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Report on Ground Geophysical Work, Reconnaissance and Rockchip Sampling

Long Lake Project

Compiled by: Sally McGuinness

Dated: 29/08/2019

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INTRODUCTION

Rumble Resources Ltd has an option agreement to acquire up to 100% of the Long Lake Project. The Long Lake Project comprises of the historic Long Lake Au mine and **over four km of Sudbury breccia/quartz diorite outcrops** which are interpreted to be part of the prospective **"Copper Cliff Offset Dyke"** system that has been moved west by later regional faults. The area of tenure is approximately 19 km^2.

This report summarises work completed during Rumble's first season of exploration at Long Lake. A reconnaissance visit including rock chip sampling was carried out in July 2018. A ground EM survey was completed in June 2019.

LOCATION AND ACCESS

The Long Lake Project (approximately 30km^2 in area) is located 20km southwest of the city of Sudbury, Ontario, Canada. The property is located within the townships of Eden and Tilton in the Sudbury Mining Division. (Figure 1)

GEOLOGY

The Long Lake Project is located in the Southern Province of the Canadian Shield, south of the Sudbury impact crater and the Sudbury Intrusive Complex. The dominant rock types in the area are metasedimentary rocks (mainly Mississagi quartzite) of the Huronian Supergroup (~2300 Ma; Jones, 1982). Conglomerates, greywacke and siltstone of the Espanola Formation are less abundant.

The main intrusive rocks in the area are Nipissing gabbro, which is characterized by pronounced light and dark layering, and Eden Lake intrusions, which are mainly hornblende gabbro-diorite and biotitetrondhjemite. Late, northwest trending diabase dikes crosscut all other rock types.

The east-northeast trending Wallingford fault is a major fault in the area. It dips 45° to the east but steepens at depth to 70° before flattening out to 45° again. It straddles the western edge of the mine. It is unknown at this point whether the Wallingford fault is post- or pre-ore (Jones, 1982).

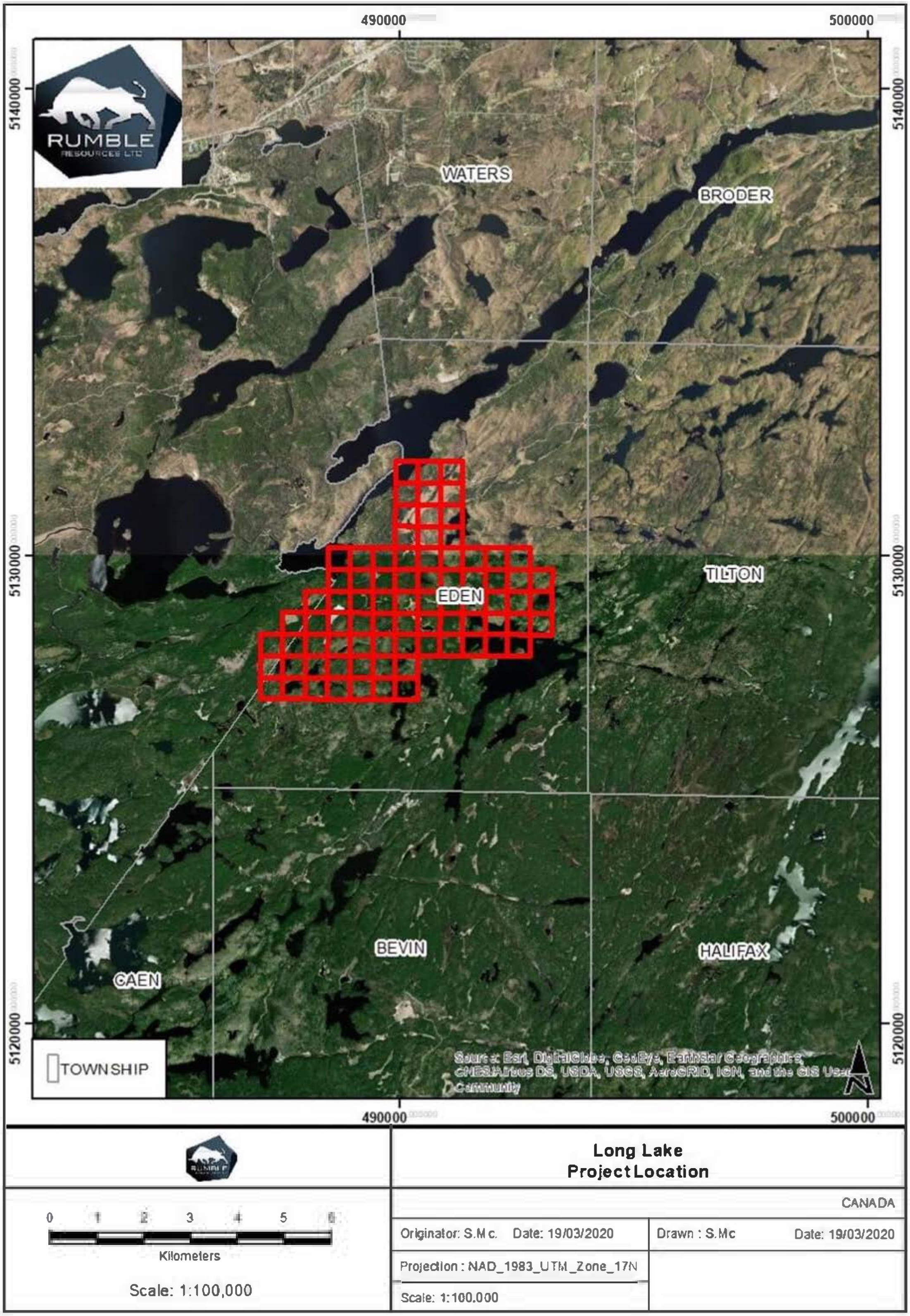


Figure 1 – Location Plan

WORK DONE AND RESULTS

During 2018 a review of previous exploration was undertaken by Rumble. Since 1883, the Sudbury mining field has been globally significant with the Sudbury Basin the second-largest supplier of nickel ore in the world, and new discoveries continuing to be made. It is one of the most productive nickel-mining fields in the world with over 1.7 billion tonnes of past production, reserves and resources.

Nickel-copper and platinum group metals ("PGM") bearing sulphide minerals occur in a 60 km by 27 km elliptical igneous body called the Sudbury Igneous Complex ("SIC"). The current model infers the SIC was formed some 1,844 million years ago after sheet-like flash/impact melting of nickel and copper bearing rocks by a meteorite impact. The SIC is within a basin like structure (Sudbury Basin) which had been covered by later sediments and has subsequently been eroded to the current level. Mineralization occurs within the SIC as well as in the neighbouring country rocks in close association with breccias and so-called 'Offset Dykes'. Offset Dykes with metamorphosed (hot) Sudbury breccias have become the target of progressively more intense exploration interest in recent years following the discovery of blind economic deposits. Offset dykes are typically quartz-diorite in composition and extend both radially away from and concentric to the SIC. It is important to note that the Offset Dykes developed downwards from the impact melt sheet. Melt material migrated down into the fractures caused by the impact below the SIC. The melt carried metal sulphides that accumulated into deposits within the Offset Dykes by gravity and pressure gradients (impact rebound). Nearly half of the nickel ore at Sudbury occurs in breccias and Offset Dykes in the footwall rocks of the SIC.

The Copper Cliff Offset Dyke System

The Copper Cliff South (producing) and the Copper Cliff North mine have yielded some 200 million tonnes of ore along the north-south trending offset dyke system. Vale Limited's Clarabelle mill, Copper Cliff smelter and Copper Cliff nickel refinery are all located close to the Copper Cliff Offset dyke.

Offset Dykes and metamorphosed (Hot) Sudbury Breccias have become the target of progressively more intense exploration interest in recent years following a number of new discoveries. The latest such discovery on the Copper Cliff Offset dyke was made in 2004 at Kelly Lake, to the south of the existing mines. Kelly Lake is the southernmost deposit discovered to date and lies south of the Copper Cliff South mine (Figure 2 and Figure 3). The Kelly Lake reserve is 10.5 Mt @ 1.77% Ni, 1.34% Cu and 3.6 g/t PGM.

The Long Lake Project (Figure 2) lies about 10km southwest of the Kelly Lake deposit.

