BC Geological Survey
Assessment Report
38001

BRITISH COLUMBIA
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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)]: TECHNICAL (T)(C)(PR)(W3) TOTAL COST: $7,415

AUTHOR(S): Christopher Delorme SIGNATURE(S): [signature]

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): YEAR OF WORK: 2018

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5719829

PROPERTY NAME: HIGHLAND VALLEY PROPERTY

CLAIM NAME(S) (on which the work was done): HIGHLAND VALLEY PROPERTY

COMMODITIES SOUGHT: COPPER

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092INE034, 092INE040

MINING DIVISION: KAMLOOPS NTS/BCGS: 092I10W / 092I056

LATITUDE: ° ' " LONGITUDE: ° ' " (at centre of work) 5600050N 649620E

OWNER(S):
1) Christopher and Guy Delorme 2)

MAILING ADDRESS:
340A LOGAN LANE AVE
Merritt B.C. V1K0B5

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

MAILING ADDRESS:
SAME

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
late triassic - Middle Jurassic Guichon Creek Batholith Deposit types Porphyry Cu Terrane Quesnel diorite, quartz diorite and granodiorite, Nicola Volcanics, minerals Chalcopyrite minor moly

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 35711, 34795, 32290 2114, 2282, 32980, 32153. Property File 9886, 10783, 30458

Next Page

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock	x 14	1060351	
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic	Historical Data	1060351	
Metallurgic			
PROSPECTING (scale, area)	4 AREAS	5 sqkm 1060351	
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)	x 3	1m x 1m	
Underground dev. (metres)			
Other			
		TOTAL COST:	$7,415
		TOTAL APPLIED	$8923.05

Technical Report

ON THE

HIGHLAND VALLEY PROPERTY

KAMLOOPS MINING DIVISION

EVENT NUMBER 5719829

CENTER OF WORK

649620E 5600050N

WORK PERFORMED ON TENURE

1060351

NTSMAP 092I10W

BCGSMAP 092I056

OWNER

Christopher and Guy Delorme

OPERATOR

Christopher and Guy Delorme

AUTHOR

Christopher Delorme

Table of Contents

1.0 SUMMARY

Christopher and Guy Delorme conducted a prospecting and geochemical survey between the dates October 5th, 2018 and November 21st, 2018 on tenure 1060351. The purpose of the work program was to delineate new zones of copper mineralization in newly logged areas, and in previously trenched areas that have since been covered with slide material. The program resulted in 16 samples being taken and 14 samples sent to the Lab in three different zones on the property. Out of the 14 samples 3 samples were analyzed for ore grade copper. The samples were sent to SGS Laboratory in Burnaby B.C. The samples were analyzed by a means of Aqua Regia Digestion 34 element package. A Garmin E-trek GPS was used to identify sample locations and samples were flagged orange in the field localities. In the Dansey East Zone hand trenching was completed in several areas to try to get to bedrock where mineralized float was evident in the area. One area prospected was from an MMI survey completed in 2009 where a soil anomaly was discovered near Guichon Creek. Only extensive overburden was encountered during the prospected area. Historical research was completed on the property.

2.0 INTRODUCTION

The Highland Valley Property is adjacent to the formerly producing Bethlehem mine and the producing Teck mine also known as Highland Valley. The **Highland Valley Copper mine** is the largest open pit copper mine in Canada, located near Logan Lake, British Columbia. It is an amalgamation of three historic mining operations: Bethlehem (later Valley Copper), Lornex and Highmont.

Early Years

The earliest roots of the Bethlehem mining operations began when the Jersey zone was staked and bonded to a French syndicate c. 1886 – c. 1887. This claim changed hands several times until finally in October 1954 when the Huestis-Reynolds-McLallen Syndicate sponsored a prospective examination covering 100 claims including Jersey and surrounding zones.

Copper was known to occur in the Cascade Mountains near Princeton as the productive mines of Allenby in 1914 had shown. On the strength of this, prospectors searched for other deposits in the region. These they found north of Merritt and east of Ashcroft at Logan Lake at the Jersey zone.

1950s-1960s

In February 1955 the Bethlehem Copper Corporation finalized the purchase of the 141 claims in the area and partnered with ASARCO to develop the property. The deposit was large, but of low grade copper ore (less than 1 percent). The mines sat waiting for the richer deposits to yield, and for technology to improve to process large amounts of ore.

In February 1960, Bethlehem Copper Corporation made an agreement with the Japanese group Sumitomo for $5.5 million USD to bring the

property into production. Construction began in July 1961. At the time, Jersey and East Jersey were identified as zones containing suitable ore for production, and an assessment was completed of the area between the two zones. It was found that this middle area did not have suitable deposits to favor commercial operation and the Jersey and East Jersey zones were mined separately.

Production of the East Jersey pit began on November 28, 1962, and continued until February 17, 1965, when a rock slide forced the Company to end the pit's life early. Production of the Jersey pit began quickly after.

1970s and 1980s

The Jersey pit was given an extension in 1977, extending its life another 5 years. Two minor additional pits were also operated for brief periods during this time: Huestis from 1970 to 1976 and Iona from 1976 to 1979.

On the south side of the valley the Lornex mine began mining in 1972.

In 1981 Cominco, who already owned the claim to the Valley Copper deposit located west of Bethlehem, purchased Bethlehem Copper to consolidate the nearby operations. Mining of the original Bethlehem Copper pits ceased in 1982. The Bethlehem concentrator continued to operate on ore from the Valley Copper deposit until June of 1989.

Production on the Valley Copper mine, now the largest mine and most noticeable feature, began in January 1983. For fifty years the ore was dug using shovels and open pit methods. A very large pit ensued--half a mile deep and two miles in diameter.

Highland Valley Copper was created in mid-1986 when the Highland Valley mining operations of Lornex Mining Corporation Ltd. and Cominco Ltd. were combined into a new single entity, structured as a partnership.

The Highmont mill on the south side of the valley was acquired in 1988 when Highmont Mining Company joined the partnership. This mill had been closed down in 1984 when the Highmont deposit became uneconomical.

Current operation

The current mining operation is named Highland Valley Copper and operates one of the world's largest open-pit mines. The Highland Valley Copper Mine consists of several large deep pits, dug to expose low-grade copper and molybdenum bearing ore deposits. Large electric shovels and explosives are used to carve out the rock and ore with diesel haul trucks carrying the material to crushing and milling facilities on the site.

A large tailing pond is maintained to support these operations (48.5 million tonnes of tailings pumped in 2003), with two containment embankments to retain the tailings from the environment. In April 2017 freezing pipes caused 850 cubic meters of process water to spill. The spill was contained on site and returned to the tailing pond. Trojan Pond, a previous tailing pool used in the operation, began to be reclaimed in 1990 and is now a self-sustaining ecosystem and used for sport fishing.

Copper and molybdenum mineral concentrates, which include trace amounts of silver and gold, are sent via truck to nearby rail facilities in Ashcroft where the ore is carried to the Port of Vancouver and to international destinations (primarily Japan and China for copper and steel production). The mine employed approximately 1300 persons in 2011.

3.0 LOCATION

The Highland Valley property is situated in south central British Columbia. The property is situated near the community of Logan Lake. This community is situated approximately 48 km north of Merritt B.C. The property can be accessed by either Highway 97C from Merritt or Highway 5 South from Kamloops to exit 336 turning west onto Meadow Creek Road to Logan Lake.

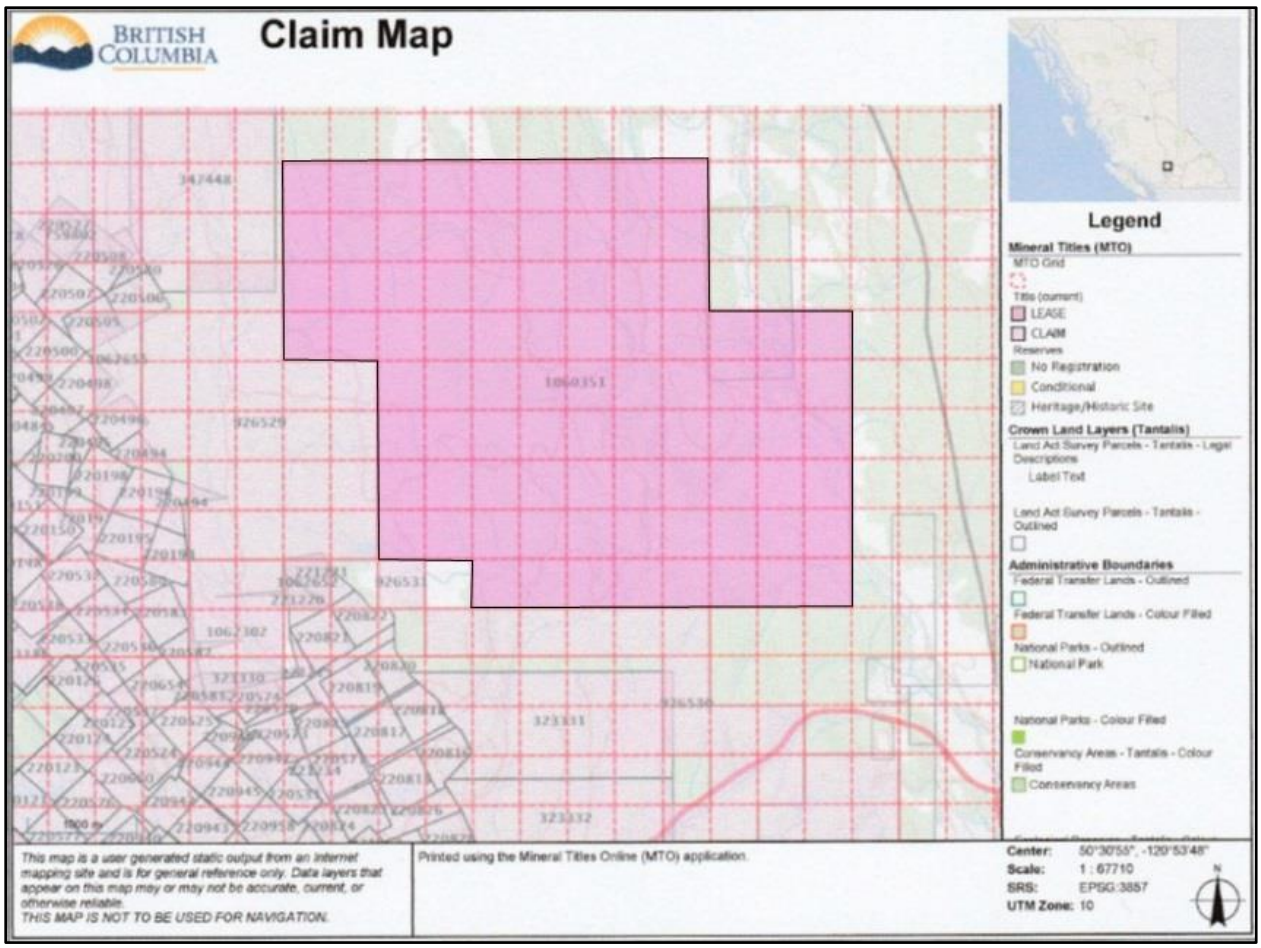
Starting from the intersection of Meadow Creek road, highway 97C and Tunkwa Lake road in the Community of Logan Lake, the center of the Highland Valley Project can be accessed by traveling north on Tunkwa Lake road for approximately 4.3 km take a left onto a gravel road for 2.5km to the center of work area.

3.1 LOCATION MAP

4.0 CLAIM STATUS

Tenure	Type	Claim	Good to Date	Area Hectares
1060351	Mineral	Highland Valley Property	2019/NOV/21	1787.35
Owner	FMC	Percentage		
C Delorme	141575	50		
G Delorme	106466	50		

4.1 CLAIM MAP



5.0 PHYSIOGRAPHY & CLIMATE

The Property is located east of the Cascade Mountains in the Thompson Plateau physiographic region of British Columbia. The upper elevations are covered by spruce and Lodge pole pine stands, grading as one descends into ponderosa pine forest at around 900 metres ASL.

The climate is semi-arid which is typical of the southern interior of BC. Average annual precipitation is 322 mm, consisting of rain and snow. Summer temperatures average 30°C, with winter temperatures on average about -40°C. Extremes of temperatures are possible, with highs approaching +41°C in summer months and -42°C during the winter. The

property is snow covered from November to April.

6.0 TOPOGRAPHY

Relief on the Property ranges in elevation from 1060 metres to 1386 metres. In general, the terrain can be described as rolling hills, slightly mountainous separated by creeks and swamps. The overburden is mainly thick glacial till.

7.0 HISTORY

The first recorded assessment work conducted in the area of the HVP Project was carried out in 1965. A large geochemical survey was conducted on behalf of New Indian Mines Ltd. ("Indian Mines") and Vananda Explorations Ltd. ("Vananda Explorations") on their Eden mineral claims which partly overlapped the southwest corner of the Dansey Project area. 1507 soil samples were collected at 300 by 200-meter intervals roughly half of which were located on ground currently held by Logan Copper. The samples were tested using the qualitative rubeanic acid method in a field laboratory. "Although the soil samples did not show a pattern of anomalous values that could be contoured, the results were sufficiently encouraging to merit additional work in this area." (ARIS 711)

In 1968 North Pacific Mines Ltd. ("North Pacific") began its exploration program over its property, located adjacent to Alwin's ground. North Pacific flew a large aeromagnetic survey which stretched across the center and beyond the northwest and southeast corners of the current Dansey Project tenures. The survey consisted of 40 lines averaging 3 miles and spaced at about 545 feet.

