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# REPORT ON EXPLORATION ACTIVITIES

March 2019 – March 2022

## HEENAN PROJECT

GEOGRAPHIC TOWNSHIP OF HEENAN  
PORCUPINE MINING DIVISION  
TERRITORIAL DISTRICT OF SUDBURY  
PROVINCE OF ONTARIO

BRYAN DORLAND

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## EXECUTIVE SUMMARY

The Heenan project is located in the Superior Province of the Canadian Shield in northern Ontario. The property was acquired by the writer via map staking between in March 2019 to evaluate the potential for precious metal deposits. Several exploration campaigns by a number of individuals and organisations over the years have determined that the area is favorable for gold mineralization. To date, a high level reconnaissance exploration program consisting of historical data compilation, prospecting and rock sampling has been carried out and forms the basis of this report. Work performed to date has been successful in locating previous showings and confirming reported assay results. A compilation of previous work on the property and general area has been completed and will provide valuable insight on how and where to focus future exploration activities.

## 1.0 PROJECT INFORMATION

### 1.1 LOCATION AND ACCESS

The Heenan Project is located in the Geographic Township of Heenan in the territorial District of Sudbury (Porcupine Mining Division) in the Province of Ontario. 1:50 000 scale NTS map sheet 41O16 encompasses the entirety of the project. The property is located in a remote area approximately 180 kilometres north west of the City of Greater Sudbury or 115 kilometres south west of the City of Timmins. Travel time to the property is approximately 3.5 hours from the Sudbury area depending on road conditions.

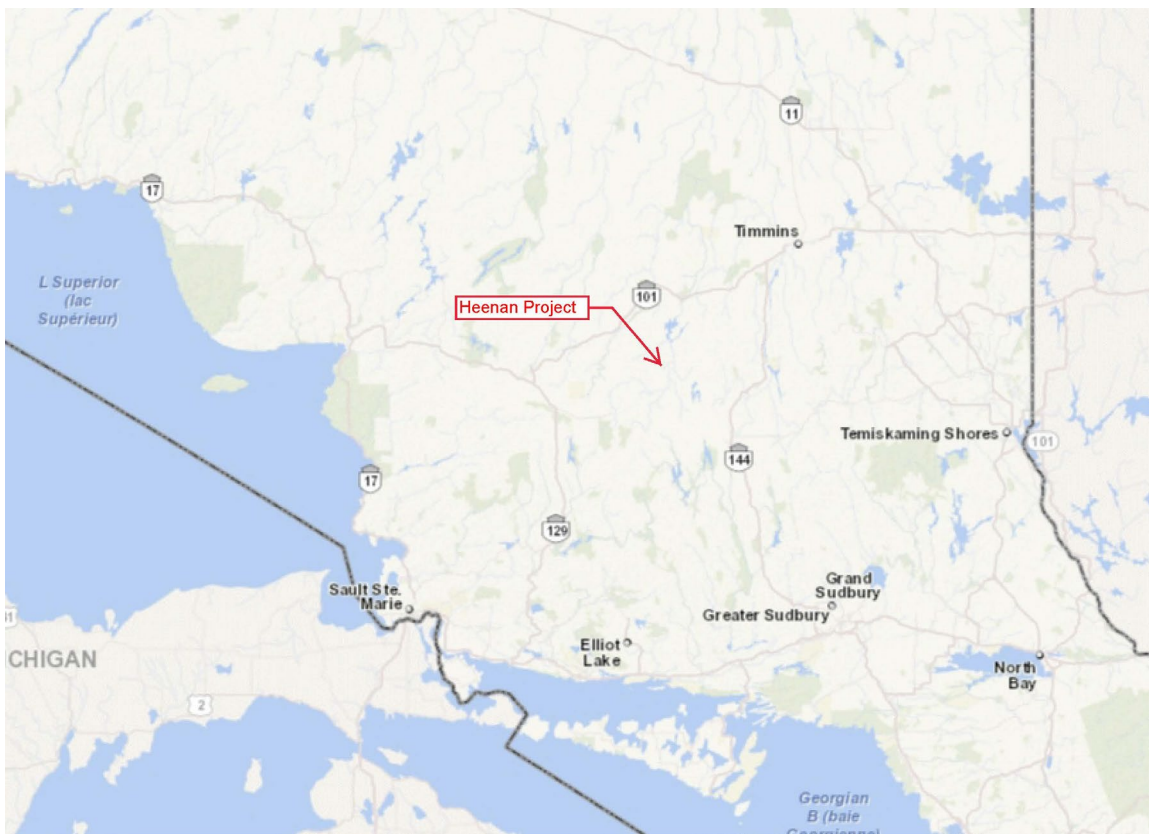


Figure 1 – Project Location

The project can be accessed from a network of active logging and forest access roads which connect Highway 101 and the Sultan Industrial Road. The Heenan Road branches off of the Dore Road and traverses the easterly part of the claim group. The Dore Road serves as a main north-south logging road while the Heenan is less travelled but easily passable by truck.

A network of skidder trails, old drill roads and previous established exploration grids provide easy access to most areas of the property.

