NI 43-101 Technical Report,

A Geological Evaluation

of the Shire Property,

Tigray National Regional State,

Northern Ethiopia

Prepared for

Sun Peak Metals Corp.

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Effective date: January 17, 2020

Report date:

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1.0 SUMMARY

The authors were commissioned by Sun Peak Metals Corp. to prepare this independent technical review of the geological data from the Shire property and to provide evaluations and recommendations in the context of NI43-101 guidelines.

Sun Peak has undertaken two years of preliminary work on its 885 square kilometer Shire property in northern Ethiopia in preparation for drill testing in 2020. The Property is approximately 590 km north of Ethiopia's capital city of Addis Ababa. It consists of three concessions, two that are owned 100% by the Company and one in which the Company may acquire 70% interest.

Sun Peak's recent work, plus a compilation of the results of historic exploration work by previous companies has indicated that significant VMS mineral occurrences are present and that there is very good potential to discover economic mineralization on the Property.

The Shire property is underlain by NE-SW trending belts of weakly metamorphosed Neoproterozoic rocks comprised mainly of mafic to felsic flows and pyroclastic rocks, as well as volcaniclastic and calcareous sedimentary rocks. Strongly foliated granitoids, possibly syn-volcanic intrusions, are also noted in close association with felsic metavolcanic rocks. This same belt of rocks hosts significant VMS mineral deposits in the Asmara area of Eritrea, 100 km northeast of the Property.

Oxidized sulphidic zones up to 200 meters or more in width and several kilometers in length occur within the metavolcanic rocks that trend northeasterly across the northern two-thirds of the Property and are readily visible on satellite imagery as rusty weathering rocks and soil. Sulphidic zones commonly occur within felsic volcaniclastic rocks at, or near, interfaces with intermediate-to-basic volcanic and volcaniclastic rocks. Polymetallic VMS-style mineralization in the area is closely associated with many of these sulphidic zones.

Geochemical exploration work conducted in the area since the 1970's has indicated the presence of gold, silver, copper, zinc and lead mineralization associated with gossan outcrops in several of the sulphidic zones. Prospecting and follow-up of stream sediment geochemical anomalies in 1998 located mineralization at the Mai Argab - Adi Ekele zones consisting of lenses of gold-bearing goethite-limonite gossan within strongly sericite altered rocks. Diamond drilling from 2007 to 2010 revealed these gossans to be underlain, at depth, by VMS-style sulphidic zones that host gold and base metal mineralization. At Mai Argab - Adi Ekele the sulphide zones have been traced by drilling for lengths of up to 1000 m, with thicknesses of more than 30 m locally, and containing significant metal grades such as 2.06% Cu, 2.44% Zn and 1.19 g/t Au over 24.0 m (Adi Ekele hole ZKH3).

A 5000 ton heap leach pilot test undertaken at the Mai Argab zone in 2011 ascertained that a crude heap leaching process recovered approximately 60% of the contained gold from near-surface oxide material grading about 1.9 g/t Au. The test was stated to have shown

that leaching is a relatively low cost (albeit low recovery) method to extract gold from the surface gossans.

Airborne EM surveying flown in 2004 over the Terer and northern Nefasit concessions indicated a large number of strongly conductive areas, some that coincide with mineralized sulphidic zones, including Mai Argab, Adi Angoda and Madadib. Several additional mineralized gossans were discovered over a period of about 10 years by follow-up of geophysical and geochemical anomalies, and many of them received detailed exploration, including soil and rock chip sampling, trenching, local small ground surveys of IP, EM, gravity and magnetics, and limited reverse circulation or diamond drilling. The most prospective of these targets was the Adi Angoda zone, which received 10 drill holes in 2009 and 2012 revealing narrow exhalites and massive sulphide horizons, such as in hole ND001, which returned grades of 2.73 g/t Au, 55 g/t Ag, 3.51% Cu, and 2.23% Zn over a 2.80 m interval.

Sun Peak undertook a heliborne VTEM survey in 2019 that covered the same area as the 2004 EM survey on Nefasit and Terer licenses as well as covering favourable stratigraphy over about one-quarter of the Adi Da-iro license. The more advanced equipment and software used for the current survey are capable of much finer discernment of subtle anomalies, as well as probing to greater depths below surface. The Company has recognized at least 16 target areas on the Property and has begun to systematically evaluate them by geological mapping, rock chip sampling, stream, sediment sampling, soil geochemical grids and geophysical surveys (primarily gravity).

Ground follow-up work has been very encouraging, especially the results of soil geochemical and gravity surveys. At the Mai Argab - Adi Akele zone detailed mapping and gravity results indicate a potential parallel mineralized zone 400 m to the north, in an area with mapped felsic volcanic rocks, small gossans and siliceous exhalites on surface that has returned stronger and more extensive density highs than those over the known VMS zone. This area has never been tested by drilling.

Soil sampling grids between the villages of Terer and Nefasit, covering approximately 37 square kilometers, has revealed a number of linear, northeast-trending Cu-Zn anomalies, some of which have been gravity surveyed and show coincident zones of high density that could be indicative of massive sulphide mineralization at depth. In particular, a Cu-in-soil anomaly with a coincident linear gravity high is located 400-600 m to the north and runs parallel to the Adi Angoda zone, over a length of approximately 3 km. About 1000 m farther north another extensive parallel gravity high is coincident with a Zn-in-soil anomaly over about a 2 km length. These are very significant anomalies and are high priority drill targets.

Sun Peak has proposed a work program for 2020 for the Shire project totaling more than C$3.3 million. This includes 6,500 meters of diamond drilling (Terer 4,000 m, Nefasit 2,500 m), gravity surveys (7,000 stations), regional and close-spaced soil sampling grids, stream sediment sampling and geological mapping. The authors are in agreement with the proposed exploration work and agree that the budgeted amounts of expenditures are warranted.

Considering the widespread occurrence of sulphidic zones and gossan outcrops that are associated with high gold, copper, zinc and silver mineralization it can be concluded that the Shire project area is highly prospective for gold-rich copper-zinc massive sulphide mineralization. Despite its high potential for precious and base metal mineralization, the Shire VMS prospect has been under-explored and is only now receiving the advanced exploration that is required for success.

2.0 INTRODUCTION AND TERMS OF REFERENCE

Sun Peak Metals Corp. ('Sun Peak' or 'SPMC' or the 'Company') through its wholly-owned subsidiary, Sun Peak Ethiopia Mining PLC ('SPEM') owns the Shire property concessions, which host important mineral occurrences. The Shire property (the 'Property') is the site of a gold-silver-copper-zinc exploration project which lies within a prolific mineral trend that spans northern Ethiopia and southern Eritrea. The geology and mineral occurrences on the Shire property have affinities to volcanogenic massive sulphide (VMS) mineralization occurring at the advanced Asmara deposits, located approximately 150 km to the northeast. At the request of Sun Peak Metals Corp., Charles J. Greig, P. Geo. and Jeffrey D. Rowe, P.Geo. carried out an independent review of the Property, located in the Tigray National Regional State of northern Ethiopia. One of the authors (Greig) conducted a property examination, reviewed available exploration results and participated in preparing this independent technical report. This Report is written in accordance with the formatting requirements of National Instrument 43-101 and Form 43-101F1 (Standards of Disclosure for Mineral Properties) and is a comprehensive review of the exploration activities on the Property, with recommendations for future work.

2.1 Site Visit

The authors are qualified persons ("QP") by virtue of experience, education and professional standings and QP certificates are provided at the end of this report. The authors are independent of Sun Peak, as defined by National Instrument 43-101 ("NI 43-101").

Charles Greig visited the Shire property from March 9 to 19, 2018, conducting geological traverses and visiting several of the various showings on the Property. The authors reviewed all aspects of the historical exploration work with Sun Peak personnel including results from exploration work, trench sampling, drill core, local lithological and structural features, sampling and shipping procedures, geophysical surveying method and results, and available project documentation.

Since the time of the author's (Greig) visit to the Property in 2018 the Company has undertaken geophysical, geological and geochemical work. The authors have had access to all of the information from this work, which has been included in this report and, as well, the authors have offered interpretations for some of the results in Section 9.1 to 9.3 of this report. The authors have also reviewed the sampling and analytical procedures implemented by Company personnel for the recent geochemical work and are satisfied that the quality of the work was satisfactory, and the results are valid. The authors are of the opinion that there has been no substantive change in the geological understanding of the type of mineral targets on the Property or the potential for mineral discovery on the Property since the time of Greig's inspection.

The Property is considered an advanced-stage exploration project due to the geological, geochemical and geophysical exploration work completed and the 9,935 m of drilling, of which 8,465m was diamond coring and 1,470m was reverse circulation drilling. Results and photographs from the site visit are provided in this report.

The purpose of this report is to provide a geological evaluation of the historic exploration data, to review the exploration work undertaken by the Company and to provide recommendations for further work, if justified.

2.2 Sources of Information

This report refers to past works undertaken by other qualified geologists and professional field personnel. Other non-project specific reports by qualified personnel have been referenced whenever possible. The information, conclusions, opinions and recommendations in this report are based upon:

- assumptions, conditions and qualifications as set forth in this report;
- data, reports and other information provided by Sun Peak and other third party sources;
- published reports from operating mines and advanced projects in the area, plus other published government reports and scientific papers.

While preparing this report, the authors reviewed all of the readily available exploration and technical reports pertaining to this property. This exploration information is generally of good quality, and there is no reason to believe that any of the information that has been used is inaccurate or misleading.

Information concerning the option of mineral tenures comprising the Property was provided by Sun Peak and has not been independently verified by the authors. A detailed list of references and sources of information is provided in Section 19.0 (References) of this report.

2.3 Abbreviations and Units of Measure

Metric units are used throughout in this report and currencies are in Canadian Dollars (C$) unless otherwise stated. Market gold or silver metal prices are reported in US$ per troy ounce. The calendar used in Ethiopian is similar to the Coptic calendar; however, the dates used in this report are based on the Gregorian calendar, which is more universally adopted. A list of abbreviations that may be used in this report is provided in Table 2-1 below.

Table 2-1 List of abbreviations

Abbreviation	Description	Abbreviation	Description
AAS	Atomic Absorption Spectroscopy	m2	Square meter
Ag	Silver	Ma	Million years ago
asl	Above sea level	MoMP	Ministry of Mines and Petroleum
As	Arsenic	mm	Millimetre
Au	Gold	M oz	Million troy ounces
Az	Azimuth	M T	Million tonnes
Birr	Ethiopian currency	m.y.	Million years
b.y.	Billion years	N (Y)	Northing
C$ or $	Canadian dollar	oz/t or opt	Ounces per short ton
cm	Centimetre	oz	Troy ounce (31.1035 grams)
Cu	Copper	Pb	Lead
°C	Degree Celsius	ppb	Parts per billion
DDH	Diamond drill hole	ppm	Parts per million
E (X)	Easting	py	Pyrite
G	Billion	QA	Quality assurance
g	Gram	QC	Quality control
g/t, gpt	Grams per tonne	qz	Quartz
GPS	Global Positioning System	RC	Reverse-circulation (drill hole)
ha	Hectare	Sedar	System for Electronic Document Analysis and Retrieval
ICP	Inductively Coupled Plasma	SG	Specific gravity
JV	Joint venture	t or ton	Short ton (2000 pounds)
k	Thousand	T or tonne	Metric tonne (1000 kg)
kg	Kilogram	US$ or USD	United States dollar
km	Kilometer	VMS	Volcanogenic massive sulphide
km^2	Square kilometer	Zn	Zinc
M	Million	%	Percent
m	Meter		

The coordinate system used on most maps included in this report is Universal Transverse Mercator (“UTM”) WGS 84 datum in zone 37N. Some reports have used the Adindan datum, zone 37N, which is noted if applicable.

3.0 RELIANCE ON OTHER EXPERTS

The authors have relied on the opinion of Sun Peak’s legal counsel in regard to legal validity of the option agreement that grants Sun Peak a percentage ownership of the mineral titles that comprise the Shire property. Sun Peak retained Mehrteab Leul & Associates (MLA) in Addis Ababa, Ethiopia to provide a title opinion in respect of the Shire Property. MLA prepared a title opinion titled ‘Legal Opinion’ December 21, 2019 that outlines the nature and extent of Sun Peak's interest in the Shire property. The Authors relied on the title opinion for Section 4 – Property Location and Description of this report.

The title opinion applies to Sections 4.2 and 4.3 and the summary of this report.

4.0 PROPERTY LOCATION AND DESCRIPTION

4.1 Property Location

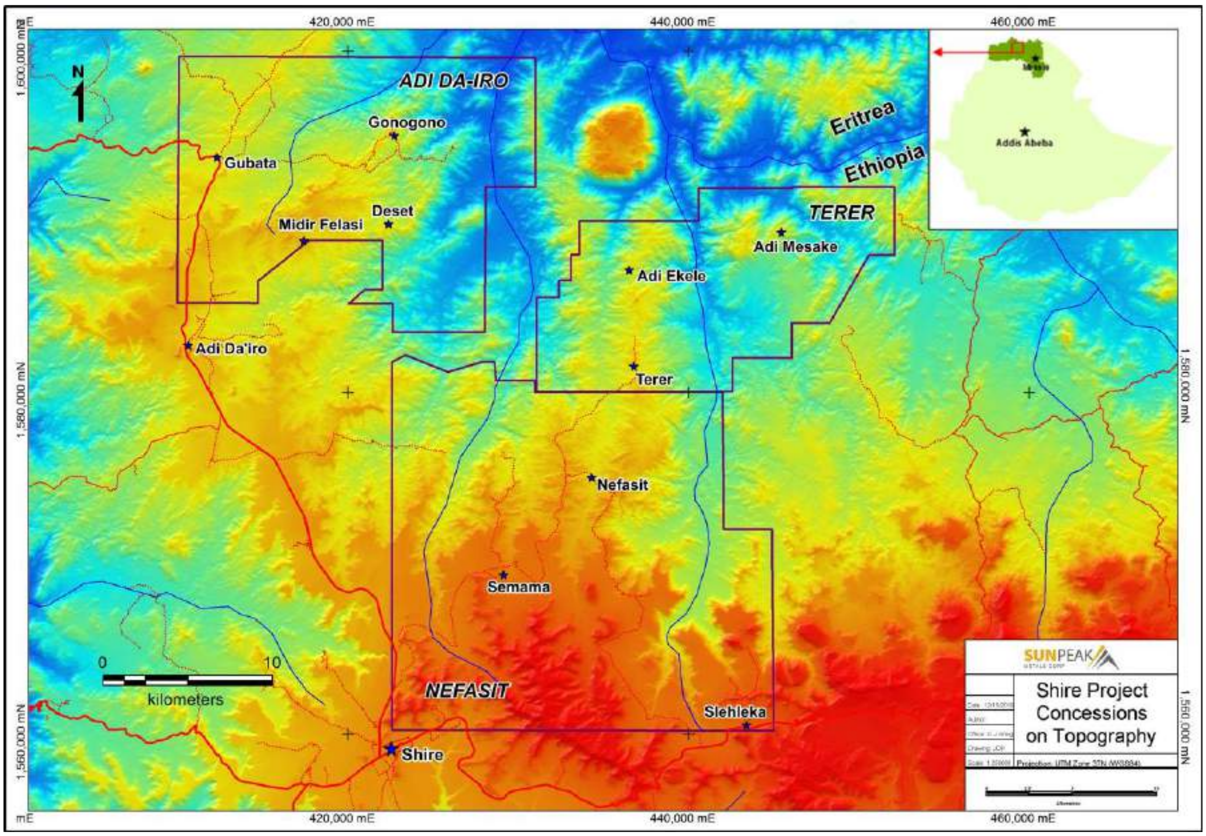
The Shire Project is located in the northwestern part of Tigray National Regional State in northern Ethiopia approximately 590 km (1,100 km ground distance) north of the capital city of Addis Ababa (estimated population 7,823,000 in 2019) and extending 40 km north from the town of Shire. Figures 4-1 and 4-2 show the location of the property. The Shire Project concessions are located within the Woredas of Laelay Adiyabo, Tahtay Koraro, Medebay-Zana and Mereb Leke, centered approximately at latitude 14.291 N and longitude 38.360 E, or in the local UTM datum WGS84, zone 37N coordinates of 431,000E, 1,580,000 N. Some of the larger communities within, or near the license areas include Shire, Adi Da'iro, Gubata, Slehleka and Semama. As well, several small villages are scattered within the concessions.

Figure 4-1 Shire project location, northern Ethiopia

4.2 Property Description

The Property is comprised of three exploration licenses (Nefasit, Adi Da-iro and Terer) that are very nearly contiguous; separated by less than 3 kilometers (Figure 4-2). The southern Nefasit exploration license comprises a block measuring about 20 kilometers north-south by 21 kilometers east-west and covering a total area of approximately 432 square kilometers. The Adi Da-iro exploration license block lies to the northwest of Nefasit and measures about 14 kilometers north-south by 19 kilometers east-west, totaling about 271 square kilometers. The Terer exploration license block sits to the northeast of Nefasit and measures about 10 kilometers north-south by 18 kilometers east-west, totaling about 182 square kilometers.

Figure 4-2 Location map, Shire project concessions, northern Ethiopia



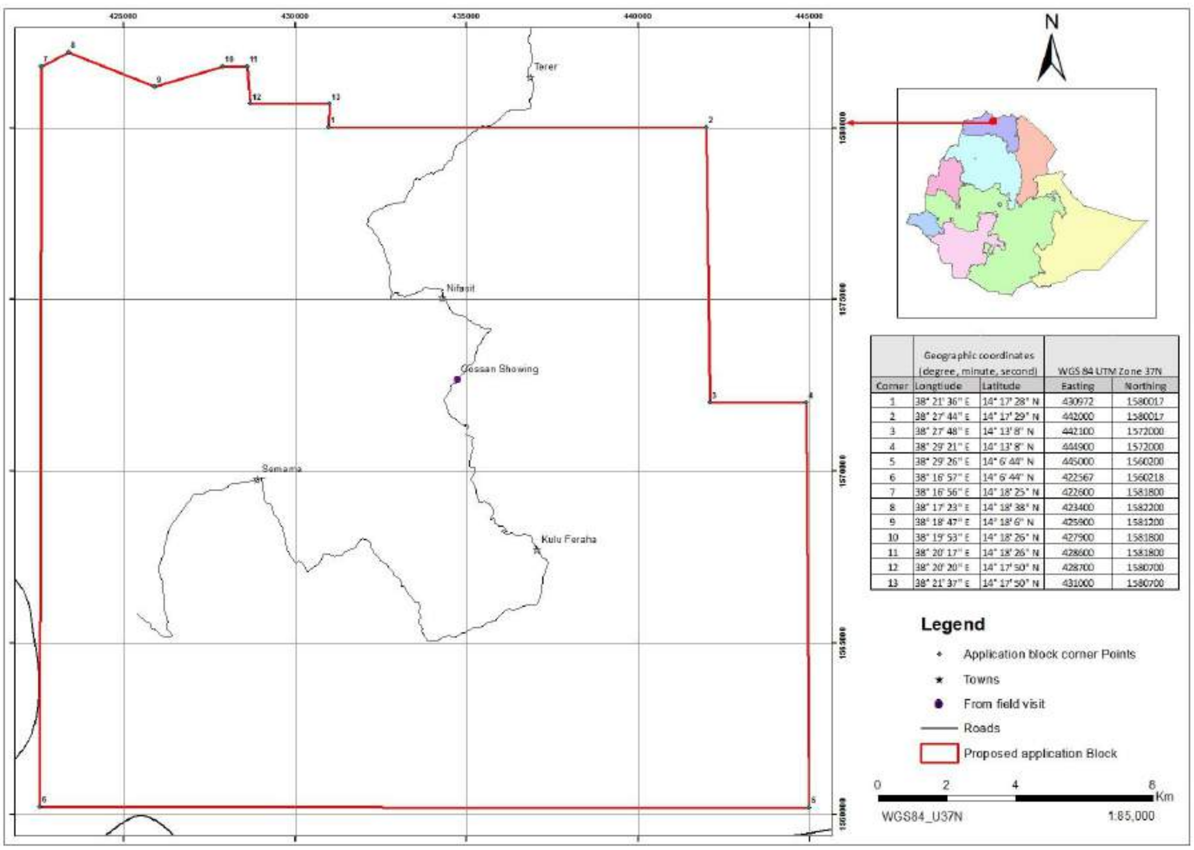
Nefasit Concesssion

The Nefasit concesssion (Figure 4-3) is 100% held by Sun Peak Ethiopia Mining PLC ("SPEM") a subsidiary 100% controlled by Sun Peak Metals Corp. The exploration license was granted to the company by the Ministry of Mines and Petroleum (MoMP) of the Federal Democratic Republic of Ethiopia on January 1, 2018 for a 3 year term, which is renewable yearly for up to an additional 7 years, provided that the licensee proves the necessity to undertake exploration activity beyond the initial work program.

Sun Peak completed the first and second year expenditure commitments totaling US$162,120 and US$677,000, respectively. Sun Peak is currently completing third year expenditure commitments expected to total approximately US$559,000 in 2020.

Sun Peak currently holds all required permits for exploration of the Nefasit concession. Table 4-1 lists the geographic coordinates, in degrees, minutes, seconds as well as in UTM datum WGS 84, Zone 37N for the perimeter of the Nefasit exploration license. The concession and exploration license application corners were established by geographic information system (GIS) coordinate points but have not been surveyed or marked on the ground. Figure 4-3 shows the geographic position of the exploration license area.

Figure 4-3 Nefasit exploration license area



	Geographic coordinates (degree, minute, second)		WGS 84 UTM Zone 37N	
Corner	Longtiude	Latitude	Easting	Northing
1	38° 21' 36" E	14° 17' 28" N	430972	1580017
2	38° 27' 44" E	14° 17' 29" N	442000	1580017
3	38° 27' 48" E	14° 13' 8" N	442100	1572000
4	38° 29' 21" E	14° 13' 8" N	444900	1572000
5	38° 29' 26" E	14° 6' 44" N	445000	1560200
6	38° 16' 57" E	14° 6' 44" N	422567	1560218
7	38° 16' 56" E	14° 18' 25" N	422600	1581800
8	38° 17' 23" E	14° 18' 38" N	423400	1582200
9	38° 18' 47" E	14° 18' 6" N	425900	1581200
10	38° 19' 53" E	14° 18' 26" N	427900	1581800
11	38° 20' 17" E	14° 18' 26" N	428600	1581800
12	38° 20' 20" E	14° 17' 50" N	428700	1580700
13	38° 21' 37" E	14° 17' 50" N	431000	1580700

Table 4-1 Geographic coordinates of the Nefasit concession area (WGS84, Z37N)

	Geographic coordinates (degree, minute, second)		WGS 84 UTM Zone 37N	
Corner	Longtiude	Latitude	Easting	Northing
1	38° 21' 36" E	14° 17' 28" N	430972	1580017
2	38° 27' 44" E	14° 17' 29" N	442000	1580017
3	38° 27' 48" E	14° 13' 8" N	442100	1572000
4	38° 29' 21" E	14° 13' 8" N	444900	1572000
5	38° 29' 26" E	14° 6' 44" N	445000	1560200
6	38° 16' 57" E	14° 6' 44" N	422567	1560218
7	38° 16' 56" E	14° 18' 25" N	422600	1581800
8	38° 17' 23" E	14° 18' 38" N	423400	1582200
9	38° 18' 47" E	14° 18' 6" N	425900	1581200
10	38° 19' 53" E	14° 18' 26" N	427900	1581800
11	38° 20' 17" E	14° 18' 26" N	428600	1581800
12	38° 20' 20" E	14° 17' 50" N	428700	1580700
13	38° 21' 37" E	14° 17' 50" N	431000	1580700

Adi Da-iro Concession

The Adi Da-iro concession (Figure 4-4) is 100% held by Sun Peak Ethiopia Mining PLC ("SPEM") a subsidiary 100% controlled by Sun Peak Metals Corp. Sun Peak applied in March, 2019 for an exploration license for Adi Da-iro. The license was granted to the company by the Ministry of Mines and Petroleum (MoMP) of the Federal Democratic Republic of Ethiopia on April 16, 2019 for a 3 year term, which is renewable yearly for up to an additional 7 years, provided that the licensee proves the necessity to undertake exploration activity beyond the initial work program. Table 4-2 lists the geographic coordinates in UTM datum Adindan, Zone 37N, for the perimeter of the Adi Da-iro exploration license. The concession and mining license application corners were established by geographic information system (GIS) coordinate points but have not been surveyed or marked on the ground. Figure 4-3 shows the geographic position of the exploration license area.

Figure 4-4 Adi Da-iro exploration license area

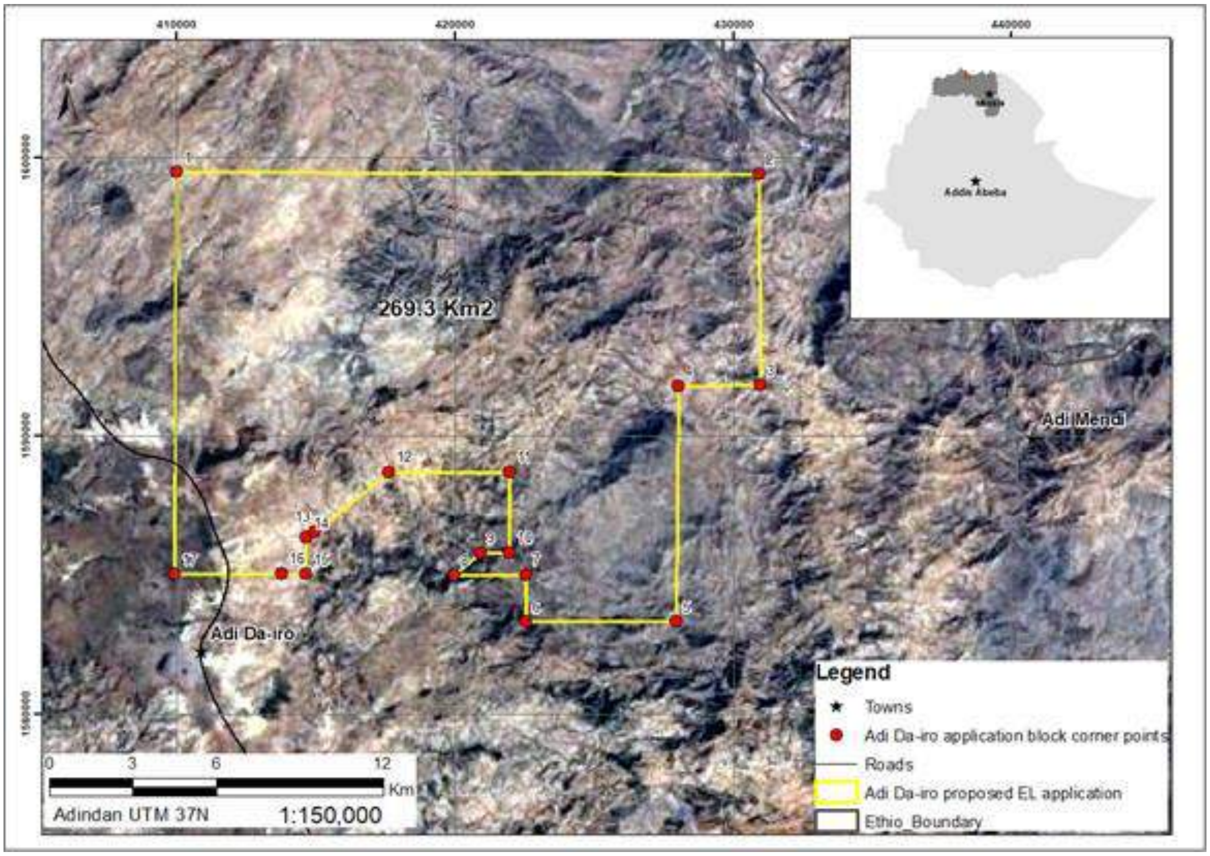


Table 4-2 Geographic coordinates of the Adi Da-iro concession area (UTM Adindan, Z37N)

Datum: Adindan UTM zone 37N			Degrees	
Corner points	**Easting**	**Northing**	**Longitude**	**Latitude**
1	410011	1599500	38.1650238	14.4679317
2	430910	1599410	38.3589287	14.4677267
3	430935	1591826	38.3593597	14.3991537
4	427998	1591817	38.3321152	14.3989973
5	427929	1583333	38.3317032	14.3222837
6	422542	1583341	38.2817535	14.3222103
7	422527	1585019	38.2815666	14.3373823
8	419952	1585012	38.2576904	14.3372459
9	420896	1585815	38.2664185	14.3445330
10	421927	1585818	38.2759819	14.3445902
11	421940	1588721	38.2760162	14.3708382
12	417623	1588719	38.2359810	14.3706942
13	414935	1586575	38.2111206	14.3512278
14	414647	1586348	38.2084541	14.3491659
15	414638	1585031	38.2084160	14.3372583

16	413753	1585061	38.2002068	14.3375015
17	409894	1585050	38.1644249	14.3372793

Terer Concession

The Terer exploration license was granted to Ezana Mining Development PLC (EMD) on March 30th, 2015 for a period of three years. The Terer license was renewed for one year for the first time in March 29, 2018. Application for a second 1 year renewal was submitted in April, 2019 and approved in May, 2019, retaining the March 29th license expiration date. In accordance with the Ministry of Mines regulations for exploration permits, due to the failure of Ezana to satisfy exploration spending commitments, 25% of the area covered by the original license was relinquished. The Terer concession area and reduced area are shown in Figures 4-5 and 4-6 and coordinates for the perimeter of the reduced license area are listed in Table 4-3 (degree, minute, seconds and UTM WGS 84 Zone 37N). The concession and exploration license application corners were established by geographic information system (GIS) coordinate points but have not been surveyed or marked on the ground. On January 28, 2020, Axum made application for another one-year renewal.

Figure 4-5 Original Terer exploration license area (March, 2015)

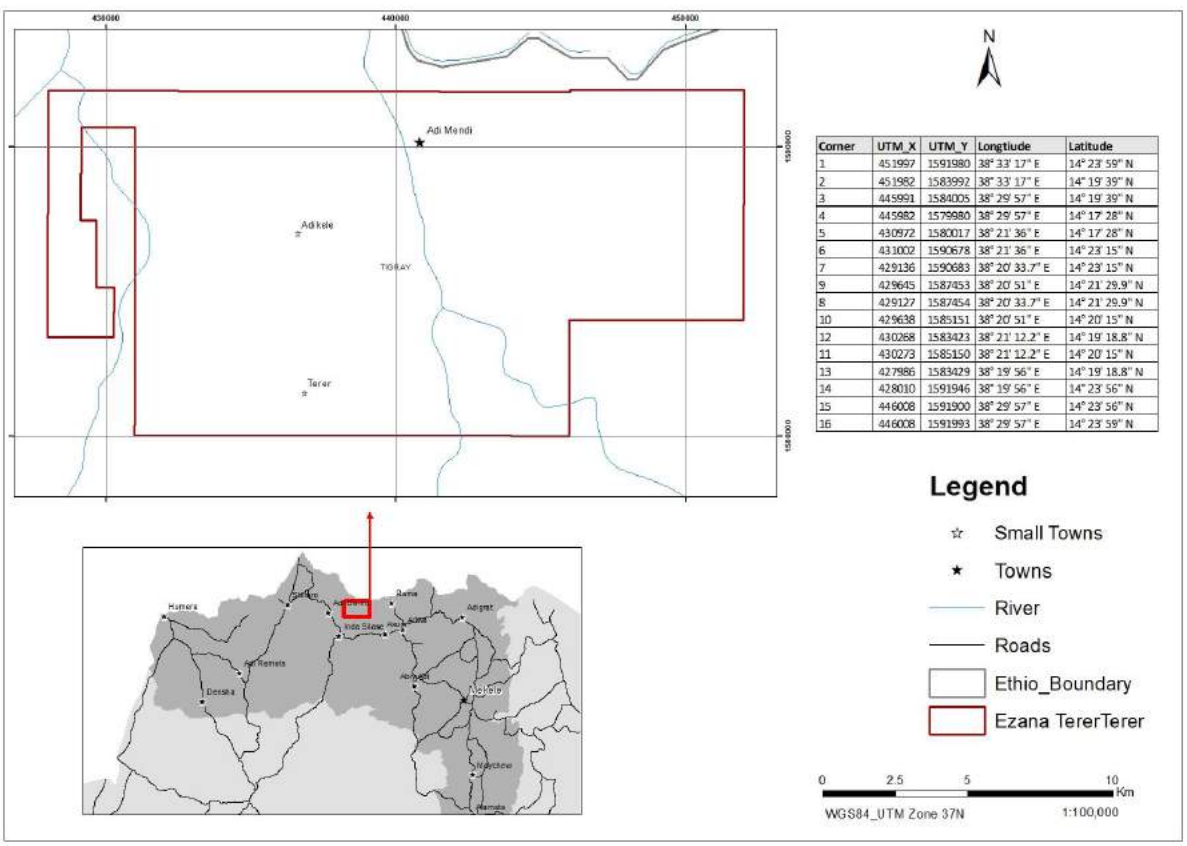


Figure 4-6 Current Terer exploration license area with relinquished areas

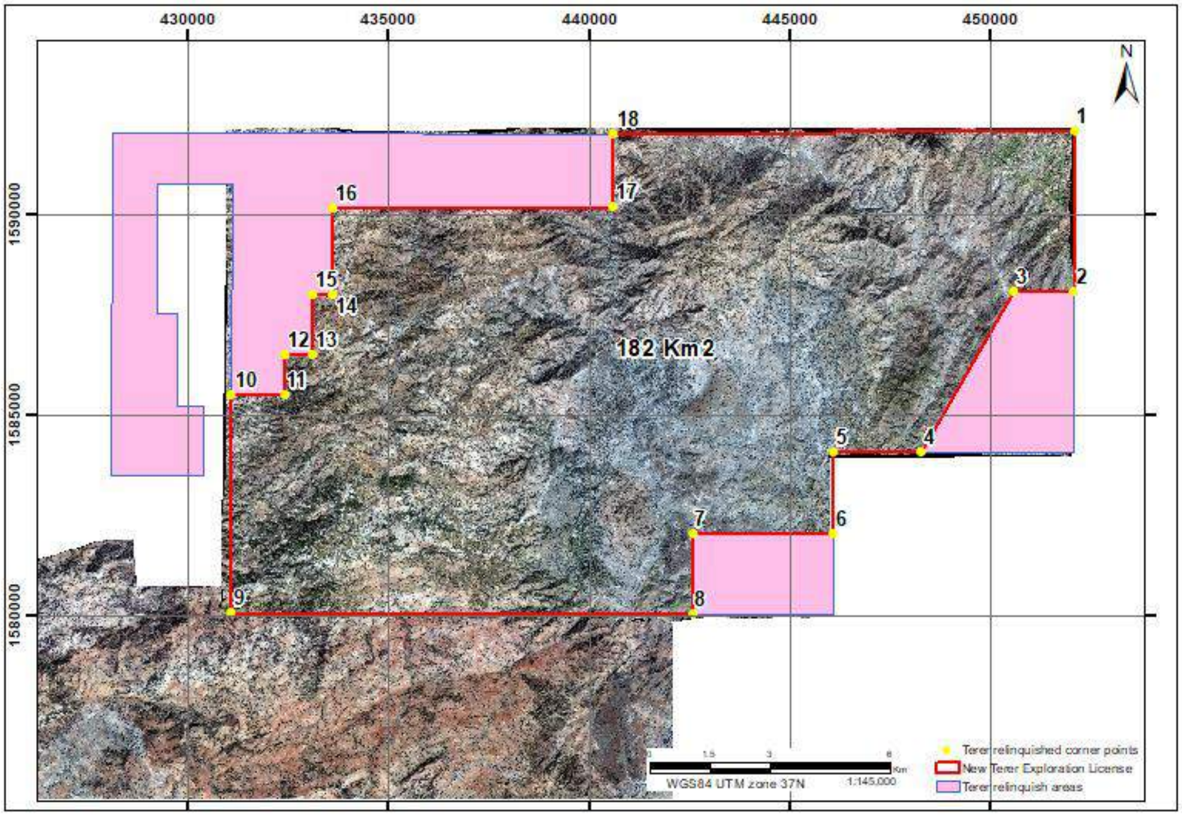


Table 4-3 Geographic coordinates of the reduced Terer concession area (WGS84, Z37N)

Datum: WGS 84 UTM Zone 37				
Corner Pts	**UTM_X**	**UTM_Y**	**Longitude**	**Latitude**
1	452097	1592050	38.55560	14.40030
2	452085	1588060	38.55560	14.36430
3	450577	1588060	38.54160	14.36420
4	448277	1584060	38.52040	14.32800
5	446090	1584070	38.50010	14.32810
6	446081	1582060	38.50000	14.30990
7	442581	1582060	38.46760	14.30980
8	442581	1580060	38.46760	14.29170
9	431071	1580080	38.36090	14.29170
10	431082	1585500	38.36090	14.34070
11	432396	1585500	38.37310	14.34080
12	432396	1586500	38.37300	14.34980
13	433096	1586500	38.37950	14.34980
14	433596	1588000	38.38410	14.36340
15	433096	1588000	38.37950	14.36340

16	433600	1590150	38.38410	14.38280
17	440600	1590170	38.44900	14.38310
18	440601	1591980	38.44900	14.39950

4.3 Terer Concession Agreement

Sun Peak has entered into an agreement with Ezana Mining Development PLC (Ezana) dated November 11, 2017 and amended on February 19, 2018, October 16, 2018, June 28, 2019 and August 12, 2019, whereby a new jointly-owned company named Axum Metals Share Company (Axum) has been incorporated to hold the Terer, and other concessions, and in which Sun Peak can earn up to 70% shareholding of the company by satisfying the following conditions:

1) To acquire a 51% Shareholding in Axum, SPMC must solely fund exploration expenditures on the Licenses held by Axum, totaling US$5,000,000 within three years after the Effective Date (December 3rd, 2019), with at least US$2,000,000 being incurred within the first 18 months. SPMC has to date expended approximately US$1 million on the subject properties. Upon satisfying the expenditures, SPMC will be granted 51% of the issued capital of the Company.

2) Within 30 days of completing the Phase 1 earn-in SPMC may notify Ezana of its intent to proceed to exercise the Phase 2 earn-in. Phase 2 earn-in will allow SPMC to earn 16.5% additional Shareholding in Axum by expending a minimum of US$1,000,000 for each year from the date of the election to exercise Phase 2, through to the completion of a Definitive Feasibility Study, and any other studies required to apply for a Mining License.

3) Within 60 days of the Company being issued a Mining License SPMC will have the option to purchase 2.5% of Ezana’s shares in Axum for a purchase price of US$6,000,000, to be delivered within 10 days of delivery of the notice to Ezana.

As part of the agreement the Terer exploration license was to be transferred from Ezana to SPMC, and as of June 12, 2019 the Ministry of Mines and Petroleum of Ethiopia has implemented this transfer.

Table 4-4 Exploration License details for 2019

Permit		Decree			Owner	Annual expenditures (USD)	
Name	km^2	Number	Renewal	Expiry	Holder	Surface Tax	Expenditures
Nefasit	430.8	MOM/EL/60/2017		1-Jan-21	SPEM	$1,292	$677,179
Adi Da-iro	269.3	MOM/EL/5/2019		16-Apr-22	SPEM	$808	$263,265
Terer	181.3	MoM/EL/86/2015	Second	30-Mar-20	Axum	$544	$582,805

4.4 Mineral Exploration Concessions in Ethiopia

In 1993, Ethiopia enacted the Mining Proclamation and the Mining Tax Proclamation, to provide for a legal regulatory framework to promote investment in mineral exploration and production in the country. This marked a major shift from the government monopolized mining sector that existed prior to 1993. The proclamations allow for business incentives that include security of tenure, the right to sell minerals, preferential duty and tax provisions on equipment and machinery, a 5-7% production royalty (precious metals revised in Proclamation 816/2013), a 35% income tax on taxable income, and a structuring to allow for repatriation of profits. In addition, the Ethiopian Government has the option to take a 5% participating stake in projects that move to the mining stage.

Ethiopian Exploration Licenses are granted by the Ministry of Mines of the Federal Democratic Republic of Ethiopia for a 3 year term, which is renewable yearly for an additional 2 years, and may be renewed yearly for up to 5 more years provided that the licensee proves the necessity to undertake exploration activity beyond the initial work program. To secure an exploration license the company is required to propose an annual exploration program and budget, which is submitted to the Ministry. If the work program is accepted then the expenditure stated in the proposal must be met to renew the license at the end of the three year period, or the subsequent annual renewal. Up to 2020, claims have been acquired through map (paper) staking, rather than online or physical staking.

After the initial 3 years if the exploration work is not completed as proposed, there is a requirement to drop 25% of the license area upon application for a 1 year renewal. In addition, there is an annual land rent charge of approximately \$3 (60 Birr) per square kilometer. There is no set minimum exploration expenditure required but the Ministry must agree with and approve the proposed work program. Annual and bi-annual reports are to be submitted to the Ministry detailing operations, results, expenditures, local employment and other relevant information.

The government holds the surface rights on which the concessions are located, and the areas granted by the exploration licenses are sufficient for any potential mining and milling operations, exploration activities, and all required project facilities.

4.5 Environmental Regulations of Exploration Licenses

The Exploration License stipulates the requirements for environmental protection and reclamation. Reclamation security can be required at the discretion of the MoMP for any type of exploration work that may cause disturbance or possible environmental damage to the land, to pay for the cost of reclamation in the case that a company defaults on its obligation to perform remediation. These include, but are not limited to, the following:

- construction of drill sites
- trenching
- construction of roads or trails

- use of wheeled or other mobile equipment
- fuel storage
- camp construction and operation

Currently the Company has not been required to post any security for the work that is proposed on the Exploration Licenses.

4.6 Environmental Liabilities and Other Risk Factors

To the best of the authors' knowledge, there are no environmental considerations or other significant environmental factors or risks that may affect access, title, or the right or ability to perform work on the Property.

5.0 ACCESSIBILITY, CLIMATE, PHYSIOGRAPHY AND INFRASTRUCTURE

5.1 Accessibility

Addis Ababa is the political and economic capital of Ethiopia and has service to locations world-wide by Ethiopian Airlines, including Toronto, Canada, four times a week. In addition, the neighbouring countries are accessible by regularly scheduled air services as well as via a network of roads. There is a daily flight with Ethiopian Airlines from Addis Ababa to Axum, which is a 67 kilometer drive on good asphalt road to Shire. As well, the airport in Shire opened in 2018 and hosts daily flights from Addis Ababa.