In late 1968 Alwin followed up their earlier aeromagnetic survey with geochemical work. 911 soil samples were collected and shipped to Technical Service Laboratories in Vancouver for analysis. The survey indicated a single, >100 ppm, 150 by 1100-foot anomaly trending and open to the northwest. The anomaly is located approximately 800m northeast of the Dab MINFILE. (ARIS 1787)

Following its aeromagnetic survey, North Pacific optioned out the property to Thermochem Industries Ltd. which had a working agreement with Noranda Exploration Company ("Noranda"). That year Noranda conducted a comprehensive geochemical survey covering nearly the entire North Pacific property group. Samples were taken from multiple soil horizons and analyzed for copper and molybdenum. Results are summarized in assessment reports 1934, 1935 and 2066.While molybdenum results were relatively muted the survey identified a large area of geochemical copper anomalies ranging from 100ppm to 1600ppm. Concurrently, Comet-Krain Mining Corp. ("Comet Mining") carried out its own geochemical survey southeast of North Pacific's ground. This survey indicated low order but discreet geochemical copper anomalies. Results from this survey were similar in magnitude and position to anomalies surrounding Noranda's Central Geochemical Anomaly, identified by Noranda the same year. (ARIS 2024)

In late 1969 large portions of the Dansey project area were subjected to induced polarization ("IP") surveys. Indian Mines and Vananda Explorations commissioned an IP on its Eden property. North-south cut lines were located 300 feet apart with 200 foot and 400-foot electrode spacing. An area of elevated chargeability was measured approximately 600m west of Logan Copper's "Midway Showing." Jon G. Baird P.Eng., the author of the subject survey's assessment report concluded:*The present induced polarization survey has indicated one area at least 400' in width by 2000' in length which exhibits above normal*

chargeability responses. These responses are interpreted as being due to disseminations of from 1% to 2% by volume of metallically conducting mineralization. In the present geological environment, it appears that there is a real possibility that the chargeability increases may be due to concentrations of sulfide mineralization. (ARIS2114)

Noranda also conducted IP surveys on three grids surrounding Noranda's Central Geochemical anomaly. A series of high order anomalies were identified on the eastern grid overlying a lowland swamp along Guichon Creek. The largest consistent anomaly in the area measures 550 feet by 1200 feet with a general anomalies trend running for over 2km north south. It appears that no IP survey was conducted, or data was not disclosed on the Noranda's Central Geochemical Anomaly itself. (ARIS 2282) In the spring of1971 Comet Mining conducted a ground magnetometer survey on the same points as its earlier geochemical survey. Results were mostly inconclusive. Recommendations included further geophysical and geochemical investigations. (ARIS 3184) In 1973 Indian Mines, which changed its name to Azure Resources Ltd. ("Azure") in 1972, also performed a ground magnetometer survey on their Eden and Ezra claim groups. The Ezra claim group was located south of the Eden claim block. No significant anomalies were encountered indicating no significant changes in bedrock geology or structure. (ARIS 4321) Following 1975 little work was recorded in the area and much of the ground described above was dropped. In 1982 Cominco Ltd. ("Cominco") conducted approximately 29.4km of Reconnaissance scale multiseparation, induced polarization survey work on their Forge property. Cominco's work identified a 400m by 850m anomaly open to the north along its long axis and coincident with Indian Mines 1969 IP anomaly (ARIS 10783).

Between the years of 2008 and 2012 Logan Copper conducted several work programs over the years, including diamond drilling, geological

mapping, MMI soil survey, over a portion of the DAB Minfile and the Midway Showing. The claims were transferred to Guy Delorme and the Author in the year 2013.

Between the years 2013 and present the author contracted out Laurence Sookochoff to conduct several Structural analysis's photo interpretations over various portions of the property, follow-up magnetometer surveys were completed on some of the Structural Analysis work programs. The Author and Guy Delorme completed a prospecting and geochemical survey's in 2017 and in 2018 delineating new zones of mineralization from existing IP anomalies and new logging roads.

8.0 REGIONAL GEOLOGY

The HVP Copper property is located on the southern Intermontane Belt of British Columbia on the southern extent of the Quesnel Trench. The central geological features of this region are the Late Triassic island-arc volcanic rocks of the Nicola Group, and Late Triassic mudstone, siltstone and shale clastic sedimentary rocks located to the east, and intruded granodioritic rocks of the Late Triassic to early Jurassic. The Nicola Group is a succession of Late Triassic island-arc volcanic rocks. The Nicola Group volcanic rocks form part of a 30km to 60km wide northwest-trending belt extending from southern B.C. into the southern Yukon. This belt is enclosed by older rocks and intruded by batholiths and smaller intrusive rocks. Major batholiths in the area of the Logan Copper Property include the Guichon Creek Batholith to the west, the Wild Horse Batholith to the east, and the Iron Mask Batholith to the north northeast.

The Guichon Batholith is a semi-concordant composite intrusive that is elliptical and elongated slightly west of north. A central, steeply plunging root or feeder zone is inferred under Highland Valley, and the major deposits lie around the projection of the feeder zone to the

surface. The batholith has intruded and metamorphosed island-arc volcanic and associated sedimentary rocks of the Nicola Group, and a metamorphic halo up to 500 meters wide is developed adjacent to the contact. Rocks along the edge of the batholith are older and more mafic, and successive phases moving inward toward the core are younger and more felsic. Although contacts can be sharp, they are generally gradational and chilled contacts are not common. Variations in the batholith's geochemistry indicate local areas of assimilated country rock in the border zone and roof pendants in the intrusion. Outcrop areas have inclusions of amphibolite and "granitized" metamorphic rocks and compositional variations.

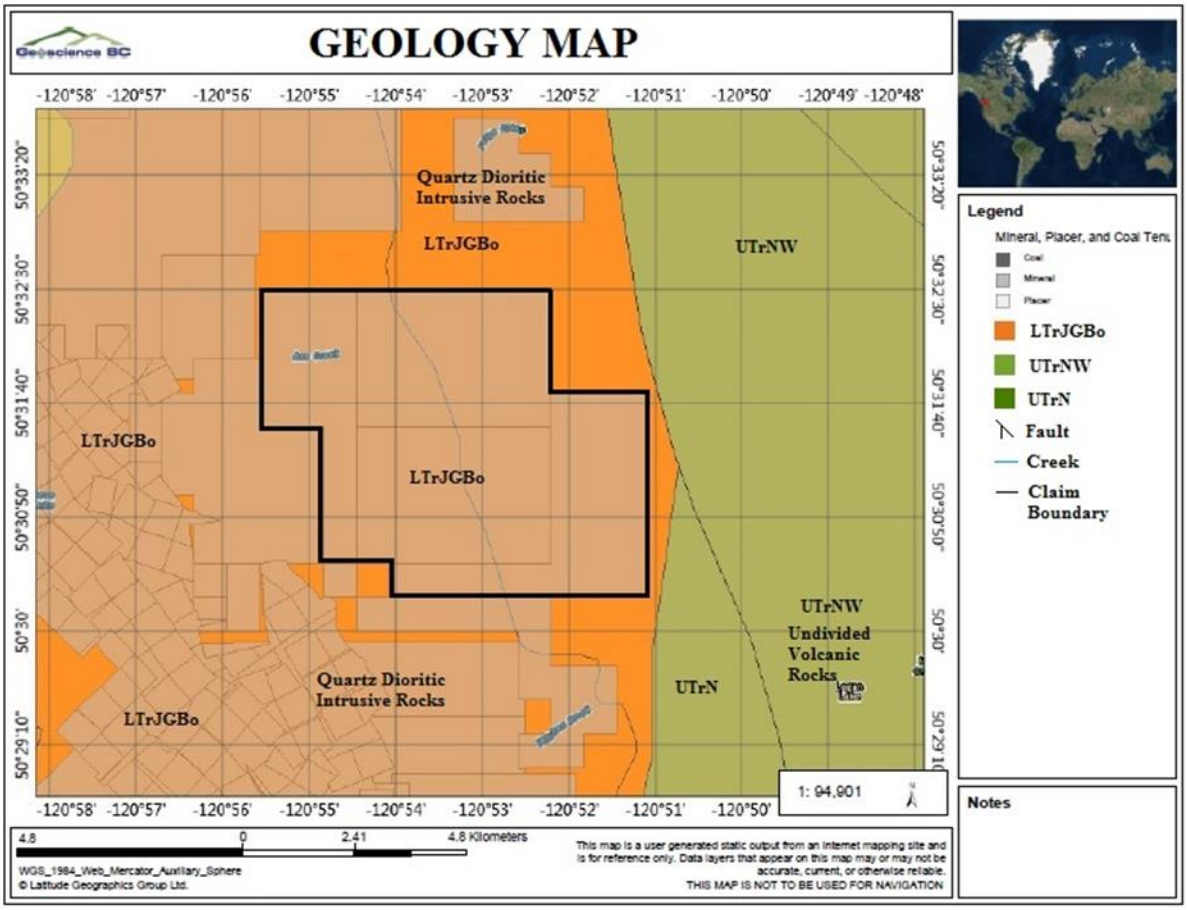
Two younger volcanic-dominated successions are important in the area. First, a northwest Trending belt of Cretaceous continental volcanic and sedimentary rocks of the Spences Bridge Group unconformably overlie both the Nicola Group country rock and intrusive rocks along the Southwest flank of the batholith. Distribution of the Spences Bridge Group rocks was locally controlled by reactivation of older faults that were important mineralization conduits in the Batholith, such as the Lornex fault. Second, continental volcanic and sedimentary rocks of the Tertiary Kamloops Group cover extensive areas of the batholith and also overlie Triassic and Jurassic rocks from north of Highland Valley to the Thompson River. These also form isolated Outliers and local intrusive centers south of the Highland Valley.

9.0 PROPERTY GEOLOGY

As indicated by the Geoscience geological maps, The HVP Claim Group is predominantly underlain by rocks of the Guichon Batholith with a predominance of granodioritic rocks of the Highland Valley Phase (LTrJGBo} and the quartz dioritic rocks of the Border phase. The rocks are

in a north- northwesterly trending regional fault contact with the Western Volcanic Facies of the upper Triassic Nicola Group (uTrNW) in the north and in an intrusive contact in the south.

