz diorite to tonalite matrix	Stock ~1.5 km across SE of Cliff zone. <i>Thbtbx</i> forms two small masses WNW and NW of Cliff zone	48 Ma (K-Ar, biotite; McDougall, 1976). Cuts Trk; <i>Thbtbx</i> cuts Trk and PzMzwc	285050E / 5458833N (Thbt); 281750E / 5463140N (Thbtbx)	Hecate Bay quartz diorite
Medium-grained diorite (Tmd)	Medium to dark grey, medium-grained equigranular; 55% hb, 45% plag	NW-trending dykes scattered N and NE of the Cliff zone	Cuts Trk. No clear age relations with other intrusive phases	283866E / 5464165N	Not recognized
<b>JURASSIC(?)</b>					
Monzogranite (Jmg)	White to cream-white, medium- to coarse-grained equigranular; plag > kf, qz > hb, bi.	NNW-elongate stock underlying much of the western part of the Cliff zone and vicinity	Cuts Trk and PzMzwc; cut by Tpd, Ttp and Tfqdp. McDougall (1976) inferred a Jurassic age based on similarity to intrusions of the Island plutonic suite	282295E / 5461016N	Quartz monzonite; logged as "granodiorite" in 2010 drilling
<b>TRIASSIC</b>					
Karmutsen Group (Trk, Trkl)	Basalt to andesite lavas, pyroclastic and epiclastic rocks; minor interbedded metasilstone and argillite. Volcanic rocks display low-grade regional "greenstone" metamorphism in fringes of the system, and form dark grey biotitic hornfels near the Catface intrusions. <i>Trkl</i> , interbedded lenses of light grey, thin- to medium-bedded marble	Dominant wall rocks throughout the northeastern part of Catface peninsula	Cut by all intrusive rock units. Assigned to Triassic Karmutsen Group by Muller and Carson (1969)	286864E / 5461867N ("greenstones"); 283539E / 5460472N (hornfelsed volcanics); 286582E / 5463114N (Trkl)	Karmutsen volcanics
<b>PALEOZOIC-MESOZOIC(?)</b>					
Westcoast Complex (PzMzwc)	Medium to dark grey, fine- to coarse-grained diorite and gabbro, commonly foliated and banded; also migmatitic rocks with dikes of leuco-tonalite. Contains 1-2% mt, making it the only magnetic rock on the property	Dominant wall rocks throughout the western part of the property	In fault contact with Trk, so no contact relations evident. Older age for PzMzwc suggested by foliated textures. McDougall (1976) cited a 263 Ma (Permian) zircon age elsewhere in the Alberni map area	284208E / 5458578N	Westcoast diorite

Abbreviations: bi, biotite; cp, chalcopyrite; hb, hornblende; kf, K-feldspar; mt, magnetite; plag, plagioclase; po, pyrrhotite; qz, quartz; sc, sericite; sulph, sulphide  
Notes: (1) Coordinates of surface outcrops in UTM zone 10, NAD 1983. Drill hole locations in the format HoleID / Depth in m.

The higher grade Irishman Creek Zone lies 500 m to the NNW of the Cliff Zone and consists of a 40 m wide multi-stage breccia body. Chalcopyrite – pyrrhotite mineralized hydrothermal breccia overprints an earlier intrusive breccia with abundant Karmutsen volcanic rock fragments along the eastern margin of the

monzogranite stock. The hydrothermal breccia is matrix-supported and contains elongate clasts of monzogranite and volcanic rocks in a matrix of rock flour, quartz, chlorite, biotite, sericite, and discrete coarse blebs of chalcopyrite and pyrrhotite rimmed by coarse-grained biotite ± chlorite.



**Figure CF-18-4: Detailed WSW-ENE cross-section 2S, showing inferred east-plunging configuration of tonalite porphyry and approximate extent of +0.4% Cu equivalent (Reidell, 2011).**

## HECATE BAY ZONE

The Hecate Bay Zone (HBZ) as defined by mineralized outcrop, soil geochemical anomalies and IP chargeability responses is located 1 to 2 km southeast of the Cliff Zone resource and covers a northwest trending area approximately 900 x 750 m in extent. The area lies on the south-southeast facing slopes of the South Peak of Catface Mountain between 150 and 750 m elevation. Within the HBZ bedrock outcrop consists of mafic to intermediate flows, agglomerates and volcanoclastics of the Triassic Karmutsen Formation, intruded by a large Tertiary Hecate Bay tonalite stock (1.5 x 1.5 km) extending to the southeast edge of the peninsula. Younger porphyritic dikes have been mapped in the area. The Hecate Bay tonalite has been dated at 48-Ma K-Ar (McDougal, 1976) and is considered part of the Eocene Catface intrusive suite.

Mineralization is widespread within the HBZ and consists of chalcopyrite, minor molybdenite, bornite, pyrite and pyrrhotite. Chalcopyrite and lesser molybdenite commonly occur on fractures, in quartz veinlets, or as

chalcopyrite disseminations replacing mafic minerals within the tonalite. Bornite is rare. Chalcopyrite was observed as sparse disseminations in numerous late porphyry dikes. Karmutsen volcanics contain more pyrrhotite, pyrite and associated chalcopyrite near contacts with intrusive rocks. Intrusive rocks are weakly altered and fresh in appearance. Mafic minerals have been altered to chlorite in a number of areas and localized black biotite alteration and silicification has been observed. Contacts between the Karmutsen volcanics and Hecate Bay tonalite show weak thermal alteration effects including hornfels, epidotization and rare skarn. Widespread, low grade Cu mineralization has been documented with grab samples from new showings identified during 1989 mapping assaying 0.35% and 0.29% Cu. Several older maps make note of vein hosted Cu mineralization associated with porphyritic tonalite as well as disseminated mineralization with visual estimates of 0.2 – 0.3% Cu (von Fersen, 2000).

Geochemical surveying in the HBZ began in 1964 when Falconbridge completed an extensive grid covering most of the area of interest. This work utilized Rubianic acid testing, a weak acid attack, that resulted in values representing only a fraction of the total Cu content and are useful only as a general guide. Additional grid soil sampling in 1990 over the northern 2/3<sup>ds</sup> of the HBZ indicated a northwest trending Cu anomaly greater than 200 ppm extending from the ridge near South Peak 850 m to the southeast, remaining open beyond the southern most line. Within this area a core zone greater than 600 ppm Cu also trends northwest, ranges from 120 to 180 m wide and reaches maximum values of 2000 ppm Cu. Mo values are generally low (1-2 ppm), with spots highs to 24 ppm, but do not correlate well with Cu.

Falconbridge conducted Induced Polarization, Resistivity, VLF and Magnetic surveys on the same property wide grid in 1989. Two significant IP anomalies, C1 and C2, occur within the HBZ and are described by Falconbridge as follows:

Anomaly C1 is a large, strong anomaly over Karmutsen volcanics immediately east of the monzogranite contact. The strongest part of the anomaly displays a linear pattern nearest the contact. The maximum IP response is co-incident with the lowest resistivity response, and a Fraser filtered VLF anomaly, indicating more abundant sulphides. Adjacent high resistivities immediately to the west suggest silicification. The pattern of the IP anomaly indicates a broad zone of porphyry style sulphides, with local, structurally controlled zones of sulphides on the west side and the region between lines 46S and 30S is underlain by the strongest chargeability. Anomaly C2, located immediately east of C1, is a moderately broad chargeability high with internal, linear, high chargeability zones, indicating northeast structural control of sulphides. Most of the anomaly is underlain by Karmutsen volcanics with the Hecate Bay tonalite mapped in the southeast portion of the anomaly. Linear resistivity highs occur within the anomaly suggesting the presence of porphyry dikes or possibly silicification.

### **2018 GEOCHEMICAL SAMPLING AND GEOLOGICAL MAPPING PROGRAM:**

The 2018 field program was conducted from November 30 to December 9, 2018 during a period of unseasonably dry weather. Field crews mobilized from Tofino to Ahousaht, BC and were housed in a camp facility or from home. Water taxi was used daily to access the property.

The program was designed to follow up on the 2016 field program as well as previous Falconbridge surveys in the HBZ. The program consisted of 125 B-horizon soil samples, 25 rock chips samples, in addition to 1:2500 scale mapping of several of the creek drainages.

The soil geochemical survey tied in to the preexisting 2016 soil survey with 100m spaced lines oriented at 68° to the NE. Additional lines were completed north and south of the 2016 lines. Samples were taken every 25m from the B-horizon using a tree planting shovel and navigation was completed using a combination of hip chain, compass, and GPS. Samples were placed into Kraft bags and then dried each night in Ahousaht.

Samples were taken by CCML personnel to Bureau Veritas Labs in Vancouver, BC. Analysis consisted of a Aqua Regia digestion with a 36 element ICP-MS analysis.

Soil sampling was successful at delineating multielement anomalies throughout the survey area. The highlight of the survey is a strong NNE-SSW oriented 880 x 700m area with greater than 200 ppm Cu. Overlapping this area are coincident and strongly anomalous W, As, anomalies as well as weak Ag anomalies. Flanking the Cu anomaly are strong Pb anomalies. Bi and Au are anomalous over the Cu anomaly but increase at the periphery and flanking the Cu anomaly. Within the copper soil anomaly are highly anomalous regions reaching up to 0.44% Cu with a pronounced increase in grades within the incised creek valleys. Due to the scarcity of outcrop outside of these creek drainages and the abundance of mineralized outcrop within these drainages, the author believes that the geomorphology of the survey area could be depressing grades within areas of deeper soil cover.

The geochemical distribution of elements within the HBZ fits the porphyry Cu-Mo model with a Cu rich center, zoned Mo, and peripheral Au and Pb. Figures CF-18-6 to CF-18-10 found in Appendix F outline the geochemical anomalies on the HBZ. Sample descriptions for both soil and rock samples can be found in Appendix D and analytical results are found in Appendix E.

Rock sampling on the property was completed in conjunction with 1:2500 scale mapping of the creek drainages. Due to favorable dry weather, prospecting within the deeply incised creek drainages was possible. Rock sampling focused on these areas since there was a lack of historic data in addition to historic Falconbridge drill holes which noted the presence of disseminated and vein hosted chalcopyrite mineralization.

Mineralization noted during this field program consisted predominantly of fine to coarse grained disseminated and vein hosted chalcopyrite. Mineralization occurs within basalts as well as quartz-diorites/tonalites. Within the mineralized intrusives trace disseminations of bornite are also present and occasional very strong fracture controlled fine grained molybdenite mineralization was observed.

Rock sampling in previous programs was mostly limited to float sampling so an effort was made to only sample outcrop during this field program; however, several strongly mineralized angular float samples were taken within creek bottoms given the likelihood of a nearby source. Sample 11201 located within the middle of the copper soil anomaly returned 1.72% Cu, 9.6 g/t Ag, and 0.1 g/t Au. Mineralization consists of disseminated and fracture-controlled chalcopyrite and bornite associated with silica-biotite alteration in a quartz-diorite host. A further 275m upstream, angular float sample 11203 returned 0.66% Cu, 3.3 g/t Ag, as well as 0.084% Mo. Also hosted by quartz-diorites, mineralization and alteration resembles that of 11201 with the addition of intense fine grained fracture-controlled molybdenite mineralization.

Outcrop sampling also returned promising values with sample 11204 (located less than 20m from 11203) returning 0.65% Cu and 2.5 g/t Ag within strongly oxidized equivalents to 11203. Sample 11221 located within the middle of the copper soil anomaly returned 0.35% Cu with very fine grained and evenly disseminated chalcopyrite and bornite. Chalcopyrite is also intergrown within biotite agglomerates indicative of a high temperature mineralizing fluid capable of producing a bulk tonnage porphyry style deposit. Although there were higher grade samples within the survey, the author believes that the alteration and mineralization within this outcrop best represents the high potential for this target.

Sampling above the limits of the soil geochemical survey also returned anomalous mineralization with a >30m wide gossan spanning the same creek that cuts the main zone of mineralization returning 0.14% Cu within strongly oxidized quartz-diorites. Given the intense weathering of this exposure, grades are likely depressed.



Outside of the main zone of mineralization at the HBZ, a recent landslide exposed a small quartz-diorite outcrop with intense quartz-chalcopyrite-pyrite sheeted veins. The exposure is small and strongly oxidized but contains biotite-silica alteration and elevated Mo, As, Au, Co, and W indicate a high temperature magmatic source for the veins. Sample 11216 returned 1.61% Cu, 11.9 g/t Ag, and 0.13% W; sample 11217 returned 3.89% Cu and 121 g/t Ag; and sample 11218 returned 4.69% Cu, and 0.2 g/t Ag. Samples were taken across veins for approximately 30cm. Veins were 3-5cm in width and spaced approximately 20cm apart. Although the size of this anomalous zone does not represent a target on its own, it is further evidence of a high temperature mineralizing porphyry event in the area.

Without petrographic studies, it is difficult to identify the exact alteration assemblage of the Hecate Bay Zone; however, field observations note several assemblages. The most intensely altered intrusives correlate with the strongest mineralization. These rocks show development of up to 10-15% shreddy medium grained biotite, silica flooding up to 20%, quartz sulfide veining, and sericite alteration of feldspars. Occasionally, medium grained chlorite is found within the well mineralized intrusives and is more common with depressed grades. Epidote was also observed but in much less abundance. Chlorite and epidote could represent an early propylitic event and given that epidote is only noted peripheral to the main zone of mineralization, chlorite could also be associated with a potassic core zone alteration assemblage. Carbonate was not observed within any of the intrusives but was observed in more distal basalts as barren and pyritic quartz-carbonate veining. Within the main zone of mineralization sericite and pyrite development could indicate an phyllic overprint which could have altered some of the original propylitic mineral assemblages.

Within basalts, alteration consists of coarse-grained chlorite, occasional high temperature undulating epidote veins, and pyritic quartz-carbonate veining. It appears that within the basaltic rocks, alteration present represents a more distal environment and that mineralization does not likely extend far from the intrusive contact.

## **CONCLUSIONS:**

The 2018 field program at the Hectate Bay Zone of the Catface Copper Project was successful at delineating a broad area of anomalous copper, molybdenum, and gold within soil. The program was also successful at providing further evidence of hydrothermal magmatic alteration typical of porphyry deposits.

The HBZ contains favourable chargeability anomalies associated with resistivity lows that are coincident with a broad copper soil anomaly. Within this anomaly tonalitic intrusives, similar to those which occur at the Cliff and Irishman Creek Zones, are altered with high temperature silicious alteration that contains high temperature minerals such as bornite. Given the presence of coincident geophysical and geochemical anomalies, historic drilling noting the presence of disseminated chalcopyrite, favourable alteration, as well as near ore grades in rock sampling, the HBZ is a drill ready target.

Additionally, given the fact that roads traverse the bottom of this anomalous zone, future drill programs can be done with minimal footprint and at a low cost.

## **RECOMMENDATIONS:**

Given the favourable results from the 2018 field program on the Hectate Bay Zone, further work is justified for this brownsfield target. Historic data for the zone is lacking with much of the work undocumented and within unreleased Falconbridge reports. Historic drill hole assays are unfortunately not in the public realm

although historic IP surveys show a broad zone of chargeability coincident with soil geochemical anomalies and mapped alteration and mineralization.

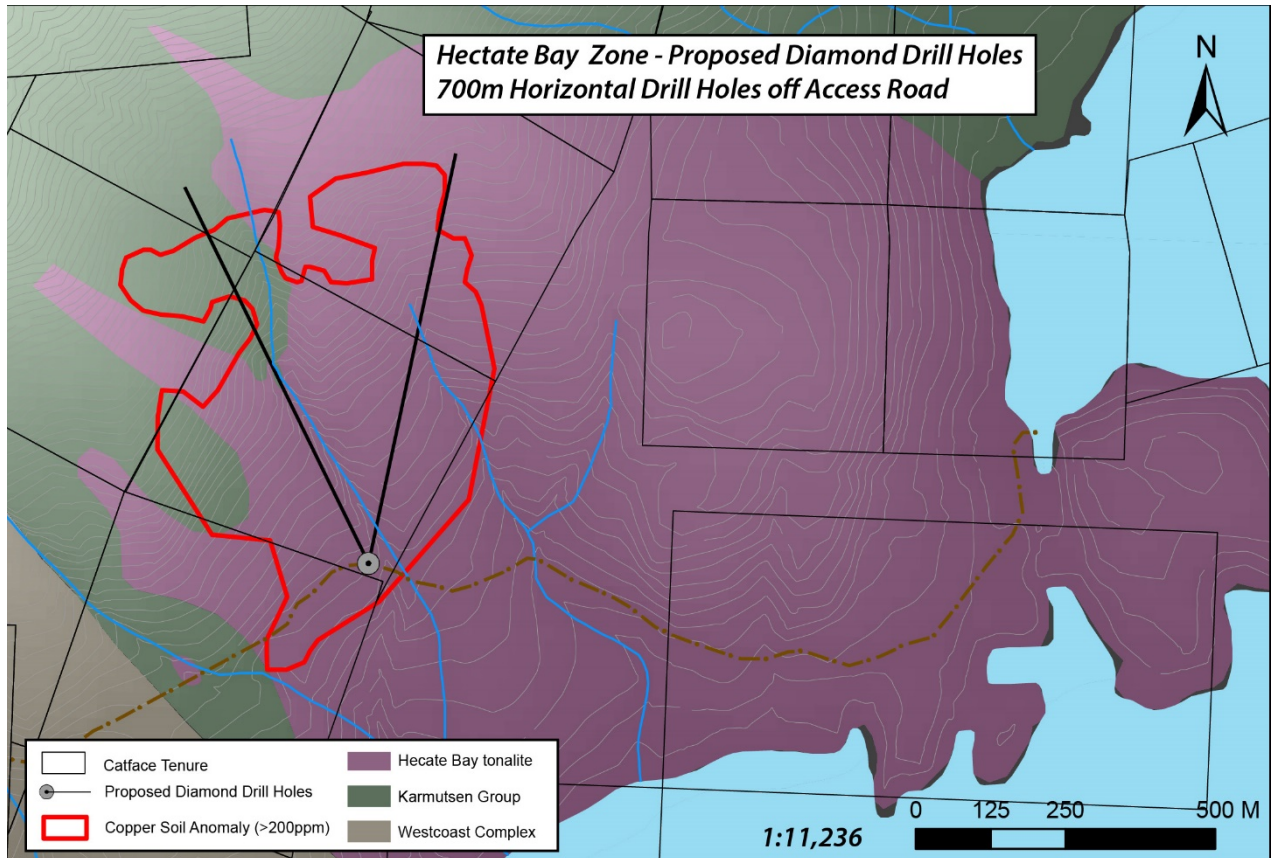
Given the favourable location of pre-existing access roads, it is possible to complete a short diamond drill program with a skid mounted drill rig. Prior to initiating this program, brushing work will have to be completed to clear the overgrown alders from the access road. Drilling should be done off this road with two 750m horizontal drill holes from the same collar and in a fan.

The following drill program is recommended. A compilation map detailing the recommended drilling can be found below.

### Proposed Diamond Drill Program (1500m)

- Labour: \$50,000
- Road Rehabilitation: \$5000
- Accommodation: \$20,000
- Transportation: \$25,000
- Drilling: \$300,000
- Analysis: \$25,000
- Other Expenditures: \$15,000
- Report: \$10,000

**Total: \$500,000 (incl 11% contingency)**



**Figure CF-18-11: Proposed Drilling**

**Respectfully submitted,**

A handwritten signature in black ink, appearing to be the initials 'DP' with a stylized flourish.

**Dustin Perry, BSc.  
Orevista Exploration**

**STATEMENT OF QUALIFICATIONS:**

**For: Dustin Perry of 42012 Birken Rd, Squamish, B.C.**

I graduated from the University of British Columbia with a Bachelor of Sciences Degree in Geology (2013);

I have been practicing my profession as a geologist in mineral exploration and mining continuously since 2010 and seasonally since 2008

The observations, conclusions and recommendations contained in the report are based on supervision of the described program, field examinations, and the evaluation of results of the exploration program completed by the operator of the property.



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**Dustin Perry, BSc.**  
**March 11, 2019**

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## **SECTION B: PROPERTY**

### **SCHEDULE OF MINERAL TENURES:**

The “good to” dates shown are based on the Statement of Exploration and Development Work registered on Mineral Titles Online on December 14, 2018 as Event #5722982 and assume that the work contained in this report will be accepted for assessment purposes.

CATFACE PROPERTY - MINERAL TENURES										Date:	Mar 11 2019
OWNER: Catface Copper Mines Limited				100.0%	BC Client No. 104480			Tenures	138		
BACK-IN RIGHT: Glencore Canada Corporation				50.1%	or ROYALTY: Glencore Canada Corporation			9.0% Net Proceeds of Production	Units/Cells	159	
MINING DIVISION: Alberni				LAND DISTRICT: Clayoquot			LAND TITLE DISTRICT: Victoria				
LOCATION: in the Catface Range 13 km north-northwest of Tofino, BC											
MAP NO.	NTS:	92E/01E, 08E; 92F/04W, 05W			GEOGRAPHIC COORDINATES:		49° 15.6' N; 125° 59.3' W				
	BCGS:	92E030, 92F021			UTM COORDINATES (NAD 83, ZONE 10): 5 460 300 N 283 200 E						
<b>Mining Lease:</b>											
Tenure No.	Tenure Type	Plan No.	Map No.	Issue Date	Good To Date	Term Expiry	Units/Cells	Area (ha)	Rent Rate	Rent*	
345339	Lease - 30 yr.	DL 2145, Clayoquot District	092F021	1996/sep/25	2019/sep/25	2026/sep/25	15	252.0	\$20.00	\$5,040.00	
<b>Mineral Claims:</b>											
Tenure No.	Tenure Type	Claim Name	Map No.	Record Date	Good To Date	Work Year	Units/Cells	Area (ha)	Work Factor	Work**	
<b>Legacy Claims:</b>											
201363	Mineral	CATFACE #8	092F021	1961/may/12	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201392	Mineral	CATFACE #36	092F021	1961/dec/04	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201393	Mineral	CATFACE #38	092F021	1961/dec/04	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201394	Mineral	CATFACE #40	092F021	1961/dec/04	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201395	Mineral	CATFACE #41	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201396	Mineral	CATFACE #42	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201397	Mineral	CATFACE #43	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201398	Mineral	CATFACE #44	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201399	Mineral	CATFACE #45	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201400	Mineral	CATFACE #46	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201401	Mineral	CATFACE #47	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201402	Mineral	CATFACE #48	092F021	1961/dec/14	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201416	Mineral	CATFACE #50	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201417	Mineral	CATFACE #52	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201418	Mineral	CATFACE #53	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201419	Mineral	CATFACE #54	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201420	Mineral	CATFACE #56	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201421	Mineral	CATFACE #58	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201422	Mineral	CATFACE #59	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201423	Mineral	CATFACE #60	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201424	Mineral	CATFACE #61	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	
201425	Mineral	CATFACE #62	092F021	1962/feb/20	2019/dec/15	1	1	25.0	\$5.00	\$125.00	



201473	Mineral	CATFACE #109	092E030	1962/apr/05	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201474	Mineral	CATFACE #110	092E030	1962/apr/05	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201475	Mineral	CATFACE #111	092E030	1962/apr/05	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201476	Mineral	CATFACE #112	092E030	1962/apr/05	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201477	Mineral	CATFACE #113	092E030	1962/apr/05	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201478	Mineral	CATFACE #114	092E030	1962/apr/05	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201479	Mineral	CATFACE #115	092E030	1962/may/10	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201480	Mineral	CATFACE #116	092E030	1962/may/10	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201481	Mineral	CATFACE #117	092E030	1962/may/10	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201482	Mineral	CATFACE #118	092E030	1962/may/10	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201483	Mineral	CATFACE #119	092E030	1962/may/10	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201484	Mineral	CATFACE #120	092E030	1962/may/10	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201485	Mineral	CATFACE #123	092F021	1962/may/10	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201489	Mineral	CATFACE #130	092F021	1962/jul/10	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201490	Mineral	CATFACE #131	092F021	1962/jul/10	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201598	Mineral	CATFACE #14 FR.	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201599	Mineral	CATFACE #15 FR.	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201600	Mineral	CATFACE #16 FR.	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201603	Mineral	CATFACE #19 FR.	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201605	Mineral	CATFACE #21	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201606	Mineral	CATFACE #22	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201607	Mineral	CATFACE #23	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201608	Mineral	CATFACE #24	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201609	Mineral	CATFACE #25	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201610	Mineral	CATFACE #26	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201611	Mineral	CATFACE #27	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201612	Mineral	CATFACE #28	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201613	Mineral	CATFACE #29	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201614	Mineral	CATFACE #30	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201615	Mineral	CATFACE #31	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201616	Mineral	CATFACE #32 FR.	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201617	Mineral	CATFACE #33	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201618	Mineral	CATFACE #34	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201619	Mineral	CATFACE #35	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201622	Mineral	CATFACE #49	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201623	Mineral	CATFACE #51	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201624	Mineral	CATFACE #55 FR.	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201625	Mineral	CATFACE #57	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201626	Mineral	CATFACE #86	092E030	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201627	Mineral	CATFACE #88	092E030	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00

201628	Mineral	CATFACE #90	092E030	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201629	Mineral	CATFACE #94	092E030	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201630	Mineral	CATFACE #96	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201631	Mineral	CATFACE #98	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201632	Mineral	CATFACE #121	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201633	Mineral	CATFACE #122	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201634	Mineral	CATFACE #124	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201635	Mineral	CATFACE #125	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201636	Mineral	CATFACE #126	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201637	Mineral	CATFACE #127 FR.	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201638	Mineral	CATFACE #128	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201639	Mineral	CATFACE #129	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201640	Mineral	CATFACE #132 FR.	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201641	Mineral	CATFACE #133 FR.	092F021	1970/mar/31	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201642	Mineral	CATFACE #134	092F021	1970/mar/31	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201643	Mineral	CATFACE #138 FR.	092F021	1970/may/07	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201644	Mineral	CATFACE #139 FR.	092E030	1970/may/07	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201645	Mineral	CATFACE #141 FR.	092F021	1970/may/15	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201646	Mineral	CATFACE #143 FR.	092F021	1970/may/19	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201647	Mineral	CATFACE #145 FR.	092E030	1970/may/19	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201648	Mineral	CATFACE #134 FR.	092E030	1970/may/08	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201649	Mineral	CATFACE #135 FR.	092E030	1970/may/08	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201650	Mineral	CATFACE #136 FR.	092E030	1970/may/08	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201651	Mineral	CATFACE #137 FR.	092E030	1970/may/08	2020/jul/15	7	1	25.0	\$20.00	\$500.00
201652	Mineral	CATFACE #144 FR.	092F021	1970/jun/01	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201653	Mineral	CATFACE #142 FR.	092F021	1970/jun/01	2019/dec/15	1	1	25.0	\$5.00	\$125.00
201654	Mineral	CATFACE #140 FR.	092F021	1970/jun/01	2019/dec/15	1	1	25.0	\$5.00	\$125.00
342307	Mineral	CATFACE #149 FR	092F021	1995/nov/29	2019/dec/15	1	<u>1</u>	<u>25.0</u>	\$5.00	<u>\$125.00</u>
Subtotal	130						130	3,250.00		\$37,250.00
<b>Cell Claims:</b>										
584343	Mineral	CCML01	092F021	2008/may/15	2020/jul/15	7	2	42.18	\$20.00	\$843.60
584344	Mineral	CCML02	092F021	2008/may/15	2020/jul/15	7	1	21.09	\$20.00	\$421.80
584345	Mineral	CCML03	092F021	2008/may/15	2020/jul/15	7	1	21.09	\$20.00	\$421.80
584347	Mineral	CCML04	092F021	2008/may/15	2019/aug/15	7	1	21.08	\$20.00	\$421.60
604683	Mineral	CCML05	092F021	2009/may/19	2020/jul/15	7	5	105.47	\$20.00	\$2,109.40
604686	Mineral	CCML06	092F021	2009/may/19	2020/jul/15	7	2	42.19	\$20.00	\$843.80
604688	Mineral	CCML07	092F021	2009/may/19	2020/jul/15	7	<u>2</u>	<u>42.18</u>	\$20.00	<u>\$843.60</u>
Subtotal	7						14	295.28		\$5,905.60
<b>TOTAL</b>	<b>138</b>						<b>159</b>	<b>3,797.28</b>		<b>\$48,195.60</b>

