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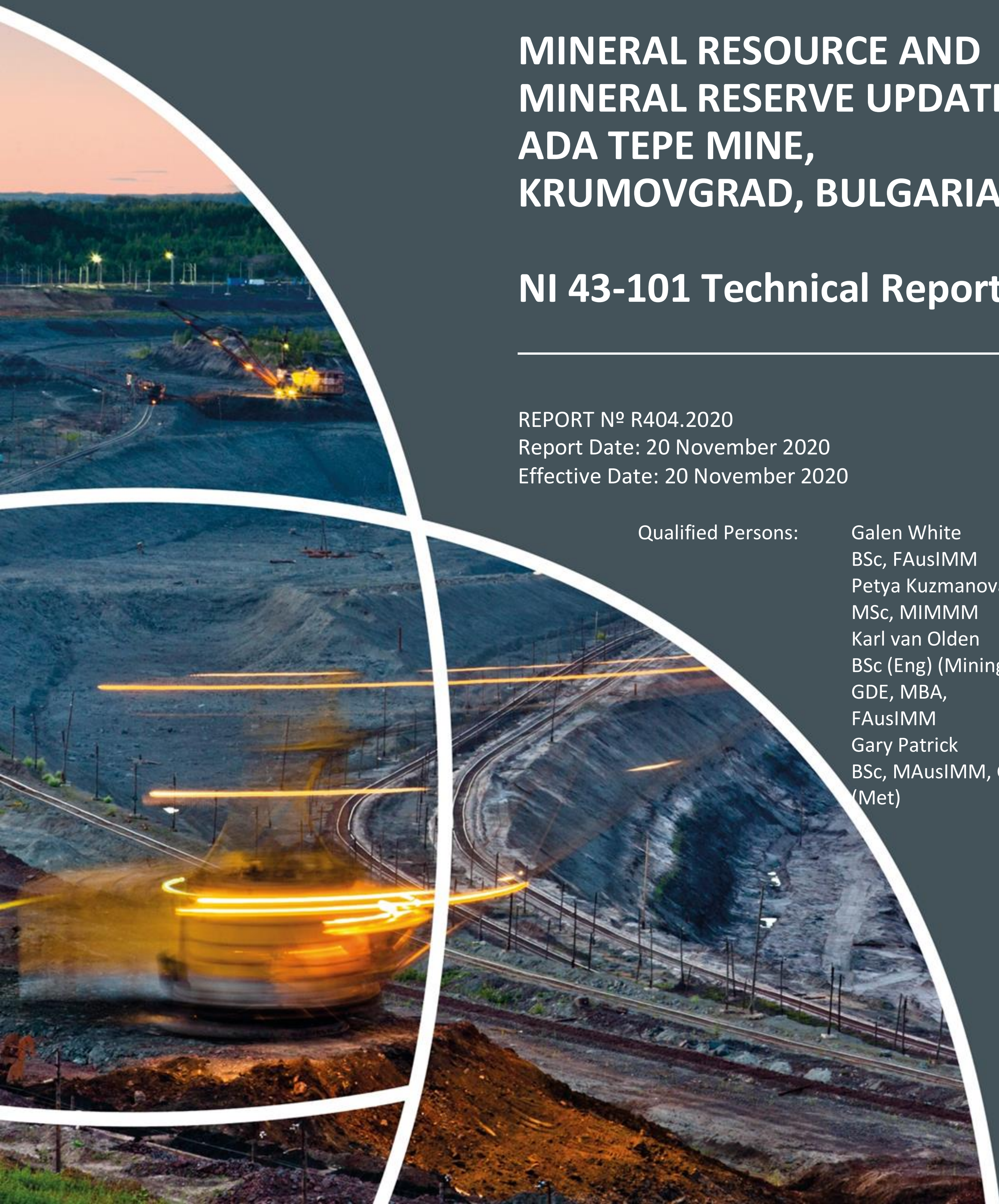

MINERAL RESOURCE AND MINERAL RESERVE UPDATE – ADA TEPE MINE, KRUMOVGRAD, BULGARIA

NI 43-101 Technical Report

REPORT № R404.2020
Report Date: 20 November 2020
Effective Date: 20 November 2020

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Report information

Filename	R404.2020 DPMRES19 DPM Krumovgrad Ada Tepe NI 43-101_FINAL_REV_A
Last Edited	20/11/2020 15:55:00
Report Status	Final

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Purpose of this document

This Report was prepared for Dundee Precious Metals Inc. ("the Client") by CSA Global (UK) Limited ("CSA Global"), an ERM Group company. The quality of information, conclusions, and estimates contained in this Report are consistent with the level of the work carried out by CSA Global to date on the assignment, in accordance with the assignment specification agreed between CSA Global and the Client.

Results are estimates and subject to change

The interpretations and conclusions reached in this Technical Report are based on current scientific understanding and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty.

The ability of any person to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond the Client and CSA Global's control. Please refer to Section 2.8 of this Technical Report for further information.

Certificates of Qualified Persons

Certificate of Qualified Person – Galen White

As a Qualified Person of the Technical Report on the Ada Tepe Mine of Dundee Precious Metals Krumovgrad, Bulgaria, I, Galen White do hereby certify that:

1. I am a Partner and Principal Consultant of CSA Global (UK) Limited and completed this work for CSA Global (UK) Limited, Springfield House, Suite 2 First Floor, Horsham, West Sussex, RH12 2RG, United Kingdom, telephone: (+44) 1403 255 969, email: csauk@csaglobal.com.
2. The Technical Report to which this certificate applies is titled "NI 43-101 Technical Report, Mineral Resource and Mineral Reserve Update, Ada Tepe Mine, Krumovgrad, Bulgaria" with an effective date of 20 November 2020.
3. I hold a BSc degree in Geology from the University of Portsmouth, UK and am a registered Fellow in good standing of the Australasian Institute of Mining and Metallurgy (AusIMM). I am familiar with National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and, by reason of education, experience in the exploration, evaluation and mining of epithermal and vein hosted mineral deposits in Europe, Australia and Africa, and professional registration; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes over 25 years continuous experience in the mining industry which includes significant experience Mineral Resource evaluation.
4. I have not completed a recent personal inspection of the property that is the subject of this Technical Report, but visited the property in 2012 in connection with technical evaluation at that time.
5. I am responsible for Sections 1 to 9, 12, 14, 23 and 25 to 27 of this Technical Report.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I have had prior involvement with the property that is the subject of this Technical Report, including periodic technical reviews since 2012 and contribution to operational support to DPM since the start-up of the mining operation.
8. I have read NI 43-101 and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20th day of November 2020.

"signed and sealed"

Galen White BSc (Hons), FAusIMM
Partner and Principal Consultant
CSA Global (UK) Limited

Certificate of Qualified Person – Karl van Olden

As a Qualified Person of the Technical Report on the Ada Tepe Mine of Dundee Precious Metals Krumovgrad, Bulgaria, I, Karl van Olden do hereby certify that:

1. I am a Principal Consultant and Manager-Mining for CSA Global Pty Ltd, Level 2, 3 Ord Street, West Perth, Western Australia, 6005, Australia, telephone: +61 8 9355 1677, email: csaaus@csaglobal.com.
2. The Technical Report to which this certificate applies is titled "NI 43-101 Technical Report, Mineral Resource and Mineral Reserve Update, Ada Tepe Mine, Krumovgrad, Bulgaria" with an effective date of 20 November 2020.
3. I hold a BSc Engineering degree in Mining from the University of the Witwatersrand, Johannesburg. I am a Fellow of the Australasian Institute of Mining and Metallurgy. I am familiar with National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and, by reason of education, experience in the evaluation and mining of vein hosted mineral deposits in, Africa and Australia, and professional registration; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 28 years in the mining industry.
4. I completed a personal inspection of the property that is the subject of this Technical Report, between 25 and 26 of February 2019 for a total of two days.
5. I am responsible for Sections 15 and 16, 18 to 22 and 24 of this Technical Report.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I have had prior involvement with the property having completed site visits in 2018 and 2019 in relation to previous technical reviews.
8. I have read NI 43-101, and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101.
9. As of the effective date of the Technical Report to the best of my knowledge, information and belief, the sections of Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20th day of November 2020.

"signed and sealed"

Karl van Olden BSc (Eng)(Mining), GDE, MBA, FAusIMM
Partner and Manager Mining
CSA Global Pty Ltd

Certificate of Qualified Person – Gary Patrick

As a Qualified Person of this Technical Report on the Ada Tepe Mine of Dundee Precious Metals Krumovgrad, Bulgaria, I, Gary Patrick do hereby certify that:

1. I am currently Principal Consultant of Metallurg Pty Ltd, with an office at Liman Mah, 25 Sokak, Sila Apartman, 15-D-10, Antalya, Turkey, 07070.
2. The Technical Report to which this certificate applies is titled "NI 43-101 Technical Report, Mineral Resource and Reserve Update, Ada Tepe Mine, Krumovgrad, Bulgaria" and is dated effective 20 November 2020.
3. I hold a BSc. (Chemistry/Extractive Metallurgy) and am a registered Member of the AusIMM (CP, #108090). I am familiar with National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and, by reason of education, experience in exploration, evaluation and mining of gold deposits and professional registration; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes 25 years in operations, metallurgical testwork supervision, flowsheet development, and study work.
4. I have not visited or completed a personal inspection of the property that is the subject of this Technical Report.
5. I am responsible for Sections 13 and 17 of this Technical Report.
6. I am independent of the issuer as described in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the property that is the subject of this Technical Report.
8. I have read NI 43-101, and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101.
9. As of the effective date of the Technical Report to the best of my knowledge, information and belief, the sections of Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20th day of November 2020.

"signed and sealed"

Gary Patrick, BSc., MAusIMM, CP (Met)
Principal Consultant
Metallurg Pty Ltd

Certificate of Qualified Person – Petya Kuzmanova

As a Qualified Person of the Technical Report on the Ada Tepe Mine of Dundee Precious Metals Krumovgrad, Bulgaria, I, Petya Kuzmanova do hereby certify that:

1. I hold the position of Senior Resource Geologist, of Dundee Precious Metals Chelopech, 2070 Chelopech village, Sofia District, Bulgaria.
2. The Technical Report to which this certificate applies is titled “NI 43-101 Technical Report, Mineral Resource and Reserve Update, Ada Tepe Mine, Krumovgrad, Bulgaria” with an effective date of 20 November 2020.
3. I hold a MSc (Economic Geology) degree from Mining and Geology University, Sofia. I am a Chartered Professional Member of the institute of Materials, Minerals and Mining (CSci, MIMMM), Membership Number IOM/112/000534). I am familiar with National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) and, by reason of education, experience in underground mining, resource geology, exploration and geologic grade control; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 16 years in the mining industry.
4. I have been involved with the project since 2004 and am currently employed by Dundee Precious Metals Chelopech as Senior Resource Geologist and have completed personal inspections, the most recent being 9th November 2020.
5. I am responsible for the following sections of this Technical Report; Sections 10 and 11.
6. I am not independent of the issuer as described in Section 1.5 of NI 43-101, being currently employed by Dundee Precious Metals Inc.
7. I have current involvement with the property that is the subject of this Technical Report as Senior Resource Geologist. My involvement with the project includes geological supervision, leading of exploration and grade control drilling, preparing the Mineral Resource estimate and guidance to the on-site technical team in the areas of technical procedures and standards.
8. I have read NI 43-101, and the sections of the Technical Report I am responsible for have been prepared in compliance with NI 43-101.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 20th day of November 2020.

“signed and sealed”

Petya Kuzmanova MSc, MIMMM.
Senior Resource Geologist
Dundee Precious Metals Chelopech

Contents

Figures

Tables

Glossary/Abbreviations

%	percent
°	degrees
°C	degrees Celsius
€	Euros
µm	micrometer, or 0.000001m
1D, 2D, 3D	one-dimension, two-dimensional, three-dimensional (model or data)
AAS	atomic absorption spectrometry
Ag	silver (grade measured in parts per million)
Au	gold (grade measured in parts per million)
AuEq	gold equivalent
BD	bulk density
BGN	Bulgaria’s local currency, the Lev which is pegged to the Euro
BMM	Balkan Mineral and Mining EAD
BNCS	Bulgarian National Coordinate System
BWi	Bond Ball Mill Work Index
CAT	Caterpillar
CC	correlation coefficient
CEFTA	Central European Free Trade Associated
CIL	carbon-in-leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CITA	Corporate Income Tax Act
CoM	(Bulgarian) Council of Ministers
cm	centimetre(s)
CRM	certified reference material
CSA Global	CSA Global (UK) Limited
CSV	comma separated values
CV	Coefficient of Variation; in statistics, the normalised variation value in a sample population
DFS	definitive feasibility study
DPM	Dundee Precious Metals Inc.
DPMKr	Dundee Precious Metals Krumovgrad
DTM	digital terrain model (three-dimensional wireframe surface model, e.g. topography)
E (X)	Easting; coordinate axis (X) for metre-based Projection, typically UTM; refers specifically to metres east of a reference point (0,0)
EBITDA	earnings before interest tax, depreciation and amortisation
EFTA	European Free Trade Associated
EIA	Environmental Impact Assessment
EU	European Union
EV	expected value
FoS	factor of safety
g	gram(s)
g/t	grams per tonne
GAAP	Generally Accepted Accounting Principles
GC	grade control
GNSS	Global Navigation Satellite System
GPS	global positioning system
HQ2	Size of diamond drill rod/bit/core
h	hour(s)

ha	hectare(s)
IFRS	International Financial Reporting Standards
IP	induced polarisation
IPA	Investment Promotion Act
IMWF	Integrated Mine Waste Facility
IRR	internal rate of return
ISO	International Standards Organisation
JKMRC	Julius Kruttschnitt Mineral Research Centre
JK	JKTech (dropweight tests)
JORC	Joint Ore Reserves Committee (The AusIMM)
kg	kilogram(s)
kg/t	kilogram per tonne
km, km^2	kilometre(s), square kilometre(s)
KNA	kriging neighbourhood analysis
koz	thousand ounces
kt	kilotonnes (or thousand tonnes)
ktpa	kilotonnes (or thousand tonnes) per annum
kW	kilowatts
kWh	kilowatt-hour
kWhr/t	kilowatt hours per tonne
lb	pound(s)
LDL	lower detection limit
LOD	limit of detection
LOM	life of mine
M	million(s)
m, m^2, m^3	metre(s), square metre(s), cubic metre(s)
Ma	million years
masl	metres above sea level
MCC	motor control centre
MD&A	Management's Discussion and Analysis
mE	metres East
MEET	Ministry of Economy, Energy and Tourism
mg	milligram(s)
MIK	multiple indicator kriging
ml	millilitre(s)
Mlb	million pounds
mm	millimetre
mN	metres North
MoE	Ministry of Energy
MoEW	Ministry of Environment and Water
Moz	million ounces
MRE	Mineral Resource estimate
mRL	metres Relative Level
MSC	management system control
MSO	Mineable Shape Optimiser
Mt	million tonnes
Mtpa	million tonnes per annum
N (Y)	Northing. Coordinate axis (Y) for meter-based Projection, typically UTM. Refers specifically to meters north of a reference point (0,0)
NGO	non-governmental organisation

NI 43-101	National Instrument 43-101 Standards of Disclosure for Mineral Projects
NPV	net present value or net present worth (NPW)
NQ	A diamond drill core diameter of 75.7 mm (outside of bit) and 47.6 mm (inside of bit)
OMAC	OMAC Laboratories Ltd
oz	Troy ounce (31.1034768 grams)
P_{80} -75 µm	Measure of pulverisation. 80% passing 75 microns
PAX	potassium amyl xanthate
PEA	preliminary economic assessment
ppb	parts per billion
ppm	parts per million
psi	pounds per square inch
Q1, Q2, Q3, Q4	quarter 1, quarter 2, quarter 3, quarter 4
QAQC	quality assurance/quality control
QAQCR	QAQC Reporter (software)
RC	reverse circulation
RL (Z)	Reduced Level; elevation of the collar of a drillhole, a trench or a pit bench above the sea level
RMS	root mean squared
ROM	run of mine
RPWR	Raw and Process Water Reservoir
RQD	rock quality designation
RSG	RSG Global
S	sulphur
SABC	SAG/Ball Mill Circuit
SAG	semi-autogenous grinding
SD	standard deviation
SFR	staged flotation reactor
SGS	Société Générale de Surveillance International laboratory group
SPI	SAG Power Index
SQL	structured query language
SSF	sample submission form
SSM	Spectrum Surveys and Mapping Pty Ltd
SWOR	Stormwater Overflow Reservoir
t	tonnes
tpa	tonnes per annum
tph	tonnes per hour
™	Trademark
UAV	unmanned aerial vehicle
UCS	unconfined compressive strength
URA	Underground Mineral Resources Act
US$	United States of America dollars
VAT	value added tax
w:o	waste to ore ratio
wt%	percentage by weight
WTO	World Trade Organization

1 Summary

1.1 Introduction

CSA Global was requested by Dundee Precious Metals Krumovgrad ("DPMKr"), a 100% owned subsidiary of Dundee Precious Metals Inc. ("DPM"), to update the Mineral Resource Estimate ("MRE") and supervise, verify and validate the Mineral Reserve estimate for the Ada Tepe open pit gold mine located in south-eastern Bulgaria. The change being reported in this Technical Report is an update to the Mineral Resource and Mineral Reserve estimates previously reported by DPM.

The Mineral Resource and Mineral Reserve update for the Ada Tepe mine was initiated to account for detailed reconciliation studies conducted since the start-up of operations, grade control drilling, and mining depletion to July 31, 2020.

1.2 Project Description and Location

1.2.1 Summary

The Ada Tepe Mine is located in Bulgaria and is approximately 320 km southeast by paved road from the capital of Sofia. The Ada Tepe Mine is located 3 km south from the Krumovgrad townsite and trends in a north-south direction. The deposit area comprises of hilly topography abutting a major regional river system.

Construction works commenced on the site of operations in the fourth quarter of 2016. Pre-stripping and stockpiling of ore started in July 2018, followed by first concentrate production in March 2019 and ramp up to commercial production levels in June 2019.

The mining methods used at the Ada Tepe pit are conventional excavator and truck methods. Ore is processed by crushing the mined ore in the primary jaw crushing circuit, grinding in a semi-autogenous grinding ("SAG") milling circuit followed by a further secondary grind in a vertimill circuit. Tailings and waste rock material from the mine are placed in an Integrated Mine Waste Facility ("IMWF"). The mill facilities and mine are developed, constructed, and operated by DPMKr, a wholly owned subsidiary of DPM.

1.2.2 Mineral Rights and Tenement Description

Balkan Mineral and Mining EAD ("BMM", now "DPMKr"), a 100% subsidiary of DPM, was awarded the Krumovgrad licence area (130 km^2) on 12 June 2000, in accordance with the Agreement of Prospecting and Exploration reached with the Bulgarian Ministry of Economy.

The Mining Licence ("Khan Khum Concession") covers an area of 1,370 ha (13.7 km^2) and includes the area of the Ada Tepe mining operation and the satellite prospects of Kuklitsa, Kupel, Surnak, Skalak, and Sinap. DPMKr has 100% ownership of the project, which operates under a concession agreement that was signed between DPMKr and the Council of Ministers of Republic of Bulgaria in 2012 for a period of 30 years.

1.2.3 Environmental Liabilities

DPM is not aware, nor has it been made aware, of any other significant environmental liability associated with the Ada Tepe Mine.

An EIA statement was issued by the Bulgarian Minister of Environment and Water. The statement includes a number of conditions which have to be implemented during detailed design, construction, operation, closure and rehabilitation stages of the project.

1.2.4 Royalties

The Company is paying a royalty to the Bulgarian government, at a variable royalty rate applied to the gross value of the gold and silver metals combined in the ore mined. The royalty rate depends on the profitability of the operation. At a pre-tax profit to sales ratio of 10% or less, the royalty rate will be 1.44% of the value of the metals. At a pre-tax profit to sales ratio of 50% or more, the royalty rate will be 4% of the value of the metals. At intermediate levels of profitability, the royalty rate will vary on a sliding scale between 1.44% and 4% in a linear fashion.

1.3 Accessibility, Local Resources and Infrastructure

The concession area is located in East Rhodope, approximately 320 km (by road) southeast of Sofia, in the Kardjali District, 3 km south of the regional township of Krumovgrad (25° 39′ 15″E and 41° 26′ 15″N). Access to the operational area is available all year, by existing tarmac roads to Krumovgrad and a recently constructed road to the Ada Tepe mining operations. Access within the licence area is good, with all-weather surface roads covering the project area. Secondary roads are unsurfaced but generally accessible all year round with four-wheel drive vehicles.

Krumovgrad is located approximately 320 km by paved road southeast of Sofia, which is serviced by an international airport. A second international airport is situated in the city of Plovdiv located approximately 106 km northwest of Krumovgrad.

The operational area is located within the Continental-Mediterranean belt, the main feature of which is its proximity to the climate of Subtropical Europe, featuring markedly higher winter and substantially lower summer precipitation. Winters are mild, but during intensive cold spells temperatures may fall to -13°C. Summers are hot, reaching 36°C in warmer spells and exceeding 40°C in some locations.

The average annual precipitation is 703.5 mm. The bulk of this falls in autumn and winter, occasionally as snow in the coldest months. The highest rainfall occurs in December (96.9 mm average) and the lowest in August (24.1 mm). Estimated 1:100-year rainfall events are projected to be around 117.3 mm for a 24-hour event, and 184.1 mm for a 72-hour event. Probable Maximum Precipitation estimates are up to 383.4 mm for 24 hours and 605.4 mm for 72 hours. Average annual evaporation is 1,050.8 mm, which is similar to annual rainfall in magnitude, but peak evaporation occurs during summer months when precipitation is at its lowest. Mining operations are conducted all year round.

Small villages are widely dispersed throughout the licence area, and are mainly involved in subsistence farming, particularly livestock and the growing of tobacco on the poorly developed soils characteristic of the region. The main land use within the licence area is state controlled forestry. The population of Bulgaria is largely non-practising Eastern Orthodox Christian (85%) with a Turkish Muslim minority predominantly residing in the southeast of the country, including the concession area.

Infrastructure in the area is good, with paved roads, power and water resources available to the Ada Tepe mine site.

The Krumovgrad District is around 230 m above mean sea level and is characterised by a rugged landscape. The Ada Tepe Mine is situated in an area of moderate, hilly topography abutting a major regional river system. The mine site is readily accessible all times of the year.

1.4 History

The Ada Tepe prospect was the subject of only very brief attention in previous State-funded exploration in the early to mid-1990s, by GeoEngineering of Assenovgrad, and Geology & Geophysics of Sofia.

On 12 June 2000, BMM (a 100% subsidiary of DPM) was awarded the Krumovgrad Licence area (113 km^2) in accordance with the Agreement of Prospecting and Exploration reached with the Ministry of Economy.

1.5 Geological Setting

The Krumovgrad region is located within East Rhodope which comprises the eastern portion of a large metamorphic complex termed the Rhodope Massif. The massif underwent Upper Cretaceous extension leading to uplift and formation of the Kessebir metamorphic core complex. This event was accompanied by low-angle detachment faulting, by graben development, and formation of sedimentary basins.

Basement rocks in the Krumovgrad area consist of Precambrian and Paleozoic metasediments, gneisses, and amphibolites of the Kessebir metamorphic core complex. The basement is unconformably overlain by Tertiary (Paleocene-Eocene) conglomerates, sandstones, siltstones and limestones of the Krumovgrad Group. The basal Shavar Formation is the primary host to gold-silver mineralisation within the Krumovgrad Licence area and is composed of tectonically deformed coarse-grained breccia/conglomerates including decametric sized marble blocks and other variable in size clasts of amphibolite, quartzite and gneiss.

1.6 Mineralisation and Deposit Types

Gold and silver mineralisation in the Krumovgrad licence area is predominantly hosted within the Shavar Formation proximal to the unconformable fault contact or detachment with the underlying basement rocks of the Kessebir core complex. Sediments within the Shavar Formation typically form laterally discontinuous lenses ranging from coarse breccia to fine sands with variable clay content. Upward variations in the stratigraphy of the Krumovgrad Group reflect progression from a high-energy environment, breccia-conglomerates and coarse sandstones through to the lower energy siltstones and limestones characteristic of increasing basin maturity.

Review by RSG Global ("RSG") in 2004 suggests that the second-order structural control for mineralisation, after that of the detachment, is the proximity of northeast-southwest transfer faults. These structures dip steeply, allowing more direct access of fluids from deeper levels than the shallow dipping extensional structures. As such, the shallow extensional structures may represent trap sites or structures that accommodate local lateral fluid flow away from the transfer structures. Closely spaced transfer structures may also be important for localising mineralisation as the presence of shear couples can enhance brecciation of the intervening rock or may act to produce tensional sites. For example, dextral shear on the northwest-southeast striking faults bounding Ada Tepe may have been responsible for facilitating epithermal vein emplacement within east-west tensional sites.

The Ada Tepe deposit is a low-sulphidation gold-silver epithermal deposit formed during the Neogene within the Southern Rhodope tectonic zone and located within Palaeocene sedimentary rocks overlying the north-eastern end of the Kessebir core complex. Two major styles of mineralisation are apparent at Ada Tepe:

- Initial stage of mineralisation hosted by a massive, shallow-dipping (15° north) siliceous body forming the hangingwall to the detachment and defining the contact between the core complex and overlying sedimentary rocks. This mineralisation is termed the "Wall Zone" by local geologists and displays multiple stages of veining and brecciation.
- A second phase of mineralisation represented by steep dipping veins that exhibit textures indicative of formation within an epithermal environment. These veins have a predominant east-west strike, crosscut the shallow-dipping siliceous Wall Zone mineralisation, and extend upwards into the sedimentary breccia unit above the Wall Zone. This mineralisation is referred to as the "Upper Zone" by local geologists.

The Ada Tepe deposit is approximately 600 m long (north-south), and 300–350 m wide (east-west). The Wall Zone is up to 30 m thick. The thickness of the Upper Zone vein mineralisation is very variable, from less than 1 m thick, to more than 30 m thick. The Wall Zone exhibits very good continuity. The Upper Zone vein system exhibits less continuity than the Wall Zone, necessitating the higher drilling density that has been applied during the delineation of the Ada Tepe deposit.

1.7 Exploration

Since June 2000, BMM has conducted detailed exploration of the Ada Tepe prospect, including:

- Establishing accurate survey and topography control
- Detailed surface trenching and channel sampling and geological mapping.

Since 2014, DPM has conducted additional exploration activities within the Ada Tepe prospect, including:

- Ground gravity and magnetic surveys were carried out over the licence areas. The data was integrated with geological and geochemical data to define both near surface and covered target areas.

- In 2015, approximately 100-line kilometres of IP were surveyed and 15 holes totalling 3,394 m were drilled in nine target areas.

Since the commencement of operations, detailed mapping data has been routinely collected.

1.8 Drilling

Mineral resource delineation at the Ada Tepe deposit has been undertaken by a combination of RC and diamond drilling, completed in four drilling programs between late 2000 and late 2004.

From June 2000 until March 2002, all exploration data collection at Ada Tepe was undertaken by BMM, under the upper management of Navan. From April 2002 to the end of 2004, exploration at Ada Tepe was undertaken under the management of RSG in close consultation with BMM field staff, Navan upper management until 30 September 2003, and subsequently DPM upper management.

Trenches and drill access road cut exposures were routinely channel sampled since the commencement of detailed exploration at Ada Tepe in mid-2000. The channel sampling was undertaken predominantly on north-south orientated traverses coinciding with the 25 m spaced drill traverses. Prior to March 2002, a variety of sample intervals were used, primarily controlled by changes in geology.

Between 2017 and 2020, approximately 91km of grade control ("GC") drilling has been completed using a contractor based in Bulgaria, Drillex International, which operates GEMEX MP-85 truck mounted RC rigs on the mine site. RC drilling is conducted using either 125 mm or 147 mm drill bit diameters to ensure sufficient volume of sample is collected during drilling. A booster compressor is employed at all times during drilling to ensure sufficient air pressure.

All bulk density measurements were completed by an ISO 9002 rated laboratory, Evrotest Kontrol, in Sofia using an ISO 9002 approved method of wax sealed water immersion bulk density measurement. A total of 5,764 bulk density measurements are available for the Ada Tepe deposit covering all the major rock types and variations in oxidation and weathering at locations distributed throughout the deposit.

1.9 Surveying

Up to 2012, all surveying of the surface topography and exploration sites at Ada Tepe was carried out by a government licensed contractor, Dimiter Motrev of Geocom Ltd using the survey control established by Australian surveying group, Spectrum Surveys and Mapping Pty Ltd ("SSM") during the 2002 survey audit. All surveying was conducted using two electronic total station instruments.

Since the start of operations, a new survey approach has been implemented for collection and processing geospatial data and building 3D topographic model. Currently, the main survey approach used is aero photogrammetry. Using unmanned aerial vehicles ("UAV'), a large amount of data points is collected by flights across the areas of interest. The down-sampled resolution of the surveyed data points is as low as 0.5 m. In areas with high vegetation where the aerial mapping is not the appropriate approach, total stations and Global Navigation Satellite System ("GNSS") receivers are used.

1.10 Sampling and Analysis

Sample preparation procedures for samples from the Ada Tepe deposit were consistent over time and are summarised below:

- Dry samples at 105°C.
- Core and trench samples crushed in a jaw crusher to minus 6 mm. RC chip samples were not crushed.
- Pulverise all samples in a LM5 crusher to 95% passing 75 µm. Complete sieve analysis on 1:20 samples.
- Clean bowl and puck of the LM5 with compressed air after each sample, and with a barren flush after every 20th sample, or as required to remove residue build-up.
- Complete barren flushes after DPMKr specified samples anticipated to contain high-grade mineralisation.

Analytical laboratories and techniques used for the Ada Tepe primary samples are summarised below:

- Drilling programs from 2000 to 2004 were analysed at two principal independent internationally accredited laboratory firms (OMAC of Ireland, 2000–2001 and SGS Laboratories, 2002–2004). Assay techniques were fire assay with an AAS finish for gold and either a two or four acid digest with an AAS finish for silver.
- Grade Control drilling samples were analysed at SGS Bor, SGS Chelopech or ALS Rosia Montana. ALS Bor was used as a sample preparation laboratory for samples analysed at either ALS Rosia Montana, Romania or ALS Loughrea, Ireland. Assay techniques were fire assay with an AAS finish for gold and a two-acid digest with an AAS finish for silver. Sulphur was analysed by the LECO method.

In addition, umpire assay analyses of approximately 5% of the routine exploration samples from the second and third exploration programs were performed by two internationally accredited laboratories.

The Exploration and GC sample QAQC was assessed based on assays of routine quality control samples inserted into the sample stream. No significant issues or fatal flaws were noted with respect to contamination, precision or accuracy of the assaying and therefore the results can be used with confidence in any downstream work.

1.11 Data Verification

The Qualified Persons are confident that the data used to underpin Mineral Resources and Mineral Reserves are of a high quality and fit for purpose. CSA Global has completed the following data verification:

- An audit of the DPMKr acQuire relational database was completed by CSA Global on the 24th July 2020 (CSA Global, 2020) and the overall conclusions were that the database was well maintained, good practices appeared to have been followed, and data in the database should be fit for purpose for downstream work.
- Site visit activities during a visit to the property in 2019, which included:
  - Inspection of drill core.
  - Review of drilling procedures.
  - Discussion and interrogation of the geology model with Technical Services Team.
  - Inspection of outcrop and road exposures.
  - Visits to mining area, stockpiles, overburden areas.
- During a site visit conducted in 2012, CSA Global reviewed the following:
  - Logging information contained in the database for the project and verified this information (exported as graphic drill logs from acQuire software) against several drillholes inspected at the time
  - Loading and validating the Drillhole and Trench Database, block model, two-dimensional (2D) wireframe surfaces and three-dimensional (3D) geological and mineralised domain wireframes
  - Tying these reviews to an on-site inspection of project geology, drill core, data collection protocols and communication with DPM project staff.
- CSA Global independently produced and reviewed quality assurance/quality control (QAQC) reports to verify the accuracy and precision of the assayed QAQC material and samples.
- CSA Global considers the drillhole collars, trench and channel sample locations at Ada Tepe to be accurately located in three dimensions for the purposes of Mineral Resource estimation.
- CSA Global has taken receipt of (and reviewed) the original topographic surface and the trench/collar points used in its construction and believes it to be valid for use in constraining the Mineral Resource block model, outside of the active mining area.
- CSA Global have reviewed the results of verification twin drilling and are satisfied with the quality and reliability of data.

1.12 Mineral Processing and Metallurgical Testing

Various phases of testing were undertaken to determine the metallurgical properties and develop the optimal flowsheet to process the mineralisation present in the deposit at Ade Tepe.

Results from the DFS (2005) testing program confirmed that all the samples tested were considered "free-milling" and amenable to gold production by conventional cyanidation processes, combined with appropriate cyanide destruction to levels well below European and World standards at the time. In 2012 the project was "re-engineered" adopting a more conventional flotation process, combined with the introduction of a combined mine waste and flotation tailings facility ("IMWF"). The process evolved from the 2005 flotation scoping testing which demonstrated that at a grind size P_{80} of 75 µm between 60% and 80% of the gold could be recovered to a flotation concentrate. Further optimisation tests carried out at SGS Lakefield showed that by grinding finer to a P_{80} of 30 µm high gold recoveries of circa 85% could be recovered to a high-grade cleaner concentrate.

The current process flowsheet consists of primary crushing followed by a single stage SAG mill. SAG mill discharge is then further ground in two vertimills to produce a P_{80} of 30 µm as feed to flotation. The flotation circuit consists of a rougher/scavenger in closed circuit, with regrinding of the rougher concentrate ahead of two stages of cleaning to produce a saleable gold bearing concentrate.

Commissioning of the Ada Tepe plant commenced in April 2019 and ramped up to nameplate production in September 2019. The actual plant operating data supersedes any earlier metallurgical testwork. DPM is not aware of any processing factors or deleterious elements that could have a significant effect on processing Ada Tepe Ore.

Further laboratory testwork is ongoing to evaluate alternate flotation circuit configurations to improve overall gold recovery to the final concentrate.

1.13 Mineral Resource Estimate

The Ada Tepe MRE has been updated based on 2,257 drill holes for 139,140 m (exploration and grade control) and 253 trenches for 10,710 m. Since 2017, pre-mining grade control RC drilling has been completed at 5 m x 5 m spacing. 2,060 of these GC holes for 117,374 m have been included in this MRE update.

Exploration drilling forms a notional 25 m x 25 m grid over the entire deposit, while closer spaced drilling on a 12.5 m x 12.5 m grid has been completed over two rectangular sub-regions of the deposit.