Access to the Shire property from Addis Ababa is via a good asphalt road 1,040 kilometers northerly, passing through Dessie, Mekele, Shire (previously called Inda Silassie), then by taking a dirt road for approximately 25 kilometers north-easterly to reach the Nefasit mineral showings (Figure 4-2). This same dirt road provides access to the Terer license by driving an additional 10 kilometers to the main area of mineral showings.

Adi Da-iro license is reached by travelling 40 kilometers on good asphalt road from Shire, then taking a dirt road for approximately 20 kilometers to reach the mineral showings.

A network of dirt roads provides vehicle access within much of the Shire concession areas during the dry season. Portions of the Property are not easily accessible during the wet seasons due to the inundation of the roads and a lack of bridges spanning seasonal water courses.

5.2 Climate and Vegetation

The project region is characterized by a temperate to hot climate and has both dry and wet seasons (Table 5-1). The rainy season extends from mid-June to mid-September with average rainfall of 800-1000 mm per annum. Mean daily temperatures range from a high of 32.5°C in March to a minimum of 13°C in January. Extremes of heat are tempered by elevated plateau present throughout much of Ethiopia.

Table 5-1 Climate data for Shire, Tigray, Ethiopia (source Wikipedia).

Month	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Average high °C	28.0	29.8	30.3	31.8	31.1	29.5	23.6	23.4	26.7	28.3	28.7	27.5	**28.2**
Daily mean °C	19.2	20.7	21.5	23.3	23.1	21.9	18.1	18.2	19.7	20.1	19.4	18.6	**20.3**
Average low °C	10.5	11.6	12.7	14.9	15.1	14.4	12.7	13.0	12.8	11.9	10.2	9.7	**12.5**
Average precipitation mm	2	1	3	22	48	119	297	274	110	15	14	0	**905**

Mineral exploration activities can be conducted year around, although extra caution must be exercised on the roads and while crossing streams in the wet season.

The area of interest is covered by scarce and scattered vegetation, mainly acacia and thorny bushes, with a few big trees growing along stream banks. The soil cover tends to be very thin, however, the only place of significant bedrock exposure is found in the large river valleys or on ridgetops. A few wild animals such as monkeys, hyena and foxes inhabit the area.

5.3 Physiography

The area covered by the Shire concessions is part of the northwestern lowlands of Ethiopia, which is moderately flat lying with narrow valleys and ridges increasing toward the northeast. Several large streams and rivers flow within these valleys, down to the Mereb River, which demarcates the northern Ethiopian border with Eritrea, 3 to 9 km north of the concessions. The project area has varying relief, from about 2500 m above sea level in the south dropping to 1150 m in the north. A northwest-trending mountainous ridge at the south end of the concession area rises to peaks at approximately 2500 m that slope steeply to the north down to a broad plateau which slopes more gently and regularly from about 2000 m to 1500 m elevation over a distance of about 15 km to the north. The northern parts of the license areas are cut by relatively steep sided valleys that trend north and northeast and drop from ridgetops at about 1700 m elevation down to valley bottoms at about 1200 m.

Water is predominantly acquired through wells since tributary drainages on the upper plateau are mostly seasonal, drying up during the drier months. However, the larger rivers that cross the concessions rarely stop flowing, and these provide limited water for irrigation during the dry season.

5.4 Local Resources and Infrastructure

Ethiopia is a landlocked country, bordered by Djibouti, Eritrea, Kenya, Somalia, Sudan and South Sudan. Ethiopia is one of Africa’s poorer nations, however economic reforms enacted by the constitution of 1994 continue to be optimized in an attempt to both privatize state businesses and attract further foreign investment. The Ethiopian economy is predominately raw commodity based, and is centered on agriculture, with coffee being the major export crop. Poor agricultural management and frequent droughts continue to hamper this sector of the economy.

There are recent signs that foreign investment in mining is on the rise in Ethiopia. In 2017, KEFI Minerals secured financing of $135M through Oryx Management to advance Ethiopia's fledgling gold mining sector with the development of the Tulu Kapi gold deposit in western Ethiopia. The Ethiopian Government will provide funding for building all project-related off-site infrastructure. The underdeveloped hydrocarbon and mineral wealth are now viewed as an opportunity for future economic development and a possible significant economic driver for the country.

Ethiopia is accessed and serviced via air, roadway, and one standard gauge rail system from Djibouti to Addis Ababa. At present port-related import and export is cycled through facilities at Djibouti, located 560 km to the southeast on the Arabian Sea. Although numerous rivers drain Ethiopia’s diverse topography, the only navigable waterway is the Baro River (a tributary of the Nile), located on the border with Sudan.

Roughly 50 civil airports exist in the country, including five in the Tigray Region (Axum, Dansha, Humera, Mekele, and Shire), along with two major military airports and a heliport, located 1 km south of Adi Da’iro (Figure 5.1). The main paved highway in the region runs east-west through Axum and Shire. A good paved highway also runs north from Shire through Adi Da’iro along the west side of the property.

Significant infrastructure in the area includes high voltage power lines installed along the Shire to Adi Da’iro and Adi Nebried to Shiraro roads. The Ethiopian Power Corporate states that the lines within the country include 45, 66, 132 m 230 and 400 kV. A large water reservoir is located 2 km southeast of Adi Da’iro. The mobile cellphone network is accessible in parts of the exploration area and internet connections are available in Shire.

Shire is the nearest medium-size town to the Shire project and has a population estimated at approximately 60,000. Many parts of the town have modern amenities such as electricity, running water, sewage disposal, paved streets and modern building construction. Businesses, schools and a hospital are some of the updates to the community. A scheduled air service is operated during the year and a variety of commercial premises are located in the town. However, in the villages proximal to the project, a subsistence lifestyle is evident and only limited power and water is available for the inhabitants. Agriculture and livestock farming are the main livelihoods. Barley, wheat, maize, sorghum, teff and gesho are the main agricultural products. Gesho is grown primarily for fermenting barley beer (a local beer called suwa). Cows, sheep, goats, donkeys and chickens are common livestock in the area. Land preparation, particularly when cultivating teff, is labour intensive and is carried out by hand and oxen draught power. Motorized vehicles are rare in the villages.

The area is inhabited by Tigray people whose main spoken language is Tigrinia. Amharic language can also be used as means of communication. Orthodox Christianity is the main religion practised by the villagers.

The Company currently has no permanent infrastructure in the Shire concessions area and exploration is carried out from a house and warehouse compounds located in Shire.

6.0 HISTORY

The project area has seen considerable historic work, including stream sediment, soil and rock chip sampling, geological mapping, airborne and ground geophysical surveys, trenching, reverse circulation and diamond drilling and a gold recovery heap leach pilot test. Previous programs were conducted on each of the Company's three concessions and the work is discussed below for each area separately.

6.1 Terer Concession Previous Work

The earliest reconnaissance stream sediment sampling in the Terer concession area consisted of 300 samples collected in 1969 by a team of geologists from the Ministry of Mines, with subsequent extensive regional mineral prospecting, including detailed soil sampling and rock sampling surveys conducted in 1970 and 1972.

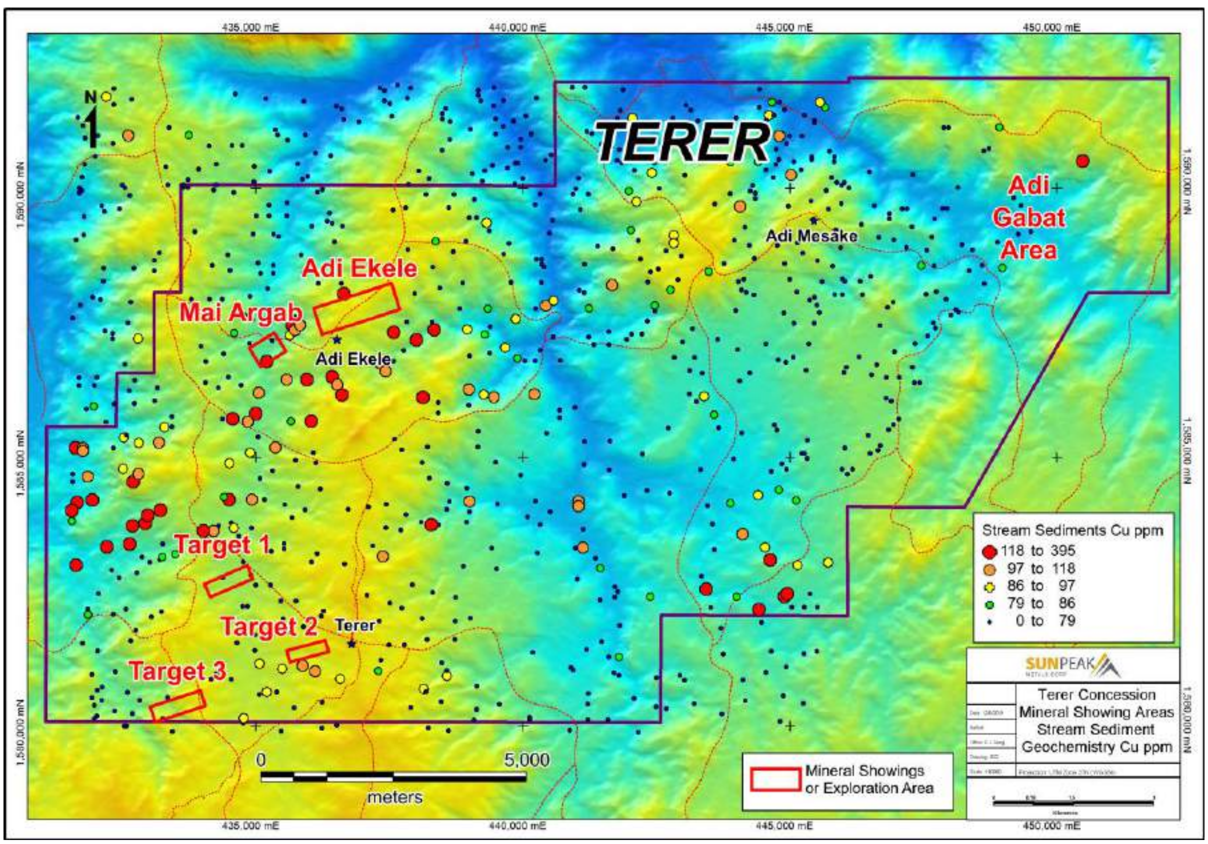
Important copper-zinc anomalies associated with gossans were delineated at the Adi Ekele ridge between Mai Argab and Messiha rivers (figs 6-1, 6-2). In the early 1970's, the Ethio-Nippon Mining Company conducted various exploration programs, included detailed soil sampling, trenching and rock sampling on the gossanous outcrops at Adi Ekele ridge, which traced the occurrences of copper and zinc mineralization and related gossans for a strike length of one kilometer. The work indicated that the mineralization had similar values, as well as lithological, and textural characteristics, to VMS mineral discoveries in the Asmara metallogenic province in Eritrea (Adi Nefas and Debarwa) located about 100 km to the northeast.

Exploration activities were not conducted from 1975 up to 1991 due to civil war in the country.

In 1997, regional mapping was conducted on the Axum sheet, which includes the Shire project area, by the Ethiopian Institute of Geological Surveys (Tadesse et al., 1997), who established the stratigraphic and tectonic setting of the Precambrian metavolcanic-metasedimentary formations of western Tigray.

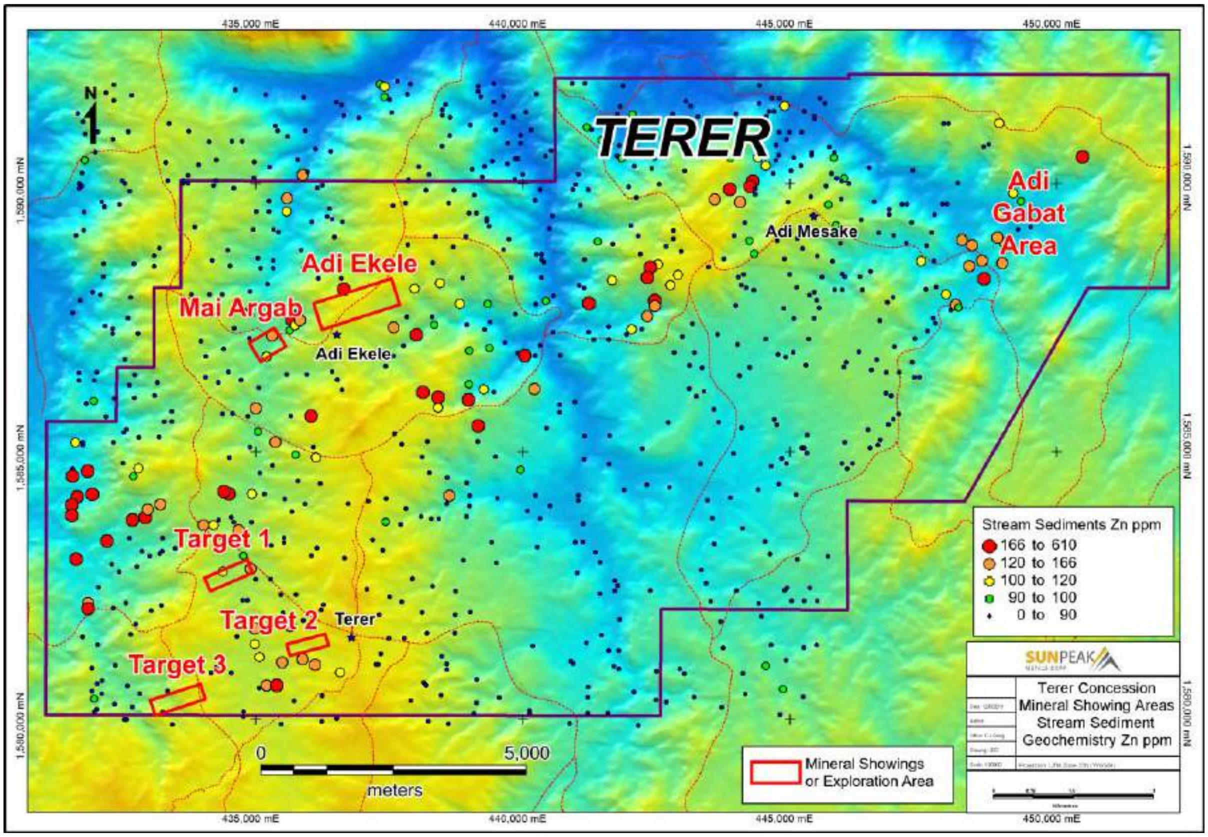
From 1994 to 1998, the Ezana-Ashanti JV Company conducted rock chip sampling (938 samples) and stream sediment surveys (818 samples) over the entire Terer concession (Figures 6-1 to 6-3). In the same period a total of 193 soil samples were collected at 50 x 200 meter intervals from the central portion of the grid around gossan outcrops of Adi Ekele and the nearby malachite occurrence of Mai Argab. These samples were prepared and analyzed for gold, silver and base metals by atomic absorption spectrometry (AAS) methods at a laboratory in Mekele owned and operated by Ezana. Geochemistry plots (Figures 6-1 to 6-3) show that the most anomalous values of Cu, Zn and Au are concentrated near some of the now known gossans and hydrothermal alteration zones. Ezana-Ashanti followed up with satellite image interpretation, detailed geological mapping, high density grid soil and grab rock sampling, trenching and ground geophysical surveying (IP/Resistivity) in some of the higher priority targets. However, many areas of strongly anomalous geochemistry remain to be more fully explored, especially to the south and southwest of Adi Ekele and in the Adi Gabat area.

Figure 6-1 Terer concession, mineral showing areas and Cu stream sediment anomalies



A trenching program, which was recommended based on the grid geochemical results, was undertaken in 1998 at the Adi Ekele - Mai Argab VMS zone, aggregating a total of 2316 meters of trenching. An IP/ Resistivity Survey was conducted on 200 meter-spaced lines over a 3.2 square kilometer area within the Adi Ekele - Mai Argab prospect, delineating the mineralized gossan zone as an area of moderate to high IP chargeability and very low resistivity.

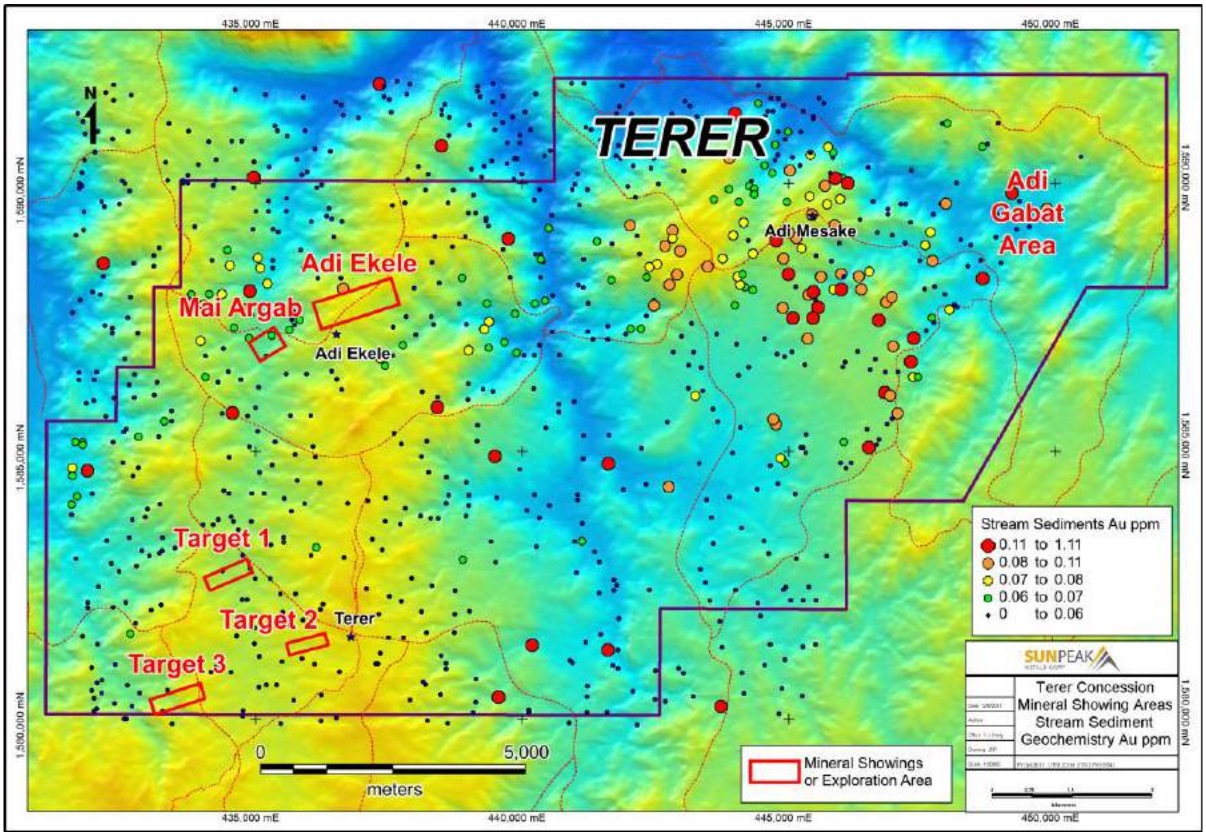
Figure 6-2 Terer concession, mineral showing areas and Zn stream sediment anomalies



Subsequently, the exploration work was extended to cover a greater area and geological maps at a scale of 1:25,000 were produced over a 30 sq. km region from geological information gathered during stream sediment surveys, supported by satellite image interpretation. Following the regional surveys, supplementary rock chip sampling was undertaken over an area of 20 square kilometers to the southwest of the Adi Ekele - Mai Argab zone. The results of this sampling are not available to the authors.

Most exploration work was suspended in the northern region between 1999 until 2001 during the two-year border conflict with Eritrea. Subsequently, Ashanti Goldfields withdrew from the partnership with Ezana in October 2000.

Figure 6-3 Terer concession, mineral showing areas and Au stream sediment anomalies



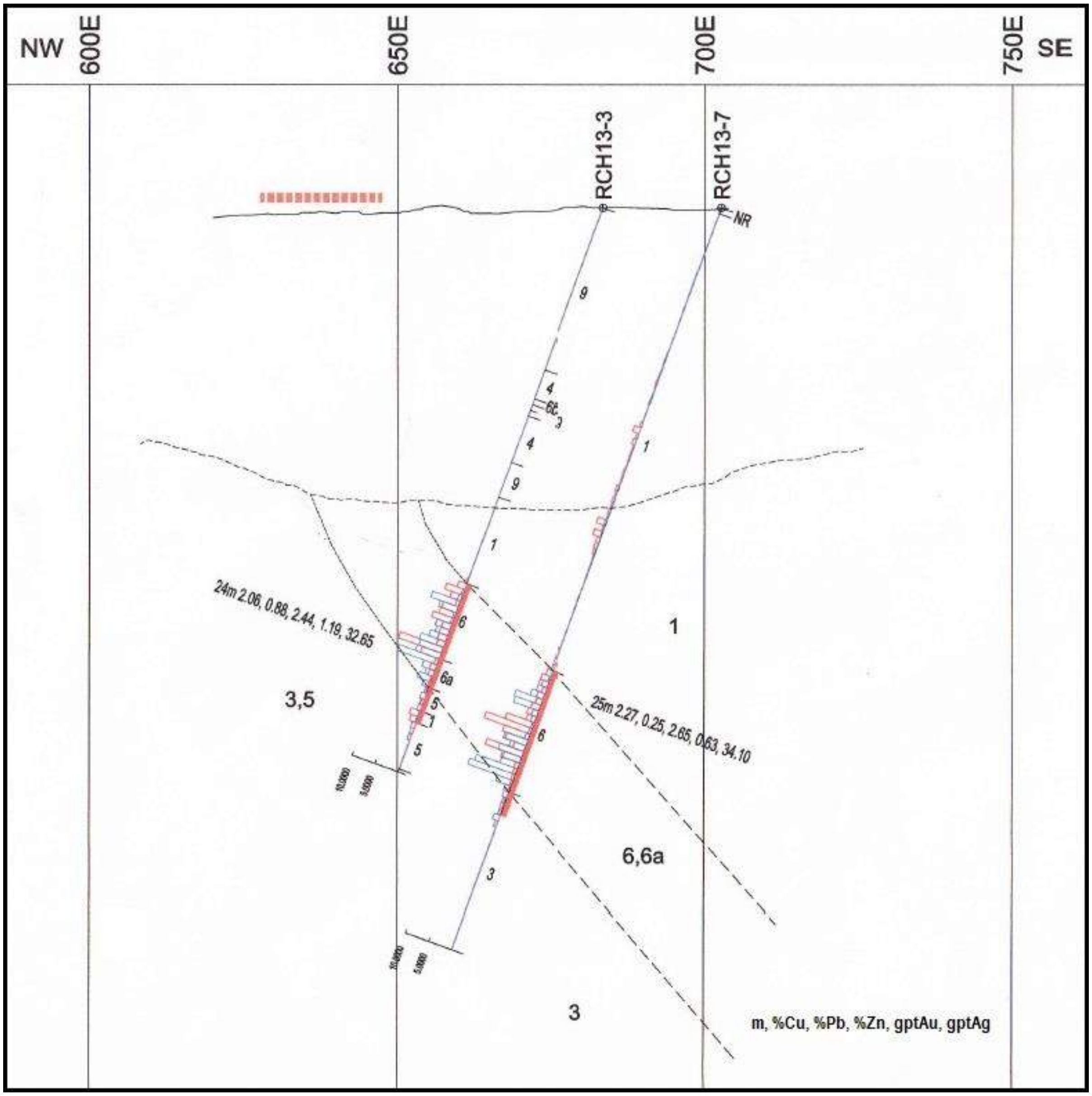
In 2001, based on the favourable results of the previous geological, geochemical and geophysical exploration, a program of reverse circulation (RC) drilling was implemented in the Adi Ekele area by Ezana. Twelve boreholes with an aggregate length of 1,438 meters were drilled in the immediate vicinity of the VMS-style gossanous outcrops. The results were very positive, with 9 out of the 12 RC holes intersecting massive to semi-massive VMS-style mineralization ranging from a few meters up to 25 meters thick (eg. holes 13-3 & 13-7) (Table 6-1 Figure 6-4). The mineralization was enriched with Cu, Zn, Au, Ag and Pb and was traced by this drilling program for over 375 meters along strike. Following the RC drilling, the company continued to appraise the prospect with geological, geochemical and geophysical surveys, delineating further promising VMS targets.

Table 6-1 Selected drill Intercepts, Adi Ekele reverse circulation drill holes

Hole No.	From	To	Metres	% Cu	% Pb	% Zn	Gpt Au	Gpt Ag
13-2	105	108	3	1.45	0.03	0.60	2.17	18.0
	118	120	2	0.77	0.01	1.47	0.15	40.4
13-3	65	89	24	2.06	0.88	2.44	1.19	32.7
incl	66	79	13	3.06	1.01	3.53	0.38	39.5
13-4	34	37	3	6.90	0.00	0.02	0.06	4.0
13-6	70	72	2	1.37	0.00	0.24	0.22	2.6
13-7	80	105	25	2.27	0.25	2.65	0.63	34.1
incl	88	99	11	3.97	0.31	4.03	0.35	41.3
13-8	64	81	17	1.16	0.26	2.71	0.07	19.5
incl	72	81	9	1.66	0.44	4.38	0.10	31.9
	96	98	2	1.28	0.07	1.18	0.12	18.0
13-9	106	108	2	0.47	0.26	1.64	0.14	12.0
13-10	140	153	13	1.32	0.16	4.88	0.18	10.7
13-12	106	107	1	1.94	0.17	4.65	3.33	30.1

Ezana consulted with a Canadian geologist, Mr. C.F. Staargaard who indicated that the massive sulphide mineralization of the Adi Ekele and the Mai Argab prospects constitute classic VMS-style mineralization (Staargard, C.F., 2001). He noted that IP anomalies coincide well with the gossan zones and that a parallel, but weaker, IP trend to the south of the gossans may be indicative of another mineralized horizon, although this potential horizon has not been confirmed to date. Staargaard (2001) recommended further geological work, ground and airborne geophysical investigation and more closely spaced core drilling in an effort to locate more VMS mineralization in the area.

Figure 6-4 Adi Ekele RC drill hole section 2050N (source : Staargaard, 2001)



In 2003 Ezana undertook geological mapping and detailed rock chip sampling to evaluate the possible extensions of the Adi Ekele zone to the southwest and the northeast (private Ezana report). Although the sample analytical values are not included in the report, several conclusions were stated:

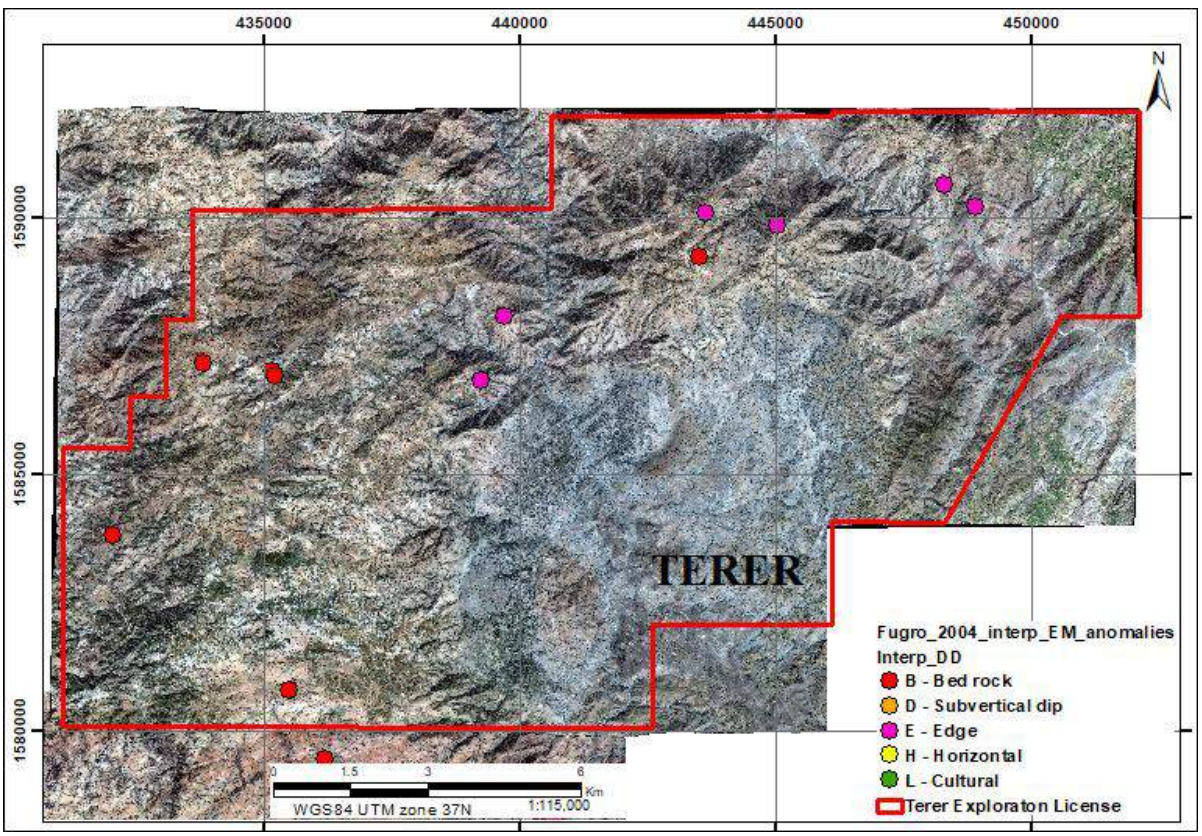
- Mineralized samples from Mai Argab returned Au values up to 20 g/t and a strong correlation of Au with As was observed.
- The differences in alteration, mineralization and element associations (Au-Ag-Cu-Zn-Pb-As) in the Mai Argab zone suggests that the mineralization may be hosted in an

independent stratigraphic horizon from the Adi Ekele zone, approximately 1 km to the northeast.

- A barite-malachite zone about 2.5 km northeast of Adi Ekele returned rock chip values of up to 12.3 ppm Au, 62.7 ppm Ag, 2.14% Cu , 1.6% Zn and 1.65% Pb.
- The Messiha sulphidized zone discovered 6 km northeast of Adi-Ekele showed erratically mineralized locations that returned high values such as 23.4 ppm Au, 57.5 ppm Ag, 287 ppm Cu and 980 ppm Zn.
- The presence of chemical sediments on the northeastern part and manganiferous banded iron formation (BIF) beds on the southwestern part of the Adi-Ekele zone suggest that they may be more distal from the source, which could underlie the Adi-Ekele gossan.

In 2004, Ezana had an airborne Dighem Electromagnetic and Magnetic survey conducted by Fugro Geophysics Canada. An area of 421 sq km was flown on 200 meter line spacings, which included the entire Terer concession area.

Figure 6-5 Terer concession Fugro airborne EM conductor anomalies



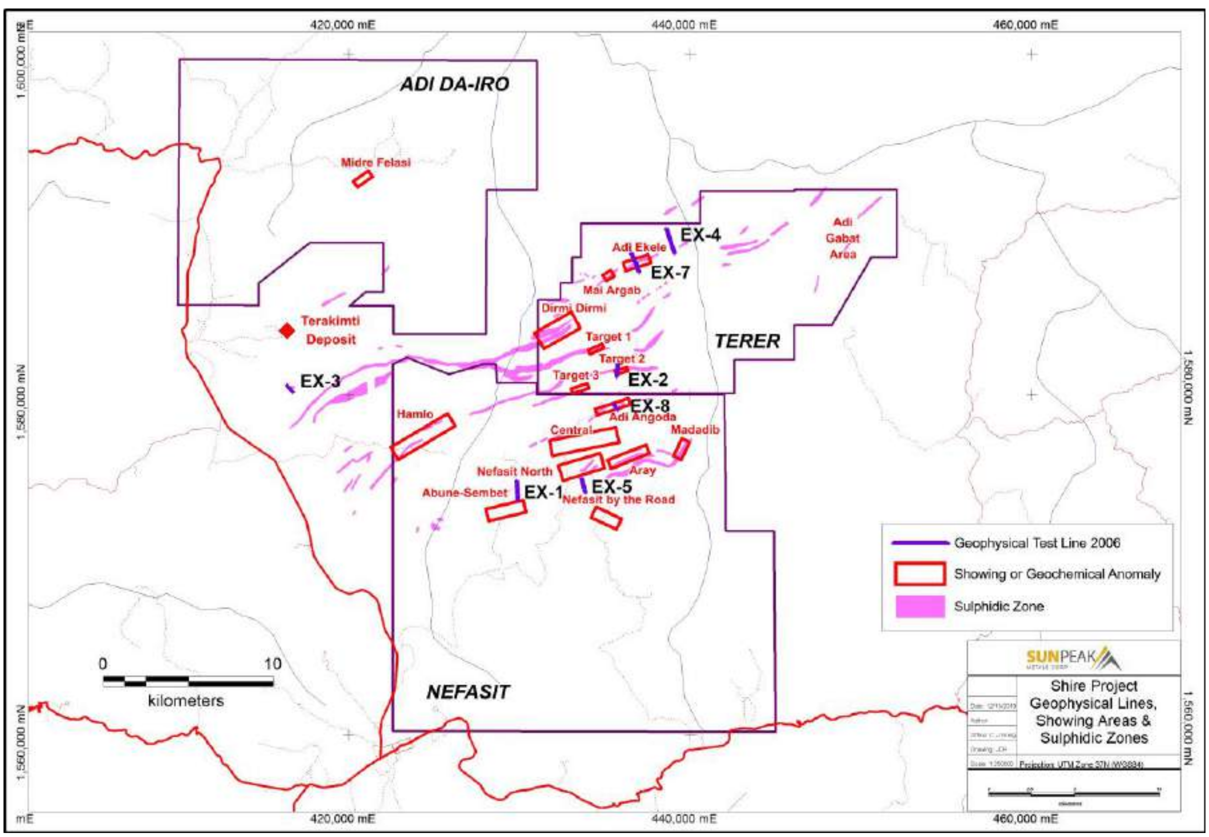
More than 10 areas of strong EM conductors were reported to have potential for VMS-style Cu-Zn mineralization (Figure 6-5). To date, many of these targets have received only limited, or no, ground-based exploration. The encouraging results of this electromagnetic survey prompted Sun Peak to undertake an airborne VTEM electromagnetic survey with more advanced equipment over the entire Terer concession in 2019. This data confirmed most of the Fugro targets and has largely superseded the results of the previous work; the 2019 survey is discussed below in Section 9.1.

In 2006 Ezana contracted Lul Earth Sciences from Addis Ababa to conduct a higher-end re-processing and re-interpretation of the airborne EM/magnetic data, followed by ground based exploration of some of the EM conductors defined by the 2004 airborne survey.

Six lines (about 6000 m) were surveyed within the current Terer and Nefasit concession areas on close-spaced stations by multi-disciplinary methods, consisting of IP/Resistivity, gravity, ground magnetic and ground EM (Genie) surveys (Figure 6-6). The results of this detailed work revealed a number of geophysical anomalies that were recommended for follow-up work.

Line EX-1 (Figure 6-6), near Abune Sembet, indicated 2 IP anomalies up to 90 m wide that coincide with airborne anomalies, high magnetic susceptibility and high density suggesting good potential for VMS-style mineralization at depths of 40-50 m. The area is underlain by sericite-chlorite schist, cherty siltstone and granitic dykes.

Figure 6-6 Geophysical test lines 2006, mineral showing areas and sulphidic zones



Line EX-2 was located at Target 2 near Terer village. It revealed one IP anomaly coincident with a prominent airborne anomaly, high magnetic susceptibility and high density. The ground EM indicated a 120 m wide, steeply dipping conductor at a depth of about 40 m suggesting good potential for VMS-style mineralization. Host rocks are interlayered quartz-sericite-chlorite phyllite and chlorite-phyllite with abundant oxidized disseminated pyrite and east-west trending quartz veins. Diamond drilling was later conducted, in 2011, in the Target 2 area intersecting wide sections of disseminated pyrite, with minor massive banded pyrite containing some chalcopyrite and sphalerite over widths of 0.5 to 4 m. No assays of the core are available.

Line EX-4 was surveyed 1500 m to the northeast of the Adi Ekele zone. Two IP anomalies were apparent, one near-surface and narrow, and one wider but with medium values. Both correspond with high magnetic values and high to medium density and the area is underlain by the same pyritic, sheared, chlorite-sericite phyllites and cherty volcanic sandstones that host the VMS mineralization at Adi Ekele. The wider anomaly is up to 70 m wide at a depth of about 40 m and it was noted as a high priority drill target which, as yet, has not been drilled.

Line EX-5 was located south of Nefasit North zone, but may be along trend from the Aray zone. One prominent IP anomaly corresponds with high magnetic susceptibility, high density and a 150 m wide conductor at a depth of about 35 m. Outcrop in the area is cherty volcanic siltstone with oxidized pyrite, as well as volcanic sandstone with indications of malachite staining and vein swarms. The author of the geophysical report (Lul Earth Sciences) considered this target to be high priority and favorable for both shear related gold-quartz veining and VMS sulphide deposits.

Line EX-7 was run across the Adi Ekele zone and revealed two IP anomalies, one over the known mineral zone which showed corresponding medium resistivity, high magnetic susceptibility, high density and a 100 m-wide sub-vertical conductor at 30 m depth. The second IP anomaly is about 250 m to the south of the zone, indicating a possible parallel mineralized horizon that has not been drill tested. It also has medium resistivity values, medium magnetic susceptibility, high density and an 80 m-wide sub-vertical conductor at 25m depth. This target is underlain by sheared chlorite-sericite phyllite trending N65E and is notably sulfidized. It contains shallowly plunging and slightly discordant quartz veins marked with no visible sulphides, although local residents report finding gold nuggets from this locality. The author of the geophysical report considered this target to be high priority and favorable for both shear related gold-quartz veining and VMS sulphide deposits.

Line EX-8 was run across the Adi Angoda zone revealing one prominent IP anomaly, with coincident moderate resistivity, mainly high magnetic susceptibility and mostly high density values. The ground EM indicated a 60 m wide moderate conductor at about 40 m depth. The anomaly is underlain by pyritic mudstone and sericite-chlorite phyllite that are interlayered between large concordant quartz tuff bodies. This target was rated as high priority, and it was later drilled, in 2009 and again in 2012, intersecting disseminated and laminated sulphide mineralization with Au, Ag, Cu and Zn values over widths of up to 3 m within a broader zone of disseminated pyrite.

In 2007, Ezana signed a joint venture agreement with Beijing Donia, a Chinese exploration company; incorporating a new joint venture company called Makeda Mining PLC (Makeda) to conduct exploration work on the Terer license, as well as the Adi Gabat license, which at that time covered the area now largely covered by the northeast end of the current Terer license.

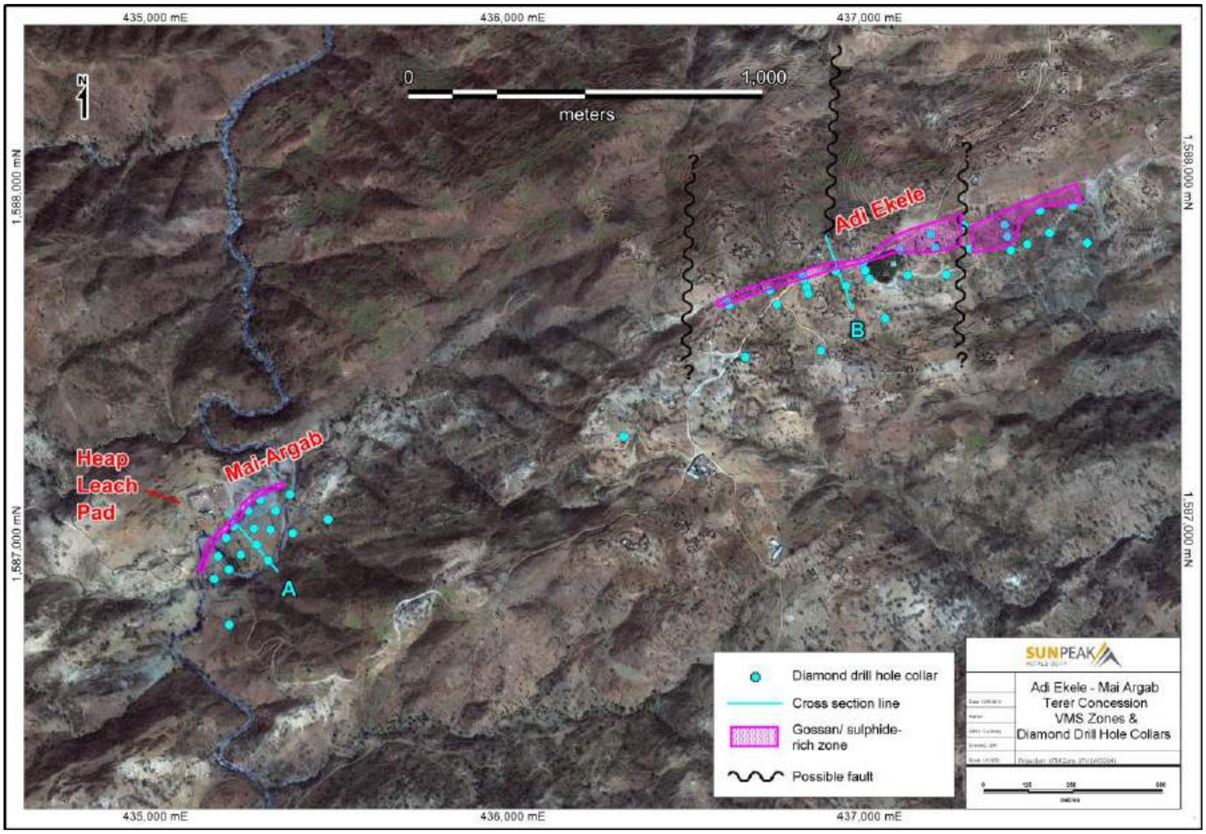
From 2007 to 2010 Makeda completed 51 diamond drill holes, for a total of 7,540 meters, mainly at Adi Ekele and Mai Argab and the northeast extension of these prospects. The mineralized areas appear to be located within the same VMS-bearing stratigraphic package extending along a length of at least 5 kilometers (Figure 6-6) to the Messiha River.