9.1 GEOLOGY MAP



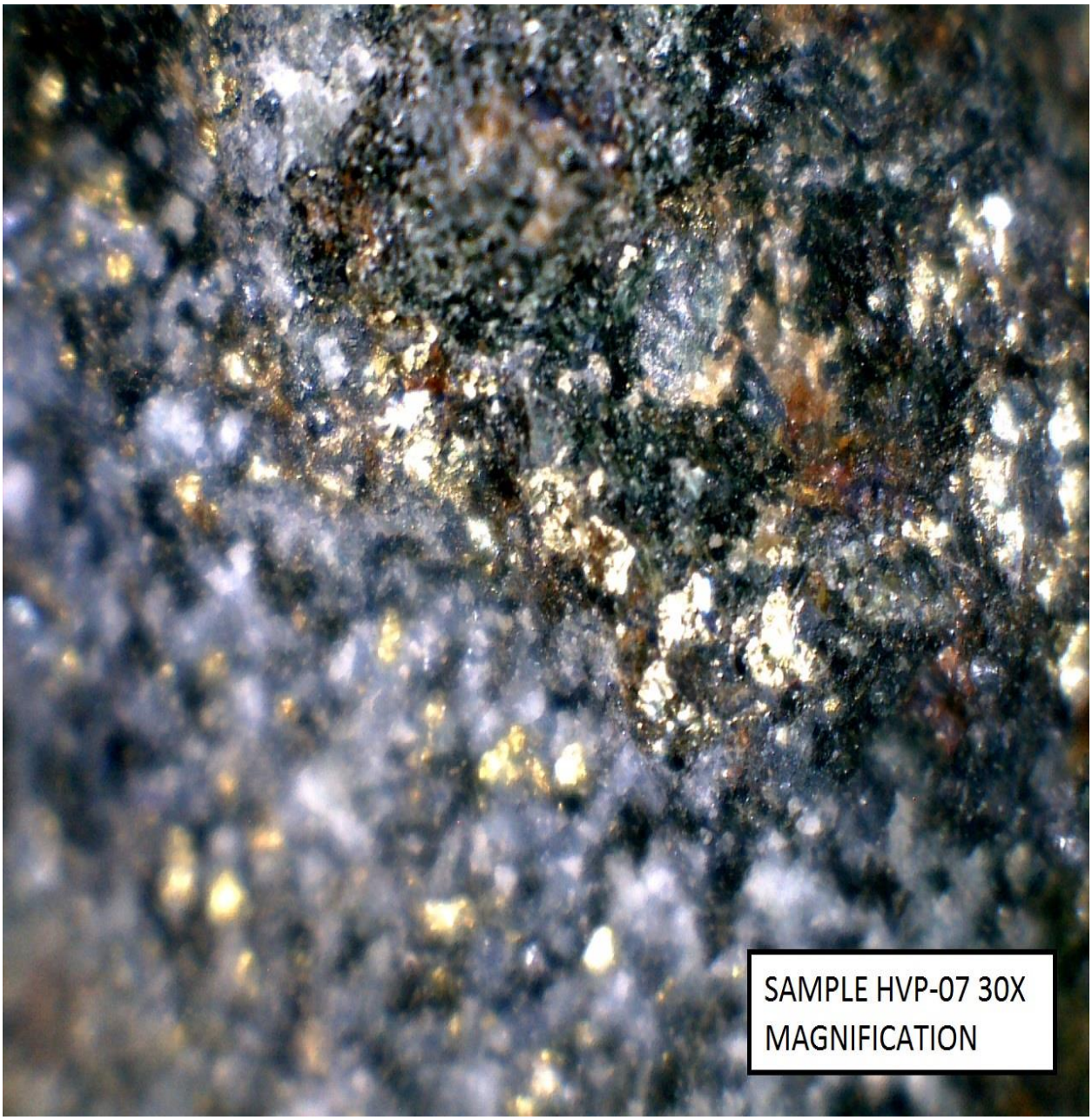
10.0 PHOTOS WORK PROGRAM

Photo showing New Logging area by POND Zone


HVP-2018
10
HVP-2018-10
Sample HVP-10 GPS 649411E
5599907N


Sample HVP-12 GPS
649575E 5599942N

11.0 MICROSCOPIC PHOTOS ROCK SAMPLES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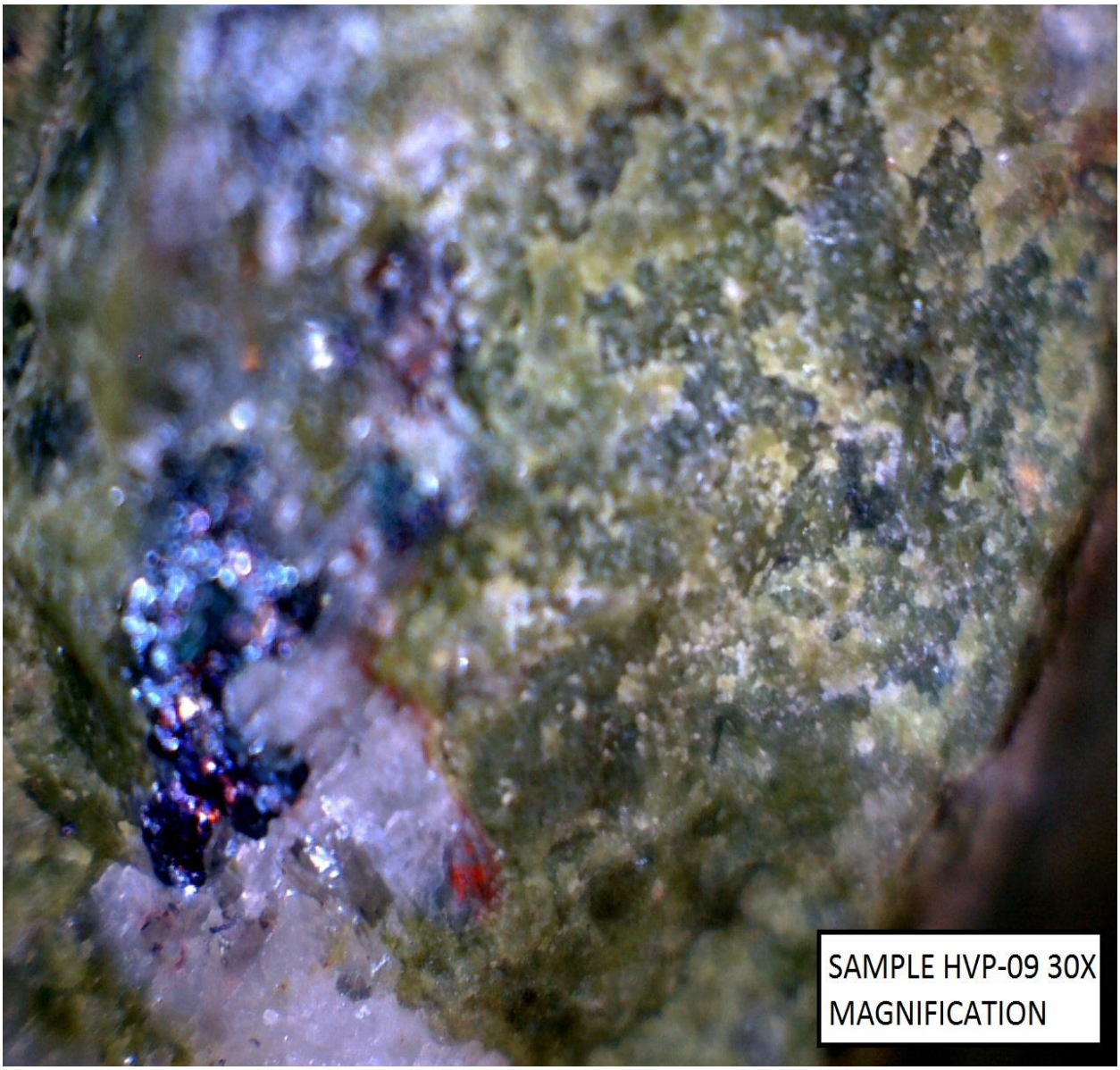
MAGNIFICATION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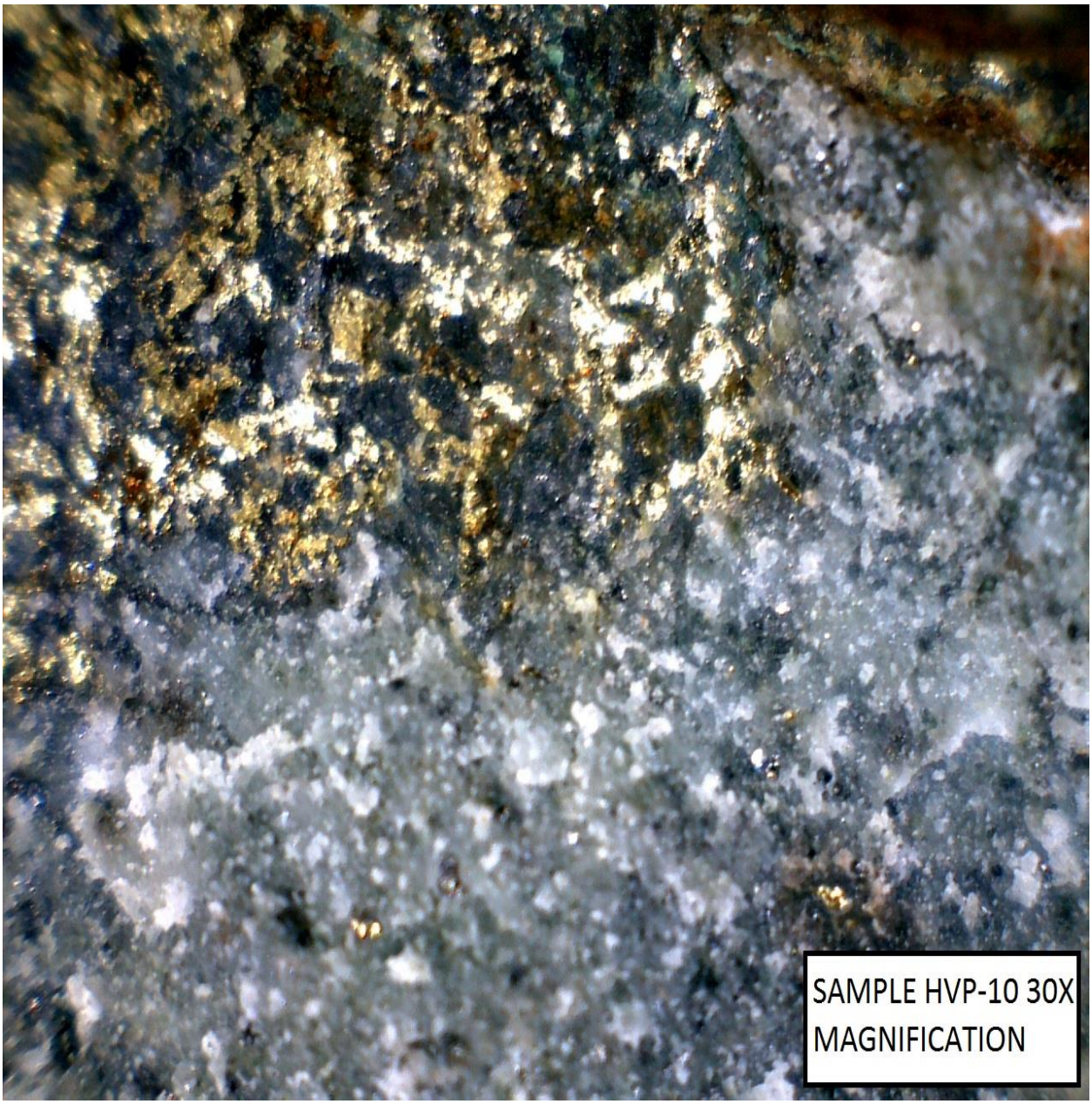
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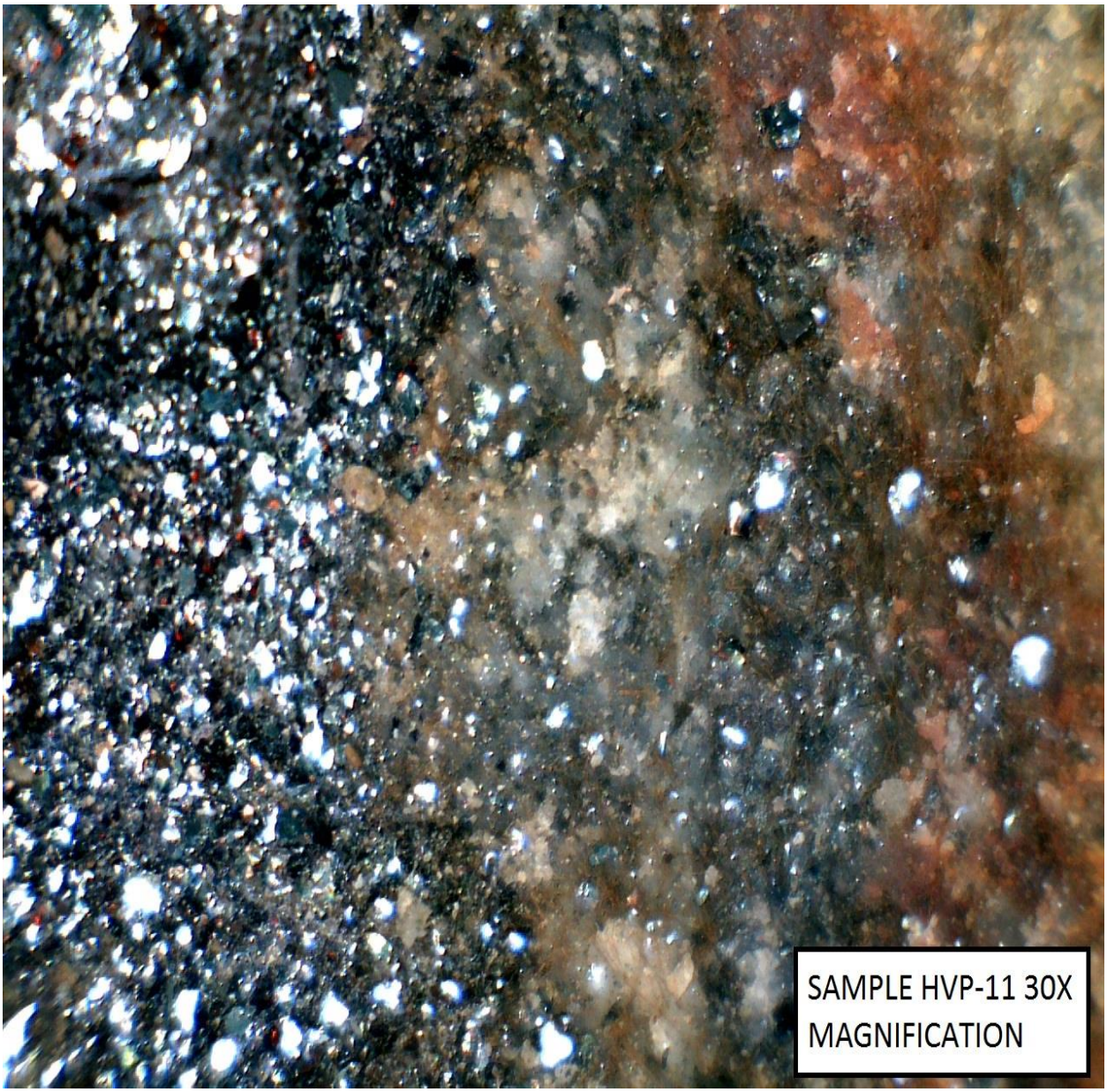
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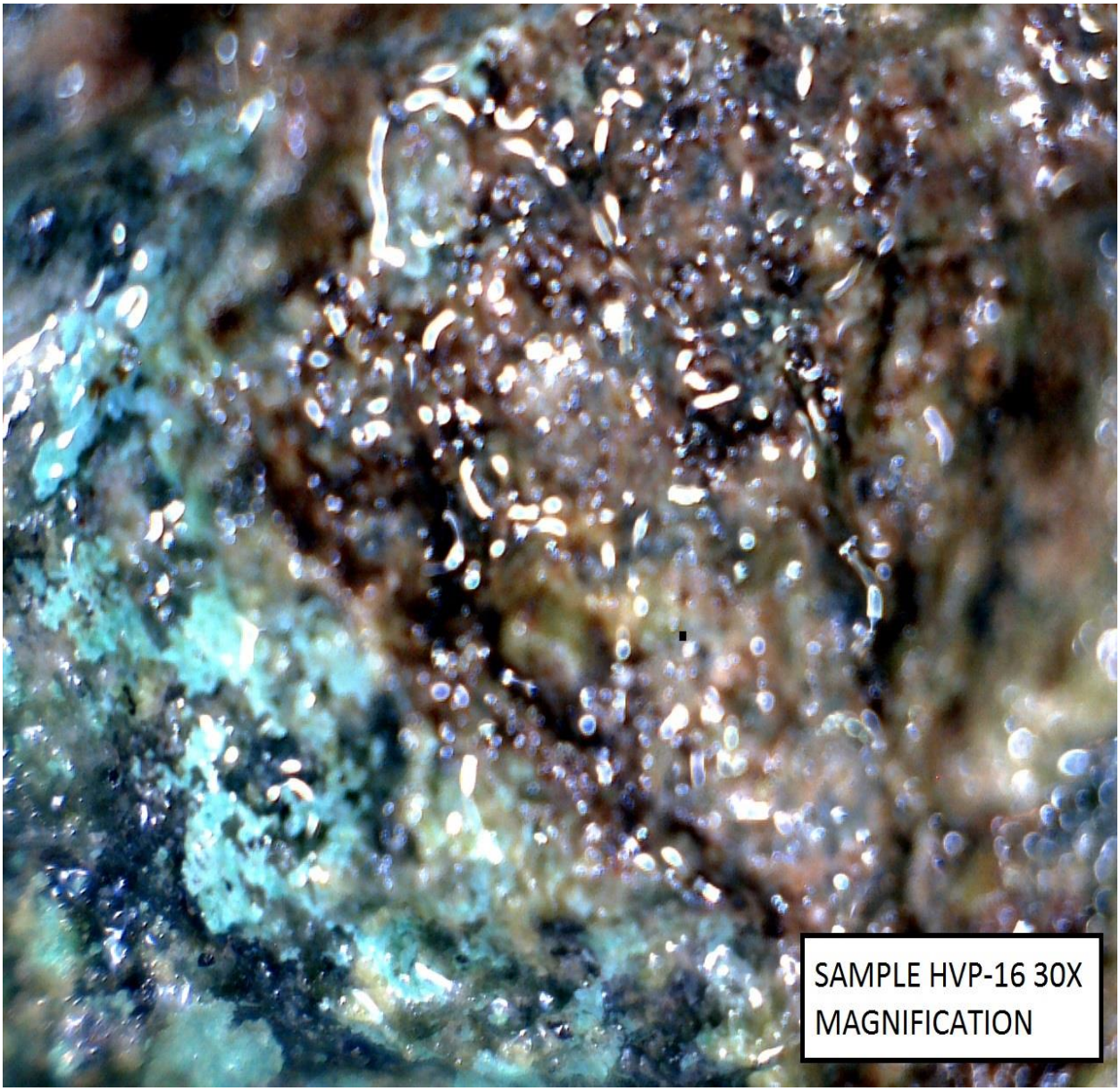
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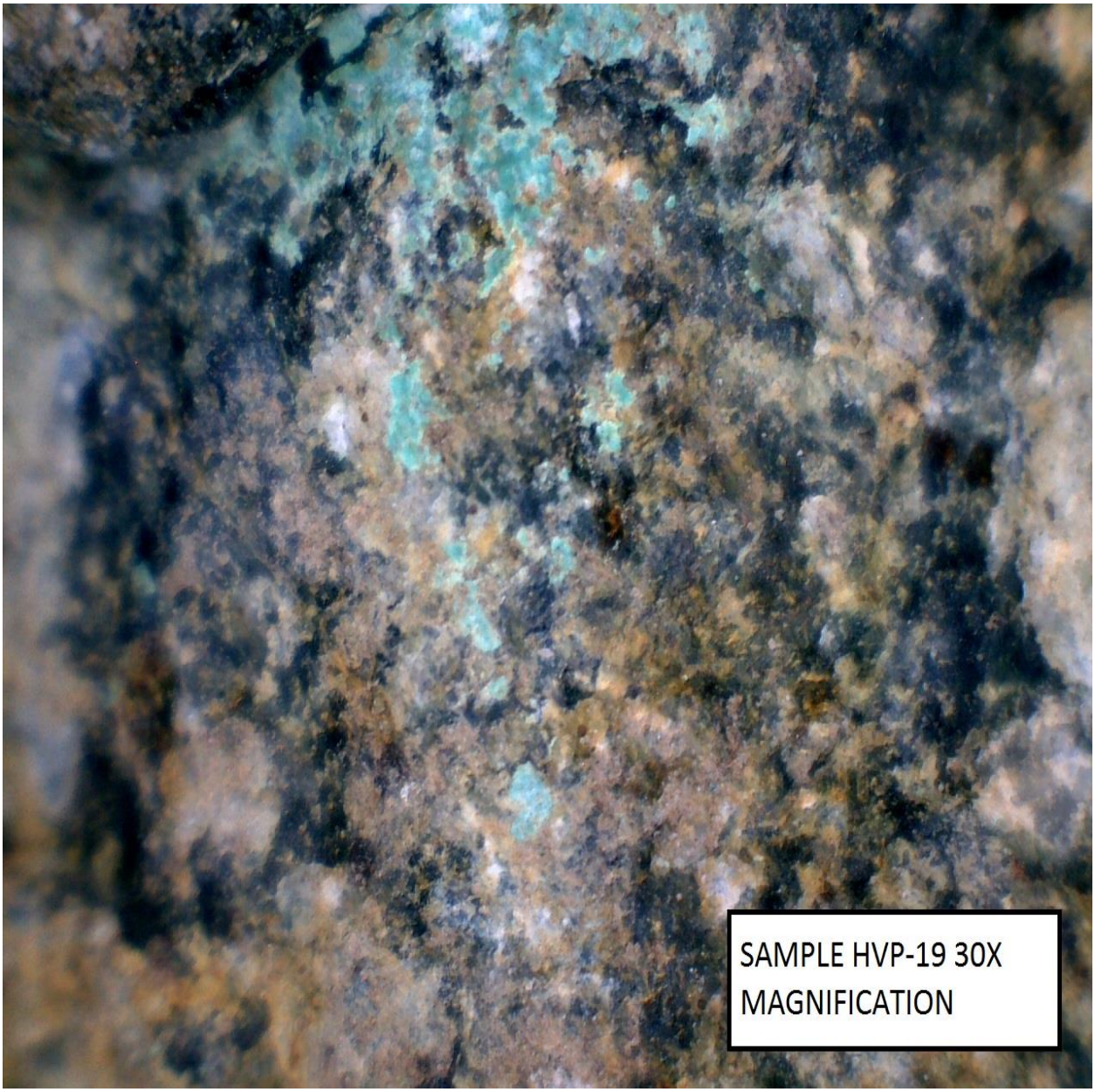
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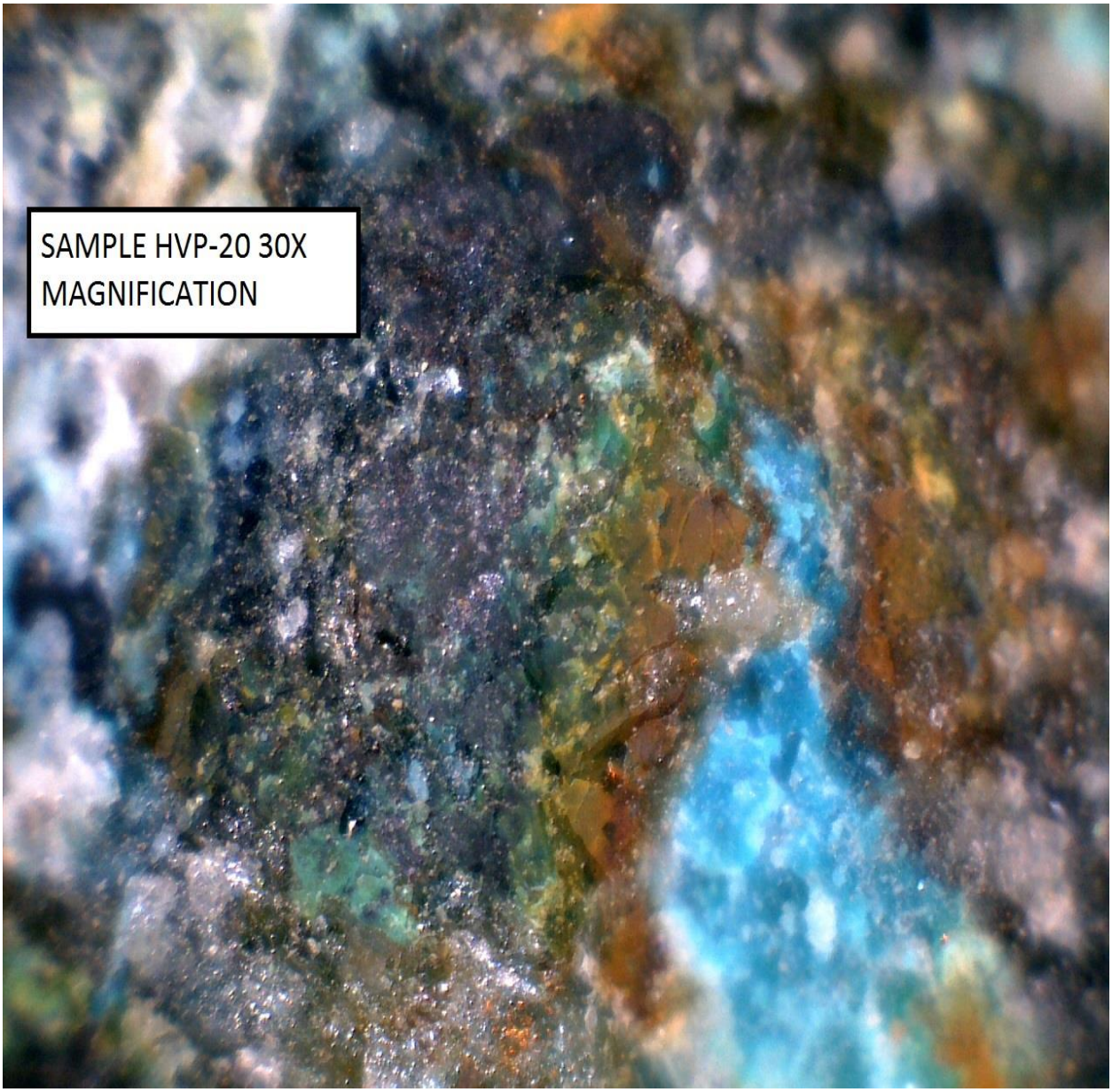
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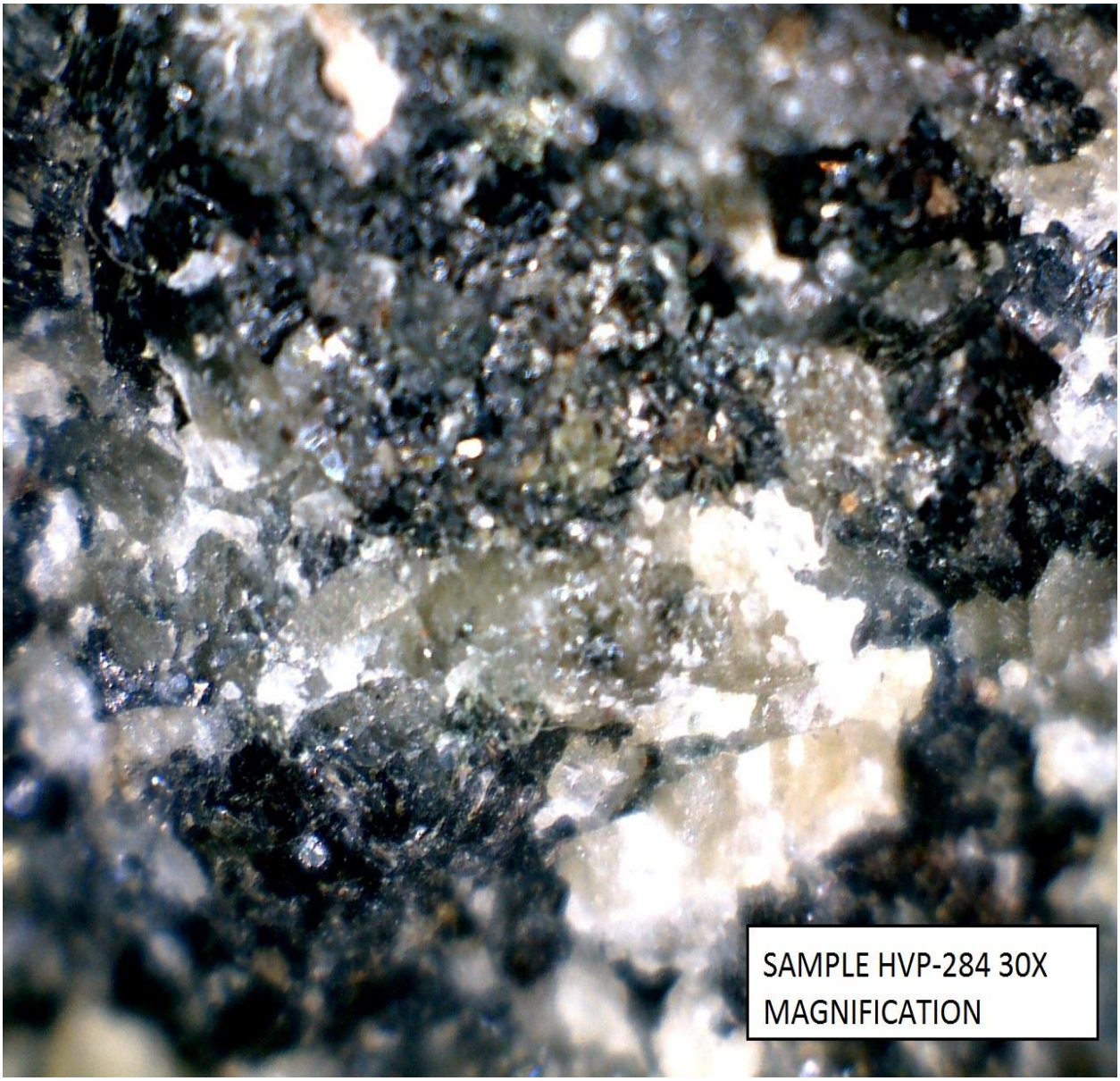
MAGNIFICATION