Geological and much of the mineralisation interpretation has been completed in Leapfrog using geological logging, structural data, surface and pit mapping, grade data to build oxidation models, Wall Zone mineralisation, basement mineralisation and overburden. Categorical kriging using a grade indicator defined at 0.45 g/t Au was used to estimate the volume of the Upper Zone. Traditional wireframing/grade shelling has been tested and resulted in excessive unmodelled mineralisation. The volume estimated through the indicator estimate was benchmarked against the GC model to ensure the mineralisation model built using wider spaced exploration data is reliable.

The Mineral Resource model is based on detailed statistical and geostatistical investigations generated using 1 m composite data domained using the mineralisation volumes. A sub-blocked block model was constructed using 10 m x 10 m x 5 m parent cells for an exploration model, and 5 m x 5 m x 5 m parent cells for a GC model within a limited GC area. Sub-blocking is down to 1 m x 1 m x 1 m (X Y x Z) to honour volumes in both cases.

In-situ dry bulk density was assigned on the basis of oxidation state and lithology.

Grade (gold and silver) was estimated into parent cells of all domains using Ordinary Kriging using a three-pass search strategy. Dynamic anisotropy was used to locally rotate search ellipses to align with interpretation mineralisation trends and orientations.

Hard boundaries were used between domains, with one exception – a one-way, semi-hard boundary was used for the upper boundary of the Wall Zone and lower boundary of the Upper Zone since this boundary is highly transitional. Samples within 3 m of the boundary, from the steeply dipping Upper Zone domains were included in the Wall Zone domain to better estimate the gradational nature of grades at that boundary. GC and exploration composites were used to estimate grades in the GC area, while only exploration data was used to estimate grade in the exploration model.

The GC and exploration block models were validated separately through the following means:

- Visual validation in 2D section and 3D views.
- Statistical comparison of composite and block mean grades.
- Swath plot trend analysis of composites and blocks.
- Comparison and reconciliation of the exploration model against the GC model.

Having validated both the GC and exploration models, the final Mineral Resource model was compiled using both models and a GC wireframe limit (GC=1) used to define the limits of the 5 m x 5 m drilling to create the most robust model possible for life of mine planning. The exploration model took precedence outside the GC limit wireframe, while the GC model took precedence within it.

The block model was classified in accordance with CIM guidelines as Measured, Indicated and Inferred Mineral Resources based on confidence in data, geological and grade continuity, density measurements and estimation quality.

The MRE for the Ada Tepe Gold Mine is presented in Table 1-1. The Mineral Resources are reported exclusive of Mineral Reserves, and as such there is only a small amount of Inferred Mineral Resources remaining in the Upper Zone and Overburden. There are no Mineral Resources remaining in the Wall Zone, once Mineral Reserves have been removed. The MRE is reported at a cut-off of 0.6 g/t Au which is supported by current mining and mining studies.

Reasonable prospects for eventual economic extraction are supported through a pit optimisation using metal prices of US$1,400/oz Au and US$17/oz Ag and Mineral Resources are effective as at July 31, 2020.

Table 1-1: Ada Tepe Gold Mine – Mineral Resource statement, effective 31 July 2020

Dundee Precious Metals – Ada Tepe Gold Mine Mineral Resource Estimate as at 31 July 2020 (reported at a 0.6 g/t Au cut-off)					
Resource category	**Tonnes (Mt)**	**Au (g/t)**	**Ag (g/t)**	**Metal content**	
				Au (Moz)	**Ag (Moz)**
Measured	0.00	0.00	0.00	0.000	0.000
Indicated	0.00	0.00	0.00	0.000	0.000
Total Measured + Indicated	**0.00**	**0.00**	**0.00**	**0.000**	**0.000**
Inferred	0.32	2.09	1.51	0.021	0.015

Notes to the Mineral Resource statement:

- Figures have been rounded to reflect this is an estimate.
- Measured, Indicated and Inferred Mineral Resources have been reported in accordance with NI 43-101 and the classification adopted by the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM").
- Estimates of Measured and Indicated Mineral Resources are reported exclusive of those Mineral Resources modified to produce Mineral Reserves.
- The MRE has been prepared by CSA Global who are independent of DPM.
- Mineral Resources are based on a gold cut-off grade of 0.6 g/t for the Upper Zone and Overburden and of 0.8 g/t for the Wall Zone and Basement Zone calculated using metal prices of US$1,400/oz Au and US$17/oz Ag. There are no Mineral Resources remaining in the Wall Zone and Basement Zone, once Mineral Reserves have been removed.
- The Mineral Resource is effective as at 31 July 2020.
- Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- Mineral Resources may be subject to legal, political, environmental and other risks and uncertainties.

1.14 Mineral Reserve Estimates

The mining method is a conventional open cut, drill, blast, load and haul operation, using hydraulic excavators and haul trucks to mine the material. The mining equipment is owner operated and maintained under a contract with the equipment supplier.

The mine planning update consisted of a pit optimisation followed by open pit design, long term production scheduling and cost estimation. The main differences in relation to the previous study were:

- the use of updated economic parameters such as metal prices, metallurgical recoveries, royalty and discount rate; and
- adoption of Mine Shape Optimiser ("MSO") diluted block model, used to account for operational mine dilution and expected level of selectivity.

The MSO model has been developed to simulate dig string boundaries from the MRE model, based on mining parameters, to produce a diluted block model suitable for open pit optimisation and mine planning. The key inputs to the MSO process are mining flitch height of 2.5 m, preferred mining direction of east-west, run of mine ("ROM") and stockpile gold cut-off grades (0.6, 0.8, 1.0 and 2.5), minimum practical dig block mining width – perpendicular to the mining direction of 3 m and dig block advance increments – parallel to the mining direction of 5 m. The pit optimisation analysis is based on a gold price of US$1,250/oz and silver price of US$17/oz. The optimisation process is discussed in Section 16.

The open pit was designed taking into consideration the geotechnical recommendations by Golder Associates UK (2013). The updated slope design has also taken into consideration the weathered rock material in the northeast corner of the pit, near the surface, and the presence of historical waste dumps in the southeast corner of the pit, also near the surface.

Four incremental cutbacks were designed: (a) to give early and consistent access to the Wall Zone material; and (b) to ensure the provision of sufficient waste rock in the early stages of the operation to enable construction of the cells on the IMWF. Consideration has also been taken into account of the restricted stockpile area for both ROM and low-grade material. The mine plan considers a mill throughput of 90 tonnes per hour ("tph") and 105 tph for the Wall Zone and Upper Zone respectively till end of 2021 and thereafter capped to 90 tph for the remaining mine life. This gives a mine life of approximately six years, with maximum annual rock movement of 3.0 Mt. Low-grade material between 0.6 g/t and 1.0 g/t is stockpiled on a separate area with maximum capacity of 0.5 Mt. Much of this is planned to be delivered to the process plant in the latter years of the mine's life.

The estimated Mineral Reserve figures are presented in Table 1-2. The numbers are appropriate for the purpose of public reporting in that they provide an acceptable prediction of the material available to mine.

This Mineral Reserve estimate has been estimated and reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014.

Table 1-2: Ada Tepe Gold Mine –Mineral Reserves estimate (DPM, 2020) effective as at 31 July 2020

Ada Tepe Mineral Reserve estimates as at 31 July 2020					
Category	**Tonnes (Mt)**	**Grade (g/t)**		**Metal content (Moz)**	
		Au	**Ag**	**Au**	**Ag**
Proven					
Upper Zone	1.10	3.67	2.12	0.130	0.075
Wall Zone	1.69	6.61	4.17	0.358	0.226
Stockpile					
Subtotal – Proven	**2.79**	**5.45**	**3.36**	**0.488**	**0.301**
Probable					
Upper Zone	1.32	3.54	2.36	0.151	0.100
Wall Zone	0.03	4.46	2.85	0.005	0.003
Stockpile	0.12	3.77	2.55	0.014	0.010
Subtotal – Probable	**1.48**	**3.58**	**2.38**	**0.170**	**0.113**
Proven and Probable					
Upper Zone	2.42	3.60	2.25	0.280	0.175
Wall Zone	1.72	6.57	4.15	0.363	0.229
Stockpile	0.12	3.77	2.55	0.014	0.010
TOTAL	**4.26**	**4.80**	**3.02**	**0.658**	**0.414**

Notes to the Mineral Reserve statement:

- Mineral Reserves have been estimated using a cut-off of 0.6 g/t Au for the Upper Zone, and 0.8 g/t Au for the Wall Zone.
- Long-term metal prices assumed for the evaluation of the Mineral Reserves are US$1,250/oz for Au and US$17/oz for Ag.
- Mineral Reserves include mining depletion as of 31 July 2020.
- Probable Ore includes stockpile inventory as of 31 July 2020.
- Error may occur due to rounding.

The Mineral Reserves at Ada Tepe have been estimated by including a number of technical, economic and other factors as outlined in the above text. A change to any of the inputs would therefore have some effect on the overall results. Concerning mining and metallurgical factors, it is CSA Global's belief that sufficient work has been done by DPM to ensure that these are not likely to have any significant or material effect on Mineral Reserves. However, CSA Global relies on information as presented in Section 3 of this Technical Report in relation to legal and environmental considerations.

1.15 Mining Operations

Drilling and blasting of ore and waste is conducted over bench heights of 5 m and explosives are delivered to the hole by the drill and blast contractor. Hydraulic excavators are used to achieve good selectivity in conjunction with good blasting practice and mine to a 2.5 m flitch height. Ore and waste are generally loaded to 40-tonne capacity off-highway haul trucks to a ROM stockpile or to the IMWF. Mining operations are conducted on a two 8.5-hour shifts per day. The mining production rate is approximately 3 Mtpa total material.

1.16 Processing Operations

The ore process comprises crushing and milling of the ROM ore followed by froth flotation to produce a gold- and silver-bearing concentrate. The process plant operates 24 hours per day, seven days per week, except for ore crushing which operates for 12 hours per day. The plant is designed to process approximately 100 tph at an operating availability of 91.3%.

The process plant is located on the side of the Ada Tepe hill, adjacent to the IMWF and approximately 1 km south of the open pit. Process plant tailings is thickened to a paste of maximum solids content ranging between 56 wt% and 68 wt% and is disposed of in the IMWF, along with waste rock from the mine. The concept of the IMWF is to place thickened tailings into cells constructed from mine waste rock. The mine waste rock provides the strength required for overall stability and internal drainage.

The plant electrical power is supplied by a local power authority via an underground high voltage cable supplied from the Krumovgrad 110 kV/20 kV substation. A 20 kV main substation is established at the plant site to facilitate power distribution to various areas within the plant.

The Ada Tepe process plant was commissioned in April 2019 and ramped up to nameplate production in September 2019. Plant performance to date, in terms of throughput and gold recovery to concentrate, supports the assumptions used in the current Mineral Resource / Mineral Reserve estimate.

1.17 Project Infrastructure

The Ada Tepe mine has been operating at commercial production levels since June 2019 and all mine site infrastructure has been completed to support the open pit operations including; IMWF, process plant, workshops, warehouses, control rooms, offices and water management facilities.

1.18 Permitting and Social Impacts

The Mine site has all required permits for operation. A construction permit for the main operational site was issued in 2016. A final operational permit was issued in 2019. All other major permits and construction permits (discharge pipeline, new part of the access road, existing road, pump station etc.) were issued and entered into force within the period between 2016 and 2019.

As part of the permitting process an Environmental and Social Impact Assessment was conducted (“ESIA”). Based upon the outcomes of the ESIA, a Social Management Plan (“SMP”) was put in place at the earliest stage and followed during project development and construction. As a living document, the SMP is being followed during operation to ensure implementation of coherent and integrated strategic initiatives targeted towards sustainable economic and social benefits.

1.19 Capital and Operating Costs

The total sustaining capital of 43.46 US$ M associated with ongoing operations for the life of the mine, as well as estimated closure and rehabilitation costs.

The average estimated total cash cost per tonne of ore processed for the LOM is US$46.15/t treated, as presented below in Table 1-3.

Table 1-3: Operating Cost Summary

Item	Unit	LOM
Mining cash cost per tonne of ore	US$/t ore	11.47
Processing cash cost per tonne of ore processed	US$/t ore	17.33
Royalty per tonne of ore processed	US$/t ore	6.46
Admin cash cost per tonne processed	US$/t ore	10.90
Total cash cost per tonne of ore processed	**US$/t ore**	**46.15**
Total cash cost/z AuEq (1), (2), (4)	US$/oz AuEq	373
On-site cash cost/oz Au (1),	US$/oz	346
Cash cost/oz Au sold, net of by-product credits (1), (3)	**US$/oz**	**386**

Notes:

(1) Cash costs are reported in US$, although majority of costs incurred are denominated in non-US$, and consist of all production related expenses including mining, processing, services, royalties and general and administrative.

(2) Refer to the "Non-GAAP Financial Measures" section of DPM Management's Discussion and Analysis (MD&A) for the three and nine months ended 30 September 2020 for more information regarding reconciliations of these Non-GAAP measures.

(3) Cash cost per ounce of gold sold, net of by-product credits, represents cost of sales, less depreciation, amortisation and other non-cash expenses, plus treatment charges, penalties, transportation and other selling costs, less by-product silver revenues, divided by the payable gold in concentrate sold.

(4) AuEq is based on metal prices of 1250 US$/oz Au and 17 US$/oz Ag.

1.20 Financial Summary

Based on the projected life of mine ("LOM") ore production schedule of six years, operating costs and metal prices of US$1,250 per troy ounce price for gold and US$17 per troy ounce for silver, the LOM after-tax net present value ("NPV") is estimated at US$391 million when using a discount rate of 5.0%.

1.21 Interpretations and Conclusions

DPMKr conducted detailed exploration of the Ada Tepe prospect between 2000 and 2004. A total of 52.9 km of drilling, and 18.3 km of surface trenching was completed, with more than 66,000 individual assay intervals and 5,700 bulk density determinations. Since then, some additional 91 km of RC drilling has been undertaken as part of pre-production grade control.

There is a strong level of confidence in the data on which the Mineral Resource is based. Benchmarking of Upper Zone mineralisation volumes against the GC model has resulted in a more reliable grade-tonnage scenario - significantly lower tonnes and higher grades modelled compared to the previous MRE.

The mine plan shows a high conversion of Mineral Resources to Mineral Reserves at the cut-off grades selected. The extent of the data collected through this exploration program and the quality control standards used provide the basis for a high level of confidence for this project. Furthermore, the project has been demonstrated to be technically and commercially viable.

1.21.1 Geology and Sampling Procedures

During site visits by CSA Global in 2013, 2014, 2015, 2016 and 2017 and 2019 meetings have been held with DPM staff. Data and procedures were reviewed in the mine office, open pit operations, processing plant and SGS laboratory. Conclusions based on these site visits were that procedures are consistent with good mining industry practice.

1.21.2 Geological Model

CSA Global believes the current understanding of geology and mineralisation controls is good, and that the current MRE model adequately predicts the in-situ grades and tonnes realised during open pit development and mine production. Good comparison between the grade control model, sampling and drilling data with the MRE model, demonstrates the robustness of the MRE model.

1.21.3 Assay QAQC

Conclusions from the QAQC results for Au and Ag exploration sample analysis are summarised below:

- The QAQC procedures implemented at Krumovgrad were adequate to assess the accuracy and precision of the assay results obtained.
- No fatal flaws were noted with respect to cross contamination or assay accuracy (blank or standard analysis respectively). CSA Global noted that accuracy and precision exhibited by SGS Chelopech was, at times, poorer than the other laboratory results, however no significant bias was noted and CSA Global considered that the Au and Ag CRMs analysed by the SGS – Chelopech laboratory to be accurate and appropriate for Mineral Resource estimation studies.
- CSA Global concluded that for the purpose of Mineral Resource estimation, acceptable levels of precision with no significant bias for both Au and Ag were reported for all the sampling stages analysed.
- Relatively high levels of inter-laboratory precision were evident for the Au analyses between primary and umpire laboratories. In addition, there was no evidence of bias between the compared datasets.

A review of the quality control data for the grade control drilling was completed for Au and Ag assays. Data from RC drill holes drilled between 2017 and 2020 were reviewed.

- No failures were noted in the preparation blanks and therefore no issues are expected with respect to cross contamination.
- Au CRM results were mostly accurate with no significant bias or failures. Ag low grade CRMs have multiple bias issues, but these are attributed to the imprecision of the assay methods at low grades.
- Acceptable levels of precision have been exhibited for Au duplicate pairs with SGS_BO having the poorest precision for field duplicates and laboratory duplicates. Ag pairs were mostly low grade, but where pairs were greater than ten times the lower detection limit, precision was mostly acceptable.

1.21.4 Database Validation

Project data are housed in an acQuire relational database which has inbuilt validation criteria, constraints and triggers to ensure that all data in the database are validated and meet these criteria. Verification checks are also completed by DPM on surveys, collar coordinates, lithology, and assay data. Data undergoes further validation by CSA Global through a series of Datamine loading macros.

An audit of the DPMKr database was completed by CSA Global and the overall conclusions were that the database was well maintained, good practices appeared to have been followed, and data in the database should be fit for purpose for downstream work.

The QP has reviewed the reports and believes the data verification procedures undertaken on the data collected from DPMKr adequately support the geological interpretations and the analytical and database quality, and therefore supports the use of the data in Mineral Resource and Mineral Reserve estimation.

1.21.5 Bulk Density

CSA Global concludes that the in-situ dry bulk density data is collected using appropriate sampling methods and analysis procedures. Investigations based on the geological logging codes concluded that the modelled geological constraints allowed for appropriate grouping of the BD data. CSA Global reviewed these assumptions in the July 2020 MRE update by further subdividing these geological zones based on mineralised vs waste material. Minor differences observed between the mean density values for the waste and mineralised material in the Upper Zone conclude that the previous grouping of BD values is appropriate. No material differences were identified for the Wall Zone in the updated dataset. CSA Global has therefore used the values determined in the previous study, with the inclusion of values for the basement waste rock.

1.21.6 Mineral Resource Estimation

A total of 2,510 holes for 149,850 m were used in the update to the Ada Tepe MRE.

Grade (Au and Ag) was estimated into parent cells of all domains using Ordinary Kriging using a three-pass search strategy. Mean dry bulk densities were assigned based on lithology, mineralisation and oxidation. 3D geology (including lithostratigraphy and structure) and oxidation models were constructed.

Validation of the estimated model using swath plots, histograms and probability plots of inputs and outputs and visual validation of cross sections showed that estimated block grades reflect the grade tenor of input data.

The block model was classified in accordance with CIM guidelines as Measured, Indicated and Inferred Mineral Resources. The MRE is reported exclusive of Mineral Reserves.

1.21.7 Process Plant and Infrastructure

Plant operating data indicates that the Ada Tepe processing facility is currently achieving nameplate production, and design gold and silver recoveries to saleable concentrate. Future mine production will include a higher percentage of more harder wall material in the plant feed. This will result in a decrease in plant throughput rate from 105tph down to 90tph as per the latest LOM production and processing plan. The IMWF design and construction schedule based on the updated LOM plan waste quantity and tails volume indicates sufficient available tailings storage throughout the LOM.

Future plant performance optimization opportunities include the installation of an on-stream analyzer allowing for further advanced control and automation of the floatation circuit to stabilize and improve recovery performance.

1.21.8 Mine Operations

The successful establishment and construction of the mine has resulted in a viable mining operation that has reached its design capacity and realised several planned milestones. The established operational approach is indicated to continue to deliver the production and results of the LOM Plan.

On an after-tax basis, based on US$1,250/oz price for gold and US$17/oz for silver the after-tax NPV is US$391 million at a discount rate of 5%.

No risks are considered to be fatal flaws in the context of the Ade Tepe Operation, although continuing actions to improve the risk profile will be undertaken.

1.21.9 Qualitative Risk Assessment

Table 1-4 summarises the areas of uncertainty and risk associated with the operation, informed by the conclusions summarised above, and recommendations discussed in Section 26.

Table 1-4: Project-specific risks

Project risk area	Summary	Outcome	Mitigation
Geology and data management	Upper Zone mineralisation is complex. Volume estimation through Indicator Kriging has been benchmarked against the current good performance of the GC model in production.	Performance may change as mining moves from predominantly oxide to fresh.	As production moves out of oxide and into fresh, performance must be monitored to ensure assumptions remain valid.
Mineral Resource estimation	The wireframes have been interpreted with the current reporting cut-offs in mind.	Any changes to cut-off, either increasing or decreasing may result in different volumes being interpreted, data being selected and therefore	If a broader spectrum of cut-off grades are of interest, a non-linear estimation method is recommended.

Project risk area	Summary	Outcome	Mitigation
		tonnes and grades being estimated.	
Mining	The Upper Zone mineralisation is highly complex and exhibits a high nugget component and significant short-range grade variability.	Misallocation of ore and waste. Unplanned dilution within feed.	Continue to ensure that RC grade control drilling is undertaken ahead of mining, preferably one year ahead. Careful mining practices to minimise dilution, such as the use of BMM and HPGPS guided excavators should continually be used during ore extraction.
Processing	No significant risks		
Waste and Tailings Management	Shortage of waste available from Pit for constructing tailings cells, or excessive volume of tailings, due to misalignment between design and actual waste/tailings mass balance	Alternative local and/or imported waste required. Periods of lower plant throughput or plant stoppage to allow	Detailed life of mine plan showing waste and tails production indicate that cell construction schedule allows sufficient available volume for tails throughout the life of mine. This schedule is progressively reviewed and adjusted as the mine progresses to account for as-built situation. Contingency tailings storage capacity available.
Force majeure (including COVID-19 outbreak)	Could affect labour and supply chain which could impact capital and operating costs. Could affect obligations under the concession and exploration contracts	Could impact on the mining and exploration schedule	Managing inventories and reviewing alternative supply options should any disruptions occur. Focus on managing outbound supply chains, including, by considering multiple sale and transportation outlet. Written notice to MoE for temporary suspension of the concession contract for the period of Force majeure. Additional agreements for extending the exploration contract terms and extension of other contracts for land use.

1.22 Recommendations

The following recommendations are made in relation to the Ada Tepe Mine operations.

1.22.1 Assay QAQC

- Some missing samples (with low or no recoveries) had been assigned a waste grade of 0.001g/t Au in the DPM database, CSA Global treated these samples as missing rather than waste samples and the adjustment was carried through into the DPM database. CSA Global recommend any future samples with low or no recoveries are investigated thoroughly to determine their correct grade assignment.

1.22.2 Geology and Mineral Resources

- Characterisation of 'voids' are recommended to ensure they are adequately mapped, and that grade and density relationships are well understood.

1.22.3 Mining and Processing

- Continue with the following activities:
  - Training and development of the technical workforce to further optimise and improve management and operational practices.
  - Reconciliation, with particular focus on comparisons as mining commences into fresh material to ensure assumptions remain valid, with respect to the Mineral Resource model and the MSO parameters used in estimation of dilution and ore loss in the Mineral Reserve model.
  - Careful monitoring of the IMWF and continued management of the waste and tailings placement process according to the design principles.
  - Focus on continuous improvement and application of appropriate innovations to operational activities – including the installation of an online analyser, allowing for improved flotation control performance.
- Implement the further process plant optimization opportunities to improve flotation performance and provide increased process control measures to ensure 'steady state' operations.
- Based on the results from the geo-metallurgical orientation program, continue the geo-metallurgy test program and model development for the Ada Tepe deposit to further increase the ore body knowledge and linking it to plant performance. This would allow for further process optimization through improved planning, prediction and control of the mining operation, feed blend and plant control.
- Grade control drilling should continue ahead of mining, to ensure sufficient time for grade control modelling, planning and scheduling. For 2021, DPMKr has planned 215,000m of RC grade control drilling with a total cost including drilling, assays, labor and materials of approximately US$11.0 million. The planned drilling will ensure all of pushback 2 and parts of pushback 3 & 4 are sufficiently tested for grade control purposes.
- Continue to work actively to monitor the COVID-19 pandemic and implement further measures as required to mitigate and/or deal with any repercussions that may occur as a result of the outbreak.

2 Introduction

2.1 Issuer

CSA Global, an ERM Group company, was requested by Dundee Precious Metals Krumovgrad ("DPMKr"), a 100% owned subsidiary of Dundee Precious Metals Inc. ("DPM"), to update the Mineral Resource estimate and supervise, verify and validate the Mineral Reserve estimate for the Ada Tepe open pit gold mine located in south-eastern Bulgaria. The change being reported in this Technical Report is an update to the Mineral Resource and Mineral Reserve estimates previously reported by DPM.

DPM is a public company headquartered in Toronto, Canada and listed on the Toronto Stock Exchange (TSX: DPM). This Technical Report has been prepared for DPM in accordance with the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101").

2.2 Terms of Reference – CSA Global

CSA Global is an international independent geological and mining consultancy with offices in Australia, UK, Ireland, Canada, Indonesia, and South Africa, and is an ERM Group company. CSA Global was engaged by DPMKr to update the MRE and supervise, verify and validate the Mineral Reserve estimate for the Ada Tepe open pit gold mine located in south-eastern Bulgaria. This Technical Report is prepared in accordance with the disclosure and reporting requirements set forth in NI 43-101, including Companion Policy 43-101CP and Form 43-101F1.

The authors of this Technical Report do not disclaim any responsibility for the content contained herein and make appropriate limited disclaimers as permitted under Section 3 (Reliance on Other Experts).

CSA Global's technical staff used geological data and interpretations, data relating to underground development and mined areas, drilling and assay data and other relevant technical data for the purposes of preparing this Technical Report.

2.3 Ownership

DPMKr, a 100% subsidiary of DPM, was awarded the Krumovgrad licence area (130 km^2) on 12 June 2000 in accordance with the Agreement of Prospecting and Exploration reached with the Bulgarian Ministry of Economy. The licence area is located in East Rhodope, approximately 320 km (by road) southeast of Sofia, in the Kardjali District, immediately south of the regional township of Krumovgrad (Latitude 25° 39' 15" and Longitude 41° 26' 15").

The Mining Licence ("Khan Krum Concession") covers an area of 1,370 ha (13.7 km^2) and includes the area of the Ada Tepe mining operation and the satellite prospects of Kuklitsa, Kupel, Surnak, Skalak, and Sinap. DPMKr has 100% ownership of the mine, which operates under a concession agreement that was signed between DPMKr and the Council of Ministers of the Republic of Bulgaria in 2012 for a period of 30 years. Under Bulgarian regulations, the Mining Licence area is applied for on the basis of geographical coordinates.

2.4 Principal Sources of Information

The data used to update the MRE reported herein is current as of 31 March 2020. The MRE has an effective date of 31 July 2020. The mined pit surface used to deplete the Mineral Resource is as of 31 July 2020. The updated Mineral Resource has been used as the basis for estimating the Mineral Reserve estimate as outlined in this document, with an effective date of 31 July 2020.

This Technical Report is an update to the NI 43-101 Technical Report re-issued on 7 November 2017 (CSA Global, 2017).

Qualified Persons for the NI 43-101 are:

- Ms Petya Kuzmanova (Qualified Person) – Drilling, Sampling and Assaying
- Mr Galen White (Qualified Person) – Geology and Mineral Resources
- Mr Karl van Olden (Qualified Person) – Mining and Mineral Reserves
- Mr Gary Patrick (Qualified Person) – Metallurgy and Processing.

A full listing of the principal sources of information is included in Section 27 of this Technical Report.

2.5 Units

All units of measurement used in this Technical Report are metric unless otherwise stated, and are contained in the Glossary/Abbreviations in the front of this Technical Report.

2.6 Site Visits

2.6.1 Current Personal Inspection (1) – Geology and Sampling

DPM Senior Resource Geologist, Ms Petya Kuzmanova has been involved in the mine since 2017, with the most recent site visit being 5th November 2019. Historical and recent activities on site include geological supervision, drilling review, sampling oversight and Mineral Resource estimation and guidance to the on-site technical team in the areas of DPM technical procedures and standards.

Ms Kuzmanova continues to follow the technical processes of the mine on a regular basis through review of documentation and personal communication with key technical staff.

2.6.2 Additional site visit – Project Review

Ms Maria O'Connor, Partner and Manager Resources EMEA, CSA Global, visited site on 27th and 28th February 2019. No drilling was underway since exploration on the Ada Tepe deposit ceased in 2013, and Phase 1 GC drilling was completed in March 2018, and Phase 2 had yet to commence.

Ms O'Connor is not a Qualified Person in relation to the preparation of this Technical Report.

The following was completed during the site visit:

- On-site inspection of project geology, drill core, data collection protocols and communication with DPMKr project staff.
- A Drill Hole and Trench Database for the Ada Tepe mine was reviewed, which includes collar, assay, survey, geology, structure, and density data.
- The project and local geology characteristics were discussed with DPM staff who have been involved in drilling and sampling programs since 2000.
- An inspection of the geological sequence over the project, through field excursions to roadside outcrop, trenches and pit.
- A review of continuous (top of hole to bottom of hole) drill core from ATDD001 and 074 being representative of mineralised zones encountered over the project and of the drilled deposit (spatial representivity). This review was undertaken with reference to hard copy graphical logs of geology, sampling and assay data.
- A review of the database held for the Ada Tepe mine (hosted in acQuire software), spot checks against hard copy assay certificates and review of data collection procedures and protocols adopted during data collection activities.

2.6.3 Current Personal Inspection (2) – Mining and Mineral Reserves

Karl van Olden, Partner and Manager Mining, CSA Global (Pty) Ltd visited the site on 25th and 26th February 2019. During the site visit, the following review was undertaken:

- Review of mining activities which included drill and blast, excavator loading and grade control activities.
- Mine planning process which included short-term planning, whittle optimisation and grade control using blast movement monitors.
- Integrated Waste Management Facility, construction, placement of waste and rehabilitation activities.
- Mine Offices and infrastructure facilities.

2.6.4 Current Personal Inspection (3) – Site Visit Metallurgy

Mr. Patrick has been providing support to the DPM metallurgical team on a regular basis since 2019. A site visit to the Ada Tepe operation was planned for the first week of March 2020, but this was cancelled due to COVID-19 travel restrictions and safety precautions. Mr Patrick is familiar with the operation and plant performance due to ongoing communication with key personnel and is familiar with the regional setting from previous visits to the Krumovgrad area, providing technical support to other projects. He has reviewed the production and test work results, as well as related operating and technical information. As a result, it is Mr. Patrick's opinion is that the required amount of review for this report has been completed and a site visit was not required.

2.7 Independence

The external contributors to this study neither have, nor have had previously any material interest in DPM or related entities or interests. The relationship with DPM is solely one of professional association between client and independent consultant. This Technical Report is prepared in return for fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this Technical Report.

CSA Global (including its directors and employees) does not have nor hold:

- Any vested interests in any concessions held by DPM
- Any rights to subscribe to any interests in any of the concessions held by DPM either now or in the future
- Any vested interests either in any concessions held by DPM, or any adjacent concessions
- Any right to subscribe to any interests or concessions adjacent to those held by DPM either now or in the future.

2.8 Cautionary Statements

2.8.1 Forward Looking Information

This Technical Report contains "forward-looking information" or "forward-looking statements" that involve a number of risks and uncertainties. Forward-looking information and forward-looking statements include, but are not limited to, statements with respect to the future prices of gold and other metals, the estimation of Mineral Resources and Reserves, the realisation of mineral estimates, the timing and amount of estimated future production, costs of production, capital expenditures, costs (including capital costs, operating costs, cash cost per ounce (oz) and per pound (lb) and other costs) and timing of the development of new mineral deposits, success of exploration activities, permitting timelines, LOM, rates of production, annual revenues, internal rate of return ("IRR"), NPV, currency fluctuations, requirements for additional capital, government regulation of mining operations, environmental risks, unanticipated reclamation expenses, title disputes or claims, limitations on insurance coverage and timing and possible outcome of pending litigation, if any.

Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved.

Forward-looking statements are based on the opinions, estimates and assumptions of contributors to this Technical Report. Certain key assumptions are discussed in more detail. Forward looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of DPM to be materially different from any other future results, performance or achievements expressed or implied by the forward-looking statements.

Such factors include, among others: the actual results of current exploration activities; actual results of reclamation activities; conclusions of economic evaluations; changes in project parameters, including schedule and budget, as plans continue to be refined; future prices of gold and other metals; possible variations in grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accidents, labour disputes and other risks of the mining industry delays in obtaining governmental approvals or financing or in the completion of development or construction activities, fluctuations in metal prices; shortages of labour and materials, the impact on the supply chain and other complications associated with pandemics, including the COVID-19 (coronavirus) pandemic; as well as those risk factors discussed or referred to in this Technical Report and in DPM's latest annual information form under the heading "Risk Factors" and other documents filed from time to time with the securities regulatory authorities in all provinces and territories of Canada and available at www.sedar.com.

There may be other factors than those identified that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers are cautioned not to place undue reliance on forward-looking statements. Unless required by securities laws, the authors undertake no obligation to update the forward-looking statements if circumstances or opinions should change.

2.8.2 GAAP Measures

This Technical Report contains certain non-GAAP (Generally Accepted Accounting Principles) measures such as expected cash cost per tonne/ounce/pound, and EBITDA (earnings before interest taxes, depreciation and amortisation). Such measures have non-standardised meaning under International Financial Reporting Standards ("IFRS") and may not be comparable to similar measures used by other issuers. See DPM's latest Management's Discussion and Analysis for more information about historical non-GAAP measures reported by DPM.

3 Reliance on Other Experts

The authors of this Technical Report have reviewed available Company documentation relating to the Ada Tepe operation and other public and private information as listed in Section 27 (References). In addition, this information has been augmented by first-hand review and on-site observation and data collection conducted by the authors.

The Qualified Persons take responsibility for all scientific and technical content of this Technical Report and believe it is accurate and complete in all material aspects. CSA Global has relied on information provided by DPM relating to legal, political, environmental and tax matters relevant to this Technical Report. CSA Global relied on DPM's legal representation to describe the following sections:

- 4.3 Mineral Rights and tenement description.
- 4.4 Permitting obligations
- 4.5 Royalties
- 4.6 Environmental Liabilities
- 20.0 Environmental Studies, Permitting and Social or Community Impact
- 24.1 Legal Framework
- 24.2 Foreign Investment

These items have not been independently reviewed by CSA Global and CSA Global did not seek independent legal review of these items.

4 Property Description and Location

4.1 Background Information

Bulgaria is a Slavic Republic in south-eastern Europe, bounded to the north by Romania, to the west by Serbia and Macedonia, to the south by Greece and Turkey, and to the east by the Black Sea. The capital city is Sofia and the national population is approximately 7 million.

Bulgaria became a member of the European Union ("EU") on 1 January 2007 and has been a member of NATO since April 2004. The local currency, the BGN has been pegged to the Euro (1.95583 BGN/EUR€) since 1999.

Educational standards within the country are high. Mineral exploration was important under the communist regime, resulting in a large pool of well-qualified geologists and technical staff. The historical lead-zinc mining industry in Eastern Rhodopes is also a source of both skilled and unskilled personnel.

Bulgaria is well serviced by facilities and infrastructure. Large towns usually have the facilities normally found in western European countries. The country is served by an extensive network of paved roads, except in the most mountainous districts. There is a comprehensive rail network.