Table 6-2 Terer concession drilling history

		RC		Diamond	
Year	**Prospect**	**Holes**	**Meters**	**Holes**	**Meters**
2001	Adi Ekele	12	1438		
2007-10	Adi Ekele-Mai Argab			51	7540.0
2011	Target 2 - SW Terer			2	518.8

Drilling at Mai Argab was on fences spaced 50 m apart and at Adi Ekele the drill fences were 100 m apart (Figures 6-7 to 6-9). Most fences had 2 or 3 shallow holes and Mai Argab was explored to a depth of about 100 to 150 m, whereas deeper holes at Adi Ekele tested to depths of up to 300 m below surface. Holes were angled toward the NNW to cross the SSE-dipping zones, therefore the true widths of intercepts ranged from about 80% to 85% of the drilled lengths of mineralization reported.

Figure 6-7 Mai Argab - Adi Ekele VMS zones, diamond drill collars & cross section lines



The drill sections that Makeda produced, with plotted analytical results as well as simple geological logs for most of the 51 holes, are available to the Company (Figures 6-10, 6-11). The core was acquired by the Company in late 2019 and a program of re-logging and re-sampling to confirm the reported mineralization is in progress. Drilling to twin some of the holes will be required to confirm the tenor and width of mineralization.

Lens-shaped bodies of strongly banded to massive sulphide mineralization were defined by drilling in both areas. At Mai Argab drilling traced the zone for a strike length of 320 m and, of the several mineral intercepts, one of the thickest was 31.2 m averaging 1.05% Cu, 0.63% Zn, 1.12 g/t Au and 7.8 g/t Ag (hole WZK0001, Table 6-3, Figure 6-10). At Adi Ekele, drilling along a 1000 m strike length intersected similar mineralization over varying thicknesses, ranging from a few meters up to 33 meters, with one of the better intercepts returning 2.06% Cu, 2.44% Zn and 1.19 g/t Au over 24.0 m (hole ZKH3). Both zones remain open at depth and along strike. Table 6-3 shows mineralized drill intercepts from Mai Argab and Adi Ekele and Table 6-4 shows an example of the grades of various elements for individual samples within a mineralized intercept.

Figure 6-8 Mai Argab Zone drill hole locations on conductivity highs (pink & yellow)

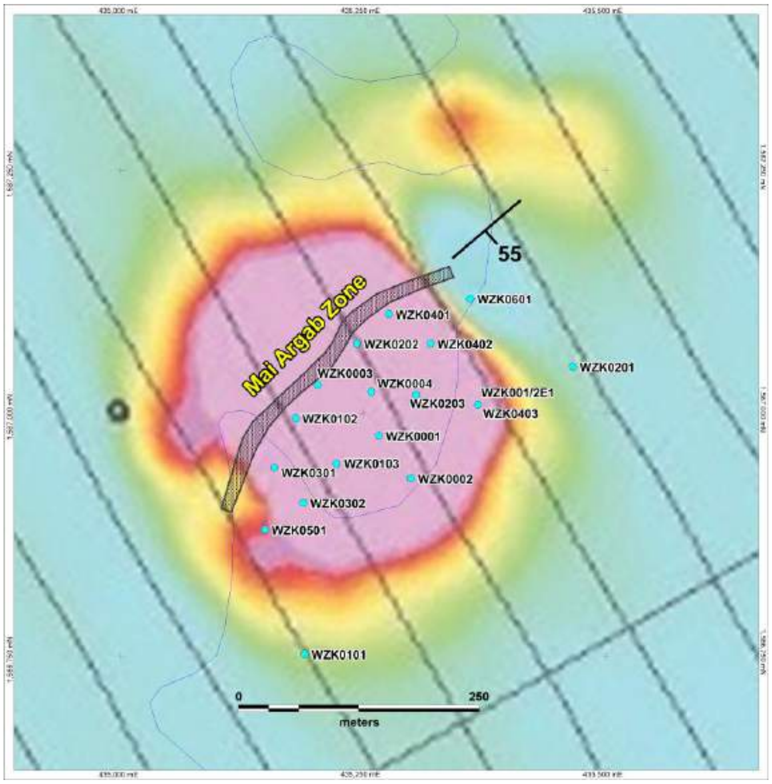


Figure 6-9 Adi Ekele Zone drill hole locations on conductivity highs (pink & yellow)

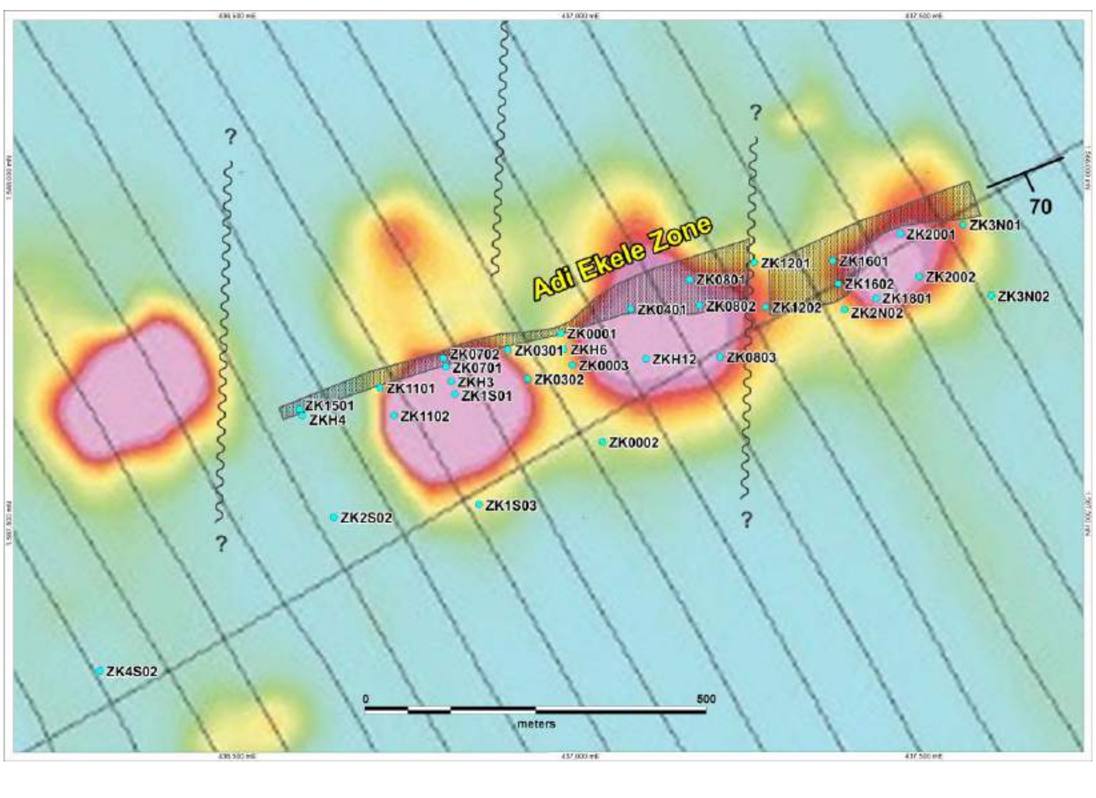


Table 6-3 Drill intercepts at Mai Argab & Adi Ekele (holes not shown had no mineralization of significance)

Zone	Hole	From	To	Length	Au Avg	Ag Avg	Cu Avg	Zn Avg
Mai Argab	WZK0001	72.77	103.97	**31.20**	**1.12**	7.84	1.05	0.63
Mai Argab	WZK0002	151.85	155.10	3.25	0.56	5.72	0.91	0.04
Mai Argab	WZK0002	169.45	175.15	5.70	0.27	2.58	0.66	0.20
Mai Argab	WZK0003	9.60	15.50	**5.90**	**3.29**	nd	0.06	0.03
Mai Argab	WZK0003	16.50	25.50	**9.00**	0.06	nd	0.58	0.16
Mai Argab	WZK0004	61.40	76.70	**15.30**	**1.01**	29.25	**1.77**	**2.34**
Mai Argab	WZK0102	12.60	20.30	**7.70**	**1.80**	nd	**6.16**	0.60
Mai Argab	WZK0103	82.10	90.00	**7.90**	**3.82**	**40.11**	1.24	**2.71**
Mai Argab	WZK0201	173.95	174.95	1.00	0.30	9.00	1.07	1.33
Mai Argab	WZK0202	15.00	21.10	**6.10**	**2.75**	nd	0.22	nd
Mai Argab	WZK0203	83.50	96.15	**12.65**	0.41	9.80	0.88	0.07
Mai Argab	WZK0203	101.25	112.05	**10.80**	0.46	2.65	0.13	0.82
Mai Argab	WZK0301	25.80	32.70	**6.90**	0.77	nd	1.32	nd
Mai Argab	WZK0401	14.10	21.10	**7.00**	0.74	32.49	0.04	0.02
Mai Argab	WZK0402	69.95	70.95	1.00	0.35	15.40	**1.69**	**2.57**
Mai Argab	WZK0403	123.60	125.60	2.00	0.11	2.00	0.77	0.06
Adi Ekele	ZK0001	37.60	52.60	15.00	0.26	15.74	0.01	nd
Adi Ekele	ZK0003	54.30	58.30	4.00	0.06	2.08	0.65	0.06
Adi Ekele	ZK0003	81.40	83.10	1.70	0.21	6.22	**2.38**	0.23
Adi Ekele	ZK0301	46.30	53.30	**7.00**	**1.66**	nd	0.49	0.16
Adi Ekele	ZK0302	121.80	135.70	**13.90**	0.65	18.50	1.36	**1.63**
Adi Ekele	ZK0702	16.80	21.30	4.50	**1.00**	nd	0.04	0.01
Adi Ekele	ZK0801	71.90	80.80	**8.90**	0.14	nd	**1.55**	0.50
Adi Ekele	ZK0802	42.00	49.00	**7.00**	0.11	3.04	1.31	0.01
Adi Ekele	ZK0802	126.00	140.00	**14.00**	0.57	14.30	0.78	**2.13**
Adi Ekele	ZK0803	201.10	216.80	**15.70**	0.81	25.93	0.87	1.38
Adi Ekele	ZK1102	109.15	110.15	1.00	0.96	11.30	1.27	1.21
Adi Ekele	ZK1501	21.60	23.10	1.50	**1.53**	1.60	0.03	0.01
Adi Ekele	ZK1601	48.90	63.90	**15.00**	0.07	2.43	0.69	0.22
Adi Ekele	ZK1601	110.60	120.60	**10.00**	0.09	**45.28**	0.97	0.05
Adi Ekele	ZK1602	11.80	27.50	15.70	0.05	1.48	0.28	0.01
Adi Ekele	ZK1602	64.40	71.40	**7.00**	0.03	2.03	**2.36**	0.02
Adi Ekele	ZK1801	176.60	177.55	0.95	0.18	6.70	**2.03**	0.18
Adi Ekele	ZK1S01	80.45	106.45	**26.00**	**1.14**	18.36	0.59	**2.26**
Adi Ekele	ZK1S01	126.75	129.75	**3.00**	**5.62**	**42.57**	0.16	1.25
Adi Ekele	ZK1S02	270.10	273.05	2.95	0.52	3.91	0.70	0.53

Adi Ekele	ZK2001	63.70	85.20	**21.50**	0.27	nd	**1.59**	nd
Adi Ekele	ZK2002	130.00	133.00	3.00	0.03	1.20	0.45	0.03
Adi Ekele	ZK2N02	229.40	232.40	3.00	0.04	6.10	0.10	1.00
Adi Ekele	ZK2S02	148.90	181.90	**33.00**	0.01	0.65	0.27	0.62
Adi Ekele	ZK2S02	238.90	245.70	**6.80**	0.14	1.66	0.75	**1.51**
Adi Ekele	ZK3N01	55.00	63.00	**8.00**	0.10	1.16	0.60	0.05
Adi Ekele	ZK3N02	208.80	212.80	4.00	0.25	5.33	**1.87**	0.15
Adi Ekele	ZK11N01	116.40	117.40	1.00	0.21	5.10	0.41	1.45
Adi Ekele	ZKH12	99.00	109.00	**10.00**	**1.01**	10.66	0.37	0.86
Adi Ekele	ZKH3	65.00	89.00	**24.00**	**1.19**	32.65	**2.06**	**2.44**
Adi Ekele	ZKH4	29.00	38.00	**9.00**	0.04	2.60	**2.64**	0.02
Adi Ekele	ZKH4	65.00	74.00	9.00	0.12	2.40	0.49	0.04
Adi Ekele	ZKH6	69.00	74.00	**5.00**	0.17	3.42	0.83	0.11

Note: True thickness is approximately 80-85% of reported drilled length.

Figure 6-10 Mai Argab diamond drill hole cross section A looking easterly (see Figure 6-7 for section location)

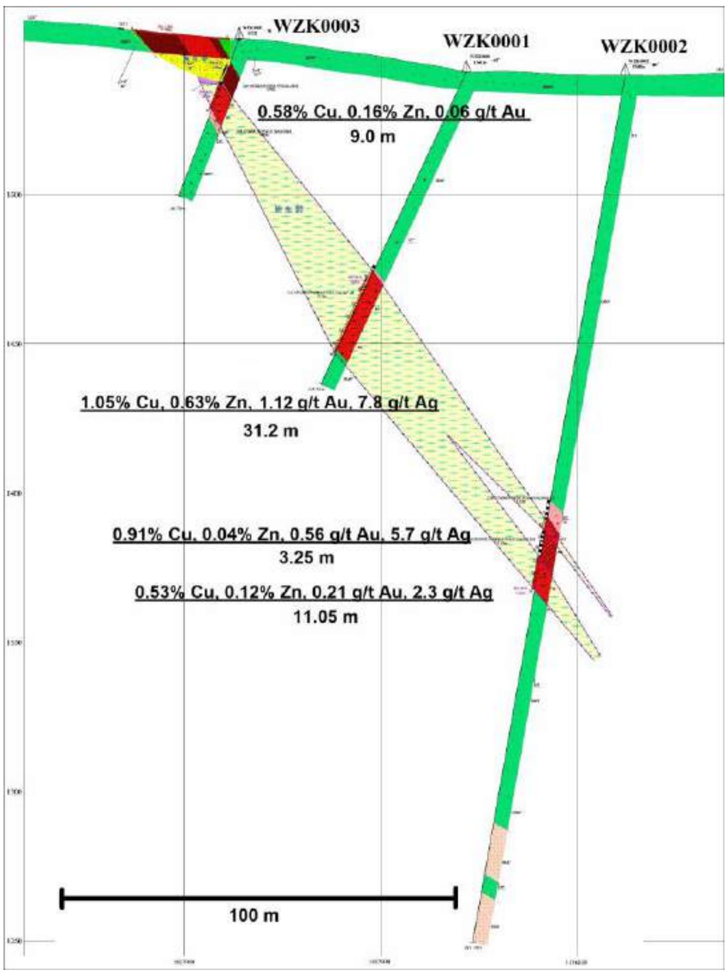
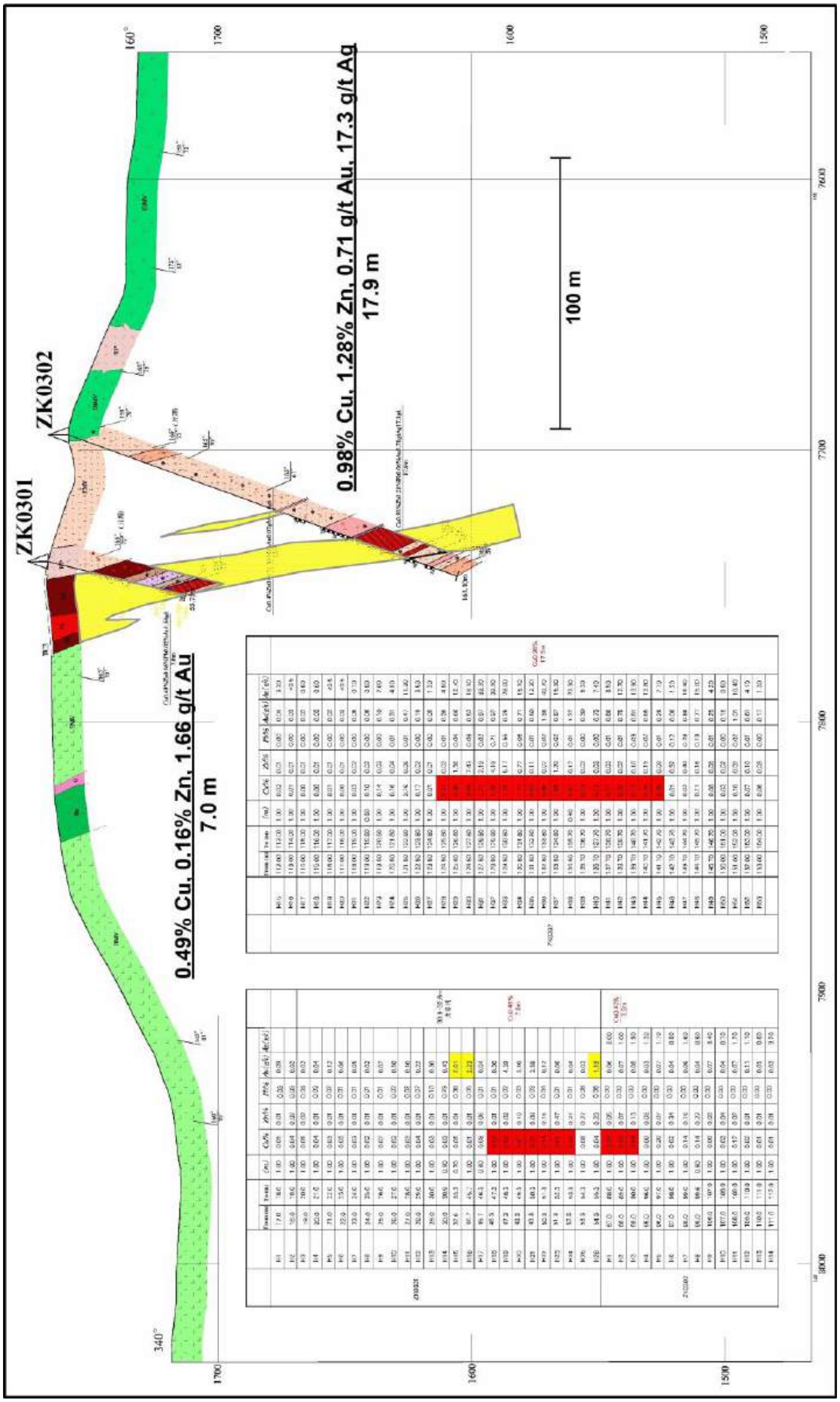


Table 6-4 Example of diamond drill core analyses for hole WZK0001 (Section A)

		From (m)	To (m)	(m)	Cu%	Zn%	Pb%	Au(g/t)	Ag(g/t)	
WZK0001	H1	71.77	72.77	1.00	0.002	0.072	0.009	0.08	0.6	
	H2	72.77	73.77	1.00	0.004	0.05	0.001	0.16	0.7	
	H3	73.77	74.77	1.00	0.29	0.03	0.003	0.58	1.3	
	H4	74.77	75.77	1.00	0.95	0.11	0.004	0.76	2.9	Au1.12g/t 31.2m
	H5	75.77	76.77	1.00	1.80	0.74	0.02	0.08	1.1	
	H6	76.77	77.77	1.00	0.30	0.02	0.004	0.26	2.8	
	H7	77.77	78.77	1.00	1.78	0.09	0.11	0.74	4.5	Zn1.24% 6.00m
	H8	78.77	79.77	1.00	0.50	3.30	0.26	2.16	12.7	
	H9	79.77	80.77	1.00	1.95	0.07	0.011	14.9	46.7	
	H10	80.77	81.77	1.00	1.60	3.69	0.32	3.5	36.8	
	H11	81.77	82.77	1.00	1.21	0.19	0.066	0.7	14.4	Ag7.8g/t 31.2m
	H12	82.77	83.77	1.00	0.92	0.09	0.009	0.72	9.5	
	H13	83.77	84.77	1.00	0.04	0.06	0.001	0.03	1.4	
	H14	84.77	85.77	1.00	4.20	0.05	0.002	0.15	11.2	
	H15	85.77	86.77	1.00	0.02	0.03	0.001	0.01	1.3	Cu1.05% 31.2m
	H16	86.77	87.77	1.00	0.01	0.02	0.001	0.02	<0.5	
	H17	87.77	88.77	1.00	0.80	0.03	0.008	0.31	6.6	
	H18	88.77	89.77	1.00	0.03	0.03	0.001	0.04	0.8	
	H19	89.77	90.55	0.78	0.10	0.02	0.003	0.07	2.6	
	H20	90.55	91.55	1.00	0.32	0.06	0.02	0.42	3.6	
	H21	91.55	92.55	1.00	0.42	0.05	0.02	0.50	4.6	
	H22	92.55	93.55	1.00	1.35	0.06	0.02	0.42	4.7	
	H23	93.55	94.55	1.00	1.17	0.06	0.02	0.46	4.6	
	H24	94.55	95.55	1.00	0.71	0.08	0.01	0.52	3.5	
	H25	95.55	96.55	1.00	1.13	0.07	0.01	0.66	4.4	
	H26	96.55	97.55	1.00	1.60	0.17	0.01	0.68	5.2	
	H27	97.55	98.55	1.00	0.95	0.17	0.009	0.62	4.2	
	H28	98.55	99.55	1.00	1.63	0.06	0.007	0.50	4.5	
	H29	99.55	100.55	1.00	1.70	0.04	0.007	0.40	4.6	
	H30	100.55	101.55	1.00	1.24	5.21	0.15	3.64	34.6	
	H31	101.55	102.05	0.50	0.43	0.03	0.01	0.46	2.6	
	H32	102.05	102.60	0.55	1.18	0.05	0.01	0.36	5.1	
	H33	102.60	102.97	0.37	1.82	0.03	0.004	0.42	3.3	
	H34	102.97	103.97	1.00	2.35	0.04	0.007	0.48	4.0	

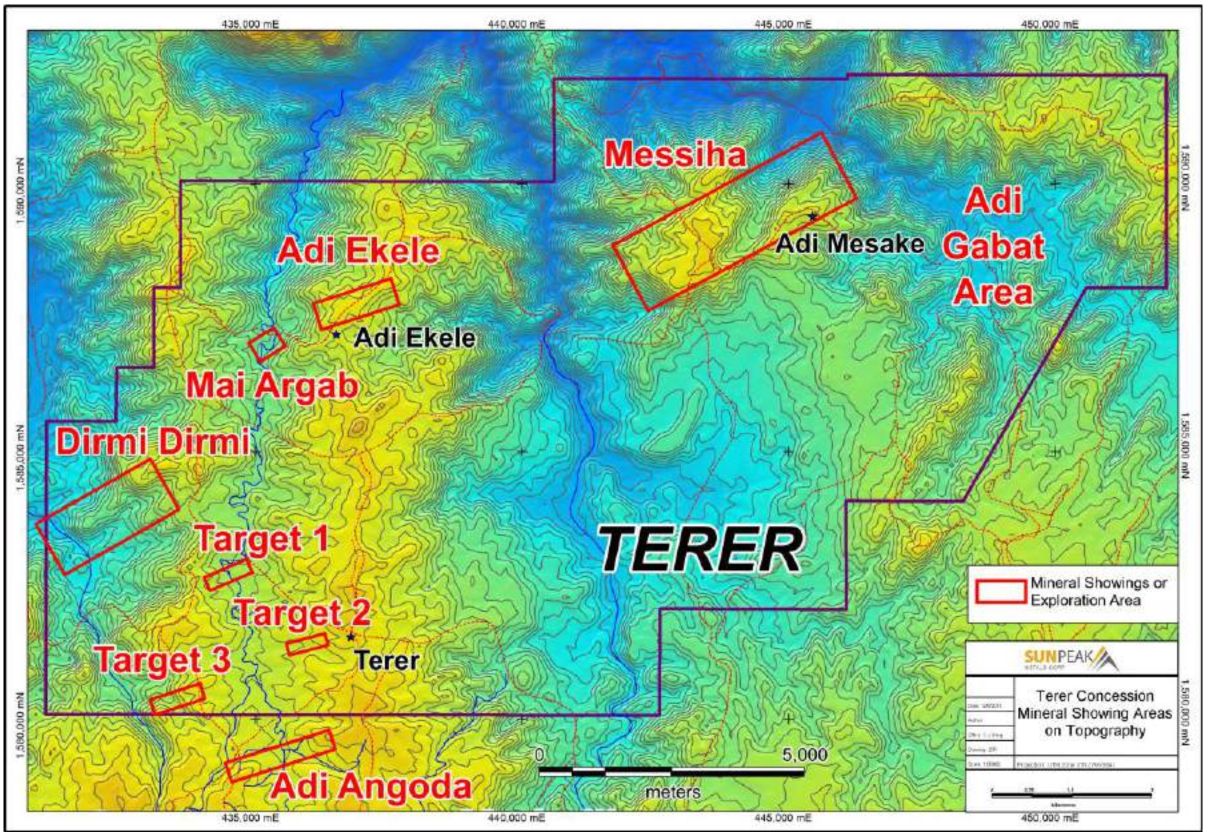
Figure 6-11 Adi Ekele diamond drill hole cross section B looking easterly (see Figure 6-7 for section location)



In 2011 Makeda re-interpreted and compiled anomalies of previous airborne magnetic, IP/Resistivity and regional stream sediment and rock geochemical surveys in the southwest part of Terer and at Adi Gabat (NE Terer). The identified anomalies were followed up on the ground with geological mapping and rock sampling as part of a prospecting exploration program for new VMS discoveries in other less explored parts of the exploration licenses.

Some of the new discoveries that were followed up in 2011 were at Targets 1, 2 and 3, to the west of the village of Terer (Figure 6-12).

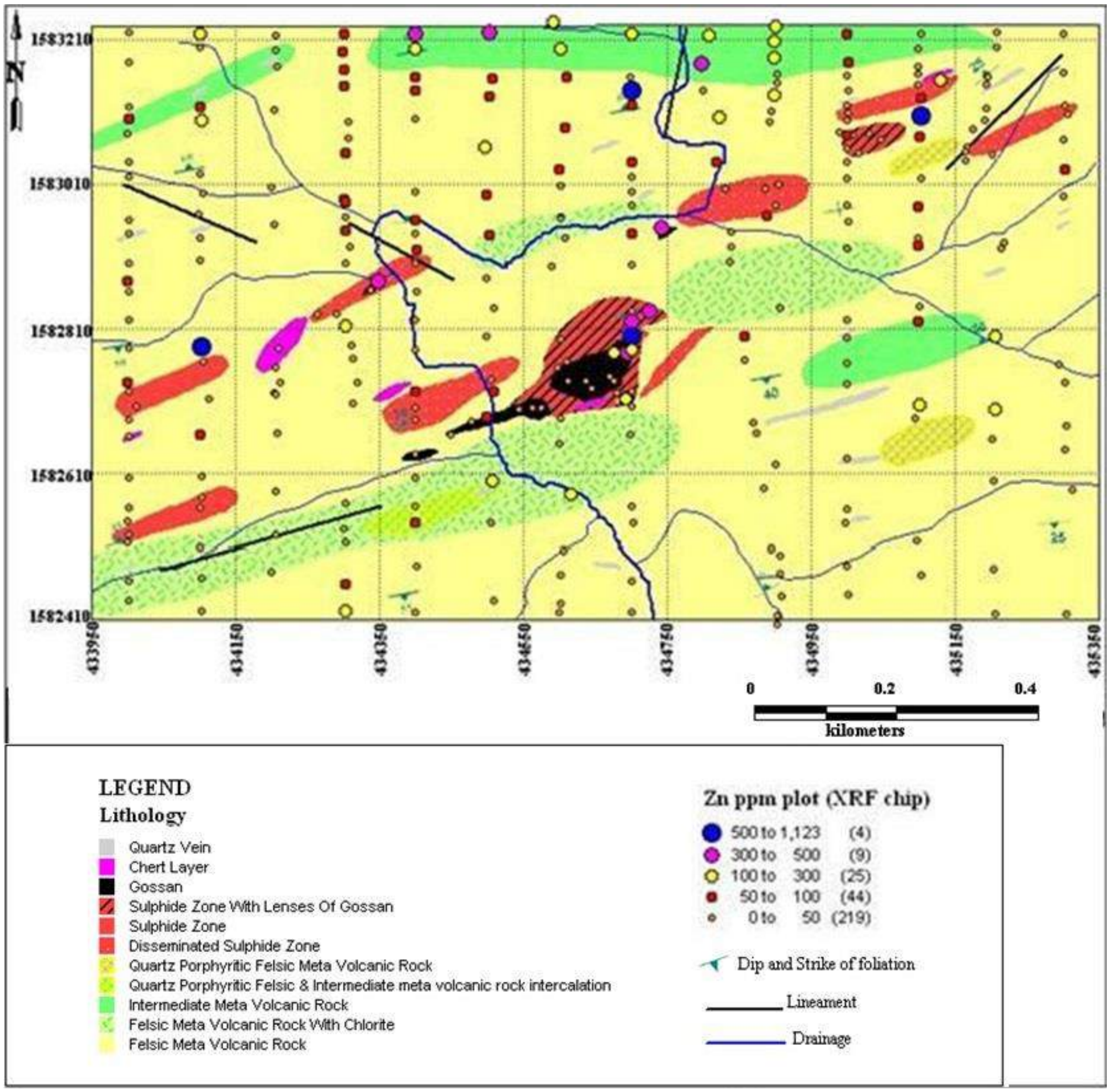
Figure 6-12 Terer concession with mineral showing areas on topography



At Target 1, located 2.5 km northwest of Terer, sulphidic zones hosted within felsic metavolcanic rocks form a belt trending about 050°, comprised of disseminated sulphides (primarily pyrite) and local lenses of gossan with sulphides (Figure 6-13). The sulphidic zone has an aggregate width of 70-120 meters and extends for 2 kilometers along strike, with greatest widths at the eastern end. One larger lens of gossan within the zone has a width ranging from 5 to 65 meters, and an aggregate length of 300 meters (Qin et al., 2011). The sulphidic zone is intruded by quartz veins and contains chert layers. The central and western parts of the zone are subject to deformation, with areas of strong shearing.

In the eastern part of Target 1 area, 299 rock chip samples were collected on a grid pattern and analyzed by portable Niton XRF analyzer. Elevated Zn, Pb and Cu values are associated with parts of the sulphidic zone and also within an intermediate volcanic unit to the north (Figure 6-13). Maximum analytical values from rock chips were 1123 ppm Zn, 2497 ppm Pb and 596 ppm Cu (Qin et al., 2011).

Figure 6-13 Terer Target 1 geology and Zn rock chip geochemistry (source: Qin et al., 2011)



Target 2 area is located about 800 m west of Terer village. It consists of felsic and intermediate metavolcanics rocks with northeast foliation intruded by aplite dykes. Zones of disseminated pyrite with local masses of sulphidic gossan occur primarily within felsic rocks, similar to Target 1. Quartz veins are common. Makeda collected 361 rock chip samples within this area and sent them for analyses; however, those results were not in their report and are not available to the authors.

Six trenches with an aggregate length of 409 m, were excavated in 2011; 5 in Target 2 area and 1 in Target 1 gossan zone. Channel samples were taken from the center of the trench floor at 1 meter intervals, 10 cm in width and 5 cm in depth. A total of 410 channel samples were collected and analyzed, however, the values are not available to the authors.

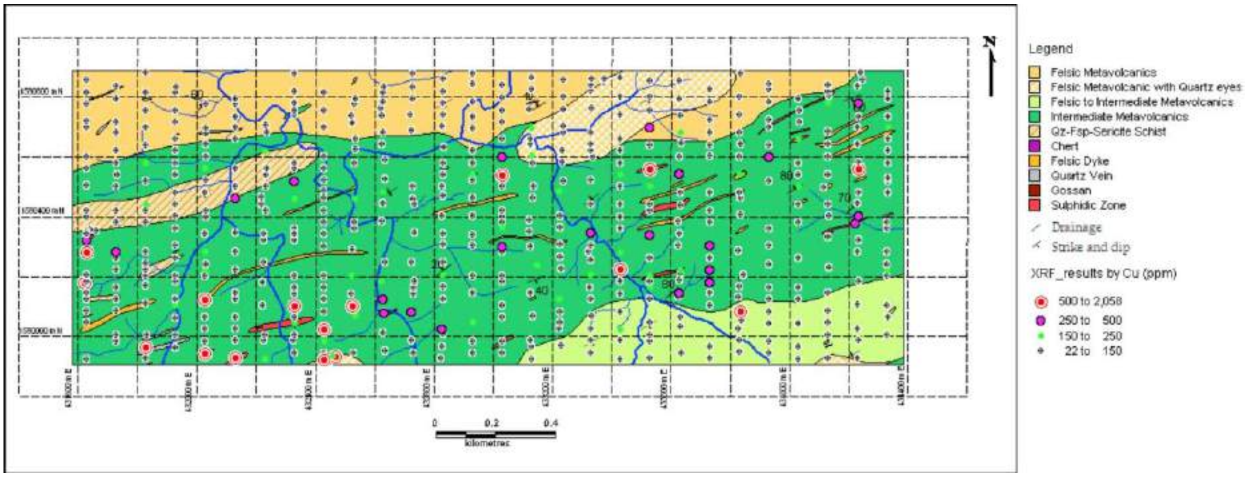
Two diamond drill holes totaling 518.8 m were completed in 2011 in the Target 2 area on the southwest part of the Terer concession. Two more holes were planned, but not included in the report. The two holes reported by Makeda intersected disseminated pyrite over lengths of 218 m in hole 1 and 128 m in hole 2, with minor massive banded pyrite containing some chalcopyrite and sphalerite over widths of 0.5 to 4 m. No assays were reported. These two drill holes indicated good potential for VMS type mineralization in Target 2 area (Qin et al., 2011).

Photo 6-1 Trench in Target 2 area

Photo 6-2 Target 2, Hole ZK1701, fine grained pyrite, sphalerite and galena bands occur along foliation

Target 3 is located approximately 3.3 km southwest of Terer village. Rock types are similar to those in Target 2 area and several thin discontinuous sulphidic zones are hosted within an intermediate volcanic rock unit. The largest sulphidic zone is up to 220 meters long and about 20 meters wide. Makeda collected 540 rock chip samples within this area along 28 profile lines spaced 100 m apart. The copper values (Figure 6-14) show several anomalies in the southwest part of Target 3 within the intermediate volcanic unit and associated with some of the sulphidic zones. Zinc and lead values from the rock chips were generally low and showed poor correlation with most of the copper anomalies, with only a couple of anomalous values associated with gossans.

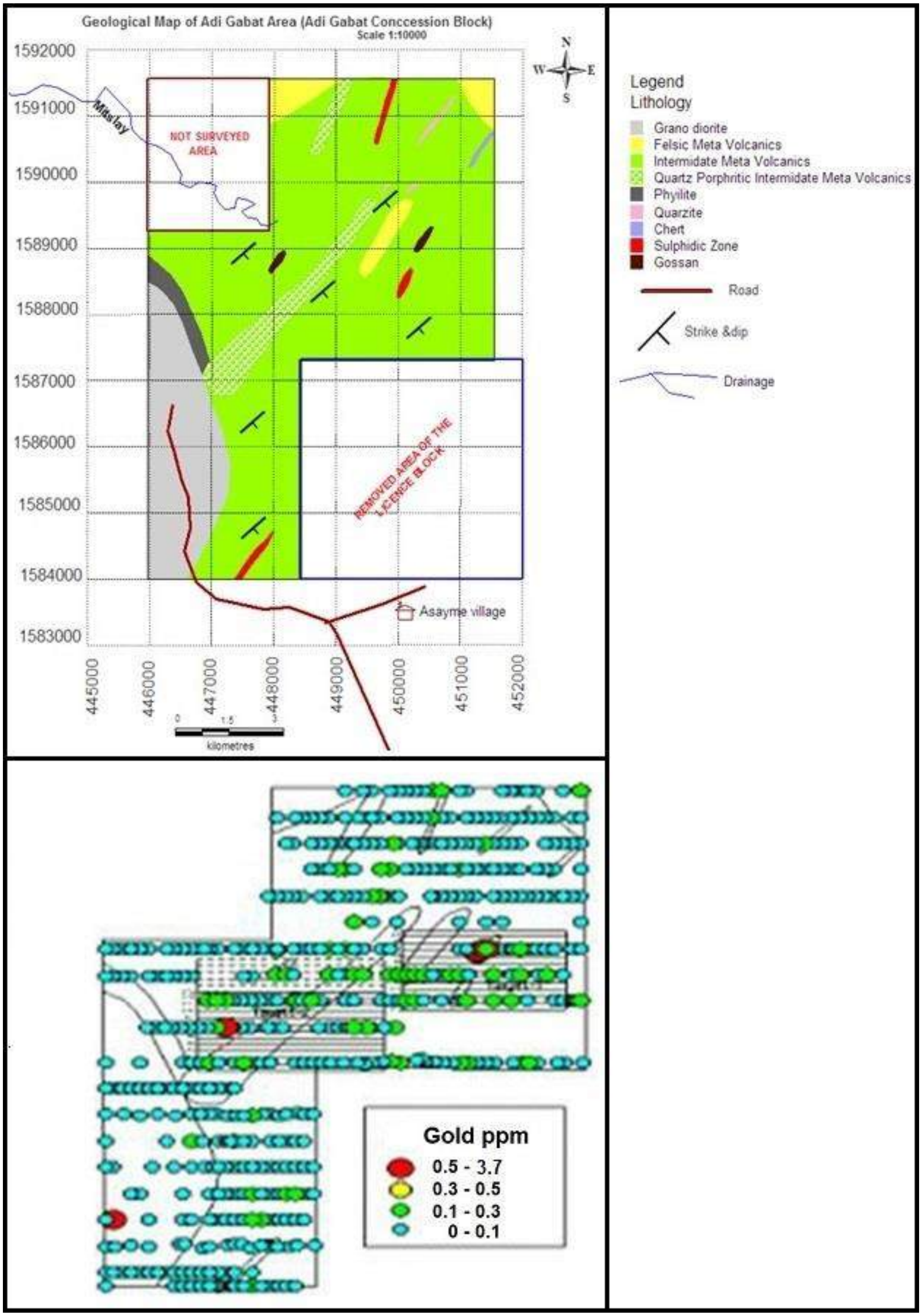
Figure 6-14 Terer Target 3 geology and Cu rock chip geochemistry (source: Qin et al., 2011)



Prospective targets at Adi Gabat (NE Terer) included northeast trending sulphidic zones and gossans with VMS potential, as well as strongly anomalous Au and As values from stream sediments sourced in the contact zone of a granitic body that may originate from orogenic gold veins.

Figure 6-15 shows a geological map of the Adi Gabat area produced in 2010 by Makeda geologists as well as a gold-in-rock geochemical grid covering the same area. The rock chip samples were collected on 20 m stations along lines spaced at 200 m, covering approximately 5 square km. A large number of the samples returned values greater than 0.1 ppm Au with values as high as 3.7 ppm Au, many of which were near the gossan zones. Makeda had planned to follow up the anomalies with more detailed sampling in 2011, however, due to warnings from the military of unsafe conditions near the Eritrean border the follow up was not done.

Figure 6-15 Adi Gabat geological map and gold in rock chip samples



A larger part of Makeda's 2011 program involved a 5,000 tonne heap leach pilot test for the recovery of gold from the Mai-Argab oxide cap overlying the Cu-Zn-Au-Ag zone. The oxide material was dug from an open trench along approximately 150 m length of the zone and stacked on an adjacent pad. Cyanide leaching was carried out for about a 1 month period followed by extraction of gold from activated carbon and smelting to form dore bars. As measured by the National Laboratory, using the density method, the final extracted gold metal recovered from the 5,000 tonnes of oxide material weighed 6.343 kg and the purity of gold was over 90%, except one bullion bar that was approximately 68% purity. By calculation, the overall leaching recovery of gold from the oxidized material was determined to be about 60% (Qin et al., 2011). The calculated grade of gold for the 5,000 tonnes of oxide material is approximately 1.9 g/t Au assuming 90% purity and 60% recovery. It was stated that the heap leaching and extraction technologies are a very applicable, fast way to recover the surface gossan gold at lower operation costs. No further tests were completed and recovery estimates are assumed to be preliminary. The Company has no plans to re-establish the heap leach test facilities at Mai Argab.

Photo 6-3 Mai Argab zone, 5,000 tonnes of stacked heap leach oxide material

Photos 6-4 a) Gold smelting process **6-4 b) dore product**

a)  b) 

In 2012 and 2013 a new joint venture between Ezana and Newmont, undertook the Ezana-Newmont Project, which comprised a regional Bulk Leach Extractable Gold (BLEG) sampling program over the entire Tigray Region covered by the Neoproterozoic rocks at a density of 1 sample for every 10 km². The results from this regional geochemical survey apparently indicated other gold and base metal anomalies that need to be further investigated in the Terer and Adi-Gabat areas (personal communication from Ezana geologists); however this information is not currently available to the Company due to a confidentiality agreement.

In 2017 Ezana signed a joint venture agreement with Sun Peak Metals Corporation, Canada, to form Axum Metals Share Company (Axum). Axum undertook compilation and re-interpretation of all the previous exploration data and input it into ArcGIS/MapInfo GIS software programs.

From these compiled & re-interpreted maps, as well as geological field visits, the Axum work indicated that at least three types of mineral deposits could exist in the Terer concession area;

1) VMS-style mineralization defined by oxide gossans underlain by sulphidic zones

2) Orogenic gold hosted by shear zones defined by alteration and geochemical anomalies, and

3) Intrusion hosted gold mineralization indicated by stream sediment geochemical anomalies sourced in an area of granitoid intrusive which has lacked attention in previous exploration work.

The Company’s re-interpretation of the drilling results of 51 diamond drill holes that were drilled by Makeda Mining at the Mai Argab - Adi Ekele VMS trend indicated that although this 060° trend was explored for over 6 kilometers, some of the drilling was conducted in the footwall rocks; therefore the VMS target horizon has not been completely tested.

Previous work on the Terer concession has predominantly focused on surface sampling and drilling of exposed gossanous oxide zones, however, the Axum joint venture team strongly believes that more than 80% of the area is still under-explored for economic mineral potential. The team identified primary targets for further exploration and the results of that exploration from 2017 to present are described in Section 9.1 below.