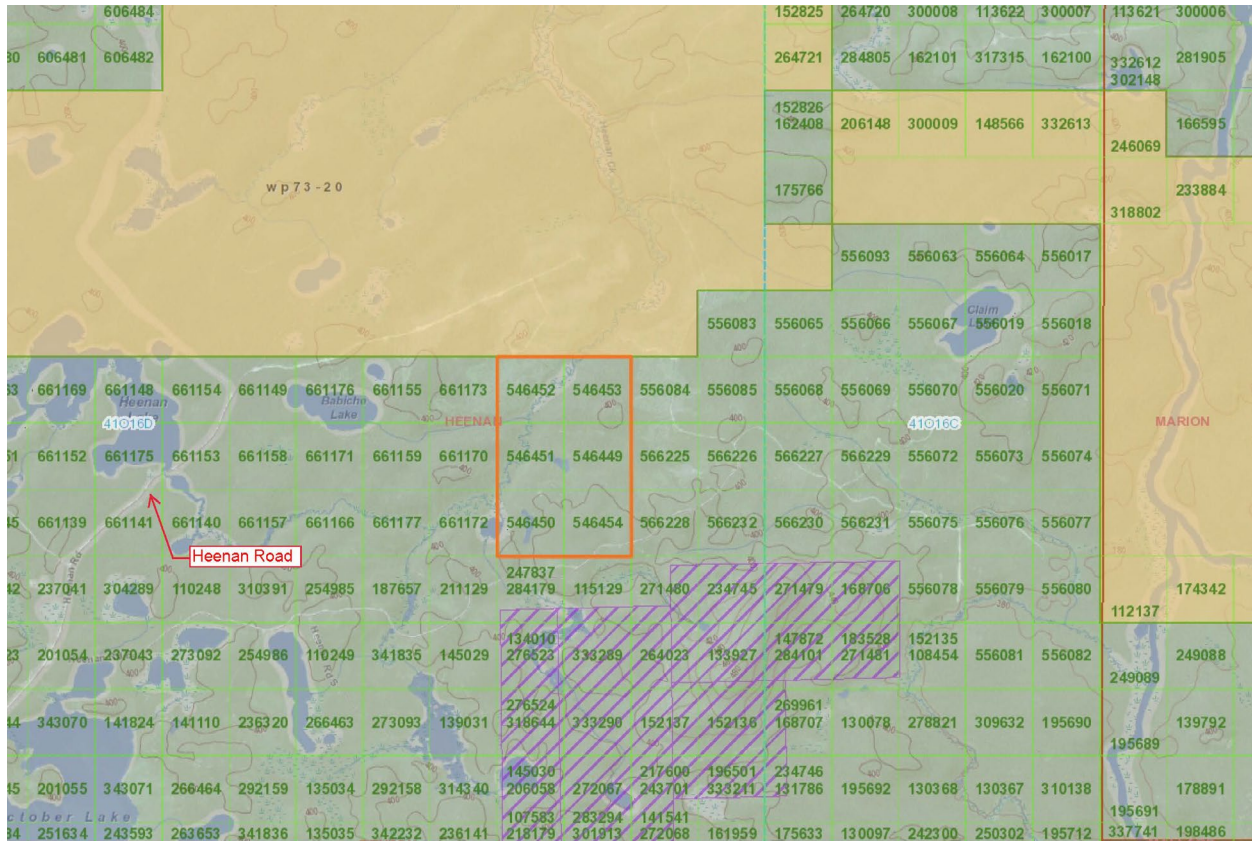


Figure 2 – Claim Map

## 1.2 TOPOGRAPHY AND VEGETATION

The Heenan Project is located in the boreal forest of northern Ontario in the Canadian shield. Topography is generally flat except for occasional sandy hills and outcrop ridges with little to no overburden interlaced with poorly drained lowlands and lakes as well as valleys filled with glacial debris. Outcrop exposure in the project area is generally fair however, flat areas with no bedrock exposure are mostly covered thick sections of sandy overburden.

The project area lies within the Hudson Bay drainage basin, just north on the arctic watershed divide and is subsequently drained north by the Woman River-Horwood Lake-Groundhog River and its tributaries.

The average elevation in and around the project area is approximately 400 metres and relief about 20 metres.

Timber and pulpwood are actively being harvested under the Spanish River Forest Management Plan. Forested areas generally consist of second growth stands of jack pine, spruce white birch and poplar with cedar, alder and tamarack in the low lying, poorly drained areas. Some mature white and red pine stands can be found in inaccessible areas or closer to water bodies.

### 1.3 TENURE DETAILS

The Heenan Project consists of 6 unpatented single unit mining claims with a total area of approximately 132.72 hectares. The property was acquired by map staking in March 2019.

The claims are registered in the name of the writer and require \$2,400 of annual assessment work to keep in good standing. See Table 1 for specific claim numbers and details.

CLAIM DETAILS								
PROJECT: Heenan								
CLAIM No.	HOLDER	UNIT S	AREA (ha)	EMCUMBERED	WORK REQD.	DUE DATE	WORK APPLIED	RESERVE
546449	Bryan Dorland	1	22.12	no	\$400.00	March 28, 2020	\$0.00	\$0.00
546450	Bryan Dorland	1	22.12	no	\$400.00	March 28, 2020	\$0.00	\$0.00
546451	Bryan Dorland	1	22.12	no	\$400.00	March 28, 2020	\$0.00	\$0.00
546452	Bryan Dorland	1	22.12	no	\$400.00	March 28, 2020	\$0.00	\$0.00
546453	Bryan Dorland	1	22.12	no	\$400.00	March 28, 2020	\$0.00	\$0.00
546454	Bryan Dorland	1	22.12	no	\$400.00	March 28, 2020	\$0.00	\$0.00
TOTAL		6	132.72		\$2,400.00		\$0.00	\$0.00

Table 1 – Mining Claim details

### 2.0 PREVIOUS WORK

The Heenan Project area has seen a number of government sponsored geological surveys and privately funded mineral exploration programs over the years.

The following is a summary of previous assessment work or other work carried out over the ground covered by the Heenan Project on file at the Geoscience Assessment Office and AFRI database.

**1940's – Unknown Party.** – overburden stripping, pitting and trenching of 2 large trenches (noted in reports, no records on file at the Sudbury geoscience assessment office)

**1965 – Ontario Department of Mines – Geological Report No. 38** - geological mapping and interpretation of rocks in Heenan, Maron and north parts of Genoa Townships

**1977 – Noranda Exploration Co.**– (Heenan Project 1-76) - line cutting, ground magnetometer and Vertical loop EM surveys (AFRI No. 41O16SW9150)

**1982 – Kerr-Addison Mines.** –line cutting, VLF-EM survey, ground magnetometer survey, soil geochemistry - (AFRI No. 41O16SW0048)

**1982 – Ministry of Natural Resources/Ontario Geological Survey.** – Airborne Electromagnetic and Total Intensity Magnetic Survey- (Geophysical Data Set 1015) – see maps 80542 and 80543

**1995 - Angus Macdonell/Raymond Lashbrook** – line cutting, ground magnetometer survey, prospecting (AFRI No.'s 41O16SW0014)

**2005 – John Hussey/Armand Aube** – line cutting, ground magnetometer and VLF-EM survey, prospecting (AFRI No.'s 20000000767)

**2006 – VenCan Gold Corporation** – airborne electromagnetic and magnetometer survey (AFRI No.'s 20000001584)

**2007 – Benton Resources** – line cutting, ground magnetometer (AFRI No. 20000002607)

**2008 – Benton Resources** – IP survey, diamond drilling (3 holes totaling 447m) (AFRI No.'s 20000002824 & 20000003657)

The above noted work has led to the discovery of over several mineralised gold showings on the Heenan property and surrounding area. Mineral occurrences of iron and zinc were first discovered in the area in the early 1900's in the Woman River Iron Formation located to the south east of the Heenan property. Prospecting in the 1940's led to the discovery of the 200 metre long east-west trending alteration zone which coincides with the IP anomaly outlined by Benton Resources in 2008. Grab samples from the alteration zone in the old trenches has produced assay values up to 6.4 g/ton Gold (Degagne, 2008).

### **3.0 GEOLOGY**

#### **3.1 REGIONAL GEOLOGY**

The Heenan Project is located in the south easterly part of the Superior Province of the Canadian Shield. The general area is underlain by Early Precambrian metavolcanics, metasediments, granitic rocks and mafic intrusive rocks of the Swayze Greenstone Belt. The SWB is said to be the south westerly extension of the Abitibi Greenstone Belt.

#### **3.2 PROPERTY GEOLOGY**

The Heenan Project is located in the east-central part of the Swayze Greenstone Belt. Previous mapping by the Ontario Geological Survey in 1965 and the Geological Survey of Canada in 1999 indicate that the property is covered by older successions of mafic to intermediate metavolcanic rocks.