SAMPLE HVP-283 30X
MAGNIFICATION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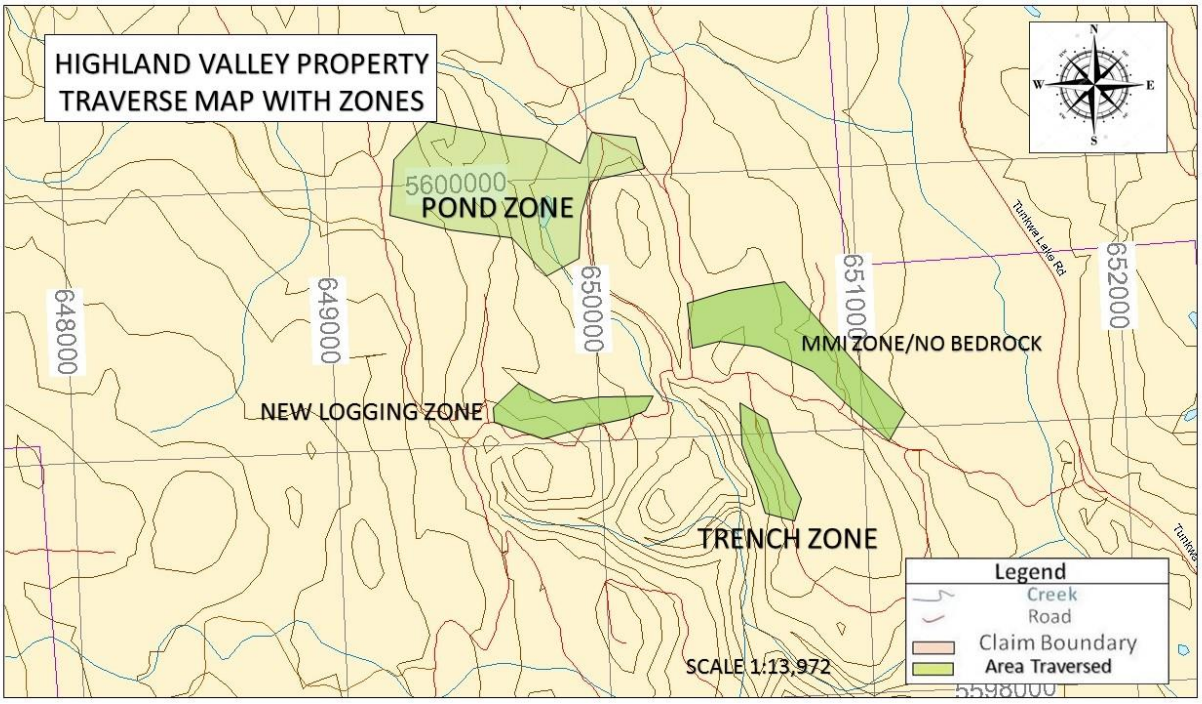
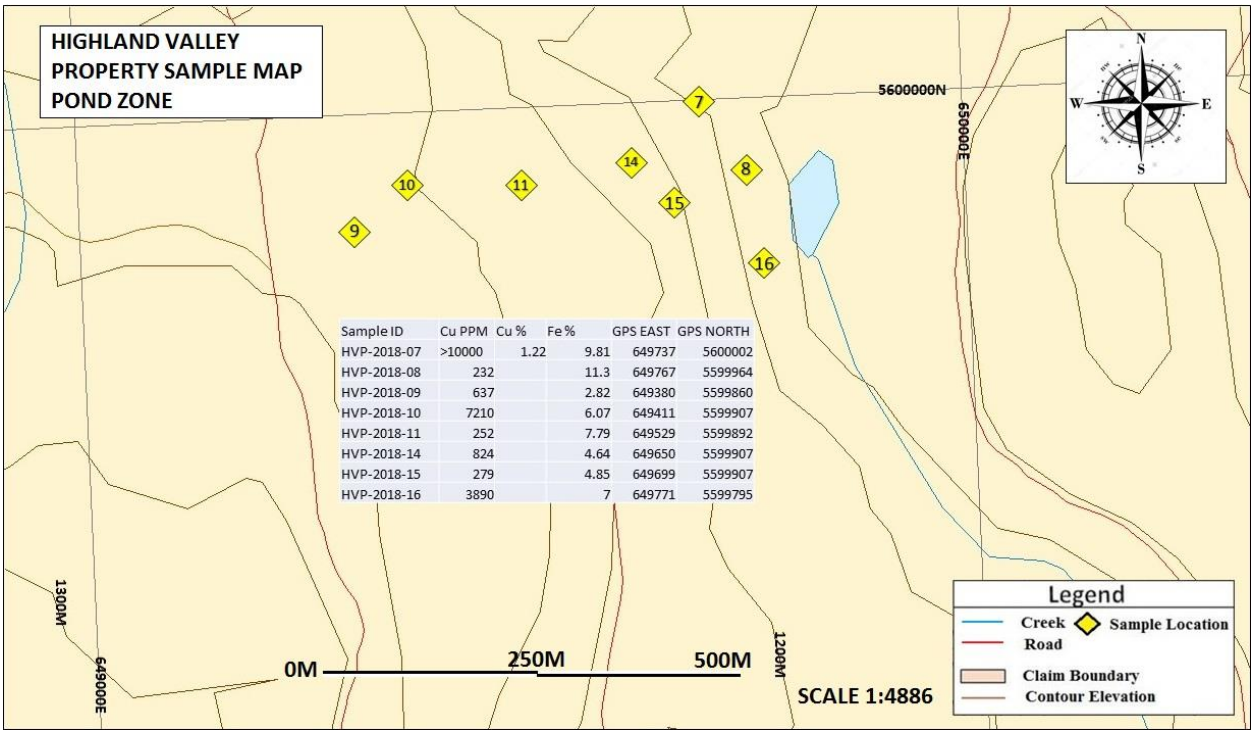
MAGNIFICATION