6.2 Nefasit Concession Previous Work

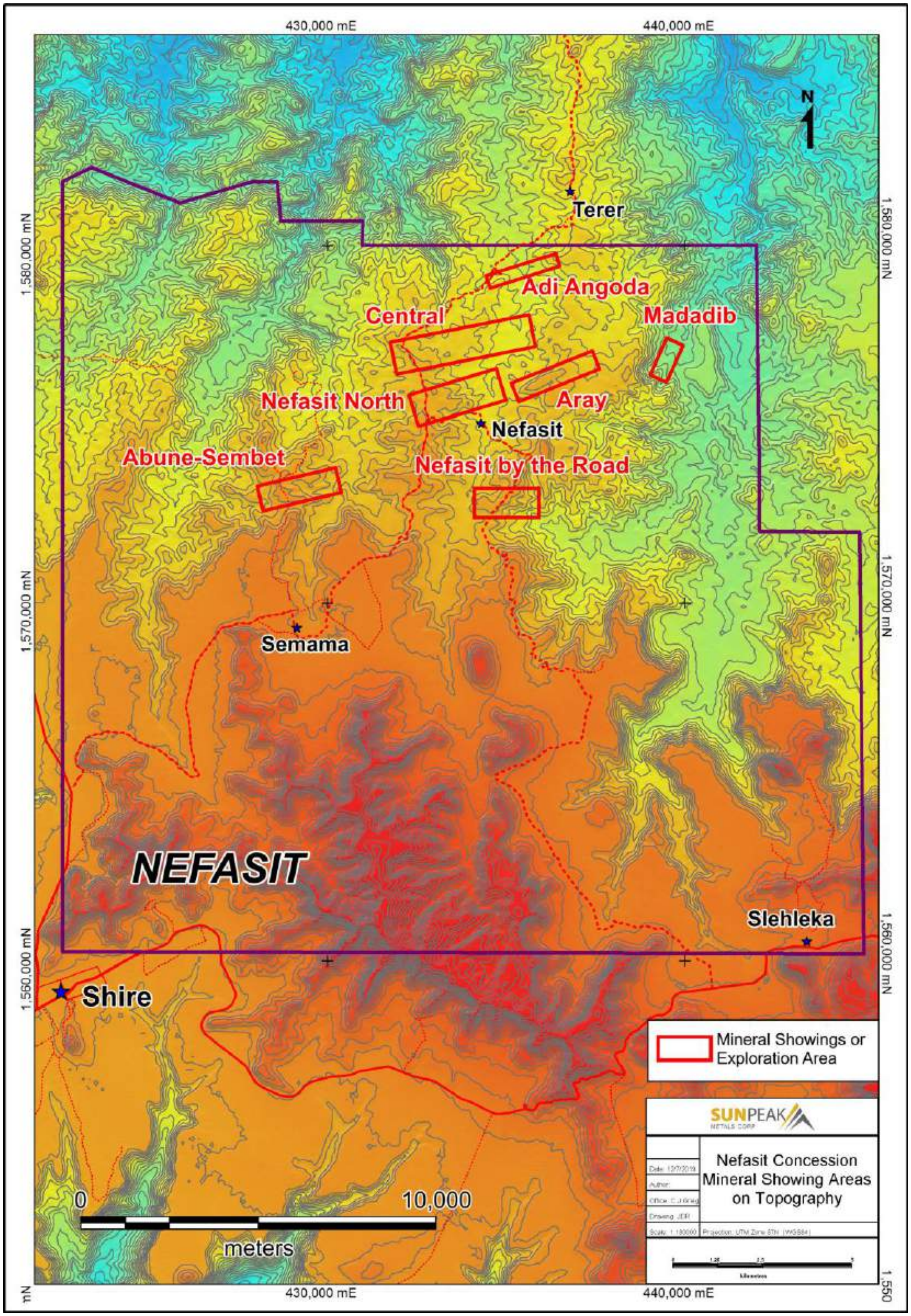
In 2002, on the northern third of the current Nefasit concession area, Ezana undertook geological traverses at approximately 1000 m intervals aggregating 296 line-km. Based on the traverse information, geological maps were produced covering 263 sq km. During the geological traverses 463 rock chip samples were collected. Samples were analyzed in Ezana's laboratory for gold, silver, copper, zinc, lead, arsenic, nickel, cobalt and manganese.

Plots of the geological and geochemical results outlined five prominent sulphidic zones that appeared to be hosted within stratigraphic horizons. The strongest anomalies were associated with some of the subsequently discovered zones, including what are now called the Adi Angoda, Madadib, Nefasit North and Central zones (Figure 6-16).

Atakilti et al. (2002) reported that the sulphide minerals are commonly found within well foliated quartz- feldspar- sericite schist units extending thousands of meters in strike length and which may be more than 100 m in width. The sulphidic zones are often near the contact of felsic schist with intermediate to mafic metavolcanics units. Quartzo-feldspathic sub-intrusive rocks (quartz porphyry) also are found adjacent to some mineralized horizons. The host rock is silicified with a cherty appearance and the sulphides (primarily pyrite) are fine to medium grained, ranging from sparsely to densely distributed. The sulphides appear as fracture and foliation filling and as disseminations, constituting about 5-10% of the modal content of the rock and locally as semi-massive lenses. The main wall rock alteration includes sericitization, chloritization, and silicification, with subordinate epidotization.

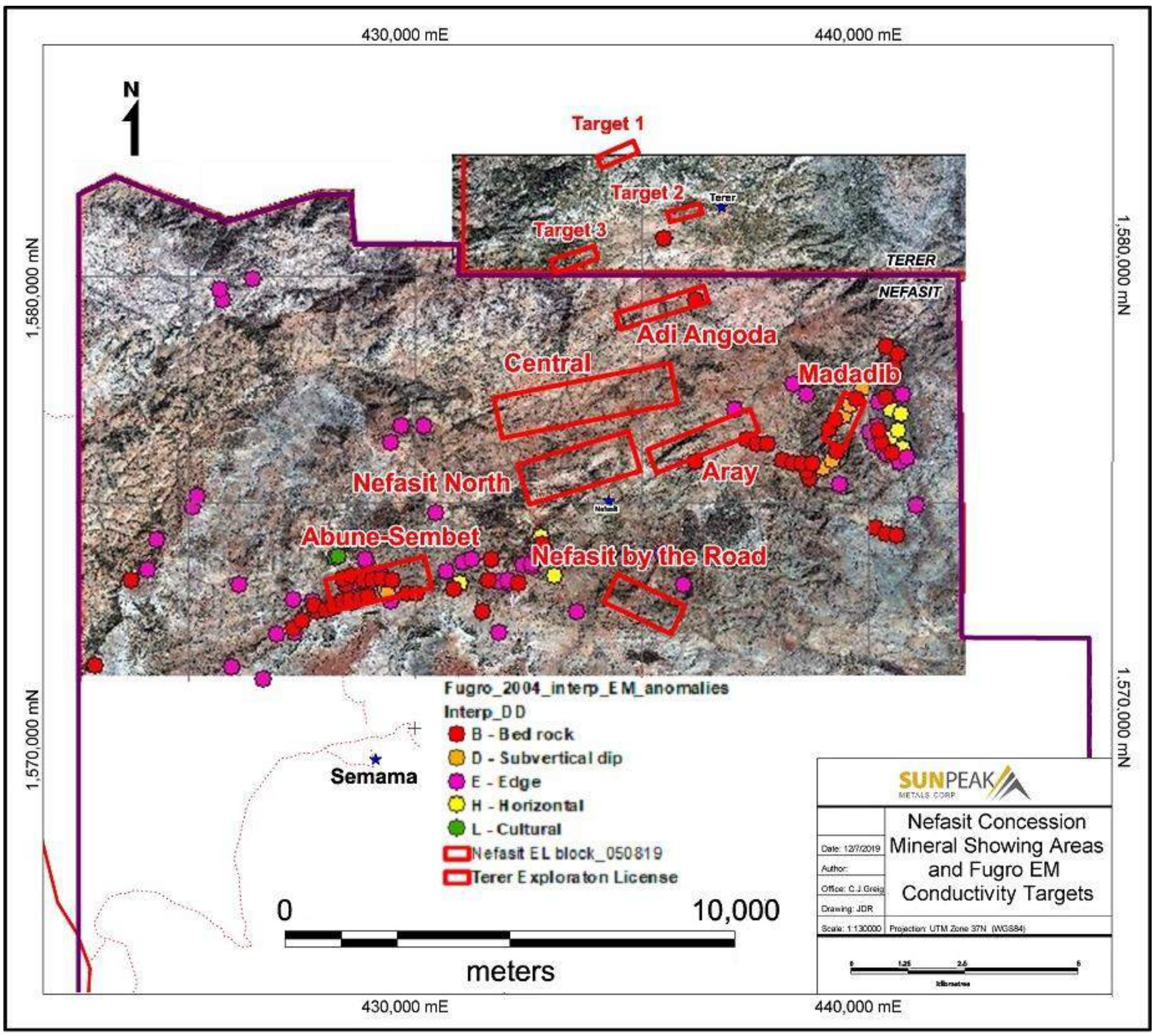
The sulphidic horizons have elevated Cu, Zn, Au, Ag values, however only locally have more significant concentrations been indicated. Cu values greater than 1000 ppm were considered anomalous, of which 2% of the samples were above this threshold; many of these also returned high Au and Ag values. Strongly anomalous Zn values greater than 1000 ppm also coincide with Cu, although Zn anomalies are more prevalent and widespread, constituting 12% of the rock samples.

Figure 6-16 Nefasit concession with mineral showing areas on topography



In 2004 Ezana hired Fugro, a Canadian company, to fly an airborne Dighem Electromagnetic and Magnetic survey over the north half of the Nefasit concession area (as well as the Terer concession to the northeast). The lines were spaced at 200 m and two large conductive areas at Abune Sembet and Madadib were identified, as well as several smaller discrete conductive areas that display VMS-type signatures (Figure 6-17). To date, many of these targets have received only limited, or no, ground-based exploration. The encouraging results of this electromagnetic survey prompted Sun Peak to undertake a heliborne VTEM electromagnetic survey with more advanced equipment over the northern half of the Nefasit concession in 2019. This data confirmed most of the Fugro targets and has largely superseded the results of the previous work; the 2019 survey is discussed below in Section 9.2.

Figure 6-17 Nefasit concession northern area with Fugro EM conductor targets

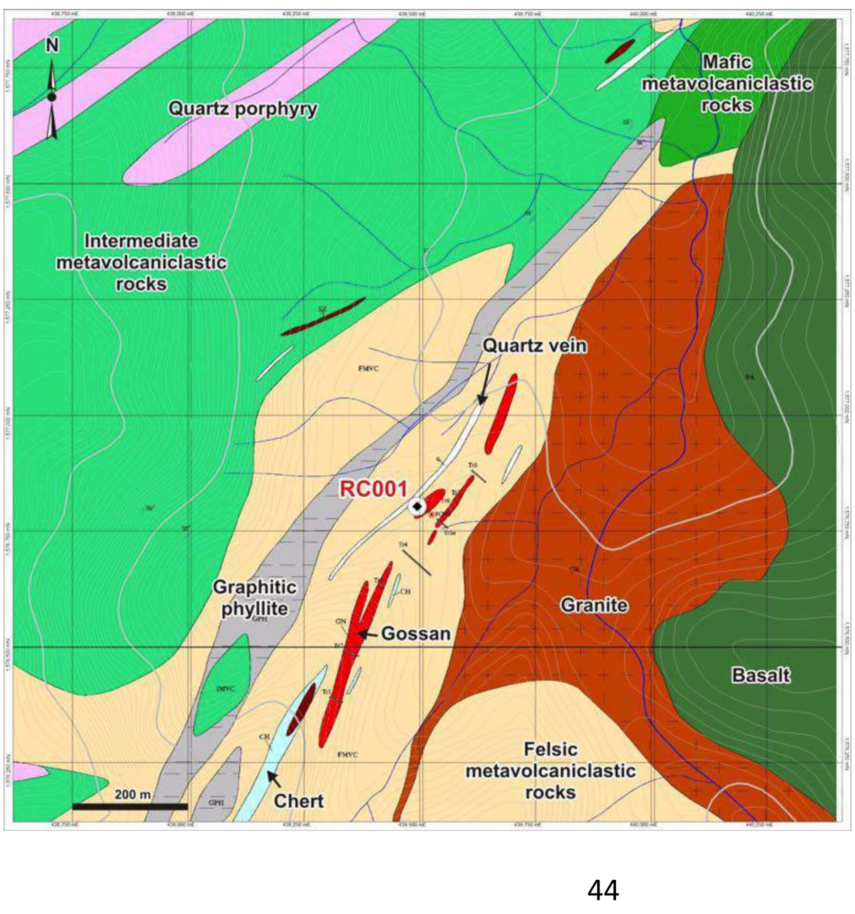


In 2007 Harvest Mining PLC (Harvest) was established as a joint venture between Ezana and Beijing Donia Resources Co. Ltd. In 2007 Harvest conducted detailed mapping on target gossans on the Nefasit concession and drilled one 30 m vertical RC hole at the Madadib VMS gossan on the east side of Nefasit. This drill hole (RC001), shown of Figure 6-18, intersected 20 m of gold-enriched gossan, with the upper 10 m grading 4.6 g/t Au (Archibald et al., 2014).

In the northwestern part of the current Nefasit concession work was undertaken by Harvest on what they named the Wudhidet area in 2007. Rock samples yielded Cu analyses of up to 5,948 ppm, with 16% of samples carrying values of over 300 ppm Cu, as well as elevated Pb and Zn. Further detailed groundwork, including geophysics and trenching were recommended for this target.

In 2008, in the Madadib and Adi Angoda areas Harvest conducted detailed rock chip sampling and dug 17 trenches (totaling 563 m in length) on gossans. A total of 322 rock chip samples were collected at Adi Angoda, with highly anomalous Cu being reported in many samples (17% of samples ranged in values from 500 to 82,500 ppm Cu) as well as elevated Zn and Pb. A total of 26 rock chip samples were collected at the southwestern sulphidic gossan of the Madadib zone, with maximum anomalous values of 1530 ppm Cu, 402 ppm Zn and 581 ppm Pb.

Figure 6-18 Madadib geology and 2004 RC drill hole location (source: Archibald, 2011)

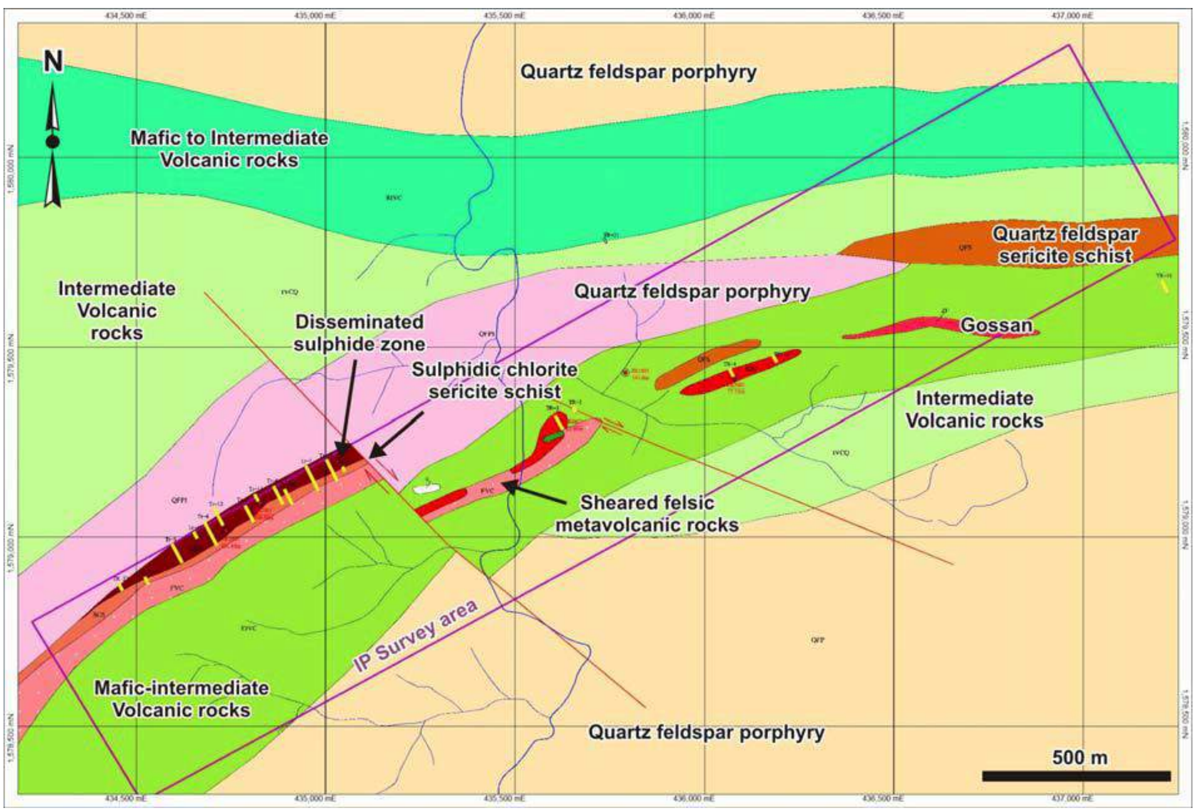


Ground magnetic surveys were also undertaken in 2008 on both zones, as well as IP on Adi Angoda, apparently showing good correlation with sulphidic areas, geological contacts and faults identified through mapping. Of the eight trenches completed at Madadib, two intersected Au and Ag grades similar to those identified by the shallow 2007 Reverse Circulation hole.

Trenching at Adi Angoda identified strong gold and copper anomalies in chip samples, and diamond drilling was recommended, targeted at areas of strong surface mineralization, and areas of strong IP response. In 2009 additional trenching was conducted, which further confirmed the presence of anomalous Cu and Au in surface sampling (Figure 6-19).

Archibald et al. (2014) reported that historic trenching at Adi Angoda had, at that time, totalled 18 trenches with 527 samples, and at Madadib 8 trenches with 151 samples.

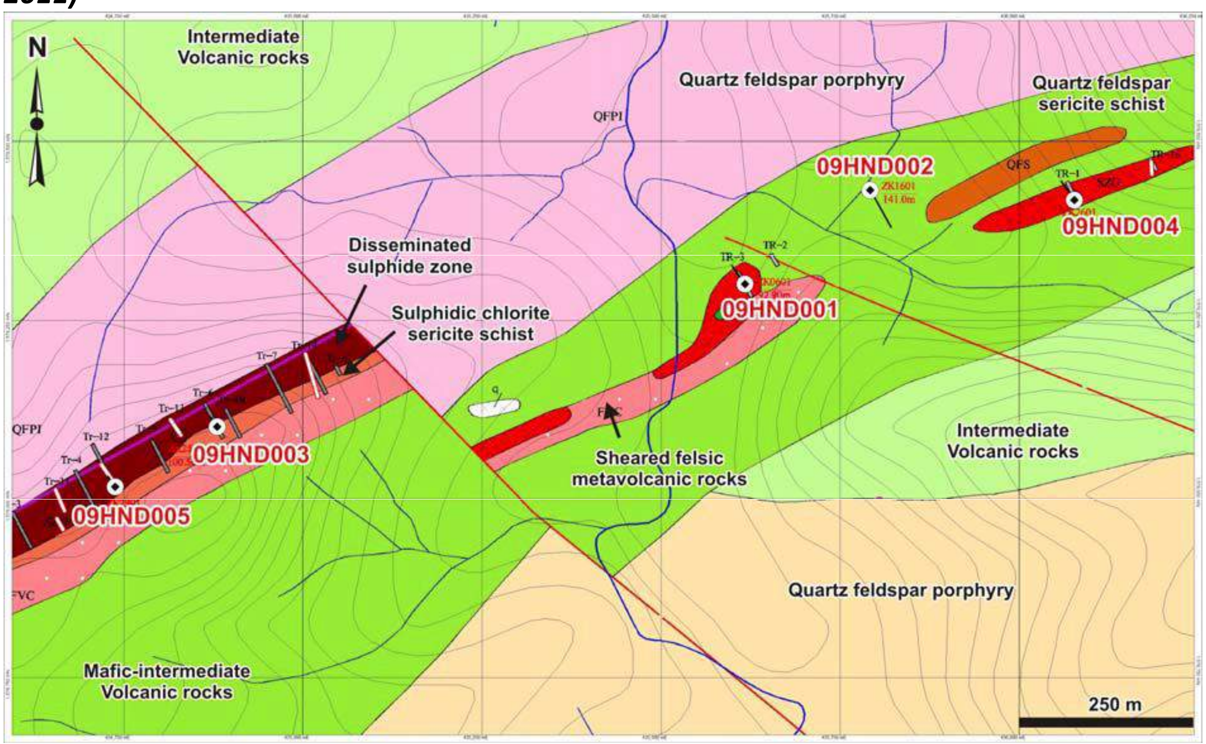
Figure 6-19 Adi Angoda geology and trench locations (yellow), (source: Archibald, 2011)



In 2009 the Adi Angoda target area was drill tested by Harvest with five diamond drill holes totaling 1,018.8 m (Figure 6-20). Holes were drilled northwesterly beneath areas of significant gold and base metal trench results. Core angles observed in the sampled core indicated that all of the holes were drilled down dip, therefore true width calculations from the resultant data were not possible. The primary cause for drilling down dip was revealed to be erroneous southeastern dip readings due to significant soil creep that resulted in subcrops being slumped and displaced.

The drill holes at Adi Angoda encountered thin bedded horizons of massive fine-grained pyrite, locally containing chalcopyrite and minor sphalerite. Archibald (2011) reviewed the drill core and believes that drilling was terminated before intersecting the main bedded sulphide horizon in one of the drill holes. The best mineralized copper and gold intersection lies at the eastern end of the targeted mineral zone, occurring within altered quartz feldspar porphyry, related to disseminated pyrite. This may reflect a sheared zone of original alteration pipe mineralization (Archibald, 2011). The mineralization located at the far western end is thinly banded and disseminated, and may reflect a more distal portion of the mineralized exhalites. Airborne magnetic data and geological mapping suggest potential for additional mineralization at depth to the east of the current exploration (Archibald, 2011).

Figure 6-20 Adi Angoda zone geology and diamond drill hole locations (source: Archibald, 2011)



In 2011 Tigray Resources Inc. (Tigray) acquired a 70% interest (Ezana retained 30%) in the project. Detailed mapping was carried out by Tigray in 2011 at Adi Angoda and along its western extension, and also at Madadib, as well as an area in the northwest part of the Nefasit concession that they called Adi Angoda Roadside.

Also, in 2011, geophysical surveys were conducted at Adi Angoda over a 1000m x 2500 m area. A ground EM survey was undertaken, totaling 20 line-km with 100 m spaced lines. A total of 17 weak to moderate conductors were identified; 10 were related to outcrop, and others ranged from 25 to 100 m in depth. A gravity survey was undertaken over the same area with 50 m grid spacing. No gravity highs were associated with the drilling targets.

In 2012 five more holes were drilled at Adi Angoda by Tigray, focused on extending mineralization encountered during the 2009 drilling, both along strike and down dip. Holes were drilled southeasterly to better cross the dip of stratigraphic units. Drill targets were located based on lithological, geochemical and geophysical anomalies. The results of these five, plus the earlier five drill holes are tabulated in Table 6-5. Two of the holes did not encounter mineralization (ND002 and ND003), and two holes intersected gold-rich exhalite (ND004 and ND005). The best drill hole in terms of mineralized interval and overall grade was ND001, close to a gossan, which returned grades of 3.51% Cu, 2.73 g/t Au, 55 g/t Ag and 2.23% Zn over a 2.80 m interval from a depth of 43.50 m.

The holes intersected felsic and mafic volcanic rocks primarily comprised of crystal and lapilli tuffs, as well as quartz porphyry. Disseminated pyrite is common in the holes (typically about 5%) and intervals of laminated pyrite with minor chalcopyrite and sphalerite were encountered over narrow widths of up to 3 meters.

Table 6-5 Adi Angoda diamond drill results from 2009 and 2012 programs (source: Archibald et al., 2014)

Hole ID		From (m)	To (m)	Interval (m)	Copper %	Gold g/t	Silver g/t	Zinc %	Local Azimuth	Dip
09HND001		71.93	74.93	3.00	0.68	1.13	5	0.12	262	-70
09HND002		138.65	139.75	1.10	0.32	0.06	2	0.02	87	-65
09HND003		59.10	60.10	1.00	0.39	0.08	4	0.02	262	-80
09HND004		52.15	55.15	3.00	2.34	1.41	23	0.09	262	-65
09HND005	No Significant Results								262	-80
ND001		43.50	46.30	2.80	3.51	2.73	55	2.23	92	-50
	inc.	44.05	45.65	1.60	6.01	4.22	92	3.86		
ND002	No Significant Results								90	-50
ND003	No Significant Results								90	-50
ND004		29.55	34.05	4.50	0.08	1.24	11	0.04	91	-50
	inc.	29.55	31.60	2.05	0.16	2.47	19	0.10		
ND005		119.55	122.10	2.55	0.02	1.00	0	0.06	90	-50

Note: true thicknesses of mineralized intervals are not known.

Table 6-6 Historic drilling on the Nefasit concession

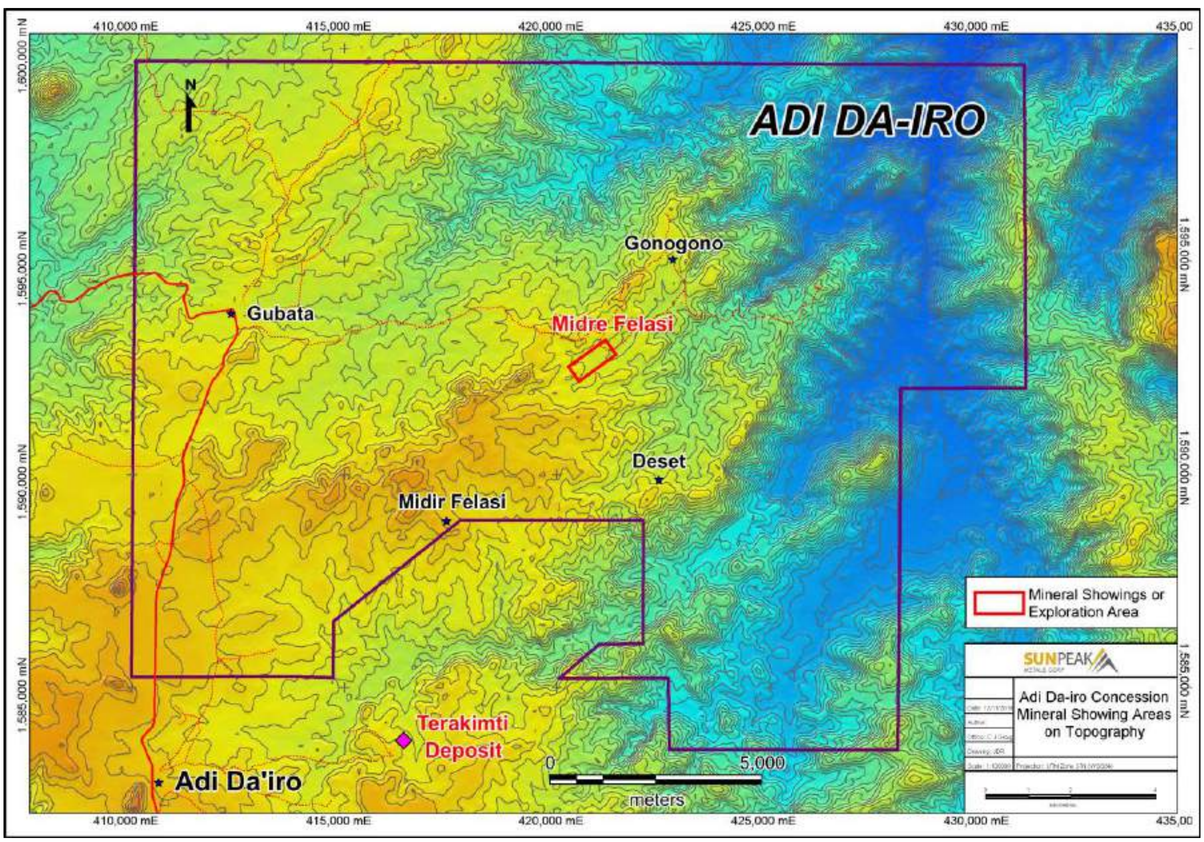
		RC		Diamond	
Year	Prospect	Holes	Meters	Holes	Meters
2007	Madadib	1	30		
2009	Adi Angoda			5	513.0
2012	Adi Angoda			5	1,018.8

6.3 Adi Da-iro Concession Previous Work

The area currently covered by the Adi Da-iro concession was previously held and explored by Enzana and joint venture partner Beijing Donia Resources Co. (Harvest JV) and later by new partner Tigray Resources Inc. on their concessions called Midre Felasi and Adi Nebreid.

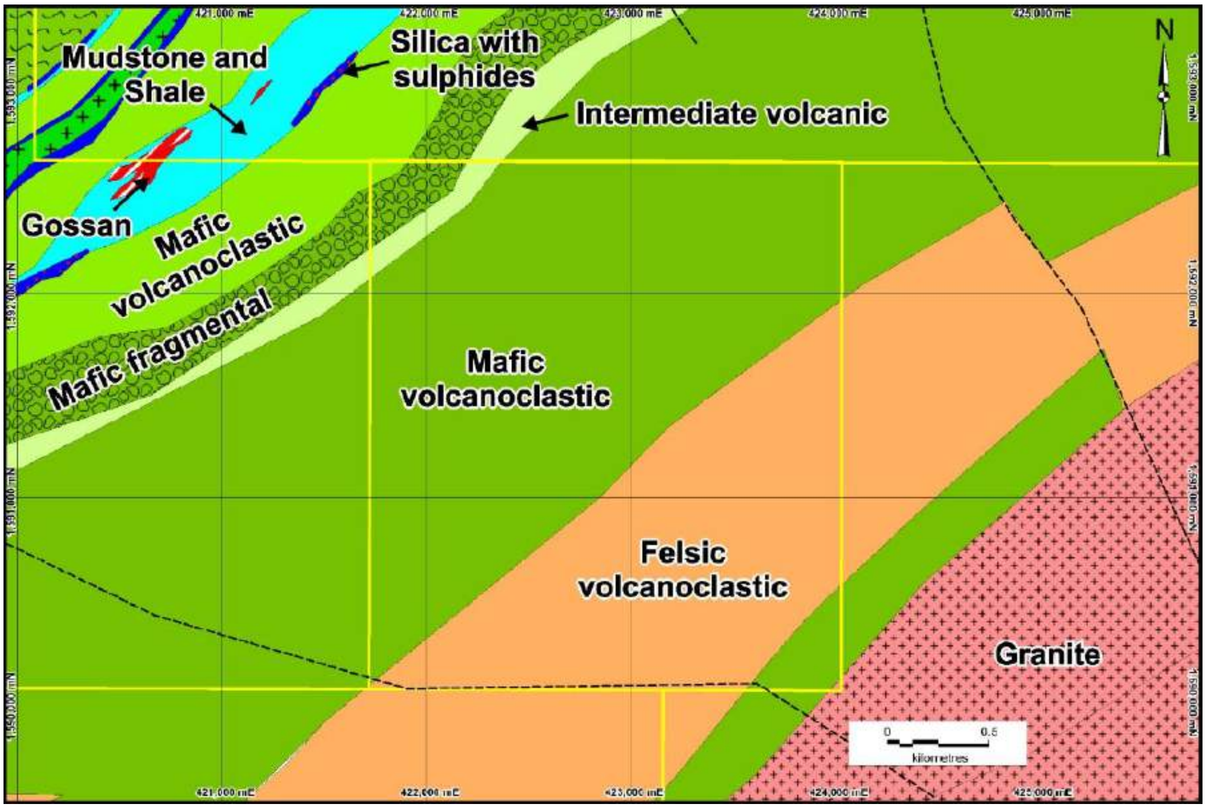
Geological mapping was undertaken by Harvest in 2008-09 and they located gossanous zones of interest in the central area of the current Adi Da-iro concession (Midre Felasi zone) (Figure 6-21). The gossans are hosted within a locally brecciated and highly altered mudstone-shale assemblage at the contact with intermediate to mafic metavolcanic rocks, generally comprised of agglomerate (Figure 6-22). The gossan is dark reddish brown iron oxide and coarse-grained pyrite is associated with chert and shale at the eastern part of the gossan. Sericitization, silicification, and carbonatization are associated with this mineralization. Maximum XRF analytical values from rock chips of the gossan material were 541 ppm Cu, 418 ppm Pb, and 1550 ppm Zn. Strong northeast foliations are evident, and parallel folding commonly plunges to the southwest.

Figure 6-21 Adi Da-iro concession with mineral showing areas on topography



Streams draining the area along the trend of the 5-10 m wide and 650-700 m long gossanous zone returned elevated gold values from sediment samples. The peak gold values from sediment samples were 50, 37, 34 and 24 ppm Au, located within a NNE-trending belt over a strike length of 2.5 km (Archibald et al., 2014). Minor pyrite mineralization has also been found associated with sericite schist and with mafic volcanics several kilometers to the northeast of the gossan.

Figure 6-22 Midre Felasi geology and gossan zone (source: Archibald et al., 2014)



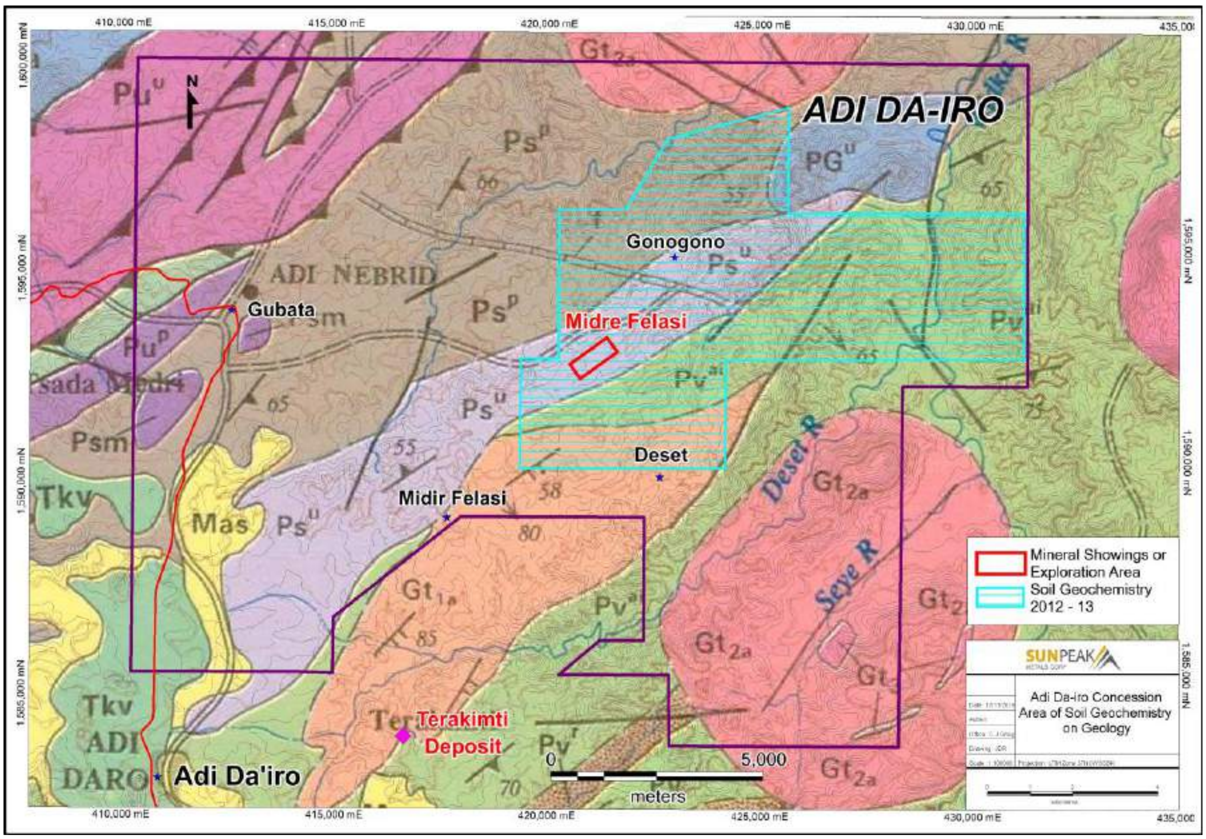
Also, in 2008-09, geological mapping and rock chip sampling were conducted. The Midre Felasi gossan and alteration zone was traced several hundred meters to the northeast and 116 rock chip samples were analyzed for base metals by a hand-held XRF analyzer. Several samples proved anomalous; up to 7,930 ppm Cu, 2,130 ppm Zn and 700 ppm Pb.

Broader property-scale geological mapping indicated Neoproterozoic rocks comprising mafic to felsic volcaniclastic rocks in the eastern areas of the property, and tuffaceous slate and schist with associated cherty layers in the west. Chert horizons are also associated with felsic volcanic rocks. Additional systematic follow-up, grid line chip sampling in the area of the anomalous base metals yielded elevated, but sub-economic, base metals values. Close spaced Niton XRF soil sample analytical coverage over a series of test lines in the area of the rock chip anomalies failed to identify favourable alteration.

In February 2011, Tigray acquired high resolution, 60 cm pixel size, satellite images covering their Midre Felasi and Adi Nebreid licenses. The images were processed by PhotoSat Information Ltd (Vancouver) to produce iron oxide alteration maps that highlighted the location of weathered iron rich rocks such as mafic igneous rocks, or gossans associated with sulphides. The results of this work are not available to the authors.

Tigray undertook limited soil sampling in 2011 (114 soils) for gold analyses in the Midre Felasi gossan area that returned less distinctive geochemical targets than had been identified previously. This was followed in 2012 and 2013 with grid soil sampling in the eastern and central parts of the current Adi Da-iro license area over an area about 11 km long by 3 to 8 km wide (Figure 6-23). These soil samples were analyzed for base metals by a portable Niton XRF analyzer, with selected small areas analyzed by AAS for gold and base metals; however, the results of this sampling are not available to the authors. They also reported the collection of 1,414 rock chip samples in 2012-13 within the same general area and, although the sample locations are shown, the results of the sample analyses were not included in the Archibald et al. (2014) report.

Figure 6-23 Adi Da-iro geology with area of 2012-13 grid soil and rock chip sampling



Stream sediment sampling was undertaken by Tigray in 2011 and 2012 in the south-central part of the current Adi Da-iro license area, covering about 6 km x 6 km, however, the results are not available to the authors.

In 2012 Tigray had a heliborne magnetic, electromagnetic (VTEM) and gamma-ray spectrometry survey flown over the area of the Midre Felasi zone and extending to the southwest, as part of a larger survey covering prospective areas to the south. This survey data has been duplicated and expanded farther to the northeast by the results of a heliborne VTEM and magnetic survey undertaken in 2019 over the central part of the Adi Da-iro concession by Sun Peak; this information is discussed below in Section 9.3.

Tigray concluded that their exploration had revealed a VMS target (Midre Felasi) centred on a gossan that returned sporadic anomalous base metal and gold values from rock chip samples and a sulphide-bearing chert showing that returned weakly anomalous values of Au, Cu and Zn. The Tigray-Ezana joint venture chose to concentrate their efforts on their Terakimti VMS property located directly to the south and their northern concessions were allowed to lapse. Sun Peak applied for, and in April 2019 was granted the Adi Da-iro exploration license that covers the area.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

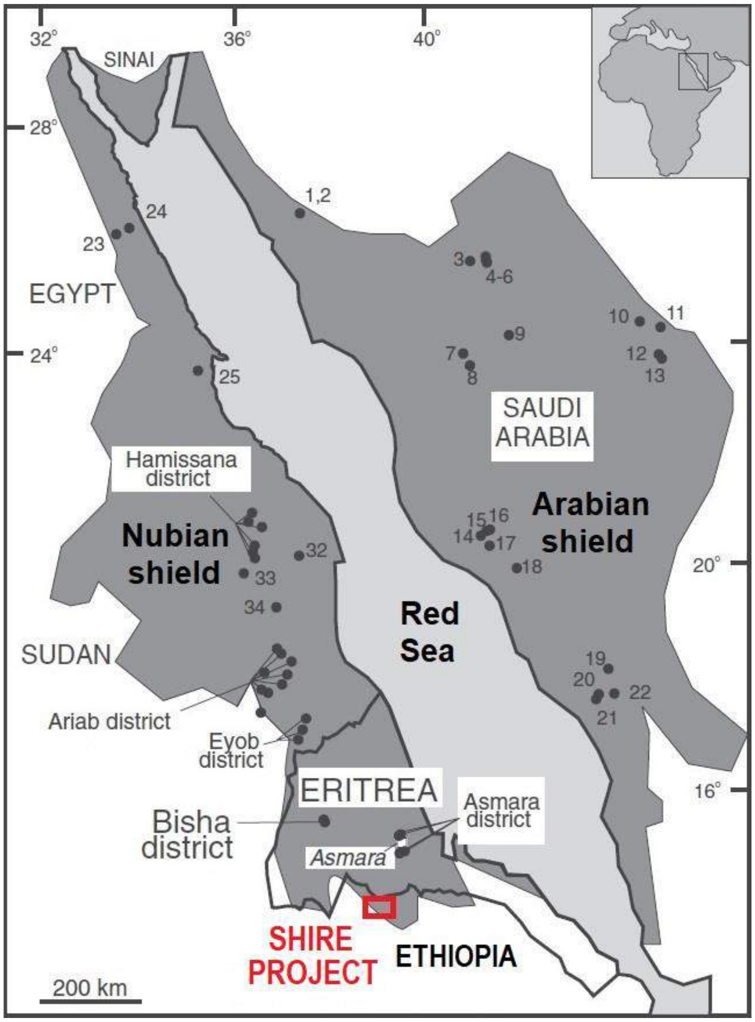
7.1 Regional Geology

The Neoproterozoic Arabian-Nubian Shield (ANS) represents a composite granitoid-greenstone belt terrane that straddles the Red Sea and covers much of Eritrea and the northern part of Ethiopia, as well as parts of Egypt, Sudan and the western part of Saudi Arabia (Figure 7-1). About 25% of Ethiopia is underlain by the western, or Nubian portion of the ANS. The ANS is geologically similar to other granitoid-greenstone shield terranes such as those found in Canada and Australia, which contain significant VMS and gold deposits (Barrie, 2004). More than 60 VMS deposits are known within the ANS as illustrated by the dots on Figure 7-1 (Barrie, 2007). The most significant with respect to the Shire project are the nearby deposits of the Asmara and Bisha districts in Eritrea.

The ANS is recognized as a mixture of distinct Precambrian tectono-stratigraphic terranes believed to have converged and amalgamated between 870 Ma and 650 Ma in a manner similar to accreted magmatic arc terranes. This amalgamation, deformation, metamorphism and uplift culminated in the Nabitah orogeny which was accompanied by intrusion of late- to post-tectonic granitoids, and partially covered by overlap assemblages deposited in rift basins. The ANS subsequently separated into two with the rifting and opening of the Red Sea which began around 26Ma. During this period the ANS was locally covered by subaerial flood basalts.