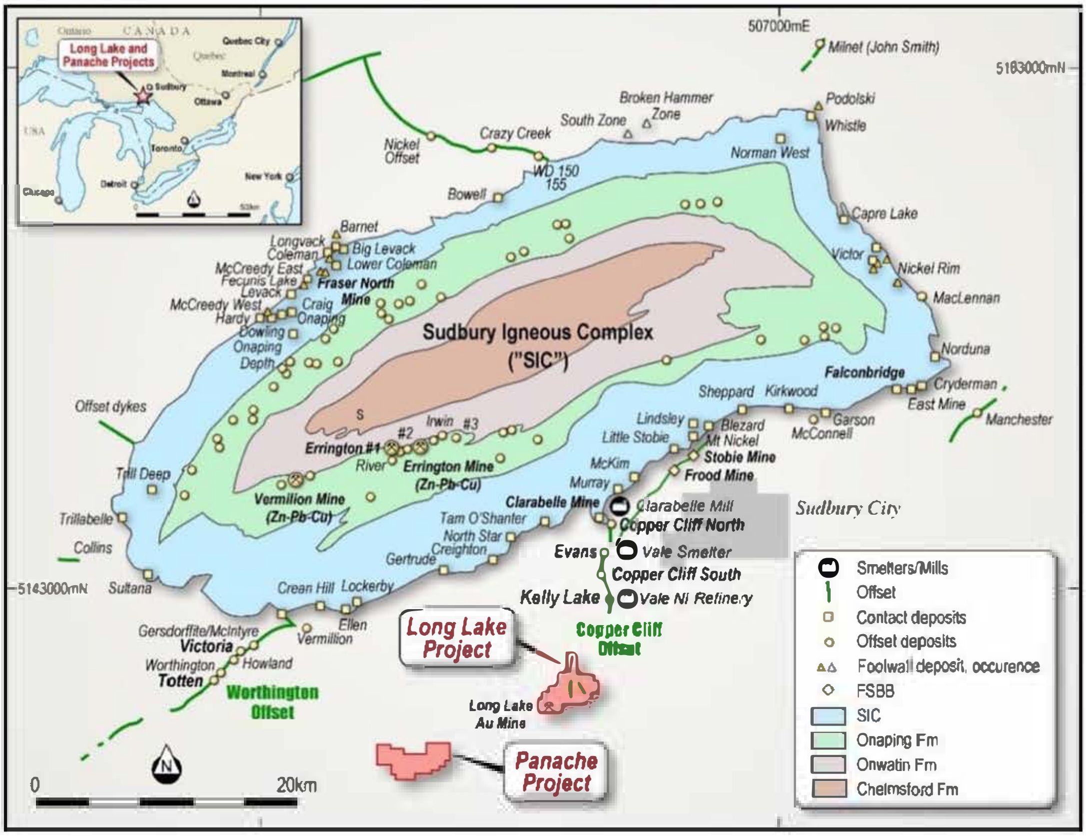
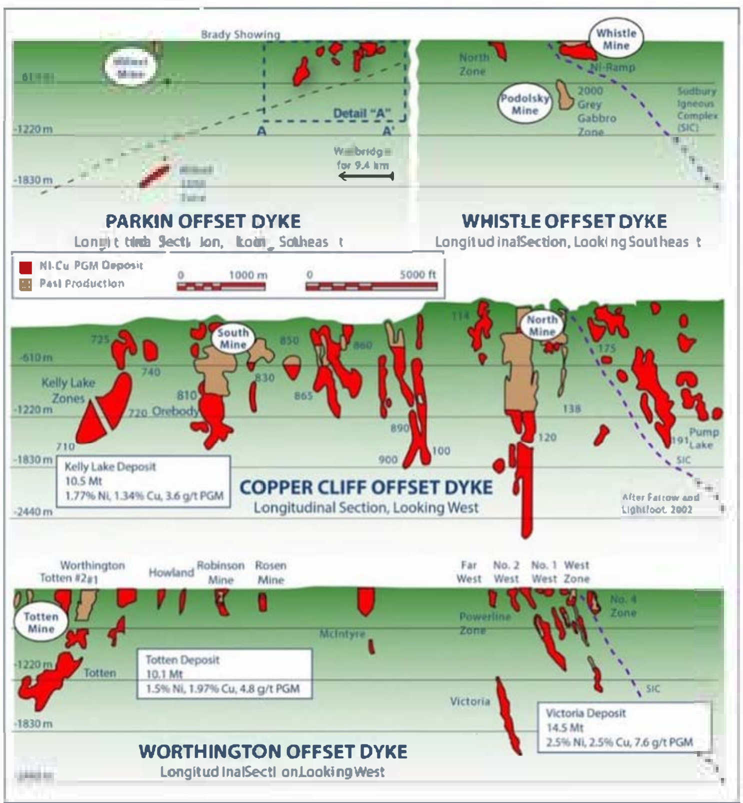


Figure 2 – The location of the Long Lake Project and the Deposit Types of the Sudbury Basin



Examples of Offset Dyke Deposits

Very significant high value deposits occur as clusters along Offset Dykes and are often blind. The Kelly Lake Deposit was found below a smaller near surface deposit by downhole TEM (discovery announced in 1997). The Kelly Lake Deposit was defined in 2006.

The Totten Deposit, which is a similar size to the Kelly Lake Deposit, lies within the Worthington Offset Dyke and was discovered in 1999 by Inco.

More recently, the deep Victoria Deposit (over 1km deep) which also lies within the Worthington Offset Dyke, was defined by Quadra FNX in 2012. **The Victoria Deposit has a reserve of 14.5Mt @ 2.5% Ni, 2.5% Cu and 7.6 g/t PGM**.

Both the Totten and Kelly Lake Deposits lie between 7 and 9km into the footwall rocks (horizontally from the SIC contact) **indicating mineralisation can develop significant distances away from the SIC** subject to syn-impact deformation (width), reactivated earlier defomation, litho-geochemistry of melts and impact/rebound pressure gradients.

Figure 3 – Offset Dyke Deposit Examples of the Sudbury Basin

Exploration by previous explorers (including the current owner – Gordon Salo) has highlighted the occurrence of north-south and northwest striking Sudbury Breccia style dykes with quartz diorite. Petrography and a single shallow diamond drill-hole (82m depth - 2011) has confirmed the presence of moderately metamorphosed Sudbury Breccia with elevated PGM (relative to the surrounding rocks) at a location called Anomaly 19 (Figure 4). The location is coincident with a moderate VTEM conductor. Reconnaissance prospecting and petrography has confirmed the presence of numerous quartz diorite north trending dykes over 4km in strike.

Electromagnetic surveys had been limited to VLF (1987) and VTEM (2008). Technical review of both surveys suggests the likely depth penetration for these systems is shallow at approximately 100m.

The Copper Offset Dyke is open to the south which is inferred to extend into the Long Lake Project with some 3km of potential Sudbury Breccia dyke (Figure 4) is interpreted to occur with the project area.

No deep penetrating ground TEM had been conducted over the main targets of interest in Phase 1 and 2 (Figure 4)

Rumble considers the Long Lake very prospective for high grade Ni – Cu deposits and will target blind Sudbury "Offset Dyke" style massive Ni – Cu – PGM type deposits by using high power ground TEM to generate potential conductors.