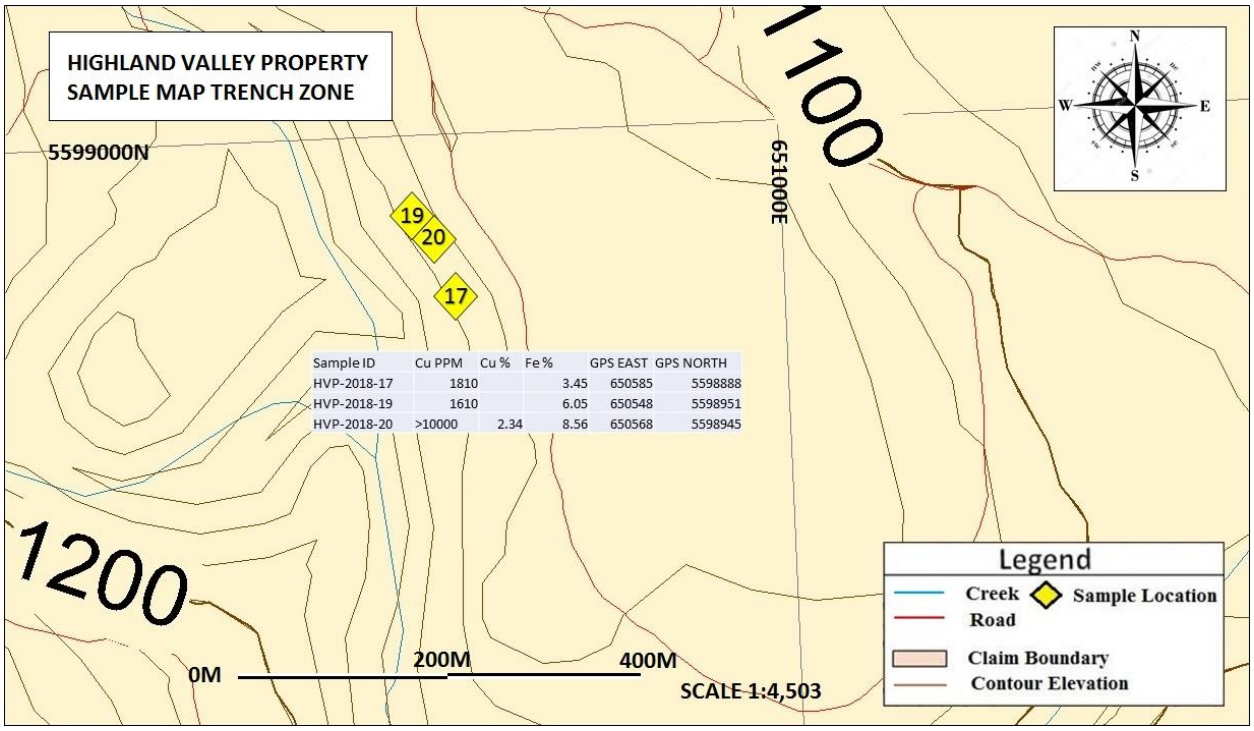
12.0 TRAVERSE MAP WITH ZONES



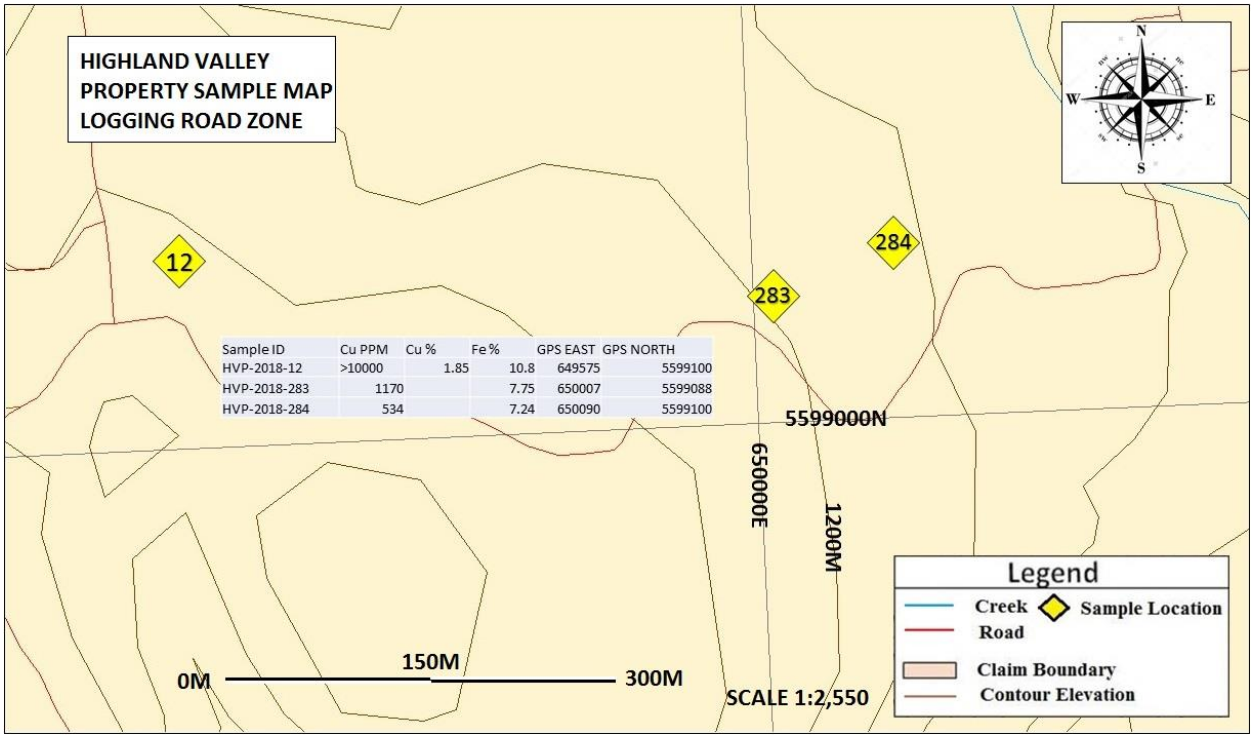
13.0 SAMPLE LOCATION MAP WITH RESULTS



Sample ID	Cu PPM	Cu %	Fe %	GPS EAST	GPS NORTH
HVP-2018-07	>10000	1.22	9.81	649737	5600002
HVP-2018-08	232		11.3	649767	5599964
HVP-2018-09	637		2.82	649380	5599860
HVP-2018-10	7210		6.07	649411	5599907
HVP-2018-11	252		7.79	649529	5599892
HVP-2018-14	824		4.64	649650	5599907
HVP-2018-15	279		4.85	649699	5599907
HVP-2018-16	3890		7	649771	5599795



Sample ID	Cu PPM	Cu %	Fe %	GPS EAST	GPS NORTH
HVP-2018-17	1810		3.45	650585	5598888
HVP-2018-19	1610		6.05	650548	5598951
HVP-2018-20	>10000	2.34	8.56	650568	5598945



14.0 EXCEL FILE ROCK DESCRIPTION & RESULTS

ROCK SAMPLES HVP	Type	Description	Texture	Mineralization	Magnetic	Showing type
HVP-2018-07	Bedrock	Granodiorite	Coarse	Chalco/Malachite	Very High	New
HVP-2018-08	Bedrock	Granodiorite	Coarse	None visible	Very High	New
HVP-2018-09	Bedrock	Granodiorite	Fine	Spahalerite/Mn Mal/epidote	No	New
HVP-2018-10	Bedrock	Granodiorite	Porphyritic	Chalcopyrite/Malachite	No	New
HVP-2018-11	Bedrock	Diorite	Fine	Spahalerite/epidote	No	New
HVP-2018-12	Bedrock	Wethered Granodiorite	coarse	Iron oxide/Malchite	Med	New
HVP-2018-14	Bedrock	Granodiorite	Porphyritic	Diseminated Chalco	No	New
HVP-2018-15	Bedrock	Granodiorite	Porphyritic	Diseminated Chalco	No	New
HVP-2018-16	Bedrock	Gouge/Shear	Coarse	Azurite/Abundant Malachite	No	New
HVP-2018-17	Float/close to bedrock	Granodiorite	Porphyritic	Malzchite/min Bornite	No	New/Old trench
HVP-2018-19	Float/close to bedrock	granodiorite	Porphyritic	Min/Malachite	No	New/Old trench
HVP-2018-20	Float/close to bedrock	diorite	Porphyritic	Mal/Azurite/Chalco	no	New/Old trench
HVP-2018-283	Bedrock	Granodiorite	Coarse	Ironstain/chalco/mal	High	New
HVP-2018-284	Bedrock	Granodiorite	Coarse	none visible	High	New

Sample ID	Cu PPM	Cu %	Fe %	GPS EAST	GPS NORTH
HVP-2018-07	>10000	1.22	9.81	649737	5600002
HVP-2018-08	232		11.3	649767	5599964
HVP-2018-09	637		2.82	649380	5599860
HVP-2018-10	7210		6.07	649411	5599907
HVP-2018-11	252		7.79	649529	5599892
HVP-2018-12	>10000	1.85	10.8	649575	5599100
HVP-2018-14	824		4.64	649650	5599907
HVP-2018-15	279		4.85	649699	5599907
HVP-2018-16	3890		7	649771	5599795
HVP-2018-17	1810		3.45	650585	5598888
HVP-2018-19	1610		6.05	650548	5598951
HVP-2018-20	>10000	2.34	8.56	650568	5598945
HVP-2018-283	1170		7.75	650007	5599088
HVP-2018-284	534		7.24	650090	5599100

15.0 ASSAY SHEETS

INVOICE

Invoice Number	: 11210477
Date	: 31-DEC-18
Page	: 1 /2

COD SGS MINERALS - GEOCHEM
VANCOUVER
C/O F406501 SGS ASSAYERS
3260 PRODUCTION WAY
BURNABY BC V5A 4W4
Canada

Customer Number	1269020
Currency	CAD
Payment Term	Due immediately
Due Date	31-DEC-18
SGS Order No.	1031813