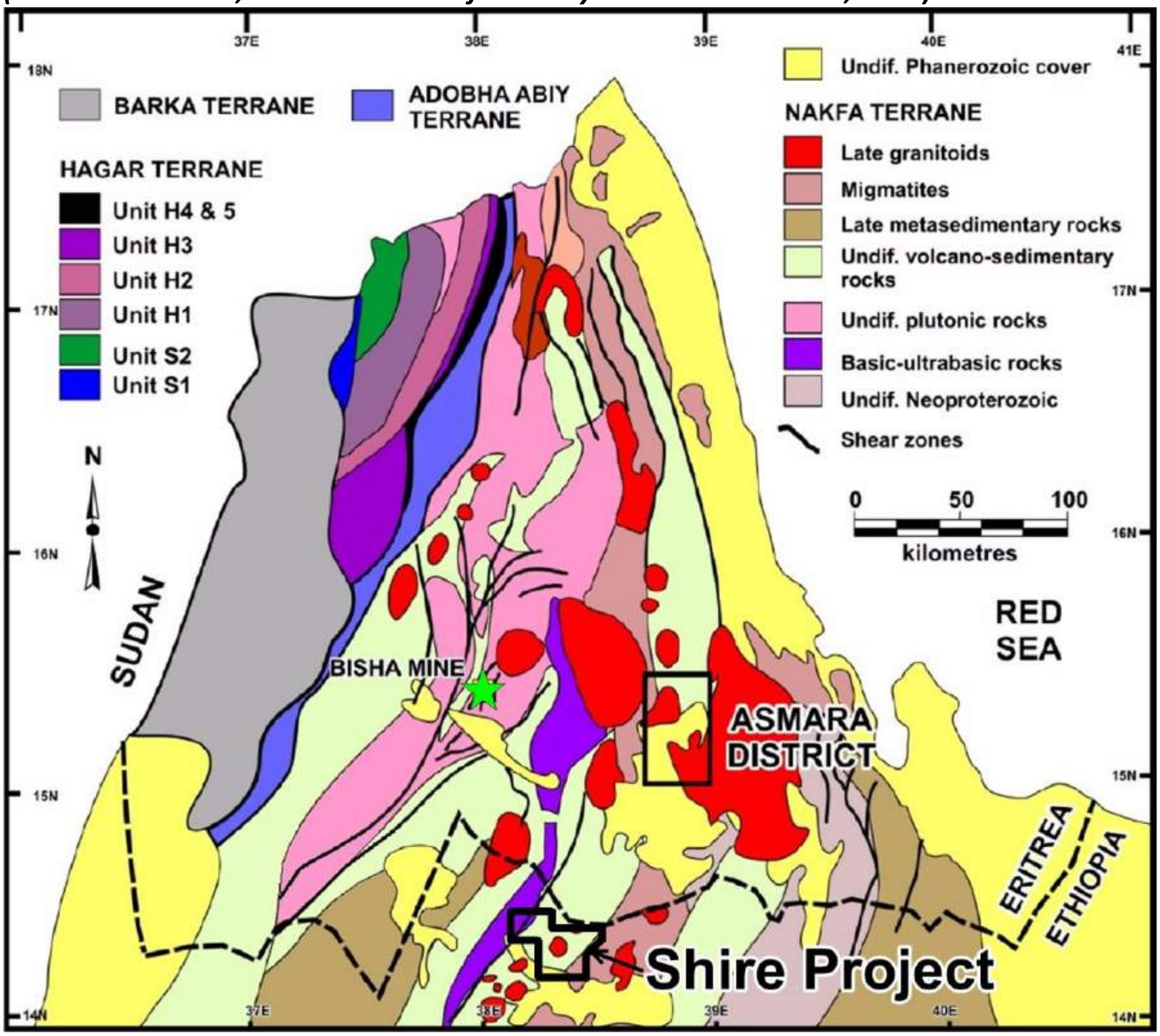
Figure 7-1 Arabian-Nubian shield & VMS deposits (Source: Barrie et al., 2007)

(Dots represent locations of more than 60 VMS deposits within the shield)



Four tectono-stratigraphic terranes are identified in the ANS in Eritrea (Figure 7-2) (Barrie et al., 2007). The westernmost Barka terrane comprises predominantly metasedimentary rocks of amphibolite to granulite facies. The Hagar terrane is made up of basaltic and siliciclastic rocks including minor mafic-ultramafic blocks; while the narrow Adobha Abiy terrane comprises highly deformed and metamorphosed sedimentary and carbonate rocks. The Nakfa terrane underlies much of the central part of Eritrea and is made up of mixed volcanic and metasedimentary (siliciclastic and carbonate) rocks. The Nakfa terrane also contains the Asmara greenstone belt VMS deposits and the Bisha VMS deposit. The Nafka terrane extends southerly into the northern part of Ethiopia and comprises the area covered by the Shire property (Figure 7-2). Shire is underlain by the same units of volcanic and volcano-sedimentary rocks as the Asmara VMS district, located about 100 km to the northeast. The convergence and amalgamation of the four regional belts of oceanic and island arc rocks resulted in deformation, metamorphism, uplift, and a late- to post-tectonic granitoid intrusive event.

Figure 7-2 Shire Project geological setting with relation to Asmara district and Bisha mine (Source: Archibald, 2014: Redrawn after Drury and De Souza-Filho, 1998)

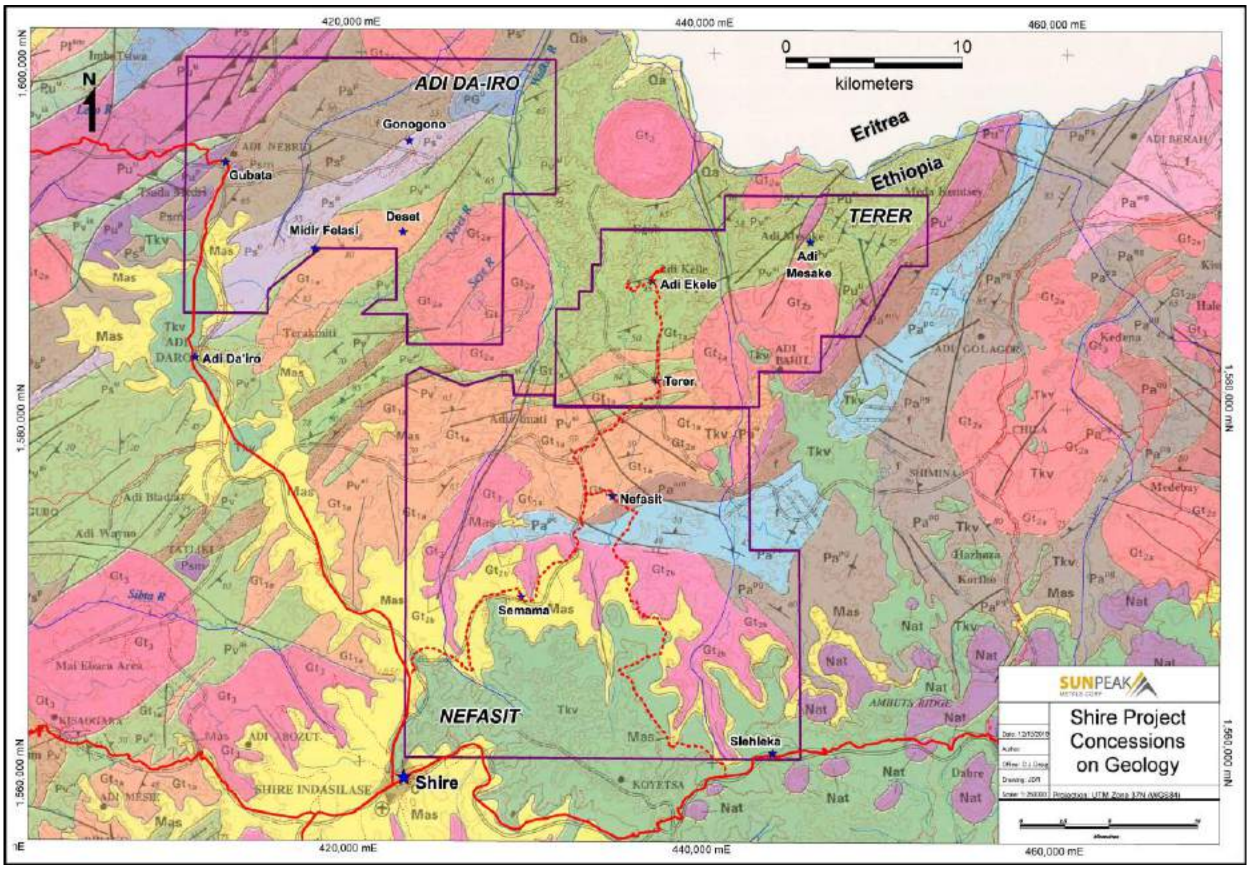


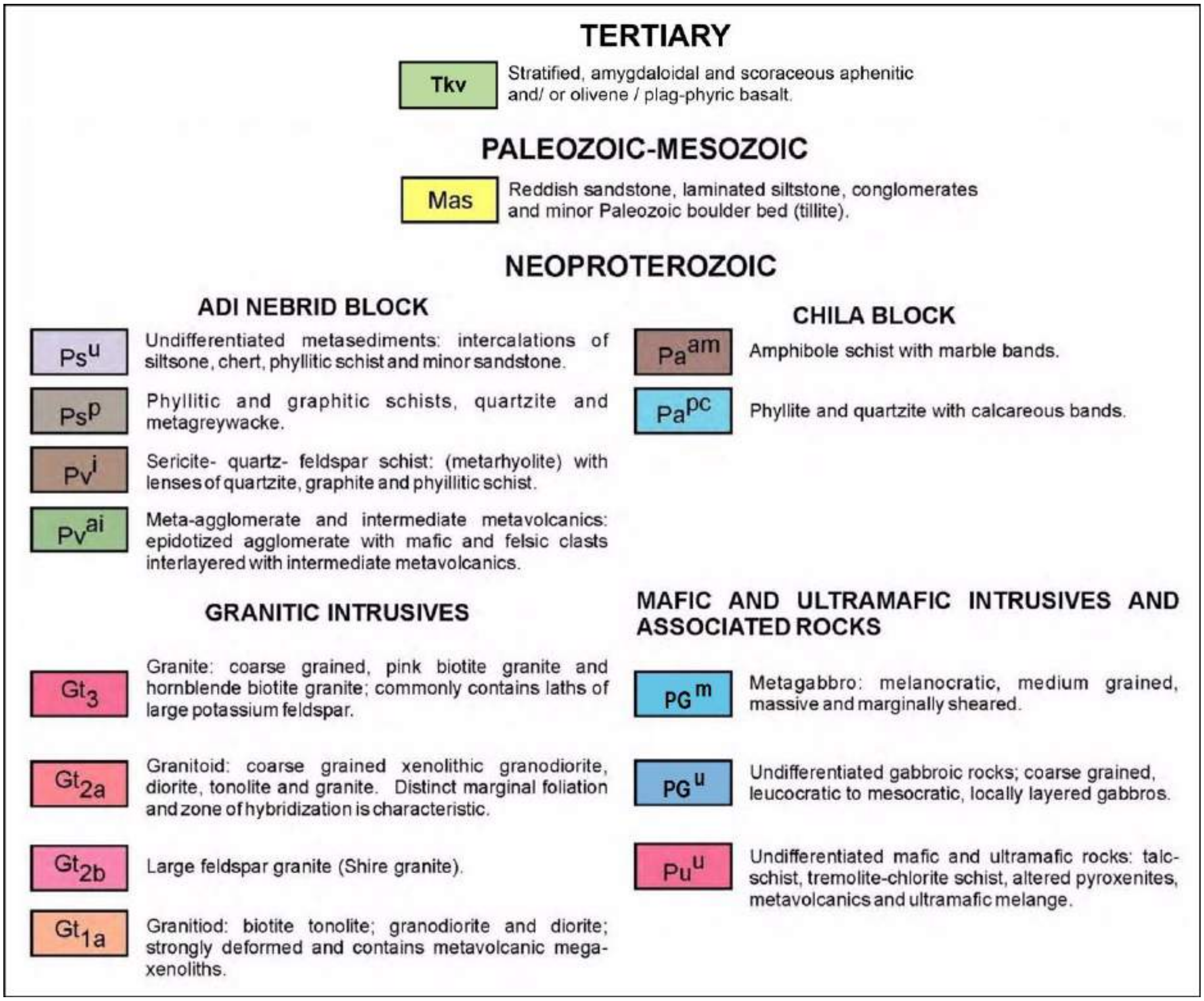
7.2 Local Geology

The Shire project area is found in the southern part of the Nafka Terrane which has been further subdivided into a number of tectonically and stratigraphically distinct blocks within one of which, the Adi Nebrid block, the majority of mineral occurrences are located. This block cuts through the northern two-thirds of the Property (Figure 7-3). It consists of a northeasterly striking, steeply dipping, low grade metamorphic sequence of basic to intermediate flows, rhyolite, pyroclastics and various epiclastic sediments of Neoproterozoic age. A number of granitoid intrusive complexes cut these rocks and have locally deformed the enclosing layered rocks.

The diversity of lithologies within the Adi Nebrid block is a function of the collapsed back-arc basin geological setting of the area. This setting is postulated due to the presence of cycles of mafic and felsic volcanic and volcanoclastic rocks, syn-volcanic intrusions, and the occurrence of deep and shallow water sediments (Archibald et al., 2014). The area underwent significant deformation during destruction of the back-arc basin resulting in the development of isoclinal and recumbent folds as well as thrust and shear faults. A period of crustal thickening followed, resulting in the emplacement of late orogenic granitic bodies, of which there are at least three within the project area, ranging from 3 to 10 km in diameter.

Figure 7-3 Shire project area on geology (source: Tadesse, 1997)





The following section has been summarized from Gardoll et al., 2012 (2012 Annual Exploration Report at Adi Nebried, Hamlo, Igub, Nefasit and Terakimti Concessions) that is quoted in Archibald et al. (2014), which describes chronologically the dominant lithologies present on the concessions that lie directly to the west of the Property. These same lithologies are present on the Shire property and the major rock groups can be correlated in the text with Figure 7-3.

1) Basement Rocks: The basement stratigraphies cut the northwest corner and eastern boundary of the Shire property (Figure 7-3, unit PUu). Both of these belts of rocks are sheared ultramafic complexes that were thrust to the surface during collapse of the basin. Both ultramafic complexes are interpreted to be oceanic crust. The western complex is interpreted as older basement crust, which later became part of the forearc. Whereas, the eastern complex is interpreted to be more juvenile back-arc basement crust that formed during the growth of the back-arc basin.

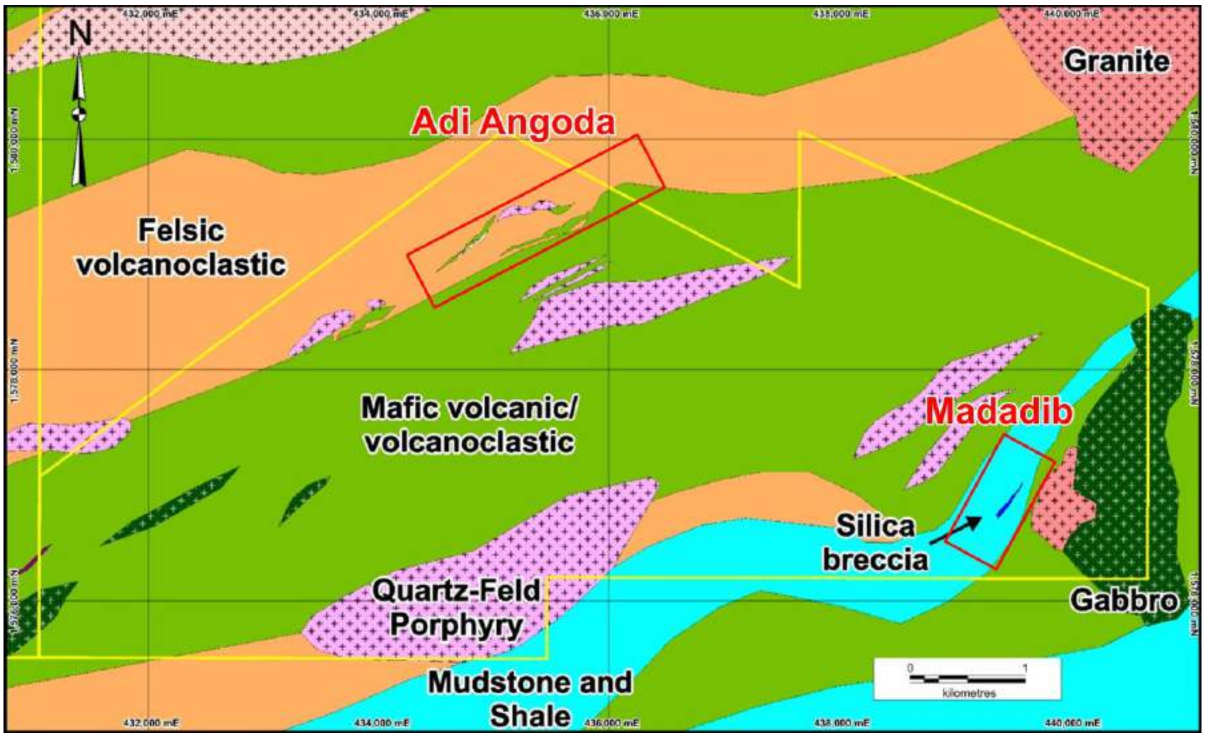
2) Sedimentary Package: During extension of the crust before rifting was initiated and any volcanic activity began, sedimentation would have occurred. It is proposed that the metamorphosed sedimentary rocks (amphibolite schist, phyllite, quartzite and marble) (Figure 7-3, units Paam & Papc) of the Chila block in the south-central and southeastern parts of the Property may represent this older sedimentary episode. However, this band of rocks is separated from the possibly overlying volcanic sequence farther to the northwest by a band of ultramafic basement rocks. One theory holds that thrusting has emplaced the deeper ultramafic sequence between the sedimentary and volcanic assemblages.

3) Felsic and Mafic Dominant Volcanics: A thick package of bi-modal felsic- and mafic-dominated volcanic rocks comprises the first sequence of extrusive rocks deposited during back-arc basement development (Figure 7-3, unit Pvai). These rocks are found over a wide belt that cuts northeasterly through the central part of the Property. The rocks are commonly light green, green-grey to grey and fine- to medium-grained. When weathered, the mafics can display remnant pillow structures and fragmental textures and the felsics can be oxidized red-brown from disseminated pyrite content (Photos 7-1a & 7-1b). They typically have well developed foliation and can contain chlorite, amphibole, feldspar and sericite. The true thickness of this package is difficult to assess, as the rocks are interpreted to be folded and perhaps structurally repeated across the width of the belt. The inferred thickness of this package of rocks is between 2,000 and 3,000 m.

Photo 7-1 a) Well foliated chloritic mafic metavolcanic rocks
Photo 7-1 b) Rusty weathering quartz-sericite-pyrite altered felsic volcanic rocks (source : Greig, 2018)


Regional mapping has identified that there are repeated cycles in the stratigraphy from felsic to mafic dominant. Detailed mapping at prospective localities has identified that the packages are a complex sequence of inter-bedded extrusive and some intrusive rocks, that on occasion, include minor chert horizons. The extrusive rocks can include tuffaceous and volcaniclastic sequences. These rocks are sparsely intruded by felsic dykes and cut by late quartz veins. Chlorite or epidote alteration is common and appears to be spatially associated with inferred faults and possible shear zones. Tadesse (1997) mapped a granitoid unit containing mega-xenoliths of metavolcanics rocks (Figure 7-3, unit Gt1a) cutting across the central part of the Property. However, more recent mapping by Tigray (Archibald et al., 2014) (Figure 7-4) has shown the area to be mainly underlain by the same mafic and felsic metavolcanic units seen to the northeast, with the exception that they contain abundant bodies of quartz eye porphyritic felsic rocks that are typically parallel to stratigraphy and may be volcanic flows (Photo 7-2).

Figure 7-4 Nefasit north geology, mapping by Tigray Resources (source: Archibald et al., 2014)



The mafic dominant volcanic package has associated thin banded iron formation (BIF) (Photo 7-3a), quartz veins and felsic dykes. The BIF layers are rare and typically exposed for 10-30 m in outcrop and less than 1m thick. The quartz veins are common, are often parallel to stratigraphy and may comprise zones of multiple thin veins over widths of several meters and lengths of 50-100 m or more. Felsic dykes are rare and typically follow stratigraphy.

VMS prospects occur more commonly within felsic rocks, typically near their contact with intermediate to mafic rocks. This includes the Adi Ekele and Adi Angoda VMS prospects in the east-central part of the Property. Locally, at VMS prospects, BIF and chert horizons have also been found, and jasperoid alteration is common. Surface exposures of VMS are oxidized to depths of several meters to tens of meters below surface, consisting of iron oxide minerals and silicified host rock (Photo 7-3b). Copper and zinc sulphide minerals have typically been leached from the oxidized zone, however, gold and silver have commonly been concentrated.

Photo 7-2 Quartz eye porphyritic felsic flow(?) with sericitic alteration (source: Greig, 2018)

Photo 7-3 a) Banded iron formation with magnetite and chert
Photo 7-3 b) massive iron oxide gossan at Adi Ekele zone

A broad belt of mafic dominant volcanic rocks occurs in the northwest part of the Property (Adi Da-iro concession), trending along the west side and folded around the northern part of a large granitoid body (Widah batholith) in that area. This belt compromises numerous volcanic sequences but is comprised dominantly of basalt and mafic volcaniclastic rocks that were folded around the granitic intrusion during the collapse of the back-arc basin. Typically, the mafic rocks are fine-grained, chloritic and weathered on the surface. However, the variety of mafic rocks is quite complex; some are chlorite altered with pyrite, some with 1-5 cm volcaniclastic clasts and some are coarse-grained and unaltered. Chlorite is the dominate alteration, with epidote and silica alteration commonly associated with interpreted faults. In the mafic volcaniclastic rocks the clasts can often be epidote rich. The rocks appear to have undergone little deformation, however; folded quartz and epidote veining suggests ductile deformation occurred within the sequence. Cross-cutting quartz veins, as well as felsic and aplite dykes are common. Float occurrences of BIF/Ironstone have been found across the extent of this unit. The mafic dominant rocks form topographic highs, unless the sequence is dominated by volcaniclastic rocks which are more susceptible to erosion.

A belt of granitoid with mega-xenoliths of metavolcanics rocks (unit Gt1a), was mapped by Tadesse (1997) cutting metavolcanic rocks in the northwest part of the Property but, as with the central belt of similar rocks, is more likely comprised of abundant bodies of quartz eye porphyritic felsic rocks, typically parallel to stratigraphy, that may be volcanic flows.

4) Shale and Intermediate Volcanic Dominant Sequence (Figure 7-3, unit Psu): This sequence occurs in the northwest part of the Property and is between 1500 and 2500 m thick. The sequence is comprised of shale with chert horizons inter-bedded with intermediate volcanics. Some mafic flows are present and a gabbro intrusion has been mapped. The area is also intruded by a few small granite plugs. The shale units are soft and light grey in colour with some units containing coarse pyrite. The shale, sometimes altered to sericite, contains silicified chert, banded chert and brecciated chert zones. The basalts and mafic rocks in the area exhibit jasperoid, silica and epidote alteration to varying degrees and are sulphidic in places with several exposures exhibiting pyrite rich “pods”. Quartz veining is present, variably sulphidic and heavily oxidized with occasional boxwork. Topographically the silicified cherts form high ridges sometimes with steep cliffs.

5) Shale Dominant Sequence (Figure 7-3, unit Psp): This sequence of rocks cuts the far northwest part of the Property and is the next stratigraphic unit, and the last in the basin formation. This sequence of rocks was deposited in a deep quiet basin away from the rift zone and any other volcanic activity and is interpreted to be between 500 and 5000 m thick, trending roughly northeast. The variability in the thickness of the shale may be due to growth faults and structural repetition. The fluid nature of the shales has accommodated the majority of the strain during the basin collapse, likely causing them to be highly contorted and sheared. The shale occurs in fine-grained massive sequences that rarely outcrop but form a white-grey powdery clay-rich soil. Outcrops of the shale occur as seriticized shear zones that form thin ridges that often extend for hundreds of meters. Tadesse (1997) in his regional mapping has included phyllitic and graphitic schists, quartzite and metagreywacke in this unit. Topographically the shale sequence forms low undulating ridges.

6) Syn-Tectonic Granitic Intrusions: The granitic rocks are alkaline feldspar dominant, coarse-grained, pink in colour and possibly syenite in composition. Some smaller intrusions of coarse-grained, white tonalities are also associated with the syenites, but their relationship has not yet been defined and could be mineral segregation, later intrusions and cross cutting dykes.

One of the larger intrusions is about 10 km in diameter and is located approximately central in the Property, on the southeast part of the Adi Da-iro concession. A second similar-sized intrusion occurs on the southeast part of the Terer concession. These granitoids, and others like them have structurally affected surrounding rocks, causing them to fold around their borders, as well as buckling and faulting along the contacts of these more rigid massifs. Rafts of country rock are still preserved within the intrusive bodies. Another interesting feature of the syenite granites is that they are associated with later gabbroic intrusions that have formed along their margins in pressure shadows. The late gabbro intrusions are discussed below.

7) Late Quartz Porphyry Intrusions: Quartz porphyry bodies are late intrusive events. Typically the rocks are coarse grained, light grey to light green in colour. Structurally the porphyries have intruded the mafic volcanics along fractures formed during deformation. The geometry of the porphyries is parallel to stratigraphy and normal to principle stress during the collapse of the basin, however, the contacts are intrusive and irregular. The porphyries are fresh resistive rocks and easily identifiable in the field. At some occurrences they have been found associated with gold mineralization.

8) Late Gabbro: Gabbroic intrusions have been found near the central part of the Property and these rocks are interpreted to be related to a late mantle plume event. Most of the intrusions are small, between 100 and 500 m in diameter, and are often in granite pressure shadows. The rocks are relatively fresh, coarse-grained and typically form topographic highs. No sulphides have been identified in any of the gabbro intrusions mapped to date.

9) Oxidation Cover: Late Palaeozoic to Mesozoic ironstone (or ferricrete) cover is sometimes found coating rocks near areas of sulphidic rocks.

7.3 Property Geology

Detailed property-scale geologic mapping has only been carried out in relatively small areas within the Property, focusing on areas of known mineralization or prospective geochemical targets, however there have been general geological observations made by at least two authors, which are summarized below.

7.3.1 Stratigraphy

According to Staargard (2001) the central part of the Terer concession, in the northeast part of the project, is dominated by mafic to intermediate volcanic rocks with minor iron formation. These are flanked on the northwest by a sequence of generally graphitic sediments and on the southeast by locally sulphidic feldspar-chlorite schist, chlorite-sericite schist and quartz porphyry. The felsic to intermediate volcanic units, are at least in part fragmental, with associated volcanogenic massive sulphide (VMS) mineralization. These units range in thickness from a few hundred meters to about one kilometer and extend over a total strike length of about 18 kilometers, from southwest of the Mindirira River to well northeast of the Messiha River and includes the Mai Argab - Adi Ekele mineralized zones.

The whole sequence is intruded by syn- and post-tectonic granitoids. Occurrences of medium grade metamorphic rocks have been encountered at the south extreme of the Terer concession and these rocks form a relatively elevated topography as compared to areas of low-grade metamorphic rocks.

The geology of the Terer concession was further reported with greater detail in an annual report for Makeda by Qin et al. (2011). Some of the observations from that report are summarized below, and many of these can be applied to the rest of the Shire property as well.

The Terer area is mainly underlain by meta-volcanic flows and pyroclastic rocks of intermediate to mafic composition intercalated with an increasing number of felsic members in an easterly direction. The intermediate to mafic composition rocks are mainly agglomerates and volcanic breccias, with minor associated flows. Felsic rocks are mostly lava flows with minor intercalations of felsic clastic rocks and are primarily meta-rhyolite, composed of quartz, plagioclase, potassic feldspar and sericite. Commonly the meta-rhyolite is light gray, fine-grained, and massive to weakly foliated. Locally, the massive variety displays a cherty appearance and weathers brown to reddish-brown due to disseminated pyrite.

Felsic quartz porphyry is a distinctive rock type that is found primarily in the southwest and northeast parts of the Terer concession. Blue quartz “eyes” are commonly distributed within a sericitic, felsic volcaniclastic rock. Some documents refer to this unit as quartz porphyry due to the abundance blue quartz “eyes” that give its distinctive appearance; others refer to it as quartz tuff. The rock is commonly dull whitish grey, massive to weakly foliated and consists of 2 to 5 mm diameter quartz porphyroblasts within a fine-grained feldspathic and variably sericitic groundmass.

Intercalated intermediate to basic meta-volcaniclastic rocks comprise much of the western part and extend into the northeastern part of the Terer concession area. East of this belt these same types of rocks are intercalated with felsic meta-volcanic rocks. The intermediate to mafic meta-volcanic rocks are made up of silicified and epidote altered rock fragments within a matrix of chlorite, feldspar, amphibole and epidote. The southern part of the zone contains meta-agglomerate, with elliptical to sub rounded clasts ranging in size from a few centimeters to fifteen centimeters. The elongated clasts display down dip alignment. In general, the intermediate to basic rocks are weakly to well foliated and foliation swings from 040° in the southwest to 080 °in the northeast, curving around a granitoid stock.

In the southwest part of the Terer concession, intermediate meta-volcanic rock near the contacts with felsic meta-volcanics is commonly light green to greenish gray, moderately foliated and fine-grained. This rock is locally weakly mineralized with oxidized cubic pyrite. Also, in the southwest, basic meta-volcanic rocks are found in contact with massive to foliated quartz porphyry, and locally the contact between the lithologies is marked by alteration and disseminated sulphide minerals. The common basic metavolcanic rock is dark green, fine- to medium-grained and weakly to moderately foliated. It mainly consists of chlorite, actinolite-tremolite, and some feldspar within a very fine-grained dark green matrix and is commonly weakly mineralized with oxidized cubic pyrite.

Quartz-feldspar-sericite schist is encountered as thin lenses usually associated with felsic meta-volcanic rocks (meta-rhyolite and felsic tuff). In the northeastern part of the Terer concession, however, it commonly occurs interposed with basic to intermediate meta-volcanic rocks. In the north, the quartz-feldspar-sericite schist has sharp and linear contacts with the basic to intermediate rocks, whereas in the central part of the area, the contact of the feldspar-chlorite-sericite schist forms an inter-digitized gradational contact with the basic to intermediate meta-volcanic rocks. This gradational contact zone is strongly sericitized and chloritized and contains local gossan zones, including the mineralized gossans of Adi Ekele and Mai Argab.

Thin layers of banded iron formation (BIF) occur as discontinuous lenses on the northwest side of the gossanous outcrops in the Adi Ekele area. The BIF consists of fine-grained, light to dark gray, thin cherty lenses and quartz-feldspar-sericite schist that occurs within intermediate to basic meta-volcanic rocks as well as felsic volcanics and, in some places, is associated with gossan material.

Some of the larger mineralized gossans on the Property are located in the Adi Ekele area, where they are positioned between intermediate meta-volcanic rock and more felsic feldspar-chlorite-sericite schist. The gossan outcrops are found in a discontinuous pattern for a length of about 2 km. At its widest point the goethite-limonite gossan outcrop reaches up to 13 meters, however, the average width is about 4 meters. It is massive, dark reddish-brown, vuggy and boxworked due to the leaching of sulphide minerals. Oxidation of copper minerals has produced malachite and azurite that locally stain the gossan. Some remnant pyrite locally remains unoxidized. Brecciated quartz fragments and quartz stringers are also components of the gossan. The general orientation of the mineralized zone at Adi Ekele is 070°, dipping steeply to the southeast.

Three large circular-shaped granodiorite to granite intrusive bodies are located in, and near, the northern part of the Property. The Messiha granitoid is found on the southeastern part of the Terer concession, the Widah granitoid is on the southeast part of the Adi Da-iro concession and the Tabir granite is situated just north of the Property.

The Messiha granitoid is light whitish, medium to coarse grained and massive to very weakly foliated around the rim of the intrusion. It is composed of mainly quartz, feldspar, amphiboles and mica. The western rim of the Messiha granitoid is comprised of granite and partly of basic-ultrabasic rocks. According to Taddese (1997), the compositional variation and structural features may classify the intrusion as a ring complex and it is believed to be syn-tectonic. The Widah granitoid is mapped by Taddese (1997) as similar in composition to the Messiha granitoid. The Widakh granite is commonly medium to coarse grained and porphyritic. Quartz, feldspar and biotite are the main constituents. Pink granite is commonly encountered at the rims whereas most of the intrusion is granodiorite. Xenoliths and roof pendants of metavolcanic rocks are noted within both intrusions. As well, both of these bodies have caused deflection of surrounding metavolcanic units whereby the stratigraphic orientations roughly parallel the contacts of the stocks. Numerous randomly oriented late magmatic intrusions (pegmatites, mafic and aplitic dykes) commonly radiate from the larger bodies.

The Tabir granite is whitish to dull pink, coarse grained and mainly consists of quartz, feldspar and mica. It is characterized by a narrow contact metamorphic areole and lack of marginal or overall fabric development. This lack of regional lineaments, which are common in the Messiha granodiorite, is one reason that Tabir is classified as a post-tectonic intrusion (Taddese, 1997). The Tabir stock stands out topographically in the area with steep cliffs around its boundaries and forms an important landmark in the area.

Across the central part of the Nefasit concession, in the southern part of the Property, an irregular strip of sandstone unit is exposed. This unit is probably equivalent to the Adigrat Sandstone of Triassic to Jurassic age (Tadesse, 1997) and sits unconformably on Precambrian basement, as well as apparently capping a large granitic intrusion in this area. The sandstone is thick bedded and reddish brown, with medium to coarse grain size quartz as the dominant mineral and iron hydroxides as cement. The sandstone is relatively resistant due to the quartz content and it is commonly capped by ferricrete deposits 2-3 m thick formed by iron remobilized from the rock cement.

The southern part of the property is primarily underlain by Tertiary basalt that forms steep mountainous terrain in that area. The basalt is described by Tadesse (1997) as stratified, amygdaloidal and scoriaceous, aphanitic or olivine-plagioclase phyric.

7.3.2 Structure

Qin et al. (2011) reported on structural elements encountered during their work for Makeda on the Terer concession. Foliation was observed to be an important and widespread structural feature, which commonly parallels bedding, where bedding is evident. In the northern and central parts of the area, foliation has ENE strikes with steep dips to the southeast. Near the western contact of the Messiha syn-tectonic granite the foliation trends NE to NNE, roughly parallel to the contact. In the southwest part of the concession foliation trends E-W and dips vertically. The change in strike of foliation from ENE in the northern area to nearly E-W in the south could be attributed to broad regional folding.

The Terer concession is transected by several regional lineaments. The most prominent lineaments noted by Qin et al. (2011) trend NE, NW, NNE, NNW, ENE and E-W. Some of these structures follow the major strike of lithologies however most of the lineaments transect lithologies and are related to major strike-slip faults. For instance, the NNE and NNW lineaments form conjugate strike-slip faults and displace the meta-volcanic rocks and the Messiha granitic body. Similarly, the ENE and NW lineaments are related to strike slip faults that displace lithologic boundaries and mineralized zones. Shearing is commonly observed in quartz-feldspar-sericite rock units found in the central and the western areas of the Terer concession.

Complex, smaller-scale fold patterns are observed within banded iron formation (BIF) lenses that crop out in the Mai Argab- Adi Ekele areas. Asymmetric folds with "S" and "Z" geometry are noted in several outcrops in association with sinistral and dextral shear structures; however, folding on a wider scale within the metavolcanic rocks is not evident, indicating that these may be syn-depositional features.

7.3.3 Alteration

Various types of alteration are recognized in the area, with sericitization, chloritization and silicification being the most common types, especially in close proximity to VMS mineralization. Kaolinization and epidotization are less extensive or more weakly developed.

Sulphidic zones generally contain both sericitic and chloritic alteration, with either being more dominant, possibly varying due to the host rock composition. Weak to moderate kaolinization has been noted in limited exposures of quartz porphyry and quartz- feldspar-sericite schist. Weak epidotization has also been observed at some outcrops of basic metavolcanic rocks, particularly as alteration of fragments in agglomerate. The presence of cherty layers within the quartz-feldspar-sericite schist could express silicification or may have formed as primary deposition of siliceous exhalative solutions.

Various oxide minerals are associated with the weathered sulphide bodies outcropping in the area such as; iron oxides (goethite, hematite, jarosite, specularite) and hydroxides (limonite), manganese oxide (pyrolusite) and hydrated copper carbonates (malachite and azurite).

7.4 Mineralization

Mineralization on the Shire property is primarily observed as surficial iron oxide minerals hosting gold, silver and minor base metals and, within drill holes, as VMS related sulphide mineralization. Surficial gossan material is generally deep brown to red in colour, locally varying to yellow. Boxwork and vuggy textures have been locally created by leaching of sulphide minerals. Oxide gossan mineralization is noted to persist to depths of 10-20 m, as seen in drill intercepts.

Malachite and azurite are rarely identified in surface gossan systems, suggesting that most original in situ copper (and zinc) has been leached out of surficial oxide zones and may have re-deposited within supergene zones at depth. Although supergene mineralization has not yet been defined in the mineral prospects on the Property it is of significant interest in the region, since it forms significant grade concentrations in Eritrean VMS deposits.

Gold enrichment has been identified in gossan material at Mai Argab, on which a pilot heap leach recovery program was undertaken on a 5000 tonne test lot (see Section 6-1). Gold enrichment is also evident at Adi Ekele, Adi Angoda, and possibly Madadib, based on increased gold values in surface trenches compared to sulphide intercepts in drill holes. For example, a 7 m channel sample at Adi Angoda averaged 5.40 g/t Au (with a maximum grade of 27.00 g/t Au and 13.1 g/t Ag (Archibald, 2011).

On the Shire property the majority of drilled mineral intercepts are from the Mai Argab and Adi Ekele zones, as well as a few diamond drill hole intercepts at Adi Angoda. Drill log descriptions of the mineralization are very brief, such as *"light greyish dacitic rock composed of quartz, feldspar, sericite and traces of chlorite. Disseminated to massive sulphide mineralization (pyrite and strips of chalcopyrite)"* (Makeda diamond drilling database). As a further complication, the drill logs have been translated from Chinese, because the work was done by a Chinese company. Based on the brief descriptions it appears that mineralization consists primarily of pyrite, ranging from weakly to strongly disseminated to banded (laminated) to massive. Chalcopyrite and sphalerite also occur locally as intergrown disseminated grains or interlaminated with pyrite, which are typical features of bedded VMS-style mineralization. Host rocks in drill core are primarily described as dacite, and they are very siliceous and strongly sericite and chlorite altered. Quartz vein hosted pyrite and chalcopyrite, with lesser sphalerite is also found cutting massive sulphides and in the structural footwall to the massive sulphides. Magnetite is found associated with intermediate to basic meta-volcanic rocks and some of the banded iron formations, and specularite, pyrolusite and ankerite are seen locally.

The drill core from the Mai Argab and Adi Ekele zones has recently been acquired by Sun Peak and the core will be re-logged and sampled to gain a better understanding of the mineralization and host stratigraphy.

The VMS sulphide zones on the Shire property are expected to resemble those at the Terakimti VMS deposit, located immediately southwest of the Property. Sulphide bodies at Terikimti are described as massive to sub-massive fine-grained pyrite with overprinting, interstitial and fracture-related chalcopyrite and low-Fe sphalerite, and rare galena. Gold and silver occur with pyrite, or in banded sulphide layers and in occasional high grade quartz stringer zones. Exhalative siliceous iron formation occurs at the periphery of the mineralized zone (Archibald et al., 2014).

The VMS mineralization found on the Shire project also displays similarities in styles, tenor of base and precious metals, host rock assemblages and mineral zonation to those of the

Asmara area deposits, located approximately 100 km to the northeast. One of the authors (Greig) has visited and mapped on some of these other properties and conducted geological review between 2006 and 2008. **The comparison is not necessarily indicative of the economics of the mineralization on the Property that is the subject of this report**.

The VMS deposits at Asmara are hosted by assemblages that include metavolcanic and metasedimentary rocks. These deposits have a hematite/goethite gossan cap on surface that ranges in vertical thickness up to 50 m and can extend up to 1500 m in strike length (Sunridge Gold Corp.). Beneath the gossan cap, a supergene zone ranging in thickness up to 30 m carries chalcocite, covellite, digenite, bornite and tennantite. The primary mineralization, located below the supergene zone, most commonly consists of pyrite, chalcopyrite, ± galena, and barite is frequently associated. Common characteristics of VMS-style mineralization are described below in Section 8.1.

Following are the main areas of mineralization or geochemically anomalous targets on the Property; locations are shown on Figure 7-5.

7.4.1 Mai Argab - Adi Ekele

The most advanced stage exploration target on the Property is the Mai Argab - Adi Ekele zone, which occurs in the north-central part of the project area and has been drilled in the past with 12 reverse circulation holes and 51 diamond drill holes (Figure 7-5). Gossan showings are found intermittently from the Mai Argab zone in the southwest, extending over approximately 2.7 km to the northeast end of the Adi Ekele zone, and for about another 2.5 km, totaling over 5 kilometers in length. The width of the surface gossan zone is highly variable, from over 100 meters to less than 2 meters near the northeast end. There are possible northerly trending fault zones that may offset the mineralized horizon by up to 200 meters, based on conductivity patterns shown by geophysical surveys. Three ancient surface excavations are identified along this zone within strongly chloritized and malachite stained rocks. The largest excavation is located at the Mai Argab zone, where oxide material has been excavated over about 150 m of length. In the northeastern part of the Adi Ekele mineralized zone, sphalerite and barite are noted with malachite. Thin veins and stringers of quartz with associated malachite have also been observed at the excavations.

The Mai Argab - Adi Ekele sulphidic zone is underlain by quartz-feldspar-sericite schist, which has a porphyritic appearance (due to the presence of quartz eyes) and intermediate to basic metavolcanic rocks. Mineralization in drill holes is dominated by fresh to oxidized pyrite, which occurs as disseminations, fracture fillings and fine laminations mainly hosted by sericitized felsic metavolcanic and cherty units. Chalcopyrite and sphalerite are also observed in many of the drill holes along this zone, occurring as disseminations or fine laminations.