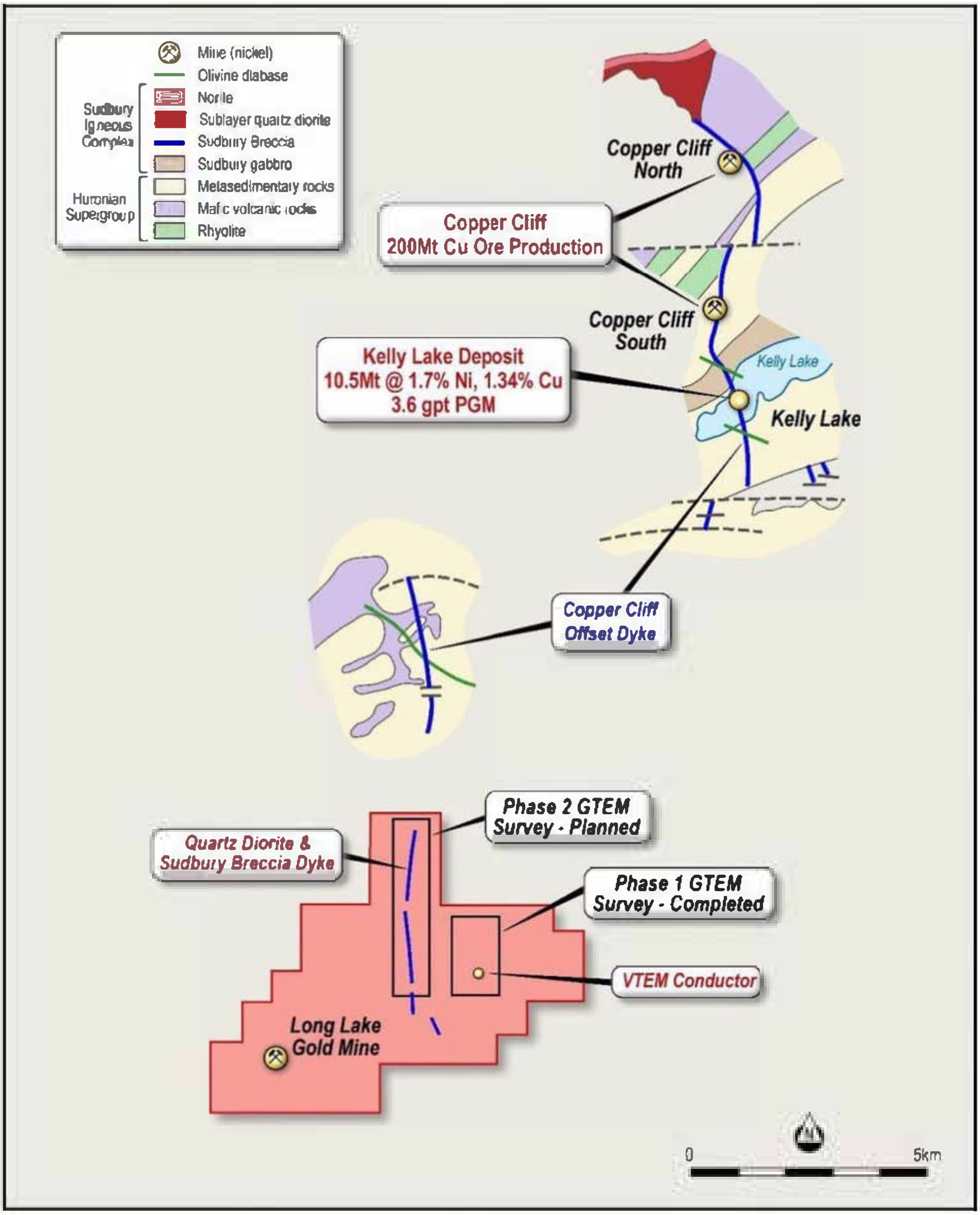


Figure 4 – Highlighting the Copper Cliff Offset Dyke and the Inferred Sudbury Breccia Dyke within the Long Lake Project.

Geological Reconnaissance and Rock Chip Sampling

Claim #290086, Cell #41I06B138

During July 2018, Rumble geologists visited the Long Lake Project. Geological reconnaissance was conducted with visits to the Long Lake gold mine and nearby Quartz Diorite and Sudbury Breccia dyke. (Figure 5)

Figure 5 – Quartz Diorite and Breccia Dyke

One Grab/Rockchip sample was taken and analysed by ALS Canada Ltd. The rock chip location and lithological description is given in Table 1 below. Coordinates are in NAD83 datum and UTM17N projection. Results are supplied in Appendix 2.

Date	Prospect	Sample ID	Easting_NAD83Z17	Northing_NAD83Z17	Description
11/07/2018	Long Lake	LLRR1801	489081	5128194	Qtz - hornblende sulphide zone with abundant pyrite in metasediment.

Table 1 – Long Lake - Rockchip Sample Locations

The Rockchip was taken within Claim #290086, Cell #41I06B138 and location is shown on Figure 6.

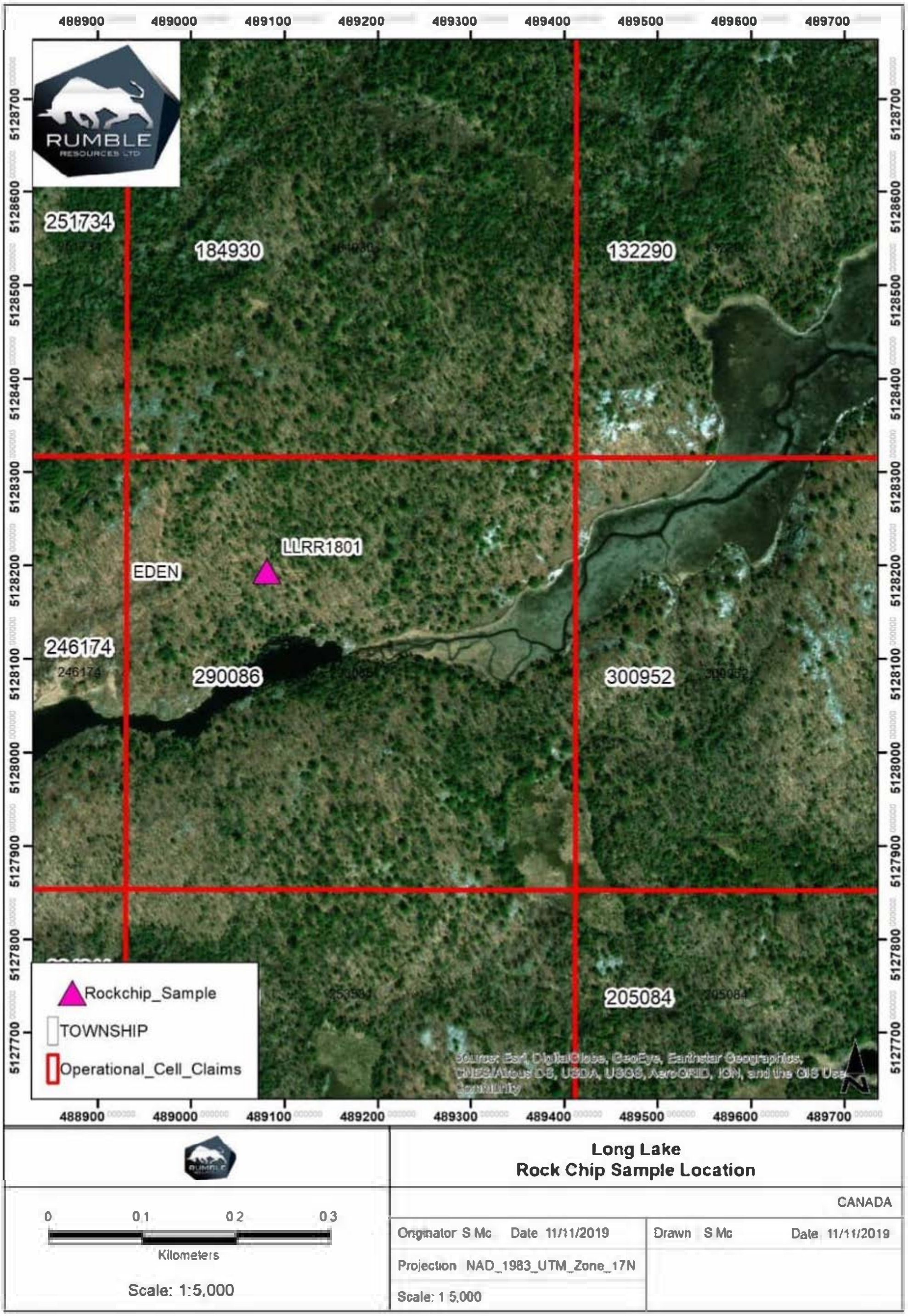


Figure 6 – Location of Rockchip sample

Ground Electromagnetic Survey

A deep penetrating ground TEM survey was designed to test a VTEM conductor associated with outcropping Sudbury Breccia (Anomaly 19). The survey was completed in May 2019 and consisted of eight (8) 200m lines with 100m stations. A high temperature SQUID (HTS) sensor was used to increase depth penetration (50 A system). The survey did not replicate the VTEM conductor (Anomaly 19). The VTEM conductor is interpreted to be small (less than 200m – between lines).

The survey was conducted by Discovery Geophysics with the aim of detecting basement conductors indicative of massive nickel sulphides to be targeted with drilling. The following section discusses the survey parameters and results in detail.

The Ground FLEM Survey work was carried out within the following claims:

Claim #246176, Cell #41I06A043

Claim #134237, Cell #41I06A044

Claim #186724, Cell #41I06A045

Claim #340979, Cell #41I06A063

Claim #340978, Cell #41I06A064

Claim #289429, Cell #41I06A065

Claim #186725, Cell #41I06A083

Claim #122724, Cell #41I06A084

Claim #281360, Cell #41I06A085

Claim #319422, Cell #41I06A103

Claim #234014, Cell #41I06A104

Claim #340331, Cell #41I06A105

Survey stations are shown on Figure 7.