4.2 Project Location and Accessibility

The Ada Tepe mine operations are located in East Rhodope, approximately 320 km (by road) southeast of Sofia, in the Kardjali District immediately south of the regional township of Krumovgrad (25° 39' 15"E and 41° 26' 15"N). Figure 4-1 displays the location of the concession area in the context of Bulgaria and the surrounding region. Krumovgrad is located approximately 320 km by paved road southeast of Sofia and some 15 km north of the border with Greece.

Figure 4-1: Location plan of the Krumovgrad Concession area
Source: DPM, 2020

The Ada Tepe deposit is located 3 km south of the Krumovgrad townsite and trends in a north-south direction. The deposit area comprises of hilly topography abutting a major regional river system. The mine site is readily accessible at all times of the year.

4.3 Mineral Rights and Tenement Description

The licence area is located in East Rhodope, approximately 320 km (by road) southeast of Sofia, in the Kardjali District, immediately south of the regional township of Krumovgrad (Latitude 25° 39' 15" and Longitude 41° 26' 15").

On 25 April 2001, the Company registered the geological discovery of the Khan Krum deposit at the Ministry of Environment and Waters ("MoEW") hosting gold located in the Krumovgrad licence area.

Based on the prospecting and exploration permit, the Company submitted to the MoEW, Application with Incoming No. ZNPB-1149/27.04.2007 for the registration and certification of a commercial discovery: Khan Krum deposit comprising the prospects of Ada Tepe, Surnak, Skalak, Sinap, Kuklitsa, and Kupel. On 28 August 2009 the MoEW formally issued the Certificate for Commercial Discovery No. 0417/28.08.2009 for the Khan Krum deposit, including Mineral Reserves, Mineral Resources and coordinates. This entitles DPM to plan and develop those Mineral Resources and Mineral Reserves within the commercial discovery boundaries and is valid for 30 years.

The Mining Licence ("Khan Krum Concession") covers an area of 1,370 ha (13.7 km^2). The current Ada Tepe commercial discovery boundary encompasses an area of 16.1 ha (0.161 km^2). A plan view of the commercial discovery boundaries and enveloping concession area is shown in Figure 4-2.

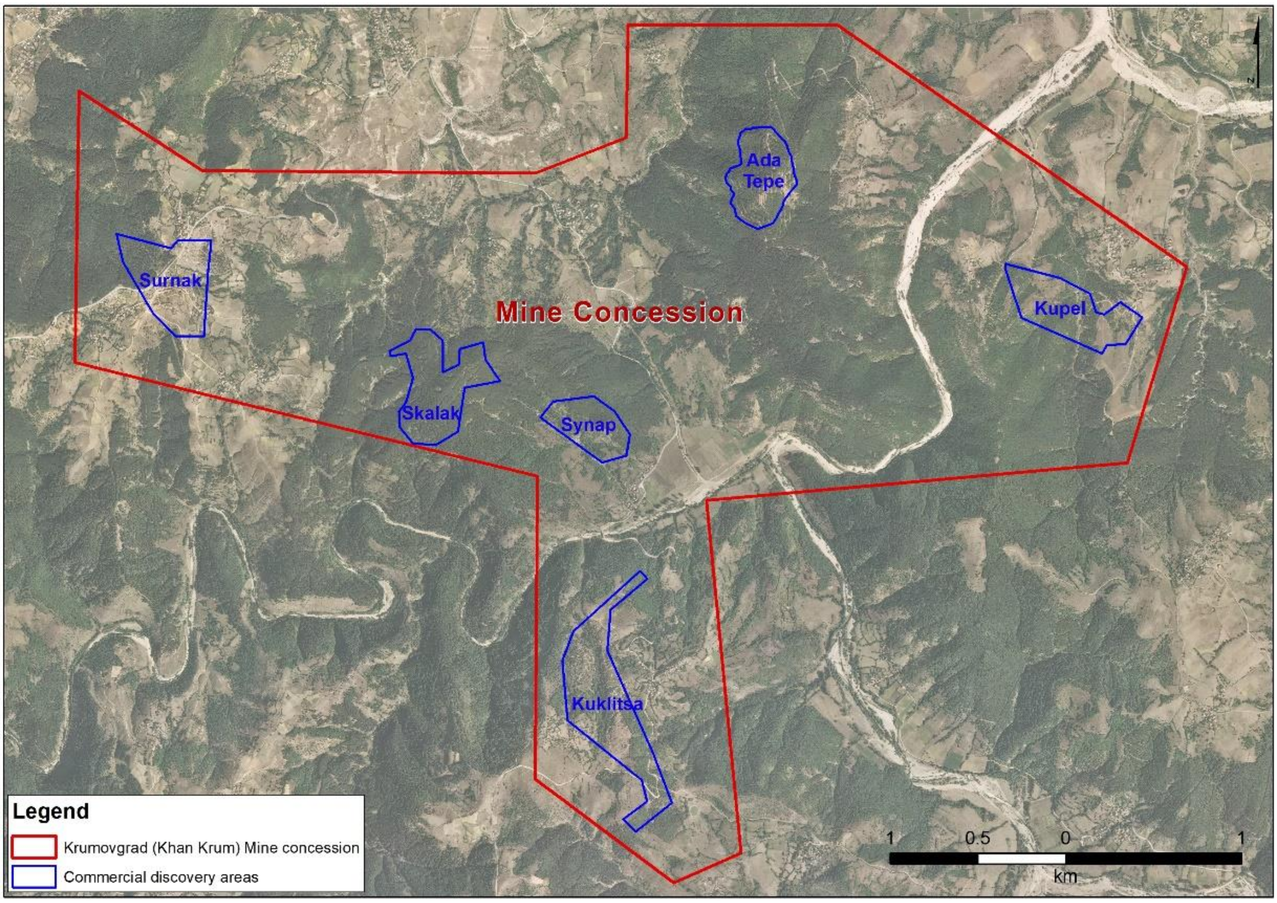


Figure 4-2: Plan view of the commercial discovery boundaries and enveloping mine concession area
Source: DPM, 2020

4.4 Permitting

The Mine site has obtained all required permits for operation. There are no pending obligations related to the property or other tenure rights. The permits can be divided into four main categories, and their histories are summarised below.

4.4.1 Concession Rights

The process of securing the concession rights began in 2007. To secure the rights, a number of key steps were completed which required the coordination of applications between different ministries, administrations and departments. In August 2009, a Commercial Discovery Certificate was issued for the Krumovgrad Gold Project by the MoEW. The final concession rights were granted to the company in 2011 by the Bulgarian Council of Ministers ("CoM").

4.4.2 Environmental Impact Assessment and Environmental Permits

In parallel with the process of securing concession rights, the Company started the process of environmental permitting. The first application was submitted in 2010 and the main environmental act was granted by Resolution of the MoEW was issued in late 2011. The Environmental Impact Assessment ("EIA") resolution was subject to an appeal by Krumovgrad Municipality and three non-governmental organisations ("NGO"s). In 2014, a five-member Supreme Administrative Court panel issued a ruling upholding the original ruling of the three-member panel, rejecting the appeals by the NGOs against the EIA Resolution. This ruling was final, and the EIA Resolution entered in force.

4.4.3 Land Ownership

The Company has purchased all the required land for the Ada Tepe Mine and surrounding facilities.

4.4.4 Construction and Operational Permits

A construction permit for the main operational site was issued in 2016. A final operational permit was issued in 2019. All other major permits and construction permits (discharge pipeline, new part of the access road, existing road, pump station etc.) were issued and entered into force within the period between 2016 and 2019.

4.5 Royalties

The Company is paying a royalty to the Bulgarian government, at a variable royalty rate applied to the gross value of the gold and silver metals combined in the ore mined. The royalty rate depends on the profitability of the operation. At a pre-tax profit to sales ratio of 10% or less, the royalty rate will be 1.44% of the value of the metals. At a pre-tax profit to sales ratio of 50% or more, the royalty rate will be 4% of the value of the metals. At intermediate levels of profitability, the royalty rate will vary on a sliding scale between 1.44% and 4% in a linear fashion.

4.6 Environmental Liabilities

An EIA statement was issued by the Bulgarian Minister of Environment and Water. The statement includes a number of conditions which have to be implemented during detailed design, construction, operation, closure and rehabilitation stages of the mine.

The Closure and Rehabilitation Plan was approved by the Minister of Economy and Energy. Total cost estimate for closure of the site and IMWF, plus rehabilitation, is BGN 10.3 million (approximately US$6.17 million). The financial guarantee for closure and rehabilitation of the site was determined as part of the Closure and Rehabilitation Plan. In November 2020, the financial guarantee was renewed for a year.

DPM is not aware, nor has it been made aware, of any other significant environmental liability associated with the Ada Tepe Mine.

4.7 Other Risks

COVID-19 as a circumstance is determined as Force majeure ("FM") in the concession and exploration contracts with the Ministry of Energy ("ME"). The definition of FM is an extraordinary event or circumstance beyond the control of the Parties occurring after the effective date of the Agreement including an intervening act of God or public enemy, such as fire, epidemic, flooding, earthquake, unfavourable weather conditions or other natural disaster, hostile acts or environment arising from or relating to acts of war or active hostilities (whether declared or not), civil commotions, revolution, strike, riot or other public disorder, lockouts, etc.

If the Company cannot perform its concession and exploration obligations as a result of COVID-19, the Company is required to promptly notify the ME. The performance of the affected obligations shall be suspended for the duration of the FM. Additional agreements in writing shall be concluded to make arrangement for the period of suspension.

To date, DPM has not declared FM on any major Ada Tepe contract due to COVID-19 at the time of filing but there is not assurance that the situation with respect to COVID-19 might change and DPM may have no choice but to declare FM.

To the extent known, the authors of this Technical Report are not aware of any other significant factors or risks that may affect access, licence title or the ability to perform work on the property.

5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Accessibility

The town of Krumovgrad is approximately 320 km southeast by paved road from the capital of Bulgaria, Sofia, which is serviced by a modern international airport. A second international airport is situated in the city of Plovdiv located approximately 106 km northwest of Krumovgrad town. The Ada Tepe deposit is located some 3 km south of Krumovgrad town. Access to the general area is available at all times of the year, by sealed roads to Krumovgrad. Access within the licence area is good, with all-weather surface roads transecting the license area. Secondary roads are unsurfaced but generally accessible with four-wheel drive vehicle year-round.

5.2 Physiography and Climate

The Krumovgrad District is around 230 m above mean sea level and is characterised by a rugged landscape. The Ada Tepe deposit is located in an area of moderate, hilly topography abutting a major regional river system.

The concession area climate is Continental-Mediterranean, featuring markedly higher winter and substantially lower summer precipitation. Winters are mild, but during intensive cold spells temperatures may fall to -13°C. Summers are hot, reaching 36°C in warmer spells and exceeding 40°C in some locations.

The average annual precipitation is 703.5 mm. The bulk of this falls in autumn and winter, occasionally as snow in the coldest months. The highest rainfall occurs in December (96.9 mm average) and the lowest in August (24.1 mm). Estimated 1:100-year rainfall events are 117.3 mm for 24 hours duration, and 184.1 mm for 72 hours. Probable Maximum Precipitation estimates are up to 383.4 mm for 24 hours and 605.4 mm for 72 hours. Average annual evaporation is 1,050.8 mm, similar overall to annual rainfall in magnitude, but opposite in seasonal sense. Mining operations are conducted all year round.

5.3 Local Resources

The Ada Tepe mine operation currently employs 291 people on site with the majority from surrounding communities. The town of Krumovgrad has a population of approximately 9,000.

Educational standards within Bulgaria are high. Mineral exploration was important under the communist regime, resulting in a large pool of well qualified geologists and technical staff. The historical lead-zinc mining industry in Eastern Rhodopes is also a source of both skilled and unskilled personnel in the local area.

Small villages are dispersed widely throughout the concession area involved in subsistence farming, particularly livestock and the growing of tobacco and other vegetables on the poorly developed soils characteristic of the region. The other main land use within the concession area is state-controlled forestry.

5.4 Infrastructure

Infrastructure in the area is good, with paved roads, power and water resources available within close proximity to the Ada Tepe mine site.

The Company is holder of a Permit No. 31530328/04.03.2013 for groundwater abstraction using new abstraction facilities – tube well with infiltration lateral, issued by the Director of Basin Directorate for Water Management – East Aegean Region – Plovdiv with a 10-year validity term. The purpose of abstraction is industrial and independent drinking water supply.

Electric power for the mine operations is supplied by the "EVN" EAD via a single overhead line. A backup supply line will also be available. The Company has its own site substation and the site distribution system.

Most of the electric power is used for ore crushing and grinding, and the remainder is used in the other process stages, the offices, and other ancillary facilities.

The Company is holder of a water discharge permit #33140188/21.08.2015. The company has operationalised 6.8 kilometres discharge pipeline in August 2019. The discharge pipeline crosses different types of land (agriculture, private, municipal, state owned and national forestry lands). DPMKr has been granted all rights necessary to use the land.

6 History

6.1 History of Ownership and Exploration

The Ada Tepe prospect was the subject of only very brief attention in previous State-funded exploration in the early to mid-1990s, by GeoEngineering of Assenovgrad, and Geology & Geophysics of Sofia. In the early to mid-1990s, GeoEngineering of Assenovgrad carried out an extensive program of geological mapping, trenching and drilling over the nearby Surnak prospect together with minor trenching on the Skalak and Kuklitsa prospects.

Geology & Geophysics included the entire licence area in a South East Rhodopes regional soil sampling program (average sample grid 250 m x 50 m) conducted during the early to mid-1990s. Magnetic and IP surveys were also conducted across the prospect. The results of this early work showed the presence of gold soil geochemical anomalies of significant intensity and extent over the Krumovgrad licence area, and a variety of geophysical anomalies.

On 12 June 2000, BMM (a 100% subsidiary of DPM, now referred to as DPMKr) was awarded the Krumovgrad licence area (113 km^2) in accordance with the Agreement of Prospecting and Exploration reached with the MEET.

6.2 Historical Mineral Resource and Mineral Reserve estimates

There was no historical Mineral Resource and Mineral Reserve estimates in accordance with section 2.4 of NI 43-101.

6.3 Historical Production

Ancient mining pits, dated to 2nd millennium BC, have been uncovered by archaeologists indicating ancient artisanal mining activity, the extent of which is low. There are also several areas of the deposit that have ancient mining spoils tips. These often have elevated gold grades and have been modelled based on intercepts in drillholes. Figure 6-1 to Figure 6-3 shows photos of mining pits, overburden spoils and a plan view of overburden mapped in the licence area.

No other production has been undertaken at the property prior to DPM’s ownership.

Figure 6-1: Ancient mining pits (water filled) exposed by archaeologists
Source: CSA Global, 2012

Figure 6-2: Overburden mapped in east Ada Tepe
Source: CSA Global, 2019

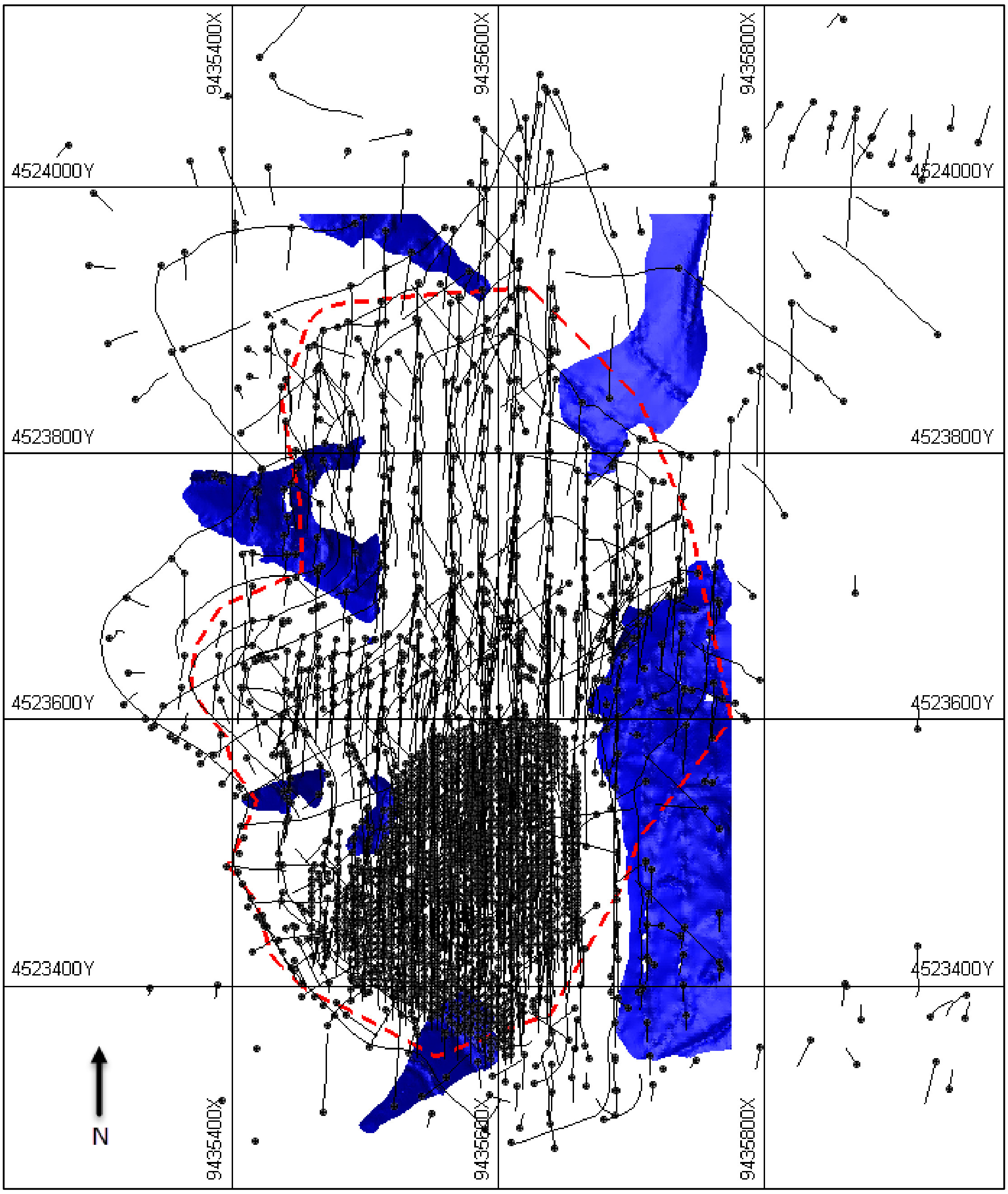


Figure 6-3: *Wireframes created of "overburden" or historical mining spoils*

Note: Licence area shown as red dashed line.

Source: CSA Global, 2020

7 Geological Setting and Mineralisation

7.1 Regional Geology

The Krumovgrad region is located within East Rhodope which comprises the eastern portion of a large metamorphic complex termed the Rhodope Massif. The massif underwent Upper Cretaceous extension leading to uplift and formation of the Kessebir metamorphic core complex. This event was accompanied low-angle detachment faulting, by graben development, and formation of sedimentary basins. The basins to the north of the Kessebir core complex contain Palaeocene terrestrial sediments that are transitional upwards into marine sediments. Figure 7-1 displays a plan of the regional geology of the Krumovgrad region.

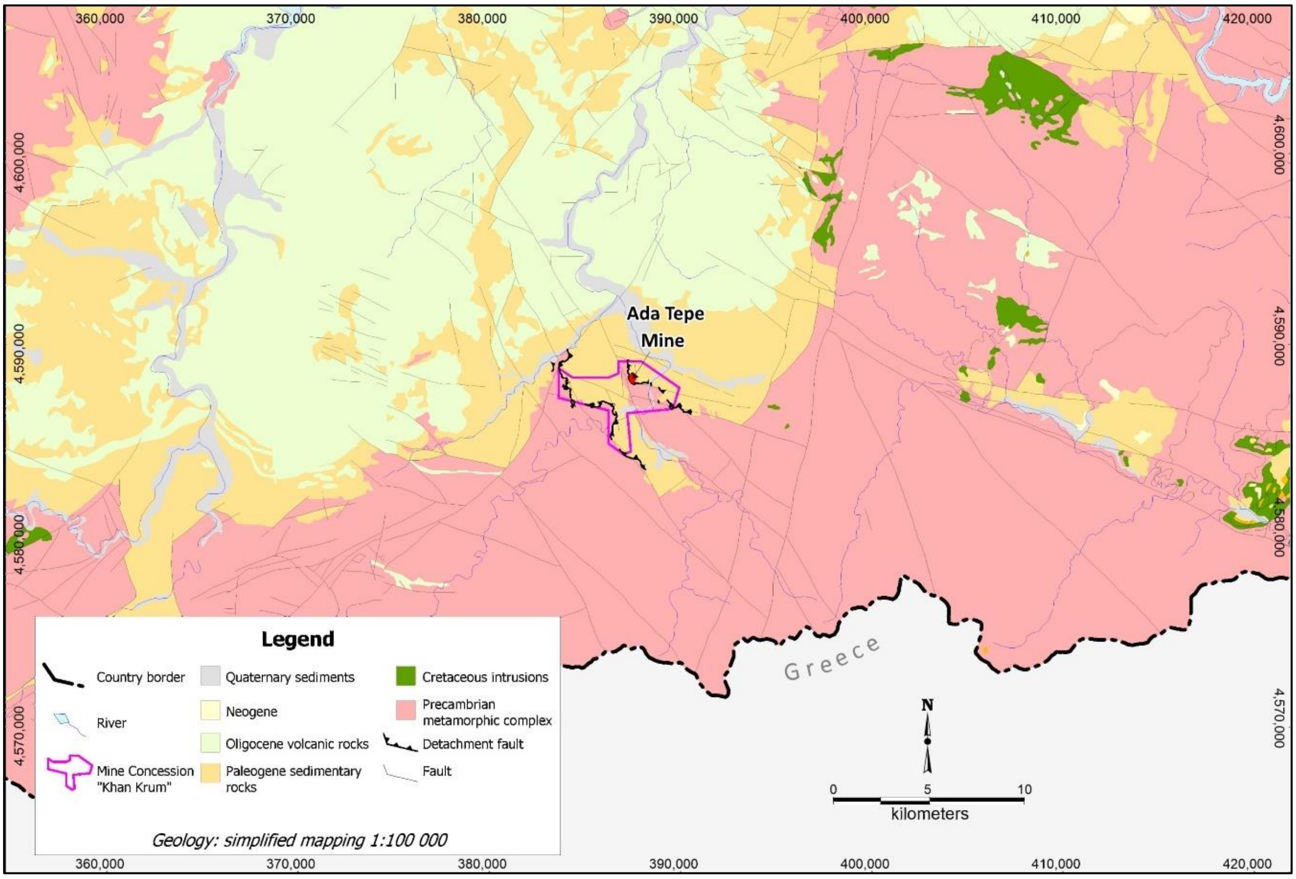


Figure 7-1: Regional geology of Krumovgrad area
Source: DPM, 2020

Basement rocks in the Krumovgrad area consist of Precambrian and Paleozoic metasediments, gneisses, and amphibolites of the Kessebir metamorphic core complex. The basement is unconformably overlain by Tertiary (Paleocene-Eocene) conglomerates, sandstones, siltstones and limestones of the Krumovgrad Group. The basal Shavar Formation is the primary host to gold-silver mineralisation within the Krumovgrad Licence area and is composed of tectonically deformed coarse-grained breccia/conglomerates including decametric-sized marble blocks and other variable in size clasts of amphibolite, quartzite and gneiss. The Shavar Formation is unconformably overlain by Late Eocene and Oligocene conglomerate, coal-bearing sandstone, siltstone, and marl-limestone, interlayered with volcanogenic successions

Felsic to intermediate volcanism began in the Upper Eocene and progressed episodically until the Upper Oligocene. Several lead-zinc (gold-silver) epithermal vein deposits are related to volcanoes formed during this period including Zvezdel and Madjarovo, which are situated 15 km west and 25 km northeast of Krumovgrad, respectively. More recent Neogene-Quaternary sedimentary cover occurs throughout the region.

The structural architecture of the Krumovgrad area reflects several stages of extensional deformation associated with uplift of the Kessebir core complex. Extensional faults generally strike east-west to northwest-southeast and dip shallow to steep towards the north-northeast. Extension on these structures was accommodated by the formation of north-south to northeast-southwest striking, steeply dipping transfer faults. The contact between the core complex and the overlying sedimentary rocks of the Krumovgrad Group is commonly a shallow northeast-dipping fault which has been interpreted as a major district wide detachment. All prospects currently identified to date are located on or very close to the basement/sediment contact and are generally associated with topographic highs.

The detachment structure has had a protracted history, initiating in the late Cretaceous and undergoing numerous stages of reactivation that pre-date and post-date identified epithermal mineralisation in the Krumovgrad area. The most conspicuous stage is also the youngest, evident in diamond drill core as a metre-scale, poorly indurated cataclasite that exhibits well developed fabric asymmetries indicative of non-coaxial shearing.

The final stage of extensional deformation associated with evolution of the Kessebir Dome is represented by a north-south to northwest-southeast trending graben. The orientation of the graben, and of faults that crosscut it suggest that the extension direction for graben opening has also been oriented approximately north (east) - south (west), similar to that during pre-graben extension.

7.2 Local Geology and Mineralisation Controls

Gold and silver mineralisation in the Krumovgrad licence area is predominantly hosted within the Shavar Formation proximal to the unconformable fault contact or detachment with the underlying basement rocks of the Kessebir core complex. Sediments within the Shavar Formation typically form laterally discontinuous lenses ranging from coarse breccia to fine sands with variable clay content. Upward variations in the stratigraphy of the Krumovgrad Group reflect progression from a high-energy environment, breccia-conglomerates and coarse sandstones through to the lower energy siltstones and limestones characteristic of increasing basin maturity. The location of the Ada Tepe deposit and other prospect areas in the Krumovgrad licence are displayed in Figure 7-2.

The Ada Tepe deposit is approximately 600 m long along strike (north-south), and 300–350 m wide (east-west). The dominant structure at the Ada Tepe deposit is the detachment structure that separates the Kessebir core complex rocks (basement) from the overlying sedimentary rocks, which forms a 10–15° north-dipping lower structural bounding surface to the deposit. The deposit is bound to the north and south by approximately northeast-southwest striking, steep dipping faults.

Review by RSG in 2004 suggests that the second-order structural control for mineralisation, after that of the detachment, is the proximity of northeast-southwest transfer faults. These structures dip steeply, allowing more direct access of fluids from deeper levels than the shallow dipping extensional structures. As such, the shallow extensional structures may represent trap sites or structures that accommodate local lateral fluid flow away from the transfer structures. Closely spaced transfer structures may also be important for localising mineralisation as the presence of shear couples can enhance brecciation of the intervening rock or may act to produce tensional sites. For example, dextral shear on the northwest-southeast striking faults bounding Ada Tepe may have been responsible for facilitating epithermal vein emplacement within east-west tensional sites.

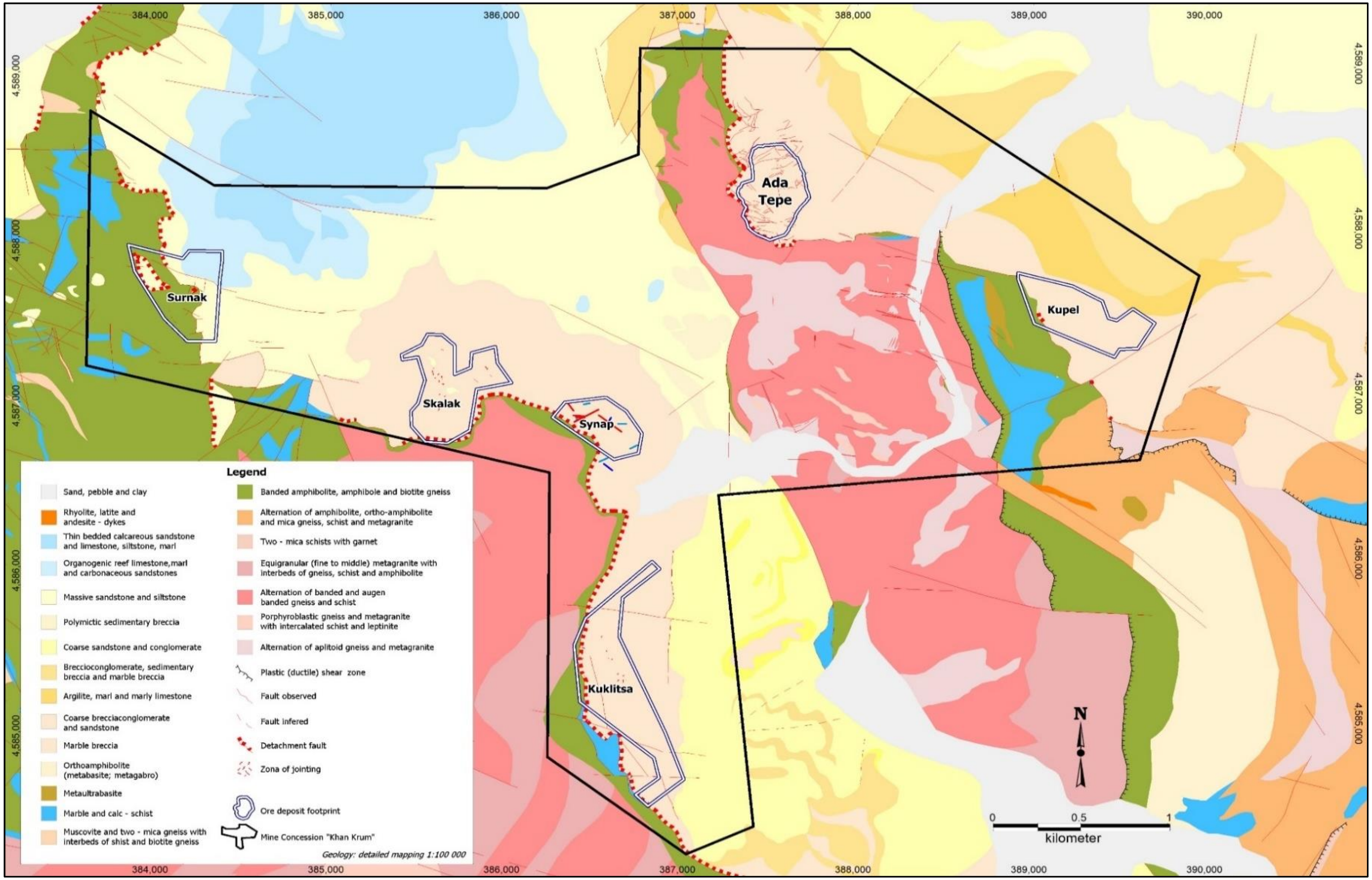


Figure 7-2: Krumovgrad Project geology

Source: DPM, 2020

Another important control on the localisation of mineralisation is exhibited by the sedimentary rocks overlying the detachment. The Shavar Formation is a highly porous, poorly sorted breccia that is bound on its contact with the Kessebir core complex by the detachment. The porosity of this unit is interpreted as a second-order control in localising fluid flow.

Mapping and structural data from diamond drill core indicate that the latter stages of movement along the detachment structure at Ada Tepe post-dates emplacement of epithermal mineralisation and were responsible for translation of the hanging wall sediments (and deposit) towards 030°. Consequently, any basement feeder structures are interpreted as lying to the south and may have been eroded or are concealed beneath later graben sediment fill.

Gold precipitated in veins where the mineralization observed macroscopically consists mainly of silica, quartz, carbonate (calcite, manganese-rich), adularia, and some opaque minerals as chalcopyrite and pyrite.

The veins occur in two domains: the "Wall Zone" and the "Upper Zone". The term "Wall Zone" describes a siliceous body shallowly dipping 15° north, forming the hangingwall of the detachment and defining the contact between the core complex and the overlying sedimentary rocks. The "Upper Zone" is the rest of the sedimentary cover above the Wall Zone.

The veins appear as a series of east-west sub-vertical structures which extend from the metamorphic basement through the Wall Zone and upwards to the Upper Zone, and a series of north-south gently dipping sub-horizontal veins forming the Wall Zone. A schematic cross-section through the Ada Tepe deposit is shown in Figure 7-3.

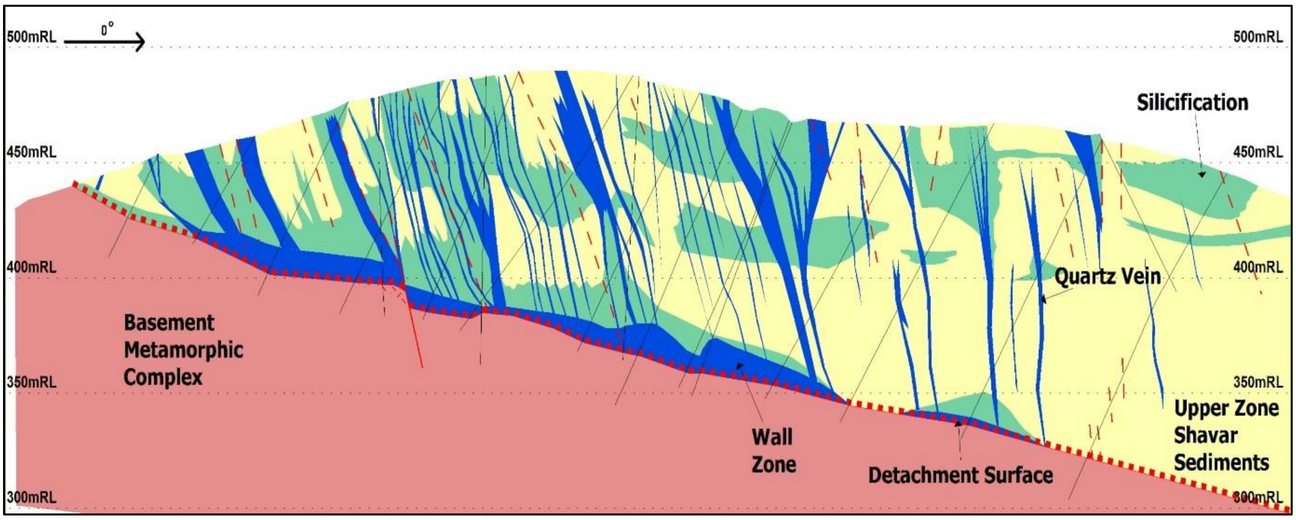


Figure 7-3: Schematic cross-section through the Ada Tepe deposit with key geological attributes (looking west)
Source: DPM, 2020

Both domains and type of veins show the same mineralisation and textures, such as boiling texture (bladed calcite, silica, adularia), indicative of forming within an epithermal environment. Those parts of the Wall Zone cut by the Upper Zone vein mineralisation are typically thicker, more intensely brecciated and have higher gold grades.