Drilling results (discussed in detail in Section 6.1), have been highlighted by moderately thick intercepts with significant grades, such as **25.0 m averaging 2.27% Cu, 2.65% Zn, 0.63**

g/t Au and 34.1 g/t Ag (RC hole 13-7) at Adi Ekele and **31.2 m averaging 1.05% Cu, 0.63% Zn and 1.12 g/t Au** (DDH WZK0001) at Mai Argab. True thicknesses of these mineralized intercepts are 80-85% of drilled lengths. Adi Ekele has been drill tested over a length of about 1000 m and Mai Argab over a length of about 400 m; both to relatively shallow depths.

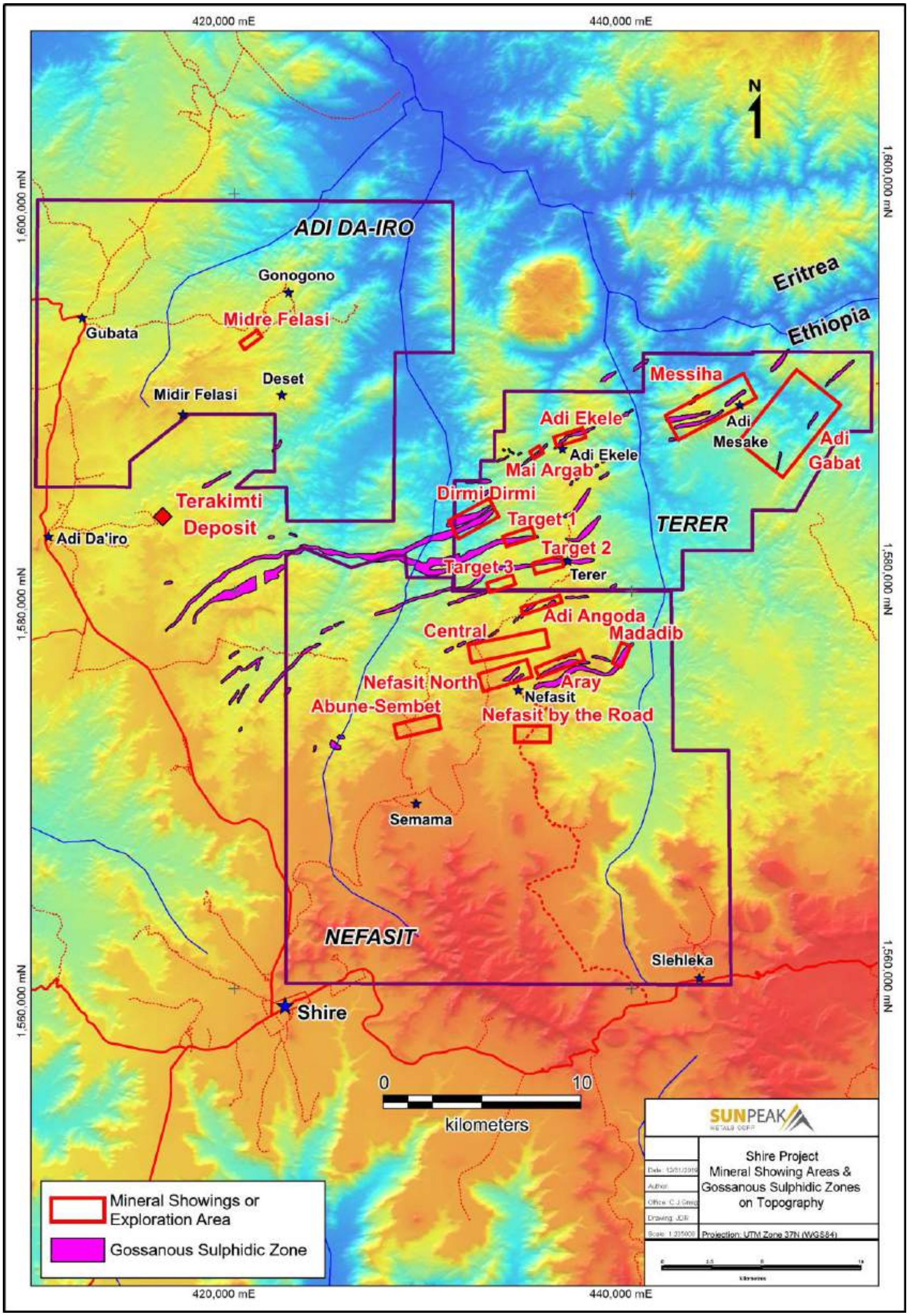
7.4.2 Messiha

At its northeastern end, the Mai Argab - Adi Ekele sulphidic zone is apparently truncated by a north-northwest oriented fault. The fault follows parts of the watercourse of the Messiha River and the amount of dislocation of the sulphidic zone is not known. Farther northeast, in the Messiha zone, sediment samples have returned anomalous Zn, Pb, lesser Cu and local Au in an area of rusty-weathering sulphidic zones within slightly chloritized felsic tuff. Irregular gossanous lenses within the zones could be indicative of VMS-style mineralization similar to Adi Ekele which is underlain by the same package of volcanic and volcaniclastic rocks.

7.4.3 Adi Gabat

Little information has been published about mineral occurrences in the Adi Gabat area that covers more than 15 sq km in the northeast corner of the Property. Several clusters of strongly anomalous stream sediment geochemical values indicate potential for differing styles of mineral occurrences. The northern part of the area has gossan occurrences that resemble VMS showings in other parts of the property. Farther south a large cluster of strongly anomalous Au in stream sediment samples that is partly coincident with strong As anomalies but low Cu, Zn and Pb values, occurs along the northeast contact between a large granodiorite pluton and volcanic rocks. The differing geochemical signature in this area may indicate that mineral occurrences could be of orogenic gold-type, similar to those found in other regions nearby, some of which contain very high gold content in quartz veins. Rock chip samples of gossan material from the Adi Gabat area have returned several anomalous gold values, up to 3.7 g/t Au.

Figure 7-5 Shire property mineral showing areas and gossanous sulphidic zones



7.4.4 Dirmi Dirmi

The Dirmi Dirmi zone, at the western edge of the Terer concession, occurs 4 km southwest of the Mai Argab zone and it apparently has been disrupted by WNW-oriented dextral faults at both its northeastern and southwestern ends. The width of the Dirmi Dirmi sulphidic zone varies from 40 to 100 meters and it appears to follow a distinct stratigraphic horizon (Ezana private company report). The sulphide minerals occur within quartz-feldspar-sericite schists and sheared intermediate to basic metavolcaniclastic rocks. Hydrothermal alteration is intimately associated with the sulphide mineralization; in particular chloritization, silicification and sericitization. There is little documentation available describing the Dirmi Dirmi zone; however, numerous stream sediment samples from this area have returned one of the widest clusters of strongly anomalous copper and zinc values on the Property.

7.4.5 Targets 1, 2 and 3

Three gossan zones are located southwest and northwest of the village of Terer. They appear to follow stratigraphy, with Targets 2 and 3 possibly along the same horizon and Target 1 along parallel stratigraphy 1.5 km to the north. All three zones are hosted by felsic and intermediate metavolcanic rocks that form belts trending about 060° to 080°. Sericite, chlorite and silica alteration are noted along the zones. Dextral displacement by WNW-oriented faults has been noted by previous workers.

Zones of disseminated pyrite and local lenses of massive goethite gossan with sulphide minerals at depth occur primarily within strongly foliated felsic rocks. Pyritic zones range from <20 m to 120 m in width and extend intermittently over lengths of up to 2 km. One of the larger goethite and sulphide masses is from 5 to 65 m wide and 300 m long (Qin et al., 2011). The sulphidic zones contain chert layers and are intruded by concordant and cross-cutting quartz veins.

Six trenches were dug (1 in Target 1, 5 in Target 2) and hundreds of rock chip samples were collected in 2011, with maximum analytical values reported of 1123 ppm Zn, 2497 ppm Pb and 596 ppm Cu (Qin et al., 2011). Two diamond drill holes are reported from Target 2 zone containing widespread disseminated pyrite, as well as massive banded pyrite with minor chalcopyrite and sphalerite over widths of 0.5 to 4 m (Qin et al., 2011), however, no results are available to the authors. Two other holes were planned in 2011 but not documented in the report.

7.4.6 Hamlo

The Hamlo zone, located in the northwest corner of the Nefasit concession, is the southwest continuation of the Target 1 sulphidic horizon, extending for more than 3 km. The zone consists of disseminated sulphide mineralization (pyrite) hosted by chloritic quartz-feldspar-sericite schist, which is within massive to weakly foliated intermediate to basic metavolcanic rocks. This zone is 20 to 40 meters wide, whereas in the northeast, it reaches up to 100 meters. Localized stream sediment anomalies occur along this trend and a narrow zone comprised of discontinuous lenses of banded iron formation has been discovered. The zone is disrupted by several NNE- and NNW-trending conjugate faults.

7.4.7 Adi Angoda

The Adi Angoda zone lies at the northern edge of the Nefasit concession near the northeast end of a sulphidic belt that extends more than 5 km in length and has an average width of 120 m. Gossanous goethite-limonite zones at Adi Angoda were trenched in 2008 and 2009 (18 trenches) and 527 rock chip samples analyzed, identifying strong gold and copper anomalies. Diamond drilling in 2009 and 2012 (10 holes) at wide-spaced intervals, over a length of 1400 m, targeted lithological, geochemical and geophysical anomalies. The best drill hole in terms of mineralized interval and overall grade was ND001, which returned 3.51% Cu, 2.73 g/t Au, 55 g/t Ag and 2.23% Zn over a 2.80 m interval from a depth of 43.50 m (Archibald et al., 2014). Additional drill results are discussed in Section 6.2.

The holes intersected felsic and mafic volcanic rocks primarily comprised of crystal and lapilli tuffs, as well as quartz porphyry. Disseminated pyrite is common in the holes (typically about 5%) and intervals of laminated pyrite with minor chalcopyrite and sphalerite were encountered over narrow widths of up to 3 meters. Airborne magnetic data and geological mapping suggested potential for additional mineralization at depth to the east of the area drilled (Archibald, 2011).

7.4.8 Nefasit North, Aray, Madadib

The Nefasit sulphidic zone stretches sinuously for a strike length of about 7 kilometers and encompasses the Nefasit North, Aray and Madadib gossan zones to the north and east of the village of Nefasit. The widths of the zones vary from 5 to 40 meters and the sulphides are intensely oxidized to limonite and local secondary copper minerals. The mineralization is located near the interface of intermediate to basic metavolcanic rocks and felsic tuffs. Areas of strong conductivity identified by airborne EM coincide closely with the Aray and Madadib zones, however, the large widths and extent of the areas of high conductivity suggest that it is caused by a lithologic unit of higher conductivity, such as graphitic schist, which is mapped in the area.

Of the three targets, the majority of exploration work has been undertaken at Madadib, including excavation of 8 trenches and drilling of one reverse circulation drill hole. The 30 m vertical hole drilled on the VMS gossan intersected 20 m of gold-enriched gossan, with the upper 10 m grading 4.6 g/t Au (Archibald et al., 2014). Some of the rock chip samples of gossan material from the Madadib trenches returned similar Au values to the drill hole result. The Company has undertaken recent soil sampling in the area and each of the three gossan areas have demonstrated strongly anomalous Cu and Zn, with local coincident Au and Ag, along linear northeast trends ranging from 800 m to more than 1500 m in length. These are priority exploration targets.

7.4.9 Nefasit Central

Recent soil and stream sediment samples over the gossanous area in Nefasit Central zone have returned strongly anomalous Cu values over an area more than 2 km in length that appear to coincide with moderately to strongly magnetic trends. Host rocks in this area include clinopyroxenite, which contains local disseminated chalcopyrite that could be the source of the anomalies. This style of mineralization is of lower exploration priority.

7.4.10 Nefasit by the Road

A recently completed, close-spaced soil sample grid at Nefasit by the Road ostensibly shows narrow, linear, partly coincident Cu and Zn geochemical anomalies that show a possible east-west trend, as well as a northwest trend, over lengths of more than 1 km. The east-west trend coincides with the northern edge of an extensive, linear magnetic low, as well as sitting on the north edge of a gravity high that extends east-west for approximately 1 km. Geological mapping of the anomaly area may help to determine the style and trend of potential mineralization and identify areas in which to focus further work.

7.4.11 Abune-Sembet

The Abune-Sembet area contains gossan zones within a broad east-west trending conductive zone (based on airborne EM) that may be the southwest extension of the gossan zones found at Nefasit North. A few stream sediment samples collected in the area draining the gossans have returned strongly anomalous Zn and moderate Cu values. No mineralized surface showings are known. Recent gravity survey results show a moderate to strong gravity high coinciding with an anomalous drainage area and extending north-easterly for more than 2 km. This gravity high is located at the edge of the survey grid, so additional surveying is required to test its validity.

7.4.12 Midre Felasi

The Midre Felasi zone is a gossan up to 10 m wide within a sulphidic zone about 700 m long. It was explored by previous companies with stream sediment, soil and rock chip sampling that returned moderately anomalous Au, Cu and Zn. No trenching or drilling have been reported for this zone. A recent airborne EM survey indicates anomalously conductive zones underlying the gossan and other areas nearby that warrant further ground follow-up.

8.0 DEPOSIT TYPES

Two deposit types are currently under exploration at the Shire property; volcanogenic massive sulphide (VMS) and orogenic lode-gold mineralization.

8.1 Volcanogenic Massive Sulphide Deposits

VMS deposits are predominantly stratabound accumulations of sulphide minerals that precipitate from hydrothermal fluids on or below the seafloor in a wide range of ancient and modern geological settings. In modern oceans they are synonymous with sulphurous plumes called black smokers.

VMS ore deposits formed in close temporal association with submarine volcanism and are formed by hydrothermal circulation and exhalation of sulphides onto the sea floor. They occur within environments dominated by volcanic or volcanic derived sedimentary rocks, and the deposits are coeval and coincident with the formation of the host rocks. As a class, they represent major sources of copper, zinc, lead, gold and silver in a high grade, low tonnage ratio.

The Arabian-Nubian shield hosts more than 60 VMS deposits (Figure 7-1). The Shire project area covers lithologic units similar to those that host the precious and base metal VMS deposits located nearby at Debarwa and Emba Derho in the Asmara district, 100 km to the north-northeast (Sunridge Gold Corporation) and the Bisha district, 100 km to the north-northwest (Nevsun Resources Ltd). All three deposits are located in the Nafka Terrane. The Bisha deposit is currently in production and as of December 2016 had Proven plus Probable mineral reserves of 9.6 million tonnes at 1.1% Cu, 6.2% Zn and 0.7 grams per tonne gold (Bisha Mining website). The Emba Derho deposit has Proven plus Probable mineral reserves totaling 50 million tonnes with primary sulphide grades of 0.7% Cu, 1.6% Zn and 0.3 g/t Au and a significant percentage of supergene mineralization averaging 1.0% Cu, 0.4% Zn and 0.3 g/t Au (Asmara Project Feasibility Study, 2013).

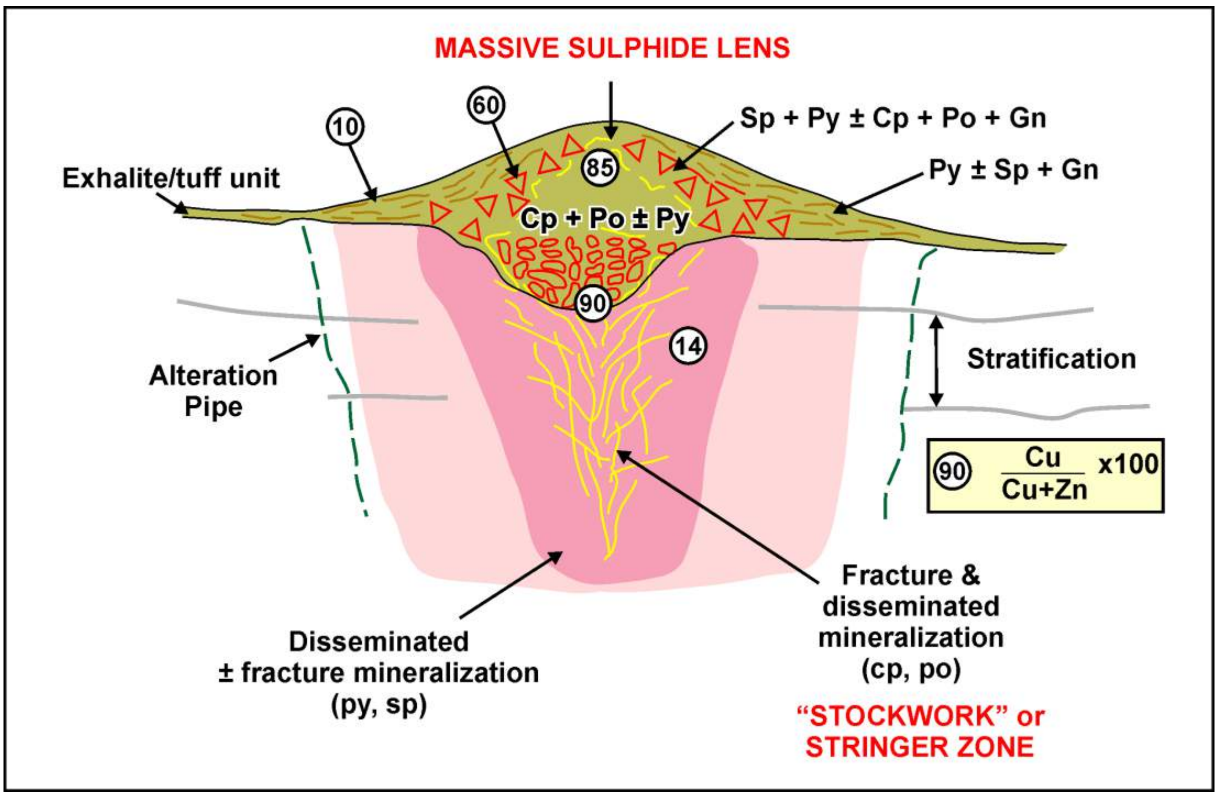
Some of the VMS mineralization found on the Shire project has similar style and tenor of base and precious metal mineralization and weathering zonation related to mineralization to those of the Asmara area deposits.

The VMS mineralization in the Asmara district has been variably described as Kuroko-type (Chewaka and DeWit, 1981) and as bi-modal mafic type (Hannington, 2009), with mineralization hosted within volcanic and metasedimentary rocks deposited in a back arc basin. Generally, VMS deposits contain footwall mineralization consisting of quartz-chalcopyrite stringers (stockwork), overlain by primary bedded (stratiform) sulphides composed of pyrite, chalcopyrite, ± sphalerite, ± galena, ± barite, ± tetrahedrite/tennanite. In some deposits the stratiform massive sulphide lenses makes up the entire economic deposit, whereas in other deposits large quantities of ore are also mined from the stockwork zone. The stratiform sulphides are typical overlain, or grade laterally into, an iron-rich silica facies that is usually manifested as a banded iron formation (BIF). The stockwork zone beneath these deposits is the conduit through which the hydrothermal fluids rise and consists of vein sulphide mineralization. Hydrothermal alteration forms a pipe around the stockwork zone and grades from an inner chloritized zone to an outer sericitic zone.

Surficial weathering of VMS mineralization results in the primary sulphides forming secondary, supergene minerals such as chalcocite, covellite, digenite, and bornite. The surface manifestation of a weathered VMS system can range from sulphide minerals partially replaced by oxides, to the total leaching of metals with the exception of silica and iron to produce a hematite-goethite gossan. Gold is an inert metal and may become concentrated in the oxide cap that commonly overlies a VMS sulphide body. VMS deposits usually consist of several mineralized lenses that can attain thicknesses up to 50 m and strike lengths up to 1500 m (Galley, 2004). A schematic model of active VMS formation, alteration and mineralization is presented in Figure 8-1.

Exploration for VMS mineralization generally consists of the following techniques: geological mapping to identify prospective volcanic and volcaniclastic rocks, which typically show intense hydrothermal alteration close to the mineralized center; geochemical surveys to identify elements (Cu, Zn, Pb, Au, Ag, etc) indicative of mineralization; geophysical surveys to identify contrasts in magnetic, electrical conductance, and gravity measurements; trenching and drilling to identify, then delineate mineralization.

Figure 8-1: Schematic model for active VMS mineralization showing principal alteration and mineralization types (source: Gibson et al., 2007)



Notes: Idealized VMS deposit showing a stratabound lens of massive sulphide overlying a discordant stringer sulphide zone within an envelope of altered rock (alteration pipe). Base metal zonation indicated by numbers in circles with the highest numbers being Cu-rich and the lower numbers more Zn-rich (Py = pyrite, Cp = chalcopyrite, Po = pyrrhotite, Sp = sphalerite, and Gn = galena. Source: Gibson et al. (2007)

Gibson et al. (2007) have listed some of the parameters for targeting VMS mineralization:

1) Deposits commonly occur in clusters that define VMS districts. VMS districts occur within large volcanic edifices, calderas and crustal structures.
2) Some of the largest deposits (> 50 MT) may be associated with a major long-lived crustal structure, or with thick successions of volcaniclastic rocks, or occur in more stable rifted continental margin settings. The large deposits tend to be associated with widespread, low temperature alteration systems, felsic volcaniclastics and thin, but laterally extensive Fe and Fe-Mn formations.
3) Deposits associated with mafic dominated terranes tend to be Cu and Cu-Zn endowed. Continental margin or successor rifted arc-hosted deposits with felsic volcaniclastic-sedimentary host rocks have a higher Pb-Zn endowment.
4) Strongly metamorphosed deposits commonly found in Archean or Proterozoic terranes tend to have coarser grained sulphides and consequently metal recovery is commonly better than for the finely crystalline sulphides in some less metamorphosed districts. Recrystallization can also mechanically “purify” deposits of metals such as Hg, As and Sb.

8.2 Orogenic Gold Deposits

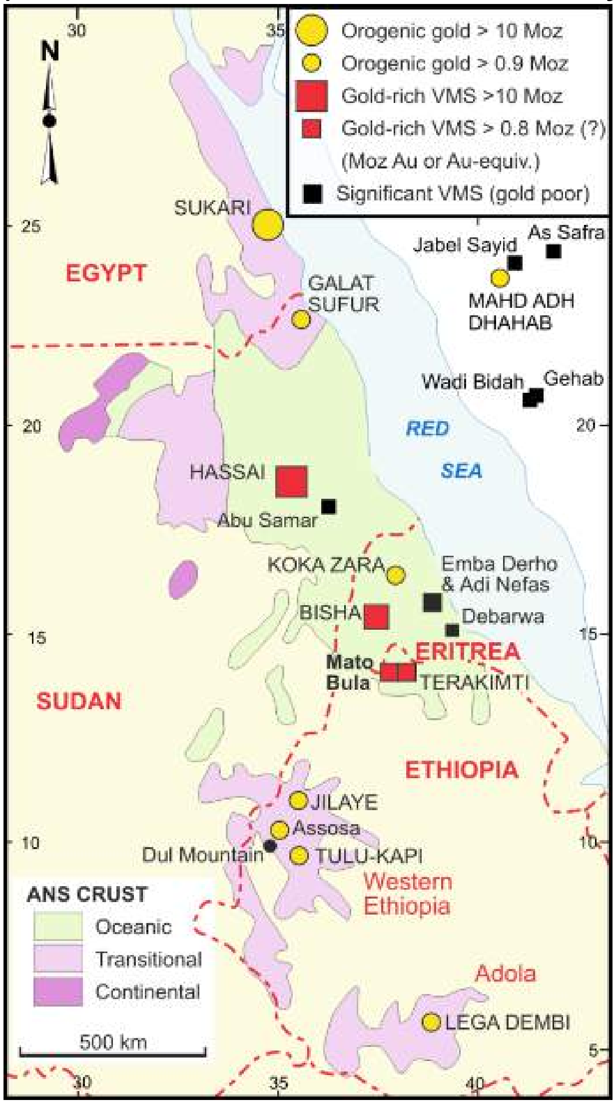
Orogenic gold deposits dominantly form in metamorphic rocks in the mid- to shallow crust (5–15 km depth) in compressional settings that facilitate transfer of hot gold-bearing fluids from deeper levels. The term “orogenic” is used because these deposits likely form in accretionary and collisional orogens (Groves et al., 1998).

A predominance of lode gold deposits are sourced from metamorphic rocks because it is believed that most derive the gold by dehydration of mafic rocks during metamorphism. Deep-seated hydrothermal fluids containing the gold were then transported up faults, whereupon the fluids underwent rapid decrease in temperature and pressure causing precipitation of the gold, along with quartz gangue, in fractures.

The Arabian-Nubian Shield is a significant gold producing area with numerous orogenic gold deposits, many of which have supported small artisanal workings and a few that have achieved commercial production (Figure 8-2)

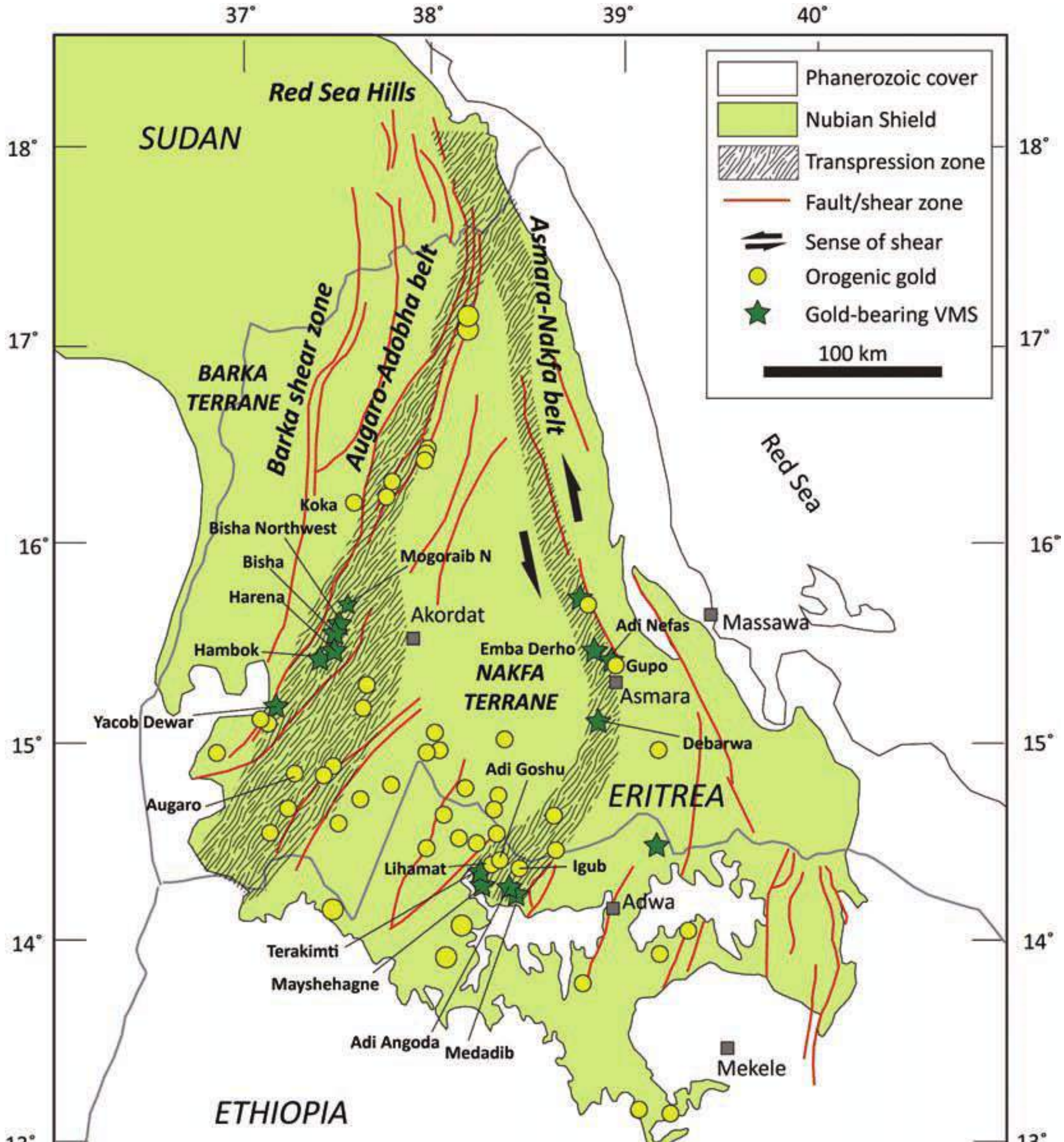
The prolonged tectono-magmatic evolution of the Arabian-Nubian Shield involved continental collision, the formation and accretion of island-arcs, extension, orogenic collapse and voluminous magmatic activities. High strain NNE to NNW trending brittle–ductile shear zones conformable with major fabrics of ANS terranes are dominant in the shield. It is suggested that some of these shear zones that contain dismembered ophiolitic suites represent the major suture zones between terranes (Stern et al., 2004). However, others are strike-slip faults and belts of shearing and folding that have modified older sutures. Studies have shown that the later types of shear zones are known to host numerous VMS-type polymetallic and orogenic gold deposits and occurrences.

Figure 8-2: Gold-rich VMS and orogenic gold deposits of the Arabian-Nubian shield (source: Horan et al., 2018 Da Tambuk, East Africa Metals)



Within the Nafka terrane in Eritrea and northern Ethiopia the Augaro-Adobha Belt (AAB) and the Asmara-Nakfa Belt (ANB) (Figure 8-3) are the two main transpressional strike-slip shear zones, along which many important mineral deposits occur. Both the world class Bisha VMS and Koka orogenic gold deposits are located in the AAB metallogenic belt. Semi-brittle shear zones developed synchronously along axial planes of isoclinal folds are also common structures in the greenschist metamorphic rocks. Syn- to late-tectonic granitoid magmatic rocks intrude along the ductile shear zones as elliptical rigid bodies. These magmatic rocks are dominated by granite, granodiorite, and diorite, accompanied by finer-grained intrusions and quartz porphyry. The ANB zone changes direction to the south of Asmara, trending toward the Shire project area 100 km to the south-southwest where similar Neoproterozoic rocks are exposed containing occurrences of orogenic gold, such as at Igub and Lihamat, as well as VMS-style mineralization.

Figure 8-3 Ethiopia-Eritrea major transpressional belts and gold deposits (source: Johnson et al., 2017)



The host rocks for orogenic gold deposits in the shield range from graphitic mica schist and ultramafic rocks (Lega Dembi, Ethiopia), to granitic stocks (Sukhaybarat East, Saudi Arabia), and along granite contact zones (El Sid and Umm Rus, Egypt). Other host rocks from the area include metamorphosed mafic lavas, volcaniclastic tuff, phyllites and deformed granodiorites. All of the mineralization is epigenetic, and is present in a variety of forms, such as quartz-rich veins, pods, veinlets, stringers, stockworks, and breccias. Vein mineralogy is dominated by quartz, carbonate (calcite, dolomite and siderite), pyrite, arsenopyrite and pyrrhotite, and wallrock alteration is typically comprised of sericite, chlorite, and carbonate.

Many gold vein occurrences are noted in the district near the Shire project, where widespread artisanal workings have produced gold on a small scale. Gold is associated with shear hosted quartz veining and often occurs in association with sulphides within the quartz. The lode dimensions and orientation are varied across the terrane although most are oriented approximately N-S, parallel to the main trend of the orogeny. Individual veins range from a few centimeters up to 3 m in thickness and may occur within sheeted zones that can be 10’s of meters wide and up to hundreds of meters long. Typically the ore minerals are pyrite, arsenopyrite and pyrrhotite.

In Saudi Arabia, grades average 2.5 g/t Au at the Sukhaybarat East deposit and 3-4 g/t Au for veins in the Al Wajh district. Some small southern Saudi Arabian vein systems are much higher grade such as Ad Duwayah at 11 g/t Au and Bi’r Tawilah at 14 g/t Au. Parts of the vein system at the Zalm mine grade near 100 g/t Au, although grades typically average between 2.5 and 12.5 g/t.

The Koka mine, which began production in 2016 in northwest Eritrea, is an example of the type of target being sought at the Shire project. At Koka a 20 to 30 m wide by 600 m long zone of shear-hosted quartz stockwork veining is found within microgranite. Based on 137 drill holes a NI43-101 compliant probable reserve of 4.6 million tonnes averaging 5.1 g/t Au has been outlined, containing 760,000 oz of gold (Zara Mining company website). The bulk of the resource is shallower than 150m depth and is currently being mined by open pit.

Exploration for orogenic lode mineralization generally consists of the following techniques: geological mapping to identify prospective host rocks, structural features (faults and shear zones), alteration, and the presence of sulphide or oxide minerals; rock or soil geochemical surveys to identify pathfinder elements such as Cu, Zn, Pb, Ag, As, Sb and W that are often associated with gold; geophysical surveys to identify concealed faults zones; and drilling to identify, and then delineate gold mineralization.

9.0 EXPLORATION

Gibson et al. (2007) have discussed various types of geophysical and geochemical exploration that have been successful for discovering VMS deposits.

1) Combined airborne electromagnetic and magnetic surveys and borehole TDEM surveys have been the primary tools in discovery of most VMS deposits.
2) Ground gravity surveys have been successful for first detecting, then delineating the shape and size of undiscovered orebodies.

3) Airborne gravity surveys are becoming more common for both a mapping and direct detection tool.
4) Other nontraditional geophysical techniques such as magnetotellurics and Titan 34 have shown early promise as deep search techniques.
5) Rock geochemistry has traditionally been used to define, map and vector within VMS alteration zones, to differentiate volcanic rock types, and to develop a chemo-stratigraphy that aids stratigraphic correlation and tracing of favorable ore-hosting units.
6) Lithogeochemical samples from outcrop are collected systematically in order to provide a database for effective geochemical targeting. On a broader scale, lithogeochemical sampling is directed at recognizing extensional arc and back arc environments and regional alteration.
7) Soil (or vegetation) samples are collected to define targets in areas of overburden cover. A suite of elements are analyzed that include the target minerals as well as pathfinder elements that may be associated with mineralization or alteration zones.

Similar techniques can be useful in exploration for orogenic gold deposits; however they typically have a less extensive alteration halo than VMS deposits and due to sparser sulphide mineral content do not always produce strong geophysical contrasts with their host rocks. On the other hand, the shear zones that host the vein systems commonly do produce strong magnetic and electromagnetic anomalies.

Many of the exploration techniques listed above have been implemented on the Shire property by the Company and by predecessor companies that explored the ground. Sun Peak has obtained results of previous work wherever possible and compiled the results in their exploration database, along with the results of their own work undertaken since 2017, which is presented below for each of the three exploration license areas.

The Sun Peak Metals team (now with Axum) have previously applied the use of modern advanced exploration techniques successfully at both Bisha and the Asmara Project, located nearby in Eritrea. At Bisha the initial holes were drilled underneath the outcropping gossan but a 450 meter step-out targeting a blind geophysical anomaly was very successful, intersecting more than 160 meters thickness of VMS mineralization and demonstrated the economic potential of the Bisha Cu-Zn-Au-Ag deposit.

Likewise, at the Emba Derho Cu-Zn-Au-Ag deposit (Asmara project) in southern Eritrea, 5 separate operators since the 1960’s had explored and drilled the large gossan zone with minimal success. In 2005, the present Sun Peak team (with Sunridge Gold at the time) applied the same modern exploration techniques, identifying a large geophysical anomaly offset from the gossans. The first hole targeting this anomaly intersected 206 meters of massive sulphides, which subsequently led to delineation of a sizeable mineralized body.

9.1 Terer Exploration

In 2017 and 2018 the Ezana-Sun Peak joint venture (Axum Metals Share Company or "Axum") compiled & re-interpreted maps and data from historic work on the Terer concession, as well as conducting geological field visits to evaluate the targets derived from the re-interpretations. Ninety man-days of office work were undertaken by two geological personnel during the 2 year period to collect historical data, to compile the data into acceptable format for GIS software use and to review the results, resulting in selection of priority targets for field follow-up. Sixty man-days of geological field evaluation were undertaken at several of the targets in 2018. $24,000 was expended during this preliminary stage of data compilation and evaluation.

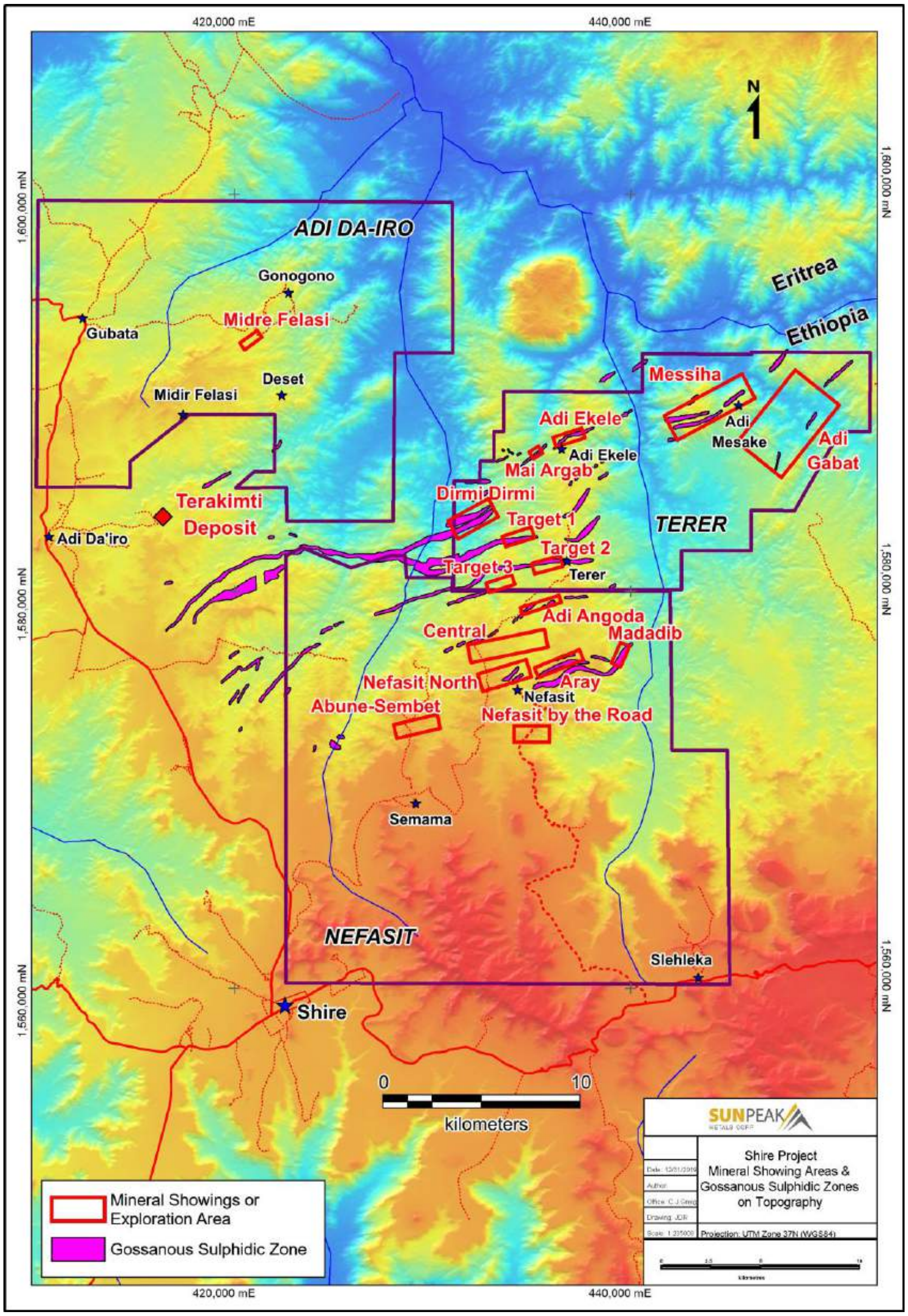
This work defined five sulphidic trends in the Terer concession with VMS potential (Figure 9-1); these are

1. the Mai Argab - Adi Ekele zone and Northeast & Southwest Extensions;
2. the Hamlo trend (includes Target 1);
3. the Terer trend (includes Targets 2 and 3) ;
4. the Messiha trend; and
5. the Adi Gabat trend.

These VMS-bearing mineralized trends have over 45 kilometers of combined strike length, so will require modern VMS exploration concepts and techniques to identify specific targets with economic potential.

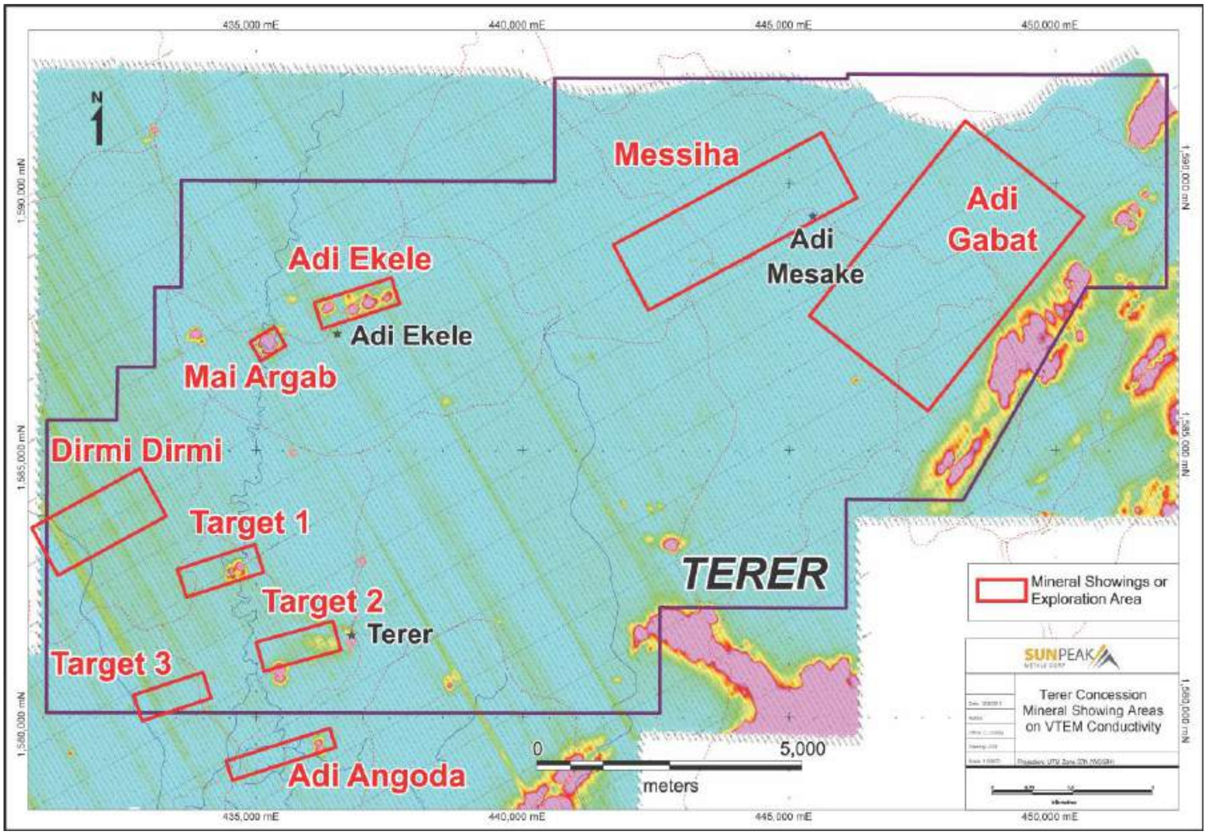
In 2018 Axum had Aster satellite image analysis conducted by Dirt Exploration of Cape Town, South Africa using high resolution imagery (0.5 meter/ pixel) covering the Terer Exploration License area. The cost for purchase of the satellite imagery and the consulting fee for analysis and reporting totalled $9,500. Major alteration zones comprised of sericite, iron oxides, kaolinite, chlorite, biotite and/or alunite were detected; alteration types that may be associated in varying degrees with either VMS-style, orogenic shear hosted gold, or intrusion hosted gold deposits. The targets that have been identified typically cover large areas, so ground based examination is required to verify and evaluate the potential for mineralization associated with the alteration types. Some of the highest priority Aster image targets have been followed up with 24 man-days of geological mapping and prospecting traverses crossing the main VMS zones and regional trends at a cost of $24,000. These and other promising targets will continue to receive follow-up work.