These units include massive and pillowed Fe- and Mg- tholeiitic basalt flows, pillow breccia and hyaloclastic breccia and medium to coarse-grained, gabbroic-textured flow sills. Variolitic and feldspar-phryic flows are common as are rusty weathering pillow selvages (GSC, 1999).

#### **3.3 EXPLORATION TARGETS**

The primary exploration target for the Heenan Project is for orogenic or mesothermal gold deposits. The Swayze Greenstone Belt host a number of these small past producing gold mines south as the Jerome, Halcrow-Swayze, Kenty, Orofino, Smith-Thorne and Rundle gold mines.

#### **4.0 ADJACENT PROPERTIES**

The ground surrounding the Heenan project is pretty well all staked and being explored by junior mining companies such as Fancamp Exploration, Genesis Metals, GFG Resources. Several individuals also hold mining claims to the east of the project. Exploration efforts in the area is generally focused on gold. Historically, there was some interest and exploration work carried out to the north and east for iron and base metals in the Woman River iron Range.

#### **5.0 CURRENT EXPLORATION ACTIVITIES COVERED BY REPORT**

##### **5.1 DETAILS**

Exploration activities carried out between March 2019 and March 2022 form the basis of this report. These activities include research and compilation of all previous exploration activities carried out on or in the immediate project area, prospecting and rock sampling.

The research and data compilation was carried out in order to assess the potential for economic mineralization and to generate targets to focus the preliminary field activities. All currently available geological maps, reports, aerial photography, topographic mapping, geophysical surveys and assessment files were reviewed in detail.

A total of 4 days were spent in the field prospecting by the author and a helper. Given the remote nature of the project, temporary accommodations (travel trailer) were established on the property to facilitate access and reduce travel time. Fieldwork included reconnaissance of road access and bedrock geology along roads, ground follow up of MDI's, general prospecting and bedrock sampling. Some channel sampling was done in the 1940's era trenches. Appendix 1 illustrates the location of areas covered by the current fieldwork and rock sample locations.

The majority of the work program was focussed on locating and sampling previous gold showings and georeferencing features that could be used to control the locations of previous work done in the area. Time was also spend locating old drill collars, old gridlines and any significant features that could be used to orient and georeference previous exploration data.

Rock or channel samples were taken at select locations. Samples were described in the field with geodetic positions noted then bagged and delivered to SGS Laboratories in Sudbury for prep and further analysis. A total of 6 samples were taken and analysed using a Sodium Peroxide Fusion/ICP-AES package and Standard 30g Fire Assay for Gold. See Appendix 2 for sample details.

Subsequent to the fieldwork, a compilation map was prepared to illustrate the general project area, previous diamond drill holes and workings, geophysical anomalies along with other significant features.

A separate statement of costs for assessment credits detailing daily activities and associated costs is being submitted concurrently with this assessment report.



## 5.2 RESULTS

Fieldwork to date has been successful in confirming gold mineralization in the alteration zone. The best gold assay came from sample S00435006 (HN-05) which ran 1.87 g/t over a 0.4m channel sample in the old westerly trench.



Photo 1 – Sample HN-05 (S00435006) – 1.87 g/t Au over 0.4m

Prospecting and beep mat traversing failed to locate outcrop extension of the target alteration zone west of the westerly trench to Heenan Creek.

In addition to the prospecting and sampling, georeferencing of significant features has allowed for a more accurate compilation of the vast amount of exploration data and previous work carried out in the area. This data, now tied to a geodetic coordinate system, can be utilised more effectively by the writer and other explorationist moving forward.

The compilation to date illustrates all previous drilling, select geophysical anomalies, known mineralised showings, past exploration workings and access roads.



Photo 2 – Sample HN-04 (S00435005) – 1.73 g/t AU over 0.4m

## 6.0 RECOMMENDATIONS

Given the very high-level nature of the work program completed to date, more time should be spent investigating and analysing the numerous past exploration and geophysical data sets. Upon further review of the geophysical data, additional targets may be generated for follow up. Beep mat prospecting is proposed to follow up previously identified anomalies and conductors as well as mineral occurrences which have not been tested or do not outcrop.

Overburden trenching is proposed to try and expose possible extension of the mineralized alteration zone and IP anomaly previously discovered to see if better Au grades may occur within this zone along strike.

Additionally, mechanical stripping and trenching is proposed to expose the mineralised shear zone located by Lashbrook in 1995 which produced grab sample assays up to 4.78 g/t Au. This showing is located in the south easterly area of the Heenan property. See MDI 00000000680. This area has not yet been explored by the author.

Finally, prospecting is warranted in areas of the claim group that have not yet been visited together with the surrounding area. Additional ground should be staked if favorable geology is encountered.

## 7.0 REFERENCES

Degagne, 2008: Assessment Report on the 2008 Diamond Drilling Program at the Heenan Property by Paul Degagne, P.Geol, of Benton Resources (Assessment File 20000003657)

GSC, 1999: Geological Survey of Canada, Open File 3384, Geology, Swayze Greenstone Belt, 1999 (see Rush Lake map – OF 3384c)

## 8.0 CERTIFICATE

I, Bryan Dorland certify that:

I graduated with a Mining Engineering Technician diploma from Cambrian College in 2008.

I have held a valid Ontario Prospector's License since 2006 (License No. 1012035, Client No. 411680)

I have been actively participating in the mining and exploration industry since 2006.

I personally supervised and carried out the work described in this report.

I hold a 100% interest the property described in this report.

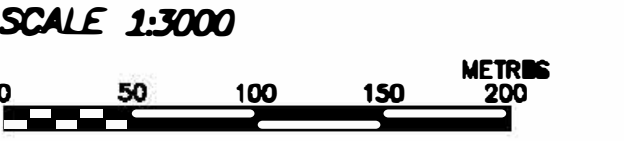


Bryan Dorland

Dated March 28, 2022 at Sudbury, Ontario



PLAN OF  
**HEENAN PROJECT**  
 2019-2022 COMPILATION  
 GEOGRAPHIC TOWNSHIP OF HEENAN  
 PORCUPINE MINING DIVISION  
 TERRITORIAL DISTRICT OF SLOUBURY