<b>Assessment Summary:</b>					<b>Good To Date</b>	<b>Tenures</b>	<b>Cells</b>	<b>Area (ha)</b>	<b>Work Factor</b>	<b>Work**</b>
					2019/aug/15	1	1	21.08	\$20.00	\$421.60
					2019/dec/15	74	74	1,850.00	\$5.00	\$9,250.00
					2020/jul/15	62	69	1,674.20	\$20.00	\$33,484.00
<b>Total</b>						<b>137</b>	<b>144</b>	<b>3,545.28</b>		<b>\$43,155.60</b>

Good to Dates are based on a Statement of Exploration and Development Work registered on December 14, 2018 as Event #5722982

**SECTION C: EXPENDITURES**

**CATFACE 2018 GEOCHEMICAL SAMPLING PROGRAM**

**CATFACE COPPER MINES LIMITED**  
**CATFACE PROJECT**

**Statement of Expenditures: 2018 Geochemical / Geological Sampling Program**

**Mar 11 2019**

<b>Item / Contractor</b>	<b>Work</b>	<b>Period</b>	<b>Quantity</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>
<b>Personnel:</b>						
Jim Miller-Tait, P.Geo.	Exploration Manager, general supervision	Nov 29 - Dec 9, 2018	1	days	\$550.00	\$550.00
Dustin Perry	Geologist	Nov 29 - Dec 9, 2018	10	days	\$600.00	\$6,000.00
Toby Orrick	Geologist	Nov 29 - Dec 9, 2018	10	days	\$300.00	\$3,000.00
George Frank	Field assistant	Nov 30 - Dec 7, 2018	8	days	\$300.00	\$2,400.00
Jackson Frank	Field assistant	Nov 30 - Dec 7, 2018	8	days	\$200.00	\$1,600.00
Subtotal						\$13,550.00
<b>Accommodation &amp; Meals:</b>						
Food / Meals - Crew	Geochem program	Nov 29 - Dec 9, 2018	10	days		\$790.79
Aauuknuk Lodge, Ahousaht	Geologist	Nov 30 - Dec 8, 2018	8	days	\$353.10	\$2,824.80
Pacific Rim Motel, Ucluelet	Geologist	Nov 28 2018	1	days	\$142.03	\$142.03
Subtotal						\$3,757.62
<b>Transportation (Ground/Water)</b>						
D. Perry Pickup - Km	Squamish-Nanaimo-Tofino	Nov 30, Dec 09, 2018	283	km	\$0.75	\$212.25
D. Perry - BC Ferries	Horseshoe Bay - Nanaimo and return	Nov 30, Dec 09, 2018	2		\$91.95	\$183.90
D. Perry Pickup - Fuel	Nanaimo-Tofino					\$313.09
T. Orrick Pickup - Fuel						\$157.64
T. Orrick - BC Ferry	Nanaimo - Horseshoe Bay					\$74.95
Tofino Water Taxi	Crew transport Tofino-Hecate Bay-Tofino		2	day	\$30.00	\$60.00
Water Taxi Services	Crew transport Ahousaht-Hecate Bay-Ahousaht	Nov 30 - Dec 7, 2018	8	day	\$300.00	\$2,400.00
Subtotal						\$3,401.83
<b>Assaying:</b>						
Bureau Veritas Mineral Laboratories	B Soil Samples: AQ201 analytical code		220	samples	\$29.85	\$6,567.00
Bureau Veritas Mineral Laboratories	Rock Samples: AQ201 analytical code		25	samples	\$25.00	\$829.12
Subtotal			245			\$7,396.12
<b>Field Supplies:</b>						
Deakin Equipment Ltd., Local sources	Sampling & engineering supplies					\$246.25
Subtotal						\$246.25
<b>Drafting:</b>						
Melissa Darney	GIS work: drafting of report maps		2	days	\$390.00	\$780.00
Subtotal						\$780.00



<b>Report Preparation:</b>						
Dustin Perry	Data compilation, report preparation		3.5	days	\$600.00	\$2,100.00
Erik Andersen	Data preparation, report editing		6	hours	\$54.30	\$325.80
Subtotal						\$2,425.80
<b>Total</b>	<b>Tenures: 201401, 201402, 201416, 201417, 201418, 201424, 201425, 201622, 201623, 201636, 201645, 342307 &amp; Mining Lease 345339</b>					<b>\$31,557.62</b>
	<b>Samples on legacy mineral tenures: 240</b>	<b>\$30,939.09</b>	<b>97.96%</b>	<b>Maximum PAC Factor</b>		<b>1.4285</b>
	<b>Samples on Mining Lease 345339: 5</b>	<b>\$618.53</b>	<b>2.04%</b>	<b>Maximum Assessment</b>		<b>\$45,080.06</b>

## **SECTION D: SAMPLE LOCATIONS**

(Coordinate locations recorded in UTM NAD83 Zone 10)

- **2018 Rock Sample Locations**
- **2018 Soil Sample Locations**

Sample_ID	Zone	East	North	Elevation	Sample_Type	Lithology	Alt 1	Alt 1 Desc	Alt 1 Str	Alt 2	Alt 2 Desc	Alt 2 Str	Min 1
11201	10	284680	5458979	110	Float	Qtz-Dio	SIL	PRV	MOD	BIO	PRV	MOD	Cp
11202	10	284628	5459066	147	Outcrop	Qtz-Dio	SIL	PRV	MOD	SER	PRV	WK	Cp
11203	10	284525	5459204	234	Float	Qtz-Dio	BIO	PRV	MOD	SIL	PRV	MOD	Cp
11204	10	284542	5459207	213	Outcrop	Qtz-Dio	BIO	PRV	MOD				Cp
11205	10	284506	5459184	231	Outcrop	Basalt							Cp
11206	10	284945	5458933	49	Outcrop	Qtz-Dio	SIL	PRV	MOD	BIO	PRV	MOD	Cp
11207	10	284806	5459173	140	Outcrop	Qtz-Dio	BIO	PRV	MOD	CHL	PRV	WK	Cp
11208	10	284794	5459208	158	Outcrop	Qtz-Dio	SIL	PRV	MOD	BIO	PRV	MOD	Cp
11209	10	284702	5459271	217	Outcrop	Qtz-Dio	BIO	PRV	WK				Cp
11210	10	284615	5459353	265	Outcrop	Qtz-Dio	SER	PRV	MOD				Cp
11211	10	284617	5459355	275	Outcrop	Qtz-Dio	SER	PRV	MOD				Cp

Sample_ID	Min 1 Desc	Min 1 %	Min 2	Min 2 Desc	Min 2 %	Description	Date
11201	dis'd and fc	1.5	Bn	dis'd	0.1	altered Biotite Qtz-Diorite. 1.5%+ disseminated and fracture controlled chalcopyrite. Chalcopyrite is medium to coarse grained and potentially 0.1% bornite (could be Ox Cp but all other Cp is fresh). 1% massive Mt. Weak	01-Dec-18
11202	dis'd	0.1	Py	dis'd	Tr	Biotite Qtz-Diorite with tr dis'd Py and potentially Mo. 0.1% dis'd fine gr Cp. Possible Ser alteration of feldspars. Mod/Pervasive silica alteration.	01-Dec-18
11203	dis'd and vn	1.25	Bn	dis'd	Tr	disseminated Cp (1.25%), Bn (Tr) , and Mt (tr). Mod-st silica alteration. Vn hosted sulfides as well. Intense Fracture controlled Mo. Nearby basalt O/C.	01-Dec-18
11204	dis'd and vn	0.75	Bn	dis'd	Tr	Outcrop sample from strong FeOx very fine grained biotite qtz-dio (almost andesite). Vn and disseminated Cp (0.75%) and Bn (Tr).	01-Dec-18
11205	dis'd	0.5				grab sample from slide outcrop. Basalt with pyrrhotite/cp (0.5%). Wk limonite on fracture surfaces. Possible	02-Dec-18
11206	dis'd	0.05	Py	dis'd	Tr	Representative grab sample from creek outcrop. Bio Qtz-	02-Dec-18
11207	dis'd	0.5				Creek outcrop. Semicontinuous since WPT 123. Random grab of Bio qtz-dio, Cp0.5Bio10Sil40Chl1. Mod PRV sil/dis'd Bio - Chl. Platy/FG coarse FC/Dis'd Cp (0.5+%)	03-Dec-18
11208	dis'd	0.1	Py	dis'd	0.5	Creek outcrop (cont since 124). Random grab sample. Py0.5Cp0.1Bio10Sil30Chl3. Wk to mod PRV Sil. Mod dis'd	03-Dec-18
11209	dis'd	tr				Creek outcrop of biotite Qtz-Dio. CpTrBio15Si20. Finely dis'd Cp, wk bio alt up to 7mm. Unox.	03-Dec-18
11210	dis'd	0.1	Py	dis'd	Tr	footwall of late fault (50 -> 34). Fracture surfaces have Bio/Chl. Grab from qtz-dio porphyry. All bio replaced to chl. Mod er on feldspars. 0.1% med to fine grained	04-Dec-18
11211	dis'd	0.1	Py	dis'd	Tr	Same rock as 11210 but not representative of overall grade. This sample is higher grade than general background.	04-Dec-18

Sample_ID	Zone	East	North	Elevation	Sample_Type	Lithology	Alt 1	Alt 1 Desc	Alt 1 Str	Alt 2	Alt 2 Desc	Alt 2 Str	Min 1
11212	10	284522	5459378	289	Outcrop	Basalt							Cp
11213	10	284438	5459522	364	Outcrop	Qtz-Dio							Cp
11214	10	284505	5459494	342	Outcrop	Qtz-Dio	SIL	PRV	ST	BIO	VN	ST	Cp
11215	10	284620	5459502	338	Outcrop	Qtz-Dio	SIL	PRV	ST	BIO	VN	ST	Cp
11216	10	284015	5458712	178	Outcrop	Qtz-Dio	SIL	VN	ST				Cp
11217	10	284012	5458722	178	Outcrop	Qtz-Dio	SIL	VN	ST				Cp
11218	10	284013	5458728	178	Outcrop	Qtz-Dio	SIL	VN	ST				Cp
11219	10	284392	5458674	112	Outcrop	Qtz-Dio							

Sample_ID	Min 1 Desc	Min 1 %	Min 2	Min 2 Desc	Min 2 %	Description	Date
11212	dis'd	tr	Py	dis'd	Tr	O/C grab of Basalt (40m long o/c). Dykes of Bio Qtz-Dio (1m). Tr dis'd sulfides.	04-Dec-18
11213	dis'd	0.5	Py	dis'd	0.5	Outcrop sample of Qtz-Dio in gossan. Gossan continues across the creek for over 30m.	04-Dec-18
11214	dis'd	0.1	Py	dis'd	0.5	Outcrop sample from Qtz-Dio. Difficult to ID sample due to fading light. Fine grained Dis'd sulfides.	04-Dec-18
11215	dis'd	0.3	Py	dis'd	0.5	Outcrop sample from Qtz-Dio. Difficult to ID sample due to fading light. Fine grained Dis'd sulfides.	04-Dec-18
11216	Vn	3	Py	Vn	6	Veins represented over 20m strike length. Vein orientation varies from steeply dipping to gentle in SE direction. Qtz-Py-Cp veins. 1-3cm and 10-20cm apart. Some disseminated sulfide halos up to 5cm out of veins. Samples are 20cm across and were taken at roughly even spacing to be representative. Not representative of disseminated mineralization.	05-Dec-18
11217	Vn	3	Py	Vn	6	Zone of Cp-Py veining within equigranular bio-chl qtz dio. Veins represented over 20m strike length. Vein	05-Dec-18
11218	Vn	3	Py	Vn	6	Veins represented over 20m strike length. Vein orientation varies from steeply dipping to gentle in SE direction. Qtz-Py-Cp veins. 1-3cm and 10-20cm apart. Some disseminated sulfide halos up to 5cm out of veins. Samples are 20cm across and were taken at roughly even spacing to be representative. Not representative of	05-Dec-18
11219						Rep grab sample from west of fault. F gr silicified Bio Qtz-Dio	06-Dec-18

Sample_ID	Zone	East	North	Elevation	Sample_Type	Lithology	Alt 1	Alt 1 Desc	Alt 1 Str	Alt 2	Alt 2 Desc	Alt 2 Str	Min 1
11220	10	284392	5458680	116	Outcrop	Qtz-Dio	SIL	PRV	MOD	BIO	PRV	MOD	Cp
11221	10	284578	5459003	145	Outcrop	Qtz-Dio	BIO	PRV	MOD	SIL	PRV	MOD	Cp
11222	10	284554	5459010	162	Outcrop	Qtz-Dio	BIO	PRV	MOD	SIL	PRV	MOD	Cp
11223	10	284589	5459038	156	Outcrop	Qtz-Dio	BIO	PRV	MOD	SIL	PRV	MOD	Cp
11224	10	284600	5459082	153	Outcrop	Qtz-Dio	BIO	PRV	MOD	SIL	PRV	MOD	Cp

Sample_ID	Min 1 Desc	Min 1 %	Min 2	Min 2 Desc	Min 2 %	Description	Date
11220	vn	0.15	Py	vn	0.15	Grab sample across 3cm wide vein for 50cm (mostly wall rock). Vn terminated by fault. Mineralization is stringer and dis'd.	06-Dec-18
11221	dis'd	0.75	Bn	dis'd	Tr	Bio8Cp0.75BnTrSi30. Not oxidized beyond 5mm. Fine grained dis'd sulfides interfrown. Cp w tr Bn. Mod Bio agglomerate development with assc Cp. Overall one of	07-Dec-18
11222	dis'd	0.75	Bn	dis'd	Tr	Same rock as 11221 on 15x5m EW trending outcrop. Only rock sampled where some unweathered material could be found. Lots of water flow over outcrop. Sulfides are 100% weathered out.	07-Dec-18
11223	dis'd	0.75	Bn	dis'd	Tr	Same rock as 11221 on 10x10m outcrop. Only rock sampled where some unweathered material could be found. Lots of water flow over outcrop. Sulfides are 100% weathered out.	07-Dec-18
11224	dis'd	0.75	Bn	dis'd	Tr	Grab sample not indicative of broad area. Indicative of zone of stronger silica than rest of creek exposures. Bio Qtz-diorite. Bio10+Cp0.75BnTrMoTrMalTrSi35. Strong pervasive silica alteration. Increase in shreddy biotite (>10%) compared to nearby exposures. Stringer, dis'd and FC, fine to med gr Cp,Bn. Mo and Mal on fracture surfaces (intense Mo along fractures).	07-Dec-18



Sample_ID	Zone	East	North	Elevation	Sample_Type	Lithology	Alt 1	Alt 1 Desc	Alt 1 Str	Alt 2	Alt 2 Desc	Alt 2 Str	Min 1
11225	10	284437	5459452	338	Outcrop	Basalt							Cp

Sample_ID	Min 1 Desc	Min 1 %	Min 2	Min 2 Desc	Min 2 %	Description	Date
11225	dis'd	tr	Py	dis'd	1.5	20m outcrop of basalt trending 315.	04-Dec-18

SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-42S 0+000	42-S	0	283713	5459140	Catface	B-Horizon	15	B	GF/TO
L-42S 0+025	42-S	25	283734	5459154	Catface	B-Horizon	20	RB	GF/TO
L-42S 0+050	42-S	50	283764	5459165	Catface	B-Horizon	20	YB	GF/TO
L-42S 0+075	42-S	75	283789	5459168	Catface	B-Horizon	15	B	GF/TO
L-42S 0+100	42-S	100	283808	5459188	Catface	B-Horizon	20	RB	GF/TO
L-42S 0+125	42-S	125	283834	5459177	Catface	B-Horizon	20	RB	GF/TO
L-42S 0+150	42-S	150	283859	5459192	Catface	B-Horizon	25	RB	GF/TO
L-42S 0+175	42-S	175	283884	5459190	Catface	B-Horizon	20	RB	GF/TO
L-42S 0+200	42-S	200	283907	5459199	Catface	B-Horizon	25	RB	GF/TO
L-42S 0+225	42-S	225	283931	5459213	Catface	B-Horizon	20	B	GF/TO
L-42S 0+250	42-S	250	283959	5459224	Catface	B-Horizon	25	B	GF/TO
L-42S 0+275	42-S	275	283985	5459235	Catface	B-Horizon	15	R	GF/TO
L-42S 0+300	42-S	300	284014	5459241	Catface	B-Horizon	20	B	GF/TO
L-42S 0+325	42-S	325	284038	5459254	Catface	B-Horizon	15	YB	GF/TO
L-42S 0+350	42-S	350	284063	5459262	Catface	B-Horizon	20	B	GF/TO
L-42S 0+375	42-S	375	284087	5459270	Catface	B-Horizon	20	Y	GF/TO
L-42S 0+400	42-S	400	284109	5459278	Catface	B-Horizon	15	B	GF/TO
L-42S 0+425	42-S	425	284132	5459284	Catface	B-Horizon	15	B	GF/TO
L-42S 0+450	42-S	450	284153	5459294	Catface	B-Horizon	15	B	GF/TO
L-42S 0+475	42-S	475	284176	5459302	Catface	B-Horizon	20	B	GF/TO
L-42S 0+500	42-S	500	284197	5459321	Catface	B-Horizon	25	RB	GF/TO
L-42S 0+525	42-S	525	284225	5459329	Catface	B-Horizon	20	B	GF/TO
L-42S 0+550	42-S	550	284245	5459339	Catface	B-Horizon	20	YB	GF/TO
L-42S 0+575	42-S	575	284270	5459355	Catface	B-Horizon	15	R	GF/TO
L-42S 0+600	42-S	600	284293	5459356	Catface	B-Horizon	15	YB	GF/TO
L-42S 0+625	42-S	625	284320	5459360	Catface	B-Horizon	25	RB	GF/TO
L-42S 0+650	42-S	650	284328	5459378	Catface	B-Horizon	25	RB	GF/TO
L-42S 0+675	42-S	675	284351	5459389	Catface	B-Horizon	10	B	GF/TO
L-42S 0+700	42-S	700	284380	5459378	Catface	B-Horizon	30	B	GF/TO
L-42S 0+725	42-S	725	284403	5459391	Catface	B-Horizon	15	B	GF/TO
L-42S 0+750	42-S	750	284429	5459396	Catface	B-Horizon	5	B	GF/TO
L-42S 0+775	42-S	775	284461	5459399	Catface	B-Horizon	5	B	GF/TO
L-42S 0+800	42-S	800	284486	5459410	Catface	B-Horizon	20	YB	GF/TO

SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-42S 0+825	42-S	825	284512	5459412	Catface	B-Horizon	30	YB	GF/TO
L-42S 0+850	42-S	850	284533	5459435	Catface	B-Horizon	30	B	GF/TO
L-42S 0+875	42-S	875	284555	5459443	Catface	B-Horizon	15	R	GF/TO
L-42S 0+900	42-S	900	284581	5459454	Catface	B-Horizon	15	R	GF/TO
L-42S 0+925	42-S	925	284608	5459459	Catface	B-Horizon	15	RB	GF/TO
L-42S 0+950	42-S	950	284632	5459470	Catface	B-Horizon	35	R	GF/TO
L-42S 0+975	42-S	975	284655	5459477	Catface	B-Horizon	35	B	GF/TO
L-42S 0+1000	42-S	1000	284684	5459479	Catface	B-Horizon	45	B	GF/TO
L-42S 0+1025	42-S	1025	284700	5459496	Catface	B-Horizon	40	B	GF/TO
L-42S 0+1050	42-S	1050	284726	5459497	Catface	B-Horizon	20	R	GF/TO
L-42S 0+1075	42-S	1075	284757	5459505	Catface	B-Horizon	35	R	GF/TO
L-42S 0+1100	42-S	1100	284784	5459516	Catface	B-Horizon	45	R	GF/TO
L-46S 0+000	46-S	0	283753	5459057	Catface	B-Horizon	5	RB	GF/TO
L-46S 0+025	46-S	25	283773	5459077	Catface	B-Horizon	25	B	GF/TO
L-46S 0+050	46-S	50	283812	5459071	Catface	B-Horizon	25	B	GF/TO
L-46S 0+075	46-S	75	283825	5459083	Catface	B-Horizon	25	DB	GF/TO
L-46S 0+100	46-S	100	283847	5459090	Catface	B-Horizon	5	LB	GF/TO
L-46S 0+125	46-S	125	283893	5459089	Catface	B-Horizon	15	DB	GF/TO
L-46S 0+150	46-S	150	283914	5459088	Catface	B-Horizon	8	LB	GF/TO
L-46S 0+200	46-S	200	283957	5459096	Catface	B-Horizon	8	RB	GF/TO
L-46S 0+225	46-S	225	283971	5459113	Catface	B-Horizon	8	RB	GF/TO
L-46S 0+250	46-S	250	283992	5459126	Catface	B-Horizon	15	LB	GF/TO
L-46S 0+275	46-S	275	284017	5459129	Catface	B-Horizon	25	GB	GF/TO
L-46S 0+300	46-S	300	284038	5459128	Catface	B-Horizon	10	LB	GF/TO
L-46S 0+325	46-S	325	284059	5459149	Catface	B-Horizon	15	RB	GF/TO
L-46S 0+350	46-S	350	284081	5459159	Catface	B-Horizon	5	G	GF/TO
L-46S 0+375	46-S	375	284106	5459171	Catface	B-Horizon	15	RB	GF/TO
L-46S 0+400	46-S	400	284125	5459181	Catface	B-Horizon	25	DB	GF/TO
L-46S 0+425	46-S	425	284151	5459183	Catface	B-Horizon	10	B	GF/TO
L-46S 0+450	46-S	450	284173	5459196	Catface	B-Horizon	20	RB	GF/TO
L-46S 0+475	46-S	475	284200	5459206	Catface	B-Horizon	15	DB	GF/TO
L-46S 0+500	46-S	500	284226	5459208	Catface	B-Horizon	15	DB	GF/TO
L-46S 0+525	46-S	525	284247	5459218	Catface	B-Horizon	20	RB	GF/TO

SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-46S 0+550	46-S	550	284273	5459227	Catface	B-Horizon	10	DB	GF/TO
L-46S 0+575	46-S	575	284301	5459228	Catface	B-Horizon	15	DB	GF/TO
L-46S 0+600	46-S	600	284329	5459238	Catface	B-Horizon	8	B	GF/TO
L-46S 0+625	46-S	625	284362	5459253	Catface	B-Horizon	20	LB	GF/TO
L-46S 0+650	46-S	650	284371	5459251	Catface	B-Horizon	10	LB	GF/TO
L-46S 0+675	46-S	675	284390	5459271	Catface	B-Horizon	6	LB	GF/TO
L-46S 0+700	46-S	700	284405	5459301	Catface	B-Horizon	8	LB	GF/TO
L-46S 0+725	46-S	725	284435	5459302	Catface	B-Horizon	10	RB	GF/TO
L-46S 0+750	46-S	750	284460	5459299	Catface	B-Horizon	20	B	GF/TO
L-46S 0+775	46-S	775	284468	5459324	Catface	B-Horizon	6	LB	GF/TO
L-46S 0+800	46-S	800	284499	5459324	Catface	B-Horizon	12	LB	GF/TO
L-46S 0+825	46-S	825	284545	5459322	Catface	B-Horizon	6	B	GF/TO
L-46S 0+850	46-S	850	284415	5459322	Catface	B-Horizon	12	LB	GF/TO
L-46S 0+875	46-S	875	284570	5459357	Catface	B-Horizon	12	LB	GF/TO
L-46S 0+900	46-S	900	284600	5459356	Catface	B-Horizon	10	LB	GF/TO
L-46S 0+925	46-S	925	284618	5459372	Catface	B-Horizon	4	B	GF/TO
L-46S 0+950	46-S	950	284646	5459373	Catface	B-Horizon	6	B	GF/TO
L-46S 0+975	46-S	975	284668	5459382	Catface	B-Horizon	20	RB	GF/TO
L-46S 0+1000	46-S	1000	284693	5459388	Catface	B-Horizon	25	DB	GF/TO
L-46S 0+1025	46-S	1025	284720	5459401	Catface	B-Horizon	20	B	GF/TO
L-46S 0+1050	46-S	1050	284739	5459404	Catface	B-Horizon	8	LB	GF/TO
L-46S 0+1075	46-S	1075	284765	5459417	Catface	B-Horizon	8	B	GF/TO
L-46S 0+1100	46-S	1100	284785	5459412	Catface	B-Horizon	15	RB	GF/TO
L-46S 0+1125	46-S	1125	284802	5459420	Catface	B-Horizon	10	G	GF/TO
L-46S 0+1150	46-S	1150	284828	5459435	Catface	B-Horizon	30	DG	GF/TO
L-46S 0+1175	46-S	1175	284851	5459443	Catface	B-Horizon	12	B	GF/TO
L-46S 0+1200	46-S	1200	284870	5459447	Catface	B-Horizon	25	B	GF/TO
L-46S 0+1225	46-S	1225	284895	5459449	Catface	B-Horizon	20	B	GF/TO
L-46S 0+1250	46-S	1250	284917	5459464	Catface	B-Horizon	25	LB	GF/TO
L-46S 0+1275	46-S	1275	284939	5459465	Catface	B-Horizon	30	B	GF/TO
L-46S 0+1300	46-S	1300	284968	5459469	Catface	B-Horizon	15	LB	GF/TO
L-46S 0+1325	46-S	1325	284992	5459471	Catface	B-Horizon	6	RB	GF/TO
L-46S 0+1350	46-S	1350	285010	5459495	Catface	B-Horizon	15	RB	GF/TO

SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-46S 0+1375	46-S	1375	285028	5459503	Catface	B-Horizon	6	RB	GF/TO
L-46S 0+1400	46-S	1400	285057	5459521	Catface	B-Horizon	5	RB	GF/TO
L-50S 0+000	50-S	0	283804	5458957	Catface	B-Horizon	20	GB	GF/TO
L-50S 0+025	50-S	25	283831	5458962	Catface	B-Horizon	25	GB	GF/TO
L-50S 0+050	50-S	50	283855	5458968	Catface	B-Horizon	10	YB	GF/TO
L-50S 0+075	50-S	75	283883	5458971	Catface	B-Horizon	15	B	GF/TO
L-50S 0+100	50-S	100	283910	5458984	Catface	B-Horizon	15	RB	GF/TO
L-50S 0+125	50-S	125	283931	5458996	Catface	B-Horizon	20	RB	GF/TO
L-50S 0+150	50-S	150	283956	5459014	Catface	B-Horizon	15	RB	GF/TO
L-50S 0+175	50-S	175	283976	5459014	Catface	B-Horizon	10	RB	GF/TO
L-50S 0+200	50-S	200	284003	5459022	Catface	B-Horizon	20	YB	GF/TO
L-50S 0+225	50-S	225	284019	5459034	Catface	B-Horizon	20	RB	GF/TO
L-50S 0+250	50-S	250	284045	5459046	Catface	B-Horizon	15	RB	GF/TO
L-50S 0+275	50-S	275	284071	5459052	Catface	B-Horizon	15	RB	GF/TO
L-50S 0+300	50-S	300	284095	5459057	Catface	B-Horizon	15	B	GF/TO
L-50S 0+325	50-S	325	284122	5459066	Catface	B-Horizon	10	B	GF/TO
L-50S 0+350	50-S	350	284148	5459055	Catface	B-Horizon	15	GB	GF/TO
L-50S 0+400	50-S	400	284178	5459081	Catface	B-Horizon	15	GB	GF/TO
L-50S 0+425	50-S	425	284209	5459101	Catface	B-Horizon	15	B	GF/TO
L-50S 0+450	50-S	450	284241	5459115	Catface	B-Horizon	10	B	GF/TO
L-50S 0+475	50-S	475	284258	5459128	Catface	B-Horizon	10	RB	GF/TO
L-50S 0+500	50-S	500	284287	5459136	Catface	B-Horizon	10	R	GF/TO
L-50S 0+525	50-S	525	284303	5459152	Catface	B-Horizon	15	RB	GF/TO
L-50S 0+550	50-S	550	284324	5459169	Catface	B-Horizon	20	RY	GF/TO
L-50S 0+575	50-S	575	284349	5459181	Catface	B-Horizon	20	R	GF/TO
L-50S 0+600	50-S	600	284363	5459201	Catface	B-Horizon	15	RB	GF/TO
L-50S 0+625	50-S	625	284382	5459215	Catface	B-Horizon	20	B	GF/TO
L-50S 0+650	50-S	650	284398	5459232	Catface	B-Horizon	20	RB	GF/TO
L-50S 0+675	50-S	675	284413	5459244	Catface	B-Horizon	20	YB	GF/TO
L-50S 0+700	50-S	700	284432	5459265	Catface	B-Horizon	15	B	GF/TO
L-50S 0+725	50-S	725	284459	5459262	Catface	B-Horizon	20	B	GF/TO
L-50S 0+750	50-S	750	284483	5459263	Catface	B-Horizon	20	Y	GF/TO
L-50S 0+775	50-S	775	284507	5459270	Catface	B-Horizon	15	Y	GF/TO

SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-50S 0+800	50-S	800	284528	5459282	Catface	B-Horizon	15	B	GF/TO
L-50S 0+825	50-S	825	284548	5459295	Catface	B-Horizon	15	B	GF/TO
L-50S 0+850	50-S	850	284574	5459300	Catface	B-Horizon	25	R	GF/TO
L-50S 0+875	50-S	875	284603	5459299	Catface	B-Horizon	20	B	GF/TO
L-50S 0+900	50-S	900	284627	5459308	Catface	B-Horizon	25	B	GF/TO
L-50S 0+925	50-S	925	284653	5459309	Catface	B-Horizon	20	B	GF/TO
L-50S 0+950	50-S	950	284680	5459306	Catface	B-Horizon	15	B	GF/TO
L-50S 0+975	50-S	975	284703	5459314	Catface	B-Horizon	20	R	GF/TO
L-50S 0+1000	50-S	1000	284725	5459308	Catface	B-Horizon	20	RB	GF/TO
L-50S 0+1025	50-S	1025	284748	5459315	Catface	B-Horizon	15	B	GF/TO
L-50S 0+1050	50-S	1050	284774	5459324	Catface	B-Horizon	20	GB	GF/TO
L-50S 0+1075	50-S	1075	284795	5459338	Catface	B-Horizon	25	GB	GF/TO
L-50S 0+1100	50-S	1100	284819	5459340	Catface	B-Horizon	30	GB	GF/TO
L-50S 0+1125	50-S	1125	284842	5459338	Catface	B-Horizon	30	GB	GF/TO
L-50S 0+1150	50-S	1150	284870	5459342	Catface	B-Horizon	20	G	GF/TO
L-50S 0+1175	50-S	1175	284894	5459344	Catface	B-Horizon	25	B	GF/TO
L-50S 0+1200	50-S	1200	284922	5459346	Catface	B-Horizon	30	G	GF/TO
L-50S 0+1225	50-S	1225	284946	5459349	Catface	B-Horizon	20	G	GF/TO
L-50S 0+1250	50-S	1250	284968	5459357	Catface	B-Horizon	25	G	GF/TO
L-50S 0+1275	50-S	1275	284993	5459363	Catface	B-Horizon	20	B	GF/TO
L-50S 0+1300	50-S	1300	285017	5459363	Catface	B-Horizon	25	G	GF/TO
L-50S 0+1325	50-S	1325	285040	5459365	Catface	B-Horizon	20	B	GF/TO
L-50S 0+1350	50-S	1350	285063	5459368	Catface	B-Horizon	20	B	GF/TO
L-70S 0+000	70-S	0	284731	5458840	Catface	B-Horizon	10	B	GF/TO
L-70S 0+025	70-S	25	284713	5458822	Catface	B-Horizon	8	G	GF/TO
L-70S 0+075	70-S	75	284670	5458788	Catface	B-Horizon	10	LB	GF/TO
L-70S 0+100	70-S	100	284652	5458769	Catface	B-Horizon	20	G	GF/TO
L-70S 0+125	70-S	125	284635	5458752	Catface	B-Horizon	30	G	GF/TO
L-70S 0+150	70-S	150	284614	5458753	Catface	B-Horizon	10	LB	GF/TO
L-74S 0+000	74-S	0	283920	5458335	Catface	B-Horizon	10	G	GF/TO
L-74S 0+025	74-S	25	283943	5458351	Catface	B-Horizon	20	G	GF/TO
L-74S 0+050	74-S	50	283961	5458366	Catface	B-Horizon	25	GB	GF/TO
L-74S 0+075	74-S	75	283980	5458377	Catface	B-Horizon	25	R	GF/TO

SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-74S 0+100	74-S	100	284002	5458390	Catface	B-Horizon	10	G	GF/TO
L-74S 0+125	74-S	125	284021	5458405	Catface	B-Horizon	10	G	GF/TO
L-74S 0+150	74-S	150	284035	5458424	Catface	B-Horizon	10	G	GF/TO
L-74S 0+175	74-S	175	284083	5458459	Catface	B-Horizon	15	B	GF/TO
L-74S 0+200	74-S	200	284097	5458472	Catface	B-Horizon	20	R	GF/TO
L-74S 0+225	74-S	225	284114	5458485	Catface	B-Horizon	15	B	GF/TO
L-74S 0+250	74-S	250	284132	5458502	Catface	B-Horizon	20	R	GF/TO
L-74S 0+275	74-S	275	284155	5458521	Catface	B-Horizon	10	B	GF/TO
L-74S 0+300	74-S	300	284176	5458528	Catface	B-Horizon	10	R	GF/TO
L-74S 0+350	74-S	350	284210	5458546	Catface	B-Horizon	15	B	GF/TO
L-74S 0+375	74-S	375	284236	5458549	Catface	B-Horizon	25	B	GF/TO
L-74S 0+400	74-S	400	284256	5458563	Catface	B-Horizon	20	GB	GF/TO
L-74S 0+425	74-S	425	284277	5458578	Catface	B-Horizon	15	B	GF/TO
L-74S 0+450	74-S	450	284295	5458597	Catface	B-Horizon	15	G	GF/TO
L-74S 0+475	74-S	475	284315	5458613	Catface	B-Horizon	35	GB	GF/TO
L-74S 0+500	74-S	500	284340	5458626	Catface	B-Horizon	20	B	GF/TO
L-74S 0+525	74-S	525	284361	5458638	Catface	B-Horizon	15	B	GF/TO
L-74S 0+550	74-S	550	284380	5458644	Catface	B-Horizon	40	B	GF/TO
L-74S 0+575	74-S	575	284407	5458660	Catface	B-Horizon	20	B	GF/TO
L-74S 0+600	74-S	600	284430	5458668	Catface	B-Horizon	15	B	GF/TO
L-74S 0+625	74-S	625	284446	5458686	Catface	B-Horizon	20	B	GF/TO
L-74S 0+650	74-S	650	284470	5458697	Catface	B-Horizon	15	B	GF/TO
L-74S 0+675	74-S	675	284494	5458707	Catface	B-Horizon	15	B	GF/TO
L-74S 0+700	74-S	700	284515	5458714	Catface	B-Horizon	15	GB	GF/TO
L-74S 0+725	74-S	725	284542	5458720	Catface	B-Horizon	15	GB	GF/TO
L-74S 0+750	74-S	750	284564	5458726	Catface	B-Horizon	25	B	GF/TO
L-74S 0+775	74-S	775	284589	5458728	Catface	B-Horizon	10	B	GF/TO
L-74S 0+800	74-S	800	284617	5458721	Catface	B-Horizon	25	B	GF/TO
L-74S 0+825	74-S	825	284660	5458706	Catface	B-Horizon	20	GB	GF/TO
L-74S 0+850	74-S	850	284646	5458712	Catface	B-Horizon	30	B	GF/TO
L-74S 0+875	74-S	875	284660	5458706	Catface	B-Horizon	15	RB	GF/TO
L-78S 0+000	78-S	0	283939	5458249	Catface	B-Horizon	15	G	GF/TO
L-78S 0+025	78-S	25	283990	5458263	Catface	B-Horizon	15	RB	GF/TO



SampleID	Line	Station	Easting_NAD83_10	Northing_NAD83_10	Project	Sample Type	Depth (cm)	Colour	Sampler
L-78S 0+050	78-S	50	284004	5458291	Catface	B-Horizon	20	G	GF/TO
L-78S 0+075	78-S	75	284024	5458307	Catface	B-Horizon	10	GB	GF/TO
L-78S 0+100	78-S	100	284040	5458324	Catface	B-Horizon	10	RB	GF/TO
L-78S 0+125	78-S	125	284055	5458343	Catface	B-Horizon	10	OB	GF/TO
L-78S 0+175	78-S	175	284097	5458400	Catface	B-Horizon	5	GB	GF/TO
L-78S 0+250	78-S	250	284163	5458423	Catface	B-Horizon	10	B	GF/TO
L-78S 0+275	78-S	275	284182	5458442	Catface	B-Horizon	20	B	GF/TO
L-78S 0+300	78-S	300	284284	5458453	Catface	B-Horizon	15	GB	GF/TO
L-78S 0+325	78-S	325	284218	5458474	Catface	B-Horizon	10	LB	GF/TO
L-78S 0+350	78-S	350	284240	5458489	Catface	B-Horizon	10	OB	GF/TO
L-78S 0+375	78-S	375	284256	5458495	Catface	B-Horizon	10	B	GF/TO
L-78S 0+425	78-S	425	284291	5458527	Catface	B-Horizon	20	LB	GF/TO
L-78S 0+450	78-S	450	284319	5458532	Catface	B-Horizon	10	B	GF/TO
L-78S 0+500	78-S	500	284368	5458535	Catface	B-Horizon	10	LB	GF/TO
L-78S 0+575	78-S	575	284445	5458545	Catface	B-Horizon	5	B	GF/TO
L-78S 0+600	78-S	600	284468	5458544	Catface	B-Horizon	8	LB	GF/TO
L-78S 0+625	78-S	625	284492	5458543	Catface	B-Horizon	9	LB	GF/TO
L-78S 0+650	78-S	650	284519	5458548	Catface	B-Horizon	20	B	GF/TO
L-78S 0+675	78-S	675	284550	5458561	Catface	B-Horizon	8	G	GF/TO
L-78S 0+700	78-S	700	284574	5458550	Catface	B-Horizon	8	LB	GF/TO
L-78S 0+725	78-S	725	284592	5458558	Catface	B-Horizon	10	G	GF/TO
L-78S 0+750	78-S	750	284620	5458563	Catface	B-Horizon	8	G	GF/TO

## **SECTION E: ANALYTICAL REPORTS**

1. Analyses carried out by Bureau Veritas Commodities Canada. of Vancouver, B.C.

<b>File Number</b>	<b>Date of Certificate</b>	<b>No. of Samples</b>	<b>Sample Type</b>	<b>Analytical Code</b>
<b>Mineral Analysis:</b>				
VAN18003674.2	Jan 25 2019	25	Rock	AQ201, AQ374, MA370
VAN18003675.1	Feb 05 2019	220	Soil	AQ201
<b>Total</b>		<b>245</b>		

2. Statement of Analytical Procedures: 2 data sheets
  - Bureau Veritas AQ300, AQ200; Multi-Element (36) Assay by ICP-ES/MS; Aqua Regia Digestion
  - Bureau Veritas AQ370, AQ270; Multi-Element (34) Assay by ICP-ES/MS; Aqua Regia Digestion Ore Grade ICP Analysis



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

[www.bureauveritas.com/um](http://www.bureauveritas.com/um)

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

**Client: Catface Copper Mines Limited**  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6 Canada

Submitted By: Email Distribution List  
Receiving Lab: Canada-Vancouver  
Received: December 12, 2018  
Report Date: January 25, 2019  
Page: 1 of 2

# CERTIFICATE OF ANALYSIS

VAN18003674.2

## CLIENT JOB INFORMATION

Project: CATFACE  
Shipment ID: CCML2018-  
P.O. Number  
Number of Samples: 25

## SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT Dispose of Reject After 90 days

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: Catface Copper Mines Limited  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6  
Canada

CC:

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	25	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ201	25	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
AQ374	5	1:1:1 Aqua Regia Digestion ICP-ES Finish	0.4	Completed	VAN
MA370	3	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN

## ADDITIONAL COMMENTS

Version 2 : MA370-W Ag included.



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

**Client: Catface Copper Mines Limited**  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6 Canada

Project: CATFACE  
Report Date: January 25, 2019

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Part: 1 of 2

# CERTIFICATE OF ANALYSIS

VAN18003674.2

Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
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	2	0.01	0.001	
11201	Rock	1.47	11.1	>10000	11.6	85	9.6	15.6	14.1	122	3.79	<0.5	100.2	1.9	16	0.5	<0.1	0.5	53	0.26	0.030
11202	Rock	0.92	3.0	997.5	0.9	17	0.3	4.9	6.7	141	2.19	<0.5	1.9	2.2	19	<0.1	<0.1	0.1	43	0.40	0.028
11203	Rock	3.16	838.6	6603.3	1.0	66	3.3	15.7	18.6	179	3.00	<0.5	27.9	1.9	33	0.9	<0.1	0.3	61	0.44	0.039
11204	Rock	0.99	1.8	6430.5	0.7	56	2.5	54.6	25.6	162	2.83	<0.5	15.7	0.7	50	0.2	<0.1	0.4	61	1.11	0.081
11205	Rock	1.61	1.5	230.7	2.9	16	0.1	22.2	7.6	69	0.80	<0.5	<0.5	1.0	135	<0.1	<0.1	<0.1	16	3.37	0.090
11206	Rock	0.56	0.8	346.1	1.0	28	0.2	11.0	8.1	185	2.07	0.6	1.4	3.0	35	<0.1	<0.1	<0.1	57	0.52	0.046
11207	Rock	1.60	1.1	439.2	1.8	37	0.2	11.9	10.9	255	2.58	<0.5	1.9	2.0	46	<0.1	<0.1	0.2	64	0.64	0.051
11208	Rock	1.42	1.5	113.4	6.7	46	<0.1	11.4	10.0	226	2.27	<0.5	2.2	1.9	47	<0.1	<0.1	<0.1	61	0.58	0.052
11209	Rock	0.88	1.7	696.5	0.8	28	0.2	15.4	11.1	217	2.54	<0.5	5.5	1.7	51	<0.1	<0.1	<0.1	73	0.77	0.058
11210	Rock	0.86	0.4	2222.0	2.9	125	2.9	11.1	15.5	490	3.76	6.1	5.4	1.7	20	0.8	0.1	0.2	49	1.19	0.058
11211	Rock	1.23	0.7	1676.2	0.6	133	2.5	11.6	13.2	395	3.16	3.4	6.9	2.6	31	0.9	<0.1	0.3	67	0.79	0.047
11212	Rock	0.93	3.5	2254.0	0.6	37	1.0	25.4	13.4	238	2.69	<0.5	5.7	0.4	27	0.2	<0.1	0.2	125	1.04	0.070
11213	Rock	1.16	1.0	1442.9	0.8	25	0.8	7.7	8.3	90	1.95	<0.5	6.5	3.3	19	0.1	<0.1	0.1	35	0.25	0.022
11214	Rock	0.68	2.1	393.5	1.5	14	0.1	7.7	10.9	40	1.40	<0.5	0.7	1.9	48	<0.1	<0.1	<0.1	13	0.57	0.048
11215	Rock	0.72	1.2	984.6	0.8	21	1.4	8.6	6.7	155	3.49	<0.5	8.7	0.4	28	<0.1	<0.1	0.3	262	0.93	0.080
11216	Rock	1.07	13.7	>10000	5.0	192	11.9	42.2	46.3	382	6.22	31.6	25.1	0.8	37	1.1	0.3	0.7	158	0.78	0.055
11217	Rock	1.35	60.1	>10000	35.3	325	30.2	48.0	63.6	516	9.80	70.7	45.5	1.1	32	5.0	0.5	1.4	167	0.59	0.054
11218	Rock	1.27	24.2	>10000	10.5	319	>100	21.4	43.7	397	8.07	36.6	37.6	1.2	20	3.3	0.2	0.8	155	0.58	0.072
11219	Rock	0.56	0.4	1361.4	1.2	38	0.9	18.5	16.3	198	6.22	2.1	2.7	0.4	545	0.2	<0.1	0.2	242	5.28	0.095
11220	Rock	0.98	1.6	>10000	2.4	230	14.7	15.6	39.0	427	5.57	9.1	32.4	0.3	332	2.0	<0.1	1.9	89	3.50	0.130
11221	Rock	0.97	7.1	3521.1	0.5	31	1.3	4.2	8.4	175	2.27	<0.5	9.6	2.9	17	0.2	<0.1	0.5	46	0.27	0.021
11222	Rock	1.56	4.2	1344.5	0.8	25	0.5	5.4	7.9	197	2.52	<0.5	4.2	3.3	29	<0.1	<0.1	0.2	49	0.39	0.029
11223	Rock	1.55	1.8	150.6	0.5	15	<0.1	4.3	5.6	163	1.87	<0.5	2.5	2.9	19	<0.1	<0.1	<0.1	36	0.24	0.022
11224	Rock	2.05	121.3	2049.3	0.5	24	0.5	4.2	7.1	167	1.97	<0.5	5.4	2.0	19	0.3	<0.1	0.2	39	0.26	0.028
11225	Rock	0.85	0.8	429.6	1.9	25	0.3	42.6	17.4	141	2.32	<0.5	3.2	0.4	141	<0.1	<0.1	<0.1	108	2.87	0.068



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

**Client:** **Catface Copper Mines Limited**  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6 Canada

**Project:** CATFACE  
**Report Date:** January 25, 2019

**Page:** 2 of 2

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

## VAN18003674.2

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ374	MA370	MA370
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te	Cu	Ag	W
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	%
		MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL
11201	Rock	3	14	0.64	78	0.153	<1	1.37	0.123	0.44	79.9	<0.01	3.8	0.1	1.89	5	5.0	0.2	1.722		
11202	Rock	5	10	0.55	154	0.143	<1	1.20	0.150	0.37	0.3	0.01	3.6	<0.1	0.10	5	<0.5	<0.2			
11203	Rock	4	17	0.79	121	0.182	<1	1.78	0.214	0.75	17.2	0.01	4.2	0.2	1.14	5	4.0	<0.2			
11204	Rock	3	23	0.52	18	0.100	<1	1.57	0.192	0.07	0.5	0.01	5.1	<0.1	1.31	4	2.7	0.3			
11205	Rock	4	11	0.18	30	0.033	<1	5.40	0.771	0.03	0.6	<0.01	1.5	<0.1	0.19	8	<0.5	<0.2			
11206	Rock	4	13	0.69	186	0.199	<1	1.35	0.186	0.58	0.2	<0.01	2.2	<0.1	<0.05	5	<0.5	<0.2			
11207	Rock	5	16	0.82	199	0.199	<1	1.72	0.240	0.72	0.2	<0.01	3.0	0.2	0.05	6	<0.5	<0.2			
11208	Rock	5	15	0.77	223	0.188	<1	1.60	0.236	0.71	<0.1	<0.01	2.3	<0.1	<0.05	5	<0.5	<0.2			
11209	Rock	5	19	0.93	179	0.221	<1	1.93	0.271	0.65	0.3	<0.01	2.6	0.2	0.07	6	<0.5	<0.2			
11210	Rock	4	13	1.21	6	0.079	2	1.87	0.045	0.17	>100	0.03	2.6	<0.1	0.30	9	<0.5	<0.2		2	0.02
11211	Rock	6	14	1.03	87	0.137	1	1.68	0.115	0.27	1.6	0.01	5.5	<0.1	0.26	7	<0.5	<0.2			
11212	Rock	3	51	0.69	13	0.183	<1	1.16	0.160	0.10	0.9	<0.01	5.2	<0.1	0.33	4	<0.5	<0.2			
11213	Rock	3	8	0.44	84	0.122	<1	1.05	0.137	0.38	1.0	<0.01	4.0	0.1	0.41	4	0.7	<0.2			
11214	Rock	8	2	0.14	15	0.036	<1	1.03	0.153	0.03	0.1	<0.01	0.9	<0.1	0.48	2	0.6	<0.2			
11215	Rock	4	53	0.35	12	0.188	<1	0.79	0.147	0.08	0.5	<0.01	4.9	<0.1	0.19	5	<0.5	0.3			
11216	Rock	1	45	1.89	37	0.102	1	3.01	0.130	0.14	>100	*	8.5	<0.1	1.78	8	2.2	0.2	1.610	11	0.13
11217	Rock	1	55	2.54	29	0.104	1	3.55	0.106	0.16	1.6	0.12	11.6	<0.1	3.33	10	5.8	0.6	4.693		
11218	Rock	2	21	1.61	25	0.139	1	2.34	0.092	0.10	2.6	0.10	7.4	<0.1	3.30	7	4.2	0.4	3.889	121	<0.01
11219	Rock	4	60	0.30	119	0.208	1	8.07	0.547	0.17	1.0	<0.01	3.8	<0.1	0.35	22	<0.5	<0.2			
11220	Rock	3	2	1.06	41	0.140	2	6.49	0.397	0.10	7.8	0.06	6.2	<0.1	1.50	15	2.0	0.4	1.590		
11221	Rock	4	8	0.50	78	0.151	<1	1.11	0.143	0.43	1.4	0.01	3.8	0.1	0.40	4	1.4	<0.2			
11222	Rock	6	12	0.61	163	0.182	<1	1.58	0.201	0.70	0.2	<0.01	5.0	0.2	0.13	6	0.7	<0.2			
11223	Rock	5	8	0.45	82	0.134	<1	0.96	0.120	0.41	0.2	<0.01	3.8	<0.1	<0.05	4	<0.5	<0.2			
11224	Rock	5	9	0.50	137	0.136	<1	1.09	0.142	0.45	0.3	<0.01	4.6	0.1	0.17	4	<0.5	<0.2			
11225	Rock	4	47	0.39	18	0.085	1	4.61	0.708	0.05	0.3	<0.01	3.9	<0.1	0.45	9	<0.5	<0.2			



# QUALITY CONTROL REPORT

VAN18003674.2

Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
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	2	0.01	0.001	
Pulp Duplicates																					
11218	Rock	1.27	24.2	>10000	10.5	319	>100	21.4	43.7	397	8.07	36.6	37.6	1.2	20	3.3	0.2	0.8	155	0.58	0.072
REP 11218	QC																				
11222	Rock	1.56	4.2	1344.5	0.8	25	0.5	5.4	7.9	197	2.52	<0.5	4.2	3.3	29	<0.1	<0.1	0.2	49	0.39	0.029
REP 11222	QC		4.0	1311.0	0.8	25	0.5	5.2	7.6	193	2.41	<0.5	5.1	3.1	26	<0.1	<0.1	0.2	45	0.36	0.027
Core Reject Duplicates																					
11205	Rock	1.61	1.5	230.7	2.9	16	0.1	22.2	7.6	69	0.80	<0.5	<0.5	1.0	135	<0.1	<0.1	<0.1	16	3.37	0.090
DUP 11205	QC		0.8	227.7	3.3	19	0.1	22.8	7.7	79	0.86	<0.5	2.0	1.1	150	<0.1	<0.1	<0.1	19	3.78	0.094
Reference Materials																					
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD DS11	Standard		13.5	149.8	133.0	338	1.7	75.9	12.9	969	3.09	41.8	76.9	7.2	66	2.4	8.7	11.9	53	1.05	0.067
STD GC-7	Standard																				
STD OREAS133B	Standard																				
STD OREAS262	Standard		0.7	117.7	55.8	148	0.4	62.5	28.1	535	3.28	35.9	70.0	9.0	36	0.6	5.7	1.1	24	2.88	0.039
STD DS11 Expected			14.6	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701
STD OREAS262 Expected			0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	72	9.33	36	0.61	5.06	0.98	22.5	2.98	0.04
STD GC-7 Expected																					
STD OREAS133B Expected																					
STD CDN-ME-14 Expected																					
BLK	Blank		<0.1	0.4	<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	<2	<0.01	<0.001
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-VAN	Prep Blank		0.7	2.3	1.4	28	<0.1	0.8	3.2	402	1.68	1.2	3.1	2.2	21	<0.1	<0.1	<0.1	24	0.59	0.038
ROCK-VAN	Prep Blank		0.5	2.8	1.5	30	<0.1	0.7	3.6	449	1.73	1.2	2.8	2.2	19	<0.1	<0.1	<0.1	24	0.54	0.039



# QUALITY CONTROL REPORT

VAN18003674.2

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ374	MA370	MA370	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Cu	Ag	W	
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	%	
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	0.001	2	0.01		
Pulp Duplicates																						
11218	Rock	2	21	1.61	25	0.139	1	2.34	0.092	0.10	2.6	0.10	7.4	<0.1	3.30	7	4.2	0.4	3.889	121	<0.01	
REP 11218	QC	3.881																				
11222	Rock	6	12	0.61	163	0.182	<1	1.58	0.201	0.70	0.2	<0.01	5.0	0.2	0.13	6	0.7	<0.2				
REP 11222	QC	5	11	0.59	149	0.167	<1	1.45	0.185	0.67	0.2	<0.01	4.7	0.2	0.12	6	<0.5	<0.2				
Core Reject Duplicates																						
11205	Rock	4	11	0.18	30	0.033	<1	5.40	0.771	0.03	0.6	<0.01	1.5	<0.1	0.19	8	<0.5	<0.2				
DUP 11205	QC	4	13	0.21	34	0.041	<1	5.95	0.844	0.04	0.5	<0.01	1.9	<0.1	0.19	9	<0.5	<0.2				
Reference Materials																						
STD CDN-ME-14	Standard																				45	<0.01
STD CDN-ME-9	Standard																				4	<0.01
STD DS11	Standard	17	57	0.82	369	0.086	6	1.14	0.074	0.40	3.4	0.23	3.1	4.7	0.29	5	2.0	4.8				
STD GC-7	Standard																				0.533	
STD OREAS133B	Standard																				0.031	
STD OREAS262	Standard	15	43	1.18	245	0.002	3	1.31	0.073	0.33	0.2	0.18	3.0	0.4	0.27	4	<0.5	0.3				
STD DS11 Expected		18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56				
STD OREAS262 Expected		15.9	41.7	1.17	248	0.0027	4	1.3	0.071	0.295	0.2	0.17	3.24	0.47	0.253	3.73	0.4	0.23				
STD GC-7 Expected																					0.555	
STD OREAS133B Expected																					0.032	
STD CDN-ME-14 Expected																					43.5	
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2				
BLK	Blank																				<0.001	
BLK	Blank																				<2	<0.01
Prep Wash																						
ROCK-VAN	Prep Blank	6	3	0.36	55	0.069	3	0.78	0.084	0.09	<0.1	<0.01	2.2	<0.1	<0.05	3	<0.5	<0.2				
ROCK-VAN	Prep Blank	6	2	0.41	49	0.068	2	0.81	0.077	0.09	<0.1	0.01	2.4	<0.1	<0.05	4	<0.5	<0.2				



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

**Client:** **Catface Copper Mines Limited**  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6 Canada

Submitted By: Email Distribution List  
Receiving Lab: Canada-Vancouver  
Received: December 12, 2018  
Report Date: February 05, 2019  
Page: 1 of 9

# CERTIFICATE OF ANALYSIS

VAN18003675.1

## CLIENT JOB INFORMATION

Project: CATFACE  
Shipment ID: CCML2018-  
P.O. Number  
Number of Samples: 231

## SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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: Catface Copper Mines Limited  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6  
Canada