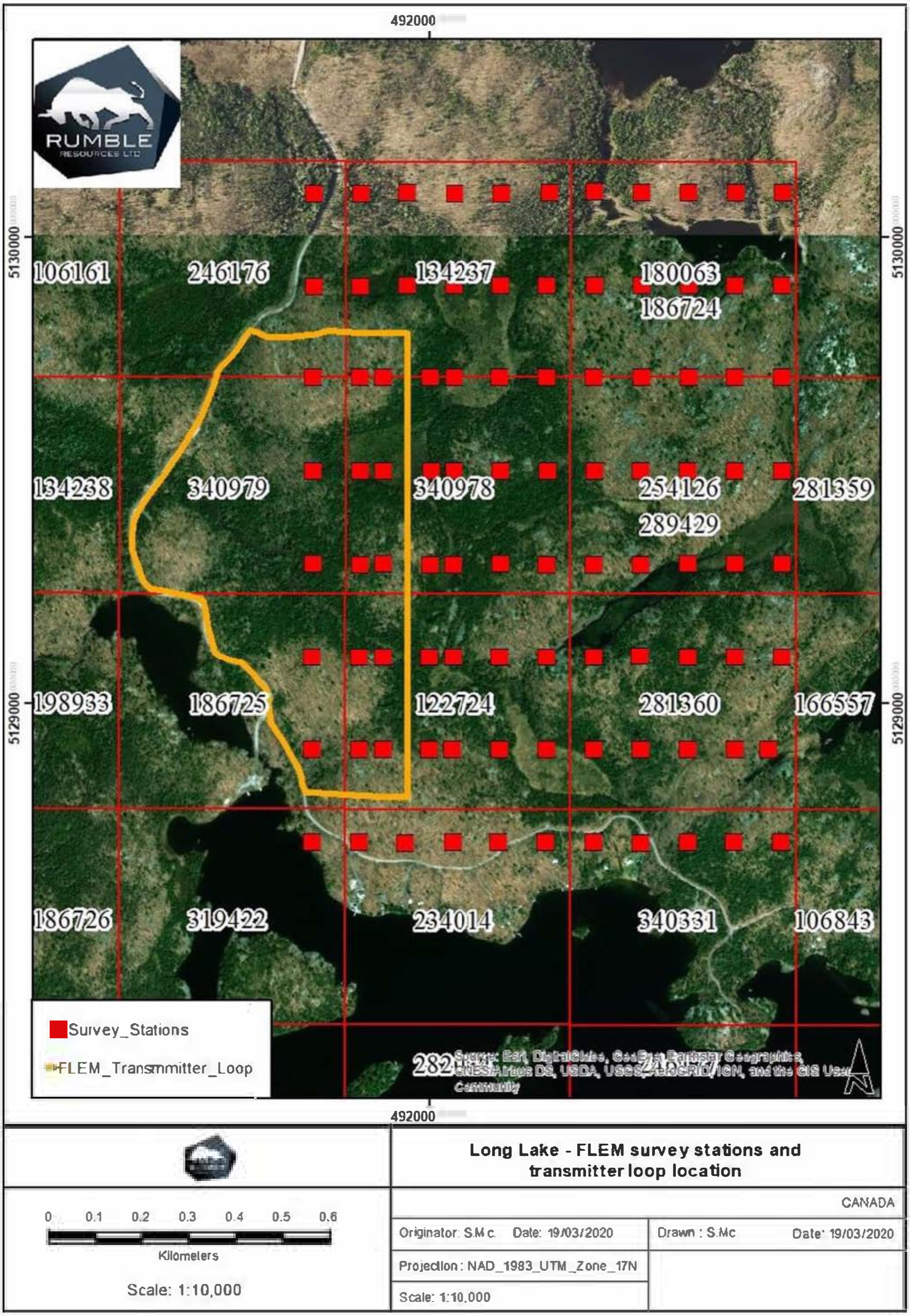


Figure 7 – Long Lake completed FLEM survey stations and transmitter loop location.

Survey Parameters

The survey was designed to traverse a conductor detected from a previously flown airborne EM survey, and a mapped area of Sudbury Breccia, to test for the presence of "offset dyke style" Ni-Cu-PGE mineralisation. Eight east-west lines of data were collected with a 200m line spacing and 100m station spacings (Figure 7). Stations close to the western loop wire were offset by 50m. A 1000m×400m transmitter loop was designed to detect steeply-dipping conductors at depth, and generated a consistent current of 50A. A high-temperature SQUID (HTS) sensor was employed to increase the signal-to-noise, hence increase the exploration depth. The HTS collected Z- (up) and X- (east) component data (the Y-component was malfunctioning hence was not recorded). Line coordinates are shown in Table 2, transmitter loop corner coordinates are shown in Table 3, and survey parameters are shown in Table 4. All coordinates are in NAD83 datum and UTM17N projection.

Line	Northing	Easting Start	Easting End
1	5130100	491750	492750
2	5129900	491750	492750
3	5129700	491750	492750
4	5129500	491750	492750
5	5129300	491750	492750
6	5129100	491750	492750
7	5128900	491750	492750
8	5128700	491750	492750

Table 2 – Long Lake FLEM survey lines

Vertex	Easting	Northing
1	491581	5129753
2	491615	5129801
3	491670	5129783
4	491783	5129798
5	491952	5129795
6	491952	5128795
7	491734	5128808
8	491722	5128859
9	491662	5128954
10	491653	5129025
11	491604	5129084
12	491541	5129110
13	491514	5129225
14	491395	5129250
15	491361	5129341
16	491368	5129396
17	491390	5129434
18	491470	5129545
19	491513	5129622
20	491549	5129717
21	491581	5129753

Table 3 – Long Lake FLEM transmitter loop coordinates.

Configuration	Fixed-loop
Loop Size	1000m × 400m
No. of Lines	8
Line Spacing	200m
Station Spacing	100m
Sensor	High-Temperature SQUID. Bz (up), Bx (east).
Transmitter	TXU-30 (50kW)
Current	50A
Base Frequency	0.5Hz

Table 4 – Long Lake FLEM survey parameters

Results

The ground within the survey area is highly resistive, highlighted by the majority of EM decays approaching the noise level of ~0.01pT/A by channel 12 (0.9-1.2ms). The early-time channels are dominated by a loop edge effect, resulting in a false anomalous EM response on the eastern side of the transmitter loop (Figure 8). This response is common with large loops in resistive environments and is enhanced with the limited dynamic range of the SQUID sensor. It has been ignored in the modelling.

No significant conductors have been detected from the FLEM survey. The inability to detect the VTEM conductor suggests that the source is likely too small to be delineated with the FLEM system specifications (i.e. line and station spacings), and hence is not deemed of economic significance. If the VTEM conductor were to be delineated to test with drilling, a frequency domain system, such as the MaxMin system from Apex Parametrics, could be used for the small, shallow conductor.

Forward modelling of the data suggests that the HTS system is capable of detecting a significant conductor (for example a 300m×400m, 3000S plate) to depths of ~700m (Figure 9). This suggests that there are no offset dyke style massive Ni-Cu-PGE sulphide orebodies of economic significance present in the survey area. No further work was recommended for this area.

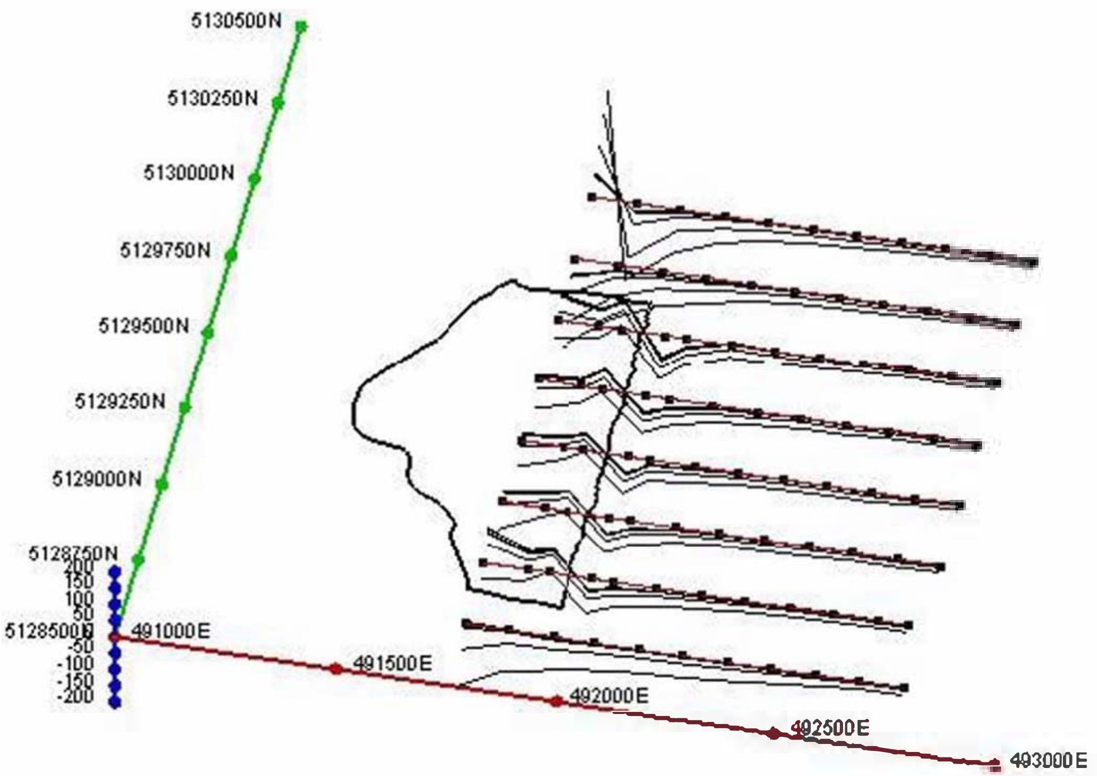


Figure 8– Oblique view of FLEM survey with early-time channel line profiles showing the false anomaly edge effect on the eastern side of the transmitter loop.