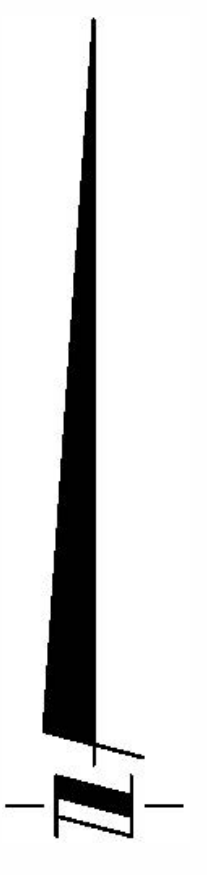
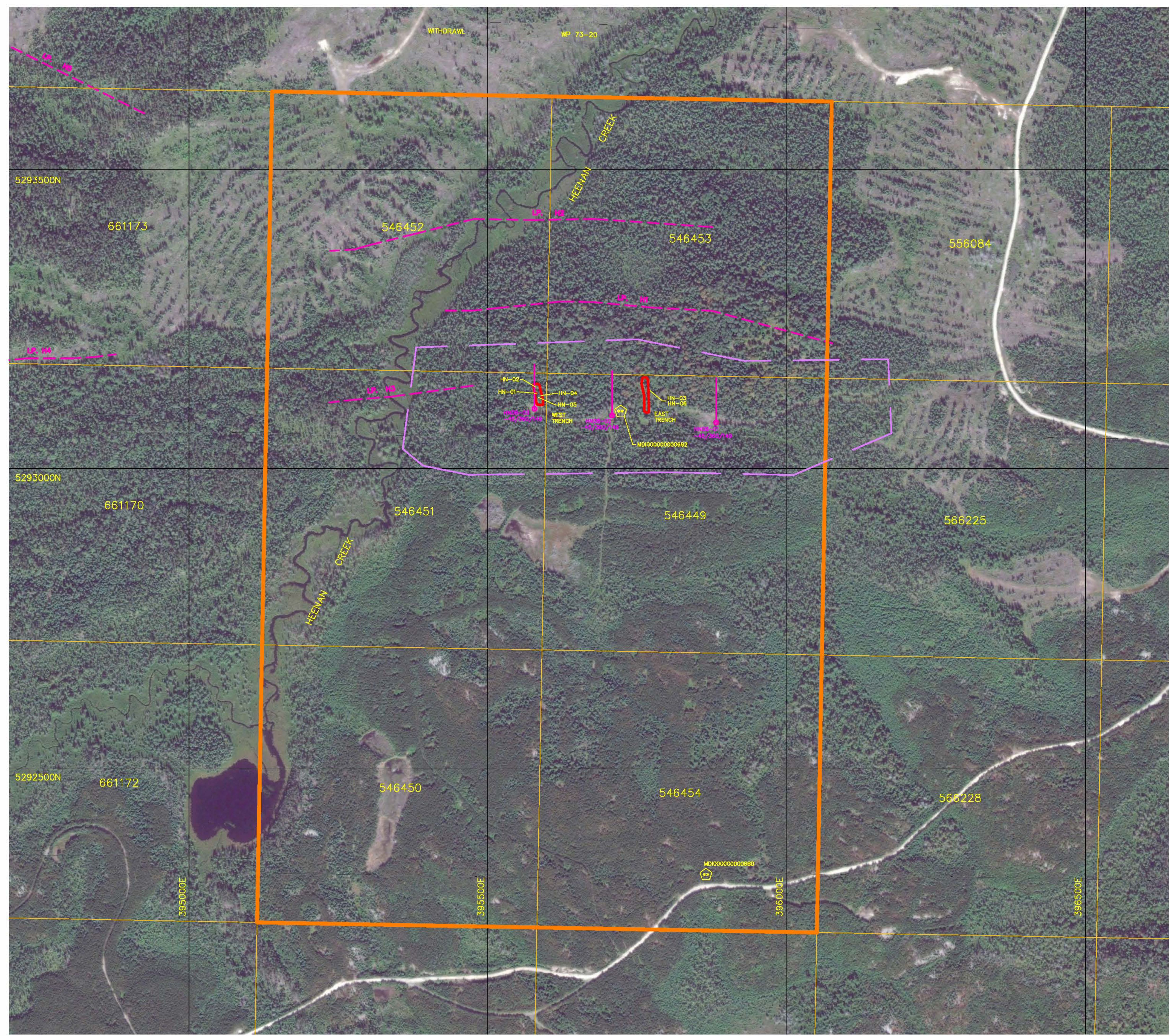
- LEGEND**
- MINERALISED SHOWING (MDI)
  - PREVIOUS DIAMOND DRILL HOLE COLLAR LOCATION  
DIP/AZIMUTH/DEPTH(M)
  - BLASTED PIT OR OVERBURDEN TRENCH LOCATION
  - DENOTES OUTLINE OF AREAS PROSPECTED OR COVERED BY THIS ASSESSMENT REPORT
  - I.P. No. PREVIOUSLY DEFINED I.P. SURVEY ANOMALY AND No.

**NOTE**

REFER TO THE FOLLOWING REPORTS FOR ADDITIONAL INFORMATION RELATING TO:

**DRILLING:**  
 AFRI No's: 20000003857

**GEOPHYSICS:**  
 AFRI No's: 20000002824



**HEENAN PROJECT**

PREPARED BY: BCD	SCALE: 1:3000 METRIC
CHECKED: BCD	CAD FILE: Heenan_Master.dwg
DATE: MARCH 27, 2022	P. SPACE TAB: 2- 2019-2022 WORK AREA



PROJECT: HEENAN		ROCK SAMPLES										UTM ZONE 17, NAD83	
SAMPLE No.	TYPE	POINT No.	NORTHING	EASTING	ELEVATION	DESCRIPTION/NOTES	SAMPLE DATE	ASSAYED	ASSAY DATE	NOTABLE ASSAYS	PHOTO		
HN-01	Grab	931	5293126	395581	381	Grab from west trench, east wall, altered volcanic, light grey, brittle, silicified, minor diss. Sulphides (Py), thins red bands throughout (hematite?)	07.20.2019	yes	08-30-2019	nil			
HN-02	Grab		5293136	395581	-	grab from west trench, north wall, approx. 10m N. of HN-01, greenish grey rusty altered volcanic, minor sulphides (Py,Pyrr)	07-20-2019	yes	08-30-2019	nil			
HN-03	Grab	932	5293137	395761	380	grab from outcrop in +/- middle of east trench, intensely altered, porphyritic?	07-20-2019	yes	08-30-2019	0.43 g/t Au			
HN-04 (S 00435005)	channel	5	5293123	395588	390	0.4m+/- long channel sample perp. to alteration zone, west wall of west trench, intermediate volcanic? With some hematite/sericite alteration, narrow Py. veinlets +/-3mm along contacts	09-12-2020	yes	10-02-2021	1.73 g/t Au			
HN-05 (S 00435006)	channel	6	5293119	395586	390	0.4m+/- long channel sample perp. To alteration zone, west wall of west trench, similar to HN-04 but +/- 5m south	09-12-2020	yes	10-02-2021	1.87 g/t Au			
HN-06 (S 00435007)	channel	12	5293139	395766	393	0.6m+/- long channel sample from north end of east trench, altered volcanic (carbonate?) less alteration than samples in west trench	09-12-2020	yes	10-02-2021	nil			