Customer Reference 14 samples
Ingenuity Exploration
Vancouver local client
Attn: Guy Delorme/Chris Delorme
Tel: 250-293-1177
prospectordelorme@hotmail.com

Job Reference: WO#:VC184612: INGENUITY / TEST: 14 Rocks
Order Source Reference: 0000019000

*Invoice PAID by visa card on Dec 11 & 31, 2018

Item	Description	Quantity	UoM	Unit Price	Net Amount	Amount
37351	**Sample Preparation** G_LOG02 Pre-preparation processing, sorting, logging, boxing GFM Acc: 4000.20.2300.0000000	14	Ea	0.60	8.40	8.82
37351	**Sample Preparation** G_PRP89 Weigh, dry(<3.0 kg), crush to 75% passing 2mm, split 250g, p GFM Acc: 4000.20.2300.0000000	14	Ea	9.00	126.00	132.30
37370	**Routine Analysis by ICP-OES** GE_ICP14B Aqua Regia digestion/ICP-AES package GFM Acc: 4000.20.2300.0000000	14	Ea	13.10	183.40	192.57
37370	**Routine Analysis by ICP-OES** GO_ICP13B Aqua Regia digestion/ICP-AES, first element GFM Acc: 4000.20.2300.0000000	3	Ea	9.00	27.00	28.35

Execution Date(s) 28-Dec-2018

	GST	17.24
Net Amount	**CAD**	344.80
Sum of Tax	**CAD**	17.24
Total Amount	**CAD**	**362.04**

Contact Name:	HUNG, HAZEL
Direct line:	604-638-2349
E-mail:	HAZEL.HUNG@SGS.COM

Issuing Affiliate : F400101_140
11210477 31-DEC-18 1269020

Please Remit To:
SGS Canada Inc
WIRE TRANSFERS:
Citibank NA Canadian Branch 123 Front St W TORONTO, ON M5J 2M3
BANK #328 TRANSIT #20012
SWIFT: CITICATTBCH ABA:
021000089
CAD2014113008 USD2014113016

SGS Canada Inc. | Mineral Services 3260 Production Way Burnaby, BC, V5A 4W4 Canada
t: (604) 638-2349 f: (604) 444-5486
SGS Tax ID GST/HST/TPS#R105082572 QST/TVQ#R1010505000 Member of the SGS Group

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INVOICE

Invoice Number	: 11210477
Date	: 31-DEC-18
Page	: 2 /2

COD SGS MINERALS - GEOCHEM
VANCOUVER
C/O F406501 SGS ASSAYERS
3260 PRODUCTION WAY
BURNABY BC V5A 4W4
Canada

Customer Number	1269020
Currency	CAD
Payment Term	Due immediately
Due Date	31-DEC-18
SGS Order No.	1031813

PLEASE INCLUDE INVOICE NUMBER WITH PAYMENT DETAIL

FOR CHEQUE PAYMENTS:
PO BOX 3400
STATION TERMINAL

Vancouver V6B 3Y4
Canada

SGS Canada Inc. | Mineral Services 3260 Production Way Burnaby, BC, V5A 4W4 Canada
t: (604) 638-2349 f: (604) 444-5486
SGS Tax ID GST/HST/TPS#R105082572 QST/TVQ#R1010505000 Member of the SGS Group

SGS

Certificate of Analysis
Work Order : VC184612
[Report File No.: 0000033447]

Date: December 28, 2018

To: **Christopher Delorme**
COD SGS MINERALS - GEOCHEM VANCOUVER
INGENUITY EXPLORATION

P.O. No.: INGENUITY / TEST: 14 Rocks
Project No.: -
Samples: 14
Received: Dec 10, 2018
Pages: Page 1 to 6
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
14	G_LOG02	Pre-preparation processing, sorting, logging, boxing
14	G_WGH79	Weighing of samples and reporting of weights
14	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
14	G_PUL45	Pulverize 250g, Cr Steel, 85% passing 75 microns
14	GE_ICP14B	Aqua Regia digestion/ICP-AES package
3	GO_ICP13B	Ore Grade, Aqua Regia Diges/ICP-AES

Storage: Pulp & Reject

REJECT STORAGE : DISPOSE AFTER 30 DAYS
PULP STORAGE : DISPOSE AFTER 90 DAYS

Certified By :

Gerald Chik
Operations Manager/Chief Chemist

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC184612 Order: INGENUITY / TEST: 14 Rocks
Report File No : 0000053447

Element	WtKg	@Ag	@Al	@As	@Ba	@Be	@Bi	@Ca
Method	G_WGH79	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
Det.Lim.	0.01	2	0.01	3	5	0.5	5	0.01
Units	kg	ppm	%	ppm	ppm	ppm	ppm	%
HVP-2018-07	1.559	2	1.23	9	85	<0.5	<5	1.35
HVP-2018-08	1.496	<2	1.81	20	<5	<0.5	<5	1.62
HVP-2018-09	1.820	<2	2.06	8	<5	<0.5	<5	4.10
HVP-2018-10	1.641	2	3.39	5	864	<0.5	<5	2.50
HVP-2018-11	2.016	<2	4.04	7	16	<0.5	<5	1.24
HVP-2018-12	1.256	4	5.38	11	10	<0.5	<5	5.06
HVP-2018-14	1.359	<2	2.10	4	172	<0.5	<5	0.97
HVP-2018-15	1.182	<2	1.89	<3	83	<0.5	<5	1.97
HVP-2018-16	1.739	<2	2.22	<3	61	<0.5	<5	1.98
HVP-2018-17	0.360	<2	1.78	6	43	<0.5	<5	1.76
HVP-2018-19	0.882	<2	4.01	<3	10	<0.5	<5	1.49
HVP-2018-20	1.539	11	2.35	27	11	<0.5	<5	0.90
HVP-2018-283	1.367	<2	2.92	5	32	<0.5	<5	1.33
HVP-2018-284	0.566	<2	1.39	<3	93	<0.5	<5	1.21
*Rep HVP-2018-14		<2	2.29	<3	180	<0.5	<5	0.99
*Blk BLANK		<2	<0.01	<3	<5	<0.5	<5	<0.01
*Std OREAS502B		2	1.95	17	283	<0.5	<5	1.04

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Final : VC184612 Order: INGENUITY / TEST: 14 Rocks
Report File No. 9000035447

Element	@Cd	@Co	@Cr	@Cu	@Fe	@Hg	@K	@La
Method	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
Det.Lim.	1	1	1	0.5	0.01	1	0.01	0.5
Units	ppm	ppm	ppm	ppm	%	ppm	%	ppm
HVP-2018-07	<1	19	46	>10000	9.81	<1	0.05	8.6
HVP-2018-08	1	21	202	232	11.3	<1	0.06	5.8
HVP-2018-09	<1	5	22	637	2.82	<1	0.01	9.8
HVP-2018-10	<1	16	24	7210	6.07	<1	0.13	6.8
HVP-2018-11	<1	21	21	252	7.79	<1	0.10	4.3
HVP-2018-12	<1	47	26	>10000	10.8	<1	0.14	5.9
HVP-2018-14	<1	14	27	824	4.64	<1	0.07	4.9
HVP-2018-15	<1	12	28	279	4.85	<1	0.16	6.1
HVP-2018-16	<1	19	69	3890	7.00	<1	0.08	6.7
HVP-2018-17	<1	10	23	1810	3.45	<1	0.18	8.5
HVP-2018-19	<1	42	24	1610	6.05	<1	0.14	6.7
HVP-2018-20	1	38	24	>10000	8.56	2	0.01	1.3
HVP-2018-283	<1	14	31	1170	7.75	<1	0.04	6.6
HVP-2018-284	<1	13	66	534	7.24	<1	0.08	6.3
*Rep HVP-2018-14	<1	15	27	790	5.02	<1	0.07	5.2
*Blk BLANK	<1	<1	<1	<0.5	<0.01	<1	<0.01	<0.5
*Std OREAS502B	<1	17	82	7110	5.26	1	0.96	27.4

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Final : VC184612 Order: INGENUITY / TEST: 14 Rocks
Report File No.: 0000033447

Element	@Li	@Mg	@Mn	@Mo	@Na	@Ni	@P	@Pb
Method	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
Det.Lim.	1	0.01	2	1	0.01	1	0.01	2
Units	ppm	%	ppm	ppm	%	ppm	%	ppm
HVP-2018-07	3	0.90	380	<1	0.10	33	0.23	<2
HVP-2018-08	9	1.63	765	<1	0.12	51	0.15	<2
HVP-2018-09	5	0.68	539	<1	0.02	15	0.10	<2
HVP-2018-10	9	1.42	584	4	0.17	19	0.12	<2
HVP-2018-11	23	2.80	1090	<1	0.01	24	0.06	<2
HVP-2018-12	48	3.02	2080	<1	0.02	41	0.06	<2
HVP-2018-14	17	1.77	616	<1	0.09	23	0.12	<2
HVP-2018-15	6	0.93	406	<1	0.11	16	0.16	<2
HVP-2018-16	14	1.16	566	<1	0.06	25	0.14	<2
HVP-2018-17	14	0.98	407	1	0.09	13	0.05	<2
HVP-2018-19	23	3.01	1610	2	0.05	24	0.13	<2
HVP-2018-20	17	1.58	1430	2	0.01	32	0.03	5
HVP-2018-283	14	2.50	1040	2	0.07	25	0.18	<2
HVP-2018-284	5	1.06	409	<1	0.15	24	0.13	<2
*Rep HVP-2018-14	17	1.87	669	<1	0.09	22	0.13	<2
*Blk BLANK	<1	<0.01	<2	<1	0.01	<1	<0.01	<2
*Std OREAS502B	29	1.28	415	225	0.15	32	0.11	3

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Final : VC184612 Order: INGENUITY / TEST : 14 Rocks

Report File No : 0000053447

Element	@S	@Sb	@Sc	@Sn	@Sr	@Ti	@V	@W
Method	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
Det.Lim.	0.01	5	0.5	10	0.5	0.01	1	10
Units	%	ppm	ppm	ppm	ppm	%	ppm	ppm
HVP-2018-07	0.81	<5	4.4	<10	34.8	0.21	379	50
HVP-2018-08	0.01	<5	7.3	<10	52.2	0.32	497	60
HVP-2018-09	0.02	<5	4.4	<10	493	0.19	95	10
HVP-2018-10	0.56	<5	6.8	<10	194	0.27	168	30
HVP-2018-11	<0.01	<5	3.6	<10	122	0.08	122	50
HVP-2018-12	0.97	11	5.0	<10	25.3	<0.01	94	50
HVP-2018-14	0.01	<5	4.5	<10	61.8	0.17	150	30
HVP-2018-15	0.05	<5	2.4	<10	60.1	0.15	165	30
HVP-2018-16	0.06	<5	7.2	<10	89.5	0.19	279	30
HVP-2018-17	0.04	<5	3.9	<10	55.7	0.29	86	20
HVP-2018-19	0.07	<5	6.3	<10	117	0.23	91	40
HVP-2018-20	0.05	121	3.6	<10	9.5	0.01	169	50
HVP-2018-283	0.19	<5	10.4	<10	79.2	0.26	228	40
HVP-2018-284	0.05	<5	4.8	<10	55.3	0.17	281	40
*Rep HVP-2018-14	0.01	<5	4.7	<10	63.5	0.18	148	30
*Blk BLANK	<0.01	<5	<0.5	<10	<0.5	<0.01	<1	<10
*Std OREAS502B	1.04	<5	6.0	<10	70.2	0.32	102	30

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Report File No: 0000033447

Element	@Y	@Zn	@Zr	Cu
Method	GE_ICP14B	GE_ICP14B	GE_ICP14B	GO_ICP13B
Det.Lim.	0.5	1	0.5	0.01
Units	ppm	ppm	ppm	%
HVP-2018-07	8.1	32	6.3	1.22
HVP-2018-08	7.6	43	8.7	N.A.
HVP-2018-09	7.3	27	4.2	N.A.
HVP-2018-10	8.1	75	11.7	N.A.
HVP-2018-11	6.1	78	3.8	N.A.
HVP-2018-12	13.7	242	4.6	1.85
HVP-2018-14	4.6	48	3.7	N.A.
HVP-2018-15	4.8	37	3.3	N.A.
HVP-2018-16	7.4	40	5.2	N.A.
HVP-2018-17	7.0	29	3.0	N.A.
HVP-2018-19	8.2	92	4.6	N.A.
HVP-2018-20	2.3	303	1.9	2.34
HVP-2018-283	10.1	58	5.4	N.A.
HVP-2018-284	5.8	30	5.4	N.A.
*Rep HVP-2018-14	4.8	49	3.4	
*Blk BLANK				<0.01
*Rep HVP-2018-12				1.86
*Std OREAS524				2.54
*Blk BLANK	<0.5	<1	<0.5	
*Std OREAS502B	14.6	120	11.3	