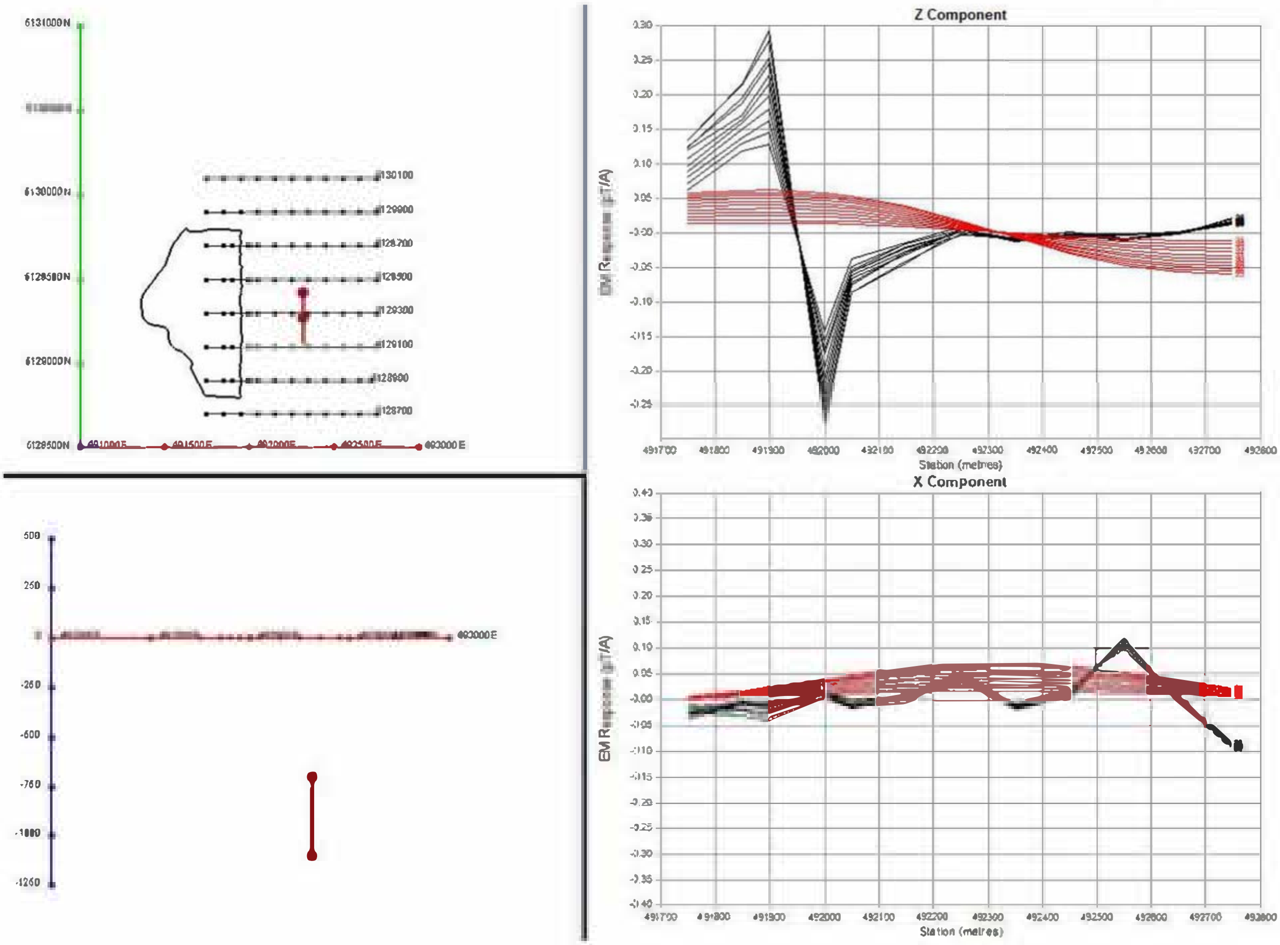


Figure 9– Plan (top left) and view from south (bottom left) of forward modelled conductor (red) at 700m depth to top.
Righthand panel shows the observed (black) and calculated (red) EM response for channels 25-35 (15.7-175.8ms) for line 5129300, directly above the conductor. The conductor is visible as a crossover in the Z-component and peak in the X-component with amplitudes of 0.06pT/A.

CONCLUSIONS AND RECOMMENDATIONS

Compilation of previous work as well as the recent exploration indicates that this property has considerable future exploration potential.

A Phase 2 high definition ground TEM survey has been planned to test the potential extension of Copper Cliff Offset Dyke. Some 3km of strike has been inferred as Sudbury Breccia. The proposed survey plans to use the low temperature SQUID sensor system (subject to helium availability). It is anticipated the programme will commence in fourth quarter of 2019. The aim is to generate high order conductors that will be subsequently tested with diamond drilling.

Appendix 1 – Exploration Costs

Category	Date	Desciption	Receipt/Invoice	Amount (CAD)
Vehicle Rental	15/06/2018	Hire care Hire car	22939331AU2	$ 419.58
Food	10/07/2018	Meals (field costs)		$ 32.30
Food	13/07/2018	Meals (field costs)		$ 78.31
Food	13/07/2018	Meals (field costs)		$ 53.70
Food	16/07/2018	Meals (field costs)		$ 42.60
Assays	19/07/2018	ALS Canada Ltd - Rockchip Assays	4358258	$ 84.40
Geologists - Consultant	31/07/2018	Shane Sikora Site Visit		$ 2,233.14
Geologists - Consultant	1/09/2018	Keillor Geologicale Geo consultingo July	050	$ 3,030.01
Geologists - Consultant	13/10/2018	Keillor Geological - Consulting geologist	052	$ 1,009.70
Geologists - Consultant	8/11/2018	Keillor Geological - Geo consulting	053	$ 330.91
Geologists - Consultant	14/12/2018	Keillor Geological - Geo consulting - Nov	055	$ 286.41
Ground EM	27/05/2019	Discovery Geophysics - EM Survey - (6 days)	2019044	$ 42,036.00
Ground EM	3/06/2019	Discovery Geophysics - Logistical report	20190603	$ 3,955.00
Geophysics - Consultant	21/06/2019	Armada Exploration Services - Geophysics Processing	0081	$ 4,391.51
Geologists - Consultant	04/09/2019	Assessment Work Report Compilation	INV-219	$ 771.88
Geologists - Consultant	15/07/2019	Keillor Geological - Geo consulting	063	$ 650.94
				$ 59,406.40

Appendix 2 – Rockchip Assays

ALS Canada Ltd.

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To: RUMBLE RESOURCES LTD
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AUSTRALIA

Finalized Date: 19-JUL-2018
This copy reported on 23-JUL-2018
Account: RRLBMAFB

CERTIFICATE SD18167021

Project: Panache

This report is for 3 Rock samples submitted to our lab in Sudbury, ON, Canada on 12-JUL-2018.