Figure 9-1 Shire property gossanous sulphidic trends and mineral target areas



In 2019 Axum commissioned Geotech Geophysical of Ontario, Canada to fly an airborne magnetic and VTEM electromagnetic survey over the entire Terer License area, covering 182 sq km at a cost of $393,633. Figure 9-2 is a preliminary map of the VTEM strongly conductive areas shown in warmer colours (yellow, red and pink) in the Terer area.

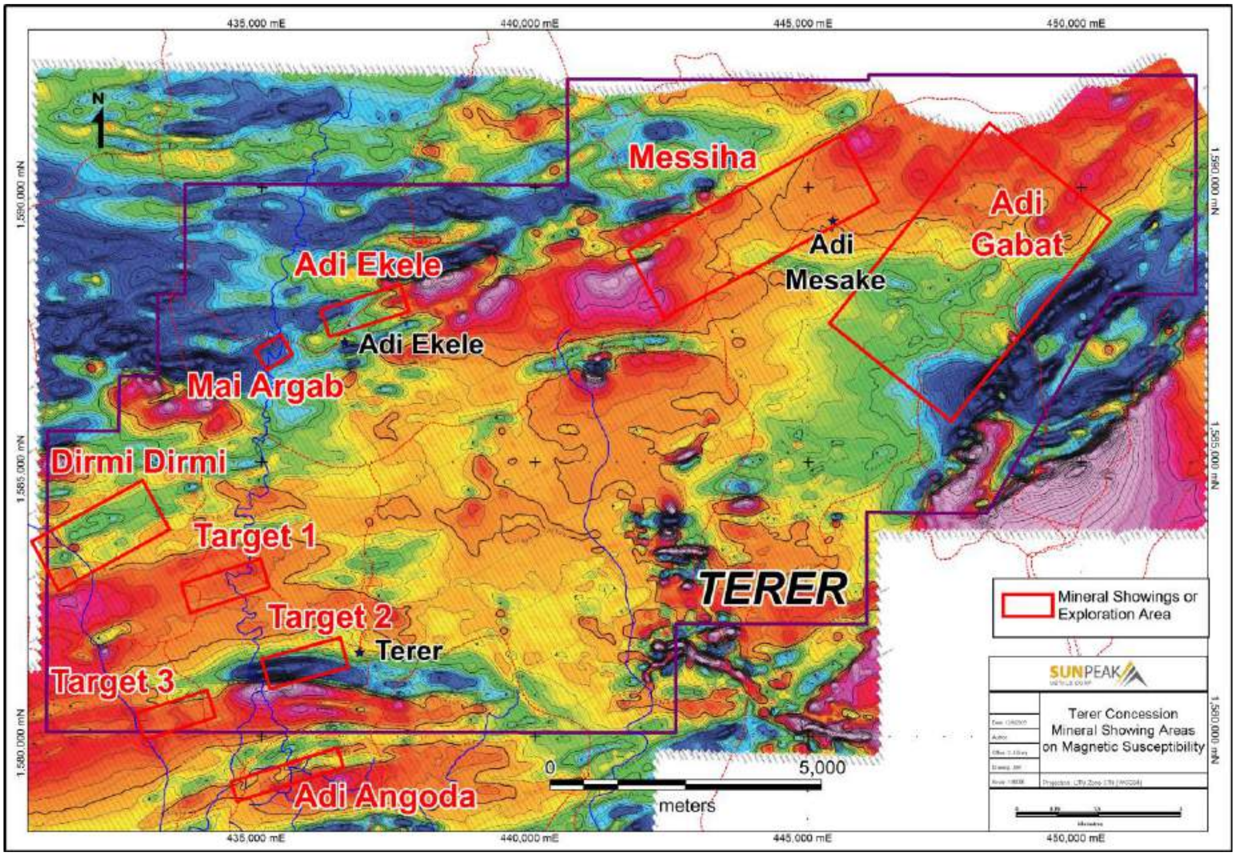
Figure 9-2 Terer concession with mineral showing areas and preliminary map of VTEM conductor anomalies (warmer colours represent higher conductivity)



A large northeast-trending conductive area on the east side of the concession appears to be mapping a mafic to ultramafic unit that is likely rich in iron minerals that provide strong conductivity. A northwest-trending conductive zone at the southeast edge of the concession is underlain by Tertiary basalt that is also probably iron-rich. However, the smaller, discrete spot highs of conductivity in the western half of the survey area are underlain by the favourable metavolcanic and metasedimentary rocks that host the known VMS zones, and show good correlation with the zones at Mai Argab, Adi Ekele, Target 1 and Target 2. Other conductor anomalies to the west and southeast of Adi Ekele and to the south and southeast of Target 2 are prime targets for additional ground-based exploration. Furthermore, the modern VLEM equipment used in this survey utilized a large number of frequencies, allowing refined interpretation of conductive areas and deeper-probing results to test for mineralized bodies at considerable depth below surface.

The preliminary magnetic susceptibility map (Figure 9-3) aids in the interpretation of VTEM results. Target areas display variable magnetic results, but commonly areas of sharp contrast in susceptibility are deemed favourable because magnetic highs can be caused by massive sulphide mineralization or related BIF, whereas magnetic lows may be caused by strong alteration of host rocks, which is often destructive for magnetic minerals. The magnetic map is also a fairly dependable geological mapping tool, helping to distinguish major rock units, as well as large scale structures that may host orogenic gold zones.

Figure 9-3 Terer concession with mineral showing areas and preliminary map of magnetic anomalies (warmer colours represent higher magnetic susceptibility)



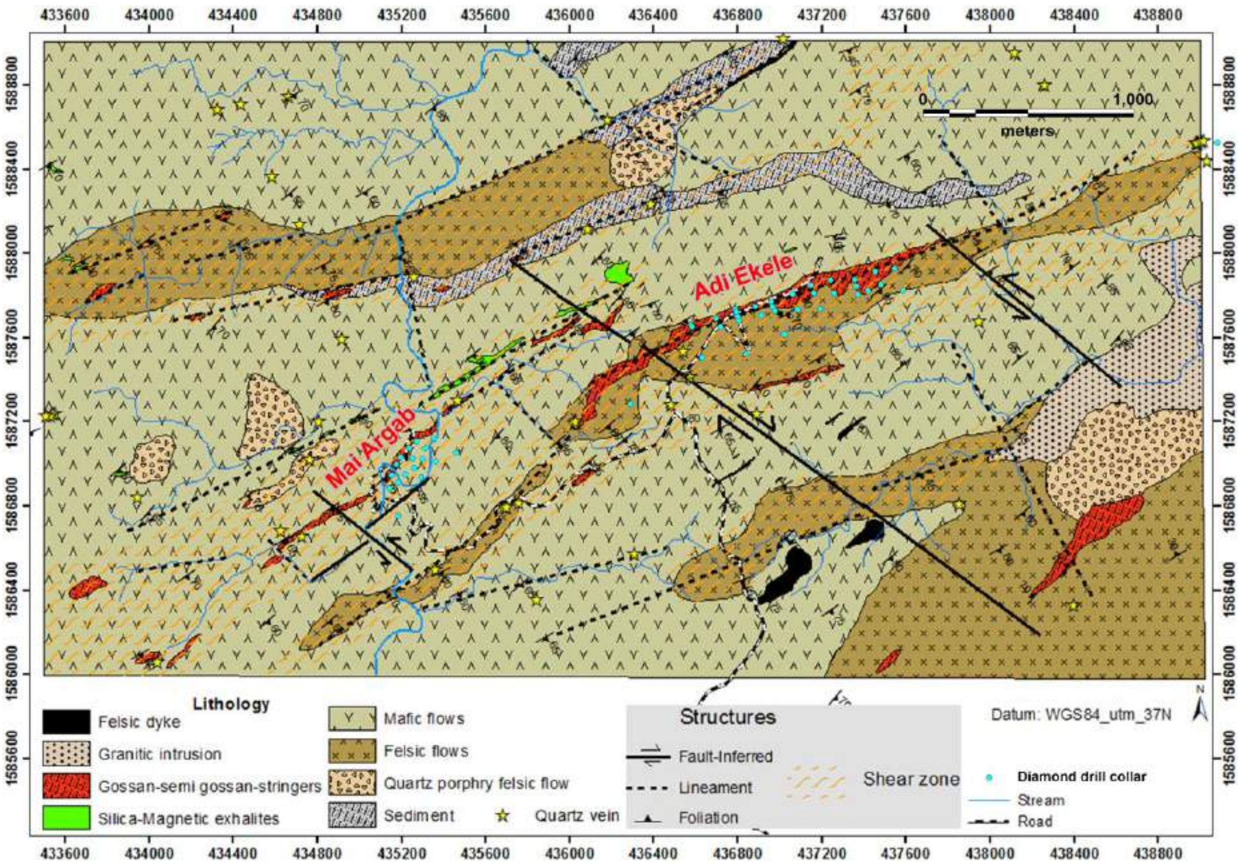
Mai Argab, Adi Ekele and Target 2 all exhibit relatively low magnetic susceptibility, possibly due to stronger and more extensive alteration in these areas. Interpretation of subtle magnetic features, in combination with VTEM conductive areas will point to new prospective targets as well as refining the existing ones.

Previous work has focused on surface sampling and drilling of exposed gossanous oxide zones, however, the authors strongly believe that much of the Terer concession area is under-explored for economic mineral potential that may lie hidden beneath thin overburden or buried at shallow depths. Modern geophysical techniques will help to identify these blind targets.

In the latter part of 2019 the Company undertook detailed geological and structural mapping and gravity surveying at the Mai Argab - Adi Akele zone to better understand the configuration of the mineralized gossans on surface, with potential for extension of the zone and possible parallel mineralized horizons that have not been tested by drilling (Figure

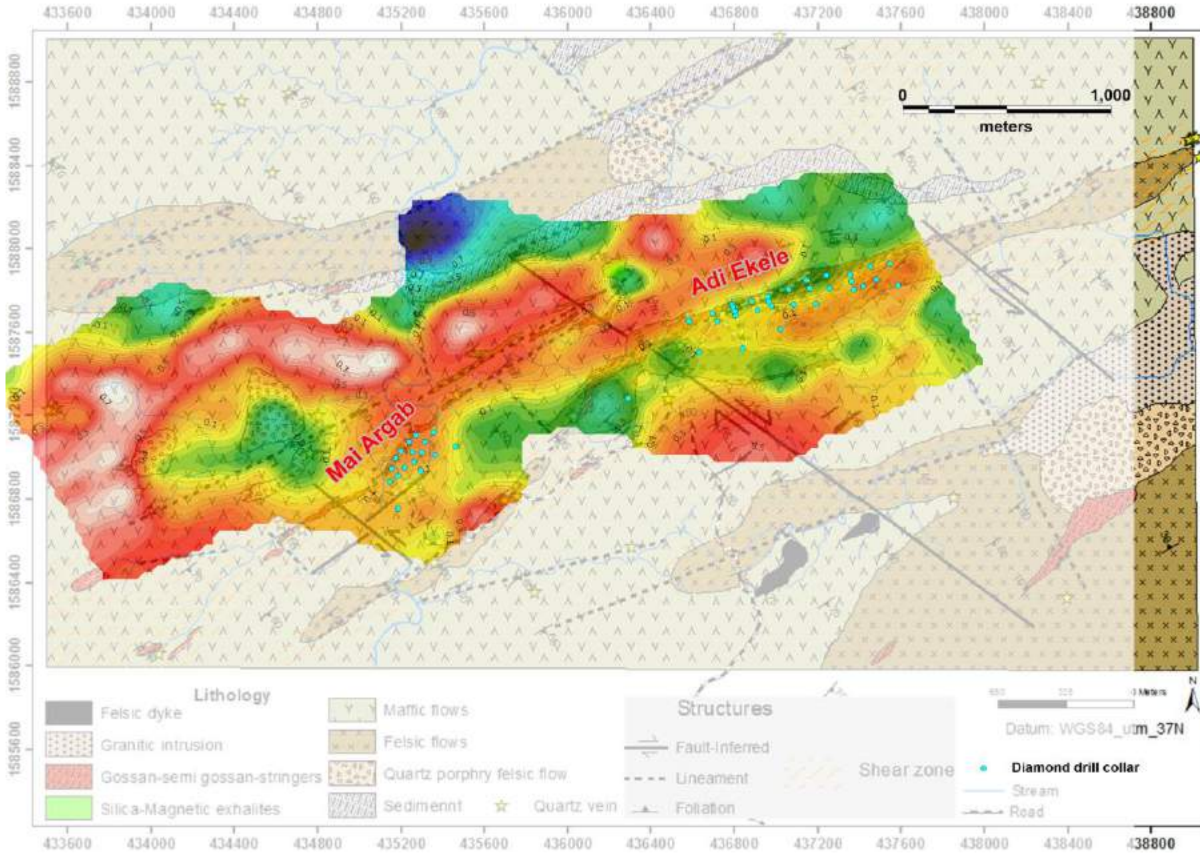
9-4). Geological mapping required 34 man-days at a cost of $14,000; the geophysical work was undertaken by MWH Geo-Surveys International Inc. covering 5.2 sq km at a cost of $142,800.

Figure 9-4 Mai Argab - Adi Akele zone geological map with drill hole collar locations



In December 2019 data from gravity surveying in the Mai Argab - Adi Akele area was received by the Company with very encouraging results. The mineralized zones currently defined by drilling are known to dip to the southeast at 55° to 80°. These areas are indicated by moderate density anomalies underlying and southeast of the drill collars (Figure 9-5). However, stronger and more extensive density highs are indicated 350-400 m northwest and parallel to the Mai Argab - Adi Akele zone in an area with mapped felsic volcanic rocks, small gossans and siliceous exhalites on surface. This area has never been drilled and holds excellent promise for massive sulphide mineralization at depth. In addition, a partially defined density high, 500 m to the southeast of the Adi Ekele gossan indicates potential for another parallel mineralized horizon. Further gravity surveying is required to properly outline this anomaly.

Figure 9-5 Mai Argab - Adi Akele zone geological map with overlain residual gravity results (warmer colours represent higher density)



9.2 Nefasit Exploration

The Company has completed the following exploration work on their Nefasit License since acquisition in 2018 to present:

- Compiled historic data acquired from Ezana, Makeda and East Africa Metals, primarily covering the Madadib and Adi Angoda VMS prospects. Forty-five man-days of office work were undertaken by two geological personnel to collect historical data, to compile the data into acceptable format for GIS software use and to review the results, resulting in selection of priority targets for field follow-up, at a cost of $12,500.
- Acquired detailed, 50m resolution satellite images covering the entire Nefasit license area, costing $10,050.
- Purchased the 2004 Fugro airborne electromagnetic (EM) data, flown over the northern part of the concession area for Ezana, and re-interpreted the data to define deeper bedrock EM conductors that could be caused by buried massive sulphide bodies. $9,300 was expended for the data and 5 man-days of geophysical interpretation.

- Had a remote sensing Aster image study done by Dirt Exploration of Cape Town, South Africa, as discussed above under Terer exploration work. The cost is included in the Terer program description.
- Conducted localized geological mapping and prospecting for VMS and orogenic gold style mineralization and associated alteration. Collected and analyzed over 60 rock chip samples from suspected mineralized rocks near Adi Angoda and farther to the south, in the Central zone area. $8,000 was expended for 20 man-days of geological work and sample analyses.
- Established a 5 km by 7 km soil geochemical grid with 500 m by 50 m sample spacings, yielding 1578 samples over the Adi Angoda zone and prospective targets to the north and south. Sample collection and analyses by portable XRF unit totaled 40 man-days, at a cost of $73,300.
- Established detailed soil geochemical grids over Madadib and Nefasit by the Road prospects. Grids are approximately 600 m by 1.4 km, with 100 m by 20 m sample spacings for totals of 456 samples from Nefasit by the Road and 394 samples from Madadib. Sample collection and analyses by portable XRF unit totaled 32 man-days, at a cost of $48,000.
- Collected 100 stream sediment samples within an area measuring about 14 km E-W by 8 km N-S in the region to the south and west of the Adi Angoda zone. Samples were sieved before analysis to recover fine and coarse fractions to attempt to distinguish VMS-style from orogenic gold anomalies that may contain coarser gold particles. Sixty-four man-days to collect the samples and laboratory analytical charges totaled $30,000.
- Conducted detailed ground gravity surveys by MWH Geosurveys in 2018 at a cost of $24,800 over separate grids at Adi Angoda, Madadib, Nefasit by the Road, Nefasit West and Abune Sembet VMS prospects totaling over 2,000 measurement stations, covering approximately 37 sq km. Additional gravity surveying was conducted in 2019 to expand the coverage on the Adi Angoda VMS target.
- Had an airborne magnetic and VTEM electromagnetic survey flown by Geotech Geophysical of Ontario, Canada in 2019 that covered approximately 250 sq km over the northern part of the Nefasit concession, at a cost of $551,082.

Seven VMS-style anomalies have been defined based on re-interpretation of historical exploration data, prospecting, soil and stream sampling geochemistry and the results of recent airborne electromagnetic and ground gravity surveys. These target anomalies are Adi Angoda, Madadib, Aray, Nefasit by the Road, Abune-Sembet, Nefasit North and Nefasit Central (Figures 9-1 & 9-6).

Preliminary interpretation of the VTEM results shows broad, extensive areas of strongly conductive response, shown in warmer colours (yellow, red and pink) on Figure 9-6. These large conductors in the Madadib, Aray and Abune-Sembet areas appear to define lithologic units that are known to contain graphitic phyllite units with local silica-rich exhalites, amphibole schist and marble bands. As well, strongly conductive areas correspond with a granitoid body mapped in the northern part of the Madadib zone and a north-trending gabbroic intrusive that lies to the east of Madadib, which also shows high magnetic susceptibility (Figure 9-7).

Figure 9-6 Nefasit concession with mineral showing areas and preliminary map of VTEM conductor anomalies (warmer colours represent higher conductivity)

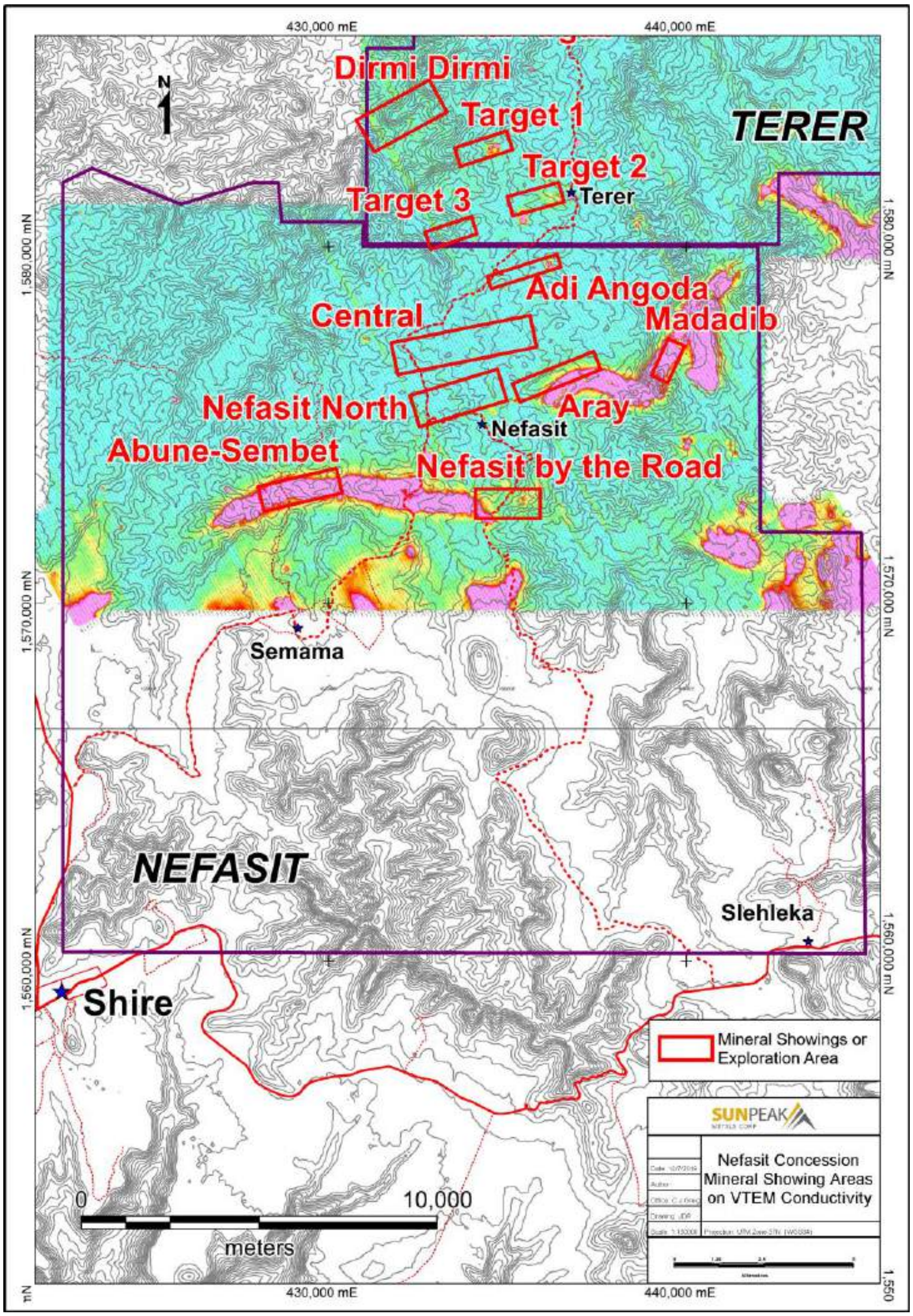
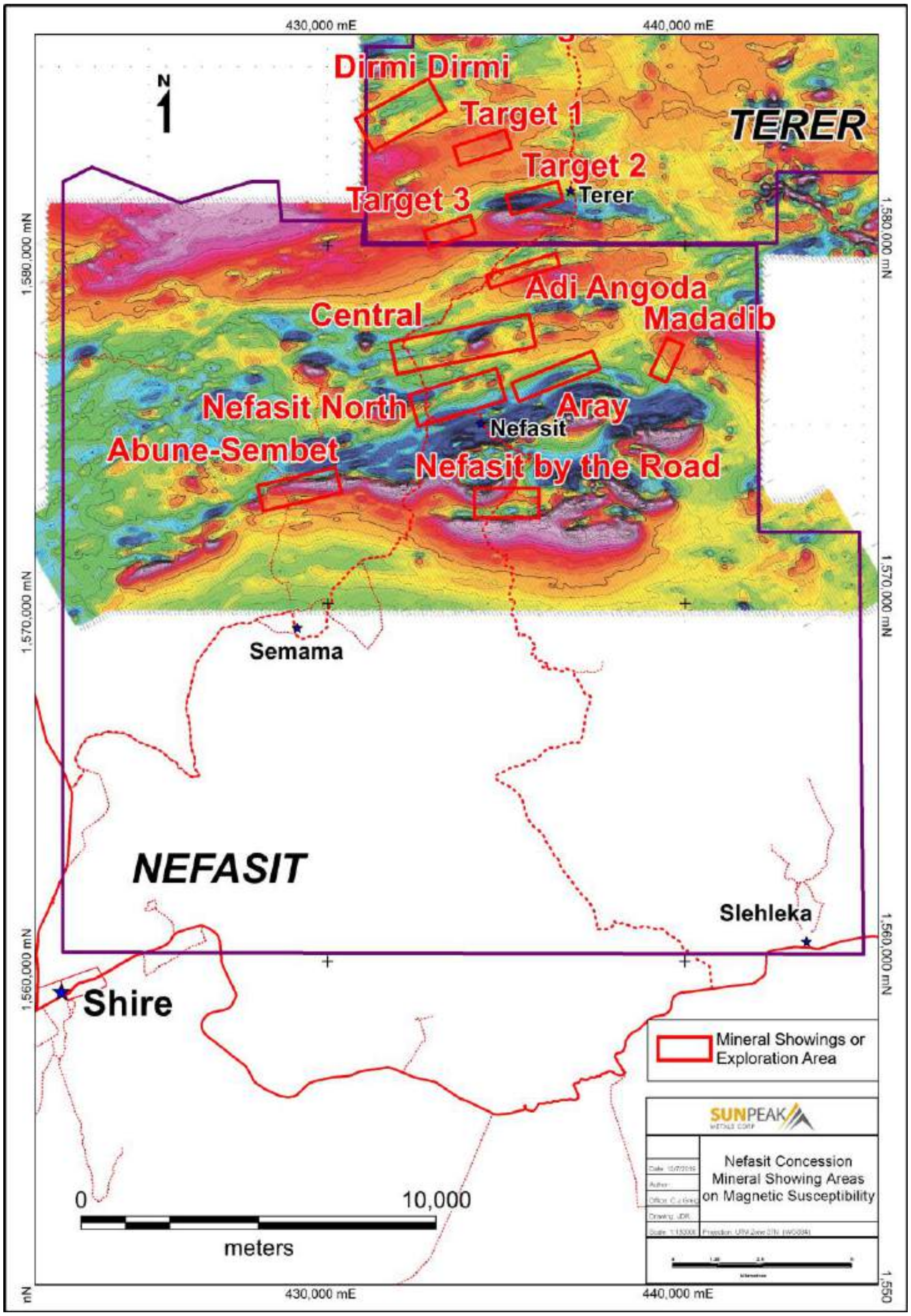


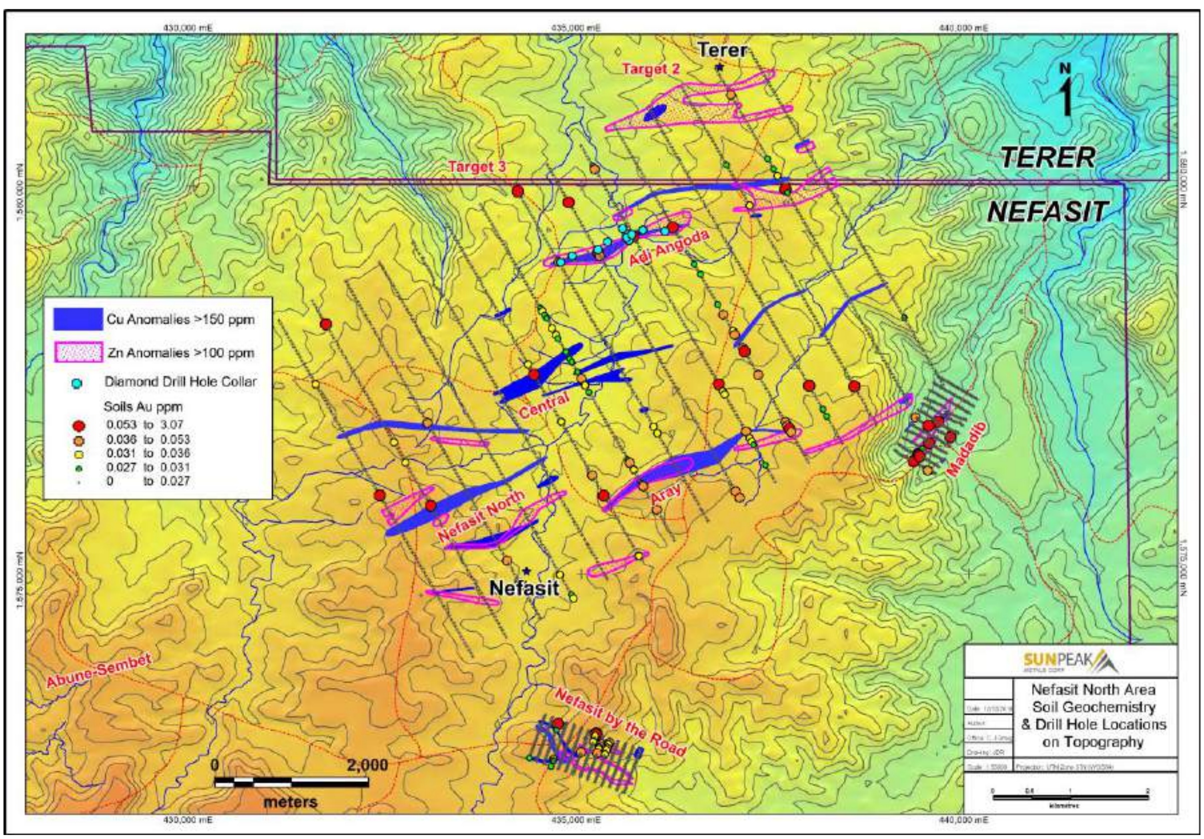
Figure 9-7 Nefasit concession with mineral showing areas and preliminary map of magnetic anomalies (warmer colours represent higher magnetic susceptibility)



The large scale geophysical features are unlikely to represent mineralized zones, which are more likely to manifest as relatively small, discrete conductive highs on the map that stand out from the surrounding geophysical response. There is such a conductor at the east end of the Adi Angoda zone which, significantly, is located just east of the easternmost drill hole, representing a prime exploration target. There are also three conductors dispersed over a length of 1100 m at the west end of the Aray zone. Another is located to the west of the Central zone. The Company will further evaluate these, and other identified targets with geological, geochemical and ground geophysical surveys, to be followed by drilling if warranted.

Ground follow up has taken place in 2018-19 to explore and test some of the most favourable targets. Soil sample grids were established over a number of the target areas in the northern part of the Nefasit concession (Figure 9-8). Although some of the sample lines are widely spaced (500 m) the soil anomalies appear to show good continuity across lines in linear east to northeast trends that parallel the orientation of regional stratigraphy. Figure 9-8 illustrates anomalous Cu- and Zn-in-soil trends and these two elements commonly show strong coincidence, such as at Adi Angoda, Nefasit North, Aray and Madadib. Anomalous Au samples plotted on the same map show coincidence with some of the Cu and Zn anomalies, and are especially strong at Madadib, but also show independent Au rich areas that provide additional excellent follow-up targets. Closer-spaced fill-in soil lines (200m x 20m) are planned in some parts of the grid to better define the anomalies.

Figure 9-8 Nefasit concession with mineral showing areas and Cu, Zn, Au soil geochemical anomalies on topography

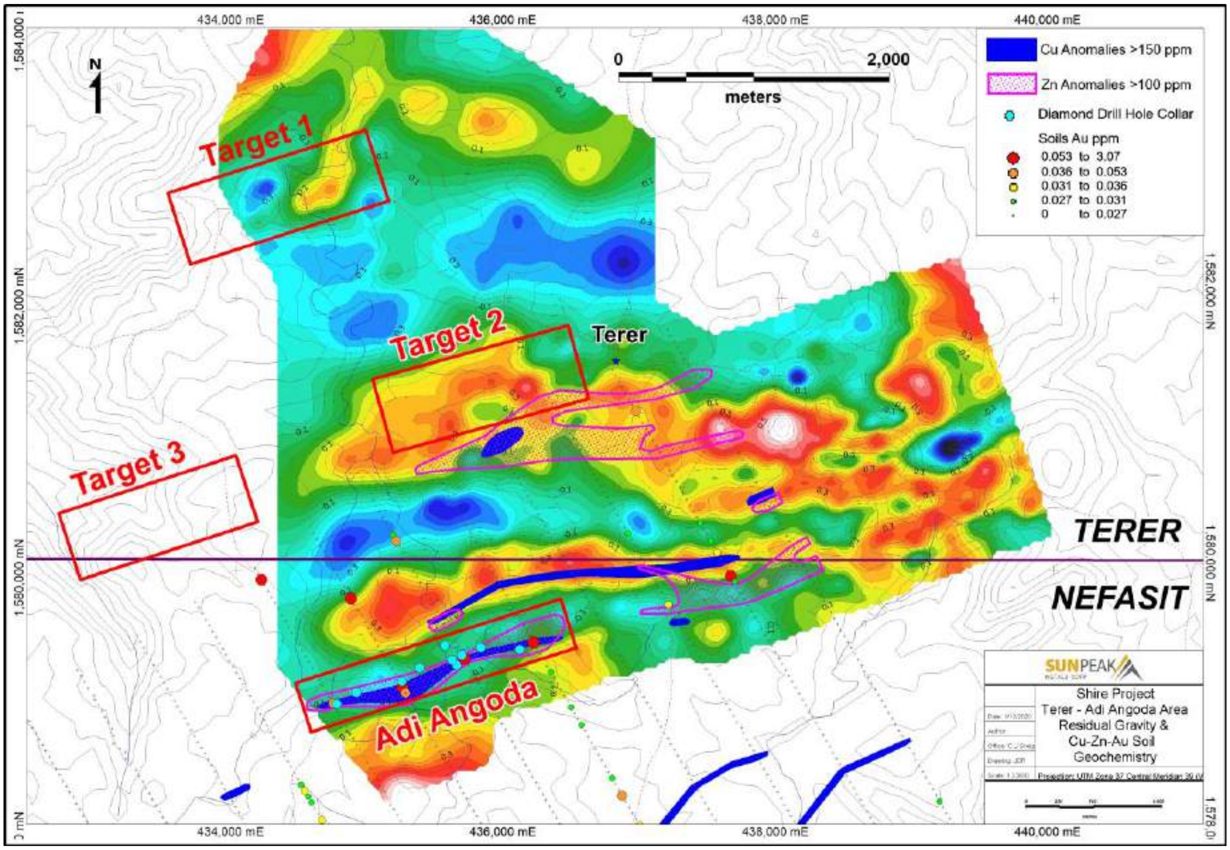


Localized gravity surveying was conducted in 2018 over several of the primary targets. Part of the Adi Angoda zone was surveyed, testing an area 2.4 km in length and 1.2 km in width, which returned very encouraging results, prompting the Company to considerably expand the survey grid to the north and east in 2019 (Figure 9-9). The results indicate that the surface expression of the Adi Angoda zone is within a gravity low (blue contours on Figure 9-9); however historic drilling has indicated that the strata that host the mineralization are dipping to the northwest. A linear gravity high parallels the surface expression of the zone approximately 400 to 600 m to the northwest. This may be caused by a thickening of the zone at depth or, alternatively and more likely, that another parallel horizon of thicker sulphide mineralization lies to the northwest and was not tested by the historic drill holes. This is supported by a linear copper geochemical anomaly, with spot Zn highs, that overlies the northern gravity anomaly, possibly caused by a VMS mineralized horizon greater than 2 km in length. A gravity high also lies 200 to 400 m southeast of the Adi Angoda gossan zone and this, as well, may represent a parallel mineralized horizon. Further gravity surveying is required to the south to better define the extent of this southern gravity high. The best mineralized copper and gold drill intersection was in the easternmost hole at Adi Angoda and the presence of a gravity high located directly to the east, in addition to a strong EM conductor, provide positive incentive for additional drilling to the northeast.

The expanded gravity survey also covered the areas of Target 1 and Target 2 to the north, on the Terer concession. A gravity high underlies the Target 2 area but also extends easterly for more than 2 km, coinciding with an area of anomalous zinc, with local copper, in soil. The strongest part of the gravity high is at the east end of the zinc anomaly, which is also the edge of the soil sample grid. Further soil sampling to the east is required to test the geochemistry in this area of highest density. Two diamond drill holes were drilled in Target 2 area by Makeda in 2011, intersecting wide intervals of disseminated pyrite and massive banded pyrite containing chalcopyrite and sphalerite over widths of 0.5 to 4 m. Makeda did not have the advantage of gravity survey results at the time, so their holes may have touched on the periphery of a mineralized system that could have greater thicknesses associated with the gravity highs. Also, the area to the east of Target 2 has never been drilled and is of high priority for further work.

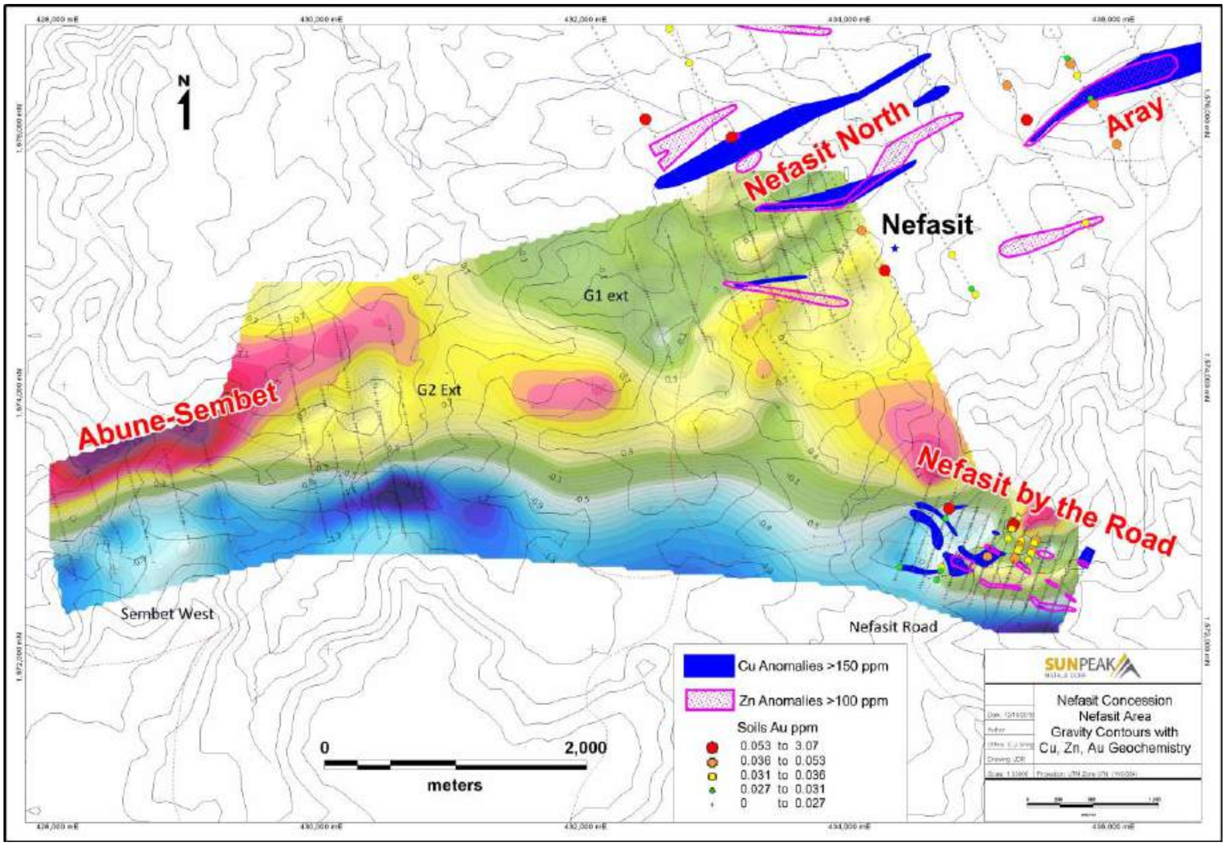
Gravity results on Figure 9-9 also confirmed a small density high of interest in the Target 1 area but, more notably, defined a northwest-trending gravity high to the north that appears to strengthen at the edge of the survey grid. Additional gravity surveying, as well as geological mapping, soil sampling and prospecting in this area are required to further evaluate this promising anomaly.

Figure 9-9 Adi Angoda zone with Cu, Zn, Au soil geochemical anomalies on residual gravity contours (warmer colours represent higher density)



Gravity surveying in 2018 to the south and west of Nefasit village covered an area approximately 7.5 km long by 1.2 to 3 km in width (Figure 9-10). A gravity high trending easterly across the geophysical grid appears to coincide with the northern part of a geologic unit described as graphitic phyllite and quartzite with calcareous bands. This also coincides with an area of low magnetic susceptibility. Conversely, the southern part of this unit is indicated by a gravity low and a magnetic high, suggesting that there may be a change in lithologies within the unit from lesser to denser rocks toward the north. Of greater significance is the more subtle linear gravity high on trend to the southwest of the Nefasit North zone that is strongest at the southwest end and may indicate massive sulphide minerals at depth. As well, about 400 m farther south, a gravity anomaly extending southwest from Nefasit village may be a down dip mineralized extension from the Cu and Zn soil geochemical anomalies located along the northern edge of the gravity high. At the Nefasit by the Road grid an east-west gravity high, coinciding with a prominent magnetic low sits approximately between two linear Zn soil anomalies that may originate from VMS mineralized horizons, whereas a more oval shaped gravity high at the north edge of the grid could represent an intrusive plug. Significantly, a number of Au soil anomalies (without Cu and Zn) wrap around the south end of this possible intrusion and could represent orogenic gold mineralization.