# ANALYSIS REPORT BBM21-11341

To COD SGS MINERALS - GEOCHEM VANCOUVER  
BRYAN DORLAND  
SGS CANADA INC  
WEST WING 5825 EXPLORER DRIVE  
MISSISSAUGA L4W 5P6  
ON  
CANADA

Submission Number	*SD* Bryan Dorland / Heenan / 3	Date Received	19-Jul-2021
Rocks		Date Analysed	04-Sep-2021 - 29-Sep-2021
Number of Samples	3	Date Completed	02-Oct-2021
		SGS Order Number	BBM21-11341

## Methods Summary

Number of Sample	Method Code	Description
3	G_WGH_KG	Weight of samples received
3	G_PRP	Combined Sample Preparation
3	GE_FUS91A50	Na2O2/NaOH Fusion, 500°C, HNO3, ICPAES, 0.1g-50ml, Glassy Carbon cruci
3	GE_ICP91A50	Na2O2/NaOH Fusion, 500°C, HNO3, ICPAES, 0.1g-50ml, Glassy Carbon cruci
3	GE_IMS91A50	Na2O2/NaOH Fusion, ICP-MS, Glassy Carbon crucibles
3	GE_FAI30V5	Au, Pt, Pd, FAS, exploration grade, ICP-AES, 30g-5mL

Authorised Signatory

John Chiang  
Laboratory Operations  
Manager

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**WARNING:** The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted. The findings report on the samples provided by the client and are not intended for commercial or contractual settlement purposes.

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received



Submission Number \*SD\* Bryan Dorland / Heenan / 3  
 Rocks  
 Number of Samples 3

**ANALYSIS REPORT BBM21-11341**

Element	@Al	@Ba	@Be	@Ca	@Cr	@Cu
Method	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50
Lower Limit	0.01	10	5	0.1	10	10
Upper Limit	25	10,000	2,500	25	50,000	10,000
Unit	%	ppm m / m	ppm m / m	%	ppm m / m	ppm m / m
S 00435005	6.40	73	<5	6.4	204	161
S 00435006	5.30	74	<5	7.2	191	132
S 00435007	6.11	174	<5	7.2	237	101
*Std OREAS 681	7.75	431	<5	6.0	2154	253
*Blk BLANK	<0.01	<10	<5	<0.1	<10	<10
*Std OREAS 70b	3.65	199	<5	3.0	1208	39
*Blk BLANK	<0.01	<10	<5	<0.1	<10	<10
*Std OREAS 682	8.63	384	<5	6.4	3436	252

Element	@Fe	@K	@Li	@Mg	@Mn	@Ni
Method	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50
Lower Limit	0.01	0.1	10	0.01	10	5
Upper Limit	25	25	50,000	25	100,000	10,000
Unit	%	%	ppm m / m	%	ppm m / m	ppm m / m
S 00435005	7.59	2.1	<10	2.86	1325	93
S 00435006	7.10	1.8	<10	2.88	1339	78
S 00435007	6.15	2.6	<10	2.84	1189	87
*Std OREAS 681	7.43	1.3	13	5.01	1282	509
*Blk BLANK	<0.01	<0.1	<10	<0.01	<10	<5
*Std OREAS 70b	5.49	0.6	31	13.21	1095	2290
*Blk BLANK	<0.01	<0.1	<10	<0.01	<10	<5
*Std OREAS 682	6.79	1.1	<10	4.84	1136	582

Element	@P	@Sc	@Si	@Sr	@Ti	@V
Method	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50	GE_ICP91A50
Lower Limit	0.01	5	0.1	10	0.01	5
Upper Limit	25	50,000	30	5,000	25	10,000
Unit	%	ppm m / m	%	ppm m / m	%	ppm m / m
S 00435005	0.02	36	20.2	167	0.39	227
S 00435006	0.02	33	19.6	169	0.35	210

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received



Submission Number \*SD\* Bryan Dorland / Heenan / 3  
 Rocks  
 Number of Samples 3

**ANALYSIS REPORT BBM21-11341**

Element Method	@P GE_ICP91A50	@Sc GE_ICP91A50	@Si GE_ICP91A50	@Sr GE_ICP91A50	@Ti GE_ICP91A50	@V GE_ICP91A50
Lower Limit	0.01	5	0.1	10	0.01	5
Upper Limit	25	50,000	30	5,000	25	10,000
Unit	%	ppm m / m	%	ppm m / m	%	ppm m / m
S 00435007	0.02	36	18.9	267	0.35	232
*Std OREAS 681	0.14	27	23.5	458	0.55	254
*Blk BLANK	<0.01	<5	<0.1	<10	<0.01	<5
*Std OREAS 70b	0.01	12	22.4	71	0.16	67
*Blk BLANK	<0.01	<5	<0.1	<10	<0.01	<5
*Std OREAS 682	0.12	22	23.4	443	0.47	221

Element Method	@Zn GE_ICP91A50	@Ag GE_IMS91A50	@As GE_IMS91A50	@Bi GE_IMS91A50	@Cd GE_IMS91A50	@Ce GE_IMS91A50
Lower Limit	5	1	5	0.1	0.2	0.1
Upper Limit	10,000	200	10,000	1,000	10,000	10,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435005	102	5	<5	0.3	<0.2	7.7
S 00435006	78	4	<5	0.2	<0.2	5.9
S 00435007	86	<1	<5	<0.1	<0.2	5.5
*Std OREAS 681	95	<1	<5	0.1	<0.2	40.6
*Blk BLANK	<5	<1	<5	<0.1	<0.2	<0.1
*Std OREAS 70b	120	<1	141	0.8	0.3	24.6
*Blk BLANK	<5	<1	<5	<0.1	<0.2	<0.1
*Std OREAS 682	95	<1	<5	0.1	<0.2	35.2
*Blk BLANK	-	<1	<5	<0.1	<0.2	<0.1
*Std OREAS 681	-	<1	<5	0.1	<0.2	43.7

Element Method	@Co GE_IMS91A50	@Cs GE_IMS91A50	@Dy GE_IMS91A50	@Er GE_IMS91A50	@Eu GE_IMS91A50	@Ga GE_IMS91A50
Lower Limit	0.5	0.1	0.05	0.05	0.05	1
Upper Limit	10,000	10,000	1,000	1,000	1,000	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435005	42.4	4.2	2.97	1.86	0.61	13
S 00435006	39.3	3.7	2.68	1.67	0.56	11

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received





Submission Number \*SD\* Bryan Dorland / Heenan / 3  
 Rocks  
 Number of Samples 3

**ANALYSIS REPORT BBM21-11341**

Element	@Co	@Cs	@Dy	@Er	@Eu	@Ga
Method	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50
Lower Limit	0.5	0.1	0.05	0.05	0.05	1
Upper Limit	10,000	10,000	1,000	1,000	1,000	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435007	40.1	4.8	2.41	1.48	0.53	12
*Std OREAS 681	53.9	4.0	3.60	1.94	1.30	17
*Blk BLANK	0.8	<0.1	<0.05	<0.05	<0.05	<1
*Std OREAS 70b	81.4	3.2	1.79	1.01	0.46	9
*Blk BLANK	<0.5	<0.1	<0.05	<0.05	<0.05	<1
*Std OREAS 682	51.6	3.4	2.95	1.56	1.14	17
*Blk BLANK	<0.5	<0.1	<0.05	<0.05	<0.05	<1
*Std OREAS 681	55.2	4.5	3.60	2.03	1.43	17