The Wall Zone is up to 30 m thick. The thickness of the Upper Zone vein mineralisation is very variable, from less than 1 m thick, to more than 30 m thick. The Wall Zone exhibits very good continuity. The Upper Zone vein system exhibits less continuity than the Wall Zone, necessitating the higher drilling density that has been applied during the delineation of the Ada Tepe deposit.

8 Deposit Types

The Ada Tepe deposit is a prime example of a high-level epithermal gold-silver deposit, formed during the Neogene within the Southern Rhodope tectonic zone. It is characterised as a low-sulphidation epithermal gold silver deposit. These deposit types are common throughout the world and form in association with volcanic arcs along subduction zones on plate boundaries. Epithermal gold-silver deposits are often associated with deeper porphyry-related copper-gold mineralisation. Major porphyry-epithermal belts elsewhere include the Carpathian Belt in Europe, the Andes Mountains in South America, and the Indonesian Archipelago.

The Ada Tepe deposit is a low-sulphidation adularia-sericite gold-silver epithermal deposit located within Palaeocene sedimentary rocks overlying the north-eastern end of the Kessebir core complex.

The gold precipitates predominantly in the veins. The Ada Tepe deposit shows a multiphase history of formation with several brecciation and vein emplacement events resulting in complex overprinting infill stages and crosscutting relationships between the veins.

Two major styles of mineralisation are apparent at Ada Tepe:

- Initial stage of mineralisation hosted by a massive, shallow-dipping (15° north) siliceous body forming the hangingwall to the detachment and defining the contact between the core complex and overlying sedimentary rocks. This mineralisation is termed the “Wall Zone” by local geologists and displays multiple stages of veining and brecciation.
- Second phase of mineralisation represented by steep dipping veins that exhibit textures indicative of formation within an epithermal environment. These veins have a predominant east-west strike, crosscut the shallow-dipping siliceous Wall Zone mineralisation, and extend upwards into the sedimentary breccia unit above the Wall Zone. This phase of mineralisation has been locally termed the “Upper Zone”.

The initial stage Wall Zone mineralisation is interpreted to be associated with early silica flooding and relatively low gold grades. However, regions of the Wall Zone through which well-developed Upper Zone vein mineralisation passes are typically thicker, more intensely brecciated and contain epithermal vein and hydraulic breccia infill textures and associated high gold grades that are not present in regions where Upper Zone vein mineralisation is absent. These thick strongly continuous regions of high-grade Wall Zone mineralisation generally thin and diminish in grade away from and between regions of well-developed Upper Zone vein mineralisation.

Typical epithermal textures present at the Ada Tepe deposit include the following:

- Crustiform and colloform banding
- Chalcedonic banding
- Bladed silica replacement textures after carbonate
- Compositionally zoned crystals
- Hydraulic breccia textures
- Late-stage carbonate veins.

The textural style and grade of mineralisation at Ada Tepe, high grades in association with open-space fill textures, such as bladed silica replacement after carbonate (i.e. evidence of boiling), hydrothermal breccias and also the presence of sinter material, suggests proximity to the paleo surface and a low-sulphidation nature of mineralisation. Examples of some of the epithermal textures present at Ada Tepe are shown in Figure 8-1.

Figure 8-1: Top left – quartz veining through Upper mineralised breccia zone; Top right – silica replacement textures; Bottom left – boiling textures next to silica flooding; Bottom right – brecciation texture in fresh rock exposure near to mineralised zone
Source: DPM, 2014

Strategies employed by DPMKr whilst exploring for low-sulphidation mineralisation in the Krumovgrad area are focused on identifying sites of structural, lithological and chemical traps which may be potential hosts for mineralisation. Geochemistry is routinely used to identify pathfinder element zonation patterns and potential vectors towards gold mineralization.

(Marton et al., 2015) noted that major ore controlling structures are the NNE striking high angle faults, their conjugate (extensional duplex) E-W veins and the low angle detachment fault. The coincidence of reactive (marble) and permeable basal breccias of Shavar and Kandilka formations lithologies at Krumovgrad district favored gold transport and precipitation over extended areas.

(Tosdal, 2012) observed that Ada Tepe deposit and most of the other nearby Au occurrences are located at changes in strike and dip orientation of the detachment fault. Slip movement along the fault in these areas creates extensive permeable damage zones in the hanging wall block. These areas are particularly advantageous for concentrating fluid flow as the curvi-planar nature of the contact will focus any fluids along the detachment contact.

In addition, areas of K metasomatism have been mapped in the hanging wall strata in the Ada Tepe area. These are not mineralized, but probably mark the sites of up flow zones along hanging wall faults. Thus, in the area surrounding Ada Tepe, understanding the spatial association of the areas of K metasomatism to deeper Au mineralisation might prove fruitful.

9 Exploration

9.1 Summary

Since June 2000, the following detailed exploration has been conducted at the Ada Tepe prospect:

- Establishment of a more accurate survey control over the licence area, surveying of the surface topography
- Detailed geological mapping, surface trenching and channel sampling of all prospects within the Krumovgrad (Khan Krum) mine concession area.

In 2014, ground gravity and magnetic surveys were carried out over the licence areas. The data was integrated with geological and geochemical data to define both near surface and covered target areas.

In 2015, approximately 100-line kilometres of IP were surveyed and 15 holes totalling 3,394 m were drilled in nine target areas. These are also outlined in Section 10 (Drilling).

Since the commencement of operations, detailed mapping data has been routinely collected.

9.2 Geological Mapping

In areas with outcrop, ground geological mapping together with rock sampling was undertaken in the area over the exploration licences. All existing surface outcrops have been mapped, including those created by earthworks activities associated with drill pad construction and cuttings for access roads. Geological maps were created using available lithology, alteration and structure fact data, followed by interpretation. Before the start of mining operations, the entire footprint of the Ada Tepe deposit was mapped at 1:1000 scale, which served as a basis for geological modelling to support Mineral Resource estimation and GC models.

In-pit geological mapping is conducted with the intent to document, on a daily basis, all available exposures in order to produce fact and interpretation maps for each 5 m bench. Most of the mapping is conducted on un-blasted pit walls and active mine faces at a 1:250 scale.

Geotechnical line mapping is conducted along un blasted pit walls and ramps. Mapping of pit floors is of little benefit to the mapping process and is not routinely undertaken.

9.3 Geophysics

Shallow penetrating geophysical methods (up to 100m from surface) were performed in 2003 via dipole-dipole IP surveys. The early IP surveys were accomplished by local contractors using a Bulgarian made single channel receiver device.

More recent surveys have been designed to help understand underlying structural architecture and identify potential targets in the areas surrounding Ada Tepe.

In 2014 Detailed gravity measurements were performed along a series of E-W and N-S profiles across the Ada Tepe deposit at a 50m station spacing. GEM magnetometers and SCINTREX CG-5 gravimeters were used for data acquisition. The results of this gravity survey helped to resolve some of the questions concerning the internal structure of upper sedimentary sequences.

Furthermore, the results show that the Ada Tepe deposit appears as distinct gravity low; caused by the significant amount of weathering, porosity and silicification relative to its surroundings. This observation is used as part of a set of targeting criteria when exploring for near mine mineralisation. The processing and interpretation of geophysical data sets includes in-house QC, 2D and 3D inversion models, which are continuously being reviewed and interrogated.

Industry standard IRIS multichannel receiver and transmitters have been used for a more recent (2015) dipole-dipole IP survey. The results of this survey highlighted that the metamorphic basement appears to be more resistive than the younger sedimentary cover which allowed for improved definition of the contact between these two lithologies in the areas surrounding Ada Tepe.

9.4 Channel Sampling

Since the commencement of detailed exploration at Ada Tepe in mid-2000, trenches and drill access road cut exposures were routinely channel sampled. The channel sampling was undertaken predominantly on north-south orientated traverses coinciding with the 25 m spaced drill traverses (Figure 9-1).

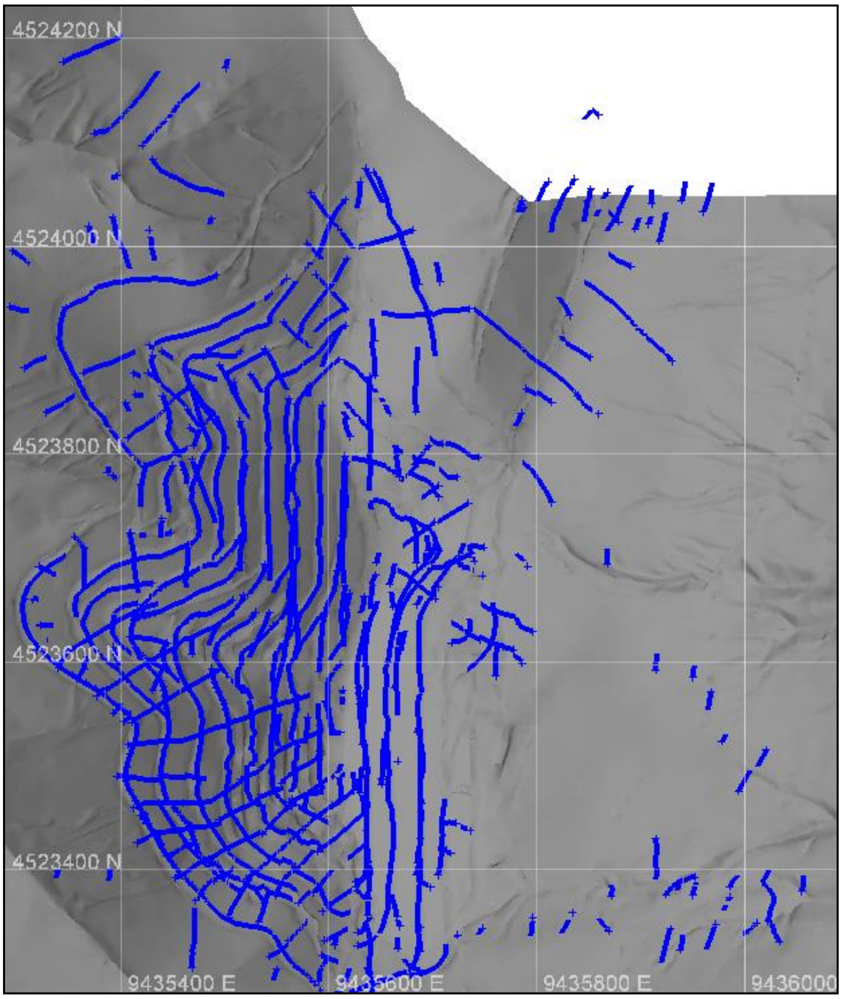


Figure 9-1: Ada Tepe trench and channel sampling locations
Source: DPM, 2014

Prior to March 2002, a variety of sample intervals were used, primarily controlled by changes in geology. In April 2002, a standard channel sampling method was introduced (RSG, 2002) which is summarised below:

- All surfaces to be channel sampled are cleaned of loose debris prior to beginning sampling
- The channel sampling line and channel interval (1 m) for each sample are marked up, using spray paint, by geologists prior to the initiation of sampling
- Each channel sample is chiselled out over standard width and depth to avoid sampling bias due to variations in rock hardness

- Channel samples are routinely weighed to ensure that a constant sample weight of approximately 3 kg is collected (approximating half HQ core)
- A duplicate channel sample located approximately 20–25 cm above the standard channel run is routinely collected over 5% of the sample intervals to enable statistical assessment of sampling errors.

Some 425 surface channels were excavated at Ada Tepe from which a total of 14,770 channel samples were collected representing a total of 18,299.8 m of sampling.

Weights were recorded for 8,988 channel samples. While there is considerable variation in the sample weights for the range of sample interval lengths (Figure 10-3), the sample weights generally increase with increasing interval lengths consistent with 3 kg samples being collected over 1 m intervals. In addition, there is no evidence of any bias in the sample gold grades relating to the variations in the sample weights (Figure 10-4).

CSA Global verified the location of some trench and drill access road cut exposures during site visits and was able to confirm the positions of some sampling points.

9.5 Topography

Prior to commencement of operations, topographic control over the Ada Tepe prospect area was established based on the following surveying activities:

- Numerous ground traverses
- Surveying of all drill access roads, including crest and toe locations in regions of cut and fill
- Surveying of all trenches
- Surveying of all drill collars.

The resultant array of survey points forms at least a notional 25 mE x 25 mN grid over the entire prospect area. However, additional survey points along the drill access roads, drainage gullies and flanks of the Ada Tepe hill result in a closer spacing of topographic control points over much of the prospect area.

Since the start of operations, a new survey approach has been implemented for collection and processing geospatial data and building 3D topographic model. Currently the main survey approach used is aero photogrammetry. Using unmanned aerial vehicles ("UAV") a large amount of data points is collected by flights across the areas of interest. The down-sampled resolution of the surveyed data points is as low as 0.5 m. A model generated using this approach is shown in Figure 9-2.

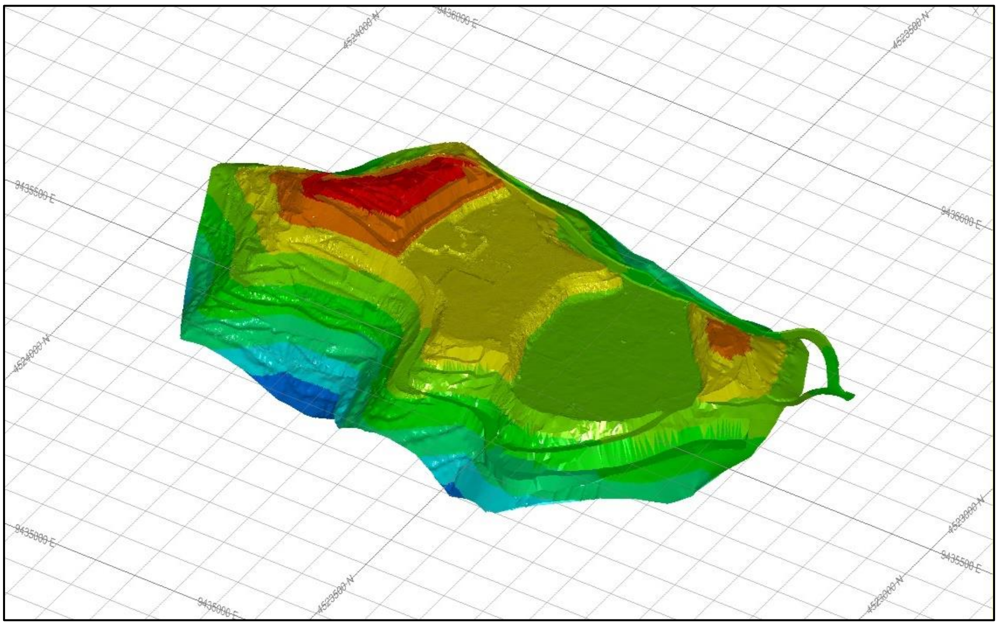


Figure 9-2: Perspective view of the open pit surface at the Ada Tepe mine, surveyed as of 31 July 2020 (looking northeast)
Source: DPM, 2020

In areas with high vegetation where the aerial mapping is not appropriate approach, total stations and Global Navigation Satellite System ("GNSS") receivers are used. Conventional survey instruments such as Total Stations and GNSS receivers are still used in cases when the weather conditions do not allow the flights of UAV.

9.6 Survey Control Audit

In May 2002, SSM was contracted to conduct an audit of the survey control at Ada Tepe prior to further exploration being undertaken. The activities undertaken and results, as provided in the SSM report of the audit, are summarised below.

Audit surveying activities were conducted using two geodetic accuracy global positioning system ("GPS") units, with one unit used as a base station positioned at a known (Bulgarian) trigonometric station, and the other used to investigate and establish control points at various locations in the licence area. Most investigations were undertaken in rapid static model, however, spot checks on existing control points and drillhole collars were also conducted using the Real Time Kinematic ("RTK") function on the GPS.

The following surveying activities were undertaken during the audit:

- Investigation of the Bulgarian Government 1970 Grid system to evaluate its suitability for the future of the mining and exploration program
- Verification of existing government survey control points
- Audit of the integrity of existing local exploration survey control points
- Establishment of 11 new high order survey control points throughout the Krumovgrad licence area (five at Ada Tepe).

The following key observations and conclusions are provided in the audit report produced by SSM:

- There are no published geodetic parameters for the 1970 grid or the level datum.

- The 1970 system is a non-earthed (planar) grid system based on four separate zones on which there is coordinate overlap. Geodetic corrections are applied to surveys to obtain the reduced coordinates.
- A closed static GPS survey of seven government survey control points distributed over the licence area indicated that all points surveyed agree to within centimetres of the Bulgarian government supplied horizontal Universal Transverse Mercator ("UTM") coordinates, and the levels also agree within centimetres at all control points surrounding the Ada Tepe and Surnak prospects.
- The accuracy of the local survey control points at Ada Tepe checked by RTK GPS indicate that the government control point at the top of Ada Tepe hill gives reduced coordinates within 0.12 m horizontal and 0.1 m elevation of the specified location. However, the accuracy of various additional survey points checked steadily diminishes with increased distance away from this point.

For optimal survey control the reference system for Ada Tepe and the Krumovgrad licence should change to a planar UTM system using a central point as the origin which has the same co-ordinates in both planar UTM and real world UTM and a common reference bearing.

10 Drilling

10.1 Introduction

Mineral resource delineation at the Ada Tepe deposit has been undertaken by a combination of RC and diamond drilling, completed in four drilling programs between late 2000 and late 2004. GC was initiated in 2017 in preparation for mining of the deposit.

The drilling programs have included diamond and RC drilling, rock chip sampling, bulk density measurements and detailed geological mapping. To date, the exploration drilling forms a notional 25 mN x 25 mE grid over the entire deposit. Within the deposit, close spaced GC RC drilling on a 5 mN x 5 mE grid has been completed over the entire volume of pushback 1 and from surface to 430 mRL in pushback 2.

10.2 Drilling Programs

The initial drilling program, undertaken in 2000 and 2001, comprised 74 diamond drillholes completed on a notional 50 m x 50 m grid. Most holes were declined 65° towards the southwest (230° azimuth), and remaining holes were drilled vertically or declined towards the northeast. The drilling was completed by BMM, Bulgarian drilling contractors GEOPS, and Romanian-based drilling contractors, RB Drilling, predominantly using Boyles-BBS37, CKB-4 and BOBY-150 coring rigs. Mostly HQ (78%) and to a lesser extent NQ (20%), and minor PQ (2%) size core was collected.

The second drilling program was carried out in May through August 2002 and included 17 diamond drillholes and 54 RC drillholes mostly declined 60° towards the south along grid north-south orientated drill traverses on a notional 50 m x 50 m pattern. The drilling orientation was changed from the grid southwest orientation used in the initial program to optimise drill intersections in the predominant east-west trending veins in the Upper Zone and shallow north-dipping Wall Zone mineralisation. All drilling in the second program was completed by a Bulgarian drilling contractor, International Drilling Services using DT1000 and CM1200 multi-purpose rigs, with HQ (62%) and HQ-3 (38%) size core collected. All RC drilling was completed using a 125 mm face sampling hammer drill bit.

The third and most substantial drilling program was undertaken between September 2003 and June 2004, by Drilling Services Bulgaria (formerly International Drilling Services) using DT1000 and CM1200 multi-purpose rigs, and by GEOPS using Diamec 282 and Boyls-BBS37 coring rigs. The program comprised 137 diamond holes (including 94 completely cored and 35 diamond tail Mineral Resource definition holes, five "wild cat" exploration holes and eight metallurgical holes) and 333 RC holes (including 298 complete Mineral Resource definition holes and 35 pre-collar holes). This program resulted in a notional drilling density of 25 mE x 25 mN over the majority of the deposit, with most of the holes declined 60° towards the south and several scissor holes declined 60° towards the north and northwest. In addition, RC infill drilling was completed to a notional 12.5 m x 12.5 m hole spacing in two selected areas in the south-western and central-western regions of the deposit to allow investigation of the close spaced variability of gold and silver assay grades. The diamond drilling collected PQ-3 (23%), HQ-3 (57%), HQ (4%) and NQ-3 (16%) size core, while all RC drilling was completed using a 125 mm face sampling hammer drill bit.

The fourth drilling program was undertaken between late October 2004 and mid November 2004 by Drilling Services Bulgaria using a DT1000 multi-purpose rig. The program comprised 36 RC drillholes designed to selectively infill strongly mineralised zones within the southern third and to a lesser extent the northern flank of the deposit. All drilling was completed using a 125 mm face sampling hammer drill bit, with drillholes inclined 60° towards northerly and southerly directions, and a variety of scissor orientations.

Between 2010 and 2013, a series of technical drillholes were undertaken to support the 2012 Definitive Feasibility Study. A series of geotechnical holes were completed to support with the assessment of the final pit slope parameters. Furthermore, one drillhole was completed for water monitoring purposes. Between 2013 until 2017, no further drilling was completed until the relevant permits were received.

Between 2017 and 2020, GC drilling has been completed using a contractor based in Bulgaria, Drillex International, which operates GEMEX MP-85 truck mounted RC rigs on the mine site. RC drilling is conducted using 125–147 mm drill bit diameters to ensure sufficient volume of sample is collected during drilling. A booster compressor is employed at all times during drilling to ensure sufficient air pressure.

Furthermore during 2018, several diamond drillholes were completed using a Company owned mobile diamond drill rig. The LM™ 30SS is a compact and mobile drill rig, designed for quick setup and ease of moving from site to site. The drill utilises a standard LM30 drill rig powered by a CAT® 246D Skid Steer with a 54-kW diesel engine. Along with a lightweight control panel and hydraulic system, the LM30SS comes with an integrated positioner and turntable that enables it to drill holes at all angles from vertically-up to vertically-down.

A summary of all drilling completed within the mine licence area is provided in Table 10-2 and the location of the drillhole collars, colour-coded by hole purpose and method, is displayed in Figure 10-1. Representative cross sections are provided in Figure 10-2.

Table 10-1: Drill type definition

Drill type	Drill code
Diamond from surface	DDH_S
Trench	TR_S
Reverse circulation	RC
Diamond tail	DDH_T

Table 10-2: Summary of exploration drilling, channel sampling and GC drilling

Year	Drill code	Hole purpose	Number	Total metres	Average length	No. of assays
2000	DDH_S	Resource	4	179	45	360
	TR_S	Exploration	83	2,612	31	3,087
2001	DDH_S	Resource	69	5,941	86	14,751
	TR_S	Exploration	107	3,891	36	11,355
2002	DDH_S	Resource	17	1,647	97	8,081
	RC	Resource	54	4,546	84	9,652
	TR_S	Exploration	48	3,532	74	11,227
2003	DDH_S	Resource	34	3,739	110	-
		SD twin	4	495	124	-
		Sterilisation	3	331	110	646
	RC	Resource	94	8,075	86	1,828
	TR_S	Exploration	91	4,874	54	8,876
2004	DDH_S	Geotech	1	146	146	-
		Metallurgy	8	776	97	802
		Resource	27	2,974	110	14,987
		SD twin	24	1,909	80	4,796
	DDH_T	Resource	35	4,353	124	2,160
	RC	GC	138	10,000	72	19,474
		Resource	137	11,322	83	36,883
	TR_S	Exploration	48	2,390	50	5,610
2005	RC	GC				537
	DDH_S	Sterilisation	3	377	126	750
2010	DDH_S	Water monitoring	1	25	25	-
2012	DDH_S	Geotech	3	66	22	-
	TR_S	Exploration	3	20	7	209
2013	DDH_S	Geotech	6	581	97	3,498
	TR_S	Exploration	38	693	18	7,169
2017	DDH_S	Exploration	2	382	191	7,950
		GC	7	693	99	1,360
	RC	GC	303	25,065	83	61,433
	TR_S	GC	1	117	117	351
2018	DDH_S	GC				411
	RC	GC	752	31,409	42	109,600
2019	RC	GC	460	26,869	58	68,840
2020	RC	GC	226	6,853	30	14,861
Total			**2,831**	**166,882**	**59**	**431,544**

Source: DPM, 2020

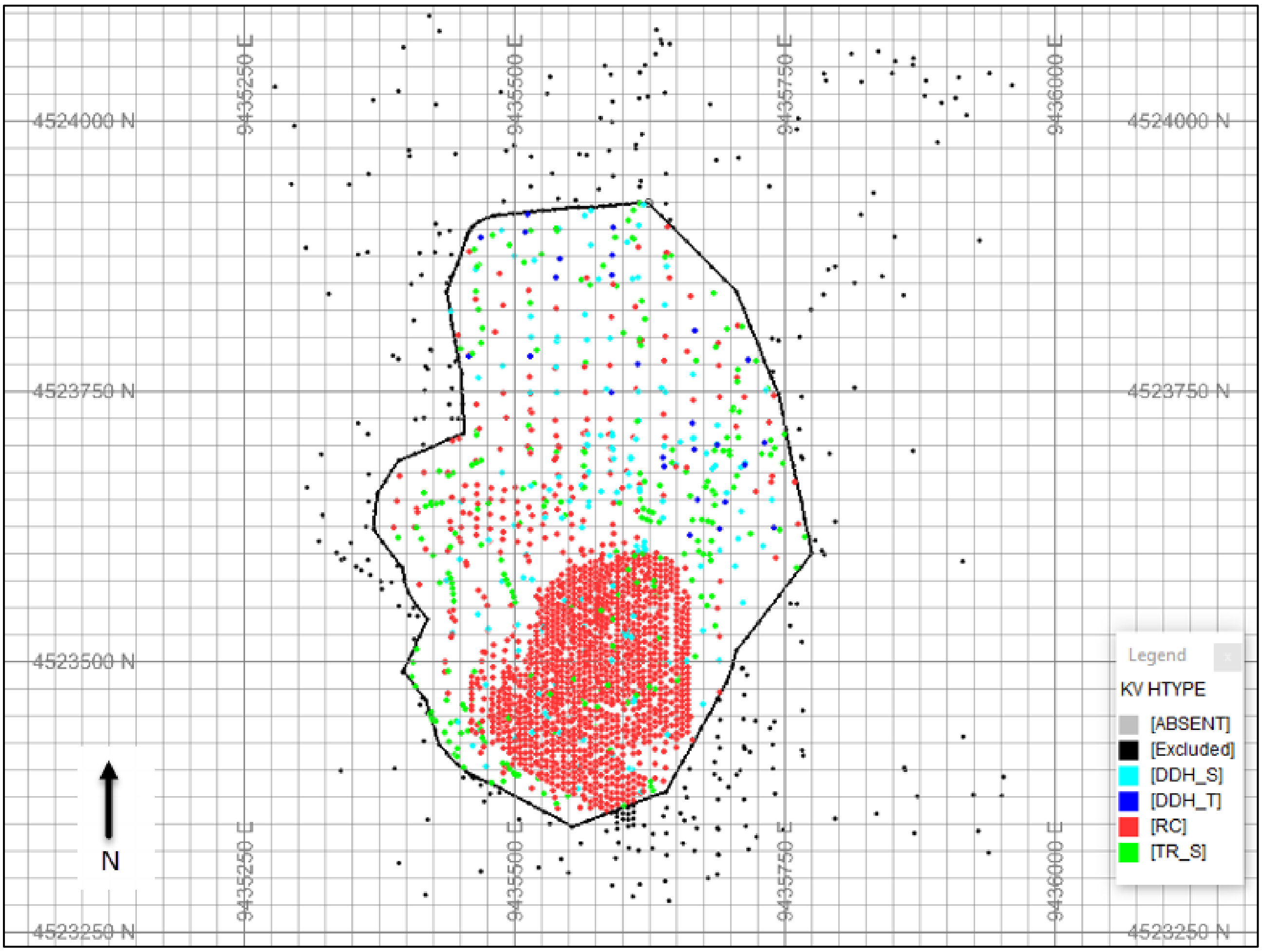


Figure 10-1: Plan map of hole types in the database for Ada Tepe

Note: Data used in the MRE was restricted to data within the licence boundary denoted here by string.
Source: CSA Global, 2020

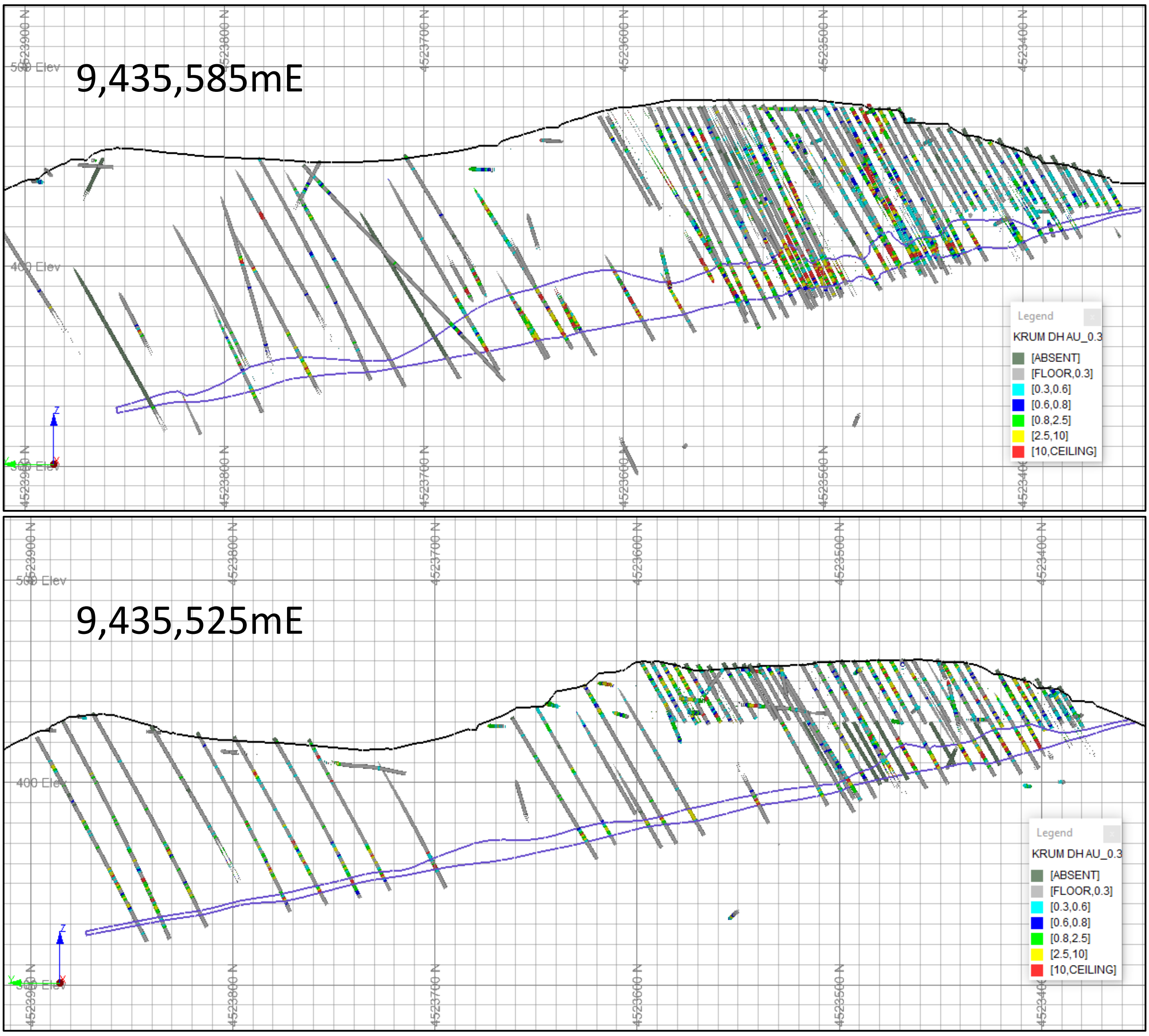


Figure 10-2: Representative cross-sections of the Ada Tepe deposit. Drillholes coloured by Au g/t. Pre-mine topography (black line) and Wall Zone (blue line).

Source: CSA Global, 2020

10.3 Logging

10.3.1 Core Logging

All surface trenches and channel sampled road cut exposures, RC drilling and diamond core were geologically logged using a logging scheme defined by BMM. Geological logging was carried out with particular attention to oxidation type, rock type, tectonic/structural fabrics, veining/intensity, alteration/intensity, sulphides/ intensity, and moisture content. In addition, the occurrences of voids and/or insufficient samples were recorded.

Detailed geological drawings of all channel sampled trenches and road cut exposures were generated. Geological logging of core was mostly conducted over intervals equal to the sampling interval (generally one metre), except for the first drilling program when logging intervals were chosen on a geological basis.

All core was geotechnically logged, including rock quality designation ("RQD"), recovery per drill run, and number of fractures per metre. Core recoveries were calculated by comparing the measured length of recovered core with the distance recorded on the core blocks between each drill run. Detailed structure orientation logging was completed for all orientated intervals of core including recording of structure types and associated alpha/beta measurements. Dip and dip direction measurements were also collected for structures exposed by trenching and along channel sampling pathways in road cut exposures.

Due to the difficulty in obtaining robust orientation marks for much of the core, an alternative method was also used to record vein orientation data for most of the core. This involved recording the number of veins with alpha angle measurements lying within a series of alpha angle intervals (Alpha 0–20°, 20–50°, 50–70° and 70–90°) over each sampling interval, thus at least allowing the orientation of vein structures to the core axis to be considered during geological modelling.

The great majority of logging information was collected digitally on palm top Hewlett Packard IPAQ computers using Field Marshall software. All core was photographed, both wet and dry, using a digital camera. The geological, geotechnical and structure orientation logging of the drilling and trenching completed at Ada Tepe has been conducted to high industry standards.

10.4 Surveying

10.4.1 Introduction

All surveying at Ada Tepe was conducted using the Bulgarian National Coordinate System ("BNCS"), a close variant of the Stereo 70 system. The BNCS divides the country into roughly quarters, with the BG5 zone covering the southeast quadrant of Bulgaria, including the Krumovgrad area.

10.4.2 Routine Surveying

Up to 2012, all surveying of the surface topography and exploration sites at Ada Tepe was carried out by a government licensed contractor, Dimiter Motrev of Geocom Ltd using the survey control established by Australian surveying group, Spectrum Surveys and Mapping Pty Ltd ("SSM") during the 2002 survey audit. All surveying was conducted using two electronic total station instruments. Geocom has established a dynamic net of some 183 survey stations covering the Ada Tepe hill using the five survey control points established by SSM during the 2002 survey audit. All the Geocom survey stations were established on closed survey loops.

10.4.3 Drillhole Collar and Trench Locations (Exploration)

The preserved drillhole collars from the 2000–2001 diamond drilling and all drillhole collars from the 2002–2004 drilling at Ada Tepe were surveyed based on the SSM established survey control. All channel sampled surface trenches and road cut exposures were also surveyed based on SSM survey control. Any non-preserved drillhole collars from the 2000–2001 program and trench sampling completed over the same period were surveyed based on the pre-audit survey control.