Figure 9-10 Nefasit area with Cu, Zn, Au soil geochemical anomalies on residual gravity contours (warmer colours represent higher density)



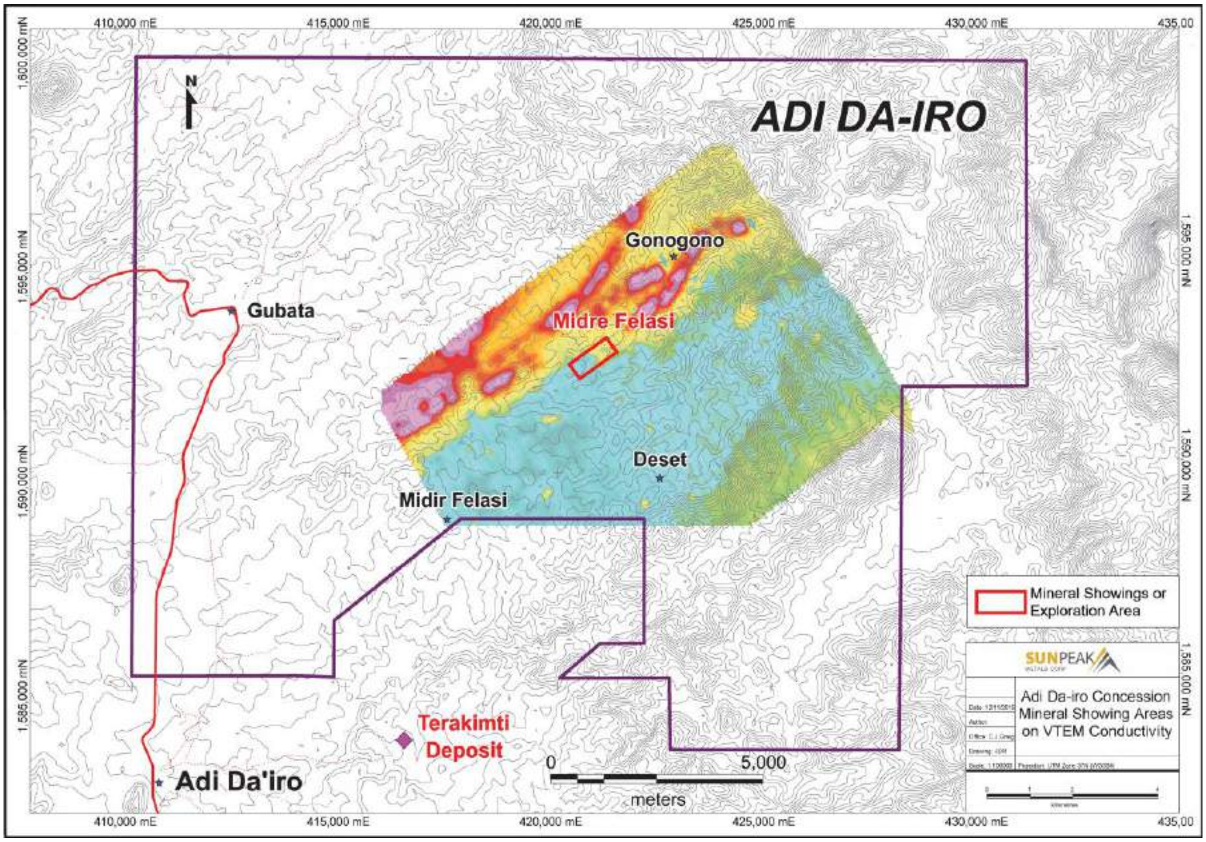
9.3 Adi Da-iro Exploration

Sun Peak was granted the Adi Da-iro concession in April, 2019 and since that time the company has undertaken a geophysical survey, as well as limited prospecting of selected targets based on evaluation of historic data. Ten man-days of office work were expended compiling and evaluating data to select favourable targets that were examined with 10 man-days of field work, at a total cost of $18,000.

In October 2019, a heliborne magnetic and VTEM electromagnetic survey was flown by Geotech Geophysical of Ontario, Canada covering approximately 68 sq km in the central part of the Adi Da-iro concession at a cost of $128,570.

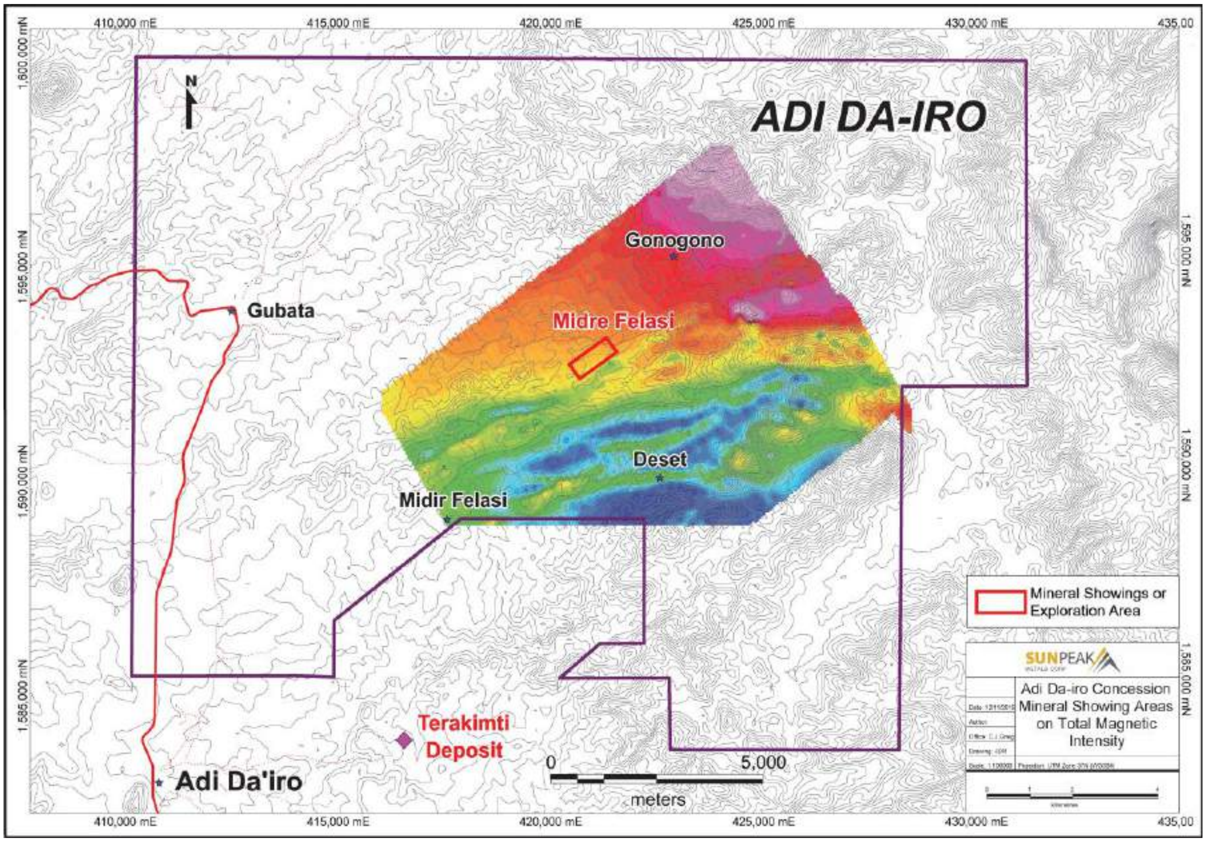
A strongly conductive northeast trending belt is underlain by metasedimentary rock units in the northwest part of the geophysical grid (Figure 9-11) and the southeast part of the grid is primarily underlain by less conductive metavolcanic rocks and dykes, with a granitic stock along the southeast edge of the survey. There are several small spot VTEM conductors scattered within the more favourable metavolcanic package, many of which warrant ground follow-up exploration, including geological mapping, soil sampling and gravity surveying.

Figure 9-11 Adi Da-iro concession with mineral showing areas and VTEM conductor anomalies (warmer colours represent higher conductivity)



The airborne magnetic map (Figure 9-12) shows moderate to strong magnetic susceptibility over the metasedimentary rocks in the northwest, but also over some of the metavolcanic rocks in the northeast, with lower magnetic susceptibility farther to the south that may be indicative of the more frequent felsic volcanic rocks and porphyritic dykes that are mapped in that area. Based on geophysical signatures of host lithologies in areas containing VMS mineralized on the Terer and Nefasit concessions the lower magnetic susceptibility areas with smaller, discrete conductive highs appear to be the most prospective targets. This signature would suggest that the southeastern part of the Adi Da-iro survey area extending over a length of 7 km and width of 4 km may have the best potential for VMS mineralization.

Figure 9-12 Adi Da-iro concession with mineral showing areas and magnetic anomalies (warmer colours represent higher magnetic susceptibility)



10.0 DRILLING

No drilling has been completed by the Company.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All samples collected by the Company on the Shire project are subject to quality control procedures to ensure industry best practices are utilized for the handling, sampling, transporting, analysis, storage and documentation of sample materials and their analytical results. Samples collected and analyzed to date consist of stream sediment and soil geochemical samples and grab samples from rock outcrop.

All samples collected have been analyzed for base metals and trace elements using a Niton Thermo Scientific XRF instrument owned and operated by Sun Peak Metals. This unit does not provide low level gold and silver analyses due to its high detection limit for these elements. Approximately 10% of the samples have been independently analyzed for gold and silver at a laboratory operated by Ezana Mining Development Plc in Mekele.

For rock chip, soil and stream sediment samples, the Company has implemented standardized documented procedures for the collection, handling, preparation and analyzing by XRF unit, as well as the processing and digital cataloguing of the analytical results. The authors have reviewed the documentation and find that the procedures meet accepted industry standards. In-house analyses of samples using an XRF instrument provide sufficient accuracy for base metals (Cu, Zn, Pb) for reconnaissance exploration purposes. Any samples that will be used for purposes of resource calculations, such as surface channel rock samples or drill core will be sent to an accredited laboratory for analyses. As well, Standards and blanks will be submitted with the sample lots to the laboratory, following proper QA/QC procedures.

11.1 Sample Submission Procedures

When samples are dispatched to the laboratory, a complete sample submission form accompanies the samples detailing the sample number sequence, the elements required and the analytical methods to be used. After analysis the assay results are received electronically by e-mail or by hard copy from the assay laboratory. On reception of the assay results the samples are checked against the sample numbers on the submission form to verify the submitted samples were all analyzed according to instructions.

11.2 Sample Security

All samples are held at the Sun Peak secure warehouse in Shire prior to transport to the laboratory and sample pulps are stored in the warehouse following analysis. Transport to the laboratory located in either Mekele, or Addis Ababa, is by company vehicle.

11.3 Sample Preparation and Analysis

11.3.1 Preparation of Rock Samples

All grab rock samples from VMS gossans and gossanous exhalites are crushed and pulverized in a steel mortar and pestle, which are cleaned after every sample, by using steel brushes, rags and clean quartz sand wash. The pulverized material is sieved through a 200 mesh screen and approximately 250 grams of the sieved material is put into a plastic sample bag.

Samples are analyzed for 22 elements, including copper, zinc and lead with the Niton XRF unit.

11.3.2 Preparation of Stream Sediment and Soil Geochemical Samples

Stream sediments of approximately 6 kg weight are collected in the field as a single sample, which is dried and sieved into two size fractions. This includes a coarse fraction (+75µ to -2mm) and fine fraction (-75µ), which are placed in separate bags. The fines are analyzed (see methodology below) using the Niton XRF unit and the coarse fractions are pulverized using a steel mortar and pestle to pass -75µ and analyzed using the same XRF method.

In the field, soil samples are collected and sieved to pass -2 mm to produce about 300 grams. The sample material is bagged in a kraft soil sample bag and air dried. The dried sample is pulverized by using a steel mortar and pestle to pass -75 µ and analyzed.

Analysis for base metals and trace elements is done with the Niton XRF instrument at the Shire warehouse. Gold and silver analyses are done at the Ezana laboratory in Mekele by 25g aqua regia digestion with ICP finish, having detection limits of 0.02 ppm for gold and 0.2 ppm for silver.

Niton Thermo Scientific XRF Analysis

The procedures for analysis of base metal and trace elements using the Niton Scientific portable XRF unit are as follows:

1. Fix the Niton XRF gun on the mobile test stand
2. Connect the Niton XRF to the computer using USB cable
3. On the computer launch NDTr program, wait until the system initializing is finished, next it will show the safety warning and proceed to the next step.
4. Every day run a system check
5. Once the system check is done select sample type (soil or rock)
6. Go to element range, make sure the main range and low range time is set to 60 secs.
7. To sort elements based on your preference go to advanced, then click on element sorting. It will show the list of elements in their current sequential order that you may change or add.
8. Go to the main menu and click on analyze
9. Click on data entry, enter sampling prospect, testing date and morning (M) or afternoon (A)
10. To set location use project name
11. On the inspector field put your name
12. Once every week before testing samples run the standards available in the lab to check calibration.
13. Open the taste chamber on the top of the mobile test stand, insert the sample and close properly. Check on the computer screen to see the green mobile test stand sign indicating the test chamber is properly closed.
14. Click on the start button and wait for 60 seconds. When finished, flip the sample onto its other side and click start to repeat the analysis. Then after 60 seconds it will give you the average of the two tests.
15. On the Niton test note book record the date, your name, time of day (morning/ afternoon), the grid lines, sequence of sample numbers analyzed for that period, the starting number on the Niton and the total number of samples analyzed.
16. All elements analyzed are reported in ppm.

17. Precious metals analyses are done at an external laboratory.
18. To download data, first close the NDTr window, then open NDT program, click on download, then click on the test button to show that the hardware is successfully communicating and click OK.
19. Type a file name, click on query readings, then choose the soils done in the current session, then click on download and click done.
20. At the end of the session save your data on the external hard drive and keep it inside the safe lockbox.

11.5 Quality Control and Quality Assurance

Sun Peak has introduced external QA/QC procedures to monitor the accuracy and reproducibility of geochemical soil and rock sample data from XRF analyses and to monitor the reliability of preparation and assay results from the laboratory. For all sampling programs, Sun Peak routinely inserts blanks, certified standards and field duplicate samples randomly into the shipments of samples.

12.0 DATA VERIFICATION

One of the authors (Greig) undertook various aspects of data verification both during a site visit, and also subsequent to the Project visit. No field exploration was taking place at the time of the visit.

• During the Project visit, the Terer and Nefasit concession areas were investigated, including outcrops and historic trench and drill locations.

• Core examination was conducted on historic core from the Terer concession (emphasis on validating geology, mineralization, and alteration).

• The security of the warehouse core and sample storage areas was corroborated.

• With no active drilling taking place written core handling and sampling procedures were reviewed.

• Niton XRF soil geochemistry and standard soil sampling practices were reviewed and the authors were satisfied that good practices were employed at all times by the field crews.

• Personal verification of historic drill pad locations were made at Adi Ekele and Mai Argab on the Terer concession and at Adi Angoda on the Nefasit concession. Trench locations at Madadib were also verified.

• Personal verification samples were not collected.

Since the time of the author's (Greig's) visit to the Property in 2018 the following field work has taken place:

- Airborne magnetic and VTEM electromagnetic surveys over a large part of the Property
- Geological mapping at Mai Argab – Adi Akele and Adi Angoda
- Gravity surveying at Mai Argab – Adi Akele, Adi Angoda, Madadib, Nefasit by the Road, Nefasit West and Abune Sembet
- Soil geochemical sampling at Adi Angoda, Madadib and Nefasit by the Road
- Stream sediment sampling in the Adi Angoda area

The authors have had access to all of the information from the geophysical, geological and geochemical work that has been undertaken in 2019, since Greig's inspection. The new information has been included in this report and the authors have offered interpretations for some of the results in Section 9.1 to 9.3 of this report. The authors have also reviewed the sampling and analytical procedures implemented by Company personnel for the recent geochemical work and are satisfied that the quality of the work was satisfactory, and the results are valid. The authors are of the opinion that there has been no substantive change in the geological understanding of the type of mineral targets on the Property or the potential for mineral discovery on the Property since the time of Greig's inspection.

Drill collar locations have recently been measured by handheld GPS where possible. Logs for some of the historic drill holes are not available, or contain only limited detail; however, the Company has recently acquired the drill core for Adi Akele and Mai Argrab, which comprise the majority of the holes drilled on the Terer property. The Company will re-log the core and collect check samples from the core to be sent to an accredited laboratory. Two or three different certified standards should be inserted into the sample batches of core samples to reference Au, Ag, Cu and Zn, for both lower values and higher values in the upper 1% range. This practice should be maintained for future drilling programs on the Property.

Reports of historic work commonly do not have verifying analytical certificates, since the samples were analyzed in-house by portable XRF unit. Therefore, many of the geochemical anomalies previously identified will require check sampling and analyzing. The Company has recently undertaken re-sampling of stream sediment samples over a large area covering much of the northern part of the Property.

Previous geological mapping conducted in selected parts of the concessions by Harvest Mining was of a general nature only, mainly due to the grid method employed for the surveys. The spacing of 200 m between survey lines is too wide to accurately identify and describe the variable geology present in the Project area. Geological maps prepared by Tigray Resources are more detailed but quite localized within drilling areas and not extensive enough to apply to regional exploration. The Company is undertaking detailed geological mapping in the main target areas of interest.

Geophysical interpretation of magnetic, electromagnetic, gravity and IP results is generally insufficient or lacking and background analytical data was not included in historic reports, but may be available from the companies that undertook the surveys. The Company has purchased EM data from a 2004 survey for re-analysis and has subsequently duplicated much of the survey with a more modern VTEM survey covering a large percentage of the Property.

Field work data collected by predecessor companies is primarily stored as Microsoft Excel files, Microsoft Word files, Adobe Portable Document Files (pdf), and image files, although some of the reports are lacking suitable maps or figures. Some of this information has been coupled with standard GPS location information to produce georeferenced data for presentation in MapInfo GIS software and Sun Peak has undertaken construction of a database using these files, which was made available to the authors.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

No mineral processing or metallurgical testing has been carried out by the Company on mineralization from the Shire property.

14.0 MINERAL RESOURCE ESTIMATES

The Shire Property currently has no defined Mineral Resources. There is insufficient data to determine such an estimate.

15.0 ADJACENT PROPERTIES

Adjacent to the Shire property, the Harvest project consists of 3 concessions that are contiguous to the south of the Adi Da-iro license area and adjoining the Nefasit license area to the north and northwest. The Harvest project is 70% owned by East Africa Metals Inc., a Canadian company that is exploring the Terakimti VMS mineral deposit, on which they have reported an Indicated resource that includes a near-surface oxide layer containing 114,000 ounces of gold, with additional silver, as detailed in Table 15-1. Supergene gold and copper, and primary sulphide copper, gold and zinc resources that underlie the gold oxide zone are also included in the table.

The Ethiopian Ministry of Mines, Petroleum, and Natural Gas granted East Africa Metals a Mining License in December, 2017 to mine the oxide portion of the deposit. Potential also exists to develop the supergene and primary sulphide resources following mining of the gold oxide zone.

Table 15-1 Terakimti mineral Resources estimate, David Thomas, P. Geo. (Effective Dates: Jan 17, 2014 and Oct 18, 2015)

Mineralization Class	Mineralization Type	NSR Cut-Off ($/t)	Contained Metals								
			Tonnes ('000s)	Cu %	Au g/t	Ag g/t	Zn %	Cu ('000 lb)	Au ('000 oz)	Ag ('000 oz)	Zn ('000 lb)
Indicated	Oxide		1,110	0.08	3.2	23.6		-	114	841	-
	Sulphide	23.9	1,841	2.2	1.06	17.5	1.65	89,477	63	1,033	66,871
	Sub-Total Indic		2,951					89,477	177	1,874	66,871
Inferred	Oxide		15	0.04	1.94	13.5		-	1	7	-
	Sulphide	23.9	2,583	1.09	0.96	20.6	1.42	62,187	80	1,712	77,101
	Underground Primary	63.9	939	0.69	0.84	15.2	2.92	14,198	25	459	60,358
	Sub-Total Infer		3,537					76,385	106	2,178	137,459

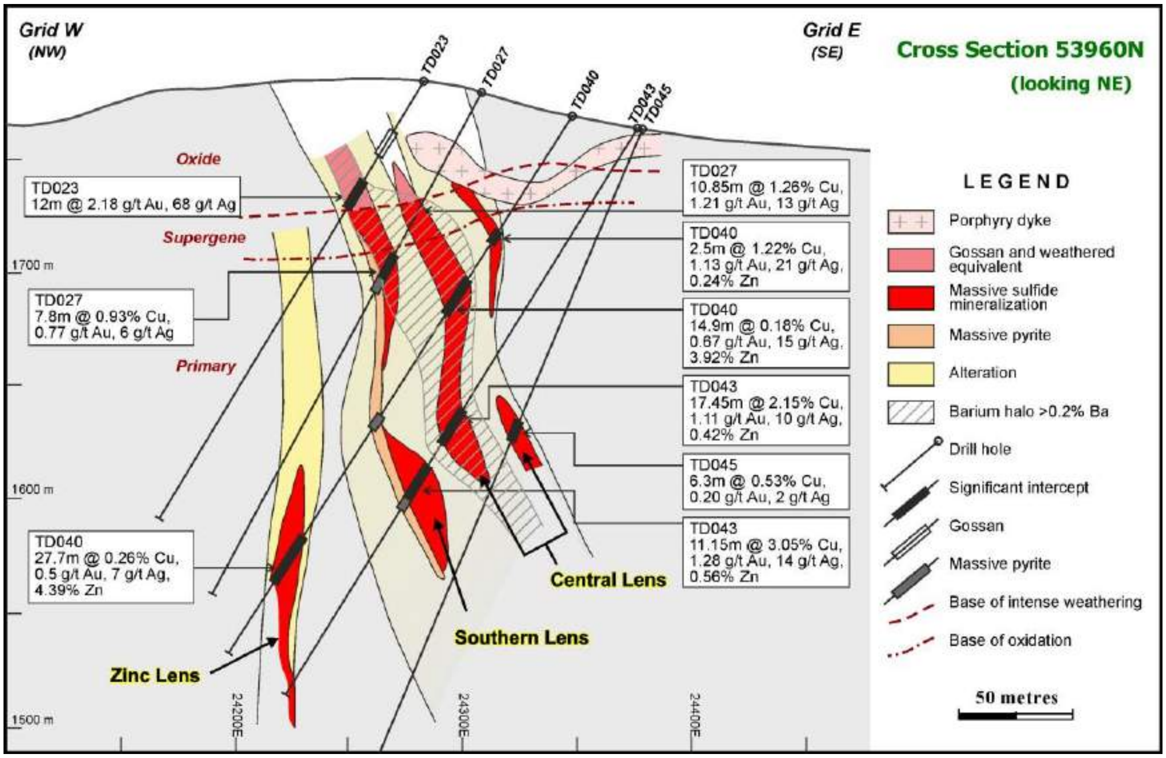
The Harvest project area is underlain by similar Neoproterozoic rocks to those that underlie much of the Shire project area. Lithologies are primarily made up of basalt, rhyolite, mafic- and felsic- volcanic tuff, shale and chert, which have been intruded by syn-tectonic quartz-feldspar porphyries, and later granite and minor gabbro.

The Harvest Project is reported to contain multiple trends of copper-gold-silver-zinc rich gossans that represent VMS horizons and numerous artisanal bedrock quartz vein gold workings on its three exploration licenses. The ground had not been subject to modern exploration until 2009-2010 when 12 holes were drilled at Terakimti by Jintai Drilling Limited. In 2011-2013 Tigray Resources Inc. became involved in a joint venture, drilling four prospects with 84 diamond drill holes totaling 17,765 meters, as well as undertaking heliborne VTEM, magnetic and radiometric surveys, ground-based gravity and EM surveys, collecting over 90,000 surface soil, stream and rock chip samples, and carrying out geological mapping.

The Terakimti zone was initially recognized by its outcropping gossans during geological mapping and prospecting. Geochemical and geophysical techniques helped to identify the mineral potential that was then tested by drilling. Soil geochemical concentrations of Cu, Pb, Zn and As defined a clear zonation of the VMS system.

The mineralization at Terakimti consists of four stacked lenses of bedded polymetallic (Cu-Au-Ag-Zn-Pb) massive sulphide over a strike length of 800 m (Figure 15-1). These lenses plunge to the northeast and the structure remains open down plunge.

Figure 15-1 Terakimti stacked VMS lenses in cross section view (source: Archibald et al., 2014)



Significant chlorite, sericite, and silica alteration is associated with the conformable mineralized horizons located in the contact zone between intermediate and felsic volcanic rock packages; quartz-eye volcanic rocks and intrusive rocks are also present in this altered zone. Gossanous iron oxide caps that have developed in the deeply weathered zones overlying the auriferous massive sulphide mineralization have been leached of copper and zinc but have been enriched in gold and silver. Siliceous iron formations (exhalites) are noted at the periphery of the gossan area. The rocks have locally been affected by intense deformation and although folding is present, no large scale folds have been identified.

The Southern Lens is the thickest, at up to 50 m thick, 360 m long and up to 170 m wide (down dip dimension). The lens shows compositional zonation, with the basal 5 m composed of massive pyrite (with low base and precious metal values). The best intercept of the primary massive sulphide is at a depth of 57.45 m, with grades of 3.77% Cu, 1.31 g/t Au, 14 g/t Ag, and 0.72% Zn over 73.85 m (not true thickness) (hole TD004). Some of the higher grade gold enriched oxide intercepts are 8.8 m grading 9.19 g/t Au and 78 g/t Ag (hole TD029) and 6.1 m grading 27.2 g/t Au and 13 g/t Ag (hole TD053).

Shear zone hosted (orogenic) gold is also present on the Terakimti property, approximately 1.5 km to the west of the VMS trend, along the Ruwa trend which includes such prospects as Lihamat and Adi Goshu. At the Lihamat showings, extensive artisanal bedrock workings occur over a strike length of 225 m and the zone of mineralized veining is up to 50 meters wide, with shafts up to 15 meters deep. Visible gold is hand-mined from numerous quartz veins that are hosted in a coarse-grained, sericite altered, quartz porphyry that has intruded into a sequence of mafic and felsic volcanic rocks and banded iron formation.

Numerous gold soil anomalies are present in the Lihamat area, and several artisanal bedrock gold workings are present over a 7 km strike length. Soil geochemical sampling has defined >0.1 ppm Au soil anomalies several hundred meters in length, with some samples returning >1.0 g/t Au. No drilling has been done on this prospect.

At Adi Goshu, mine workings attain depths in excess of 20 m to hand-mine a series of auriferous quartz veins over a 20 m width and 100 m strike length on two trends. Soil geochemical sampling has defined a 500 meter long >0.1 ppm gold soil anomaly with five samples assaying > 1.0 g/t Au. No drilling has been done on this prospect.

16.0 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information required for disclosure in this NI 43-101 technical report.

17.0 INTERPRETATIONS AND CONCLUSIONS

Sun Peak Metals Corp. has undertaken two years of preliminary work on its 885 square kilometer Shire property in northern Ethiopia in preparation for drill testing in 2020. Sun Peak's recent work, plus a compilation of the results of historic exploration work by previous companies has indicated that significant VMS mineral occurrences are present and that there is very good potential to discover economic mineralization on the Property.

The Shire property is underlain by NE-SW trending belts of weakly metamorphosed Neoproterozoic rocks comprised mainly of mafic to felsic flows and pyroclastic rocks, as well as volcaniclastic and calcareous sedimentary rocks. This same belt of rocks hosts significant VMS mineral deposits in the Asmara area of Eritrea, 100 km northeast of the Property.

Oxidized sulphidic zones up to 200 meters or more in width and several kilometers in length occur within the metavolcanic rocks that trend northeasterly across the northern two-thirds of the Property. Sulphidic zones commonly occur within felsic volcaniclastic rocks at, or near, interfaces with intermediate-to-basic volcanic and volcaniclastic rocks. Polymetallic VMS-style mineralization in the area is closely associated with many of these sulphidic zones.

Geochemical exploration work conducted in the area since the 1970's has indicated the presence of gold, silver, copper, zinc and lead mineralization associated with gossan outcrops in several of the sulphidic zones. Prospecting and follow-up of stream sediment geochemical anomalies in 1998 located mineralization at the Mai Argab - Adi Ekele zones consisting of lenses of gold-bearing goethite-limonite gossan within strongly sericite altered rocks. Diamond drilling from 2007 to 2010 revealed these gossans to be underlain, at depth, by VMS-style sulphidic zones that host gold and base metal mineralization. At Mai Argab - Adi Ekele the sulphide zones have been traced by drilling for lengths of up to 1000 m, with thicknesses of more than 30 m locally, and containing significant metal grades such as 2.06% Cu, 2.44% Zn and 1.19 g/t Au over 24.0 m (Adi Ekele hole ZKH3).

A 5000 ton heap leach pilot test undertaken at the Mai Argab zone in 2011 ascertained that a crude heap leaching process recovered approximately 60% of the contained gold from near-surface oxide material grading about 1.9 g/t Au. The test was stated to have shown that leaching is a relatively low cost (albeit low recovery) method to extract gold from the surface gossans.

Airborne EM surveying flown in 2004 over the central and northeastern parts of the Property indicated a large number of strongly conductive areas, some that coincide with mineralized sulphidic zones, including Mai Argab, Adi Angoda and Madadib. Several additional mineralized gossans were discovered over a period of about 10 years by follow-up of geophysical and geochemical anomalies, and many of them received detailed ground exploration. The most prospective of these targets was the Adi Angoda zone, which received 10 drill holes in 2009 and 2012 revealing narrow exhalites and massive sulphide horizons, such as in hole ND001, which returned grades of 2.73 g/t Au, 55 g/t Ag, 3.51% Cu, and 2.23% Zn over a 2.80 m interval.

Sun Peak undertook a heliborne VTEM survey in 2019 that covered the same area as the 2004 EM survey, as well as covering favourable stratigraphy in the northwest part of the Property. The more advanced equipment and software used for the current survey are capable of much finer discernment of subtle anomalies, as well as probing to greater depths below surface. The Company has recognized at least 16 target areas on the Property and has begun to systematically evaluate them by geological mapping, rock chip sampling, stream, sediment sampling, soil geochemical grids and geophysical surveys (primarily gravity).

Ground follow-up work has been very encouraging, especially the results of soil geochemical and gravity surveys. At the Mai Argab - Adi Akele zone detailed mapping and gravity results indicate a potential parallel mineralized zone 400 m to the north, with stronger and more extensive density highs than those over the known VMS zone. This area has never been tested by drilling.

Soil sampling grids in the central part of the Property, covering approximately 37 square kilometers, has revealed a number of linear, northeast-trending Cu-Zn anomalies, some of which have been gravity surveyed and show coincident zones of high density that could be indicative of massive sulphide mineralization at depth. In particular, a Cu-in-soil anomaly with a coincident linear gravity high is located 400-600 m to the north and runs parallel to the Adi Angoda zone, over a length of approximately 3 km. About 1000 m farther north another extensive parallel gravity high is coincident with a Zn-in-soil anomaly over about a 2 km length. These are very significant anomalies and are high priority drill targets.

Sun Peak has proposed a work program for 2020 for the Shire project totaling more than C$3.3 million. This includes 6,500 meters of diamond drilling (Terer 4,000 m, Nefasit 2,500 m), gravity surveys (7,000 stations), regional and close-spaced soil sampling grids, stream sediment sampling and geological mapping. The authors are in agreement with the proposed exploration work and agree that the budgeted amounts of expenditures are warranted.

Considering the widespread occurrence of sulphidic zones and gossan outcrops that are associated with high gold, copper, zinc and silver mineralization it can be concluded that the Shire project area is highly prospective for gold-rich copper-zinc massive sulphide mineralization. Despite its high potential for precious and base metal mineralization, the Shire VMS prospect has been under-explored and is only now receiving the advanced exploration that is required for success.

18.0 RECOMMENDATIONS

Sun Peak has submitted exploration proposals to the Ethiopian Ministry of Mines as part of the requirements for retaining their exploration licenses. The authors' recommendations for exploration are consistent with the remaining uncompleted work that was part of the Company's proposal and which is expected to be completed over the next year.

18.1 Proposed Work

Previous operators in the Project area have targeted drilling based on the mapping of gossans and then drilling directly beneath them. This is a logical first pass method, but more sophisticated exploration techniques must be applied to the project in order to discover an economic deposit that may not come to surface.

18.1.1 Terer Proposed Work

Compilation and re-interpretation of historic work and ground follow-up from 2017 to present by the Axum team has defined five potential VMS trends in the Terer concession area with over 45 kilometers of combined strike length. As well, targets for possible orogenic gold hosted in major shear zones or gold skarns have been identified by anomalous gold values in stream sediments along the northern contact of the Messiha granitic intrusive with Neoproterozoic volcano-sedimentary rocks.

The following next phase of exploration work is proposed for the Terer concession:

- Regional geological mapping from Mai Argab to northeast of Adi Ekele along the VMS trend for over 6 kilometers.
- Similar mapping along the geological trends for the other four identified targets.
- Detailed geological mapping of VMS gossans and exhalites (quartzites, banded iron formations and cherts) identified along each of the trends.

- Soil sample grids will be established over potential VMS and orogenic gold mineral trends with sample spacing nominally at 200 m x 50 m; estimated 5000 soil samples to analyze for base metals with selected samples analyzed for gold.
- During geological and structural mapping and prospecting approximately 300 rock chip samples will be collected and analyzed for base metals with selected samples analyzed for gold.
- Estimated 10 trenches of 30 meters length on average across VMS or orogenic gold trends to follow up mapping and soil sampling surveys; approximately 300 channel samples will be collected and analyzed for base metals and gold.
- Ground gravity surveys over defined VMS trends to follow up geochemical and airborne EM anomalies; estimated minimum of 3,000 stations.
- A minimum of 1000 meters of diamond drilling (HQ and NQ size) will initially test the VMS mineralized trend between Mai Argab and the Northeast Extension defined by previous exploration work. Additional drilling will test VMS and orogenic gold targets as they are defined by geochemical and geophysical surveys.

18.1.2 Nefasit Proposed Work

Compilation and re-interpretation of historic work and ground follow-up from 2018 to present by the Company has defined seven potential VMS trends in the Nefasit concession area.

The following next phase of exploration work is proposed for the Nefasit concession:

- Regional geological mapping to cover an 8 km (north-south) by 12 km (east-west) area covering the VMS targets that lie between Terer on the north and 3 km south of Nefasit village.
- Detailed geological mapping and sampling to follow up any VMS gossans and exhalites (silica-rich and banded iron formations) that have been identified.
- Detailed geological mapping and sampling of shear zones that show potential for orogenic gold mineralization.
- Generate detailed structural maps covering the VMS trends and the shear zones based on compilation of geological, geophysical and geochemical data plotted on detailed satellite imagery.
- Fill in the stream sediment sampling data that already covers a large part of the prospective geological terrane on the Property in specific areas lacking sample coverage; estimated at 200 stream sediment samples to analyze for base metals and gold.
- Soil sample grids will be established over potential VMS and orogenic gold mineral trends with sample spacing nominally at 200 m x 20 m; estimated 10 sq km generating 3000 soil samples to analyze for base metals with selected samples analyzed for gold.

- Ground gravity surveys over defined VMS trends to follow-up geochemical and airborne EM anomalies; estimated survey grids totaling 15 sq km with a minimum of 2,000 stations on 200 m x 20 m grid spacings.
- A minimum of 2500 meters of diamond drilling (HQ and NQ size) will initially test the most prospective VMS mineralized trends defined by exploration work. Additional drilling will test other VMS and orogenic gold targets as they are defined by ongoing geological, geochemical and geophysical surveys.

18.1.3 Adi Da-iro Proposed Work

Sun Peak plans a logical sequence of exploration work beginning with the compilation of all historical data, interpretation of this data, followed by regional prospecting and then detailed geological mapping in certain areas. In the first year, there will be various geophysical and geochemical surveys and re-mapping.

The following is the first phase of exploration work proposed for the Adi Da-iro concession:

- Regional prospecting, followed by detailed geological and structural mapping at approximately 1:2,000 scale.
- Ground gravity surveys over defined VMS trends to follow-up geochemical and airborne EM anomalies; estimated survey grids totaling 15 sq km with a minimum of 2,000 stations on 200 m x 20 m grid spacings.
- Soil geochemistry over identified airborne geophysical anomalies.
- Estimated 10 trenches of 30 meters length on average across VMS or orogenic gold trends; approximately 300 channel samples will be collected and analyzed for base metals and gold.
- Regional Stream sediment surveys at 2 to 4 samples per sq km.

18.2 Proposed Budget

Proposed exploration expenditures for the Shire property in 2020 total C$3,331,650. The budgeted work has been divided between the three exploration licenses and is detailed below.

Terer	**US$**
Core drilling - 4,000m	750,000
Assaying	150,000
Gravity Geophysics - 3,000 stns	100,000
Soil Geochemistry - close spacing on select targets	20,000
Trenching	10,000
Mapping - Regional and local scale	20,000
Camp Construction	120,000
Claims and permitting	5,000
Fuel	50,000
Road Maintenance	10,000
Contingency	130,000
Subtotal US$	**1,365,000**
Nefasit	
Core drilling - 2,500m	500,000
Assaying	110,000
Gravity Geophysics - 2,000 stns	65,000
Soil Geochemistry - close spacing on select targets	10,000
Stream Sediment Survey	10,000
Mapping - Regional and local scale	20,000
Road Maintenance	35,000
Claims and permitting	5,000
Fuel	40,000
Contingency	75,000
Subtotal US$	**870,000**
Adi Da-iro	
Assaying	30,000
Gravity Geophysics - 2000 stns	65,000
Soil Geochemistry - regional	20,000
Soil Geochemistry - close spacing on select targets	10,000
Stream Sediment Survey	10,000
Mapping - Regional and local scale	20,000
Trenching	10,000
Vehicles (1 - Toyota Hilux)	40,000
Fuel	30,000
Road Maintenance	10,000
Contingency	25,000
Subtotal US$	**270,000**
Shire Property Total 2020 Expenditure Forecast (US$):	**$2,505,000**
(C$) @ 1.33 exchange rate:	**$3,331,650**

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20.0 DATE AND SIGNATURE PAGE

The undersigned prepared this Technical Report, titled "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern Ethiopia", with an effective date of January 17, 2020, in support of the public disclosure of technical aspects of the Shire property owned by Sun Peak Minerals Inc. The format and content of the report are intended to conform to Form 43-101F1 of National Instrument 43-101 (NI 43-101) of the Canadian Securities Administrators.

Effective Date: January 17, 2020

Signed by

"signed"

Charles J. Greig, M.Sc., P.Geo.

Dated this 17 day of January, 2020

"signed"

Jeffrey D. Rowe, B.Sc., P.Geo.

Dated this 17 day of January, 2020

21.0 CERTIFICATES OF QUALIFICATIONS

I, Charles J. Greig, am a professional geologist residing at 250 Farrell St., Penticton, British Columbia, Canada and do hereby certify that:

- I am an author of "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern Ethiopia", dated January 17, 2020;
- I am a Registered Professional Geoscientist (P. Geo.), Practising, with the Engineers and Geoscientists, British Columbia, (License no. 27529) and with the Professional Geoscientists of Ontario (Member ID no. 1751).
- I am a graduate of the University of British Columbia with a B.Comm. (1981), a B.Sc. (Geological Sciences, 1985), and an M.Sc. (Geological Sciences, 1989). I have practiced my profession continuously since graduation, having worked as a geoscientist in the minerals industry for over 35 years.
- I visited the Shire property in March of 2019.
- I have had no prior involvement with the Shire property and no other involvement with the Property until contracted to write this technical report;
- I am responsible for all sections of "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern Ethiopia", dated January 17, 2020.
- I am independent of Sun Peak Metals Corp. as independence is described in Section 1.5 of NI 43-101. I have not received, nor do I expect to receive, any interest, directly or indirectly, in Sun Peak Metals Corp.;
- I am independent of Ezana Mining Development PLC, the Vendor of the Terer concession, as independence is described in Section 1.5 of NI 43-101. I have not received, nor do I expect to receive, any interest, directly or indirectly, in Ezana Mining Development PLC.
- I was retained by Sun Peak Metals Corp. to prepare an exploration summary on the Shire Property Tigray National Regional State, Ethiopia, in accordance with National Instrument 43-101. The report is based on my property visit, and on a review of project files and information provided by Sun Peak Metals Corp. personnel and publically available data;
- I have read National Instrument 43-101 and Form 43-101F1 and, by reason of education and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI43-101. This technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I, the undersigned prepared this report entitled "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern

Ethiopia", dated January 17, 2020, in support of the public disclosure of the geological exploration potential of the Shire property of Sun Peak Metals Corp.

Effective Date: January 17, 2020

Signed this 17th day of January, 2020 in Penticton, British Columbia:

"signed"

Charles J. Greig, B. Comm., B.Sc., M.Sc., P.Geo. (PGBC no. 27529)

(signed and sealed original copy on file)

I, Jeffrey D. Rowe, am a professional geologist residing at 111-6109 Boundary Drive W, Surrey, British Columbia, Canada and do hereby certify that:

- I am an author of "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern Ethiopia", dated January 17, 2020;
- I am a Registered Professional Geoscientist (P. Geo.), Practising, with the Engineers and Geoscientists, British Columbia, (License # 19950).
- I graduated from the University of British Columbia, Canada, with a B.Sc. (Geological Sciences, 1975).
- I have worked as a geoscientist in the minerals industry for over 35 years, I have been directly involved in the exploration, evaluation and mining of mineral properties, mainly in Canada and Mexico, for gold, silver, tungsten, molybdenum and base metals;
- I have not visited the Shire property.
- I have had no prior involvement with the Shire property and no other involvement with the Property until contracted to write this technical report;
- I am responsible for all sections of "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern Ethiopia", dated January 17, 2020.
- I am independent of Sun Peak Metals Corp. as independence is described in Section 1.5 of NI 43-101. I have not received, nor do I expect to receive, any interest, directly or indirectly, in Sun Peak Metals Corp.;
- I am independent of Ezana Mining Development PLC, the Vendor of the Terer concession, as independence is described in Section 1.5 of NI 43-101. I have not received, nor do I expect to receive, any interest, directly or indirectly, in Ezana Mining Development PLC.
- I was retained by Sun Peak Metals Corp. to prepare an exploration summary on the Shire Property Tigray National Regional State, Ethiopia, in accordance with National Instrument 43-101. The report is based on my review of project files and information provided by Sun Peak Metals Corp. personnel and publically available data;
- I have read National Instrument 43-101 and Form 43-101F1 and, by reason of education and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI43-101. This technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I, the undersigned prepared this report titled "NI 43-101 Technical Report, A Geological Evaluation of the Shire Property, Tigray National Regional State, Northern Ethiopia", dated January 17, 2020, in support of the public disclosure of the geological exploration potential of the Shire property of Sun Peak Metals Corp.

Effective Date: January 17, 2020

Signed this 17th day of January, 2020 in Surrey, British Columbia:

"signed"

Jeffrey D. Rowe, B.Sc., P.Geo. (PGBC license no. 19950)

(signed and sealed original copy on file)