CC:

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	231	Dry at 60C			VAN
SS80	220	Dry at 60C sieve 100g to -80 mesh			VAN
SS10	220	Dry at 60C sieve 100g to -10 mesh		Completed	VAN
PULSL	220	Soil Pulverized 100g		Completed	VAN
SLBHP	11	Sort, label and box pulps			VAN
AQ201	220	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
DRPLP	220	Warehouse handling / disposition of pulps			VAN

## ADDITIONAL COMMENTS

  
KERRY JAY  
Geochem Project Specialist





Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

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**Client:** **Catface Copper Mines Limited**  
200 - 580 Hornby Street  
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**Project:** CATFACE  
**Report Date:** February 05, 2019

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# CERTIFICATE OF ANALYSIS

VAN18003675.1

Method Analyte Unit MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	
	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	2	0.01	0.001	1	
L-42S 0+000	Soil	<0.1	21.7	3.7	28	<0.1	2.5	6.4	173	2.09	2.7	3.3	3.2	49	<0.1	0.2	<0.1	31	0.37	0.042	3
L-42S 0+025	Soil	0.6	56.9	9.5	20	0.2	4.8	1.9	54	4.25	4.1	4.1	5.4	9	<0.1	0.4	0.3	52	0.11	0.041	5
L-42S 0+050	Soil	0.9	23.2	9.5	17	0.6	7.8	1.9	68	4.62	3.6	2.4	0.8	12	<0.1	0.5	0.3	113	0.21	0.050	3
L-42S 0+075	Soil	2.2	100.3	10.7	21	0.6	9.1	3.4	103	4.16	3.5	2.6	0.6	12	0.1	0.3	0.4	88	0.21	0.070	3
L-42S 0+100	Soil	1.2	69.0	8.8	18	0.9	7.0	4.3	95	2.84	2.2	2.2	0.4	20	0.1	0.2	0.3	53	0.21	0.062	3
L-42S 0+125	Soil	1.9	30.8	7.0	18	0.4	7.3	2.9	54	2.53	2.2	1.3	1.6	12	0.1	0.3	0.2	58	0.16	0.046	4
L-42S 0+150	Soil	0.7	26.8	9.0	12	0.1	4.7	1.9	51	5.61	2.6	2.3	2.1	7	<0.1	0.7	0.5	154	0.12	0.045	3
L-42S 0+175	Soil	0.9	203.1	13.7	57	0.2	30.4	14.3	283	3.96	5.8	4.0	2.8	23	0.2	0.3	0.3	88	0.39	0.061	6
L-42S 0+200	Soil	0.9	56.4	7.5	13	0.2	7.4	3.1	58	5.08	2.7	2.8	2.3	7	0.2	0.3	0.3	125	0.12	0.044	4
L-42S 0+225	Soil	0.6	43.4	8.1	12	0.2	7.3	3.2	63	3.00	1.1	9.0	0.5	15	<0.1	0.2	0.3	91	0.19	0.033	3
L-42S 0+250	Soil	1.2	95.0	7.4	17	0.3	14.6	4.2	79	5.88	3.7	2.1	0.7	9	<0.1	0.3	0.4	203	0.18	0.038	3
L-42S 0+275	Soil	1.1	98.0	5.5	13	0.2	13.6	4.8	82	5.42	2.6	4.1	0.4	6	<0.1	0.2	0.5	164	0.15	0.043	3
L-42S 0+300	Soil	1.2	64.0	6.3	10	0.3	8.3	3.2	52	4.31	1.8	22.8	0.4	6	<0.1	0.3	0.3	208	0.13	0.026	3
L-42S 0+325	Soil	0.9	53.3	5.2	9	0.1	9.4	3.1	58	4.80	1.3	3.5	0.4	5	<0.1	0.2	0.2	190	0.16	0.026	3
L-42S 0+350	Soil	0.6	22.1	6.7	7	0.1	6.0	2.2	58	3.08	0.8	1.4	0.2	7	<0.1	0.2	0.2	172	0.19	0.027	2
L-42S 0+375	Soil	1.4	57.9	7.0	9	0.5	8.7	3.0	50	2.86	0.9	2.5	0.4	12	<0.1	0.2	0.2	115	0.19	0.024	3
L-42S 0+400	Soil	0.9	179.4	4.2	14	0.2	17.4	7.7	135	3.58	1.8	9.1	0.5	14	<0.1	0.2	0.2	112	0.31	0.058	3
L-42S 0+425	Soil	0.6	92.6	4.7	12	0.3	9.3	3.6	104	2.97	0.9	3.3	0.3	7	<0.1	0.2	0.2	102	0.20	0.045	2
L-42S 0+450	Soil	1.1	229.3	4.5	18	0.2	14.0	5.9	159	3.74	2.0	3.3	0.6	11	0.1	0.1	0.3	116	0.20	0.059	3
L-42S 0+475	Soil	1.4	93.6	4.5	11	0.3	9.0	2.4	44	3.11	1.5	4.6	0.2	14	<0.1	0.2	0.2	111	0.13	0.045	2
L-42S 0+500	Soil	3.3	131.4	5.8	11	0.3	9.0	3.0	47	4.85	1.6	1.4	0.4	6	<0.1	0.2	0.3	168	0.12	0.038	2
L-42S 0+525	Soil	1.4	144.3	4.3	14	0.4	10.2	3.3	66	5.13	1.9	2.6	0.8	9	0.1	0.2	1.0	142	0.10	0.034	2
L-42S 0+550	Soil	3.9	348.8	3.8	16	0.7	13.7	4.1	62	5.19	2.3	1.1	1.1	7	<0.1	0.2	0.3	146	0.08	0.030	2
L-42S 0+575	Soil	2.3	117.6	4.0	10	0.5	7.0	2.6	46	5.99	2.0	3.4	2.0	5	<0.1	0.2	0.2	121	0.08	0.038	3
L-42S 0+600	Soil	4.1	349.4	2.7	11	0.2	15.0	5.1	62	3.73	1.7	6.3	0.9	11	<0.1	0.1	0.2	99	0.13	0.040	3
L-42S 0+625	Soil	2.3	252.1	2.6	16	0.3	20.3	6.0	78	4.43	2.0	2.9	0.8	15	<0.1	0.1	0.2	110	0.17	0.034	3
L-42S 0+650	Soil	2.2	226.0	3.0	11	0.2	14.7	4.3	68	3.69	2.0	4.6	0.9	7	<0.1	0.1	0.2	103	0.13	0.042	3
L-42S 0+675	Soil	1.4	84.6	5.1	12	0.3	11.2	4.0	64	2.58	0.9	2.8	0.2	11	<0.1	0.1	0.2	87	0.14	0.046	2
L-42S 0+700	Soil	4.2	447.2	3.8	17	0.4	17.2	5.7	73	4.24	1.6	5.3	0.4	15	<0.1	0.2	0.3	108	0.14	0.054	3
L-42S 0+725	Soil	2.7	1191.3	2.3	54	0.4	36.2	31.0	327	4.64	0.7	7.3	1.7	34	0.2	<0.1	<0.1	110	0.31	0.066	3

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



Bureau Veritas Commodities Canada Ltd.

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PHONE (604) 253-3158

**Client:** **Catface Copper Mines Limited**  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6 Canada

**Project:** CATFACE  
**Report Date:** February 05, 2019

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# CERTIFICATE OF ANALYSIS

VAN18003675.1

Method	Analyte	Unit	MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
				Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
				ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
				1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
L-42S 0+000	Soil			7	0.51	70	0.105	2	2.77	0.030	0.12	0.2	0.07	2.9	0.1	<0.05	9	0.6	<0.2
L-42S 0+025	Soil			41	0.13	34	0.147	3	5.57	0.010	0.02	0.1	0.33	3.1	<0.1	<0.05	17	3.3	<0.2
L-42S 0+050	Soil			19	0.19	20	0.216	4	1.74	0.018	0.03	0.1	0.15	2.1	<0.1	0.07	16	1.3	<0.2
L-42S 0+075	Soil			18	0.18	23	0.150	4	2.34	0.019	0.03	0.2	0.23	2.5	<0.1	<0.05	11	2.2	<0.2
L-42S 0+100	Soil			15	0.13	31	0.101	4	2.71	0.016	0.03	0.2	0.27	1.9	<0.1	0.09	8	3.5	<0.2
L-42S 0+125	Soil			16	0.09	37	0.099	3	3.51	0.015	0.02	<0.1	0.19	2.3	<0.1	<0.05	12	2.4	<0.2
L-42S 0+150	Soil			19	0.06	13	0.182	2	2.47	0.008	0.01	<0.1	0.12	1.7	<0.1	<0.05	26	1.1	<0.2
L-42S 0+175	Soil			56	0.76	102	0.196	2	6.52	0.027	0.05	0.3	0.16	7.4	<0.1	<0.05	13	1.7	<0.2
L-42S 0+200	Soil			31	0.13	15	0.209	3	3.27	0.015	0.02	0.3	0.26	3.4	<0.1	0.05	18	2.9	<0.2
L-42S 0+225	Soil			14	0.16	18	0.197	4	1.54	0.018	0.03	0.2	0.15	1.8	<0.1	<0.05	12	1.3	<0.2
L-42S 0+250	Soil			48	0.29	14	0.373	2	3.29	0.019	0.03	0.3	0.16	3.3	<0.1	<0.05	20	1.8	<0.2
L-42S 0+275	Soil			31	0.22	10	0.286	3	2.50	0.017	0.02	0.3	0.13	3.3	<0.1	<0.05	17	1.7	<0.2
L-42S 0+300	Soil			22	0.10	6	0.274	3	1.50	0.011	0.02	0.2	0.11	1.4	<0.1	<0.05	18	1.0	<0.2
L-42S 0+325	Soil			24	0.15	6	0.294	1	1.44	0.017	0.02	<0.1	0.08	2.6	<0.1	<0.05	20	0.8	<0.2
L-42S 0+350	Soil			19	0.12	6	0.254	2	0.74	0.016	0.02	<0.1	0.10	1.9	<0.1	<0.05	16	0.7	<0.2
L-42S 0+375	Soil			18	0.12	9	0.206	2	1.16	0.018	0.02	0.2	0.16	1.9	<0.1	<0.05	11	1.2	<0.2
L-42S 0+400	Soil			35	0.29	16	0.182	2	4.33	0.024	0.03	0.3	0.14	5.7	<0.1	<0.05	12	2.7	<0.2
L-42S 0+425	Soil			25	0.19	7	0.141	2	2.51	0.018	0.02	0.3	0.16	3.9	<0.1	<0.05	10	2.1	<0.2
L-42S 0+450	Soil			37	0.35	12	0.195	3	5.08	0.021	0.02	0.5	0.26	5.1	<0.1	<0.05	11	3.6	<0.2
L-42S 0+475	Soil			23	0.09	9	0.141	3	1.85	0.016	0.02	0.2	0.20	2.1	<0.1	<0.05	11	2.1	<0.2
L-42S 0+500	Soil			32	0.14	8	0.229	2	1.54	0.009	0.02	0.2	0.14	2.0	<0.1	<0.05	15	1.4	<0.2
L-42S 0+525	Soil			40	0.20	8	0.172	2	2.91	0.010	0.02	0.2	0.24	2.6	<0.1	<0.05	13	2.6	<0.2
L-42S 0+550	Soil			36	0.33	16	0.227	1	4.69	0.009	0.02	0.3	0.32	3.4	<0.1	<0.05	18	1.3	<0.2
L-42S 0+575	Soil			59	0.17	9	0.218	3	5.16	0.010	0.01	0.4	0.41	4.2	<0.1	<0.05	18	3.0	<0.2
L-42S 0+600	Soil			41	0.24	17	0.177	3	5.02	0.013	0.02	0.8	0.17	4.4	<0.1	<0.05	11	3.5	<0.2
L-42S 0+625	Soil			62	0.46	17	0.216	3	3.69	0.020	0.02	0.8	0.19	3.6	<0.1	<0.05	13	2.5	<0.2
L-42S 0+650	Soil			71	0.20	9	0.175	4	5.12	0.012	0.01	0.6	0.23	4.6	<0.1	<0.05	11	4.1	<0.2
L-42S 0+675	Soil			18	0.19	14	0.120	3	1.32	0.017	0.03	0.3	0.13	1.5	<0.1	<0.05	10	1.3	<0.2
L-42S 0+700	Soil			28	0.38	25	0.133	4	2.66	0.019	0.02	3.1	0.14	3.0	<0.1	<0.05	11	1.8	<0.2
L-42S 0+725	Soil			36	1.03	145	0.235	2	4.89	0.023	0.22	5.6	0.10	6.9	0.2	<0.05	12	0.9	<0.2



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Vancouver British Columbia V6C 3B6 Canada

Project: CATFACE  
Report Date: February 05, 2019

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Part: 1 of 2

# CERTIFICATE OF ANALYSIS

## VAN18003675.1

Method Analyte Unit MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	
L-42S 0+750	Soil	1.7	1013.7	2.0	35	0.5	36.8	13.2	193	3.59	4.3	6.5	1.5	23	<0.1	0.2	0.3	98	0.29	0.044	4
L-42S 0+775	Soil	1.6	782.5	3.6	20	0.4	21.1	6.7	99	4.33	2.5	5.6	0.8	20	0.1	0.2	0.5	119	0.17	0.062	3
L-42S 0+800	Soil	2.5	1040.7	3.1	30	0.4	35.8	10.7	145	4.99	2.7	3.5	1.2	21	<0.1	0.2	0.6	140	0.19	0.055	3
L-42S 0+825	Soil	1.0	367.0	4.4	34	0.2	43.0	12.8	174	3.40	3.5	2.1	0.9	17	<0.1	0.2	0.4	96	0.21	0.054	4
L-42S 0+850	Soil	0.9	335.8	3.5	18	0.4	28.6	8.0	98	3.00	4.6	5.7	0.5	15	<0.1	0.3	0.3	102	0.30	0.033	2
L-42S 0+875	Soil	1.5	150.3	4.9	10	0.3	15.1	4.5	53	4.57	3.4	3.0	1.1	5	<0.1	0.3	0.4	154	0.10	0.036	2
L-42S 0+900	Soil	3.0	114.4	7.7	10	0.4	14.2	4.1	52	6.07	3.2	9.8	0.9	6	<0.1	0.3	0.6	173	0.11	0.029	3
L-42S 0+925	Soil	2.7	273.6	2.7	13	0.1	19.7	5.2	68	4.49	2.9	6.9	1.1	9	<0.1	0.2	0.3	96	0.15	0.031	3
L-42S 0+950	Soil	3.4	283.9	3.3	8	0.2	9.4	2.7	48	4.42	1.8	5.8	0.9	9	<0.1	0.2	0.3	127	0.13	0.033	4
L-42S 0+975	Soil	3.8	207.1	3.9	8	0.4	8.0	2.8	53	3.47	1.2	5.4	0.5	11	<0.1	0.1	0.3	127	0.13	0.034	3
L-42S 0+1000	Soil	3.1	466.2	2.5	17	0.2	19.2	5.9	106	3.38	3.6	8.8	1.7	23	<0.1	0.2	0.2	83	0.20	0.042	4
L-42S 0+1025	Soil	2.8	535.0	2.9	9	0.5	8.2	3.2	42	2.55	1.7	4.0	0.7	17	<0.1	0.1	0.2	57	0.11	0.054	5
L-42S 0+1050	Soil	3.9	593.8	4.4	14	0.6	7.4	3.2	68	5.47	2.9	12.5	1.9	20	<0.1	0.2	0.8	138	0.12	0.042	4
L-42S 0+1075	Soil	8.0	100.2	5.8	7	0.6	8.1	2.2	54	3.62	2.9	7.5	0.7	8	<0.1	0.3	0.3	143	0.13	0.027	4
L-42S 0+1100	Soil	22.0	284.7	4.0	11	0.4	5.6	2.8	64	4.96	2.7	3.8	2.8	13	<0.1	0.1	0.2	115	0.08	0.034	5
L-46S 0+000	Soil	1.0	24.8	6.0	17	<0.1	6.0	2.4	71	4.45	2.9	2.9	2.2	13	<0.1	0.3	0.2	72	0.16	0.049	4
L-46S 0+025	Soil	1.4	59.1	5.3	11	0.5	10.6	3.7	63	5.52	1.9	2.3	1.1	5	<0.1	0.3	0.4	169	0.16	0.032	13
L-46S 0+050	Soil	1.4	55.1	5.5	8	0.5	10.1	3.1	49	4.27	1.9	1.7	0.7	6	<0.1	0.3	0.4	172	0.13	0.018	3
L-46S 0+075	Soil	1.2	305.1	1.7	13	0.1	17.4	5.0	77	2.59	3.0	1.8	1.2	10	<0.1	0.1	0.1	73	0.17	0.046	3
L-46S 0+100	Soil	1.0	101.2	5.6	16	0.1	12.4	4.2	96	4.56	4.7	5.5	3.1	6	<0.1	0.2	0.2	109	0.21	0.046	4
L-46S 0+125	Soil	0.8	86.2	7.1	18	<0.1	10.3	4.8	97	3.20	4.3	<0.5	4.1	19	0.1	0.3	0.2	69	0.28	0.053	4
L-46S 0+150	Soil	0.5	67.7	7.9	32	0.1	9.3	8.5	262	2.20	4.2	3.3	2.5	18	0.4	0.3	0.3	47	0.25	0.043	6
L-46S 0+175	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-46S 0+200	Soil	1.5	44.9	20.3	14	0.2	5.4	3.3	89	4.87	6.4	2.9	3.6	15	0.1	0.3	0.4	74	0.17	0.050	6
L-46S 0+225	Soil	1.5	61.4	11.8	13	0.3	8.8	3.1	54	6.24	3.9	4.5	1.5	6	0.1	0.3	0.4	161	0.11	0.031	6
L-46S 0+250	Soil	1.1	57.4	12.4	16	0.2	13.8	4.7	114	4.10	3.8	5.7	0.6	8	<0.1	0.3	0.4	169	0.23	0.033	3
L-46S 0+275	Soil	0.6	16.9	10.5	6	0.4	3.7	1.1	31	0.81	1.7	3.7	0.2	11	<0.1	0.1	0.3	46	0.11	0.037	3
L-46S 0+300	Soil	0.8	56.9	114.0	13	1.3	9.2	3.4	62	6.65	75.0	66.1	0.6	7	<0.1	1.5	0.5	218	0.18	0.021	3
L-46S 0+325	Soil	1.2	123.9	10.2	17	0.2	12.3	4.8	87	4.10	3.8	1.7	1.0	11	<0.1	0.3	0.3	124	0.24	0.026	5
L-46S 0+350	Soil	1.2	86.6	5.2	16	0.1	11.8	5.1	80	1.46	0.7	5.9	0.7	8	<0.1	0.1	0.2	61	0.20	0.022	4



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**Project:** CATFACE  
**Report Date:** February 05, 2019

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# CERTIFICATE OF ANALYSIS

**VAN18003675.1**

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
L-42S 0+750	Soil	45	0.80	80	0.237	2	4.44	0.031	0.05	2.4	0.11	6.6	<0.1	<0.05	10	1.2	<0.2
L-42S 0+775	Soil	37	0.45	31	0.184	2	4.54	0.022	0.03	2.9	0.23	4.4	<0.1	<0.05	12	2.0	<0.2
L-42S 0+800	Soil	45	0.66	55	0.249	2	4.28	0.024	0.04	3.7	0.10	5.0	<0.1	<0.05	14	1.1	<0.2
L-42S 0+825	Soil	45	0.69	74	0.181	3	4.35	0.033	0.04	0.7	0.14	4.9	<0.1	<0.05	10	0.9	<0.2
L-42S 0+850	Soil	38	0.41	29	0.234	2	3.02	0.029	0.02	0.7	0.10	3.9	<0.1	<0.05	9	0.7	<0.2
L-42S 0+875	Soil	48	0.18	9	0.272	2	4.55	0.011	0.01	0.4	0.22	3.5	<0.1	<0.05	16	2.6	<0.2
L-42S 0+900	Soil	45	0.17	10	0.327	2	2.29	0.012	0.02	0.4	0.15	2.5	<0.1	<0.05	25	1.5	<0.2
L-42S 0+925	Soil	61	0.29	11	0.202	2	4.40	0.019	0.02	0.9	0.13	5.0	<0.1	<0.05	13	3.5	<0.2
L-42S 0+950	Soil	44	0.13	8	0.199	2	3.80	0.014	0.01	0.9	0.18	3.6	<0.1	<0.05	15	4.2	<0.2
L-42S 0+975	Soil	28	0.11	8	0.173	3	1.89	0.016	0.02	0.8	0.16	1.8	<0.1	0.05	12	2.2	<0.2
L-42S 0+1000	Soil	60	0.47	33	0.178	2	5.29	0.025	0.03	2.4	0.15	5.4	<0.1	<0.05	11	3.5	<0.2
L-42S 0+1025	Soil	28	0.17	27	0.128	2	3.35	0.018	0.03	2.8	0.20	2.4	<0.1	0.07	7	3.5	<0.2
L-42S 0+1050	Soil	46	0.33	24	0.333	2	4.07	0.018	0.03	11.1	0.29	4.7	<0.1	0.06	18	3.6	<0.2
L-42S 0+1075	Soil	40	0.13	9	0.328	3	1.28	0.014	0.02	0.3	0.11	1.8	<0.1	<0.05	15	1.7	<0.2
L-42S 0+1100	Soil	37	0.25	23	0.308	2	3.44	0.014	0.03	0.4	0.18	2.0	<0.1	<0.05	18	2.9	<0.2
L-46S 0+000	Soil	27	0.11	23	0.201	2	3.49	0.013	0.02	0.2	0.19	2.4	<0.1	0.05	15	3.0	<0.2
L-46S 0+025	Soil	65	0.16	13	0.297	3	2.70	0.017	0.01	0.1	0.36	3.9	<0.1	<0.05	19	3.2	<0.2
L-46S 0+050	Soil	38	0.10	7	0.273	2	1.33	0.013	0.02	<0.1	0.16	1.7	<0.1	<0.05	15	1.3	<0.2
L-46S 0+075	Soil	57	0.33	18	0.175	3	6.37	0.022	0.02	0.6	0.19	5.4	<0.1	<0.05	9	4.1	<0.2
L-46S 0+100	Soil	86	0.29	11	0.273	4	8.16	0.023	0.02	0.2	0.25	10.6	<0.1	0.24	16	5.0	<0.2
L-46S 0+125	Soil	27	0.26	63	0.176	2	5.28	0.033	0.03	0.2	0.24	3.3	0.1	<0.05	12	1.9	<0.2
L-46S 0+150	Soil	16	0.34	39	0.106	1	3.54	0.018	0.03	0.4	0.18	2.5	<0.1	<0.05	8	1.2	<0.2
L-46S 0+175	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-46S 0+200	Soil	23	0.11	31	0.170	3	6.66	0.012	0.03	0.3	0.41	3.5	<0.1	0.08	16	3.2	<0.2
L-46S 0+225	Soil	38	0.13	16	0.285	3	3.86	0.011	0.02	0.2	0.36	3.6	<0.1	<0.05	21	3.0	<0.2
L-46S 0+250	Soil	41	0.31	15	0.388	4	1.90	0.022	0.04	0.3	0.14	3.4	<0.1	<0.05	19	1.9	<0.2
L-46S 0+275	Soil	14	0.06	10	0.120	3	0.86	0.012	0.03	<0.1	0.14	1.0	<0.1	0.05	7	1.3	<0.2
L-46S 0+300	Soil	46	0.15	6	0.371	3	1.82	0.014	0.02	0.1	0.17	3.1	<0.1	<0.05	20	1.6	<0.2
L-46S 0+325	Soil	32	0.30	12	0.238	2	3.04	0.031	0.03	0.3	0.22	3.8	<0.1	<0.05	15	1.6	<0.2
L-46S 0+350	Soil	32	0.24	9	0.201	2	2.98	0.020	0.02	0.3	0.12	4.3	<0.1	<0.05	14	1.2	<0.2



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**Project:** CATFACE  
**Report Date:** February 05, 2019

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# CERTIFICATE OF ANALYSIS

## VAN18003675.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		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	
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	2	0.01	0.001	1	
L-46S 0+375	Soil	<0.1	7.7	3.2	10	<0.1	2.9	0.4	16	0.05	<0.5	<0.5	<0.1	23	0.1	<0.1	<0.1	<2	0.36	0.018	<1
L-46S 0+400	Soil	0.8	112.1	5.3	14	0.2	11.9	6.6	132	3.04	1.5	3.7	0.4	8	<0.1	0.1	0.2	106	0.23	0.043	3
L-46S 0+425	Soil	0.8	116.9	3.7	12	0.2	12.5	5.0	106	3.24	1.6	3.4	0.4	8	<0.1	0.1	0.2	105	0.23	0.039	3
L-46S 0+450	Soil	0.6	18.5	4.9	6	0.1	4.0	1.2	38	1.34	<0.5	2.7	0.2	5	<0.1	0.1	0.2	71	0.10	0.025	2
L-46S 0+475	Soil	1.6	109.9	5.0	12	0.2	7.6	2.8	70	4.81	2.1	1.4	0.3	6	<0.1	0.2	0.4	139	0.12	0.032	3
L-46S 0+500	Soil	1.1	52.3	4.8	9	0.3	6.7	1.8	41	3.55	2.3	2.2	0.4	7	<0.1	0.2	0.2	104	0.16	0.034	2
L-46S 0+525	Soil	0.7	62.4	4.3	8	0.2	7.4	1.7	45	3.90	2.2	3.6	0.6	4	<0.1	0.2	0.2	94	0.11	0.030	1
L-46S 0+550	Soil	0.8	93.6	4.3	13	0.3	11.9	3.2	74	3.56	4.8	4.9	0.5	10	<0.1	0.2	0.4	103	0.20	0.041	2
L-46S 0+575	Soil	2.2	96.9	5.0	11	0.4	7.8	2.1	48	3.94	2.2	1.5	0.8	9	<0.1	0.2	0.5	111	0.14	0.027	2
L-46S 0+600	Soil	1.2	28.4	5.6	6	0.4	5.1	2.1	35	3.03	1.5	4.4	0.4	6	<0.1	0.2	0.3	155	0.07	0.022	2
L-46S 0+625	Soil	1.4	127.1	3.7	11	0.3	8.7	3.1	54	4.57	2.4	<0.5	0.6	11	<0.1	0.1	0.2	142	0.16	0.046	3
L-46S 0+650	Soil	1.8	67.1	2.9	6	0.2	7.0	2.1	32	3.90	1.0	3.1	0.7	7	<0.1	0.1	0.4	130	0.07	0.021	2
L-46S 0+675	Soil	1.9	130.7	5.3	10	0.2	8.9	2.9	49	3.67	2.5	1.7	0.9	7	<0.1	0.2	0.3	91	0.12	0.045	2
L-46S 0+700	Soil	1.7	227.9	2.8	12	0.3	12.9	4.3	64	2.84	1.4	4.6	0.3	8	<0.1	0.1	0.4	74	0.12	0.035	2
L-46S 0+725	Soil	1.8	131.5	3.8	10	0.4	8.6	3.2	43	4.12	1.5	1.7	0.6	8	<0.1	0.1	0.2	95	0.12	0.035	4
L-46S 0+750	Soil	1.0	103.3	3.7	8	0.4	10.4	3.1	48	3.67	3.2	2.2	0.8	7	<0.1	0.2	0.2	106	0.16	0.039	2
L-46S 0+775	Soil	1.3	418.9	2.9	29	0.2	22.0	7.9	183	3.46	3.3	3.9	1.0	11	<0.1	0.2	0.3	95	0.19	0.042	4
L-46S 0+800	Soil	1.1	173.1	4.7	12	0.5	10.9	4.4	69	4.65	2.9	2.8	0.5	7	<0.1	0.2	0.4	150	0.21	0.040	2
L-46S 0+825	Soil	1.1	697.3	2.3	33	0.2	41.5	18.7	212	3.83	5.1	5.8	0.8	19	<0.1	0.4	0.5	103	0.33	0.047	3
L-46S 0+850	Soil	9.3	546.1	2.5	11	0.4	5.8	5.7	107	2.71	<0.5	19.8	1.0	45	<0.1	<0.1	0.3	76	0.21	0.020	2
L-46S 0+875	Soil	1.0	197.2	4.3	13	0.2	15.7	4.9	78	4.39	3.5	3.6	1.0	7	<0.1	0.3	0.3	124	0.20	0.033	3
L-46S 0+900	Soil	1.9	336.3	4.9	31	0.1	72.3	20.0	195	2.45	2.9	3.1	0.6	64	0.1	0.1	0.2	50	0.43	0.040	3
L-46S 0+925	Soil	0.5	34.5	4.4	11	0.1	6.1	2.1	64	2.21	2.9	1.5	1.4	8	<0.1	0.3	0.2	43	0.11	0.034	3
L-46S 0+950	Soil	0.6	22.0	6.2	14	0.2	7.8	2.7	111	3.13	2.4	1.6	2.2	7	<0.1	0.2	0.1	67	0.13	0.041	3
L-46S 0+975	Soil	0.5	31.0	7.7	13	0.1	9.1	3.0	83	2.75	2.5	2.1	1.5	8	<0.1	0.4	0.1	67	0.14	0.037	3
L-46S 0+1000	Soil	2.2	94.7	4.3	10	0.4	9.6	3.9	69	3.01	1.4	2.4	0.5	14	<0.1	0.2	0.2	74	0.19	0.025	3
L-46S 0+1025	Soil	1.5	279.3	5.5	15	0.4	14.6	11.6	188	1.19	0.9	0.8	<0.1	28	0.2	0.5	0.1	29	0.38	0.048	5
L-46S 0+1050	Soil	5.8	616.5	7.5	27	0.7	14.6	18.8	248	3.25	2.0	4.4	0.9	38	<0.1	0.2	0.2	63	0.22	0.043	4
L-46S 0+1075	Soil	6.7	563.1	3.6	25	0.4	15.0	7.4	143	2.55	4.1	1.3	0.4	26	<0.1	0.5	0.2	64	0.28	0.037	3
L-46S 0+1100	Soil	6.6	4383.8	7.8	44	0.4	18.3	91.3	1157	0.56	<0.5	<0.5	<0.1	99	0.7	0.3	0.1	12	1.50	0.054	5