The following have access to data associated with this certificate:

BRETT KEILLOR		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES
Au-AA23	Au 30g FA-AA finish	AAS

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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Project: Panache

CERTIFICATE OF ANALYSIS SD18167021

Sample Description	Method	WEI-21	Au-AA23	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Recvd Wt.	Au	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Lu
	Units	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.005	0.5	0.1	10	0.01	0.05	0.03	0.03	0.1	0.05	0.2	0.01	0.1	0.01
LPRR18-01		1.34	0.008	25.2	179.0	130	0.11	7.72	3.51	2.26	16.2	13.40	2.8	1.32	73.6	0.50
LPRR18-02		0.86	0.030	27.9	109.0	1170	0.10	2.76	2.41	0.46	24.3	3.34	23.9	0.61	61.7	0.75
LLRR18-01		1.03	<0.005	50.0	190.0	880	0.19	5.04	3.44	1.02	21.6	6.70	17.5	1.10	128.5	0.79

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Sample Description	Method	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5	1	0.1
LPRR18-01		12.3	94.2	23.2	1.7	17.50	1	49.1	1.3	1.49	13.70	0.53	3.81	168	2	33.9
LPRR18-02		38.9	40.7	11.65	7.1	5.79	3	15.6	4.4	0.43	102.0	0.45	24.6	388	132	18.5
LLRR18-01		30.6	65.2	18.75	10.7	10.00	2	21.2	3.1	0.81	66.4	0.60	21.1	320	108	26.6

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Sample Description	Method	ME-MS81	ME-MS81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	CRU-QC
	Analyte	Yb	Zr	Ag	As	Cd	Co	Cu	Li	Mo	Ni	Pb	Sc	Tl	Zn	Pass2mm
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.03	2	0.5	5	0.5	1	1	10	1	1	2	1	10	2	0.01
LPRR18-01		3.05	106	<0.5	24	<0.5	77	90	10	2	527	17	19	<10	30	74.2
LPRR18-02		3.66	894	<0.5	>10000	<0.5	9960	6	<10	53	4620	10	12	<10	9	
LLRR18-01		4.84	658	<0.5	1595	<0.5	602	3	<10	3	379	6	17	<10	15	

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Sample Description	Method Analyte Units LOD	PUL-QC Pass75um % 0.01
LPRR18-01		91.6
LPRR18-02		
LLRR18-01		

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Project: Panache

CERTIFICATE OF ANALYSIS SD18167021

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Sudbury located at 1351-B Kelly Lake Road, Unit #1, Sudbury, ON, Canada.

Applies to Method:	CRU-31	CRU-QC	LOG-22	PUL-31
	PUL-QC	SPL-21	WEI-21	

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:	Au-AA23	ME-4ACD81	ME-MS81

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To: **RUMBLE RESOURCES LTD**
SUITE 5, 26 RAILWAY ROAD
PO BOX 1905
SUBIACO WA 6005
AUSTRALIA

INVOICE NUMBER 4358258

BILLING INFORMATION

Certificate:	**SD18167021**	
Sample Type:	**Rock**	
Account:	**RRLBMAFB**	
Date:	**19-JUL-2018**	
Project:	Panache	
P.O. No.:		
Quote:		
Terms:	**Due on Receipt**	C3
Comments:		

QUANTITY	ANALYSED FOR CODE	DESCRIPTION	UNIT PRICE	TOTAL
1	BAT-01	Administration Fee	35.80	35.80
3	PREP-31	Crush, Split, Pulverize	8.10	24.30
3.23	PREP-31	Weight Charge (kg) - Crush, Split, Pulverize	0.80	2.58
3	Au-AA23	Au 30g FA-AA finish	17.40	52.20
3	ME-MS81	Lithium Borate Fusion ICP-MS	32.70	98.10
3	ME-4ACD81	Base Metals by 4-acid dig.	9.45	28.35

SUBTOTAL (CAD)	$	241.33
R100938885 GST	$	12.07
TOTAL PAYABLE (CAD)	**$**	**253.40**

To: **RUMBLE RESOURCES LTD**
ATTN: BRETT KEILLOR
SUITE 5, 26 RAILWAY ROAD
PO BOX 1905
SUBIACO WA 6005
AUSTRALIA

Please Remit Payments To :
ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7 Canada

Payment may be made by: Cheque or Bank Transfer

Beneficiary Name:	ALS Canada Ltd.
Bank:	Royal Bank of Canada
SWIFT:	ROYCCAT2
Address:	Vancouver, BC, CAN
Account:	003-00010-1001098

Please send payment info to accounting.canusa@alsglobal.com

Appendix 3 – Ground Fixed Loop TEM Survey Reports

Rumble Resources – Sudbury Area Fixed Loop TEM Survey

Daily Production Notes

Saturday May 11, 19 – **Long Lake Grid**. Truck was loaded and the crew departed Saskatoon.

Sunday, May 12, 19 – **Long Lake Grid** Driving continued

Monday, May 13, 19 – **Long Lake Grid** The crew arrived in Sudbury and checked into a motel.

Tuesday, May 14, 19 – **Long Lake Grid** The crew got the majority of the loop laid out. There was some road work being done and some sections were left unlaid. The crew got a feel of the grid before returning to Sudbury to buy some supplies.

Wednesday, May 15, 19 – **Long Lake Grid** Liquid nitrogen was picked up in the morning and plans with the generator rental company to pick up the generator tomorrow. The crew spent the afternoon flagging lines. Some of the neighbors were spoken to and informed of the survey and the high voltage wire laid down the side of the road.

Thursday, May 16, 19 – **Long Lake Grid** There was some confusion as to when we would pick the Gen set up from the rental facility. We went to pick it up the morning but it wouldn't be ready until the afternoon. Shaun and Jim returned to the grid and continued to flag lines. We had better luck today speaking to neighbors and I feel everyone in the area is well informed to keep children and dogs away from the high voltage cable. As a precaution we set out more high voltage signs as we noticed more traffic in the area than we had the first two days. Shaun and Jim returned to the rental facility and picked up the generator in the evening. Overcast in the morning, turned to heavy rains in the afternoon.

Friday, May 17, 19 – **Long Lake Grid** powered on the TX and did some standard equipment testing before beginning to survey. We went with a current of 50amps. With it being Friday and the long weekend there was a lot of traffic coming through. Everyone was understanding about the survey and not to touch the cable. Began surveying on L28700N at station 1750E. There was lots of wind movement in the trees causing noisy decays. The crew returned to the hotel to get the swamp tri pod in an effort to reduce squid movement. Surveying continued at 1:30pm. Completed L28700N and moved over to 28900N. Completed half of 28900N before shutting down at 5:30pm to return and pack up the TX and Gen. **Total 1.5km**

Saturday, May 18, 19 – **Long Lake Grid** Powered on TX shortly after 9am. The crew got moved into place where they left off on 28900N. Completed 28900N, moved over to 29100N and continued surveying. Steep cliffs at 2350E had to be carefully traversed to not damage any equipment. Completed 29100N around 2pm and moved over to 29300N. When the crew got to 2650E the realized the entire valley was flooded from a beaver dam that was spotted at the bottom of the cliffs on 29100N. Stations 2650E and 2550E are both off by 10 meters due to the flooded valley. The crew completed L29300N at 5:30pm. Packed up the TX and gen and returned to the hotel by 6:30pm. Not much wind today allowed for quitter data. **Total 2.5km**

Sunday, May 19, 19 – **Long Lake Grid** The crew arrived at the grid around 10am. The weather was storming with heavy rain, strong winds and lightning. The crew sat in the truck and monitored the weather until noon before deciding to call it a day. The operator felt that the data that would have been collected would not have been up to acceptable standards. **No surveying**

Monday, May 20, 19 – **Long Lake Grid** The crew held off an hour this morning as the weather was still unfavorable for acquiring data. Arrived at the grid at 11am, powered on the TX and hiked to L29500N. The weather cleared up and the crew was able to survey both lines 29500N and 29700N before shutting down at 5:30pm. T**otal surveyed 2km**

Tuesday, May 21, 19 – **Long Lake Grid** Arrived at the grid shortly before 9am. Powered on the TX and began surveying on L29900N. Completed both lines 29900N and 30100N by 3:30pm. The crew then pull the loop cables to the road for wrap up. All the loop and signage were cleaned up. Arrived back at the motel at 6pm. T**otal surveyed 2km.**

Wednesday, May 22, 19 - **Long Lake Grid.** The survey generator was returned and the crew began to demob.

Memo

To: Brett Keillor, Shane Sikora

From: Jacob Paggi

Date: June 11, 2019

Re: Long Lake FLEM survey summary and results

Introduction

Rumble Resources completed a fixed-loop electromagnetic (FLEM) survey at their Long Lake project, 18km southeast of Sudbury, Canada. The survey was conducted by Discovery Geophysics with the aim of detecting basement conductors indicative of massive nickel sulphides to be targeted with drilling. This memorandum discusses the survey parameters and results.