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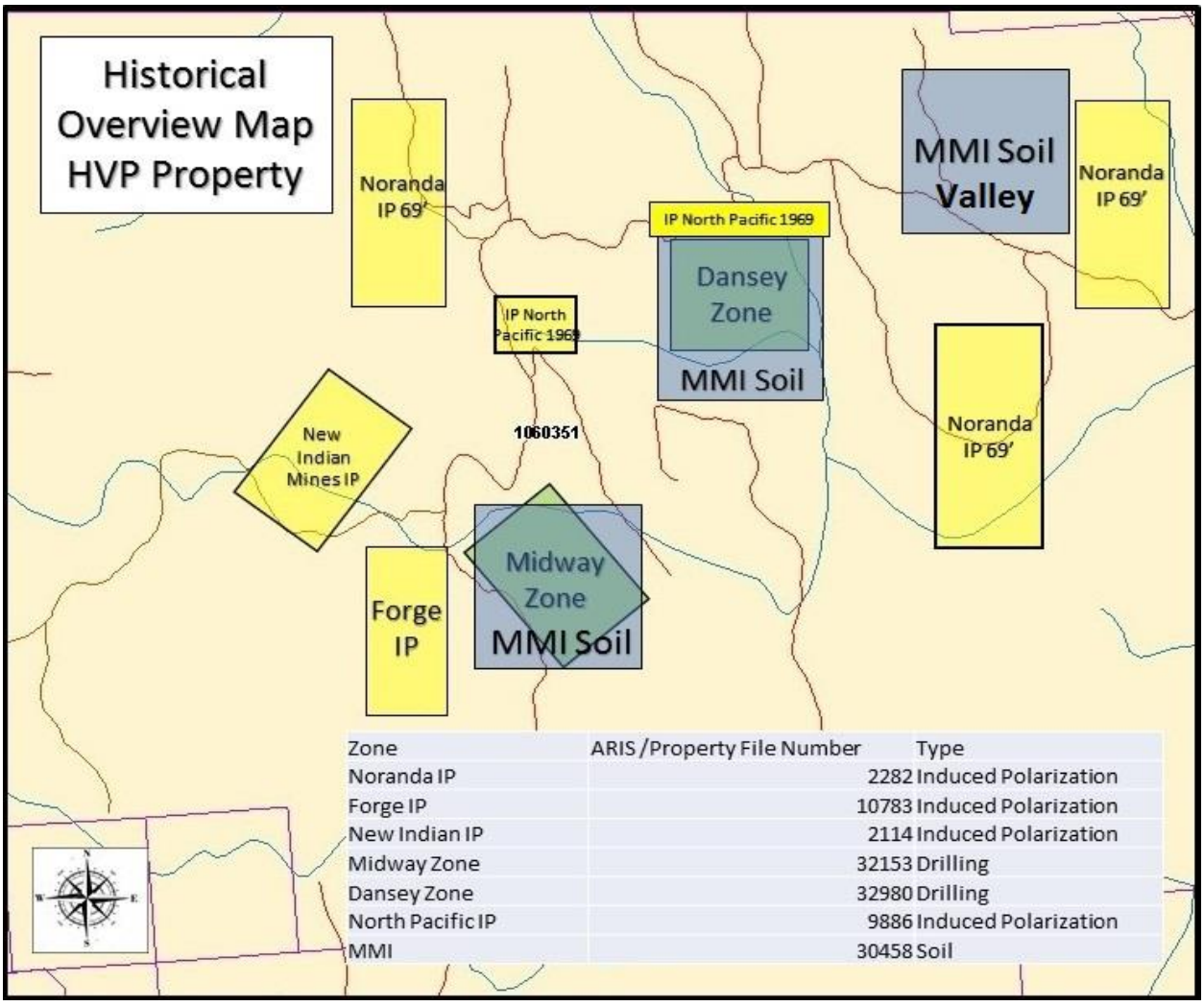
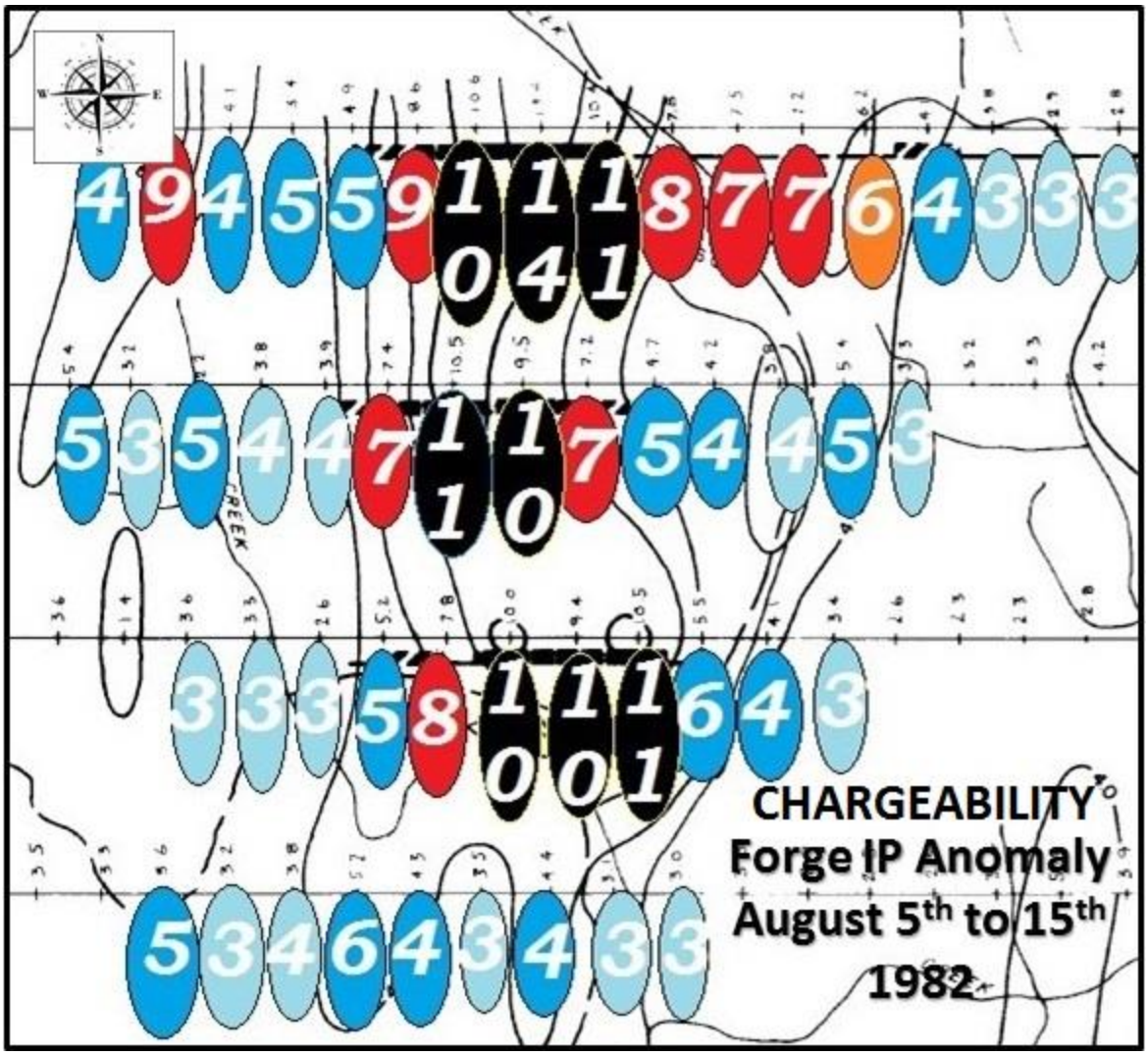
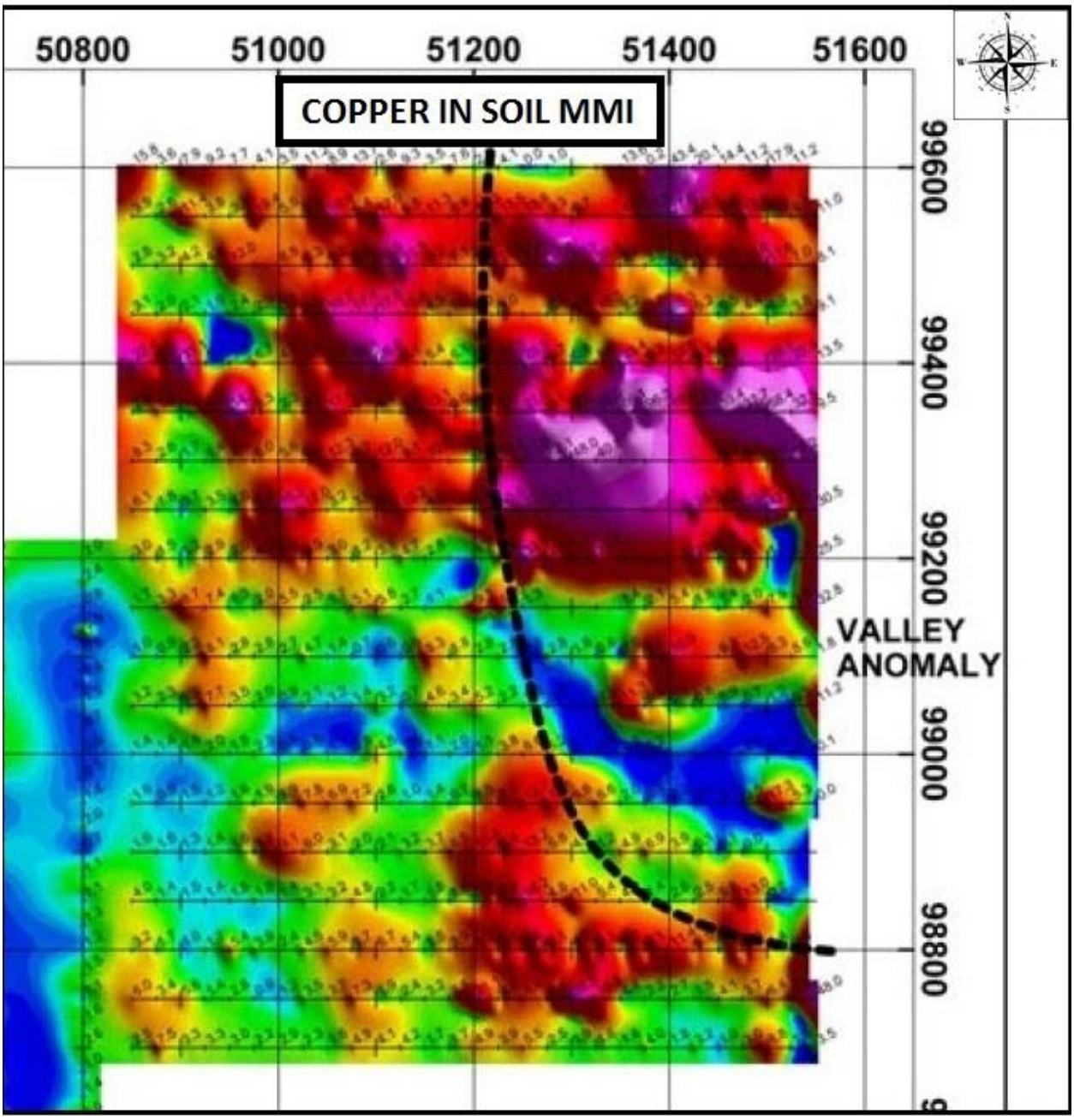
16.0 HISTORICAL DATA COMPILATION

The author spent some time compiling historical data and enhancing some of the historical maps to get a better picture and understanding of the property. Several maps were made showing potential areas of interest for future prospecting and to further evaluate the property. 8 areas were discovered where no drilling has occurred on the Geophysical anomalies. Historical Maps and New Maps shown below.



Zone	ARIS / Property File Number	Type
Noranda IP	2282	Induced Polarization
Forge IP	10783	Induced Polarization
New Indian IP	2114	Induced Polarization
Midway Zone	32153	Drilling
Dansey Zone	32980	Drilling
North Pacific IP	9886	Induced Polarization
MMI	30458	Soil