CSA Global became involved in the project in 2012, and by then, the drillhole collars relevant to the MRE for Ada Tepe had been rehabilitated, having been completed eight to 12 years previously. However, CSA Global has reviewed documentation prepared by RSG which involved cross checking of the location and elevation of proximal early and more recent exploration sites suggest that the location accuracy of the earlier exploration sites is to industry accepted standards.

A consistent approach has been used to survey continuous channel sampling along trenches and road cut exposures. This involves surveying the start and end points of a trench or channel, and all intermediate points where the azimuth or dip of the trench or channel changes. The resultant survey coordinates were used to calculate azimuth and dip values for the surveyed positions along each channel, allowing the trenches and channels to be treated as pseudo-drillholes for Mineral Resource modelling.

10.4.4 Drillhole Collar Locations (Grade Control)

Drillhole collars are picked up by surveyors using a GPS Trimble SPS 985 Base or GPS Trimble SPS 986.

10.4.5 Downhole Surveying (Exploration)

Downhole surveying was routinely conducted using an Eastman single-shot camera, Tropari, or Sperry Sun multi-shot instruments. Survey measurements were recorded at downhole intervals typically ranging from 25 m to 50 m. Some 580 of the 614 drillholes (94%) and 90% of the total drilling metreage was surveyed. Downhole deviations from the drillhole collar azimuth and dip measurements are typically small, primarily due to the shallow depth of the great majority of the drillholes.

CSA Global concluded that the downhole orientations of the drillholes and 3D locations of the drill samples were accurately located for the purposes of Mineral Resource estimation.

10.4.6 Downhole Surveying (Grade Control)

GGC drillholes were downhole surveyed using a Reflex-GYRO tool which is calibrated regularly. The survey file contains a “calculated” value at 0 m and a measured value at the end of hole.

10.5 Sampling

10.5.1 Introduction

From June 2000 until March 2002, all exploration data collection at Ada Tepe was undertaken by BMM, under the upper management of Navan. From April 2002 to the end of 2004, exploration at Ada Tepe was undertaken under the management of RSG in close consultation with BMM field staff, Navan upper management until 30 September 2003, and subsequently DPM upper management.

GC sampling is undertaken by DPMKr, following site operating procedures.

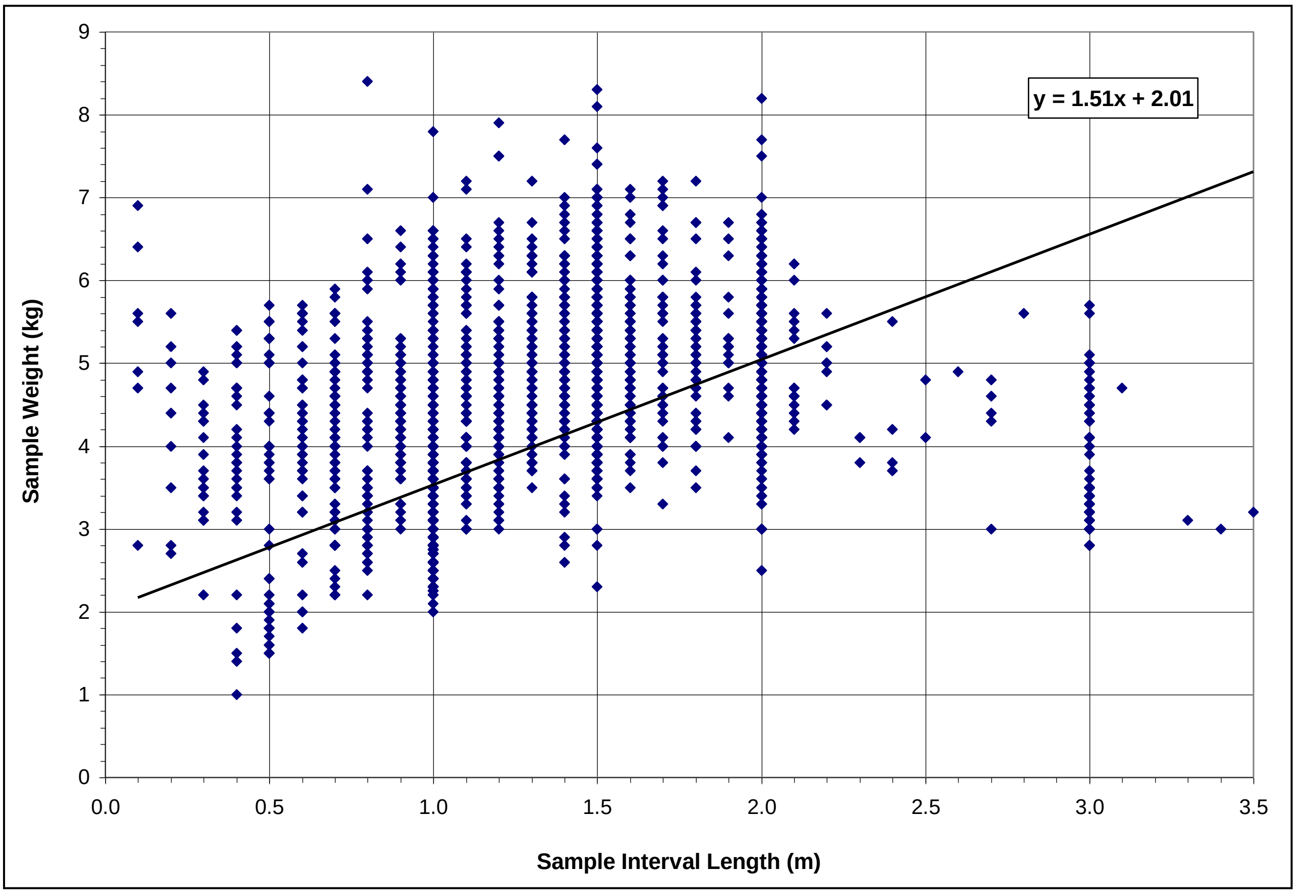


Figure 10-3: Channel sample interval lengths vs sample weights

Source: DPM, 2020

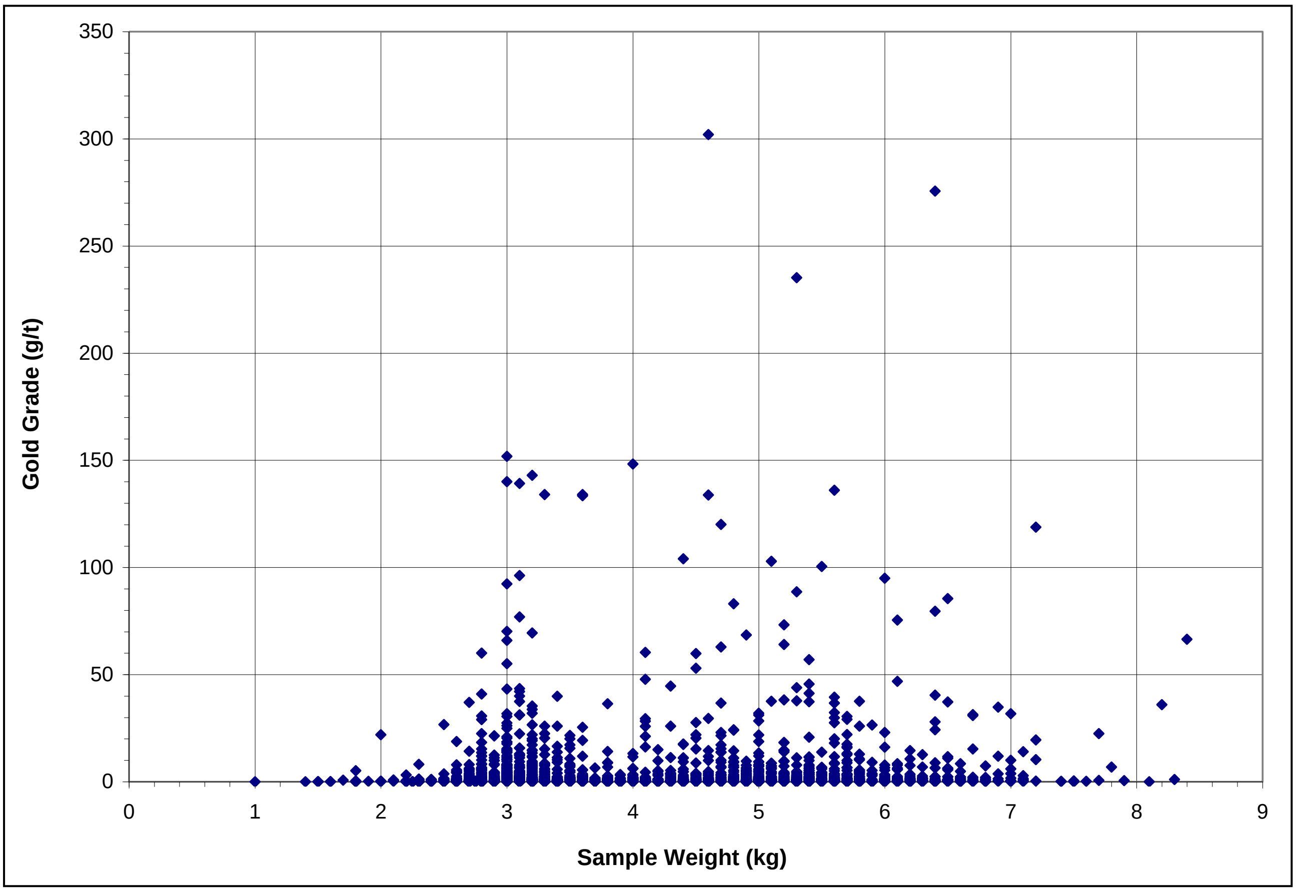


Figure 10-4: Channel sample gold assay grades vs sample weights

Source: DPM, 2020

10.5.2 Reverse Circulation Drilling

RC samples were routinely collected at 1 m intervals and the following is summarised from the document, "Reverse Circulation Drill Hole Logging and Sampling, DPMK-SOP-11":

- The pit technician/sampler takes the plastic bag, full of sample, taken from the cyclone and records the weight.
- The sampler covers the splitter with a clean plastic sheet prior to sample splitting. The RC cuttings must pass evenly through the sampler grill after removing the plastic cover.
- The sampler places a cloth bag with a special ID code written on it at one of the sampler chutes. The bag collects 1/8 of the cuttings, which makes the assay sample. The original plastic bag is placed at the other chute to collect and store the remaining portion (7/8) of the sample.
- The sampler sieves clean a representative portion of RC cuttings from the plastic bag for the geologist, washes the chips with water and places them in labelled plastic chip trays. In addition, the sampler arranges the washed and unwashed cuttings in rows on the ground.
- The sampler weighs the 1/8th samples and records the data in a notebook. If the amount of material that is going to be assayed is not enough (i.e. less than 1.5 kg), the sampler puts the cuttings from the plastic bag again through the sampler following the rules described above.
- After completing each 1 m sample, the sampler cleans the splitter and the plastic sheet with wire brushes and an air gun and gets it ready for the next sample.
- Upon completion of the hole, the samplers and the drillers clean the drill site, and move the rig off the hole.

- The sampler and the geologists deliver the samples to the sample prep store at the end of each shift.

The following processes are followed in order to ensure sample integrity:

- Prior to drilling, the driller checks/places an accurate 1 m mark on the mast to enable the drill to be stopped precisely at the end of each metre, and thus recover samples of correct length.
- The driller completes routine blow backs every metre to clean the drill string. The sample bag must remain in place during this time. Once the sample bag is removed, the bottom lip of the cyclone should be brushed clean.
- At the end of each rod, the driller must engage the "blow down" device and the cyclone must be cleaned with a brush and an air gun to prevent contamination.
- If no sample is recovered during drilling, then the numbering sequence is continued through the void area. This results in empty bags, but avoids confusion when data are entered into the database.

The RC drilling was always supervised by a trained geologist, assisted by four field assistants, who operated the sample splitter and weighed each metre sample bag. A representative portion of RC cuttings from each successive metre was also sieved clean and stored in neatly labelled chip trays.

It is the opinion of CSA Global that the RC drilling and associated sampling was completed to high industry standards. This opinion is informed by a review of data collection procedures, protocols and metadata contained in the database for the project.

10.5.3 Diamond Drilling

The diamond drilling and core sampling procedures employed for Mineral Resource delineation at the Ada Tepe deposit are summarised in Figure 10-5. The diamond drilling at Ada Tepe has been performed using strict quality control procedures. The key technical considerations used for majority of the diamond drilling at Ada Tepe are as follows:

- Most of the drilling was completed using 1.5 m PQ and HQ triple tube; however, core diameter reduction to NQ triple tube was used if ground conditions were deemed unstable. Where possible, PQ core was used to drill approximately 5 m past the base of oxidation, thereafter the hole was continued with HQ.
- In cases of poor core recovery, the drill runs were reduced from 1.5 m to less than 0.5 m.
- Specialised drilling muds and polymers were routinely used to maximise core recovery.
- Triple tube splits and core lifters were washed prior to re-use in successive drill runs.
- Drill core was orientated every 3 m using the spear method.
- Wooden core blocks were placed between runs, recording the length of the run and/or core loss.
- Forced breaks made by the drillers were marked on the core with a red cross.

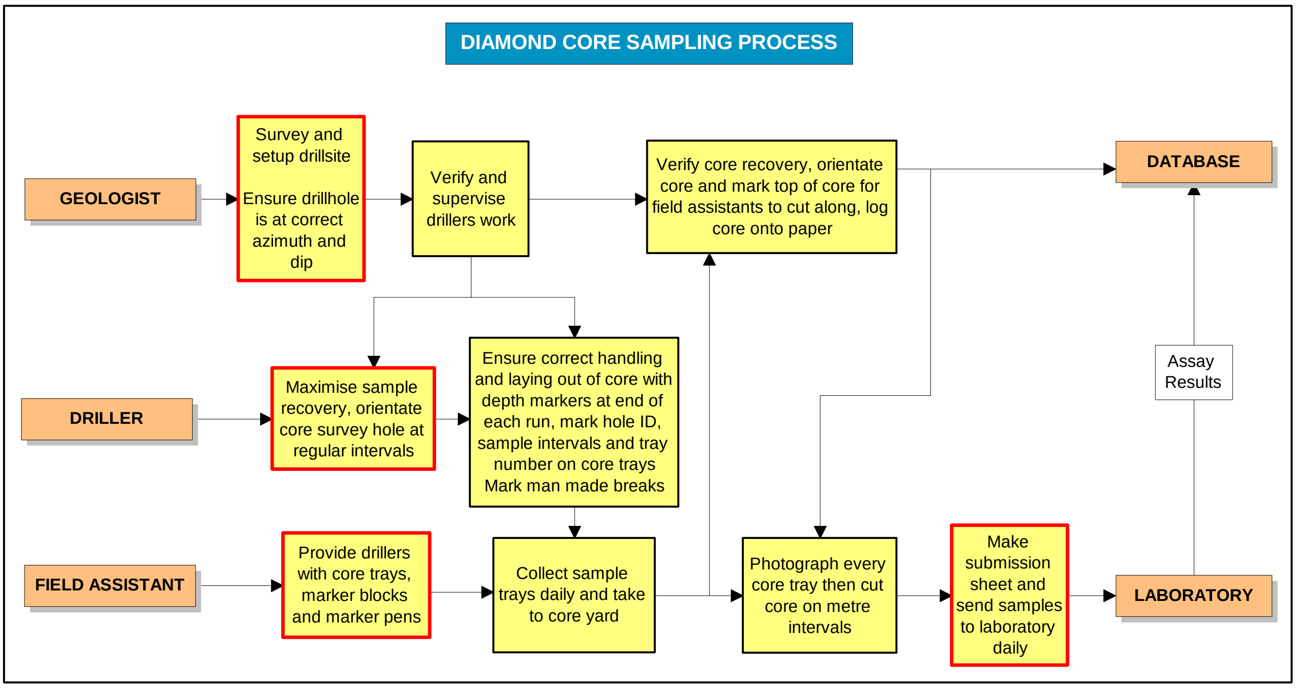


Figure 10-5: Diamond core sampling process (DPM Orange Book procedures)
Source: DPM, 2007

The diamond core was marked up with a longitudinal line coinciding with the orientation mark when available, or otherwise perpendicular to the dominant structural fabric in the core. The core was then marked off predominantly at 1 m intervals for sampling and then cut in half lengthways using diamond core saws. Mostly half-core samples were submitted for sample preparation and laboratory analysis. Coarse crush duplicates were produced from the same half-core sample following jaw crushing at a frequency of 1:20 samples.

10.6 Sample Quality/Recovery

10.6.1 Reverse Circulation Drilling

RC drill sample weights were routinely measured as part of the standard RSG RC drilling procedures. Statistical analysis was undertaken based on 3 m composites of the RC sample weight data for the deposit host breccia conglomerate unit converted to percent recovery data using theoretical sample weights of approximately 26 kg (per metre) for strongly to moderately oxidised conglomerate, 29 kg for weakly oxidised conglomerate, and 30 kg for fresh conglomerate.

Average RC sample recoveries ranged from 70% in strongly to moderately oxidised conglomerate to 75% in fresh conglomerate, and average 72% for all RC intersections of conglomerate. The trend of increasing recovery with decreasing oxidation is also reflected in the core recovery data (discussed in Section 10.6.2). It was the opinion of RSG that in its experience of using both RC and diamond drilling for Mineral Resource delineation, average theoretical RC sample recoveries are typically 20% less than the average core recoveries. This was supported for the Ada Tepe deposit by comparing theoretical RC sample percent recovery data with corresponding core recovery data for 24 successful RC-diamond twin hole pairs representing approximately 1,865 m of comparative drilling. The average 73% theoretical sample recovery for the RC drilling is 21% less than the achieved average core recovery of 92%.

The average RC sample recoveries achieved in the different oxidation zones at the Ada Tepe deposit are consistent with those achieved by diamond drilling and are considered to be of industry accepted standards for the ground conditions and styles of mineralisation in the deposit. Figure 10-6 displays a scatterplot of the RC sample weights vs gold grade. There is no evidence that anomalously low or high sample weights are associated with high (or low) gold grades.

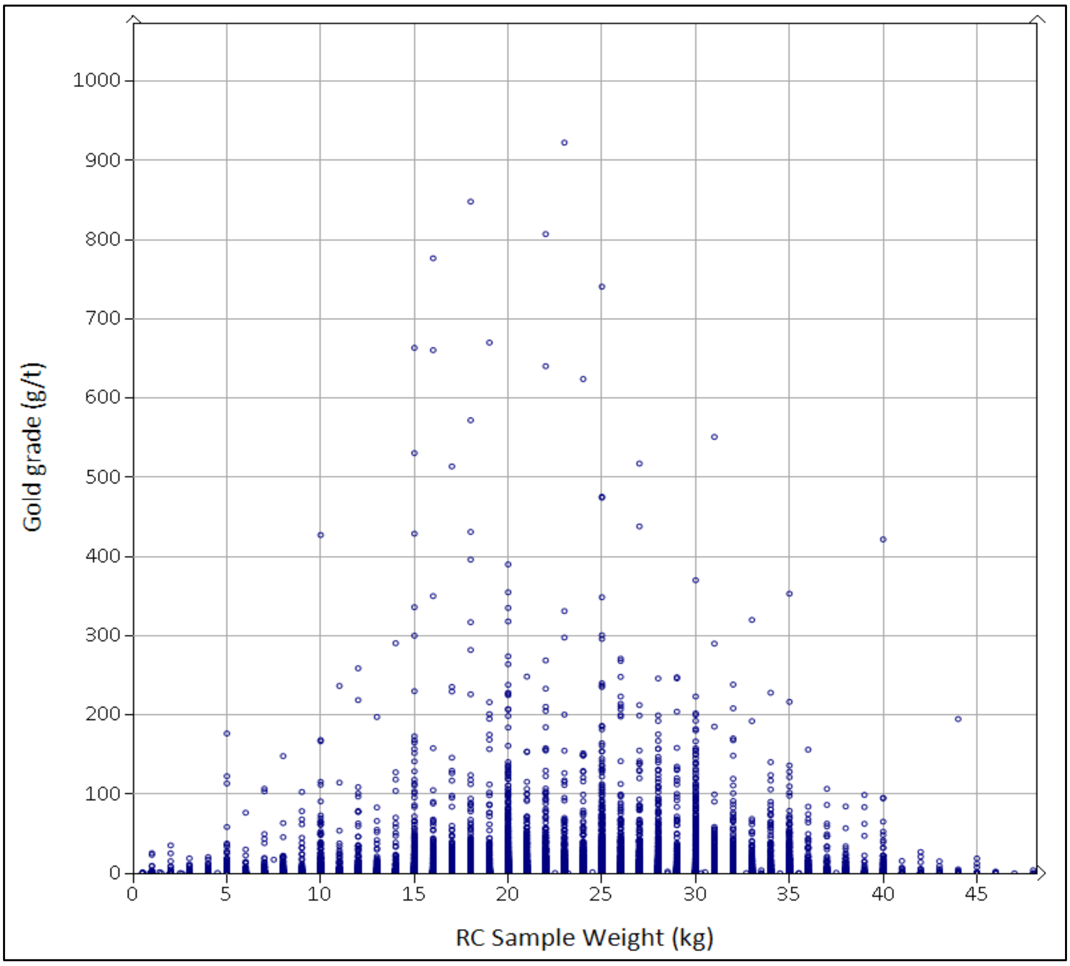


Figure 10-6: RC sample weight vs gold grade

Source: DPM, 2020

10.6.2 Core Recovery

Statistical analysis was undertaken based on 3 m composites of the core recovery data for the host breccia conglomerate unit. Average core recoveries range from 89% in strongly to moderately oxidised conglomerate to 99% in fresh conglomerate, and average 94% for all diamond core intersections of conglomerate, as presented in Table 10-3. It is considered that these recoveries are good for the ground conditions at Ada Tepe.

Table 10-3: Summary statistics of 3 m composite

Percentage Core Recovery Data for Breccia Conglomerate				
	Completely and Moderately Oxidised	Weakly Oxidised	Fresh	Combined
Number	2,533	836	1,744	5,113
Minimum	0	0	20	0
Maximum	100	100	100	100
Mean	89	97	99	94
Median	97	100	100	100
Standard deviation	18	11	4	15
Variance	337	122	18	216
Coefficient of variation	0.21	0.11	0.04	0.16

Figure 10-7 displays a scatterplot of percentage core recovery vs gold grade for the diamond drilling at Ada Tepe. There is no evidence that low core recoveries are associated with high gold grades and in fact, the opposite appears to be the norm.

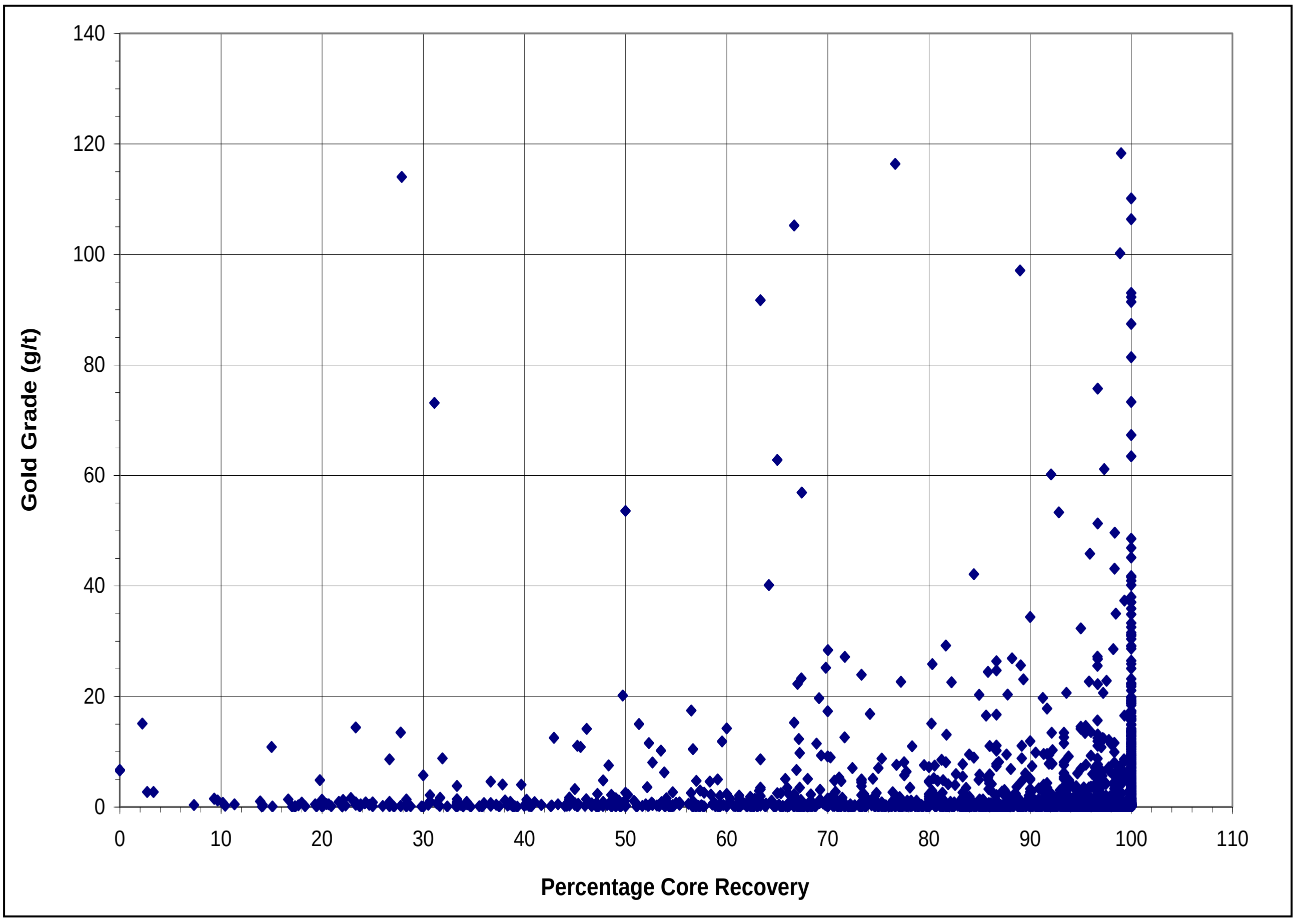


Figure 10-7: Percentage core recovery vs gold grade

Source: DPM, 2020

10.7 Bulk Density Measurements

A review of bulk density data undertaken prior to the 2002 exploration program indicated that inappropriate techniques had been used (water immersion without sealing and air pycnometer) such that a density reading closer to the specific gravity rather than the in-situ bulk density had been measured. As a result, all pre-2002 density data were rejected, and new bulk density data based on diamond drill core and trench grab samples were collected from March 2002 onwards (RSG, 2005). Bulk density measurements were routinely collected from core billets at approximately 3 m down intervals and trench grab samples collected at 5 m intervals.

All bulk density measurements were completed by an ISO 9002 rated laboratory, Evrotest Kontrol, in Sofia using an ISO 9002 approved method of wax sealed water immersion bulk density measurement. The laboratory and the technique used were inspected by RSG prior to the beginning of routine sample submissions for density analysis from Ada Tepe. A total of 5,764 bulk density measurements are available for the Ada Tepe deposit covering all the major rock types and variations in oxidation and weathering at locations distributed throughout the deposit. In addition to the bulk density determinations, a suite of tests was completed to ascertain the residue moisture in the core billets (53 oxide samples and 10 fresh samples). Negligible moisture was recorded, with the average moisture for both oxide and fresh samples being <1%.

10.8 Operational Grade Control Drilling

Since the start of operations grade control drilling has been planned ahead of mining, to ensure sufficient time for grade control modelling, planning and scheduling. For 2021, DPMKr has planned 215,000m of RC grade control drilling with a total cost including drilling, assays, labor and materials of approximately US$11.0 million. The planned drilling will ensure all of pushback 2 and parts of pushback 3 & 4 are sufficiently tested for grade control purposes.

11 Sample Preparation, Analyses and Security

11.1 Sample Preparation

Samples from the 2000 and 2002 trench sampling and drilling were transported either to the OMAC Laboratories Ltd ("OMAC") or SGS Gura Rosiei facilities for both sample preparation and analysis. Both are independent laboratories. An independent SGS sample preparation facility, within a fully secured and enclosed core farm and RC sample storage facility with 24-hour security, was established at Krumovgrad for the 2003 program.

Except for the first 600 RC samples from the 2003–2004 drilling program (transported to the SGS Gura Rosiei facility for both sample preparation and analysis), all subsequent samples from the third and fourth drilling programs underwent sample preparation at the SGS facility in Krumovgrad, and subsequent transport to the following independent laboratories: SGS Gura Rosiei (Romania), SGS Welshpool (Western Australia) or SGS Chelopech (Bulgaria) laboratories for assay analysis. All of the above laboratories are independent of the issuer.

From 2000 to 2004, the following routine procedures were used to prepare the trench, RC drilling, and core samples for analysis:

- Dry samples at 105°C.
- Jaw crush core and trench samples to minus 6 mm.
- Pulverise all samples in a LM5 crusher to 95% passing 75 µm. Complete sieve analysis on 1:20 samples.
- Clean bowl and puck of the LM5 with compressed air after each sample, and with a barren flush after every 20th sample, or as required to remove residue build-up.
- Complete barren flushes after BMM specified samples anticipated to contain high-grade mineralisation.

Since the commencement of GC RC drilling in late 2017, samples have been sent to various analytical laboratories for sample preparation. Primary crushing was not required as samples were RC chips.

From June 2020, a new sample preparation facility located within the Ada Tepe mine site was put into operation. This sample preparation facility is owned and operated by DPMKr and has been specifically built for the preparation of RC samples and the equipment and procedures are identical to those used by SGS Chelopech. The procedures followed by all laboratories for the preparation of GC samples are listed in Table 11-1 below.

Table 11-1: Sample preparation procedures for GC samples

Lab code	Procedure
SGS Bor, Serbia	
PRP94	Dry, crush, split to ~1,000 g, pulverise
SGS Chelopech, Bulgaria	
Sample preparation	Sample drying at 105°C, coarse crushing, split, pulverising in chrome steel bowl, wet screen 95% passing 75 µm, barren flush after every 20th sample or as required
DPMKr Sample Preparation Laboratory, Ada Tepe Mine Site	
Sample preparation	Sample drying at 105°C, coarse crushing, split, pulverising in chrome steel bowl, wet screen 95% passing 75 µm, barren flush after every 20th sample or as required
ALS Rosia Montana, Romania	
DRY-21	High temperature drying
SPL-21	Split sample – riffle splitter
PUL-32	Pulverise 100 g to 85% passing 75 µm
PUL-QC	Pulverising quality control test
ALS Bor, Serbia	
DRY-21	High temperature drying
SPL-21	Split sample – riffle splitter
PUL-32	Pulverise 100 g to 85% passing 75 µm
PUL-QC	Pulverising quality control test

11.2 Analytical Methods

Assay techniques used by the primary laboratories (Table 11-2 and Table 11-3) and umpire laboratories (Table 11-4) during each of the following periods of exploration activity are summarised below:

- Program 1: Navan Mining PLC, 2000–2001 exploration drilling and trenching
- Program 2: Navan Mining PLC, 2002 drilling and trenching
- Program 3: Dundee Precious Metals EAD, 2003–2004 feasibility study drilling and trenching
- Program 4: Dundee Precious Metals EAD, November 2004 feasibility study additional infill RC drilling and trenching (note, additional trenching completed during field season of Program 3)
- GC program: Dundee Precious Metals EAD, 2017–2020.

Sample preparation and assay of analysis samples of drilling programs 1 to 4 were undertaken at two principal independent internationally accredited laboratory firms:

- OMAC of Ireland (2000–2001)
- SGS Laboratories of Perth (Welshpool), Western Australia, Gura Rosiei (near the Rosia Montana mine site), Romania and Chelopech, (part of Chelopech Mine) Bulgaria (2002–2004).

Gold analysis has been undertaken systematically for all exploration samples using fire assay with AAS finish. Silver analysis has been undertaken with either two- or four-acid digestion followed by AAS finish. Most sample analyses were completed at SGS Gura Rosiei (Au – 61%, Ag – 60%), followed by SGS Welshpool (Au – 32%, Ag – 34%), followed by OMAC (Au – 5%, Ag – 2%), followed by SGS Chelopech (Au – 3%, Ag – 3%).

Not all samples were analysed for silver in the initial exploration program:

- None of the trench samples (1,954) submitted to OMAC were analysed
- 72% of the trench samples (1,707) submitted to SGS Gura Rosiei were not analysed
- 15% of the core samples (627) submitted to SGS Gura Rosiei were not analysed
- 5% of the core samples (66) submitted to OMAC were not analysed.

Table 11-2 summarises the assay methods used in programs 1 to 4.

Table 11-2: Analytical procedures – primary laboratories (programs 1 to 4)

Element	Lab code	Sample types	Detection limit	Procedure
SGS Chelopech, Bulgaria – Program 4				
Au	F650	Primary, Repeat, Split	>0.01 ppm	50 g fire assay, lead collection, with AAS finish
Ag	A117	Primary, Repeat, Split	1 ppm to 100 ppm	0.3 g charge dissolved in 15 ml (x50 dilution factor) two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish
	A104	Primary, Repeat, Split	>100 ppm	0.25 g charge dissolved in 50 ml (x200 dilution factor) four-acid digest (hydrofluoric, perchloric, hydrochloric, and nitric acid) with AAS finish
Within each batch of 50 samples, internal lab QAQC checks consist of 3 repeats, 3 second splits, 2 standards, and 1 blank				
SGS Analabs, Welshpool, Australia – Program 3 only				
Au	F650	Primary, Repeat, Split	>0.01 ppm	50 g fire assay, lead collection, with AAS finish (gravimetric finish on samples nominally greater than 80 g/t)
Ag	A117	Primary, Repeat, Split	1 ppm to 100 ppm	0.4 g charge dissolved in 20 ml (x50 dilution factor) two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish
	A119	Primary, Repeat, Split	>100 ppm	0.25 g charge dissolved in 500 ml (x2000 dilution factor) four-acid digest (hydrofluoric, perchloric, hydrochloric, and nitric acid) with AAS finish
Within each batch of 50 samples, internal lab QAQC checks consist of 2 repeats, 3 second splits, 2 standards, and 1 blank				
SGS Analabs, Gura Rosiei, Romania – Programs 2 and 3				
Au	F650	Primary, Repeat, Split	>0.01 ppm	50 g fire assay, lead collection, with AAS finish
Ag	A108	Primary, Repeat, Split	1 ppm to 300 ppm	0.5 g charge dissolved in 25 ml (x50 dilution factor) two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish
	A108	Primary, Repeat, Split	>300 ppm	0.25 g charge dissolved in 25 ml (x100 dilution factor) two-acid digest (hydrochloric and nitric acid) with AAS finish
Within each batch of 50 samples, internal lab QAQC checks consist of 4 repeats, 3 second splits, 2 standards, and 1 blank				
OMAC Laboratories, Galway, Ireland – Program 1 only				
Au	Au4	Primary	>0.01 ppm	30 g fire assay, lead collection, with AAS finish
	Au5	Repeat, Re-repeat	>0.01 ppm	30 g two-acid aqua regia digest (hydrochloric and nitric acid) mixed in a MIBK solution (hydrocarbon compound) with AAS finish
	Au6	Primary	>0.01 ppm	30 g two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish. 10% of samples checked with fire assay
Ag	GAR	Primary, Repeat	0.5 ppm to 200 ppm	0.2 g charge dissolved in 10 ml (x50 dilution factor) two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish
	BM2	Primary, Repeat	>1,500 ppm	1 g charge dissolved in 200 ml (x200 dilution factor) two-acid digest (hydrochloric and nitric acid) with AAS finish
Within a normal batch of 50 samples, internal lab QAQC checks consists of 4 repeats, 1 standard, and 1 blank				

Table 11-3 lists the assay laboratories and techniques used in the grade control program. Note that ALS Bor was used as a sample preparation laboratory with samples sent onwards to either ALS Rosia Montana, Romania or ALS Loughrea, Ireland for analysis.