Survey Parameters

The survey was designed to traverse a conductor detected from a previously flown airborne EM survey, and a mapped area of Sudbury Breccia, to test for the presence of "offset dyke style" Ni-Cu-PGE mineralisation. Eight east-west lines of data were collected with a 200m line spacing and 100m station spacings (Figure 1). Stations close to the western loop wire were offset by 50m. A 1000m×400m transmitter loop was designed to detect steeply-dipping conductors at depth, and generated a consistent current of 50A. A high-temperature SQUID (HTS) sensor was employed to increase the signal-to-noise, hence increase the exploration depth. The HTS collected Z- (up) and X- (east) component data (the Y-component was malfunctioning hence was not recorded). Line coordinates are shown in Table 1, transmitter loop corner coordinates are shown in Table 2, and survey parameters are shown in Table 3. All coordinates are in NAD83 datum and UTM17N projection.

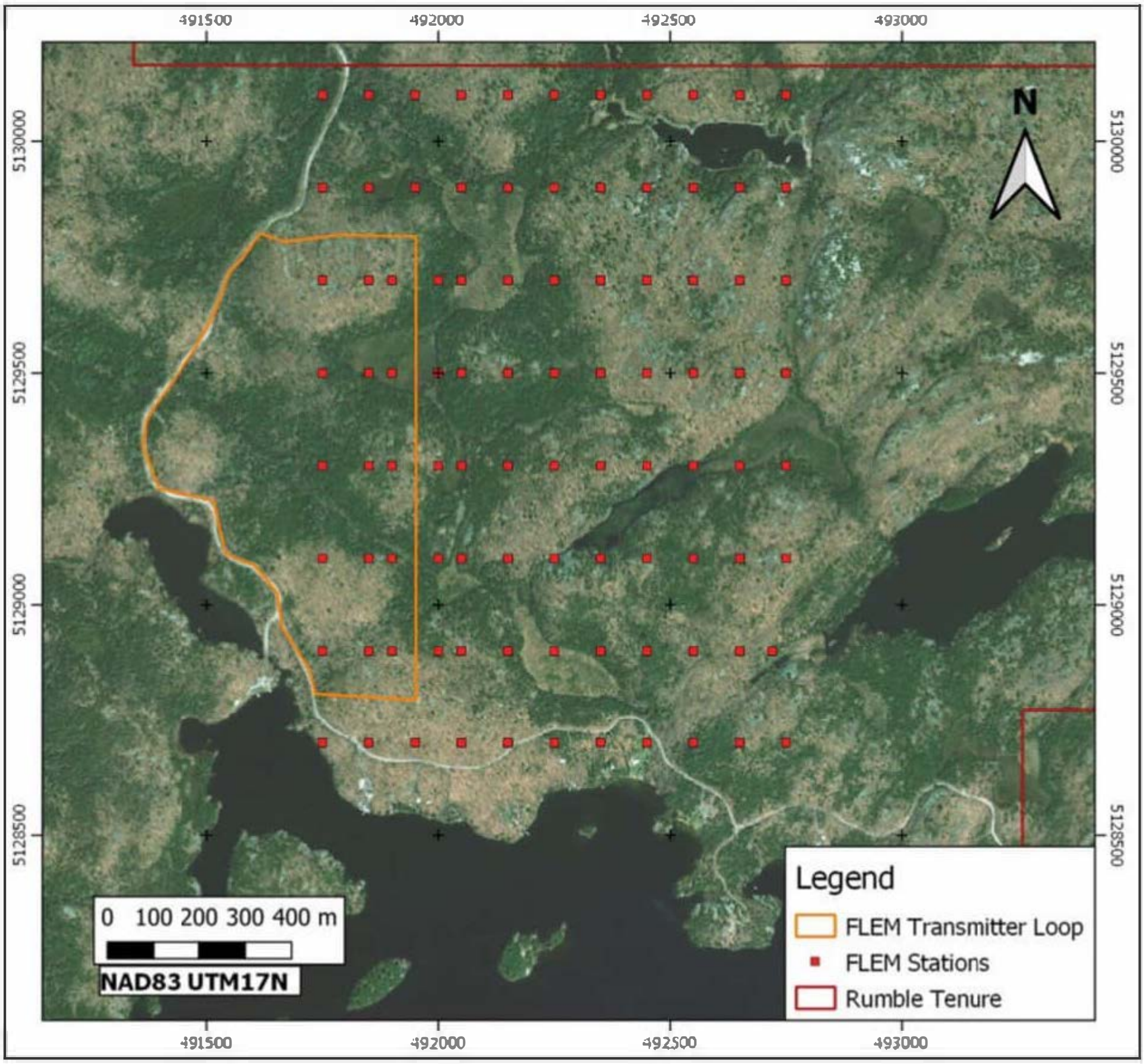

Figure 1: Long Lake completed FLEM survey stations and transmitter loop location over Bing imagery.

Table 1: Long Lake FLEM survey lines.

Line	Northing	Easting Start	Easting End
1	5130100	491750	492750
2	5129900	491750	492750
3	5129700	491750	492750
4	5129500	491750	492750
5	5129300	491750	492750
6	5129100	491750	492750
7	5128900	491750	492750
8	5128700	491750	492750

Table 2: Long Lake FLEM transmitter loop coordinates.

Vertex	Easting	Northing
1	491581	5129753
2	491615	5129801
3	491670	5129783
4	491783	5129798
5	491952	5129795
6	491952	5128795
7	491734	5128808
8	491722	5128859
9	491662	5128954
10	491653	5129025
11	491604	5129084
12	491541	5129110
13	491514	5129225
14	491395	5129250
15	491361	5129341
16	491368	5129396
17	491390	5129434
18	491470	5129545
19	491513	5129622
20	491549	5129717
21	491581	5129753

Table 3: Long Lake FLEM survey parameters.

Configuration	Fixed-loop
Loop Size	1000m × 400m
No. of Lines	8
Line Spacing	200m
Station Spacing	100m
Sensor	High-Temperature SQUID. Bz (up), Bx (east).
Transmitter	TXU-30 (50kW)
Current	50A
Base Frequency	0.5Hz

Results

The ground within the survey area is highly resistive, highlighted by the majority of EM decays approaching the noise level of ~0.01pT/A by channel 12 (0.9-1.2ms). The early-time channels are dominated by a loop edge effect, resulting in a false anomalous EM response on the eastern side of the transmitter loop (Figure 2). This response is common with large loops in resistive environments and is enhanced with the limited dynamic range of the SQUID sensor. It has been ignored in the modelling.

No significant conductors have been detected from the FLEM survey. The inability to detect the VTEM conductor suggests that the source is likely too small to be delineated with the FLEM system specifications (i.e. line and station spacings), and hence is not deemed of economic significance. If the VTEM conductor were to be delineated to test with drilling, a frequency domain system, such as the MaxMin system from Apex Parametrics, could be used for the small, shallow conductor.

Forward modelling of the data suggests that the HTS system is capable of detecting a significant conductor (for example a 300m×400m, 3000S plate) to depths of ~700m (Figure 3). This suggests that there are no offset dyke style massive Ni-Cu-PGE sulphide orebodies of economic significance present in the survey area. No further work is recommended.

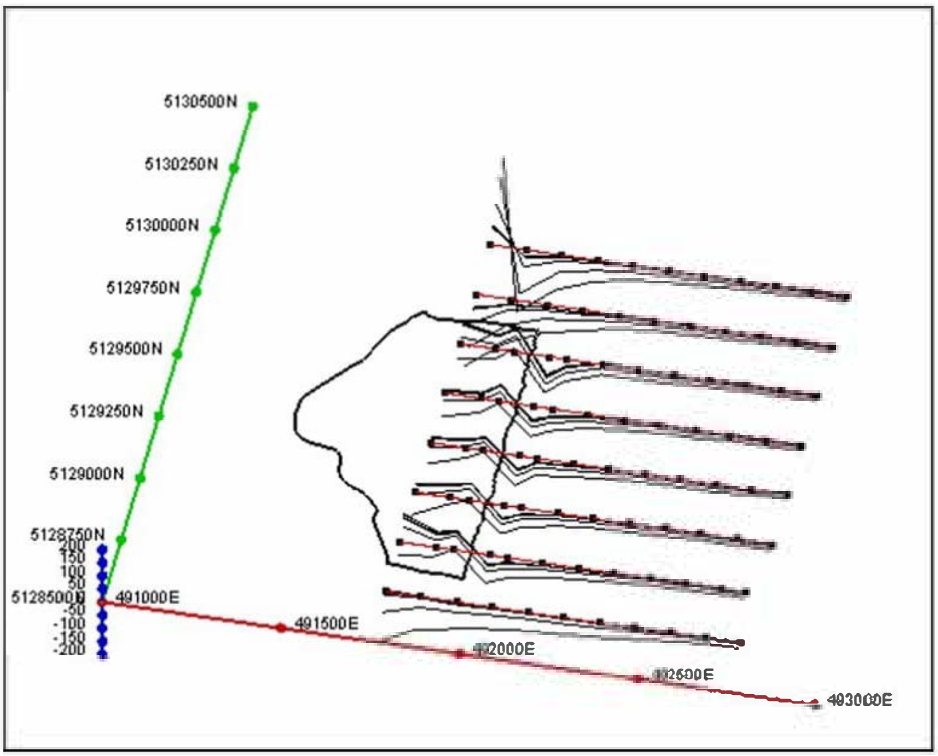

Figure 2: Oblique view of FLEM survey with early-time channel line profiles showing the false anomaly edge effect on the eastern side of the transmitter loop.