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# CERTIFICATE OF ANALYSIS

**VAN18003675.1**

Method Analyte Unit MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm	Te ppm	
L-46S 0+375	Soil	2	0.10	7	0.003	7	0.12	0.019	0.01	<0.1	0.06	0.3	<0.1	<0.05	<1	0.6	<0.2
L-46S 0+400	Soil	32	0.26	9	0.182	2	3.00	0.024	0.02	0.3	0.15	4.6	<0.1	<0.05	11	2.4	<0.2
L-46S 0+425	Soil	37	0.26	10	0.168	2	3.12	0.026	0.02	0.3	0.11	4.4	<0.1	<0.05	11	2.6	<0.2
L-46S 0+450	Soil	9	0.08	3	0.140	1	0.48	0.013	0.02	<0.1	0.10	1.2	<0.1	<0.05	9	0.7	<0.2
L-46S 0+475	Soil	27	0.15	7	0.245	3	2.22	0.013	0.02	1.2	0.13	2.4	<0.1	<0.05	15	2.1	<0.2
L-46S 0+500	Soil	26	0.11	9	0.181	2	1.60	0.015	0.02	0.4	0.14	1.9	<0.1	<0.05	12	1.8	<0.2
L-46S 0+525	Soil	33	0.11	5	0.177	2	2.14	0.011	0.01	0.2	0.13	2.2	<0.1	<0.05	13	2.2	<0.2
L-46S 0+550	Soil	50	0.20	9	0.226	3	2.39	0.017	0.02	0.8	0.25	3.1	<0.1	<0.05	12	2.1	<0.2
L-46S 0+575	Soil	29	0.17	7	0.221	2	1.82	0.016	0.02	0.6	0.11	1.5	<0.1	<0.05	14	1.6	<0.2
L-46S 0+600	Soil	26	0.05	4	0.206	1	0.63	0.008	0.01	0.4	0.09	0.9	<0.1	<0.05	11	0.8	<0.2
L-46S 0+625	Soil	52	0.12	9	0.234	3	2.66	0.013	0.02	2.0	0.20	2.6	<0.1	<0.05	13	2.9	<0.2
L-46S 0+650	Soil	38	0.07	5	0.199	2	1.34	0.008	0.01	0.9	0.11	1.6	<0.1	<0.05	15	1.5	<0.2
L-46S 0+675	Soil	50	0.16	7	0.163	2	3.54	0.012	0.02	0.9	0.28	3.6	<0.1	<0.05	11	3.9	<0.2
L-46S 0+700	Soil	24	0.25	10	0.132	3	1.91	0.017	0.03	2.1	0.12	2.1	<0.1	<0.05	9	1.5	<0.2
L-46S 0+725	Soil	32	0.17	8	0.167	4	2.78	0.012	0.01	0.5	0.21	2.5	<0.1	<0.05	12	3.3	<0.2
L-46S 0+750	Soil	58	0.18	7	0.236	4	3.52	0.018	0.02	0.4	0.31	5.4	<0.1	<0.05	12	3.7	<0.2
L-46S 0+775	Soil	48	0.46	31	0.196	3	5.08	0.019	0.03	1.6	0.17	5.7	<0.1	<0.05	11	2.2	<0.2
L-46S 0+800	Soil	36	0.25	6	0.247	3	2.67	0.025	0.02	0.8	0.15	3.4	<0.1	<0.05	15	1.6	<0.2
L-46S 0+825	Soil	47	0.74	71	0.231	2	4.46	0.034	0.05	1.6	0.04	7.3	<0.1	<0.05	9	1.3	<0.2
L-46S 0+850	Soil	20	0.91	86	0.249	1	1.72	0.072	0.30	0.4	0.03	3.3	0.1	<0.05	7	2.9	<0.2
L-46S 0+875	Soil	58	0.30	13	0.238	2	4.45	0.024	0.02	0.5	0.20	4.7	<0.1	<0.05	13	3.0	<0.2
L-46S 0+900	Soil	79	0.92	74	0.098	2	2.83	0.063	0.05	1.7	0.10	3.1	<0.1	<0.05	6	1.4	<0.2
L-46S 0+925	Soil	18	0.10	18	0.127	2	2.19	0.015	0.02	0.1	0.16	1.8	<0.1	0.05	8	2.5	<0.2
L-46S 0+950	Soil	33	0.17	16	0.193	2	2.55	0.017	0.03	0.1	0.19	2.6	<0.1	<0.05	10	2.0	<0.2
L-46S 0+975	Soil	30	0.21	23	0.188	3	1.98	0.021	0.03	<0.1	0.21	2.7	<0.1	<0.05	10	2.2	<0.2
L-46S 0+1000	Soil	24	0.26	16	0.171	2	1.44	0.030	0.02	0.7	0.17	1.8	<0.1	<0.05	10	1.9	<0.2
L-46S 0+1025	Soil	21	0.30	26	0.077	8	1.37	0.029	0.04	1.4	0.20	1.5	<0.1	0.09	4	1.3	<0.2
L-46S 0+1050	Soil	28	0.51	52	0.177	4	3.26	0.031	0.06	4.7	0.24	2.9	<0.1	<0.05	9	2.9	<0.2
L-46S 0+1075	Soil	34	0.59	45	0.162	3	2.10	0.044	0.09	3.2	0.12	2.3	<0.1	<0.05	8	2.4	<0.2
L-46S 0+1100	Soil	8	0.28	68	0.037	9	1.04	0.030	0.05	1.4	0.19	0.8	0.4	0.14	2	7.3	<0.2



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Project: CATFACE  
Report Date: February 05, 2019

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# CERTIFICATE OF ANALYSIS

## VAN18003675.1

Method Analyte	Unit	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
MDL		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
		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	2	0.01	0.001	1	
L-46S 0+1125	Soil	11.0	1036.8	19.4	35	1.9	22.6	11.3	127	1.02	0.7	2.1	0.2	24	0.2	0.6	0.4	42	0.41	0.045	6
L-46S 0+1150	Soil	6.3	51.9	4.0	12	0.3	4.9	2.8	100	1.05	1.3	19.8	0.4	10	<0.1	<0.1	0.3	28	0.11	0.022	3
L-46S 0+1175	Soil	6.0	171.1	5.3	13	0.4	1.7	0.5	20	0.22	<0.5	33.6	<0.1	10	0.2	1.0	0.8	5	0.13	0.026	4
L-46S 0+1200	Soil	6.5	45.3	8.6	6	0.8	2.5	0.7	27	0.47	<0.5	9.8	<0.1	9	0.2	0.1	0.8	20	0.08	0.044	3
L-46S 0+1225	Soil	19.5	172.3	4.1	12	0.3	17.9	5.3	74	3.33	2.6	5.5	0.5	8	<0.1	0.5	0.7	113	0.15	0.020	2
L-46S 0+1250	Soil	6.4	117.6	5.7	14	0.1	22.8	5.3	81	4.37	2.3	3.8	0.6	9	<0.1	0.2	1.0	160	0.14	0.018	2
L-46S 0+1275	Soil	0.8	73.8	4.3	10	0.2	11.6	4.5	45	2.60	1.9	1.4	0.5	11	<0.1	0.5	0.3	87	0.12	0.025	2
L-46S 0+1300	Soil	2.0	46.4	4.4	6	0.2	9.6	3.7	35	3.51	1.0	3.8	0.4	7	<0.1	0.2	0.6	144	0.10	0.022	2
L-46S 0+1325	Soil	1.0	140.0	5.6	15	0.2	20.3	8.3	281	4.10	2.5	1.8	0.8	14	0.1	0.4	0.4	107	0.20	0.032	4
L-46S 0+1350	Soil	1.8	33.6	3.6	6	0.3	3.4	1.4	34	3.01	0.8	2.0	0.6	9	<0.1	0.1	0.2	83	0.06	0.030	3
L-46S 0+1375	Soil	1.4	58.0	4.0	9	0.3	10.2	4.2	53	2.74	1.2	1.3	0.6	15	<0.1	0.4	0.2	71	0.15	0.027	6
L-46S 0+1400	Soil	1.8	65.1	3.6	10	0.2	10.9	4.1	76	3.18	0.9	1.6	0.8	10	<0.1	0.1	0.3	83	0.10	0.021	4
L-50S 0+000	Soil	0.2	7.7	4.5	10	<0.1	2.7	1.5	53	1.52	<0.5	0.9	0.3	7	<0.1	0.5	<0.1	42	0.09	0.020	2
L-50S 0+025	Soil	0.9	47.4	7.3	20	0.2	12.8	16.3	894	3.12	3.0	4.3	0.4	16	0.1	0.2	0.2	76	0.27	0.061	4
L-50S 0+050	Soil	1.3	47.0	4.4	44	<0.1	8.9	17.1	533	3.79	2.1	2.6	2.0	24	<0.1	0.3	0.1	87	0.29	0.055	5
L-50S 0+075	Soil	0.6	28.2	5.5	14	0.1	7.2	3.4	118	2.12	1.8	2.1	1.2	17	0.1	0.2	0.1	42	0.15	0.039	5
L-50S 0+100	Soil	0.7	27.5	7.4	13	0.1	5.6	2.7	66	3.73	3.8	3.0	3.3	5	<0.1	0.4	0.2	76	0.09	0.031	8
L-50S 0+125	Soil	0.4	10.3	6.1	9	<0.1	2.4	2.8	108	3.63	1.4	2.8	1.1	7	<0.1	0.2	0.1	97	0.09	0.022	2
L-50S 0+150	Soil	0.3	5.0	4.7	4	<0.1	1.6	1.2	56	1.53	<0.5	1.1	0.4	5	<0.1	0.5	0.1	43	0.04	0.017	3
L-50S 0+175	Soil	0.6	21.7	5.3	14	<0.1	7.4	4.6	129	4.73	1.6	1.1	2.2	11	<0.1	0.2	0.1	100	0.10	0.024	3
L-50S 0+200	Soil	0.3	24.9	3.7	23	<0.1	5.5	7.4	234	3.23	1.8	0.9	2.1	43	0.1	0.3	0.1	62	0.23	0.044	4
L-50S 0+225	Soil	1.0	22.2	6.6	7	0.2	3.8	2.8	61	5.34	2.2	1.1	1.1	6	<0.1	0.3	0.3	166	0.10	0.019	3
L-50S 0+250	Soil	1.0	25.6	7.9	9	0.2	5.2	2.0	47	4.51	3.0	2.7	1.4	8	<0.1	0.4	0.3	120	0.13	0.020	4
L-50S 0+275	Soil	0.6	14.7	19.7	9	0.2	6.2	2.6	62	2.82	2.7	3.0	0.5	7	0.2	0.3	0.2	115	0.16	0.017	6
L-50S 0+300	Soil	0.8	97.9	44.4	28	0.3	17.0	20.7	308	3.38	8.1	2.3	0.4	18	0.2	0.4	0.3	89	0.26	0.045	3
L-50S 0+325	Soil	0.7	84.9	8.0	22	0.1	18.5	7.2	95	2.65	3.3	2.1	0.4	15	0.1	0.2	0.2	83	0.22	0.037	2
L-50S 0+350	Soil	1.1	40.6	5.5	8	0.2	6.1	2.8	59	3.14	2.3	2.9	0.3	9	<0.1	0.3	0.3	132	0.14	0.023	2
L-50S 0+375	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-50S 0+400	Soil	1.7	167.1	4.2	19	0.1	16.5	8.0	156	2.53	2.4	91.4	0.4	14	<0.1	0.1	0.4	77	0.24	0.043	2
L-50S 0+425	Soil	1.1	67.9	4.7	11	0.3	8.9	3.2	73	3.16	1.7	1.1	0.3	8	<0.1	0.2	0.3	92	0.17	0.029	2



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**Project:** CATFACE  
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Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2		
L-46S 0+1125	Soil	63	0.46	57	0.159	3	1.61	0.031	0.03	0.7	0.24	3.5	0.3	0.12	10	1.8	<0.2	
L-46S 0+1150	Soil	10	0.26	14	0.069	2	0.88	0.021	0.05	0.2	0.08	1.3	<0.1	<0.05	6	0.6	<0.2	
L-46S 0+1175	Soil	4	0.03	23	0.023	2	0.41	0.009	0.02	0.1	0.14	0.5	<0.1	0.10	3	<0.5	<0.2	
L-46S 0+1200	Soil	6	0.05	8	0.065	4	0.61	0.013	0.04	<0.1	0.23	0.7	<0.1	0.10	4	0.9	<0.2	
L-46S 0+1225	Soil	28	0.24	11	0.194	2	1.72	0.016	0.02	0.2	0.08	2.0	<0.1	<0.05	12	1.0	<0.2	
L-46S 0+1250	Soil	40	0.36	17	0.212	<1	2.08	0.019	0.02	<0.1	0.09	2.5	<0.1	<0.05	20	0.9	<0.2	
L-46S 0+1275	Soil	15	0.18	16	0.122	2	1.36	0.014	0.02	0.1	0.10	1.9	<0.1	<0.05	11	1.1	<0.2	
L-46S 0+1300	Soil	23	0.08	7	0.189	2	1.16	0.012	0.02	<0.1	0.13	1.2	<0.1	<0.05	13	0.8	<0.2	
L-46S 0+1325	Soil	38	0.22	26	0.150	3	3.49	0.015	0.02	0.1	0.22	3.4	<0.1	0.06	12	2.7	<0.2	
L-46S 0+1350	Soil	9	0.07	10	0.155	2	1.33	0.012	0.02	<0.1	0.12	0.8	<0.1	0.06	12	0.9	<0.2	
L-46S 0+1375	Soil	21	0.11	30	0.146	2	1.62	0.017	0.02	0.1	0.17	1.3	<0.1	0.06	10	1.0	<0.2	
L-46S 0+1400	Soil	23	0.20	24	0.186	2	1.81	0.016	0.02	0.1	0.16	1.5	<0.1	<0.05	11	1.6	<0.2	
L-50S 0+000	Soil	13	0.05	17	0.106	<1	0.39	0.015	0.03	<0.1	0.05	0.8	<0.1	<0.05	6	<0.5	<0.2	
L-50S 0+025	Soil	35	0.28	26	0.181	3	2.32	0.026	0.03	0.1	0.20	3.1	<0.1	0.09	11	2.6	<0.2	
L-50S 0+050	Soil	23	0.68	60	0.203	2	3.60	0.030	0.04	0.1	0.05	5.2	<0.1	<0.05	10	1.2	<0.2	
L-50S 0+075	Soil	17	0.20	65	0.116	2	2.29	0.019	0.05	0.1	0.14	2.0	<0.1	<0.05	7	2.3	<0.2	
L-50S 0+100	Soil	36	0.13	23	0.169	2	3.62	0.010	0.02	<0.1	0.20	4.1	<0.1	<0.05	13	2.2	<0.2	
L-50S 0+125	Soil	10	0.16	28	0.234	1	1.25	0.018	0.04	<0.1	0.13	1.5	<0.1	<0.05	11	0.9	<0.2	
L-50S 0+150	Soil	2	0.03	21	0.116	1	0.72	0.013	0.02	<0.1	0.08	0.5	<0.1	<0.05	9	<0.5	<0.2	
L-50S 0+175	Soil	35	0.30	40	0.291	2	3.81	0.013	0.05	<0.1	0.23	3.9	<0.1	0.07	14	1.7	<0.2	
L-50S 0+200	Soil	15	0.48	104	0.195	2	3.62	0.022	0.13	0.1	0.14	3.6	0.1	<0.05	10	1.2	<0.2	
L-50S 0+225	Soil	36	0.10	11	0.299	1	1.62	0.011	0.02	<0.1	0.16	1.8	<0.1	<0.05	16	1.2	<0.2	
L-50S 0+250	Soil	33	0.11	17	0.238	2	1.49	0.012	0.03	0.2	0.18	1.6	<0.1	0.08	16	0.7	<0.2	
L-50S 0+275	Soil	21	0.13	13	0.183	2	0.87	0.020	0.03	0.1	0.12	2.0	<0.1	<0.05	9	<0.5	<0.2	
L-50S 0+300	Soil	30	0.36	18	0.176	4	2.28	0.026	0.05	0.6	0.13	3.0	<0.1	0.08	10	1.4	<0.2	
L-50S 0+325	Soil	48	0.39	23	0.164	3	1.84	0.025	0.07	0.9	0.15	3.1	<0.1	0.07	8	1.2	<0.2	
L-50S 0+350	Soil	16	0.10	7	0.161	2	0.81	0.011	0.02	0.1	0.09	1.3	<0.1	<0.05	11	<0.5	<0.2	
L-50S 0+375	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-50S 0+400	Soil	27	0.40	17	0.132	2	2.40	0.027	0.03	0.4	0.07	3.5	<0.1	0.07	8	1.2	<0.2	
L-50S 0+425	Soil	18	0.19	9	0.177	1	1.26	0.020	0.02	0.4	0.12	1.9	<0.1	<0.05	12	1.2	<0.2	

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.





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# CERTIFICATE OF ANALYSIS

**VAN18003675.1**

Method Analyte	Unit	MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
			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	2	0.01	0.001	1	
L-50S 0+450	Soil		1.1	110.6	4.3	10	0.2	7.8	2.7	106	3.49	2.2	4.6	0.5	5	<0.1	0.1	0.5	97	0.13	0.033	2
L-50S 0+475	Soil		1.2	124.2	3.7	11	0.5	5.9	2.7	76	3.78	5.0	4.4	0.4	6	<0.1	0.2	2.4	112	0.14	0.037	2
L-50S 0+500	Soil		1.7	164.4	4.0	12	0.6	6.1	2.4	72	3.46	4.4	2.7	0.3	5	<0.1	0.2	1.0	100	0.12	0.052	2
L-50S 0+525	Soil		1.2	66.4	5.2	8	0.5	5.7	1.9	55	3.40	9.9	5.2	0.4	9	<0.1	0.2	1.6	101	0.11	0.024	2
L-50S 0+550	Soil		1.3	118.1	4.2	9	0.3	7.4	2.5	60	2.95	2.7	2.9	0.6	11	<0.1	0.1	1.9	83	0.14	0.037	2
L-50S 0+575	Soil		1.7	146.5	4.3	14	0.8	10.4	3.6	71	3.96	2.3	1.3	0.4	12	0.1	0.2	1.0	107	0.23	0.042	2
L-50S 0+600	Soil		1.7	69.2	5.2	6	0.5	6.5	2.4	53	3.60	1.0	2.1	0.3	7	<0.1	0.2	0.8	131	0.14	0.026	2
L-50S 0+625	Soil		1.6	61.1	3.5	7	0.6	7.1	2.5	50	2.85	0.6	1.6	0.3	6	<0.1	0.2	0.2	143	0.13	0.021	1
L-50S 0+650	Soil		8.9	472.4	6.3	15	1.4	12.2	4.2	117	4.73	2.8	5.9	1.3	10	<0.1	0.2	1.1	123	0.15	0.047	2
L-50S 0+675	Soil		1.4	118.6	2.1	7	0.2	8.7	3.1	40	2.45	0.6	1.2	0.3	9	<0.1	0.2	0.1	82	0.14	0.022	1
L-50S 0+700	Soil		1.5	111.9	4.7	7	0.6	6.2	2.5	45	1.83	0.8	2.1	0.2	13	<0.1	0.1	0.3	64	0.14	0.039	2
L-50S 0+725	Soil		2.5	97.5	3.7	6	0.8	5.8	2.2	42	2.59	1.2	3.7	0.4	11	<0.1	0.2	0.2	110	0.15	0.030	2
L-50S 0+750	Soil		2.2	193.6	3.1	10	0.4	9.8	4.7	65	3.48	1.4	3.8	0.6	8	<0.1	0.1	0.2	97	0.13	0.030	2
L-50S 0+775	Soil		0.3	41.9	2.6	11	0.4	21.5	5.9	116	1.91	2.4	1.6	0.2	17	<0.1	0.3	<0.1	74	0.42	0.029	2
L-50S 0+800	Soil		1.4	494.5	3.3	28	0.1	32.5	10.9	163	3.52	3.4	2.9	1.2	14	<0.1	0.2	0.3	98	0.23	0.042	5
L-50S 0+825	Soil		3.0	344.7	3.5	19	0.2	16.4	6.7	175	2.70	1.7	1.4	1.2	36	0.1	0.3	0.1	59	0.33	0.031	3
L-50S 0+850	Soil		1.6	119.4	24.1	9	0.3	9.8	3.6	59	5.97	2.5	3.7	0.5	8	<0.1	0.3	0.4	205	0.25	0.026	3
L-50S 0+875	Soil		1.1	236.3	5.4	16	0.4	10.4	3.5	112	3.88	2.3	4.9	0.4	14	<0.1	0.2	0.3	117	0.31	0.049	1
L-50S 0+900	Soil		1.4	295.8	2.9	16	0.7	19.3	6.9	94	3.79	2.4	3.1	1.0	9	<0.1	0.2	0.3	109	0.17	0.036	4
L-50S 0+925	Soil		1.1	224.1	4.1	16	0.2	24.2	6.3	86	3.07	3.2	2.0	0.8	14	<0.1	0.2	0.3	84	0.23	0.044	3
L-50S 0+950	Soil		0.7	294.3	2.1	22	0.1	40.7	12.6	174	2.40	3.3	3.2	0.8	21	<0.1	0.2	0.2	68	0.43	0.032	3
L-50S 0+975	Soil		1.6	182.5	3.3	12	0.2	19.2	6.3	77	4.18	2.2	2.0	1.3	10	<0.1	0.2	0.4	121	0.17	0.024	5
L-50S 0+1000	Soil		2.5	93.4	3.5	6	0.4	10.4	3.6	51	4.86	1.9	2.3	0.9	6	<0.1	0.2	0.3	158	0.14	0.018	2
L-50S 0+1025	Soil		7.0	535.3	5.8	18	0.6	16.0	74.6	1025	2.17	0.7	1.0	0.1	25	0.2	0.1	0.2	44	0.31	0.058	5
L-50S 0+1050	Soil		9.8	988.2	5.0	19	0.8	13.4	63.9	845	2.09	4.9	2.3	0.7	21	0.1	0.2	0.2	42	0.20	0.067	6
L-50S 0+1075	Soil		5.9	488.6	2.7	34	0.2	25.5	9.5	182	1.76	2.2	3.6	0.8	34	0.1	<0.1	0.1	56	0.48	0.032	4
L-50S 0+1100	Soil		6.4	94.5	3.6	8	0.8	6.0	2.4	44	1.64	1.6	2.7	0.6	15	0.1	0.3	0.4	58	0.14	0.028	2
L-50S 0+1125	Soil		5.9	293.0	4.3	26	0.4	20.9	7.3	126	2.81	6.0	3.2	1.4	16	<0.1	0.1	0.5	75	0.19	0.020	2
L-50S 0+1150	Soil		27.8	175.6	8.8	7	0.6	4.4	1.2	30	0.36	1.7	29.4	0.2	17	<0.1	0.2	5.1	30	0.11	0.031	5
L-50S 0+1175	Soil		40.8	98.8	6.8	14	0.3	11.0	3.7	109	3.83	4.7	10.0	0.5	11	0.1	0.2	1.1	103	0.22	0.024	3



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**Project:** CATFACE  
**Report Date:** February 05, 2019