Element	@Gd	@Ge	@Hf	@Ho	@In	@La
Method	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50
Lower Limit	0.05	1	1	0.05	0.2	0.1
Upper Limit	1,000	1,000	10,000	1,000	1,000	10,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435005	2.61	2	1	0.62	<0.2	2.9
S 00435006	2.26	1	<1	0.55	<0.2	2.3
S 00435007	2.04	2	<1	0.51	<0.2	2.3
*Std OREAS 681	4.39	2	2	0.67	<0.2	18.7
*Blk BLANK	<0.05	<1	<1	<0.05	<0.2	<0.1
*Std OREAS 70b	1.82	1	2	0.37	<0.2	13.3
*Blk BLANK	<0.05	<1	<1	<0.05	<0.2	<0.1
*Std OREAS 682	3.71	1	2	0.56	<0.2	16.4
*Blk BLANK	<0.05	<1	<1	<0.05	<0.2	<0.1
*Std OREAS 681	4.30	2	2	0.75	<0.2	20.7

Element	@Lu	@Mo	@Nb	@Nd	@Pb	@Pr
Method	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50
Lower Limit	0.05	2	1	0.1	5	0.05
Upper Limit	1,000	10,000	10,000	10,000	10,000	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received



Submission Number \*SD\* Bryan Dorland / Heenan / 3  
 Rocks  
 Number of Samples 3

**ANALYSIS REPORT BBM21-11341**

Element	@Lu	@Mo	@Nb	@Nd	@Pb	@Pr
Method	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50
Lower Limit	0.05	2	1	0.1	5	0.05
Upper Limit	1,000	10,000	10,000	10,000	10,000	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435005	0.27	<2	<1	6.0	12	1.23
S 00435006	0.23	<2	<1	4.9	7	0.95
S 00435007	0.22	<2	<1	4.7	8	0.94
*Std OREAS 681	0.27	<2	5	22.7	10	5.57
*Blk BLANK	<0.05	<2	<1	<0.1	<5	<0.05
*Std OREAS 70b	0.15	5	3	10.2	12	2.81
*Blk BLANK	<0.05	<2	<1	<0.1	<5	<0.05
*Std OREAS 682	0.21	<2	5	19.5	10	4.78
*Blk BLANK	<0.05	<2	<1	<0.1	<5	<0.05
*Std OREAS 681	0.29	<2	6	21.4	11	5.40

Element	@Rb	@Sb	@Sm	@Sn	@Ta	@Tb
Method	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50
Lower Limit	0.2	0.1	0.1	1	0.5	0.05
Upper Limit	10,000	10,000	1,000	10,000	10,000	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435005	66.8	2.1	1.6	<1	<0.5	0.44
S 00435006	56.8	1.8	1.5	<1	<0.5	0.39
S 00435007	78.5	0.9	1.3	<1	<0.5	0.35
*Std OREAS 681	79.6	0.2	4.4	2	<0.5	0.60
*Blk BLANK	<0.2	<0.1	<0.1	<1	<0.5	<0.05
*Std OREAS 70b	30.9	0.4	1.7	1	<0.5	0.28
*Blk BLANK	<0.2	<0.1	<0.1	<1	<0.5	<0.05
*Std OREAS 682	67.0	0.2	3.8	1	<0.5	0.50
*Blk BLANK	0.4	<0.1	<0.1	<1	<0.5	<0.05
*Std OREAS 681	84.4	0.2	4.6	2	<0.5	0.66

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received



Submission Number \*SD\* Bryan Dorland / Heenan / 3  
 Rocks  
 Number of Samples 3

## ANALYSIS REPORT BBM21-11341

Element	@Th	@TI	@Tm	@U	@W	@Y
Method	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50	GE_IMS91A50
Lower Limit	0.1	0.5	0.05	0.05	1	0.5
Upper Limit	1,000	1,000	1,000	1,000	10,000	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
S 00435005	0.3	0.6	0.27	0.19	22	16.3
S 00435006	0.2	<0.5	0.25	0.17	22	14.5
S 00435007	0.2	0.5	0.22	0.19	20	13.2
*Std OREAS 681	6.1	<0.5	0.28	1.52	1	17.7
*Blk BLANK	<0.1	<0.5	<0.05	<0.05	<1	<0.5
*Std OREAS 70b	5.6	<0.5	0.15	1.65	4	9.9
*Blk BLANK	<0.1	<0.5	<0.05	<0.05	<1	<0.5
*Std OREAS 682	6.2	<0.5	0.22	1.39	<1	14.7
*Blk BLANK	<0.1	<0.5	<0.05	<0.05	<1	<0.5
*Std OREAS 681	6.8	<0.5	0.30	1.69	<1	18.1

Element	@Yb	@Zr	@Au	@Pt	@Pd
Method	GE_IMS91A50	GE_IMS91A50	GE_FAI30V5	GE_FAI30V5	GE_FAI30V5
Lower Limit	0.1	0.5	1	10	1
Upper Limit	1,000	10,000	10,000	10,000	10,000
Unit	ppm m / m	ppm m / m	ppb	ppb	ppb
S 00435005	1.8	49.6	1730	<10	5
S 00435006	1.6	33.9	1870	<10	4
S 00435007	1.4	32.8	83	<10	11
*Blk BLANK	-	-	<1	<10	<1
*Std OREAS 680	-	-	154	400	221
*Std OREAS 681	1.8	77.9	-	-	-
*Blk BLANK	<0.1	<0.5	-	-	-
*Std OREAS 70b	1.0	67.2	-	-	-
*Blk BLANK	<0.1	0.8	-	-	-
*Std OREAS 682	1.5	66.7	-	-	-
*Blk BLANK	<0.1	<0.5	-	-	-
*Std OREAS 681	1.9	76.3	-	-	-

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received



Submission Number \*SD\* Bryan Dorland / Heenan / 3

## ANALYSIS REPORT BBM21-11341

Rocks

Number of Samples 3

SGS Canada Minerals Burnaby conforms to the requirements of ISO/IEC17025 for specific tests as listed on their scope of accreditation found at <https://www.scc.ca/en/search/laboratories/sgs>

Tests and Elements marked with an "@" symbol in the report denote ISO/IEC17025 accreditation.

- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received

2-Oct-2021 8:00PM BBM\_U0014727927

Page 7 of 7

MIN-M\_COA\_ROW-Last Modified Date: 05-Nov-2019



**Certificate of Analysis**  
**Work Order : SU1900517**  
**[Report File No.: 0000021589]**

Date: August 30, 2019

To: **Bryan Dorland**  
**COD SGS MINERALS - GEOCHEM LAKEFIELD**  
**ON**

P.O. No.: -  
Project No.: -  
**Samples: 8**  
**Received: Aug 6, 2019**  
**Pages: Page 1 to 12**  
(Inclusive of Cover Sheet)

**Methods Summary**

<u>No. Of Samples</u>	<u>Method Code</u>	<u>Description</u>
8	SHIP	Shipping
8	G_WGH79	Weighing of samples and reporting of weights
8	G_PRP89	Weigh, Dry, to 3kg, Crush 75% -2mm, Split to 250g, Pulverize to 85% -75µm
8	GE_FAI313	@Au, Pt, Pd, FAS, ICP-AES, 30g - 5ml
8	ZMS_ICM90A	Package Price - GE_ICM90A (GE_IC90A+GE_IC90M)
8	GE_IC90A	@Package, ICPAES after Sodium Peroxide Fusion-Graphite Crucibles
8	GE_IC90M	@Package, ICPMS after Sodium Peroxide Fusion-Graphite Crucibles
8	GE_ICP90A	ICP-OES after Na2O2 fusion

**Storage: Pulp & Reject**

PULP STORAGE :  
REJECT STORAGE :

**Comments:**

Assays not suitable for commercial exchange.

Certified By :   
Debbie Waldon  
Project Coordinator

**SGS Minerals Services (Lakefield) is accredited by Standards Council of Canada (SCC) and conforms to the requirements of ISO/IEC 17025 for specific tests as indicated on the scope of accreditation to be found at <http://www.scc.ca/en/programs/lab/mineral.shtml>**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = 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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Element Method Det.Lim. Units	WtKg G_WGH79 kg	@Au GE_FAI313 ppb	@Al GE_ICM90A %	@Ba GE_ICM90A ppm	@Be GE_ICM90A ppm	@Ca GE_ICM90A %	@Cr GE_ICM90A ppm	@Cu GE_ICM90A ppm
HN-01	1.827	3	6.36	80	<5	7.4	209	103
HN-02	0.832	5	8.31	81	<5	5.9	262	111
HN-03	2.235	433	6.67	86	<5	8.7	238	75
OG-01	3.291	3	0.27	<10	<5	4.5	70	44
OG-02	2.549	5	0.47	30	<5	0.2	82	50
OG-03	2.406	1	0.38	11	<5	0.4	94	17
OG-04	2.062	4	0.43	12	<5	4.2	74	237
OG-05	1.493	6	0.49	23	<5	2.8	85	152
*Rep OG-04		4						
*Std OREAS-222		1199						
*Rep HN-01			6.37	76	<5	7.3	218	110
*Std SY-4			10.8	328	<5	5.7	11	<10

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Element Method Det.Lim. Units	@Fe	@K	@Li	@Mg	@Mn	@Ni	@P	@Sc
	GE_ICM90A 0.01 %	GE_ICM90A 0.1 %	GE_ICM90A 10 ppm	GE_ICM90A 0.01 %	GE_ICM90A 10 ppm	GE_ICM90A 5 ppm	GE_ICM90A 0.01 %	GE_ICM90A 5 ppm
HN-01	7.25	3.0	<10	2.92	1448	85	0.02	36
HN-02	8.48	2.4	32	2.74	1581	112	0.03	46
HN-03	5.20	2.2	<10	3.13	1554	83	0.02	35
OG-01	22.2	<0.1	<10	0.50	693	<5	0.05	<5
OG-02	17.5	<0.1	<10	1.53	2789	13	0.03	<5
OG-03	14.9	<0.1	<10	1.42	1273	8	0.04	<5
OG-04	22.1	<0.1	<10	0.97	2567	8	0.05	<5
OG-05	24.9	<0.1	<10	1.05	1204	<5	0.05	<5
*Rep HN-01	7.19	3.0	<10	2.93	1439	88	0.03	37
*Std SY-4	4.18	1.4	35	0.31	830	12	0.06	<5

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Element Method Det.Lim. Units	Si	@Sr	@Ti	@V	@Zn	@Ag	@As	@Bi
	GE_ICM90A 0.1 %	GE_ICM90A 10 ppm	GE_ICM90A 0.01 %	GE_ICM90A 5 ppm	GE_ICM90A 5 ppm	GE_ICM90A 1 ppm	GE_ICM90A 5 ppm	GE_ICM90A 0.1 ppm
HN-01	19.8	109	0.40	243	73	<1	<5	<0.1
HN-02	25.0	65	0.52	273	94	<1	<5	<0.1
HN-03	17.6	212	0.34	182	67	<1	<5	<0.1
OG-01	28.6	62	<0.01	<5	38	<1	<5	0.3
OG-02	>30.0	<10	0.01	8	297	<1	<5	0.3
OG-03	>30.0	<10	0.03	5	288	<1	<5	<0.1
OG-04	>30.0	19	0.02	<5	163	<1	<5	0.1
OG-05	29.3	22	0.02	8	203	<1	<5	<0.1
*Rep HN-01	19.7	116	0.39	254	73	<1	<5	<0.1
*Std SY-4	23.8	1175	0.16	<5	99	<1	<5	<0.1

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Element Method Det.Lim. Units	@Cd GE_ICM90A 0.2 ppm	@Ce GE_ICM90A 0.1 ppm	@Co GE_ICM90A 0.5 ppm	@Cs GE_ICM90A 0.1 ppm	@Dy GE_ICM90A 0.05 ppm	@Er GE_ICM90A 0.05 ppm	@Eu GE_ICM90A 0.05 ppm	@Ga GE_ICM90A 1 ppm
HN-01	<0.2	6.1	41.0	4.9	2.84	1.75	0.64	15
HN-02	<0.2	6.8	51.4	4.6	3.07	2.00	0.68	18
HN-03	<0.2	5.2	38.6	2.1	2.43	1.40	0.58	15
OG-01	<0.2	4.3	4.5	0.2	0.63	0.41	0.60	2
OG-02	0.4	5.3	9.1	0.4	0.89	0.61	0.44	3
OG-03	0.3	3.1	4.4	0.2	0.43	0.26	0.14	5
OG-04	<0.2	3.8	9.6	0.2	0.81	0.56	0.52	3
OG-05	<0.2	5.3	6.8	0.2	1.07	0.70	0.70	4
*Rep HN-01	<0.2	5.9	40.7	4.7	2.82	1.69	0.63	15
*Std SY-4	<0.2	119	2.8	1.6	19.89	14.63	2.11	40