CHARGEABILITY
Forge IP Anomaly
August 5th to 15th
1982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COPPER IN SOIL MMI
99600
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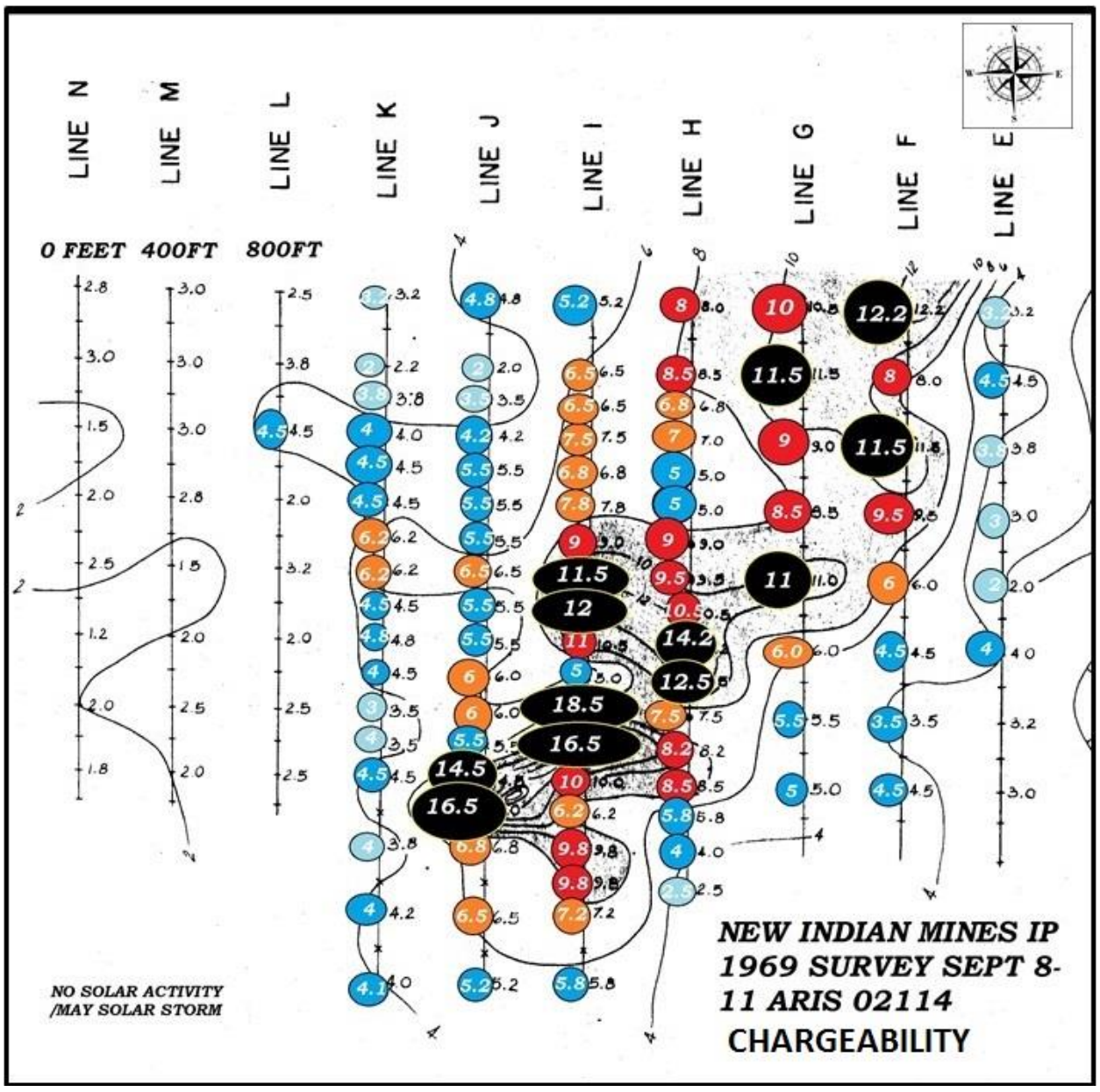
VALLEY
ANOMALY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LINE M
LINE L
LINE K
LINE J
LINE I
LINE H
LINE G
LINE F
LINE E
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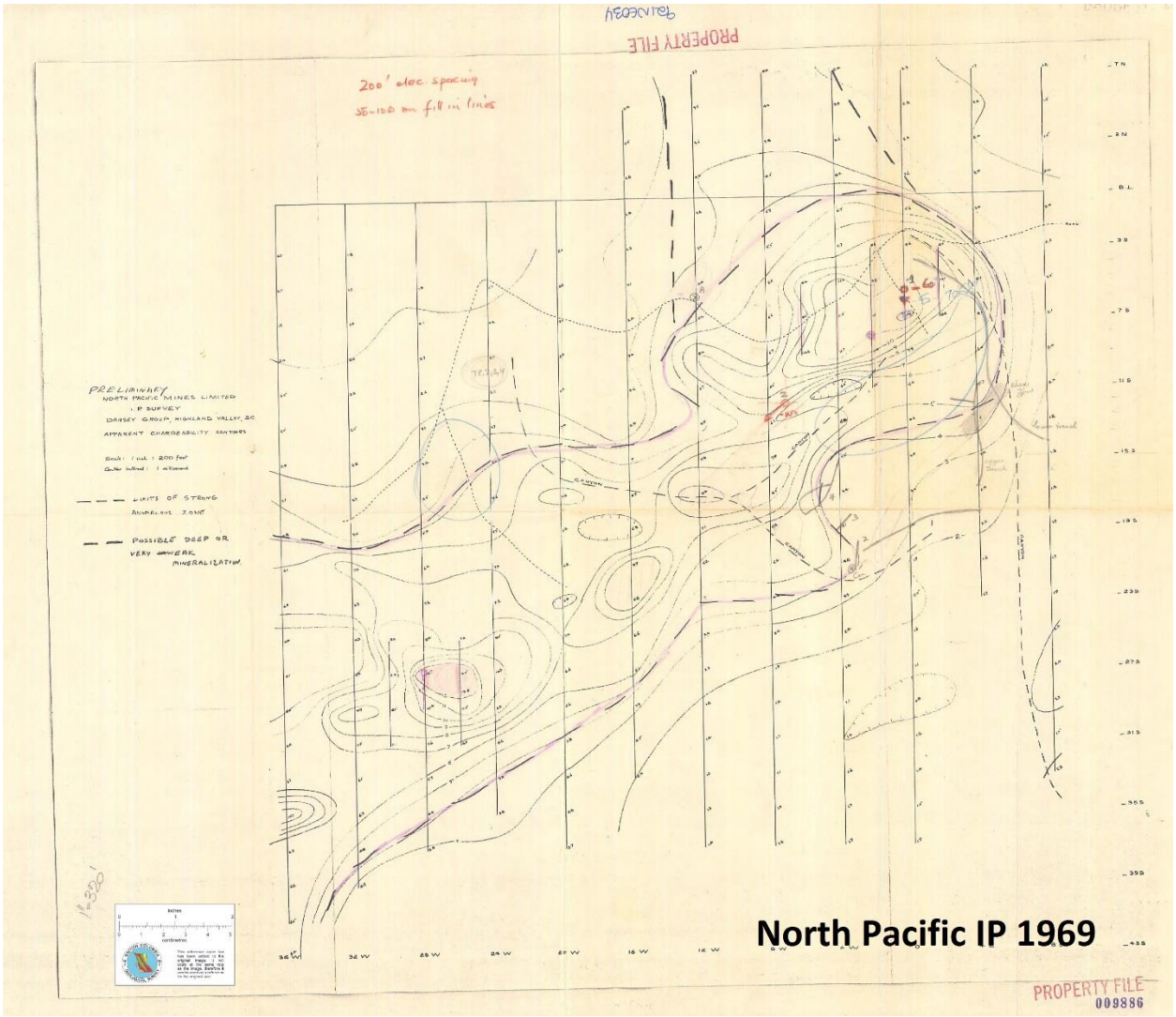
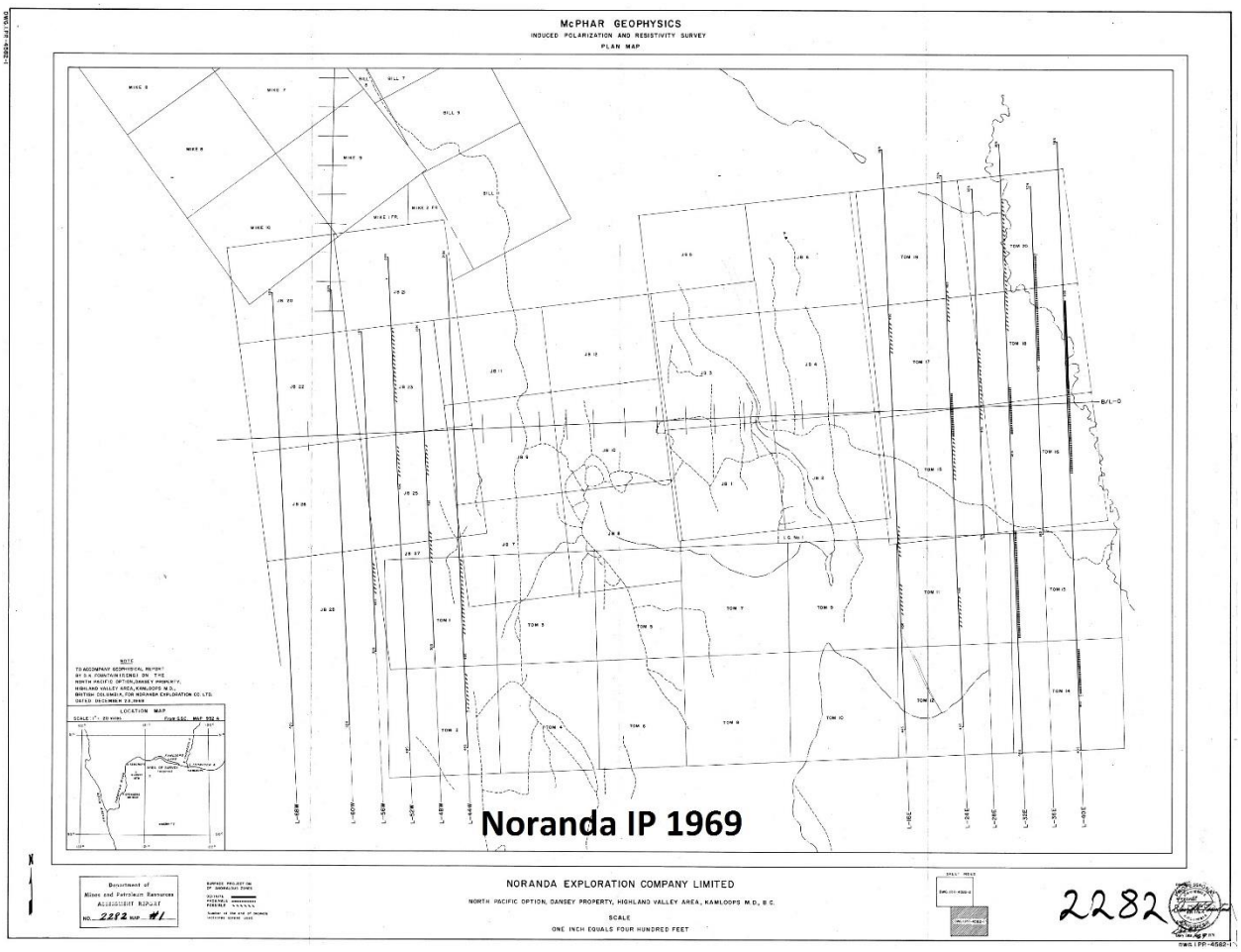
NO SOLAR ACTIVITY
/MAY SOLAR STORM
NEW INDIAN MINES IP
1969 SURVEY SEPT 8-
11 ARIS 02114
CHARGEABILITY


PROPERTY FILE
200' elec. spacing
PRELIMINARY
NORTH PACIFIC MINES LIMITED
I.P. SURVEY
DARSEY GROUP, HIGHLAND VALLEY, BC
APPARENT CHARGEABILITY CONTOURS
LIMITS OF STRONG ANOMALOUS ZONE
POSSIBLE DEEP OR VERY WEAK MINERALIZATION
North Pacific IP 1969
PROPERTY FILE
009886



17.0 CONCLUSIONS AND RECOMMENDATIONS

The 2018 prospecting and geochemical program was successful in finding new showings over a widespread area. The Pond zone had the greatest number of new showings located and sampled, for the most part these mineralized showings appear to be localized and do not exhibit characteristics of potential large-scale ore grade or width since most of the country rock was barren. However, this does not put the potential at depth in this area to find a deposit since several samples have disseminated copper in the Granodiorite, sample 7,14 and 15. A trenching program and an Induced Polarization survey is recommended for this area.

The New Logging area had a total of three samples taken in three different localities. Sample 12 came back above the threshold for 10,000 ppm copper and assayed 1.22% in the gouge/shearzone. This sample is intriguing since it is close to the eastern boundary of Noranda's IP Anomaly from 1969. The other sample 284 showed weaker responses in Cu values and little alteration. Sample 283 has disseminated copper with epidote alteration. Further prospecting trenching and IP is recommended to the west of sample 12.

The Trench Zone was prospected to see if the mineralization extends from the Dansey drill area across a fault. The area had numerous float indicators from the sloughed in trench that copper is nearby. A pick and shovel were used to get to bedrock in several location's around sample's 17/19 and 20. The material there was hardpack conglomerate/clay which was very difficult to excavate by hand. Approximately three pits were dug one reaching almost 5ft in depth and 4 ft wide. Bedrock was not found but by re-analyzing the 1969 North Pacific IP Map there shows a shear zone mapped near the vicinity where trenching and samples were taken to verify the samples should be where they were found. The author has also come to the conclusion that it is possible in this area the soil samples taken by means of MMI conducted previously might not have shown the true or real copper values due to the hardpack in this area. Further Trenching and Induced Polarization is recommended for this area.

The MMI area was almost completely covered by overburden after re-evaluating the route and area traversed further prospecting is warranted to the north of the area traversed and staking additional claims to cover the copper in soil anomaly. Trenching is recommended

in this area.

The historical data compilation was very useful in determining future prospecting and the relationship of metals to response geophysical anomalies. Several new areas have been delineated to further explore for future programs. Prospecting trenching and IP are Recommended in these areas to further evaluate their potential using newer technologies to ascertain the extent and multitude of the Zones of interest.

18.0 AUTHORS QUALIFICATIONS

The author has spent over 20 years in the exploration industry. Work related experience has been over the past 20 years or more, staking mineral claims in the USA and Canada, conducting or working on the crew of geophysics with methods of VLF, Magnetometer, Induced Polarization and Self-Potential Survey's. Conducted numerous soil sampling surveys and line cutting. I have also worked on over 15 different types of diamond drills, have experience in roadbuilding and heavy equipment operation, completed reclamation requirements on mineral properties, researching mineral properties, evaluating data, prospecting and report writing and preparation as well as permitting and first nation consultation. The Author has also worked on an operating mine from weighing in the trucks of ore to final stages of shipping the ore.

19.0 REFERENCES

- Sookochoff, Laurence, 33 pages, 2015, Geological Photo, 472.0 ha, Geophysical, Magnetic Ground 3.0km ARIS 35711, Structural Analysis.

- Sookochoff, Laurence, 28 pages, 2014, Geological 492.9ha, Structural Analysis, ARIS 34975.

- Garrow, Terry D , 80 pages , 2011 , Drilling Diamond Surface , 1 Hole NQ 284.6m , Geochemical , 287 Samples Multielement ,ARIS 32290

- Wikipedia , Highland Valley Copper Mine .

- Crosby, R.O.; Baird, Shannon James, 20 Pages, Report on Induced Polarization Survey on some CL Claims - Highland Valley Area 1969 ARIS 2114

- Fountain, D 27 pages Geophysical Induced Polarization/Resistivity 1969 01/01 ARIS 2282

- Mark, David 235 pages Geophysical and Geochemical Report 2008 10/23 ARIS 30458

- Klein, Jan 14 pages Geophysical Induced Polarization and Resistivity 1982 11/23 ARIS 10783

- Property File B.C.

- Pan, Zhonghua 111 pages Drilling and Geochemical 2010 12/31 ARIS 32153

- Garrow, Terry D 105 pages Drilling 2011 11/25 ARIS 32980

20.0 COST STATEMENT

Report		Dates/Km	$1,500
Prospecting	C&G Delorme $400 per Man Per day	Nov 5th/14th	$1,600
Prospecting	C Delorme $400 per man per day	Oct 5th Oct 20th	$800
Truck	Travel to Burnaby SGS/5 trips Property	1050km @.65km	$683
Microscopic Photos	9 photos x$30 dollars a photo		$270
Historical Data Compilation/Maps			$1,250
Drop Off Samples/Prepare samples	SGS Lab		$400
Laboratory	14 samples		$362
Misc Supplies	Pick/Sample Bags/Flagging/Batteries		$100
Food Lodging			$450
		Total	**$7,415**