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	Unit	MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
				Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Ti	S	Ga	Se	Te
				ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
				1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
L-50S 0+450	Soil			29	0.12	7	0.188	2	2.31	0.014	0.02	0.6	0.14	3.0	<0.1	0.06	12	2.4	<0.2
L-50S 0+475	Soil			24	0.20	7	0.186	3	2.22	0.016	0.04	2.3	0.20	3.4	<0.1	0.09	12	1.8	<0.2
L-50S 0+500	Soil			24	0.18	5	0.144	3	2.25	0.020	0.02	4.0	0.21	2.6	<0.1	<0.05	9	2.2	<0.2
L-50S 0+525	Soil			20	0.11	9	0.173	2	1.32	0.019	0.02	0.5	0.09	1.5	<0.1	<0.05	12	1.6	<0.2
L-50S 0+550	Soil			24	0.18	9	0.169	2	1.65	0.020	0.02	0.7	0.10	1.5	<0.1	<0.05	11	1.1	<0.2
L-50S 0+575	Soil			29	0.20	8	0.178	3	2.33	0.020	0.03	0.7	0.37	2.3	<0.1	<0.05	12	2.7	<0.2
L-50S 0+600	Soil			21	0.10	6	0.213	2	1.05	0.013	0.01	0.3	0.09	1.6	<0.1	<0.05	15	1.0	<0.2
L-50S 0+625	Soil			29	0.09	5	0.157	<1	0.66	0.018	0.01	0.4	0.09	1.4	<0.1	<0.05	10	0.6	<0.2
L-50S 0+650	Soil			59	0.25	10	0.192	3	5.68	0.013	0.02	1.6	0.31	7.7	<0.1	0.07	11	4.7	<0.2
L-50S 0+675	Soil			18	0.13	4	0.102	2	0.96	0.016	0.01	0.4	0.07	1.3	<0.1	<0.05	7	1.1	<0.2
L-50S 0+700	Soil			13	0.08	13	0.099	3	0.94	0.012	0.02	0.7	0.17	1.2	<0.1	0.06	6	1.0	<0.2
L-50S 0+725	Soil			13	0.08	11	0.186	3	0.70	0.012	0.02	0.7	0.16	1.1	<0.1	<0.05	11	0.8	<0.2
L-50S 0+750	Soil			26	0.21	10	0.184	2	2.35	0.017	0.02	0.5	0.14	2.1	<0.1	<0.05	11	1.8	<0.2
L-50S 0+775	Soil			50	0.44	9	0.227	2	0.98	0.039	0.02	0.3	0.10	3.2	<0.1	<0.05	6	0.6	<0.2
L-50S 0+800	Soil			43	0.68	44	0.195	2	3.95	0.032	0.04	1.4	0.12	4.4	<0.1	<0.05	9	1.5	<0.2
L-50S 0+825	Soil			26	0.70	39	0.189	2	2.24	0.051	0.08	2.0	0.12	2.6	<0.1	<0.05	8	1.3	<0.2
L-50S 0+850	Soil			39	0.16	8	0.365	2	1.42	0.017	0.01	0.3	0.10	2.2	<0.1	<0.05	18	1.1	<0.2
L-50S 0+875	Soil			29	0.22	16	0.180	4	2.14	0.016	0.02	1.3	0.20	2.5	<0.1	0.06	10	2.4	<0.2
L-50S 0+900	Soil			49	0.31	19	0.191	2	4.17	0.024	0.02	0.7	0.19	5.4	<0.1	0.05	11	2.9	<0.2
L-50S 0+925	Soil			48	0.37	25	0.176	2	3.32	0.028	0.02	0.8	0.19	3.7	<0.1	<0.05	9	2.1	<0.2
L-50S 0+950	Soil			54	0.71	40	0.189	2	2.74	0.048	0.04	0.6	0.08	4.0	<0.1	<0.05	6	0.7	<0.2
L-50S 0+975	Soil			60	0.36	15	0.214	1	4.24	0.023	0.01	0.4	0.18	6.2	<0.1	<0.05	12	2.5	<0.2
L-50S 0+1000	Soil			52	0.15	7	0.246	2	2.72	0.016	0.01	0.1	0.20	3.7	<0.1	<0.05	15	2.4	<0.2
L-50S 0+1025	Soil			24	0.31	33	0.085	4	1.94	0.027	0.03	0.8	0.24	2.0	<0.1	0.07	6	3.6	<0.2
L-50S 0+1050	Soil			33	0.30	26	0.101	3	7.28	0.018	0.03	4.8	0.24	4.1	<0.1	0.05	6	6.8	<0.2
L-50S 0+1075	Soil			44	0.75	69	0.196	2	2.04	0.052	0.09	1.0	0.06	3.1	<0.1	<0.05	7	1.3	<0.2
L-50S 0+1100	Soil			20	0.16	16	0.132	4	0.66	0.026	0.03	1.5	0.13	1.2	<0.1	<0.05	7	0.9	<0.2
L-50S 0+1125	Soil			47	0.56	33	0.211	3	2.89	0.028	0.04	1.3	0.16	3.8	<0.1	<0.05	11	1.6	<0.2
L-50S 0+1150	Soil			20	0.09	29	0.107	3	0.86	0.012	0.02	<0.1	0.16	1.2	<0.1	0.07	15	0.8	<0.2
L-50S 0+1175	Soil			44	0.33	9	0.174	3	1.25	0.023	0.03	<0.1	0.16	2.4	<0.1	<0.05	11	1.3	<0.2



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# CERTIFICATE OF ANALYSIS

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Method Analyte Unit MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	2	0.01	0.001	1	
L-50S 0+1200	Soil	28.4	23.1	3.9	2	0.2	0.8	0.2	18	0.18	0.6	23.1	0.3	9	<0.1	0.3	1.6	12	0.06	0.012	4
L-50S 0+1225	Soil	82.7	89.1	9.1	13	0.6	2.7	1.9	76	2.78	4.2	10.5	0.7	17	0.2	0.2	2.8	91	0.10	0.031	6
L-50S 0+1250	Soil	4.8	15.5	4.8	3	0.3	0.9	0.5	29	0.53	<0.5	8.0	0.4	19	<0.1	0.4	1.2	32	0.06	0.014	5
L-50S 0+1275	Soil	1.2	15.3	3.9	4	0.5	0.7	0.3	21	0.25	<0.5	8.4	0.2	10	<0.1	<0.1	0.6	12	0.08	0.021	4
L-50S 0+1300	Soil	0.3	13.4	1.0	6	0.2	1.9	1.5	58	0.80	<0.5	7.1	0.6	9	<0.1	0.3	0.2	17	0.06	0.010	4
L-50S 0+1325	Soil	2.3	27.9	5.5	4	0.8	1.0	0.5	24	0.48	<0.5	5.6	0.5	14	<0.1	0.1	1.6	29	0.04	0.019	5
L-50S 0+1350	Soil	1.1	26.0	3.8	2	0.3	0.9	0.4	25	0.29	<0.5	3.3	0.3	19	<0.1	0.3	1.4	17	0.05	0.016	5
L-70S 0+000	Soil	12.1	1448.7	5.1	50	0.5	25.6	127.5	1540	3.66	2.5	6.5	0.4	44	0.3	0.1	0.4	89	0.44	0.064	5
L-70S 0+025	Soil	0.8	4.5	2.2	4	0.1	1.3	0.5	35	0.46	<0.5	4.1	0.2	9	<0.1	0.6	<0.1	14	0.13	0.019	1
L-70S 0+050	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-70S 0+075	Soil	2.8	25.3	5.0	8	0.1	5.9	2.6	67	3.97	2.2	2.2	0.7	8	<0.1	0.3	0.1	158	0.18	0.016	4
L-70S 0+100	Soil	2.3	11.2	1.9	3	<0.1	2.1	1.2	40	0.74	0.6	<0.5	0.5	4	<0.1	0.2	<0.1	41	0.06	0.010	2
L-70S 0+125	Soil	12.7	150.0	5.7	10	0.2	5.2	3.6	90	1.65	0.9	2.5	0.4	12	0.1	0.1	0.2	80	0.19	0.025	3
L-70S 0+150	Soil	5.4	151.7	4.5	13	0.2	12.5	5.0	117	4.33	3.7	5.1	1.6	9	<0.1	0.3	0.2	149	0.20	0.017	3
L-74S 0+000	Soil	1.0	23.5	6.2	7	0.1	8.4	2.2	62	1.61	0.5	2.5	0.3	8	<0.1	0.1	0.2	54	0.13	0.020	2
L-74S 0+025	Soil	1.1	15.9	6.9	6	<0.1	5.2	1.4	43	0.61	0.8	2.5	0.4	8	<0.1	0.3	0.4	86	0.12	0.011	3
L-74S 0+050	Soil	1.6	11.6	8.6	7	0.1	6.0	1.9	55	2.06	0.7	5.2	0.4	8	<0.1	0.3	0.4	202	0.15	0.017	3
L-74S 0+075	Soil	1.3	94.2	4.9	12	<0.1	13.5	4.9	102	4.51	2.6	2.4	1.3	8	<0.1	0.2	0.3	127	0.18	0.018	2
L-74S 0+100	Soil	1.1	10.6	6.9	8	0.1	3.7	1.3	59	1.45	0.7	2.8	0.3	7	<0.1	0.3	0.2	102	0.13	0.026	3
L-74S 0+125	Soil	0.3	5.6	6.9	9	0.1	5.8	2.6	121	0.87	<0.5	6.7	0.2	8	<0.1	0.4	0.1	64	0.20	0.022	2
L-74S 0+150	Soil	0.5	3.6	6.4	5	<0.1	3.0	1.2	50	0.50	<0.5	3.2	0.2	8	<0.1	0.2	0.1	54	0.17	0.019	2
L-74S 0+175	Soil	0.3	23.0	5.8	13	<0.1	13.4	4.3	112	1.11	1.1	2.0	0.3	10	<0.1	0.2	<0.1	54	0.34	0.030	2
L-74S 0+200	Soil	2.9	42.4	6.5	8	<0.1	10.3	3.5	60	7.66	3.1	3.4	0.9	8	<0.1	0.4	0.4	286	0.17	0.012	2
L-74S 0+225	Soil	6.1	132.8	6.7	34	0.1	34.4	12.8	300	2.81	5.2	3.2	0.8	27	<0.1	0.3	0.1	81	0.54	0.035	3
L-74S 0+250	Soil	17.9	66.7	5.2	11	<0.1	16.6	5.1	108	5.68	4.4	2.0	1.1	8	<0.1	0.3	0.3	186	0.22	0.020	3
L-74S 0+275	Soil	2.5	8.9	9.2	11	0.1	2.5	3.1	109	1.32	0.8	5.0	0.3	15	0.1	0.3	0.1	79	0.35	0.045	2
L-74S 0+300	Soil	66.0	56.2	8.7	14	0.2	7.8	4.4	96	6.69	1.9	3.2	0.8	12	<0.1	0.3	0.3	249	0.23	0.026	3
L-74S 0+325	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-74S 0+350	Soil	4.6	26.0	8.9	11	0.3	4.2	3.0	109	2.25	0.9	0.9	0.4	14	0.1	0.2	0.2	66	0.29	0.055	2
L-74S 0+375	Soil	23.2	43.4	6.9	11	0.2	4.5	3.6	101	1.39	0.6	3.0	0.1	12	<0.1	0.1	0.3	87	0.29	0.039	3



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**VAN18003675.1**

Method Analyte Unit MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm	Te ppm	
L-50S 0+1200	Soil	5	0.01	8	0.097	1	0.35	0.007	0.02	<0.1	0.06	0.4	<0.1	<0.05	7	<0.5	<0.2
L-50S 0+1225	Soil	8	0.10	16	0.149	3	1.10	0.010	0.04	0.2	0.11	1.2	<0.1	<0.05	27	0.8	<0.2
L-50S 0+1250	Soil	4	0.03	8	0.104	2	0.37	0.007	0.03	0.1	0.06	0.4	<0.1	<0.05	9	<0.5	<0.2
L-50S 0+1275	Soil	3	0.02	9	0.043	3	0.20	0.008	0.02	0.4	0.09	0.2	<0.1	<0.05	3	<0.5	<0.2
L-50S 0+1300	Soil	3	0.08	5	0.052	2	0.26	0.008	0.01	0.1	0.03	0.7	<0.1	<0.05	5	<0.5	<0.2
L-50S 0+1325	Soil	3	0.03	10	0.085	1	0.43	0.010	0.03	<0.1	0.11	0.5	<0.1	<0.05	8	<0.5	<0.2
L-50S 0+1350	Soil	3	0.03	13	0.079	1	0.37	0.009	0.02	<0.1	0.10	0.5	<0.1	<0.05	8	<0.5	<0.2
L-70S 0+000	Soil	44	0.64	64	0.162	3	2.84	0.039	0.07	0.8	0.14	4.7	0.4	0.05	10	2.3	<0.2
L-70S 0+025	Soil	5	0.03	6	0.017	4	0.13	0.036	0.02	<0.1	0.07	0.3	<0.1	<0.05	<1	<0.5	<0.2
L-70S 0+050	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-70S 0+075	Soil	40	0.17	7	0.327	2	1.64	0.018	0.02	<0.1	0.15	1.6	<0.1	<0.05	14	0.7	<0.2
L-70S 0+100	Soil	17	0.08	8	0.089	2	0.95	0.015	0.02	<0.1	0.04	1.6	<0.1	<0.05	6	0.7	<0.2
L-70S 0+125	Soil	24	0.12	14	0.187	3	0.69	0.018	0.03	<0.1	0.12	1.6	<0.1	<0.05	11	0.7	<0.2
L-70S 0+150	Soil	69	0.38	13	0.342	2	3.81	0.022	0.02	<0.1	0.13	7.0	<0.1	<0.05	17	2.4	<0.2
L-74S 0+000	Soil	48	0.20	10	0.158	1	0.66	0.013	0.02	<0.1	0.08	2.0	<0.1	<0.05	10	<0.5	<0.2
L-74S 0+025	Soil	57	0.12	9	0.234	1	1.09	0.010	0.01	<0.1	0.10	2.3	<0.1	<0.05	16	0.5	<0.2
L-74S 0+050	Soil	44	0.15	9	0.238	2	0.67	0.013	0.03	<0.1	0.08	1.7	<0.1	<0.05	17	<0.5	<0.2
L-74S 0+075	Soil	94	0.36	10	0.266	2	3.97	0.020	0.02	<0.1	0.12	4.0	<0.1	<0.05	14	1.0	<0.2
L-74S 0+100	Soil	28	0.09	8	0.137	3	0.56	0.012	0.03	<0.1	0.13	1.3	<0.1	<0.05	8	<0.5	<0.2
L-74S 0+125	Soil	36	0.22	6	0.099	2	0.30	0.017	0.03	<0.1	0.10	2.2	<0.1	<0.05	4	<0.5	<0.2
L-74S 0+150	Soil	22	0.10	11	0.093	2	0.24	0.014	0.03	<0.1	0.08	1.4	<0.1	<0.05	3	<0.5	<0.2
L-74S 0+175	Soil	41	0.40	11	0.096	4	0.85	0.025	0.04	<0.1	0.15	3.1	<0.1	<0.05	4	<0.5	<0.2
L-74S 0+200	Soil	122	0.19	6	0.431	1	2.07	0.015	0.01	<0.1	0.14	4.2	<0.1	<0.05	24	0.7	<0.2
L-74S 0+225	Soil	68	0.83	43	0.195	3	2.89	0.044	0.05	0.5	0.07	5.2	<0.1	<0.05	7	1.0	<0.2
L-74S 0+250	Soil	115	0.40	10	0.355	2	3.46	0.022	0.02	0.2	0.23	3.4	<0.1	<0.05	18	1.2	<0.2
L-74S 0+275	Soil	8	0.20	20	0.112	4	0.48	0.040	0.06	0.2	0.19	2.5	<0.1	0.06	4	<0.5	<0.2
L-74S 0+300	Soil	38	0.20	23	0.317	3	2.02	0.015	0.02	0.2	0.15	2.5	<0.1	<0.05	27	0.8	<0.2
L-74S 0+325	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-74S 0+350	Soil	12	0.16	21	0.115	4	0.65	0.024	0.05	0.5	0.22	1.5	<0.1	0.07	7	0.7	<0.2
L-74S 0+375	Soil	22	0.24	39	0.179	2	1.20	0.024	0.06	0.4	0.24	2.4	<0.1	0.16	17	0.7	<0.2



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Project: CATFACE  
Report Date: February 05, 2019

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# CERTIFICATE OF ANALYSIS

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Method Analyte	Unit	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
MDL		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
		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	2	0.01	0.001	
L-74S 0+400	Soil	33.5	20.8	8.2	13	0.2	5.4	3.0	97	1.20	1.8	3.8	0.4	15	0.1	0.2	0.2	71	0.36	0.031	3
L-74S 0+425	Soil	0.7	6.7	3.2	10	0.3	1.6	1.6	38	1.18	1.1	0.8	0.2	18	0.1	0.2	<0.1	60	0.34	0.029	1
L-74S 0+450	Soil	0.9	15.5	5.9	13	0.4	4.9	4.6	89	2.12	2.4	4.5	0.4	10	<0.1	0.3	0.2	106	0.20	0.027	3
L-74S 0+475	Soil	0.7	20.1	5.2	11	0.3	3.3	3.8	69	2.02	2.4	1.1	0.3	19	<0.1	0.3	0.2	104	0.22	0.029	2
L-74S 0+500	Soil	0.9	95.7	5.8	40	0.1	14.7	10.8	275	3.02	3.8	2.5	1.5	25	<0.1	0.2	0.2	86	0.34	0.041	3
L-74S 0+525	Soil	1.0	105.7	4.6	21	0.2	14.4	6.6	250	2.92	2.8	2.2	0.5	16	0.1	0.2	0.2	96	0.32	0.047	3
L-74S 0+550	Soil	1.0	109.3	3.9	18	0.2	15.1	5.6	157	2.93	2.3	3.2	0.5	13	<0.1	0.2	0.3	101	0.26	0.043	3
L-74S 0+575	Soil	0.9	118.9	3.9	20	0.2	17.4	7.4	189	2.98	2.6	28.8	0.6	16	<0.1	0.1	0.2	102	0.30	0.040	3
L-74S 0+600	Soil	0.7	106.6	4.4	26	0.2	16.8	9.6	235	2.92	2.7	3.4	0.6	28	0.1	0.2	0.2	90	0.41	0.046	3
L-74S 0+625	Soil	0.8	52.2	6.6	10	0.5	2.3	1.7	55	1.61	0.9	1.5	0.1	15	<0.1	0.1	0.4	69	0.17	0.076	3
L-74S 0+650	Soil	1.6	282.6	3.9	9	0.6	4.1	1.9	64	4.59	<0.5	4.2	0.5	12	<0.1	0.1	0.4	125	0.10	0.043	2
L-74S 0+675	Soil	1.2	21.3	6.8	8	0.4	4.1	1.8	44	0.57	1.1	2.2	0.1	17	<0.1	0.1	0.2	31	0.26	0.039	1
L-74S 0+700	Soil	1.4	22.9	3.2	7	0.3	5.4	2.1	57	0.91	<0.5	1.8	<0.1	9	<0.1	0.1	0.2	67	0.24	0.025	1
L-74S 0+725	Soil	1.6	574.0	3.2	30	0.2	23.3	11.5	272	2.64	2.0	2.7	0.9	49	<0.1	0.1	0.3	76	0.66	0.042	3
L-74S 0+750	Soil	4.5	297.6	4.7	26	0.1	22.3	9.0	223	2.61	2.9	1.4	0.5	17	<0.1	0.2	0.2	109	0.35	0.025	4
L-74S 0+775	Soil	3.2	393.9	2.6	11	0.1	35.0	8.8	45	1.30	0.6	3.0	0.1	16	<0.1	<0.1	<0.1	50	0.20	0.026	1
L-74S 0+800	Soil	0.9	9.7	7.9	6	0.1	2.1	0.8	41	0.55	<0.5	1.8	0.3	7	<0.1	0.4	0.2	72	0.12	0.023	3
L-74S 0+825	Soil	2.4	59.5	5.1	7	0.2	3.1	1.2	52	0.93	<0.5	2.7	0.3	9	<0.1	0.1	0.3	93	0.17	0.025	3
L-74S 0+850	Soil	3.0	11.8	1.3	1	<0.1	0.7	0.3	19	0.37	<0.5	0.9	0.5	2	<0.1	0.2	<0.1	25	0.02	0.003	1
L-74S 0+875	Soil	9.0	128.6	6.7	14	<0.1	9.1	3.7	98	4.91	2.8	2.5	2.7	8	<0.1	0.3	0.2	157	0.19	0.019	2
L-78S 0+000	Soil	1.6	5.4	14.0	3	0.2	2.5	0.6	29	0.49	<0.5	5.3	0.5	8	<0.1	0.3	0.5	111	0.08	0.011	4
L-78S 0+025	Soil	1.7	50.2	6.0	15	<0.1	13.5	4.5	112	3.47	4.7	2.1	5.6	9	<0.1	0.4	0.2	100	0.18	0.019	3
L-78S 0+050	Soil	0.3	1.7	1.3	2	<0.1	0.3	0.2	20	0.14	<0.5	0.7	0.2	4	<0.1	0.3	<0.1	3	0.05	0.007	1
L-78S 0+075	Soil	3.2	24.2	6.3	13	0.1	18.4	5.2	143	2.02	1.3	3.1	0.3	14	<0.1	0.2	0.2	110	0.33	0.019	2
L-78S 0+100	Soil	21.6	90.2	3.9	18	0.2	21.4	6.4	148	4.47	5.0	4.9	1.7	10	<0.1	0.3	0.3	94	0.20	0.021	3
L-78S 0+125	Soil	2.1	30.8	4.2	12	0.2	27.2	5.8	105	3.69	2.0	2.5	0.5	12	<0.1	0.2	0.2	110	0.24	0.023	3
L-78S 0+150	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+175	Soil	1.2	3.5	4.4	4	<0.1	1.9	0.8	58	1.30	<0.5	2.5	0.3	7	<0.1	0.2	0.2	86	0.12	0.013	2
L-78S 0+200	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+225	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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**Project:** CATFACE  
**Report Date:** February 05, 2019

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# CERTIFICATE OF ANALYSIS

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Method Analyte	Unit	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
MDL		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2		
L-74S 0+400	Soil	16	0.19	18	0.170	3	0.80	0.020	0.03	2.9	0.14	1.8	<0.1	<0.05	10	<0.5	<0.2	
L-74S 0+425	Soil	4	0.07	8	0.091	3	0.26	0.011	0.03	<0.1	0.12	1.0	<0.1	0.08	4	<0.5	<0.2	
L-74S 0+450	Soil	35	0.21	14	0.165	3	0.90	0.021	0.03	<0.1	0.13	1.9	<0.1	<0.05	8	0.8	<0.2	
L-74S 0+475	Soil	11	0.13	15	0.178	4	0.58	0.018	0.04	<0.1	0.11	1.6	<0.1	0.07	6	0.9	<0.2	
L-74S 0+500	Soil	29	0.63	71	0.183	2	3.52	0.037	0.07	0.4	0.11	4.3	0.1	<0.05	8	1.2	<0.2	
L-74S 0+525	Soil	42	0.38	24	0.186	3	2.78	0.026	0.04	0.5	0.14	4.1	<0.1	<0.05	9	1.8	<0.2	
L-74S 0+550	Soil	44	0.34	19	0.193	3	2.49	0.026	0.03	0.4	0.15	3.8	<0.1	<0.05	10	1.5	<0.2	
L-74S 0+575	Soil	50	0.44	29	0.208	3	3.14	0.029	0.04	0.3	0.13	4.8	<0.1	<0.05	10	2.0	<0.2	
L-74S 0+600	Soil	40	0.49	46	0.183	3	2.66	0.034	0.06	0.3	0.11	4.0	<0.1	<0.05	8	1.3	<0.2	
L-74S 0+625	Soil	6	0.10	25	0.112	6	0.61	0.024	0.04	3.4	0.18	1.4	<0.1	0.09	5	1.0	<0.2	
L-74S 0+650	Soil	31	0.19	16	0.181	3	3.22	0.015	0.03	0.7	0.25	4.3	<0.1	<0.05	13	2.5	<0.2	
L-74S 0+675	Soil	9	0.12	10	0.048	3	0.29	0.026	0.05	0.3	0.22	1.7	<0.1	<0.05	2	<0.5	<0.2	
L-74S 0+700	Soil	10	0.14	4	0.086	2	0.33	0.022	0.02	0.4	0.11	1.9	<0.1	<0.05	4	<0.5	<0.2	
L-74S 0+725	Soil	38	0.70	40	0.144	1	2.09	0.053	0.08	1.7	0.03	4.2	<0.1	<0.05	6	<0.5	<0.2	
L-74S 0+750	Soil	58	0.70	19	0.314	2	2.08	0.029	0.03	<0.1	0.14	4.8	<0.1	<0.05	13	2.2	<0.2	
L-74S 0+775	Soil	15	0.20	7	0.063	2	0.60	0.042	0.02	<0.1	0.06	1.4	<0.1	<0.05	4	<0.5	<0.2	
L-74S 0+800	Soil	15	0.05	6	0.149	2	0.34	0.013	0.02	<0.1	0.10	1.0	<0.1	<0.05	9	<0.5	<0.2	
L-74S 0+825	Soil	10	0.07	8	0.132	3	0.39	0.011	0.03	0.1	0.08	1.0	<0.1	<0.05	8	<0.5	<0.2	
L-74S 0+850	Soil	2	0.01	5	0.062	<1	0.12	0.011	0.01	<0.1	0.02	0.2	<0.1	<0.05	3	<0.5	<0.2	
L-74S 0+875	Soil	92	0.26	10	0.367	2	4.21	0.017	0.02	<0.1	0.20	9.9	<0.1	<0.05	17	3.4	<0.2	
L-78S 0+000	Soil	32	0.06	18	0.360	1	0.83	0.008	0.02	<0.1	0.17	1.2	<0.1	<0.05	30	<0.5	<0.2	
L-78S 0+025	Soil	96	0.36	16	0.218	2	4.62	0.020	0.02	0.2	0.17	10.1	<0.1	<0.05	12	2.8	<0.2	
L-78S 0+050	Soil	2	0.02	13	0.011	3	0.38	0.006	0.03	<0.1	0.03	0.3	<0.1	<0.05	3	<0.5	<0.2	
L-78S 0+075	Soil	52	0.50	14	0.232	1	1.15	0.028	0.03	<0.1	0.08	3.3	<0.1	<0.05	10	<0.5	<0.2	
L-78S 0+100	Soil	112	0.47	15	0.280	2	6.49	0.021	0.02	0.5	0.37	8.1	<0.1	<0.05	11	2.8	<0.2	
L-78S 0+125	Soil	135	0.52	21	0.229	3	1.36	0.026	0.03	<0.1	0.12	2.2	<0.1	<0.05	11	1.3	<0.2	
L-78S 0+150	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	
L-78S 0+175	Soil	16	0.07	11	0.154	<1	0.37	0.018	0.02	<0.1	0.06	1.0	<0.1	<0.05	8	<0.5	<0.2	
L-78S 0+200	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	
L-78S 0+225	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	



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Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		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	
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	2	0.01	0.001	1	
L-78S 0+250	Soil	4.4	19.6	10.4	6	0.1	5.1	1.9	51	5.76	1.5	1.1	0.8	8	<0.1	0.5	2.1	378	0.11	0.011	3
L-78S 0+275	Soil	2.6	24.3	7.7	8	0.1	4.8	2.1	50	3.69	2.3	1.7	0.7	10	<0.1	0.3	0.5	177	0.15	0.027	3
L-78S 0+300	Soil	1.2	6.3	6.4	8	0.2	2.9	1.1	63	0.64	<0.5	3.8	0.1	17	<0.1	0.2	0.2	42	0.19	0.031	3
L-78S 0+325	Soil	1.8	25.7	6.1	8	0.1	9.5	2.8	76	2.90	1.6	6.7	0.5	11	<0.1	0.2	0.3	171	0.20	0.021	3
L-78S 0+350	Soil	1.7	23.1	7.3	6	0.3	3.5	2.4	54	5.66	1.3	5.3	0.6	7	<0.1	0.3	1.2	394	0.13	0.019	2
L-78S 0+375	Soil	1.6	80.5	6.0	12	0.3	12.3	4.7	91	5.48	2.3	2.5	1.5	11	<0.1	0.2	0.6	138	0.23	0.027	4
L-78S 0+400	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+425	Soil	1.2	23.9	6.3	9	0.3	7.4	2.4	64	2.93	1.5	4.4	0.4	12	<0.1	0.3	0.4	122	0.20	0.043	3
L-78S 0+450	Soil	1.4	57.1	6.3	8	<0.1	7.2	2.2	56	5.29	1.4	3.6	1.4	7	<0.1	0.2	0.2	197	0.13	0.026	3
L-78S 0+475	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+500	Soil	0.6	21.0	5.9	8	0.2	5.5	3.6	86	1.54	0.7	0.7	0.3	27	<0.1	0.1	0.3	102	0.21	0.023	2
L-78S 0+525	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+550	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+575	Soil	0.8	65.2	11.2	43	0.3	11.6	7.0	276	4.34	3.4	1.4	1.2	23	0.1	0.3	0.3	87	0.26	0.042	3
L-78S 0+600	Soil	0.5	49.5	9.4	57	<0.1	11.1	7.9	304	3.13	2.8	2.0	1.4	31	0.1	0.2	0.2	72	0.44	0.041	3
L-78S 0+625	Soil	0.7	111.8	5.1	24	0.1	16.7	9.4	228	2.91	2.4	1.7	0.6	24	<0.1	0.2	0.2	91	0.44	0.035	3
L-78S 0+650	Soil	1.1	55.3	6.7	24	<0.1	11.9	6.4	152	1.84	1.5	1.1	0.8	21	<0.1	0.2	0.2	70	0.35	0.017	3
L-78S 0+675	Soil	1.4	26.8	6.0	6	0.1	3.3	2.2	81	1.12	0.6	7.1	0.5	12	<0.1	0.2	0.3	81	0.17	0.017	3
L-78S 0+700	Soil	2.2	47.6	4.7	8	<0.1	5.2	2.4	76	7.14	2.5	2.4	1.0	6	<0.1	0.3	0.3	228	0.12	0.021	2
L-78S 0+725	Soil	1.4	13.1	5.4	4	0.2	2.3	1.1	49	0.90	<0.5	4.5	0.5	5	<0.1	0.1	0.2	70	0.09	0.012	2
L-78S 0+750	Soil	2.2	9.8	9.2	4	0.2	1.8	0.6	18	0.51	<0.5	3.1	0.3	7	<0.1	0.2	0.3	78	0.07	0.020	2