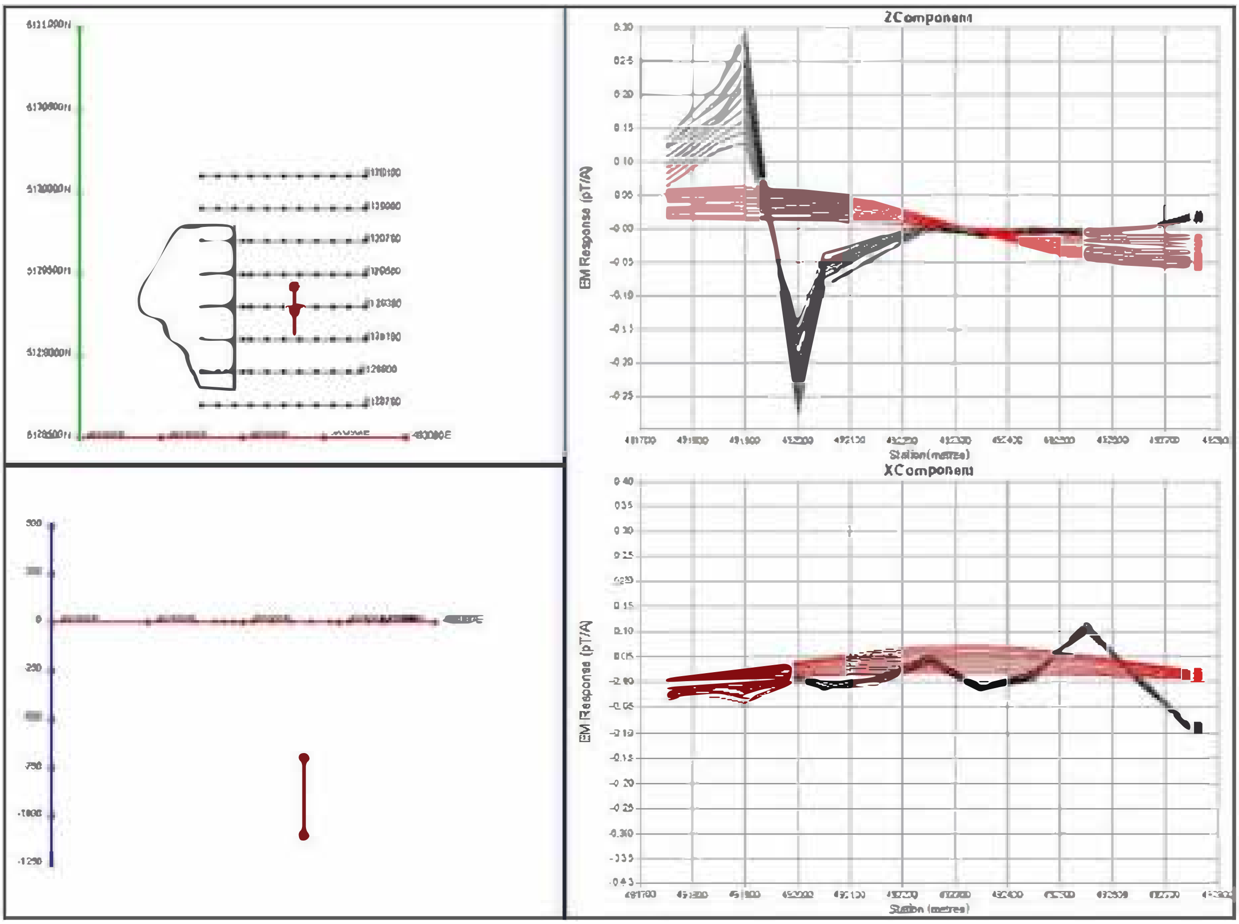

Figure 3: Plan (top left) and view from south (bottom left) of forward modelled conductor (red) at 700m depth to top. Right-hand panel shows the observed (black) and calculated (red) EM response for channels 25-35 (15.7-175.8ms) for line 5129300, directly above the conductor. The conductor is visible as a crossover in the Z-component and peak in the X-component with amplitudes of 0.06pT/A.

Jacob Paggi

Statement of Qualifications

I complete a BSc Geophysics degree at Curtin University, graduating with Honours in 2005. I have 13 years' experience in mineral exploration in Australia and overseas.

I joined Independence Group (IGO) in 2005 and spent 3 years at the Long Nickel mine in Kambalda, where I played a key role in the discovery of the Moran nickel deposit. Moving back to Perth, my role involved providing geophysical support for nickel, gold, and base metal exploration in a wide variety of geological terrains across Australia and Sweden. I was a key member of the teams that discovered the Rosie nickel deposit in Western Australia, and the Eureka VMS lens in Victoria.

In 2015, I started my own business, Armada Exploration Services, working for major and junior exploration and mining companies by planning, supervising and interpreting geophysical data for nickel, gold and base metal exploration programs.

I am a member of the ASEG.

Jacob Paggi

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Principle Geophysicist

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Lesmurdie, WA, 6076

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(+61) 439 693 068

Sally McGuinness

Statement of qualifications

I completed a Bachelor of Applied Science (Geology) at the University of Ballarat, graduating in 1997.

I have 17 years of experience in mineral exploration and scientific research in Australia.

I have substantial work experience in geosciences and mineral exploration within both the private sector and the Geological Survey of Western Australia. I was a geologist within the Geochemistry, and Minerals Resources and Regional Mapping Sections and a Senior Geologist in the Regolith Geochemistry Section of the GSWA. My work has been published in eight reports and three regolith materials maps.

I have been employed by a number of junior companies where I was responsible for planning and implementing on-ground exploration programs for commodities including, gold, base metals and uranium.

In 2016, I started my own business working for major and junior mining and exploration companies and tenement management services providers, providing assistance with geological interpretation, exploration planning, tenement management and report writing.

Sally McGuinness

Consultant Geologist

49 Kenmure Avenue

Bayswater

Western Australia, 6053

(+61) 410 512 408

Today at 8:32 PM

Hi Gordon,

I have attached the Report detailing the 2019 ground geophysical survey. This satisfies the following request:

The ground geophysics work requires the following revisions:
a. describe the method of survey and the use of the instrument, operational technique and parameters measured;

b. describe the calibration and quality control methods used;

c. describe the corrections and processing steps applied to the survey data, if applicable; and

d. provide legible profiles for each line, with a legend or explanation indicating how the measured units are plotted, with anomalous zones indicated and spurious suspect readings identified.

The sampling work was carried out by Shane Sikora and Brett Keillor as part of a reconnaissance visit on the 11th July. The purpose of sampling was to test a rockchip sample for gold (fire assay and AAS finish) and base metals (ICP-AES) and other elements (ICP-MS) taken from an outcrop of quartz-hornblende sulphide zone with abundant pyrite in metasediment. The sample was a grab sample taken with a geopick. Brett's invoices are attached. I believe this information should satisfy the following request.

The sampling work done on July 11, 2018, will be added in MLAS and requires the following revisions: a. give the names of the employees who performed the work;

b. state the purpose for which the work was performed;

c. provide a daily log describing in detail the nature and content of the work and the observations made during the performance of the work, the nature of rocks and mineralization sampled and exposed, as well as the type of equipment used; and
d. note that you may claim the salary of employees who performed the sampling on July 11, 2018. Please, provide a summary of their paychecks for July 2018 (it will remain confidential, and you may black out or remove any personal information).

The different in amounts is because of conversion from $AUD to $CAD. I have attached credit card statements as receipts for meals costs and hire car. This supports the following queries.

There are some discrepancies between the costs reported in appendix 1 and some of the invoices already provided (Invoice 0081 and INV-129). Provide an explanation when the costs claimed are different than the costs invoiced.
Please provide copies of all receipts and invoices listed in appendix 1. If not provided, costs of missing receipts or invoices will be reduced to $0. Note that the eligibility of all costs will be determined upon final review.

I hope that this satisfies the Mines Ministry request for corrections and supporting documentation.

Kind regards,
Sally