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Element Method Det.Lim. Units	@Gd GE_ICM90A 0.05 ppm	@Ge GE_ICM90A 1 ppm	@Hf GE_ICM90A 1 ppm	@Ho GE_ICM90A 0.05 ppm	@In GE_ICM90A 0.2 ppm	@La GE_ICM90A 0.1 ppm	@Lu GE_ICM90A 0.05 ppm	@Mo GE_ICM90A 2 ppm
HN-01	2.43	2	1	0.62	<0.2	2.5	0.30	<2
HN-02	2.62	2	2	0.68	<0.2	2.9	0.33	<2
HN-03	2.06	2	1	0.50	<0.2	1.9	0.26	<2
OG-01	0.58	6	<1	0.14	<0.2	2.3	0.07	3
OG-02	0.82	5	<1	0.21	<0.2	2.6	0.11	4
OG-03	0.40	6	<1	0.10	<0.2	1.4	0.05	4
OG-04	0.80	7	<1	0.19	<0.2	2.0	0.11	5
OG-05	1.04	9	<1	0.23	0.2	2.6	0.13	5
*Rep HN-01	2.32	2	1	0.61	<0.2	2.2	0.31	<2
*Std SY-4	15.49	1	12	4.58	<0.2	56.1	2.28	<2

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Element Method Det.Lim. Units	@Nb	@Nd	@Pb	@Pr	@Rb	@Sb	@Sm	@Sn
	GE_ICM90A 1 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 5 ppm	GE_ICM90A 0.05 ppm	GE_ICM90A 0.2 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 1 ppm
HN-01	1	4.6	<5	0.96	86.9	1.8	1.5	<1
HN-02	2	5.2	<5	1.16	66.0	1.3	1.8	<1
HN-03	1	3.9	<5	0.83	58.6	0.8	1.4	<1
OG-01	<1	2.0	<5	0.53	1.7	<0.1	0.4	2
OG-02	<1	2.6	<5	0.68	1.4	<0.1	0.6	<1
OG-03	<1	1.6	<5	0.43	1.5	<0.1	0.4	<1
OG-04	<1	1.8	7	0.47	1.3	<0.1	0.5	<1
OG-05	<1	2.9	12	0.67	2.2	0.3	0.8	2
*Rep HN-01	1	4.5	<5	0.94	85.4	1.7	1.5	<1
*Std SY-4	14	57.0	10	15.52	55.2	<0.1	12.9	9

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Element Method Det.Lim. Units	@Ta GE_ICM90A 0.5 ppm	@Tb GE_ICM90A 0.05 ppm	@Th GE_ICM90A 0.1 ppm	@Tl GE_ICM90A 0.5 ppm	@Tm GE_ICM90A 0.05 ppm	@U GE_ICM90A 0.05 ppm	@W GE_ICM90A 1 ppm	@Y GE_ICM90A 0.5 ppm
HN-01	<0.5	0.50	0.2	0.6	0.31	0.06	8	15.4
HN-02	<0.5	0.45	0.2	<0.5	0.34	0.06	2	17.3
HN-03	<0.5	0.36	0.2	<0.5	0.25	0.18	17	12.7
OG-01	<0.5	0.09	<0.1	<0.5	0.07	<0.05	4	4.9
OG-02	<0.5	0.14	0.3	<0.5	0.11	0.09	<1	6.8
OG-03	<0.5	0.06	0.3	<0.5	<0.05	0.09	<1	3.0
OG-04	<0.5	0.13	0.2	<0.5	0.09	0.06	<1	5.7
OG-05	<0.5	0.16	0.3	<0.5	0.13	0.08	<1	7.5
*Rep HN-01	<0.5	0.40	0.2	0.5	0.30	0.06	8	15.3
*Std SY-4	0.8	2.82	1.6	<0.5	2.57	0.74	<1	121

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Element Method Det.Lim. Units	@Yb	@Zr	Al	As	Ba	Be	Ca	Cd
	GE_ICM90A	GE_ICM90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A
	0.1 ppm	0.5 ppm	0.01 %	30 ppm	10 ppm	5 ppm	0.1 %	10 ppm
HN-01	1.7	41.2	6.35	<30	70	<5	7.3	<10
HN-02	2.1	47.2	7.30	<30	77	<5	5.1	<10
HN-03	1.4	35.1	6.68	<30	81	<5	8.6	<10
OG-01	0.4	3.7	0.26	<30	<10	<5	4.2	<10
OG-02	0.6	8.8	0.45	<30	29	<5	0.3	<10
OG-03	0.3	6.7	0.37	<30	11	<5	0.4	<10
OG-04	0.6	14.4	0.41	<30	11	<5	3.9	<10
OG-05	0.7	10.4	0.48	<30	22	<5	2.8	<10
*Rep HN-01	1.7	40.6						
*Std SY-4	15.2	595						

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Element Method Det.Lim. Units	Co	Cr	Cu	Fe	K	La	Li	Mg
	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A
	10 ppm	10 ppm	10 ppm	0.01 %	0.1 %	10 ppm	10 ppm	0.01 %
HN-01	30	203	99	7.14	2.9	<10	<10	3.02
HN-02	37	256	104	7.27	2.2	<10	30	2.54
HN-03	29	225	71	5.17	2.2	<10	<10	3.21
OG-01	<10	77	43	22.1	<0.1	<10	<10	0.51
OG-02	<10	81	54	16.5	<0.1	<10	<10	1.62
OG-03	<10	105	20	14.2	<0.1	<10	<10	1.40
OG-04	<10	79	234	22.2	<0.1	<10	<10	0.97
OG-05	<10	71	163	22.8	<0.1	<10	<10	1.00

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Element Method Det.Lim. Units	Mn	Mo	Ni	P	Pb	Sb	Sc	Sn
	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A	GE_ICP90A
	10	10	10	0.01	20	50	5	50
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
HN-01	1386	<10	83	0.02	<20	<50	33	<50
HN-02	1365	<10	109	0.02	<20	<50	40	<50
HN-03	1502	<10	81	0.01	<20	<50	31	<50
OG-01	726	<10	<10	0.05	<20	<50	<5	<50
OG-02	2593	<10	16	0.02	<20	<50	<5	<50
OG-03	1207	<10	<10	0.03	<20	<50	<5	<50
OG-04	2430	<10	<10	0.05	<20	<50	<5	<50
OG-05	1146	<10	<10	0.05	<20	<50	<5	<50

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Element Method Det.Lim. Units	Sr	Ti	V	W	Y	Zn	Si
	GE_ICP90A 10 ppm	GE_ICP90A 0.01 %	GE_ICP90A 10 ppm	GE_ICP90A 50 ppm	GE_ICP90A 5 ppm	GE_ICP90A 10 ppm	GE_ICP90A 0.1 %
HN-01	108	0.40	233	<50	13	71	20.2
HN-02	60	0.47	280	<50	15	83	22.0
HN-03	199	0.35	169	<50	11	73	18.1
OG-01	60	<0.01	<10	<50	<5	39	29.2
OG-02	11	0.01	<10	<50	6	281	>30.0
OG-03	10	0.03	<10	<50	<5	280	>30.0
OG-04	20	0.02	<10	<50	5	162	28.4
OG-05	24	0.02	<10	<50	7	200	28.7

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