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**Client:** **Catface Copper Mines Limited**  
200 - 580 Hornby Street  
Vancouver British Columbia V6C 3B6 Canada

**Project:** CATFACE  
**Report Date:** February 05, 2019

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**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

VAN18003675.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
L-78S 0+250	Soil	39	0.11	11	0.464	1	1.13	0.010	0.02	<0.1	0.13	1.6	<0.1	<0.05	37	0.5	<0.2
L-78S 0+275	Soil	42	0.12	11	0.282	3	1.64	0.012	0.02	0.1	0.20	2.3	<0.1	<0.05	20	1.9	<0.2
L-78S 0+300	Soil	13	0.12	19	0.103	3	0.46	0.032	0.04	<0.1	0.11	1.8	<0.1	<0.05	7	<0.5	<0.2
L-78S 0+325	Soil	57	0.24	14	0.308	3	1.27	0.022	0.02	<0.1	0.17	2.7	<0.1	<0.05	18	0.8	<0.2
L-78S 0+350	Soil	32	0.08	9	0.362	1	0.85	0.012	0.02	<0.1	0.11	1.6	<0.1	<0.05	24	0.9	<0.2
L-78S 0+375	Soil	77	0.36	13	0.278	3	3.85	0.025	0.02	0.3	0.27	7.1	<0.1	<0.05	15	3.8	<0.2
L-78S 0+400	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+425	Soil	33	0.14	13	0.195	4	1.01	0.020	0.03	0.2	0.16	1.8	<0.1	<0.05	10	1.0	<0.2
L-78S 0+450	Soil	75	0.17	10	0.338	2	3.03	0.011	0.01	<0.1	0.16	4.7	<0.1	<0.05	19	2.6	<0.2
L-78S 0+475	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+500	Soil	9	0.24	23	0.177	2	0.69	0.032	0.04	0.1	0.10	1.5	<0.1	<0.05	7	0.7	<0.2
L-78S 0+525	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+550	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
L-78S 0+575	Soil	34	0.54	42	0.203	3	2.37	0.032	0.04	0.4	0.23	3.8	<0.1	<0.05	10	2.3	<0.2
L-78S 0+600	Soil	28	0.67	53	0.148	2	2.89	0.043	0.04	0.3	0.08	3.6	<0.1	<0.05	7	1.2	<0.2
L-78S 0+625	Soil	44	0.50	38	0.193	4	2.62	0.041	0.06	0.4	0.11	4.5	<0.1	<0.05	8	1.3	<0.2
L-78S 0+650	Soil	34	0.48	42	0.222	<1	2.29	0.025	0.03	<0.1	0.06	4.1	<0.1	<0.05	10	0.8	<0.2
L-78S 0+675	Soil	15	0.10	14	0.198	2	0.81	0.011	0.02	<0.1	0.11	1.3	<0.1	0.05	12	<0.5	<0.2
L-78S 0+700	Soil	50	0.13	6	0.433	2	1.88	0.010	0.01	<0.1	0.12	2.0	<0.1	<0.05	21	0.8	<0.2
L-78S 0+725	Soil	15	0.07	9	0.162	2	0.36	0.013	0.02	<0.1	0.09	0.9	<0.1	<0.05	8	<0.5	<0.2
L-78S 0+750	Soil	18	0.04	10	0.212	1	0.59	0.010	0.02	<0.1	0.17	1.2	<0.1	0.07	14	0.6	<0.2





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# QUALITY CONTROL REPORT

VAN18003675.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
		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	
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	2	0.01	0.001	1	
Pulp Duplicates																					
L-42S 0+375	Soil	1.4	57.9	7.0	9	0.5	8.7	3.0	50	2.86	0.9	2.5	0.4	12	<0.1	0.2	0.2	115	0.19	0.024	3
REP L-42S 0+375	QC	1.3	58.3	6.9	9	0.5	8.3	3.2	47	2.72	1.1	3.2	0.4	12	<0.1	0.2	0.3	119	0.18	0.023	3
L-46S 0+150	Soil	0.5	67.7	7.9	32	0.1	9.3	8.5	262	2.20	4.2	3.3	2.5	18	0.4	0.3	0.3	47	0.25	0.043	6
REP L-46S 0+150	QC	0.5	69.4	7.8	32	<0.1	9.4	8.9	267	2.39	4.4	2.9	2.4	19	0.3	0.3	0.3	46	0.25	0.044	6
L-46S 0+1075	Soil	6.7	563.1	3.6	25	0.4	15.0	7.4	143	2.55	4.1	1.3	0.4	26	<0.1	0.5	0.2	64	0.28	0.037	3
REP L-46S 0+1075	QC	6.6	556.8	3.7	24	0.5	15.6	7.5	143	2.61	4.1	1.8	0.4	25	<0.1	0.6	0.1	65	0.28	0.039	3
L-50S 0+575	Soil	1.7	146.5	4.3	14	0.8	10.4	3.6	71	3.96	2.3	1.3	0.4	12	0.1	0.2	1.0	107	0.23	0.042	2
REP L-50S 0+575	QC	1.8	155.2	4.4	15	0.8	10.5	3.6	71	3.92	2.5	3.8	0.4	12	<0.1	0.2	1.1	109	0.24	0.043	2
L-70S 0+125	Soil	12.7	150.0	5.7	10	0.2	5.2	3.6	90	1.65	0.9	2.5	0.4	12	0.1	0.1	0.2	80	0.19	0.025	3
REP L-70S 0+125	QC	12.4	150.1	5.8	11	0.2	5.2	3.6	90	1.63	0.8	2.2	0.4	12	0.1	0.1	0.2	82	0.20	0.023	3
L-74S 0+875	Soil	9.0	128.6	6.7	14	<0.1	9.1	3.7	98	4.91	2.8	2.5	2.7	8	<0.1	0.3	0.2	157	0.19	0.019	2
REP L-74S 0+875	QC	8.9	125.7	7.0	14	<0.1	9.2	4.0	97	4.98	3.0	1.0	2.7	8	<0.1	0.3	0.2	157	0.18	0.022	3
L-78S 0+700	Soil	2.2	47.6	4.7	8	<0.1	5.2	2.4	76	7.14	2.5	2.4	1.0	6	<0.1	0.3	0.3	228	0.12	0.021	2
REP L-78S 0+700	QC	2.5	46.6	4.6	8	<0.1	5.5	2.5	73	6.81	2.5	1.6	1.0	6	<0.1	0.3	0.2	229	0.13	0.020	2
Reference Materials																					
STD DS11	Standard	13.5	158.4	137.8	317	1.7	76.5	14.2	937	3.08	42.3	64.6	7.7	66	2.3	8.7	12.1	51	1.00	0.069	18
STD DS11	Standard	14.9	157.3	136.1	330	1.7	79.6	13.7	1003	3.23	43.4	80.8	8.0	69	2.5	9.1	12.2	53	1.07	0.073	21
STD DS11	Standard	14.5	154.4	135.3	346	1.7	75.9	13.1	993	3.10	43.5	61.2	7.6	66	2.4	9.0	11.8	50	1.04	0.074	19
STD DS11	Standard	15.5	158.0	137.3	347	1.9	80.5	14.9	1061	3.11	48.6	74.7	8.2	64	2.7	9.5	12.1	53	1.08	0.074	19
STD DS11	Standard	14.7	155.4	132.0	328	1.7	75.1	13.3	968	3.08	41.6	71.8	7.8	68	2.3	9.5	11.5	49	1.02	0.075	19
STD DS11	Standard	14.7	158.3	140.5	340	1.9	78.6	15.1	1031	3.30	47.5	74.7	7.9	68	2.6	9.5	12.3	53	1.03	0.080	20
STD DS11	Standard	15.0	160.4	140.4	332	1.8	81.9	15.3	1029	3.18	46.6	66.4	8.3	67	2.5	9.3	12.5	52	1.05	0.082	20
STD OREAS262	Standard	0.7	124.9	57.0	145	0.5	61.4	27.2	535	3.20	35.8	70.3	9.1	36	0.6	5.9	1.0	22	2.89	0.041	15
STD OREAS262	Standard	0.6	115.3	56.1	151	0.5	62.3	27.8	535	3.34	36.1	74.0	8.9	36	0.6	6.1	1.0	23	2.91	0.043	18
STD OREAS262	Standard	0.8	121.1	57.5	152	0.5	63.2	26.2	547	3.40	37.5	71.7	9.2	37	0.6	6.4	1.0	22	2.91	0.046	17
STD OREAS262	Standard	0.8	123.4	58.1	151	0.5	65.9	28.2	526	3.41	38.4	79.3	9.5	34	0.7	6.7	1.1	23	3.05	0.044	16
STD OREAS262	Standard	0.7	121.2	56.9	144	0.5	61.7	27.4	528	3.39	36.0	67.9	9.5	36	0.7	6.2	1.1	23	2.83	0.047	17
STD OREAS262	Standard	0.7	122.3	58.9	158	0.5	65.5	28.1	556	3.50	38.4	63.1	9.3	35	0.7	4.3	1.0	24	3.05	0.043	17



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# QUALITY CONTROL REPORT

VAN18003675.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																	
L-42S 0+375	Soil	18	0.12	9	0.206	2	1.16	0.018	0.02	0.2	0.16	1.9	<0.1	<0.05	11	1.2	<0.2
REP L-42S 0+375	QC	18	0.13	8	0.201	3	1.12	0.017	0.03	0.3	0.16	1.9	<0.1	<0.05	11	1.3	<0.2
L-46S 0+150	Soil	16	0.34	39	0.106	1	3.54	0.018	0.03	0.4	0.18	2.5	<0.1	<0.05	8	1.2	<0.2
REP L-46S 0+150	QC	17	0.33	43	0.127	2	3.44	0.016	0.03	0.6	0.18	2.5	<0.1	<0.05	9	1.8	<0.2
L-46S 0+1075	Soil	34	0.59	45	0.162	3	2.10	0.044	0.09	3.2	0.12	2.3	<0.1	<0.05	8	2.4	<0.2
REP L-46S 0+1075	QC	32	0.58	43	0.158	3	2.18	0.039	0.09	3.2	0.12	2.3	<0.1	<0.05	8	2.6	<0.2
L-50S 0+575	Soil	29	0.20	8	0.178	3	2.33	0.020	0.03	0.7	0.37	2.3	<0.1	<0.05	12	2.7	<0.2
REP L-50S 0+575	QC	30	0.19	7	0.179	3	2.32	0.020	0.03	0.8	0.40	2.3	<0.1	<0.05	11	2.5	<0.2
L-70S 0+125	Soil	24	0.12	14	0.187	3	0.69	0.018	0.03	<0.1	0.12	1.6	<0.1	<0.05	11	0.7	<0.2
REP L-70S 0+125	QC	25	0.14	13	0.191	3	0.75	0.018	0.03	<0.1	0.13	1.7	<0.1	<0.05	11	0.6	<0.2
L-74S 0+875	Soil	92	0.26	10	0.367	2	4.21	0.017	0.02	<0.1	0.20	9.9	<0.1	<0.05	17	3.4	<0.2
REP L-74S 0+875	QC	93	0.29	11	0.369	2	4.20	0.016	0.02	<0.1	0.21	10.2	<0.1	<0.05	16	2.9	<0.2
L-78S 0+700	Soil	50	0.13	6	0.433	2	1.88	0.010	0.01	<0.1	0.12	2.0	<0.1	<0.05	21	0.8	<0.2
REP L-78S 0+700	QC	49	0.13	6	0.416	2	1.79	0.011	0.02	<0.1	0.10	2.1	<0.1	<0.05	20	1.2	<0.2
Reference Materials																	
STD DS11	Standard	56	0.80	343	0.089	8	1.07	0.064	0.36	3.0	0.27	3.0	4.8	0.26	5	2.5	4.6
STD DS11	Standard	60	0.85	356	0.097	7	1.27	0.076	0.39	2.9	0.27	3.2	5.3	0.26	5	2.4	4.8
STD DS11	Standard	59	0.84	361	0.091	8	1.16	0.068	0.40	3.0	0.26	3.2	5.1	0.26	5	2.3	4.5
STD DS11	Standard	66	0.87	372	0.090	8	1.19	0.069	0.40	3.3	0.28	3.3	5.1	0.31	5	3.1	5.0
STD DS11	Standard	57	0.81	360	0.092	7	1.11	0.071	0.38	3.0	0.27	3.1	4.7	0.29	5	2.0	4.5
STD DS11	Standard	62	0.84	378	0.098	7	1.19	0.068	0.42	3.1	0.27	3.2	4.9	0.26	5	2.2	4.7
STD DS11	Standard	62	0.83	385	0.097	8	1.17	0.079	0.40	3.3	0.28	3.3	5.2	0.28	5	2.2	4.7
STD OREAS262	Standard	41	1.10	246	0.003	2	1.20	0.064	0.27	0.2	0.17	3.1	0.5	0.25	4	0.6	<0.2
STD OREAS262	Standard	46	1.15	251	0.003	4	1.39	0.063	0.34	0.3	0.15	3.2	0.5	0.26	4	0.5	0.3
STD OREAS262	Standard	43	1.14	252	0.003	3	1.35	0.064	0.30	0.3	0.19	3.2	0.5	0.29	4	<0.5	0.2
STD OREAS262	Standard	45	1.08	251	0.002	4	1.36	0.066	0.29	0.2	0.16	3.3	0.5	0.26	4	0.6	0.2
STD OREAS262	Standard	43	1.13	256	0.002	4	1.29	0.067	0.29	0.2	0.15	3.3	0.5	0.26	4	<0.5	0.3
STD OREAS262	Standard	45	1.14	260	0.003	4	1.26	0.068	0.31	0.2	0.18	3.2	0.5	0.23	4	<0.5	0.2



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**Client: Catface Copper Mines Limited**

200 - 580 Hornby Street

Vancouver British Columbia V6C 3B6 Canada

Project: CATFACE

Report Date: February 05, 2019

Page: 2 of 2

Part: 1 of 2

# QUALITY CONTROL REPORT

**VAN18003675.1**

		AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
		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	2	0.01	0.001	1
STD OREAS262	Standard	0.6	126.4	60.2	152	0.5	66.4	29.9	571	3.44	38.9	64.1	10.4	37	0.7	4.7	1.1	23	3.05	0.045	17
STD DS11 Expected		14.6	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701	18.6
STD OREAS262 Expected		0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	72	9.33	36	0.61	5.06	0.98	22.5	2.98	0.04	15.9
BLK	Blank	<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	<2	<0.01	<0.001	<1
BLK	Blank	<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	<2	<0.01	<0.001	<1
BLK	Blank	<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	<2	<0.01	<0.001	<1
BLK	Blank	<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	<2	<0.01	<0.001	<1
BLK	Blank	<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	<2	<0.01	<0.001	<1
BLK	Blank	<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	<2	<0.01	<0.001	<1
BLK	Blank	<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	<2	<0.01	<0.001	<1



Bureau Veritas Commodities Canada Ltd.

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# QUALITY CONTROL REPORT

VAN18003675.1

		AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
STD OREAS262	Standard	45	1.25	263	0.003	4	1.44	0.069	0.32	0.2	0.17	3.5	0.5	0.27	4	<0.5	<0.2
STD DS11 Expected		61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56
STD OREAS262 Expected		41.7	1.17	248	0.0027	4	1.3	0.071	0.295	0.2	0.17	3.24	0.47	0.253	3.73	0.4	0.23
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2



# AQ300, AQ200

Package Description	Geochemical aqua regia digestion
Sample Digestion	HNO <sub>3</sub> -HCl acid digestion
Instrumentation Method	ICP-ES (AQ300, AQ200), ICP-MS (AQ200)
Legacy Code	1D, 1DX
Applicability	Sediment, Soil, Non-mineralized Rock and Drill Core

## METHOD DESCRIPTION:

Prepared sample is digested with a modified Aqua Regia solution of equal parts concentrated HCl, HNO<sub>3</sub> and DI H<sub>2</sub>O for one hour in a heating block or hot water bath. Sample is made up to volume with dilute HCl. Sample splits of 0.5g are analyzed optional 15g or 30g digestion available for AQ200.

Element	AQ300 Detection	AQ200 Detection	Upper Limit	Element	AQ300 Detection	AQ200 Detection	Upper Limit
Ag	0.3 ppm	0.1 ppm	100 ppm	Na*	0.01 %	0.001 %	5 %
Al*	0.01 %	0.01 %	10 %	Ni	1 ppm	0.1 ppm	10000 ppm
As	2 ppm	0.5 ppm	10000 ppm	P*	0.001 %	0.001 %	5 %
Au	-	0.5 ppb	100 ppm	Pb	3 ppm	0.1 ppm	10000 ppm
B*^	20 ppm	20 ppm	2000 ppm	S	0.05 %	0.05 %	10 %
Ba*	1 ppm	1 ppm	10000 ppm	Sb	3 ppm	0.1 ppm	2000 ppm
Bi	3 ppm	0.1 ppm	2000 ppm	Sc	-	0.1 ppm	100 ppm
Ca*	0.01 %	0.01 %	40 %	Se	-	0.5 ppm	100 ppm
Cd	0.5 ppm	0.1 ppm	2000 ppm	Sr*	1 ppm	1 ppm	10000 ppm
Co	1 ppm	0.1 ppm	2000 ppm	Te	-	0.2 ppm	1000 ppm
Cr*	1 ppm	1 ppm	10000 ppm	Th*	2 ppm	0.1 ppm	2000 ppm
Cu	1 ppm	0.1 ppm	10000 ppm	Ti*	0.01 %	0.001 %	5 %
Fe*	0.01 %	0.01 %	40 %	Tl	5 ppm	0.1 ppm	1000 ppm
Ga*	-	1 ppm	1000 ppm	U*	8 ppm	0.1 ppm	2000 ppm
Hg	1 ppm	0.01 ppm	50 ppm	V*	1 ppm	2 ppm	10000 ppm
K*	0.01 %	0.01 %	10 %	W*	2 ppm	0.1 ppm	100 ppm
La*	1 ppm	1 ppm	10000 ppm	Zn	1 ppm	1 ppm	10000 ppm
Mg*	0.01 %	0.01 %	30 %				
Mn*	2 ppm	1 ppm	10000 ppm				
Mo	1 ppm	0.1 ppm	2000 ppm				

\* Solubility of some elements will be limited by mineral species present. ^Detection limit = 1 ppm for 15g / 30g analysis.

### Limitations:

Au solubility can be limited by refractory and graphitic samples.



**BUREAU  
VERITAS**

# AQ370 & AQ270

Package Description	Aqua regia digestion Ore Grade ICP analysis
Sample Digestion	HNO <sub>3</sub> -HCl acid digestion
Instrumentation Method	ICP-ES (AQ370, AQ270), ICP-MS (AQ270)
Legacy Code	7AR & 7AX
Applicability	Rock and Drill Core

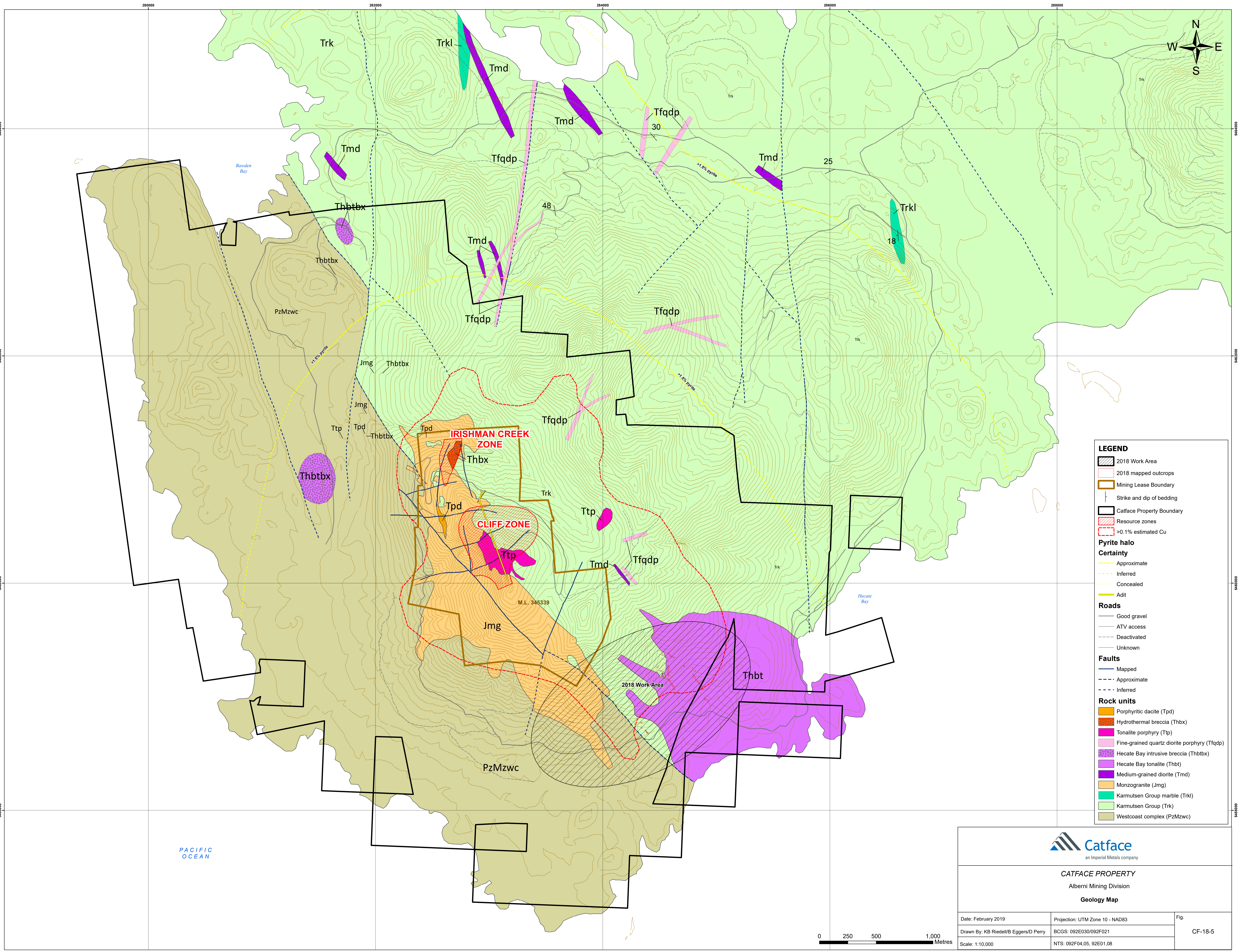
## METHOD DESCRIPTION:

1g sample split is digested with a modified Aqua Regia solution of equal parts concentrated HCl, HNO<sub>3</sub> and DI H<sub>2</sub>O for one hour in a hot water bath. Sample is made up to volume with dilute HCl in class A volumetric flasks. Sample splits of 0.4g or 0.1g may be necessary for very high-grade samples to accommodate analysis up to 100% upper limit.

Element	AQ370 Detection	AQ270 Detection	Upper Limits	Element	AQ370 Detection	AQ270 Detection	Upper Limits
Ag	2 g/t	0.5 ppm	300 g/t	Sc	-	0.5 ppm	
Al	0.01%	0.01%		Se	-	2 ppm	500 ppm
As	0.01%	5 ppm	10 %	Sr	0.001%	5 ppm	
Ba	-	5 ppm		Th	-	0.5 ppm	
Bi	0.01%	0.5 ppm		Ti	-	0.001%	
Ca	0.01%	0.01%		Tl	-	0.5 ppm	
Cd	0.001%	0.5 ppm		U	-	0.5 ppm	
Co	0.001%	0.5 ppm		V	-	10 ppm	
Cr	0.001%	0.5 ppm		W	0.001%	0.5 ppm	
Cu	0.001%	0.5 ppm	10 %	Zn	0.01%	5 ppm	20 %
Fe	0.01%	0.01%		<b>Limitations:</b> This digestion is only partial for some Cr and Ba minerals and some oxides of Al, Fe, Hf, Mn, Nb, S, Sn, Ta, Ti, W and Zr if refractory minerals are present.			
Ga	-	5 ppm					
Hg	0.001%	0.05 ppm					
K	0.01%	0.01%					
La	-	0.5 ppm					
Mg	0.01%	0.01%					
Mn	0.01%	5 ppm					
Mo	0.001%	0.5 ppm	20 %				
Na	0.01%	0.01%					
Ni	0.001%	0.5 ppm					
P	0.001%	0.001%					
Pb	0.01%	0.5 ppm	4 %				
S	0.05%	0.05%					
Sb	0.001%	0.5 ppm					

## **SECTION F: ILLUSTRATIONS**

<b>Plan Number</b>	<b>Title</b>	<b>Scale</b>
CF-18-1 (p.3)	BC Location Plan	1:8 000 000
CF-18-2 (p.4)	General Location Plan	1:200 000
CF-18-3 (p.5)	Mineral Tenures Plan	1:40 000
CF-18-4 (p.11)	Cross Section 2S: Cliff Zone >0.4% Cu shell	As Shown
CF-18-5 (in pocket)	Geology Plan	1:10 000
CF-18-6 (in pocket)	2018 Soil & Rock Sample Locations	1:2 500
CF-18-7 (in pocket)	2018 Soil & Rock Sampling: Cu (ppm)	1:2 500
CF-18-8 (in pocket)	2018 Soil & Rock Sampling: Mo (ppm)	1:2 500
CF-18-9 (in pocket)	2018 Soil & Rock Sampling: Au (ppb)	1:2 500
CF-18-10 (in pocket)	2018 Soil & Rock Sampling: Ag (ppm)	1:2 500
CF-18-11 (p. 15)	Proposed Drilling	1:11 236



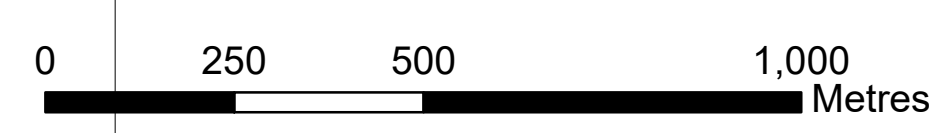
**LEGEND**

- 2018 Work Area
- 2018 mapped outcrops
- Mining Lease Boundary
- Strike and dip of bedding
- Catface Property Boundary
- Resource zones
- >0.1% estimated Cu
- Pyrite halo**
- Certainty**
- Approximate
- Inferred
- Concealed
- Adit
- Roads**
- Good gravel
- ATV access
- Deactivated
- Unknown
- Faults**
- Mapped
- Approximate
- Inferred
- Rock units**
- Porphyritic dacite (Tpd)
- Hydrothermal breccia (Thbx)
- Tonalite porphyry (Ttp)
- Fine-grained quartz diorite porphyry (Tfqdp)
- Hecate Bay intrusive breccia (Thbtbx)
- Hecate Bay tonalite (Thbt)
- Medium-grained diorite (Tmd)
- Monzogranite (Jmg)
- Karmutsen Group marble (Trkl)
- Karmutsen Group (Trk)
- Westcoast complex (PzMzwc)