Table 11-3: Analytical procedures – primary laboratories (2017–2020 GC drilling)

Element	Lab code	Sample types	Detection limit	Procedure
SGS Bor, Serbia – GC program				
Au	FAA25	Primary, Repeat, Split	0.01 ppm to 1,000 ppm	25 g fire assay, lead collection, AAS finish
	FA15G	Primary	3 ppm to 1,000 ppm	15 g fire assay with gravimetric finish
Ag	AAS12B	Primary, Repeat, Split	1 ppm to 100 ppm	Two-acid (aqua regia) digest with AAS finish
S	CSA06V	Primary, Repeat, Split	0.05% to 55%	Total sulphur, LECO method
SGS Chelopech, Bulgaria – GC program				
Au	FAA25	Primary, Repeat, Split	0.01 ppm to 1,000 ppm	25 g fire assay, lead collection, AAS finish
	FA15G	Primary	3 ppm to 1,000 ppm	15 g fire assay with gravimetric finish
Ag	AAS12B	Primary, Repeat, Split	1 ppm to 100 ppm	Two-acid (aqua regia) digest with AAS finish
S	CSA06V	Primary, Repeat, Split	0.05% to 55%	Total sulphur, LECO method
ALS Rosia Montana, Romania – GC program				
Au	AA25	Primary, Repeat	>0.01 ppm	30 g ore grade fire assay with AAS finish
Ag	AA45	Primary, Repeat	>0.2 ppm	Trace method, aqua regia (two-acid) digest with AAS finish
S**	IR08	Primary, Repeat	>0.01%	Total sulphur, LECO method
ALS Bor, Serbia – GC program				
Au*	AA25	Primary, Repeat	>0.01 ppm	30 g ore grade fire assay with AAS finish
Ag*	AA45	Primary, Repeat	>0.2 ppm	Trace method, aqua regia (two-acid) digest with AAS finish
S**	IR08	Primary, Repeat	>0.01%	Total sulphur, LECO method

**Analysis at ALS Rosia Montana, Romania.*
***Analysis at ALS Loughrea, Ireland.*

External check (umpire) assay analyses of approximately 5% of the routine exploration samples from the second and third exploration programs were performed by three independent internationally accredited laboratories:

- Genalysis Laboratory Services, Maddington, Western Australia, Australia (2002 and 2004); ISO9002:1984 and ISO17025
- ALS Chemex, Vancouver, British Columbia, Canada (2004); ISO9001:2000 and ISO17025.
- SGS Analabs, Welshpool, Perth, Australia.; ISO 9001:2015, certificate N: FS717158, accreditation ISO/IEC 170–5 - National Association of Testing Authorities, Australia.

Table 11-4 summarises the assay methods used for the external check (umpire) assay analysis. No samples from the GC drilling program have been sent for umpire analysis.

Table 11-4: Analytical procedures – umpire laboratories

Element	Lab code	Sample types	Detection limit	Procedure
Genalysis – Maddington, Australia – Program 2, 3 and 4				
Au	FA50	Primary	>0.01 ppm	50 g fire assay, lead collection, with AAS finish
	FA25	Repeat	>0.01 ppm	25 g fire assay, lead collection, with AAS finish
Ag	B/AAS	Primary, Repeat	0.1 ppm to 100 ppm	10 g charge, dissolved in 50 ml (x5 dilution factor) two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish
	B/AAS	Primary, Repeat	>100 ppm	1 g charge dissolved in 50 ml (x50 dilution factor) two-acid aqua regia digest. Alternatively, a four-acid digest is used (hydrofluoric, perchloric, hydrochloric, and nitric acid) with AAS finish
Internal lab QAQC consists of one blank inserted at the start of each job, one standard/blank randomly inserted at a ratio of one standard/blank every 26 samples, plus one standard/blank inserted at the end of the job. 10% of gold samples are repeated, consisting of a routine duplicate every 25 samples and 6% repeats on selected assay results. In addition, laser sizing has been completed on every 10th sample.				
ALS Chemex, Vancouver, Canada – Programs 3 and 4				
Au	Au-AA26	Primary, Repeat	>0.01 ppm to 100 ppm	50 g fire assay, lead collection, with AAS finish
	Au-GRA22	Primary	0.05 ppm to 1,000 ppm	50 g fire assay, lead collection with gravimetric finish
Ag	Ag-AA45	Primary, Repeat	0.2 ppm to 100 ppm	0.5 g charge dissolved in 12.5 ml (x25 dilution factor) two-acid aqua regia digest with AAS finish
	Ag-AA46	Primary	1 ppm to 1,500 ppm	0.4 g charge dissolved in 10 ml (x25 dilution factor) aqua regia digest with AAS finish
Within a normal batch of 84 assays internal lab QAQC checks consist of 2 standards, 3 duplicates, and 1 blank. In addition, every 10th sample has undergone.				
SGS Analabs, Welshpool, Australia – Program 4 only – Intra Lab Check with SGS Chelopech				
Au	FAA005	Primary, Repeat, Split	>0.01 ppm	50 g fire assay, lead collection, with AAS finish (gravimetric finish on samples nominally greater than 80 g/t)
Ag	AAS12s	Primary, Repeat, Split	1 ppm to 100 ppm	0.4 g charge dissolved in 20 ml (x50 dilution factor) two-acid aqua regia digest (hydrochloric and nitric acid) with AAS finish
	AAS42s	Primary, Repeat, Split	>100 ppm	0.25 g charge dissolved in 500 ml (x2000 dilution factor) four-acid digest (hydrofluoric, perchloric, hydrochloric, and nitric acid) with AAS finish
Within each batch of 50 samples internal lab QAQC checks consist of 2 repeats, 3 second splits, 2 standards, and 1 blank. Note: FAA005 same method as F650; AAS12s same method as A117; AAS42s same method as A119 (scheme codes changed during October 2004).				

11.3 Quality Assurance and Quality Control Procedures

Quality control employed by BMM for external monitoring of the precision and accuracy of the assay analyses completed during exploration programs 2 and 3 included:

- Submission of internationally accredited gold and silver certified reference materials ("CRM"s), produced by Rocklabs of New Zealand, routinely inserted into the sample stream at a frequency of 1:20 routine exploration samples
- Insertion of a blank sample (beach sand) before the first sample of each drillhole from March 2004 onwards
- Routine collection of duplicate RC drill sample splits at a frequency of 1:20 routine samples
- Routine collection of duplicate channel samples at a frequency of 1:20, approximately 20 cm above the primary channel sample location

- Collection of a duplicate sample split after jaw crushing of trench and core samples at a frequency of 1:20.

The DPM Red Book (2007) details the Quality Control, Data Tracking and Reporting Policies used by DPM. Quality assurance procedures are summarised below:

- The combined total of the Company's and primary laboratory check samples, duplicates, and CRMs should equal at least 30% of all assay results.
- Primary charting tools to review QAQC of the assay data consist of:
  - scatterplot of actual assays vs diamond core recovery
  - analysis of actual assays vs duplicate, split, and repeats samples
  - analysis of DPM and Laboratory CRM expected values vs the reported assay from the laboratory
  - comparison of actual assays vs umpire samples.
- The objectives of these analyses are to determine relative precision and accuracy levels between various sets of assay pairs and the quantum of relative error.
- Following a general inspection of data to catch simple mistakes and to spot outliers, the analytical results should be viewed at values greater than 10 times detection level.
- Quality control samples are inserted as follows:
  - Field duplicate RC and trench samples – every 20th sample.
  - Crushed core and trench duplicates collected after jaw crushing – every 20th sample.
  - Coarse grained blanks placed at the start of each RC and diamond drillhole. Alternatively, or in addition to, coarse grained blanks may be inserted as routine control samples every 50th sample.
  - CRMs are inserted as a every 20th primary sample using certified sulphide and oxide CRMs. At least five different types of CRMs including a blank pulp should be used and the grade ranges should be representative of the deposit.
- Laboratories should apply their own internal check regime of lab duplicates, second splits, repeats, and CRMs.
- The reliability of the primary assay data is further assessed by comparison of 5% of the original assay results with umpire assays completed at an independent laboratory. Quality control samples are submitted with the umpire samples. Umpire samples are not required for RC drilling.
- If failures are noted, the lab is contacted to perform 10 repeat assays either side of the anomalous quality control assay and is requested to include a lab standard within the run of repeats:
  - if the repeat assays show no evidence of bias, the original results are accepted
  - if the repeat assays show bias, then the complete submission is re-assayed.
- The complete laboratory submission must be re-assayed if:
  - the batch has more than two failed CRMs
  - most of the lab repeats and/or lab splits show greater than ±10% bias
  - RC field and trench/diamond core crusher duplicates display a consistent poor correlation (allowing for occasional spikes)
  - Company CRMs indicate a consistent positive or negative bias greater than ± 5% of the expected values.

11.4 Security

An enclosed core farm and RC sample storage facility with 24-hour security, was established at Krumovgrad for the 2003 program and was used from 2003 onwards. A pulp library is maintained of all samples prepared by SGS Krumovgrad, which are stored in a locked room within the Exploration Department at Krumovgrad. CSA Global observed this pulp library facility during the 2012 site visit and performed random spot checks of sample numbers and compared these with data contained in the project database. No issues were detected.

Samples collected from the drilling operations are transported to the site-based geology core shed, where the samples are geologically logged and are prepared for chemical analysis. The sampling procedures are appropriate and adequate security exists on the site to minimise any risk of contamination or inappropriate mixing of samples.

GC pulp samples collected between 2017 and 2020 are stored in a secure pulp library facility within the Mine building.

11.5 Statistical Analysis of Assay Quality Control Data

11.5.1 QAQC Analysis (Exploration)

Introduction

QAQC was reviewed in the March 2014 CSA Global NI 43-101 Technical Report (re-issued in November 2017) and the results of this review are summarised below.

The precision and accuracy of the gold and silver assay data for the Ada Tepe exploration samples were assessed based on assays of routine quality control samples inserted into the sample stream, both as part of each laboratory's internal quality control procedures, and external monitoring of laboratory performance by BMM. In addition, the reliability of the assay data from the primary laboratories (SGS Gura Rosiei and Welshpool labs) were further assessed by comparison of the original assay results with external check (umpire) assays completed by ALS Chemex and Genalysis.

No significant issues of bias or fatal flaws were noted and results are summarised in the relevant sections below.

Assay Accuracy and Contamination

The accuracy of the gold and silver assay data and the potential for cross contamination of samples during sample preparation was assessed based on the assay results of the laboratory internal CRMs and blanks and the BMM submitted blanks and CRMs (from Rocklabs). Both oxide and sulphide CRMs were used which represented the range of most of the gold and silver grades evident.

OMAC Laboratory:

- No assay data were available for the internal laboratory standards and blanks analysed by OMAC during the initial exploration program.

SGS – Gura Rosiei:

- Results of the internal laboratory blanks and CRMs were not available for review by CSA Global; however, the results of the BMM submitted blanks and CRMs assayed showed no evidence of systematic bias.
- CSA Global considered that the gold and silver CRMs analysed by the SGS Gura Rosiei laboratory were accurate and appropriate for Mineral Resource estimation studies.

SGS Welshpool:

- The results of the statistical analysis of the blanks and CRMs analysed by the SGS Welshpool laboratory can be summarised as follows:
  - Most of the blanks reported gold and silver assays at or near the detection limits and hence, there is little evidence of cross contamination of samples.
  - Most of the gold and silver assays of the laboratory and BMM submitted standards were within ± 10% of the expected CRM values.
  - There was no evidence of significant bias in gold and silver assays for any of the analysed CRMs.
- CSA Global considered that the gold and silver CRMs analysed by the SGS Welshpool laboratory were accurate and appropriate for Mineral Resource estimation studies.

SGS Chelopech:

- The results of the statistical analysis of the blanks and CRMs analysed by the SGS Chelopech laboratory can be summarised as follows:
  - Internal laboratory blanks and standards were not available for CSA Global review.
  - Most of the blanks report gold and silver assays at or near the detection limits and hence, there is little evidence of cross contamination of samples.
  - Most of the gold and silver assays of the laboratory and BMM submitted CRMs are within ± 10% of the expected CRM values.
  - There is no evidence of significant bias in gold and silver assays for any of the analysed CRMs.
- CSA Global noted that accuracy and precision exhibited by SGS Chelopech was, at times, poorer than the other laboratory results; however, no significant bias was noted and CSA Global considered that the gold and silver CRMs analysed by the SGS – Chelopech laboratory to be accurate and appropriate for Mineral Resource estimation studies.

Assay Precision

The results of the statistical analyses are summarised below for each laboratory. Statistical analysis of the gold datasets considered only the assay data greater than or equal to 10 times the SGS analytical detection limit (i.e. data at or above 0.1 g/t Au). Similarly, a lower selection threshold of five times the SGS analytical detection for silver (i.e. data at or above 5 g/t Ag) was used for statistical analysis of the silver assay datasets.

CSA Global reviewed the results of the check analyses (duplicates, repeats and pulp splits) and no significant bias or material issues were detected.

OMAC Laboratory:

- Precision of the gold analyses completed by OMAC was assessed based on routine laboratory repeat assay data for core and trench samples as well as a limited number of field duplicate trench samples.
- The levels of precision reported for both the laboratory repeat and trench field duplicate gold assays were consistent with those reported based on the analogous datasets for the SGS Gura Rosiei and Welshpool facilities.
- No routine comparative duplicate assay data were available in relation to the silver analyses completed by OMAC.

SGS Gura Rosiei:

- Precision of the gold assays for samples analysed at the SGS Gura Rosiei facility was based on routine duplicate RC sample splits and trench sample twins, routine duplicate splits of jaw crushed core and trench samples, routine duplicate splits of pulverised core, RC, and trench samples, and routine laboratory repeat assay data for core, RC, and trench samples.

- Results of the statistical analysis of the gold repeat assay data was summarised as follows:
  - Increasing levels of precision were reported in relation to each successive sampling stage approaching final laboratory analysis (as expected)
  - Similar %HARD values (precision levels) were reported for the assay datasets for the duplicate crusher splits onwards
  - The lowest precision was reported for the duplicate trench samples, reflecting the collection of samples from distinctively separate locations (20 cm apart), and the closed spaced variability of the gold grades at Ada Tepe.
- Silver analysis precision was assessed predominantly based on laboratory repeat assay data, although a relatively small number of assay pairs were also available for duplicate RC and trench field samples and duplicate jaw crusher splits of core and trench samples.
- CSA Global concluded that for the purpose of Mineral Resource estimation, acceptable levels of precision with no significant bias for both gold and silver were reported for all the sampling stages analysed.

SGS Welshpool:

- Precision of the Au assays for samples analysed at the SGS Welshpool lab were assessed based on routine duplicate RC sample splits and trench sample twins, routine duplicate splits of jaw crushed core and trench samples, routine duplicate splits of pulverised core, RC, and trench samples, and routine laboratory repeat assay data for core, RC, and trench samples.
- Similar levels of precision were reported for the SGS Welshpool gold assays as those reported by SGS Gura Rosiei and SGS Chelopech for the different input sample types and downstream sample groups, with acceptable levels of precision evident for all the sampling stages.
- Acceptable levels of precision for the Welshpool silver assays were also evident based on the relatively small field duplicate and laboratory repeat data datasets.
- CSA Global concluded that acceptable levels of precision for the purpose of Mineral Resource estimation were reported for all the sampling stages. A slight bias to the original in the gold field duplicates between 15 ppm and 50 ppm Au was observed, but overall no significant biases were noted.

SGS Chelopech:

- Gold assay precision for samples analysed at the SGS Chelopech laboratory was assessed based on routine duplicate RC sample splits, routine duplicate splits of pulverised core and RC, and routine laboratory repeat assay data for RC samples.
- Similar levels of precision were reported for the SGS Chelopech gold assays as those reported by SGS Gura Rosiei and SGS Welshpool for the different input sample types and downstream sample groups, with acceptable levels of precision evident for all the sampling stages.
- Acceptable levels of precision for the Chelopech silver assays was also evident based on the relatively small duplicate field sample and laboratory repeat data datasets.
- CSA Global concluded that acceptable levels of precision were reported for all the sampling stages for the purpose of Mineral Resource estimation.

Inter-Laboratory Precision and Relative Accuracy

The inter-laboratory precision and relative accuracy between the primary laboratories (SGS, Chelopech, Gura Rosiei and Welshpool) and external check (umpire) laboratories (Genalysis, Perth and ALS Chemex, Vancouver) were assessed for gold and silver:

- The assessment was based on the primary and umpire laboratory assays of the duplicate pulp splits collected during the second and fourth exploration programs at Ada Tepe.
- Minor instances of mislabelled samples were noted and omitted from the review.
- Oxide and sulphide CRMs and certified blanks were inserted in the umpire batches.

Conclusions of CSA Global were as follows:

- Relatively high levels of inter-laboratory precision were evident for the gold analyses between primary and umpire laboratories. In addition, there was no evidence of bias between the compared datasets.
- The primary and umpire silver analyses also showed good levels of inter-laboratory precision. However, the ALS Chemex and SGS Welshpool silver assays were marginally lower grade than the Genalysis and SGS Gura Rosiei silver assays. This was not considered a material issue which would affect the Mineral Resource estimation.
- CSA Global reviewed the results of the interlaboratory assaying performed at Genalysis Perth and ALS Vancouver and concluded that, based on checks completed, the inter-laboratory precision and relative accuracy of the primary and umpire gold and silver datasets were acceptable for the purpose of Mineral Resource estimation.

11.5.2 QAQC Analysis (Grade Control)

Introduction

A high-level review of the quality control data for the GC data was completed for gold and silver assays. Data from RC drillholes drilled between 2017 and 2020 and analysed at the following four laboratories were reviewed:

- ALS Bor (ALS_BO)
- ALS Rosia Montana, Romania (ALS_RO)
- SGS Bor (SGS_BO)
- SGS Chelopech (SGS_CH).

Cross Contamination

Blank Beach is a beach sand blank which requires pulverisation and therefore will indicate whether cross contamination is noted in the sample preparation process. Blank analysis results from the SGS labs are summarised below.

Table 11-5: SGS_CH and SGS_BO Blank data

Laboratory	Blank type	Element	No. of samples	Unit	Expected value	Mean	No. of failures (>10 x LDL)
SGS_CH	BLANK_BEACH	Ag	1,084	ppm	1	0.5	0
	BLANK_BEACH	Au	1,084	ppm	0.01	0.006	0
SGS_BO	BLANK_BEACH	Ag	612	ppm	1	0.5	0
	BLANK_BEACH	Au	612	ppm	0.01	0.006	0

No failures were noted in the preparation blanks and therefore no issues are expected with respect to cross contamination.

Assay Accuracy (Bias)

Shewhart control plots and summary statistics were produced for DPMKr inserted silver and gold CRMs. These were reviewed per laboratory (SGS_CH, SGS_BO, ALS_BO) and results are summarised below.

Table 11-6: Ag CRM data (absolute bias >5% highlighted in red)

Laboratory	Standard code	Expected value Ag (ppm)	No. of samples	Mean Ag (ppm)	Mean bias	No. of failures (>10 x LDL)
ALS_BO	GBMS304-1	1.4	2	1.3	-7%	0
	GBMS304-4	3.4	2	3.1	-9%	0
	GBMS304-6	6.1	1	7.3	20%	0
	GBMS911-1	11.9	7	12.1	2%	0
	GBMS911-2	12.4	1	12.9	4%	0
	GBMS911-4	17.9	3	18.6	4%	0
SGS_BO	GBM305-2	1.2	5	1.2	-2%	0
	GBM311-9	0.7	5	0.7	-3%	0
SGS_CH	GBMS304-1	1.4	21	2.0	40%	0
	GBMS304-4	3.4	23	4.1	21%	0
	GBMS911-1	11.9	84	12.0	1%	0
	GBMS911-2	12.4	22	12.5	0%	0
	GBMS911-3	1.7	3	2.1	25%	0
	GBMS911-4	17.9	24	18.4	3%	0

There is a bias in the low-grade silver CRMs which is not deemed material as the expected values are within 10 x LDL. However, there is very little control on silver bias as most CRM are too low grade to be relevant (i.e. within 10 x LDL). No silver CRMs were used with the ALS Romania samples.

Table 11-7: Au CRM data (failures and absolute bias >5% highlighted in red)

Laboratory	Standard code	Method	Expected value Au (ppm)	No. of samples	Mean Au (ppm)	Mean bias	No. of failures (>10 x LDL)
ALS_BO	G310-3	Au_AA25	0.07	14	0.06	-15%	0
	G312-10	Au_GRA21	24.94	6	25.27	1%	0
	G312-7	Au_AA25	0.22	20	0.21	-5%	0
	G313-4	Au_AA25	2.00	5	2.03	2%	0
	G315-8	Au_AA25	9.93	8	9.91	0%	0
	G907-1	Au_AA25	0.79	18	0.77	-2%	0
	G910-8	Au_AA25	0.63	11	0.62	-1%	0
	G911-10	Au_AA25	1.30	14	1.30	0%	0
	G915-10	Au_GRA21	46.68	2	48.90	5%	0
	G915-2	Au_AA25	4.98	8	5.06	2%	0
	G915-7	Au_AA25	12.38	1	11.95	-3%	0
	GBMS304-1	Au_AA25	3.06	2	3.01	-2%	0
	GBMS304-4	Au_AA25	5.67	2	5.72	1%	0
	GBMS911-1	Au_AA25	1.04	7	1.12	8%	0
	GBMS911-4	Au_AA25	6.78	3	6.83	1%	0
	ST575	Au_AA25	2.430	12	2.50	3%	0
	ST627	Au_AA25	0.099	10	0.10	1%	0
	ST637	Au_AA25	3.210	12	3.26	2%	0
ALS_RO	G310-3	Au_AA25	0.07	52	0.06	-15%	0
	G310-6	Au_AA25	0.65	47	0.63	-3%	0
	G312-10	Au_GRA21	24.94	11	25.11	1%	0
	G312-7	Au_AA25	0.22	42	0.21	-6%	0
	G907-1	Au_AA25	0.79	33	0.77	-2%	0

Laboratory	Standard code	Method	Expected value Au (ppm)	No. of samples	Mean Au (ppm)	Mean bias	No. of failures (>10 x LDL)
	G911-10	Au_AA25	1.30	8	1.27	-2%	0
	G915-10	Au_GRA21	46.68	19	49.05	5%	0
SGS_BO	G310-3	Au_FAA25	0.07	206	0.06	-14%	0
	G310-6	Au_FAA25	0.65	41	0.64	-2%	0
	G311-7	Au_FAA25	0.40	76	0.39	-3%	0
	G312-10	Au_FA15G	24.94	15	25.11	1%	0
	G312-10	Au_FAA25	24.94	53	25.10	1%	0
	G312-7	Au_FAA25	0.22	147	0.21	-3%	0
	G313-4	Au_FAA25	2.00	147	2.00	0%	0
	G315-8	Au_FAA25	9.93	111	10.02	1%	0
	G907-1	Au_FAA25	0.79	78	0.77	-2%	0
	G910-8	Au_FAA25	0.63	7	0.64	1%	0
	G911-10	Au_FAA25	1.30	91	1.31	1%	0
	G912-8	Au_FAA25	0.53	82	0.52	-2%	0
	G913-1	Au_FAA25	0.82	35	0.81	-1%	0
	G915-10	Au_FA15G	46.68	15	47.92	3%	0
	G915-10	Au_FAA25	46.68	41	47.82	2%	0
	G915-2	Au_FAA25	4.98	155	4.99	0%	0
	G915-7	Au_FAA25	12.38	63	12.43	0%	0
SGS_CH	G310-3	Au_FAA25	0.07	295	0.06	-9%	0
	G310-3	Au_FAA505	0.07	36	0.07	-5%	0
	G310-6	Au_FAA25	0.65	70	0.64	-2%	0
	G311-7	Au_FAA25	0.40	143	0.40	0%	0
	G312-10	Au_FA15G	24.94	89	25.93	4%	0
	G312-10	Au_FAA505	24.94	3	25.82	4%	0
	G312-7	Au_FAA25	0.22	279	0.22	-2%	0
	G312-7	Au_FAA505	0.22	32	0.22	0%	0
	G313-4	Au_FAA25	2.00	183	2.00	0%	0
	G313-4	Au_FAA505	2.00	13	2.00	0%	0
	G314-1	Au_FAA25	0.75	2	0.77	2%	0
	G315-8	Au_FAA25	9.93	162	9.89	0%	0
	G315-8	Au_FAA505	9.93	9	10.00	1%	0
	G907-1	Au_FAA25	0.79	144	0.79	1%	0
	G907-1	Au_FAA505	0.79	32	0.80	1%	0
	G910-8	Au_FAA25	0.63	119	0.63	0%	0
	G910-8	Au_FAA505	0.63	23	0.63	0%	0
	G911-10	Au_FAA25	1.30	154	1.33	2%	0
	G911-10	Au_FAA505	1.30	32	1.32	2%	0
	G912-8	Au_FAA25	0.53	141	0.52	-2%	0
	G913-1	Au_FAA25	0.82	73	0.81	-2%	0
	G915-10	Au_FA15G	46.68	66	47.62	2%	0
	G915-2	Au_FAA25	4.98	179	4.94	-1%	0
	G915-2	Au_FAA505	4.98	15	5.00	0%	0
	G915-7	Au_FAA25	12.38	49	12.48	1%	0

Laboratory	Standard code	Method	Expected value Au (ppm)	No. of samples	Mean Au (ppm)	Mean bias	No. of failures (>10 x LDL)
	G915-7	Au_FAA505	12.38	3	12.68	2%	0
	GBMS304-1	Au_FAA25	3.06	15	3.06	0%	0
	GBMS304-1	Au_FAA505	3.06	5	3.06	0%	0
	GBMS304-4	Au_FAA25	5.67	19	5.67	0%	0
	GBMS304-4	Au_FAA505	5.67	4	5.72	1%	0
	GBMS911-1	Au_FAA25	1.04	64	1.06	2%	0
	GBMS911-1	Au_FAA505	1.04	20	1.01	-3%	0
	GBMS911-2	Au_FAA25	2.88	17	2.86	-1%	0
	GBMS911-2	Au_FAA505	2.88	5	2.85	-1%	0
	GBMS911-3	Au_FAA25	1.33	3	1.34	1%	0
	GBMS911-4	Au_FAA25	6.78	18	6.69	-1%	0
	GBMS911-4	Au_FAA505	6.78	6	6.63	-2%	0

Low-grade CRM (G310-3) has a negative bias (expected value is within 10 x LDL) and GBMS911-1 analysed at ALS_BO has an 8% positive bias. No other bias issues were noted and there are no significant concerns regarding Au assay bias.

The charts below show examples of results from SGS Chelopech for low-grade, medium-grade and high-grade gold CRMs. Results are acceptable with (mean bias between -2% and 0%).

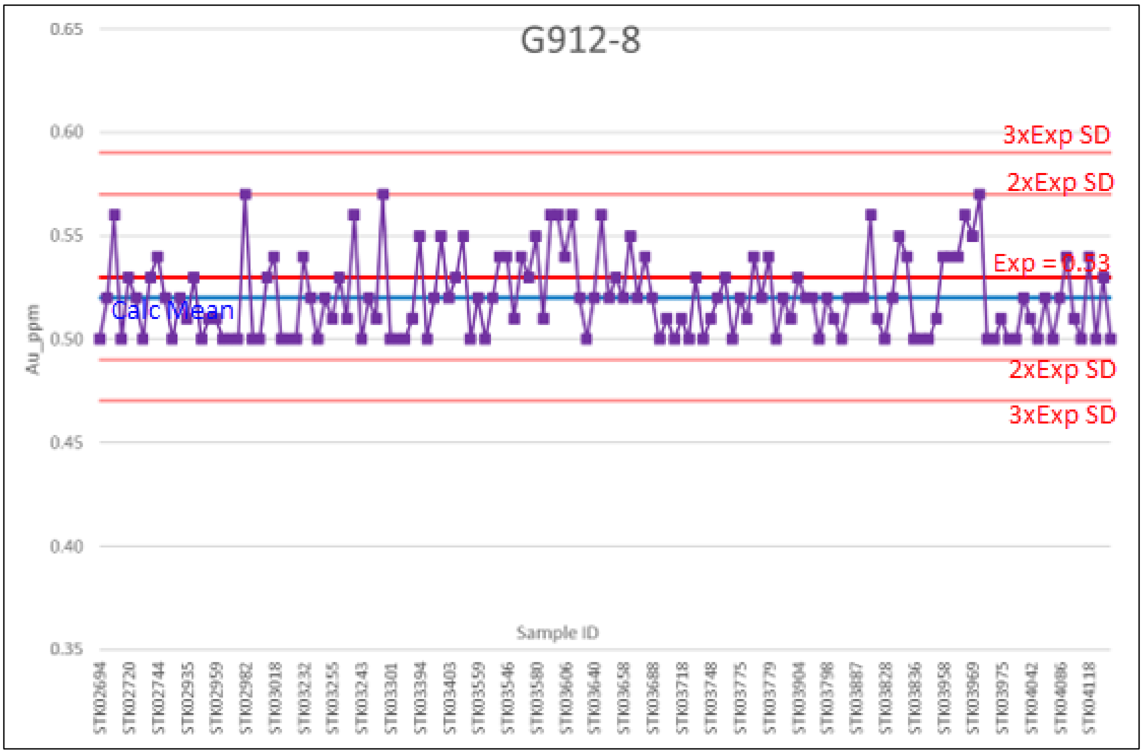


Figure 11-1: Au CRM G912-8 showing acceptable results with -2% bias (expected value 0.53 ppm Au)

Source: DPM, 2020

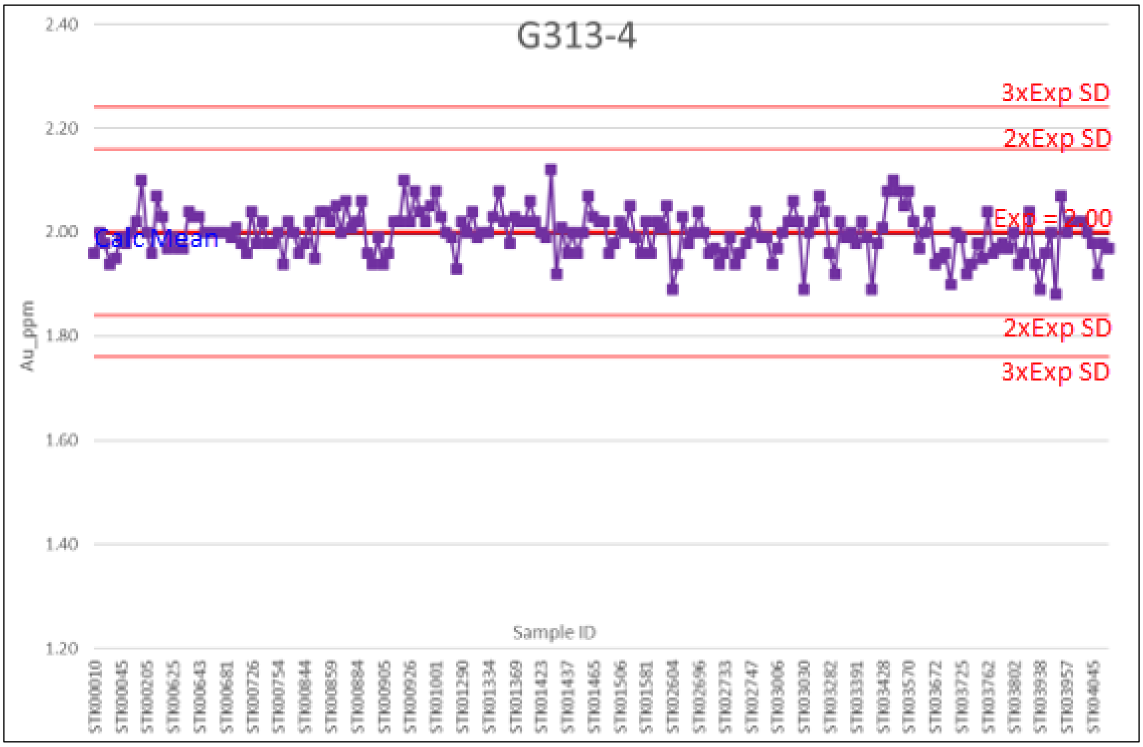


Figure 11-2: Au CRM G313-4 showing accurate and precise results (expected value 2.00 ppm Au)
Source: DPM, 2020

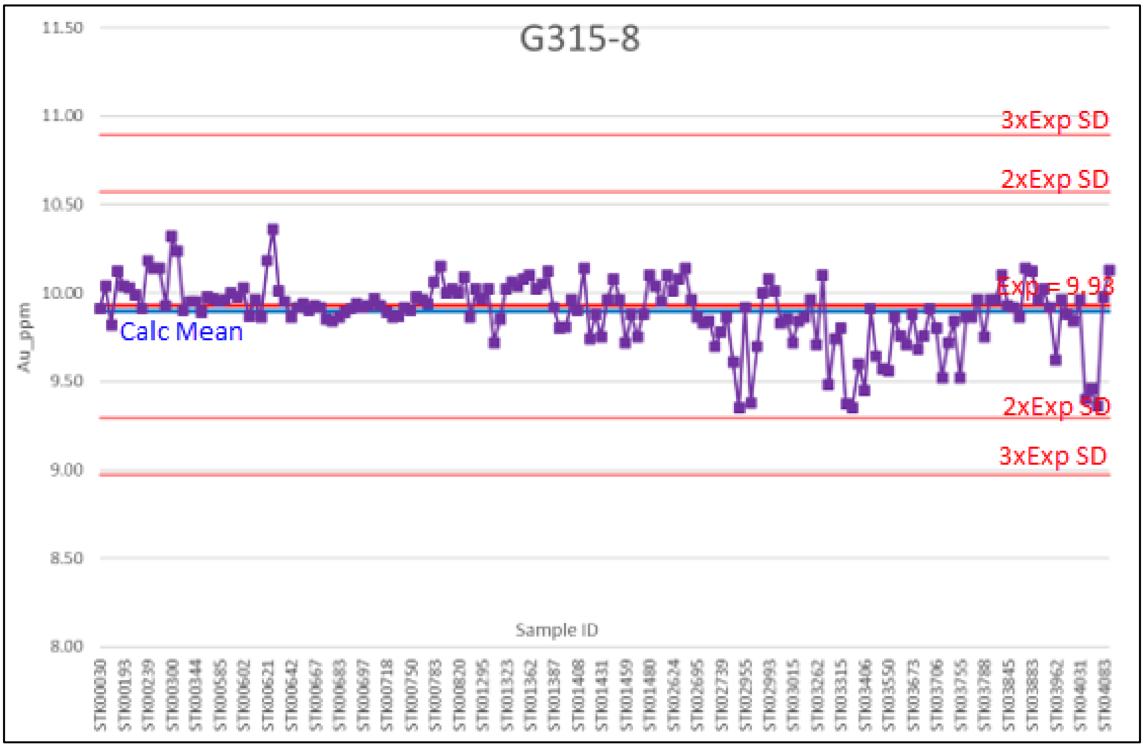


Figure 11-3: Au CRM G315-8 showing overall accurate results (expected value 9.93 ppm Au)
Note precision and accuracy deterioration in the later samples.
Source: DPM, 2020

Gold CRM results were mostly accurate with no significant bias or failures. Silver low-grade CRMs have multiple bias issues, but these are attributed to the imprecision of the assay methods at low grades.