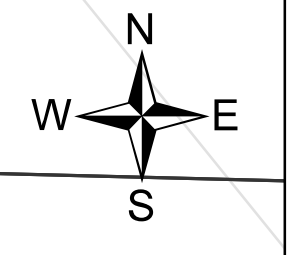
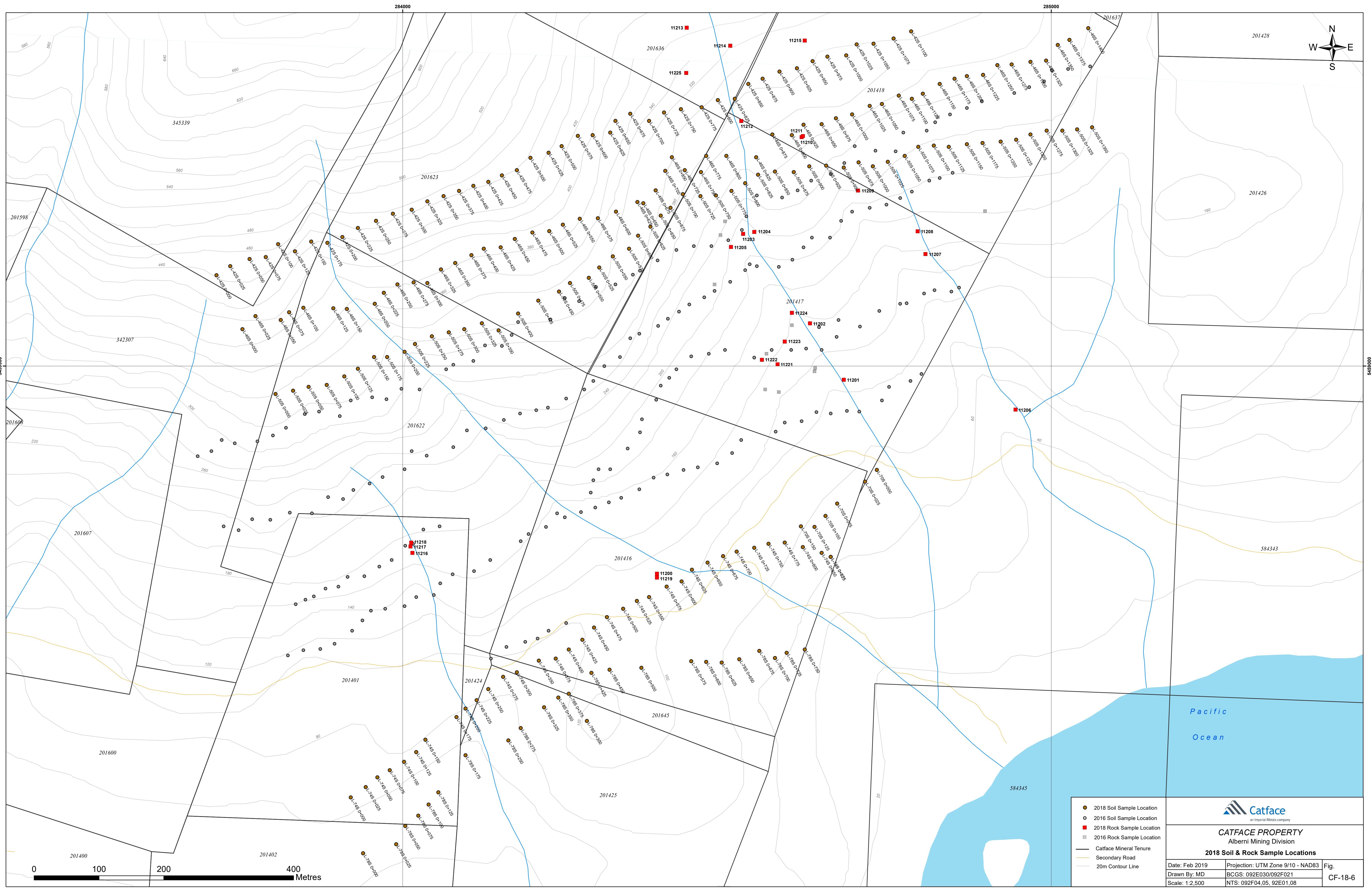


**CATFACE PROPERTY**  
 Alberni Mining Division  
**Geology Map**

Date: February 2019	Projection: UTM Zone 10 - NAD83	Fig.
Drawn By: KB Riedell/B Eggers/D Perry	BCGS: 092E030/092F021	CF-18-5
Scale: 1:10,000	NTS: 092F04.05, 92E01.08	





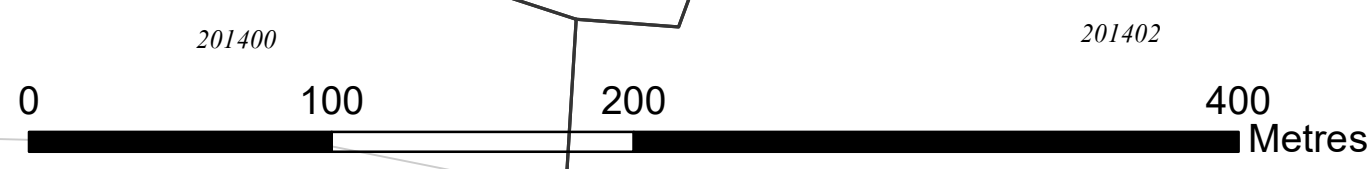


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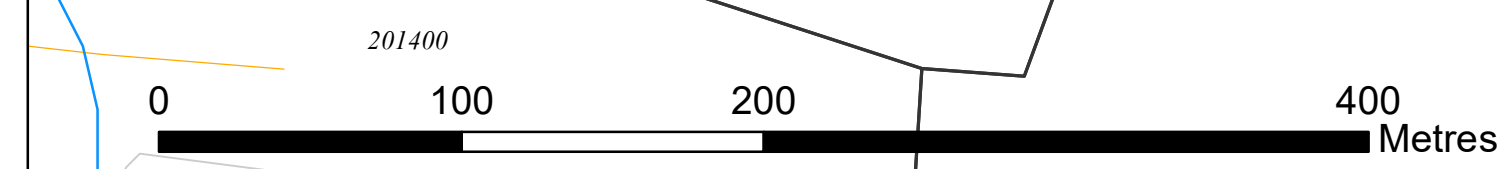
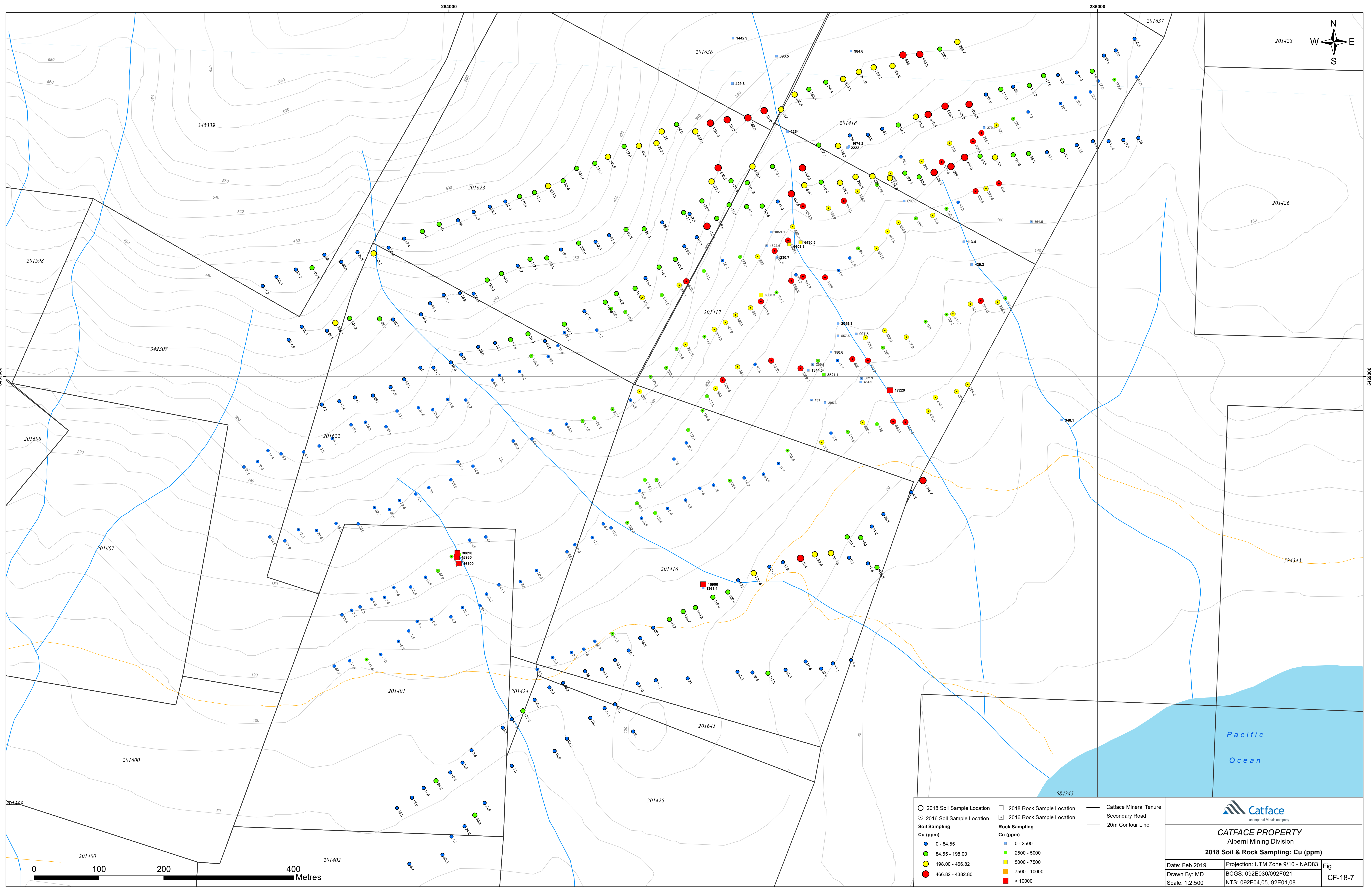
- 2018 Soil Sample Location
- 2016 Soil Sample Location
- 2018 Rock Sample Location
- 2016 Rock Sample Location
- Catface Mineral Tenure
- Secondary Road
- 20m Contour Line




**CATFACE PROPERTY**  
Alberni Mining Division

**2018 Soil & Rock Sample Locations**

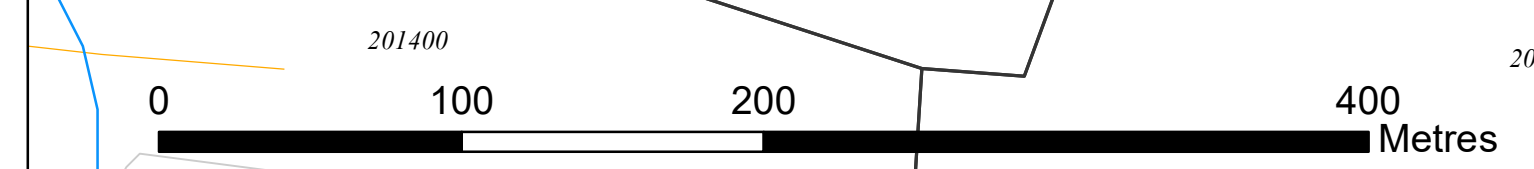
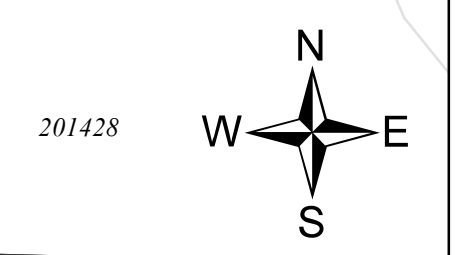
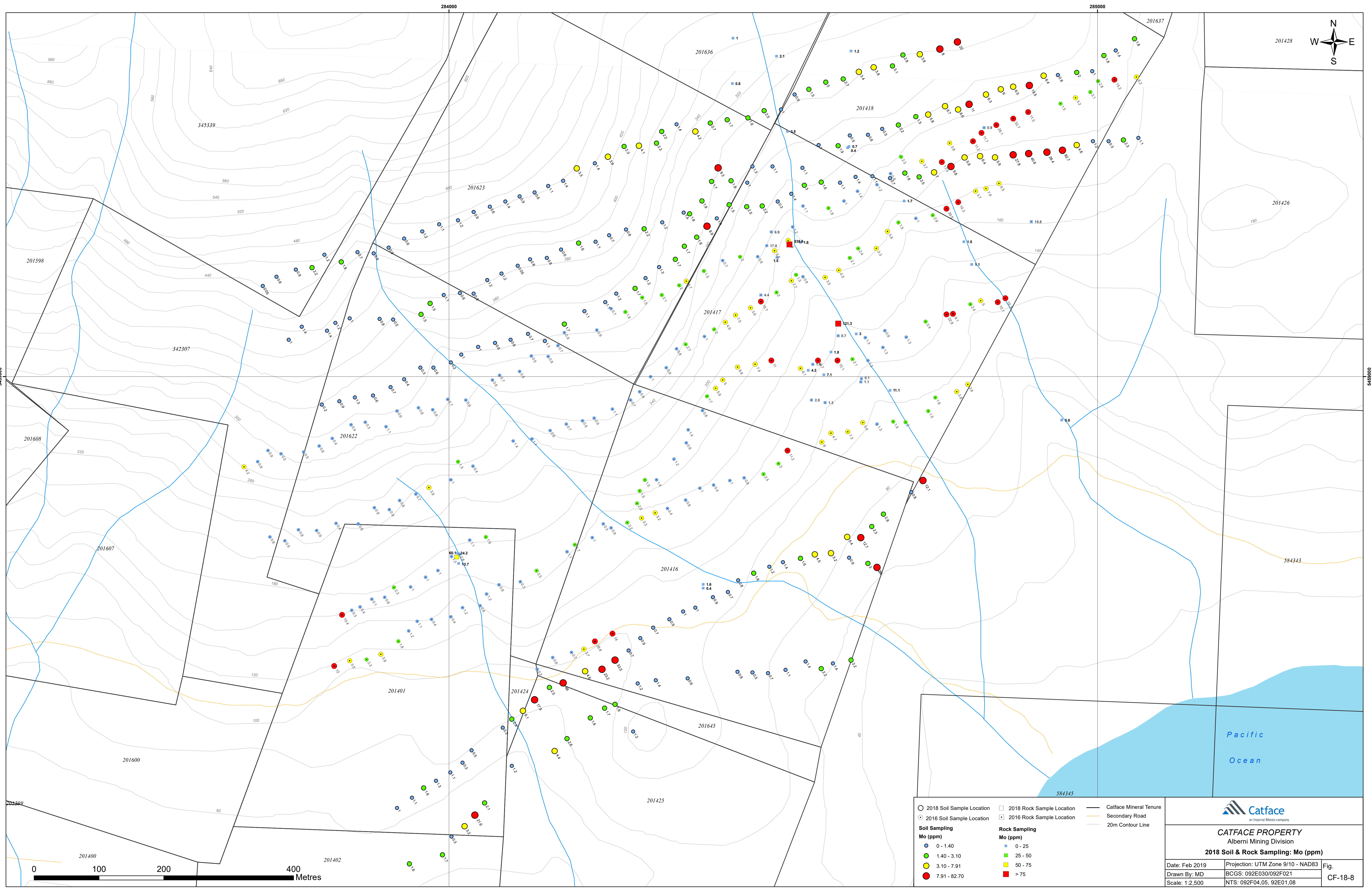
Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig.
Drawn By: MD	BCGS: 092E030/092F021	CF-18-6
Scale: 1:2,500	NTS: 092F04.05, 92E01.08	



○ 2018 Soil Sample Location	□ 2018 Rock Sample Location	— Catface Mineral Tenure
○ 2016 Soil Sample Location	□ 2016 Rock Sample Location	— Secondary Road
Soil Sampling		— 20m Contour Line
● 0 - 84.55	■ 0 - 2500	
● 84.55 - 198.00	■ 2500 - 5000	
● 198.00 - 466.82	■ 5000 - 7500	
● 466.82 - 4382.80	■ 7500 - 10000	
	■ > 10000	

  
**CATFACE PROPERTY**  
 Alberni Mining Division  
**2018 Soil & Rock Sampling: Cu (ppm)**

Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig.
Drawn By: MD	BCGS: 092E030/092F021	CF-18-7
Scale: 1:2,500	NTS: 092F04.05, 92E01.08	



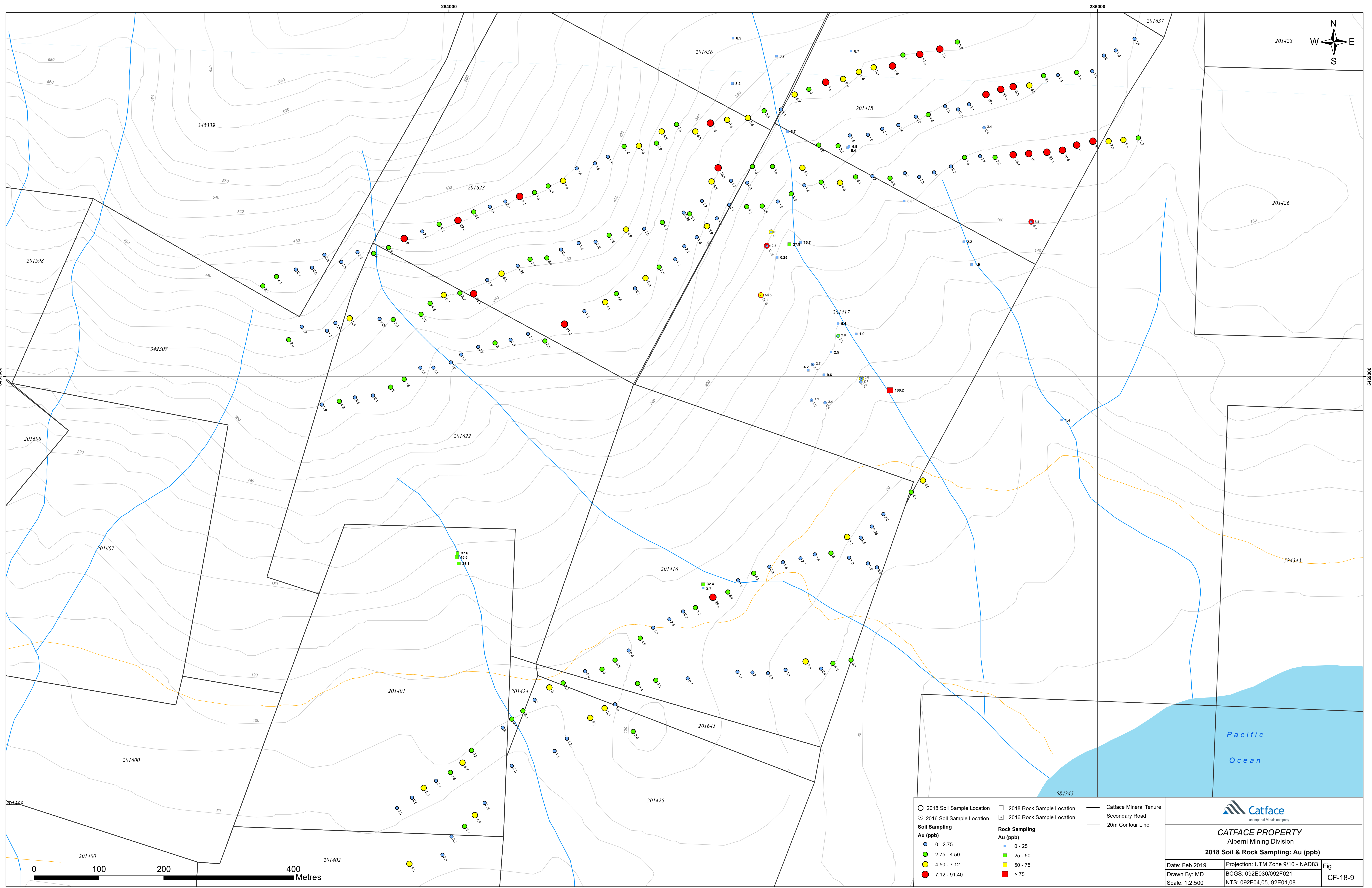
○ 2018 Soil Sample Location	□ 2018 Rock Sample Location	— Catface Mineral Tenure
○ 2016 Soil Sample Location	□ 2016 Rock Sample Location	— Secondary Road
<b>Soil Sampling Mo (ppm)</b>	<b>Rock Sampling Mo (ppm)</b>	— 20m Contour Line
● 0 - 1.40	■ 0 - 25	
● 1.40 - 3.10	■ 25 - 50	
● 3.10 - 7.91	■ 50 - 75	
● 7.91 - 82.70	■ > 75	



**CATFACE PROPERTY**  
Alberni Mining Division

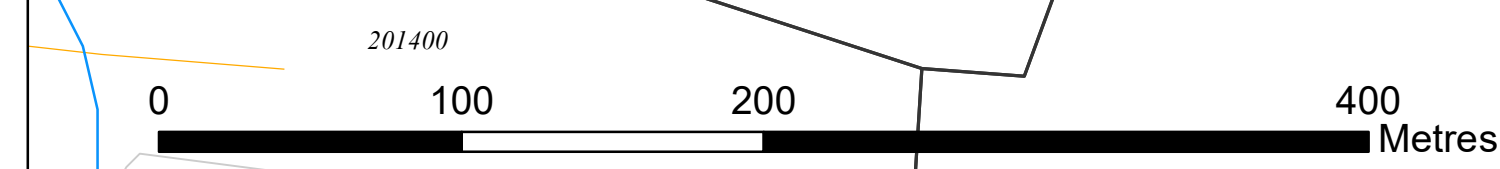
**2018 Soil & Rock Sampling: Mo (ppm)**

Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig.
Drawn By: MD	BCGS: 092E030/092F021	CF-18-8
Scale: 1:2,500	NTS: 092F04.05, 92E01.08	



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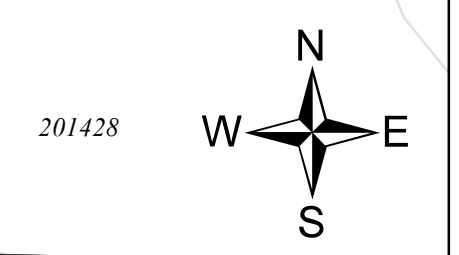
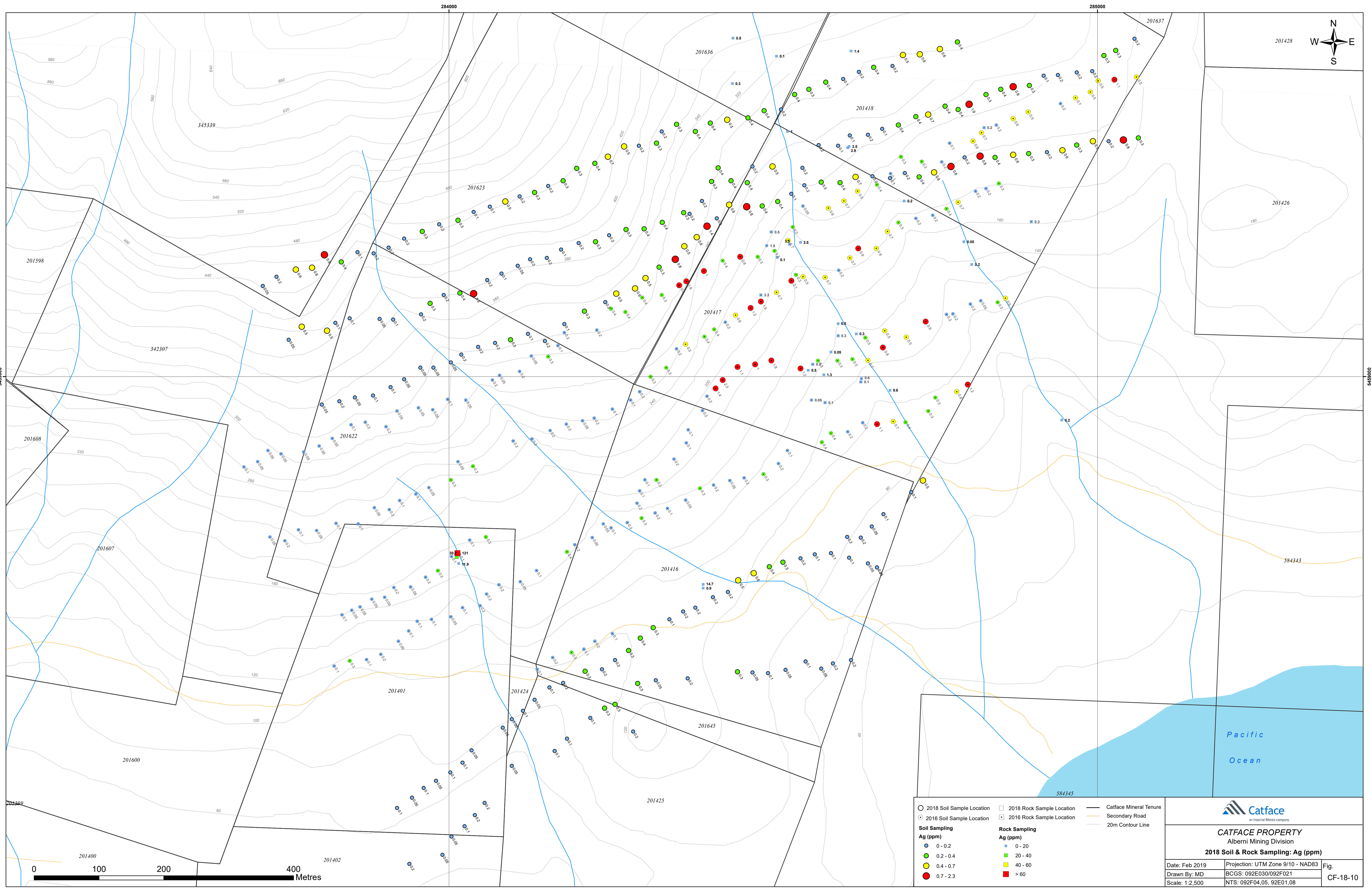


○ 2018 Soil Sample Location	□ 2018 Rock Sample Location	— Catface Mineral Tenure
○ 2016 Soil Sample Location	□ 2016 Rock Sample Location	— Secondary Road
<b>Soil Sampling Au (ppb)</b>	<b>Rock Sampling Au (ppb)</b>	— 20m Contour Line
● 0 - 2.75	■ 0 - 25	
● 2.75 - 4.50	■ 25 - 50	
● 4.50 - 7.12	■ 50 - 75	
● 7.12 - 91.40	■ > 75	



**CATFACE PROPERTY**  
Alberni Mining Division  
**2018 Soil & Rock Sampling: Au (ppb)**

Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig.
Drawn By: MD	BCGS: 092E030/092F021	CF-18-9
Scale: 1:2,500	NTS: 092F04.05, 92E01.08	

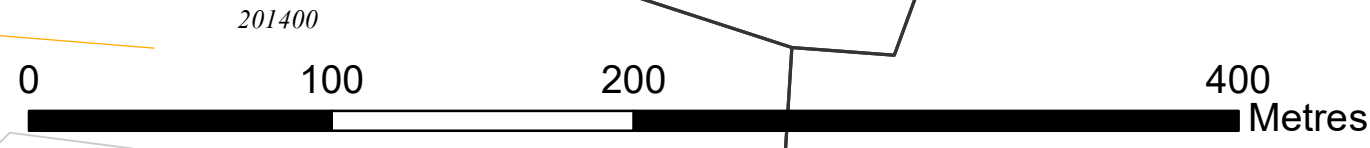


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○ 2018 Soil Sample Location	□ 2018 Rock Sample Location	— Catface Mineral Tenure
○ 2016 Soil Sample Location	□ 2016 Rock Sample Location	— Secondary Road
<b>Soil Sampling</b>	<b>Rock Sampling</b>	— 20m Contour Line
● 0 - 0.2	■ 0 - 20	
● 0.2 - 0.4	■ 20 - 40	
● 0.4 - 0.7	■ 40 - 60	
● 0.7 - 2.3	■ > 60	



**CATFACE PROPERTY**  
Alberni Mining Division

**2018 Soil & Rock Sampling: Ag (ppm)**

Date: Feb 2019	Projection: UTM Zone 9/10 - NAD83	Fig. CF-18-10
Drawn By: MD	BCGS: 092E030/092F021	
Scale: 1:2,500	NTS: 092F04.05, 92E01.08	