Assay Precision

Precision error can be estimated by measuring the precision error at each stage of the sampling and assay process. Field duplicates contain all sources of error (sampling error, sample reduction error and analytical error), Laboratory duplicates contain sample reduction error and analytical error, pulp duplicates contain analytical error only.

The data were assessed using coefficients of variation (CV = standard deviation/average – also known as relative standard deviation) calculated from individual duplicate pairs and averaged using the root mean squared ("RMS") approach. This approach is recommended by Abzalov (2008) as a way of defining a fundamental measure of data precision using duplicate paired data.

Precision errors (CV_{AVR}(%)) were calculated for duplicates with mean values ≥10 times the analytical detection limit and compared to acceptable limits. Acceptable and best practice limits are obtained from Abzalov's 2008 paper, "Quality Control of Assay Data: A Review of Procedures for Measuring and Monitoring Precision and Accuracy". Table 11-8 to Table 11-15 summarise the precision results for silver and gold field and laboratory duplicates, lab replicates and laboratory splits. Relative difference plots and logarithmic scatterplots for silver and gold field duplicates are shown below for SGS_BO and SGS_CH (Figure 11-4 and Figure 11-5 respectively).

Table 11-8: Ag Field duplicate data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
SGS_BO	Ag	1,363	24	19	20%	30%	25.34	28.05	11%
SGS_CH	Ag	2,528	56	9	20%	30%	22.79	22.50	-1%

Note that silver values are mostly low grade (within 10 x LDL) and the SGS_BO field duplicates have an 11% bias to the duplicate samples.

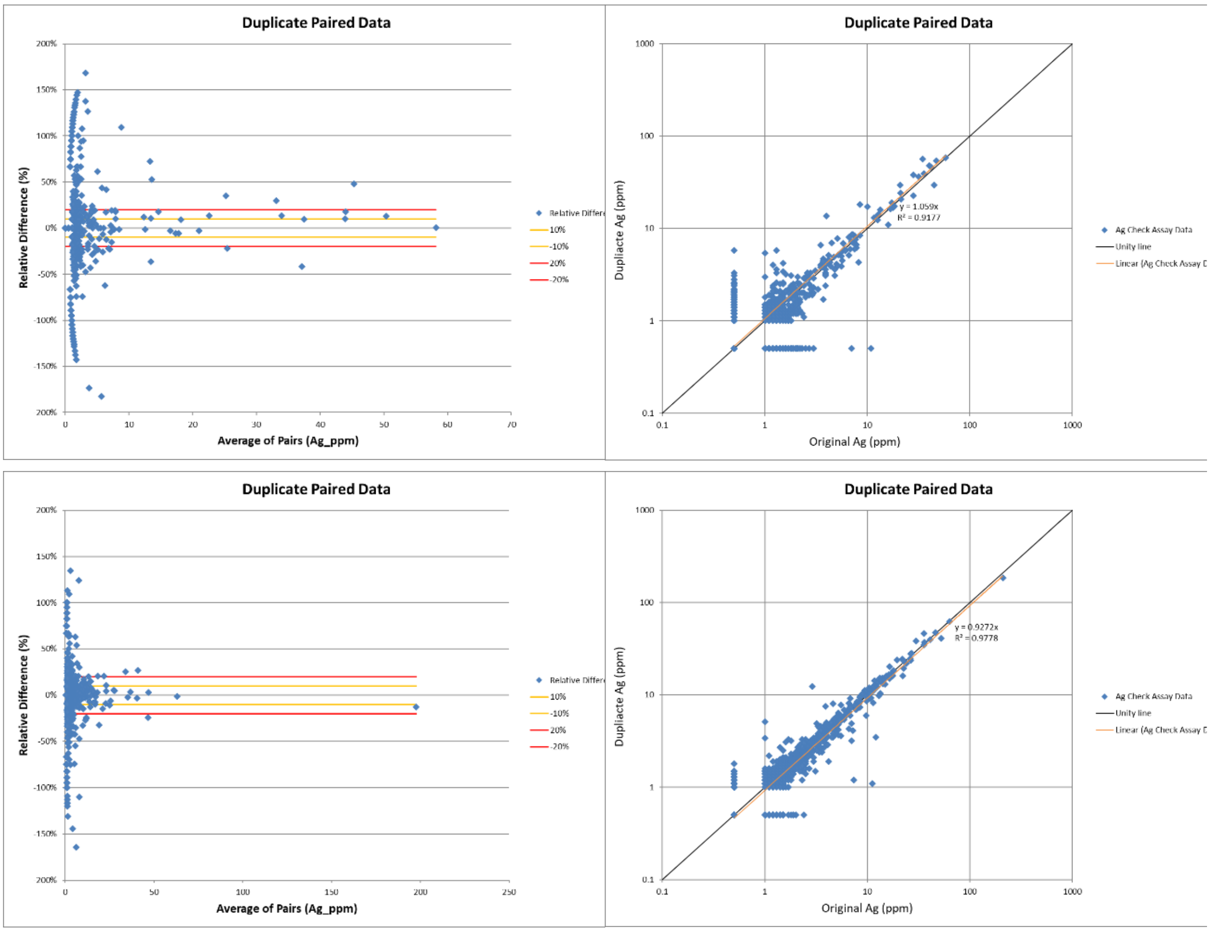


Figure 11-4: Ag field duplicate relative difference and log scatterplots for SGS_BO (top) and SGS_CH (bottom)

Source: DPM, 2020

Table 11-9: Au Field duplicate data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
SGS_BO	Au	1,361	1,114	23	20%	30%	2.19	2.38	9%
SGS_CH	Au	2,528	1,841	19	20%	30%	2.94	2.92	-1%

Field duplicates analysed at SGS_BO show poorer precision than those analysed at SGS_CH and there is a 9% bias to the duplicate results at SGS_BO. However, precision for all field duplicates is within acceptable limits.

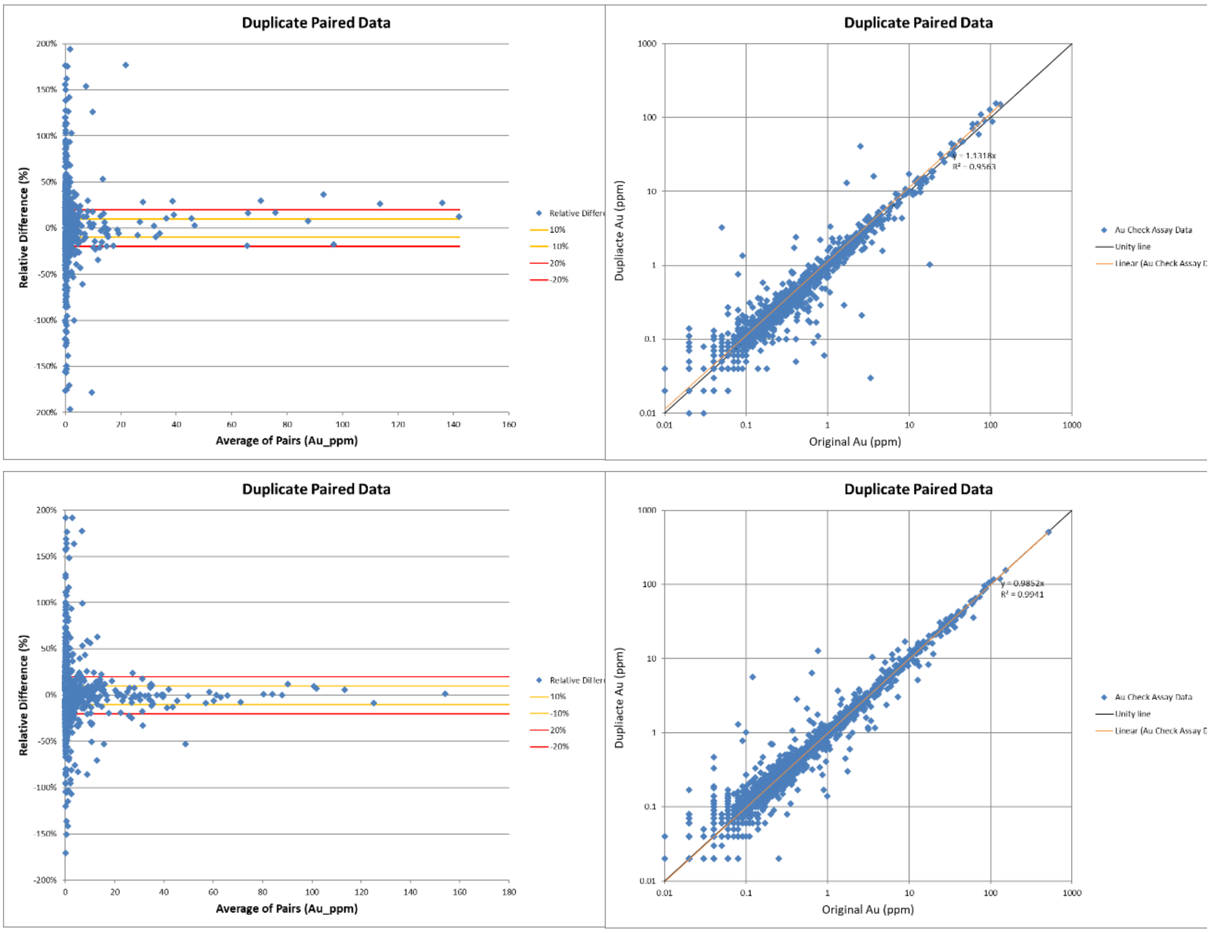


Figure 11-5: Au field duplicate relative difference and log scatterplots for SGS_BO (top) and SGS_CH (bottom)

Source: DPM, 2020

Lab duplicate precision at SGS_BO was poorer than expected (Table 11-10). Note that silver values are relatively low with most pairs having grades within 10 x LDL.

Table 11-10: Ag lab duplicate data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
ALS_RO	Ag	197	4	3	5%	10%	24.18	23.50	-3%
ALS_BO	Ag	155	0	N/A	5%	10%	N/A	N/A	N/A
SGS_BO	Ag	1,249	18	28	5%	10%	23.37	22.72	-3%
SGS_CH	Ag	2,411	44	5	5%	10%	20.21	20.17	0%

Lab replicate and lab split precision for silver pairs is acceptable at both SGS_BO and SGS_CH with no significant bias (Table 11-11 and Table 11-12).

Table 11-11: Ag lab replicate data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
SGS_BO	Ag	735	9	3	5%	10%	23.96	23.82	-1%
SGS_CH	Ag	5,026	111	4	5%	10%	22.25	22.22	0%

Table 11-12: Ag lab split data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
SGS_BO	Ag	1,406	39	5	5%	10%	32.76	32.69	0%
SGS_CH	Ag	2,430	52	4	5%	10%	21.01	21.18	1%

The gold lab duplicates are mostly precise with no bias. The SGS_BO precision is lower than expected (Table 11-13).

Table 11-13: Au lab duplicate data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
ALS_RO	Au	197	159	6	5%	10%	2.07	2.07	0%
ALS_BO	Au	155	120	5	5%	10%	0.58	0.58	0%
SGS_BO	Au	1,249	1,014	13	5%	10%	2.19	2.19	0%
SGS_CH	Au	2,416	1,752	8	5%	10%	3.63	3.64	0%

Lab replicate and lab split precision for gold pairs is acceptable at both SGS_BO and SGS_CH with no significant bias (Table 11-14 and Table 11-15).

Table 11-14: Au lab replicate data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
SGS_BO	Au	704	556	6	5%	10%	1.98	1.94	-2%
SGS_CH	Au	4,906	3,512	6	5%	10%	1.56	1.56	0%

Table 11-15: Au lab split data (including acceptable and best practice limits)

Lab_Orig	Element	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Best	Acceptable	Mean original (ppm)	Mean duplicate (ppm)	Bias
SGS_BO	Au	1,390	1,127	5	5%	10%	2.61	2.70	3%
SGS_CH	Au	2,396	1,691	5	5%	10%	1.57	1.56	0%

Overall, acceptable levels of precision have been exhibited for gold duplicate pairs with SGS_BO having the poorest precision for field duplicates and laboratory duplicates. Silver pairs were mostly low grade, but where pairs were greater than ten times the lower detection limit, precision was mostly acceptable.

11.5.3 Author's Opinion on Sample Preparation, Security and Analytical Procedures

Quality control results indicate that the grade control assay results are accurate and repeatable with no material contamination apparent. No significant issues of bias or fatal flaws were noted in the overall QAQC review and therefore the author believes these results can be used with confidence in downstream work.

12 Data Verification

The Qualified Person has supervised the data verification review and believes the data verification procedures undertaken on the data collected from DPM adequately support the geological interpretations and have led to analytical and database quality, and therefore support the use of the data in Mineral Resource estimation.

12.1 Database Validation

Project data are housed in an acQuire relational database which is hosted at the Chelopech Mine. The acQuire data model has inbuilt validation criteria, constraints and triggers to ensure that all data in the database are validated and meet these criteria. An audit of the DPMKr database was completed by CSA Global on the 24th July 2020 (CSA Global, 2020) and the overall conclusions were that the database was well maintained, good practices appeared to have been followed, and data in the database should be fit for purpose for downstream work.

12.2 Verification Sampling

Substantial secondary verification sampling of the primary trench/channel sampling and drilling at the Ada Tepe deposit was completed, including the following:

- Twinning of four 2001 diamond drillholes in 2002 with 366 m of triple tube coring
- Twinning of 194 m of the initial 2000 and 2001 channel sampling in 2002 using the RSG channel sampling procedures
- Successful twinning of 24 RC drillholes from the second and third drilling programs with triple tube coring (1,865 m).

12.2.1 Analysis of Twin Trench Sampling Data

The 194 m of twin trench sampling was completed along various segments of 13 trenches, with the twin samples collected over the same intervals as the original samples. The average gold grade of the original and twinned segments of continuous trench sampling was calculated, both uncut and with a 10 g/t Au upper cut applied, as presented in Table 12-1. The compared intersection grades are generally similar with no systematic bias evident in favour of the original or twin intersection grades. On this basis, it is considered the trench sampling data collected during the initial exploration program to be suitable for use in Mineral Resource estimation.

Table 12-1: Uncut and cut mean gold grade data for twin trench sampling intersections

Trench ID	From	To	Metres	Uncut mean gold grade (g/t)		Cut mean gold grade (10 g/t Au)	
				Original	Twin	Original	Twin
AT102-6	57.8	65.4	7.6	1.0	1.9	1.0	1.8
AT108	23.2	50.8	27.6	10.2	9.7	5.3	4.6
AT110-1	17	27	10	0.3	0.5	0.3	0.5
AT110-2	6	36.1	30.1	11.3	12.9	5.1	4.8
AT121-1	72.7	79.4	6.7	2.5	3.4	2.5	2.9
AT133	34.9	42	7.1	13.9	17.1	5.1	5.5
AT149	0	23.7	23.7	0.2	0.2	0.2	0.2
AT149-1	0	5	5	0.1	0.2	0.1	0.2
AT156	79.7	84	4.3	55.3	132.1	6.7	10.0
AT182	6	15.2	9.2	3.5	2.1	3.5	2.1
AT187	0	11.4	11.4	5.9	2.4	1.9	1.7
AT187	28.6	45.8	17.2	13.4	9.6	2.4	2.9
AT194-2	82.8	104.7	21.9	1.7	1.1	0.9	1.0
AT196	0	3.6	3.6	0.9	0.7	0.9	0.7
AT196	11.1	19.9	8.8	5.5	3.4	2.6	2.5
Total			**194.2**	**7.3**	**8.6**	**2.8**	**2.8**

12.2.2 Analysis of Twin Core Hole Data

CSA Global reviewed the results of twin core sampling and agrees with the conclusions reached by RSG. This is summarised below.

Comparison of the original and twin diamond drillhole intersections (Table 12-2), both uncut and using a 10 g/t Au upper cut, indicates the original core hole intersections are higher grade than the twin hole intersections, but with much reduced differences evident between the intersections based on the cut grade data. Plots of the sample gold assay grades vs downhole depth for each of the four twin pairs indicate that the high-grade mineralised intersections are of similar length in the original and twin holes. Furthermore, not all the mineralised intersections are dominated by higher sample grades in the initial drillholes. RSG also noted that the separation between the surveyed downhole traces of the twin pairs AT1045 and ATDD014, and AT1079 and ATDD015 range from approximately 2 m at the top of the holes to greater than 9 m at depth, and as such, differences in the sample and mineralised intersection grades at depth are not unexpected.

Table 12-2: Uncut and cut mean gold grade data for twin core holes

Original hole	Twin hole	From	To	Metres	Uncut Au (g/t)		Cut (10 g/t Au)	
					Original	Twin	Original	Twin
ATI 012	ATDD011	3	59	54	18.5	10.7	4.8	4.8
ATI 059	ATDD012	0	66	65	1.8	0.7	1.5	0.7
AT1045	ATDD014	1	107	106	4.6	2.3	1.5	1.2
AT1079	ATDD015	0	130	130	1.7	1.6	1.2	1.1
Total				**355**	**5.1**	**3.0**	**1.9**	**1.6**

In summary, when the effects of a relatively small number of very high grade samples are removed by cutting, and the significant separation between some of the original and twin drillhole traces are considered, the length and tenor of the mineralised intersections in the original core holes is generally confirmed by triple tube twin holes.

12.2.3 Analysis of Reverse Circulation and Diamond Twin Hole Data

The 24 successful RC and diamond twin drillhole pairs have been compared on the basis of 3 m composites of the gold assay data over the twinned downhole segments of each twin hole pair. Similar to the diamond twin holes and the duplicate channel samples, a high level of short-scale variability is noted, as is typical for epithermal gold systems. The important findings of the RC v DDH twin drilling review are summarised as follows:

- The mineralised intersection lengths, their relative downhole positions and the associated sample recoveries show reasonable correlation for majority of twin hole pairs, as illustrated in the example plot displayed in Figure 12-1.
- A high degree of grade variation is noted between the mineralised intercepts
- Although a larger percentage of RC holes are relatively higher tenor (consistent with that described above for the DDH vs DDH twin dataset), a significant number of diamond intercepts are also noted to be higher grade than the corresponding RC twin. This would support the finding of high short-scale variability and not bias.
- Small intercepts (<= 3 m) identified in the RC or the DDH twin are often not repeated in the adjacent drillhole.
- It is considered that the twin drilling adequately replicates the original drillhole intercepts in terms of magnitude and location, when consideration is given to the mineralisation style.

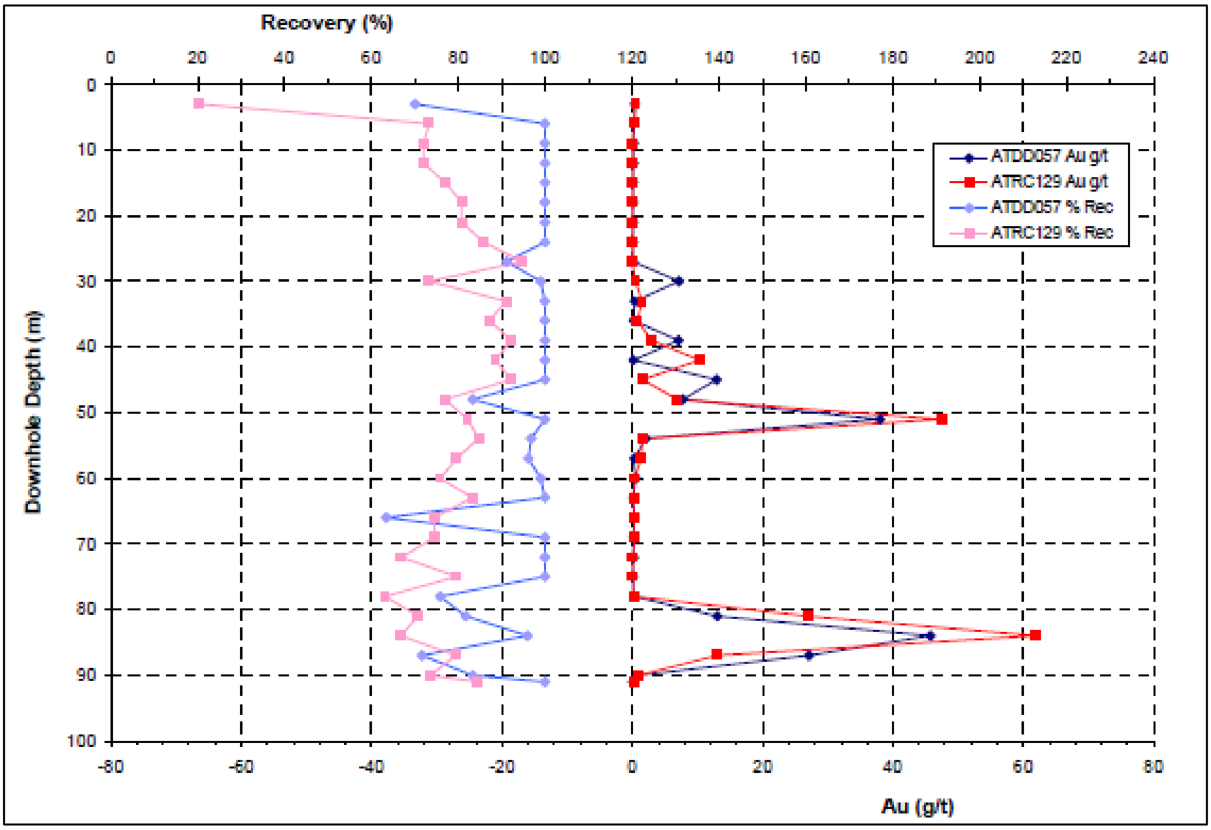


Figure 12-1: Grade and recovery vs depth plot for diamond and RC twin drillholes ATDD057 and ATRC129
Source: CSA Global, 2018

Table 12-3: Comparison of uncut and cut gold 3 m composites RC vs diamond drillhole twins

DDH hole	RC hole	From	To	Length (m)	Uncut Au (g/t)		Cut (10 g/t Au)	
					DDH	RC	DDH	RC
ATDD026	ATRC013	3	54	51	2.83	7.38	2.83	7.03
		75	80.3	5.3	17.11	3.68	16.64	3.68
ATDD030	ATRC003	0	36	36	3.68	2.03	3.68	2.03
		123	137	14	1.69	1.17	1.69	1.17
ATDD032	ATRC002	0	9	9	2.02	2.41	2.02	2.41
		105	111	6	1.14	4.68	1.14	4.68
		120	131.6	11.6	3.87	2.74	3.87	2.74
ATDD034	ATRC007	60	93	33	7.89	6.63	7.76	6.63
ATDD057	ATRC129	27	60	33	6.99	6.85	6.26	5.26
		78	90	12	21.72	25.81	17.76	17.80
ATDD058	ATRC062	15	20	5	0.40	31.85	0.40	29.67
ATDD059	ATRC059	0	21	21	7.48	6.74	7.48	6.74
ATTDD060	ATRC132	15	24	9	0.47	0.61	0.47	0.61
ATTDD061	ATRC074	0	12	12	9.06	13.80	8.43	10.11
		45	66	21	0.48	0.42	0.48	0.42
ATDD073	ATRC117	0	33	33	15.16	18.32	8.01	6.53
		45	51	6	0.13	1.46	0.13	1.46
		63	108	45	5.07	5.63	4.75	5.33
ATDD074	ATRC118	12	66	54	30.12	60.07	11.21	15.55
		81	109.7	28.7	4.04	11.40	4.04	5.71
ATDD077	ATRC273	66	70	4	0.21	15.95	0.21	15.95
ATDD078	ATRC339	0	18	18	0.97	20.51	0.97	5.64
ATDD081	ATRC143	9	15	6	0.73	0.31	0.73	0.31
		33	81	48	8.37	11.57	5.67	8.90
ATDD083	ATRC081	0	18	18	0.84	0.87	0.84	0.87
		24	39	15	5.37	6.65	5.37	6.65
ATDD085	ATRC111	0	15	15	6.25	7.94	6.25	7.94
		27	68.2	41.2	6.17	17.24	6.17	10.76
ATDD087	ATRC097	15	27	12	27.80	5.10	7.77	5.10
		54	87	33	1.96	2.81	1.96	2.81
ATDD088	ATRC135	6	18	12	1.93	5.26	1.93	5.26
		27	45	18	6.00	3.75	6.00	3.75
ATDD089	ATRC357	0	54	54	0.55	12.57	0.55	4.37
		69	85.5	16.5	25.51	11.37	10.79	9.42
ATDD091	ATRC270	42	66	24	1.66	1.65	1.66	1.65
ATDD092	ATRC016	0	18	18	1.61	1.63	1.61	1.63
		27	78	51	5.98	11.20	4.40	3.79
ATDD101	ATRC335	0	12	12	0.78	2.34	0.78	2.34
		18	24	6	0.98	0.03	0.98	0.03
ATDD105	ATRC140	15	30	15	1.47	1.14	1.47	1.14
		57	63	6	5.02	0.24	5.02	0.24
		90	112	22	21.86	11.28	14.38	11.28

Note: Selection completed on the basis of >2 composites and a minimum grade of 0.5 g/t Au for either/or original and twin hole.

13 Mineral Processing and Metallurgical Testing

13.1 Introduction

Three distinct phases of ore characterisation and metallurgical testing were undertaken in the evaluation of the mineralisation present in the deposit at Ade Tepe. These are summarised in Sections 13.1.1. 13.1.2 and 13.1.3 below.

13.1.1 Definitive Feasibility Study (2005)

The main objectives of this testwork program was to develop the optimal flowsheet for processing the Ada Tepe ore types using best available technology. ALS AMMTEC Laboratory, Perth, Australia carried out the physical characterisation, comminution, leaching and cyanide detoxification testwork programs.

Samples were also sent to MinnovEX Technologies (now SGS) in Toronto, Canada for comminution characterisation, variability testing and for mineralogical examination; Outotec for thickening, and Larox Pty Ltd for filtration; and to Coffey for tailings characterisation. Results from the phase of testing confirmed that all the samples tested were considered "free-milling" and amenable to gold production by conventional cyanidation leaching.

13.1.2 Definitive Feasibility Study (2012)

Testing carried out as part of the DFS essentially reinvented the project following the rejection of the original investment proposal by the local community and government authorities. At the expense of a reduction (8–10%) in recovery compared with the original conventional carbon-in-leach ("CIL") circuit, the project was "re-engineered" using a more conventional flotation process, combined with the introduction of a combined mine waste and flotation tailings facility ("IMWF").

The flowsheet evolved from the 2005 flotation scoping testing which demonstrated that at the CIL circuit grind size (P_{80} of 75 µm) between 60% and 80% of the gold could be recovered to a flotation concentrate, at a saleable gold grade. The 2009–2011 testing program was developed to confirm the potential of both: (a) physical recovery processes (flotation and gravity) as the primary method of precious metal concentration; and (b) the ultimate integration of high-density (or "paste") settled tailings from the process into an overall waste deposition strategy which incorporates the mine waste.

13.1.3 2012/2013

Testing carried out was predominantly to be used for plant design purposes. Representative samples were dispatched to recognised testing institutions for mechanical design tests, including materials handling flow characteristics, slurry rheology determinations, additional confirmatory settling and paste thickening testing. Several confirmatory flotation programs continued at SGS.

13.2 Ore Characterisation (2009 to 2013)

The SGS laboratory in Lakefield, Ontario was selected as the testing facility for the supplementary comminution, and the flotation development programs. A comprehensive test program was undertaken for this program, samples for which were taken from the extensive store of HQ, NQ and PQ drill core. The locations were selected to cover the range of mineralisation present across the zones, to include composites and sufficient samples to determine the extent of any variability in performance.

The test program focused on the two main ore zones: the "softest" – the Oxidised Upper Zone; and the "hardest", the Fresh Wall Zone. Composites of each were examined, and in addition, individual samples for variability testing, were also tested. The samples were selected in consultation with the exploration team from the remainder of the HQ, NQ and PQ drill core available. Most of the samples were split from the existing half core H- and NQ material, into quarter core.

13.3 Gold Occurrence

Testing carried out as part of the 2005 study concluded that gold was predominantly present in the ore as fine, and sometimes, liberated particles of electrum (a naturally occurring alloy of gold and silver). The concentration of sulphides and base metals were very low; two dominant ore lithologies were present – the "brecciated" Upper Zone and the "siliceous" Wall Zone. Subdivisions of these (oxidised or fresh) indicating the degree of weathering that had occurred were examined and the subsequent metallurgical and comminution test work programs confirmed only minor variations in the physical characteristics within each subdivision. However, substantial differences in overall hardness between the two main ore zone classifications were noted.

The overall geology, ore zones, and lithologies remained unchanged for the 2009/2010 study, and these were considered in the selection of the remaining samples. As part of the characterisation process, a gold deportment study (SGS Canada, Project 12251-002) was carried out on selected concentrates from the two main composite samples ground to a P_{80} of approximately 35 µm. The bulk of the gold was found to be present as electrum, with average equivalent diameters of 7 µm and 5 µm for the Oxidised Upper Zone and Wall Zone particles, respectively. The Wall Zone samples are slightly finer overall (maximum size 14 µm), compared to a maximum of 25 µm for the Oxidised Upper Zone. Approximately two-thirds of the gold particles for the two composites were recorded as liberated (>95% free mineral), and attached (80–95%), with the remaining being locked (<80% free).

This confirmed the relatively fine grind size requirement in order to achieve sufficient liberation and subsequent recovery by floatation.

13.4 Comminution Testwork

To confirm the extent of any variations in the hardness characteristics, additional tests were carried out to supplement the original (2005) comminution testwork program. These were conducted on the Oxidised Upper Zone and Fresh Wall Zone composites and variability samples which showed the widest range of characteristics.

A full suite of comminution tests was completed, which confirmed the original findings that the Oxidised Upper Zone samples were moderately competent and abrasive, while those of the Wall Zone were relatively much harder and more abrasive.

Together with the standard tests for grindability determinations undertaken in the 2005 program, 32 individual samples in total have been tested for SAG Power Index ("SPI") and Bond Ball Mill Work Index ("BWi") measurements. SPI is a measure of the hardness of the ore from the perspective of semi-autogenous milling. The Bond Work Index characterises the ore hardness with respect to ball milling, with the Modified Bond (ModBond) method being used on all the 32 samples. Four full Bond Index measurements were made in 2005 to calibrate the Modified Bond results on the first 14 samples at a P_{100} of 106 µm. A further six full Bond Index measurements were made in late 2009 to calibrate the 18 additional samples at a P_{100} of 75 µm.

As the testwork program evolved, it became clearer that a significantly finer grind than the original 2005 Definitive Feasibility Study circuit design was required. Additional testing was completed to determine the relative parameters to properly size the grinding equipment capable of producing the target grind size required. A single composite was subjected to a full Bond test at both P_{100} of 75 µm and 38 µm to account for the significantly finer mill product size required for the modified comminution circuit. Further samples were sent to Metso (York, Pennsylvania) for supplementary fine grinding tests, which confirmed the appropriate specific energy requirements to be used for sizing of the fine grinding mill. The additional grinding test results obtained confirmed the range of hardness previously measured, reflected in the primary and secondary mill specific power requirements, which remained unchanged from the 2005 design.

13.5 Flotation Testwork

The flotation testwork program was also conducted on the samples from the same zones, representing the two main ore types.

The 2009–2010 program concentrated on developing the grind size/recovery relationships for flotation, together with the development of the optimum circuit configuration. Following the initial 2005 scoping work and several "proof of concept" phases, a significant sampling program on drill core covering the extent of mineralisation was designed to cover the range of ore zones covered in the earlier characterisation program. An additional 20 individual intervals of the Oxidised Upper Zone material, and 12 individual samples of the Wall Zone were selected and prepared at SGS. A number of these were combined into composites for the development program, and also individually tested to determine the effects of variability.

The test programs took place in several phases over the period between September 2009 and May 2010. The bulk of the development work took place on main composites (UpOx and Wall) of individual samples from each of the two ore types (20 for the Upper Oxide and 11 for the Wall). A wide range of flotation parameters, including grind size, reagent optimisation, rougher, rougher/cleaner (both in open circuit and locked cycle), and kinetic tests were undertaken through the program, with the main conclusion being that overall performance was very similar for each ore type, and both were completely dependent on grind size. The overall results showing the clear trends of improving performance with increasing fineness of grind is summarised in Figure 13-1 and Figure 13-2. This also includes the results of the two main locked cycle tests carried out on the main composites.

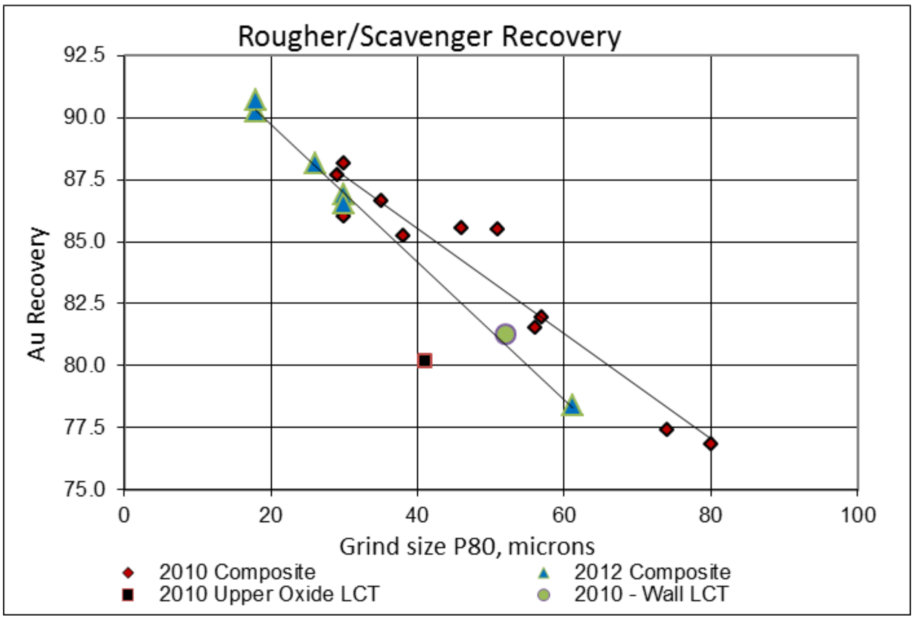


Figure 13-1: Summary grind size – rougher/scavenger flotation recovery of the main composites
Source: DPM, 2014

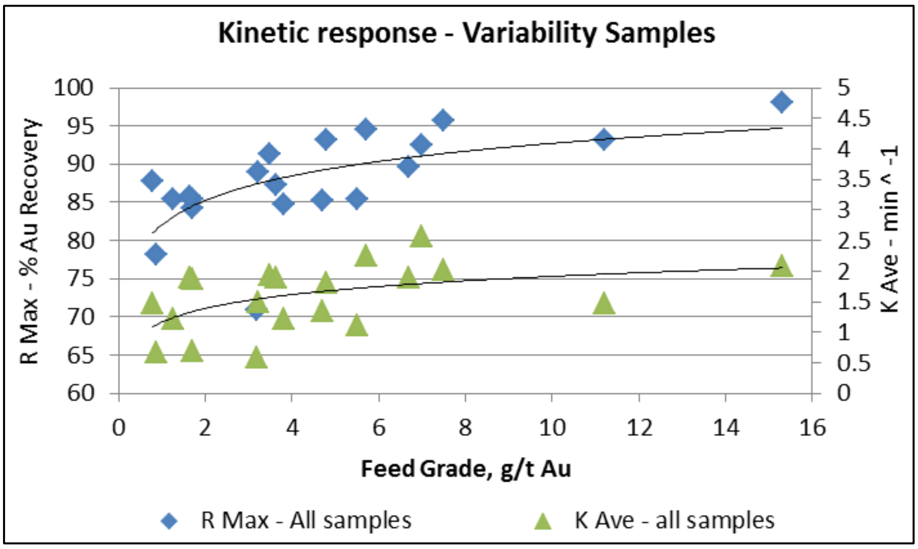


Figure 13-2: Kinetic response of the variability samples tested in 2010
Source: DPM, 2014

13.6 Tailings Testwork

The tailings thickening work was performed on a number of samples from each composite at a variety of grind sizes. The bulk work was completed on the worst-case sample (most oxidised) to ensure the dewatering design parameters would be adequate under all operating conditions. Drill core samples representing the various lithological ore zones were prepared in batches to the various grind sizes required for testing for thickening and “high density” tailings (“paste”) production. This was performed by Golder Pastec in Sudbury, Ontario, and Burnaby, British Columbia, and the work undertaken included material characterisation (sizing and mineralogy), dewatering characteristics (achievable solids concentrations, yield stress and viscosity, and rheological properties. Specific products from these programs were also sent to several thickener and filter suppliers for “pilot” plant characterisation as the basis of design and subsequent quotations for the various unit process selections.

13.7 Comminution and Flotation Circuit Design (2012)

To complement the physical testing programs, additional engineering studies were completed by SGS Canada, which confirmed the original grinding circuit characteristics, and developed the flotation circuit requirements.

These studies utilised the basic testwork characteristics, which for Comminution were: individual sample rock hardness from primary, secondary and tertiary grinding mill perspectives – completed with the proprietary Comminution Economic Evaluation Program (CEET2®) (SGS Canada, November 2010); and for Flotation were individual kinetic parameters, to design the appropriate flowsheets – Flotation Economic Evaluation Program – FLEET2® (SGS Canada, February 2011).

Both the studies involved the geostatistical estimation of the relative parameters distributed to the total blocks of the mine block model. On the basis of the annual mine plan, the circuit production estimates were then produced on a year-by-year basis to confirm the capabilities of the selected equipment to process the variations in parameters on an annual basis. The geostatistical approach allows for the estimation of the precision (statistical error) in the block values, thereby improving the reliability of the production forecasts.

Using the design requirements of required throughput and final grind size, the required specific energy for each of the comminution circuit stages were predicted, which are then used as the minimum requirements for the engineering design. SGS add appropriate safety factors for drive losses and a margin for the orebody uncertainty and complete a power requirement for the particular circuit studied. Similarly, the flotation circuit performance predictions indicated that, on average, a concentrate grade of 250 g/t Au could be produced at 86% recovery over the LOM from ore grade of 3.36 g/t Au. Monte Carlo simulations were used to determine the risk of error in the forecast results arising from lack of precision in the estimation of head grade and related kinetic parameters for different periods of operation.

Since commissioning in April 2019, the processing plant has achieved nameplate capacity and design metallurgical performance, as documented in Section 0. The actual plant operating data supersedes any earlier metallurgical testwork.

13.8 Current Mineral Processing

Since commissioning in April 2019, the processing plant has achieved nameplate capacity and design metallurgical performance. The actual plant operating data supersedes any earlier metallurgical testwork. DPM is not aware of any processing factors or deleterious elements that could have a significant effect on processing Ada Tepe ore.

14 Mineral Resource Estimates

14.1 Drillhole Database

14.1.1 Data Summary

Data files containing collar, downhole survey, assay, geology (lithology and oxidation), geotechnical (DD recovery), structural and bulk density (BD) data, as well as magnetic susceptibility and QAQC data were supplied to CSA Global in comma-separated values (CSV) format from the acQuire ™ database hosted at Chelopech. The database close-off date was 31 March 2020 and a summary of received data is shown in Table 14-1. The drill data was imported into structured query language (SQL) and Datamine StudioRM™ software for validation.

Table 14-1: Summary of data imported – Ade Tepe

Collars	Assays	Surveys	Geology	Recovery (DD)	BD
2,832	158,804	8,883	159,608	18,263	5,891

The Ade Tepe MRE area was restricted by the licence string provided by DPM (the Commercial Discovery license), and data was selected within this boundary. A summary of the drilling data as used for the Ade Tepe MRE is shown in Table 14-2.

*Table 14-2: Summary of drilling as used for estimation – Ada Tepe**

	DD	DDT**	RC	TR	Total
Number of holes	171	26	2,060	253	**2,510**
Metres	16,232	5,534	117,374	10,710	**149,850**
Number of assays	15,317	3,144	112,659	9,157	**140,277**
Number of BD measurements	4,154	230	-	477	**4,861**

**Data restricted within the boundary string as presented in Figure 14-1.*

***DDT totals include holes with a RC pre-collar and DD tail*

The database contains 9,157 trench samples for 10,710 m within the MRE area. These were used in the estimation of the Mineral Resource. Sections 9.4 and 12.2.1 outlines the work completed to validate the use of trenches in the MRE.

A location plan for drillholes used in the MRE (within the licence boundary), coloured by drillhole type ("HTYPE") is presented in Figure 14-1.

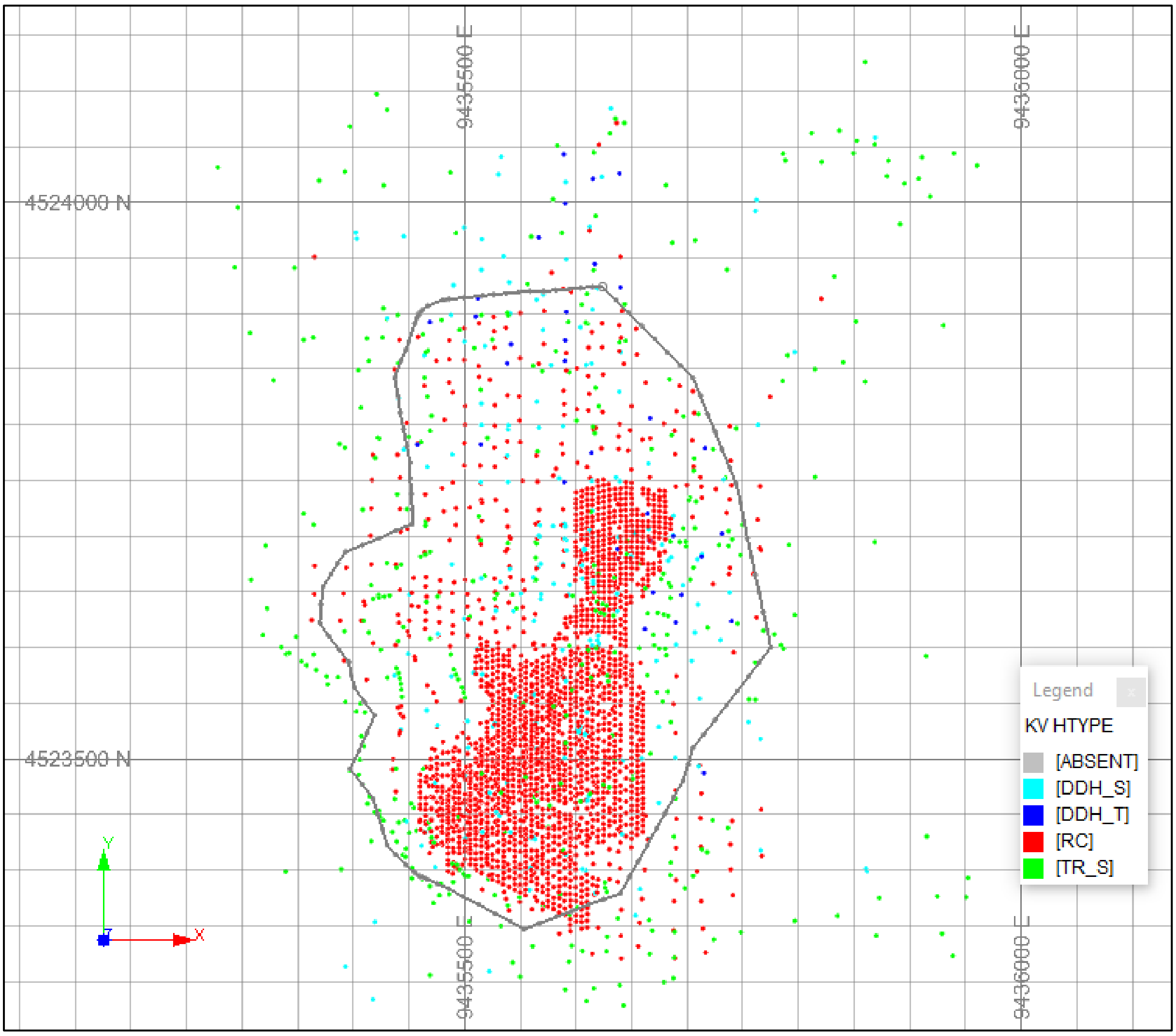


Figure 14-1: Plan map of hole types in the database for Ada Tepe

Note: Data used in the MRE was restricted to data within the licence boundary denoted here by string.
Source: CSA Global, 2020

14.1.2 Data Spacing and Orientation in relation to Geological Structure

Diamond drilling within the Mineral Resource area has been completed on sections which are generally between 20–40 m x 40 m apart, whereas RC drilling (for GC) has generally been drilled out on a 5 m x 5 m grid.

The drilling was targeted normal to the plane of the principal mineralised orientation (Wall Zone) ensuring the optimum angle of intersection for the largest most coherent domain at Ada Tepe. The Wall Zone mineralisation is associated with a shallow detachment structure dipping to the north. The Upper Zone mineralisation shows a complex geometry, predominantly east/west trending, steeply dipping to the north.

There are however instances of steeply dipping to the south, and flat lying branching structures. This mineralisation is believed to be based on secondary brecciation structures associated with the detachment surface. Most exploration drilling at Ada Tepe has been pushed through to target both the Upper Zone and Wall Zone mineralisation. GC drilling has been completed over Phase 1 area (pushback 1) and is currently focused on the Phase 2 area (pushback 2).

Despite not being at the optimal angle of intersection for the Upper Zone mineralisation in all instances, the drilling is appropriate for determination of the structural controls and geological characteristics of the deposit and allows for well-informed mineralisation envelopes to be generated in Leapfrog™ for estimation.

14.1.3 Data Load and Data Excluded

Data was loaded into an SQL database which has constraints and triggers, ensuring that only validated data was included in the database. CSA Global performed additional validation checks of the exported data as detailed below. During the validation process issues were highlighted and corrected where possible. Exports of the clean, verified data were provided to the resource geologists in CSV format for the MRE.

The list below summarises the validation and checks completed:

- Collar table: Incorrect coordinates (not within known range), duplicate holes.
- Survey table: Duplicate entries, survey intervals past the specified maximum depth in the collar table, overlapping intervals, abnormal dips, and azimuths.
- Geotechnical table: Overlapping intervals, missing collar data, negative widths, geotechnical results past the specified maximum depth in the collar table.
- Geology, sample and assay tables: Duplicate entries, lithological intervals past the specified maximum depth in the collar table, overlapping intervals, negative widths, missing collar data, missing intervals, correct logging codes, duplicated sample IDs, missing samples (assay results received, but no samples in database), missing analyses (incomplete or missing assay results).
- QAQC material: A QAQC report is generated in which results of the standards (CRMs), blanks and duplicates are reviewed (includes client QAQC material and lab checks where applicable).

Some missing samples (with low or no recovery) had been assigned a waste grade of 0.001 g/t Au (and associated waste grades for silver and sulphur) in the DPMKr database. In discussions with DPMKr, it was established that these should not be treated as waste. CSA Global treated these samples as missing rather than waste samples and the adjustment was recommended to be carried through into the DPMKr database.

Following de-surveying, 146 missing intervals were identified in the assays, with a total length of 3,006 m. These gaps were discussed with DPMKr, and reviewed by CSA Global, and some were identified as waste zones (set to half the detection limit), and some as potentially mineralised (left absent) based on review of the lithology codes.

The CSV files were then loaded into Datamine StudioRM™ and the following was observed:

- 11 DD collars with no assays
- 30 DD collars with no BD data (no BD measurements for RC samples)
- 381 TR collars with no BD data.

The appropriateness of data to be used in the MRE were reviewed. A summary of drill data removed prior to estimation is shown in Table 14-9 below. Most were excluded since they are outside the licence boundary. Several others were excluded because they had no assays (geotechnical drillholes, metallurgical drillholes). All subsequent data analysis, statistics and estimation are limited to the validated and selected dataset as used in the MRE.

Table 14-3: Excluded drillholes

BHID (excluded)	Reason for exclusion
ATDDEX003–ATDDEX005, ATDDEX028, ATDDEX029, ATDDEX031 ATDDGT042 ATDD010, ATDD035, ATDD036, ATDD048, ATDD049, ATDD056, ATDD062–ATDD068, ATDD070, ATDD075, ATDD103 ATDT197, ATDT278, ATDT279, ATDT301, ATDT351–ATDT355 ATRC019, ATRC044–ATRC048, ATRC051, ATRC052, ATRC055, ATRC072, ATRC086, ATRC1530–ATRC1532, ATRC1532A, ATRC1533, ATRC1542–ATRC1545, ATRC1550, ATRC1551, ATRC1558–ATRC1560, ATRC163–ATRC168, ATRC182, ATRC187–ATRC197, ATRC205, ATRC233–ATRC235, ATRC238, ATRC239, ATRC242–ATRC247, ATRC251–ATRC257, ATRC278, ATRC279, ATRC300–ATRC304, ATRC318, ATRC351–ATRC356, ATRC363, ATRC364, ATRC371, ATRC380, ATRC422, ATRC648 ATTR345, ATTR347, ATTR348 AT040, AT041, AT042, AT043, AT044, AT049, AT056, AT057, AT058, AT102-1, AT102-2, AT1035, AT1040, AT1042, AT105, AT1050, AT1051, AT1053, AT108, AT109-1, AT11, AT110, AT111, AT112, AT113-1, AT115, AT116, AT117, AT117-1, AT117-2, AT118, AT119-1, AT119-2, AT119-3, AT11-3E, AT120, AT121, AT121-1, AT122, AT123, AT123-1, AT124, AT124-1, AT125, AT126, AT126-1, AT127, AT130, AT131, AT134, AT135, AT145, AT15E, AT151, AT154, AT15-1E, AT16E, AT162, AT163-1, AT163-2, AT163-3, AT164-1, AT164-2, AT164-3, AT165, AT166-1, AT166-2, AT167, AT168, AT169-1, AT169-2, AT170-1, AT170-2, AT171-1, AT171-2, AT171-3, AT171-4, AT174, AT175–AT178, AT183, AT188–AT191, AT193, AT194, AT1-1, AT1-1C, AT1-2, AT1-3W, AT1-4E, AT201, AT204, AT206–AT219, AT221–AT225, AT225-1, AT226, AT230, AT235–AT238, AT246, AT250, AT253, AT254, AT258–AT262, AT271, AT280, AT280-1, AT281–AT283, AT283-1, AT284–AT289, AT291, AT291-1, AT292, AT292-1, AT293–AT296, AT299, AT305, AT305-1, AT306, AT307–AT310, AT3-5, AT4E, AT5E, AT6, AT7W, AT8W, AT8-1E, AT8-3W, AT8-4W, AT8-6W, AT9W, AT9-1W, AT9-2W BH-MWF-J, BH-OP-1, BH-OP-2, BH-OP-3, BH-RPWR-B, BH-RPWR-D	Outside licence area
ATDDGT001, ATDDGT042 ATMET006, ATMET007, ATMET008 AT1012A, AT1022, AT1022A BH-MWF-J, BH-RPWR-B, BH-RPWR-D	No assays (including geotechnical and metallurgical drillholes)

14.2 Geological and Mineralisation Modelling

14.2.1 Oxidation/Weathering Boundaries

Weathering and oxidation at Ada Tepe have been logged with strong, moderate, or weak oxidation/weathering or fresh rock recorded for each logging interval. Based on a detailed review of the spatial distribution of the logging, DPM interpreted and modelled wireframe boundaries subdividing the weathering profile into a combined strongly and moderately oxidised zone, weakly oxidised zone and fresh (un-oxidised) rock zone (Table 14-4).

Table 14-4: Logged oxidation codes

Oxidation code [OXID]	Description
1	Strongly oxidised
2	Weakly oxidised
3	Fresh

Strong to moderate oxidation in the sedimentary breccia is typically associated with the partial weathering of variably altered clasts of basement and near complete oxidation of sulphides. This is generally associated only with minor reductions in bulk density compared to the fresh sedimentary breccia due to the substantial degree of silicification and veining throughout the deposit. The depth of strong to moderate oxidation at Ada Tepe typically ranges from 25 m to 75 m depth, with the deepest weathering present beneath the top of the Ada Tepe hill, decreasing towards the north and down the east and west flanks of the hill. Weak oxidation and weathering typically extend an additional 10–25 m below the base of strong to moderate weathering.

14.2.2 Lithology Boundaries

Two principal lithologies occur at Ada Tepe, predominantly un-mineralised basement metamorphic rocks mostly comprised of gneiss and amphibolite, and the variably mineralised overlying sedimentary rocks of the Shavar Formation, comprised of irregular lenses of sedimentary breccia and sandstone. The shallow northerly dipping boundary between the basement and overlying sedimentary rocks is often represented by a thin clay zone with mylonitic textures, which can contain mineralised vein fragments.

When the clay mylonitic zone is absent, the basement-sediment contact has been interpreted and wireframe modelled at the logged position of the contact above un-mineralised clay zone intersections but below some of the mineralised clay zone intersections where considered appropriate on the basis of the intersections in the adjacent drillholes.

The main lithologies are presented in the north-south section in Figure 14-2 below.

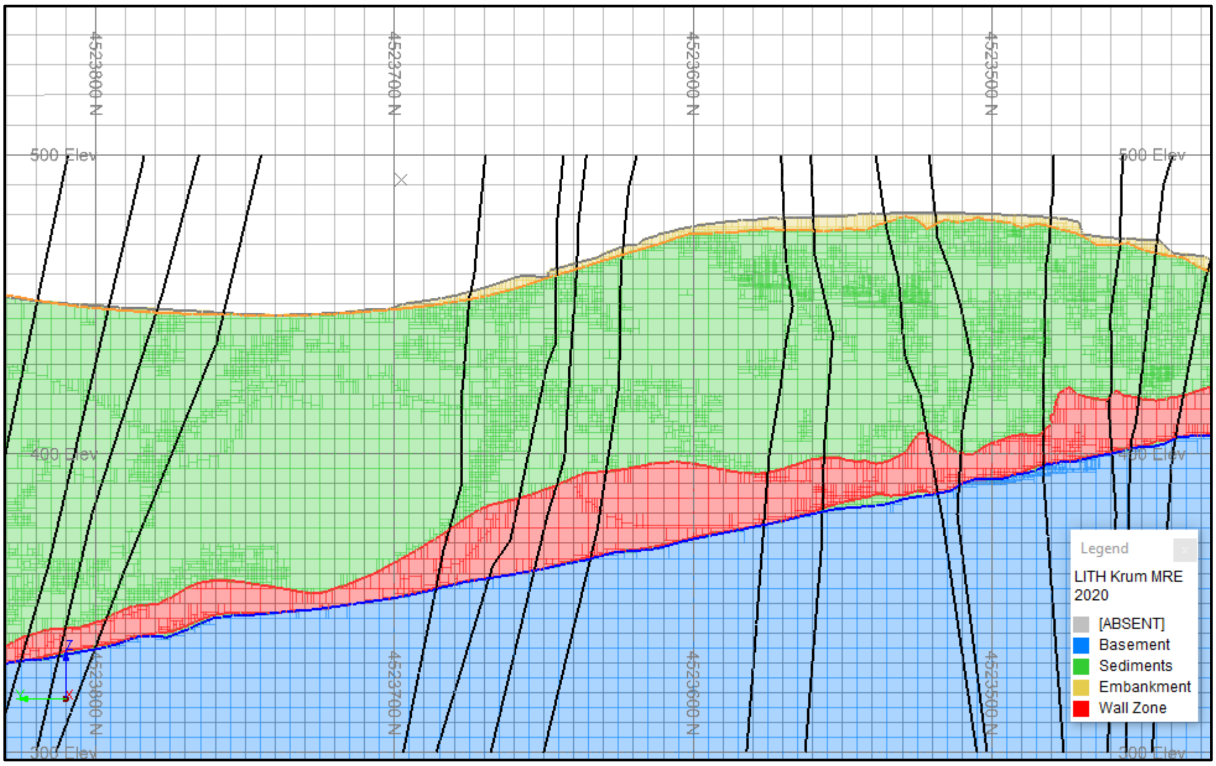


Figure 14-2: North-south section through the Ada Tepe deposit displaying the main lithology units, and mineralised Upper Zone broad mineralisation domains (black) within the variably mineralised overlying sedimentary rocks of the Shavar Formation (green)

Source: CSA Global, 2020

While generally little to no surface talus or overburden occurs over most of the Ada Tepe deposit, some overburden, mostly associated with ancient surface mine workings, termed "The Quarry", occurs along the eastern side of the Ada Tepe hill and various other areas of the deposit. Solids representing this overburden was interpreted and modelled based on the drillhole and trench logging for the area and is shown in Figure 14-3.

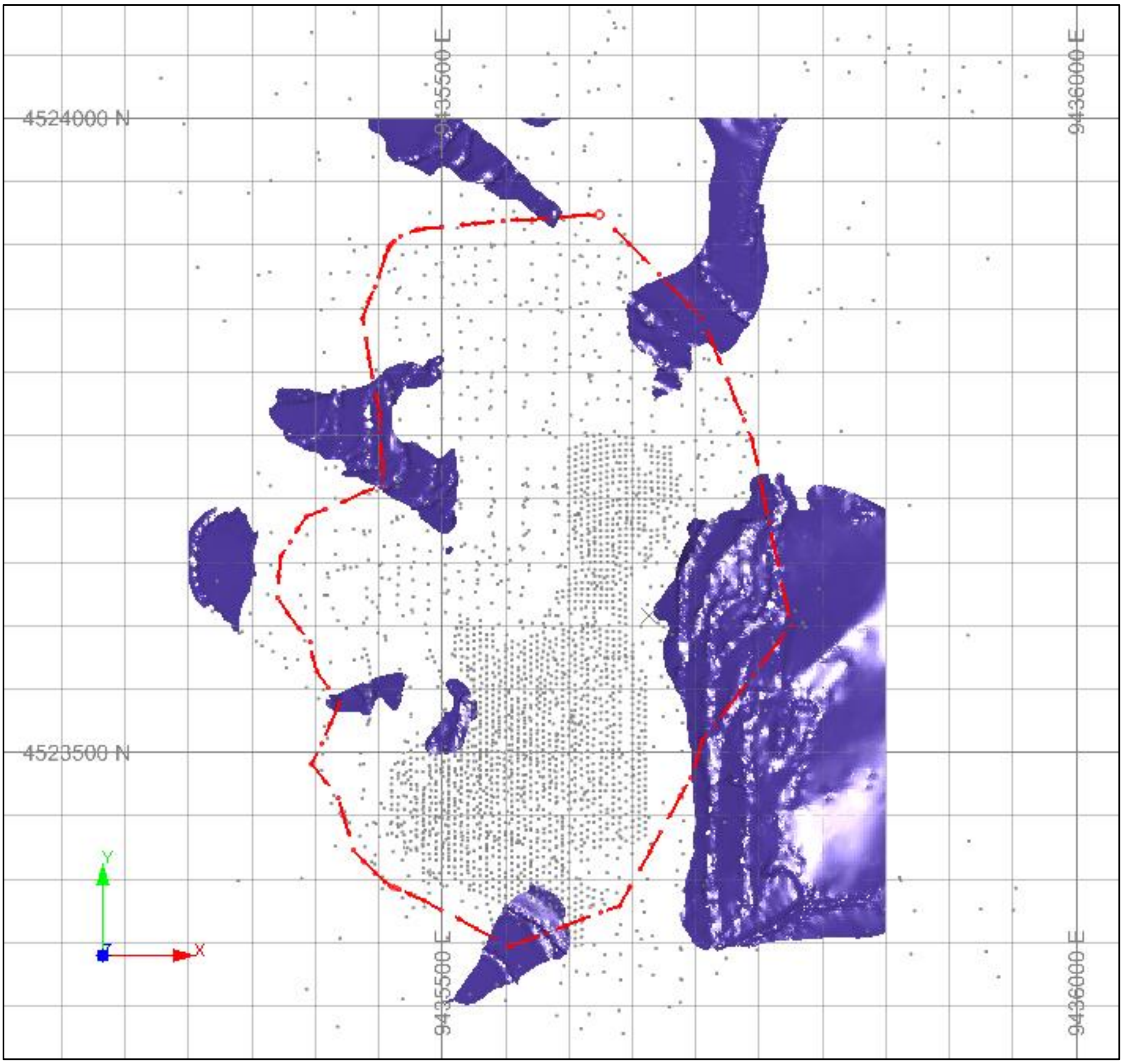


Figure 14-3: Overburden solids representing ancient mining spoils
Source: CSA Global, 2020

14.2.3 Void Model

Voids were modelled in Leapfrog on the basis of recovery data in diamond and RC drillholes. Where recovery was 0 m (diamond) or 0 kg (RC), a VD_OID model was created representing confirmed voids. Where there was low recovery (e.g. <10 kg or 30% recovery), a VD_OIS model was created to guide geologists during mining (Figure 14-4).

It should be noted that voids are characterised by poor recovery in drillholes but during mining, in-pit observations show that this material is a mixture of voids, clay and fractured material. For this reason, the void wireframes represent areas where density should be discounted to reflect voids.

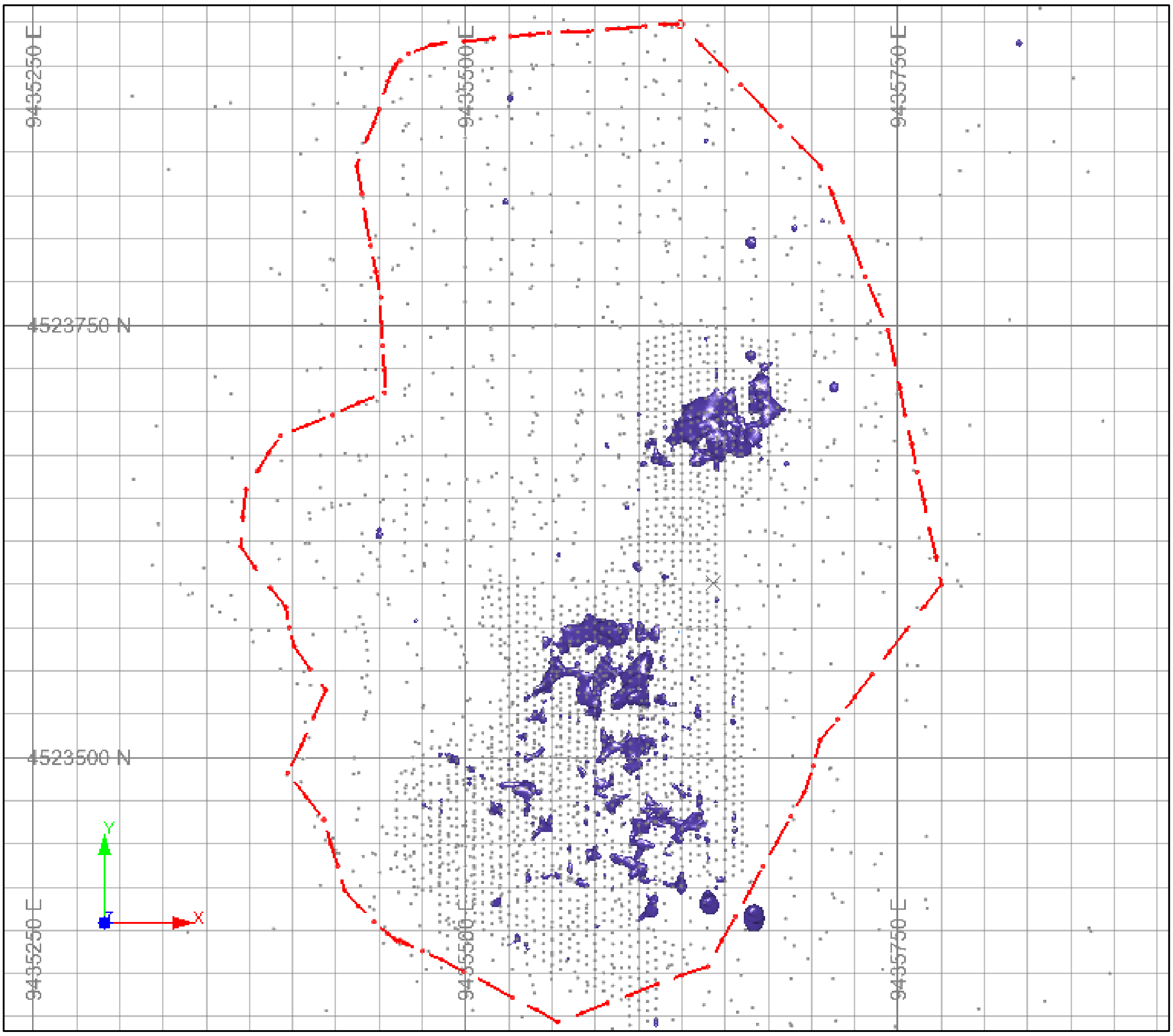


Figure 14-4: VD_OID – high confidence voids
Source: CSA Global, 2020

14.2.4 Mineralised Domain Boundaries

Mineralisation for the Wall Zone, Basement Zone and Overburden was modelled using geological logging, geochemical assays, surface mapping and interpreted geological and structural controls by DPM, in collaboration with CSA Global. The wireframes are considered robust for use in Mineral Resource estimation.

The Upper Zone was modelled numerically using Categorical kriging using a grade indicator.

The interpretation reflects the following principal styles of mineralisation recognised at Ada Tepe:

- Upper Zone mineralisation predominantly occurring within east-west striking, steep dipping veins, transitional downwards into the Wall Zone. This mineralisation volume has been modelled using Indicator Kriging.
- Wall Zone mineralisation occurring within a shallow north dipping zone of brecciated vein material and variably silicified sedimentary breccia immediately above the basement-sediment contact. This mineralisation volume has been modelled using Leapfrog.

Minor mineralisation in the basement zone and overburden has been modelled in Leapfrog.

Wall Zone

Wall Zone mineralisation occurs within a shallow north dipping zone of brecciated vein material and variably silicified sedimentary breccia immediately above the basement-sediment contact. Generally thicker more intensely brecciated regions of the Wall Zone, through which well-developed Upper Zone vein mineralisation passes, contain epithermal vein and hydraulic breccia infill textures and associated high gold grades. These are not present in regions where Upper Zone vein mineralisation is absent. These thick strongly continuous regions of high-grade Wall Zone mineralisation generally thin and diminish in grade away from, and in between regions of well-developed Upper Zone vein mineralisation.

A wireframe solid model of the Wall Zone mineralisation was generated by intersecting the wireframe surfaces of the basement-sediment contact and upper confining boundary. The lateral limits of the resultant wireframe solid reflect an interpreted tapering of the Wall Zone mineralisation converging towards the basement-sediment contact.

The wireframe surface of the basement-sediment contact was used as the lower bounding surface to the Wall Zone domain. An upper bounding wireframe surface was constructed based on digitised cross-sectional lines defined using the following generalised parameters:

- Interpretations of intervals of Wall Zone mineralisation on an individual hole basis
- Intersections of massive silicified breccia-conglomerate and re-brecciated early phase vein mineralisation
- Shallow-dipping structural orientation data for vein mineralisation near the basement-sediment contact
- Use of geological logging (massive quartz, less stockwork visible, higher vein density and breccia matrix) and grade
- Avoiding large changes in the interpreted thickness of the Wall Zone mineralisation amongst adjacent drillholes
- The detachment fault controls the mineralisation and marks the basal limit of mineralisation.

The resultant wireframe surface of the interpreted upper boundary of the Wall Zone mineralisation reflects the selection of a best fit boundary, often through mineralisation that is difficult to differentiate between Wall Zone and Upper Zone.

Upper Zone

Upper Zone mineralisation has a complex morphology. Previous attempts to model this zone have included:

- Wireframing broad domains, and estimating grade and tonnes above cut-off using Multiple Indicator Kriging ("MIK")
- Using Leapfrog wireframes to model grades in more tightly constrained volumes.

Both methods have their advantages and their limitations. For example, for MIK (which was used for the previously reported MRE in 2014), the estimation of metal is reliable, but tonnes are too high and grade is too low (when compared to the GC model), and the exact location of the mineralisation is unknown within the large panel.

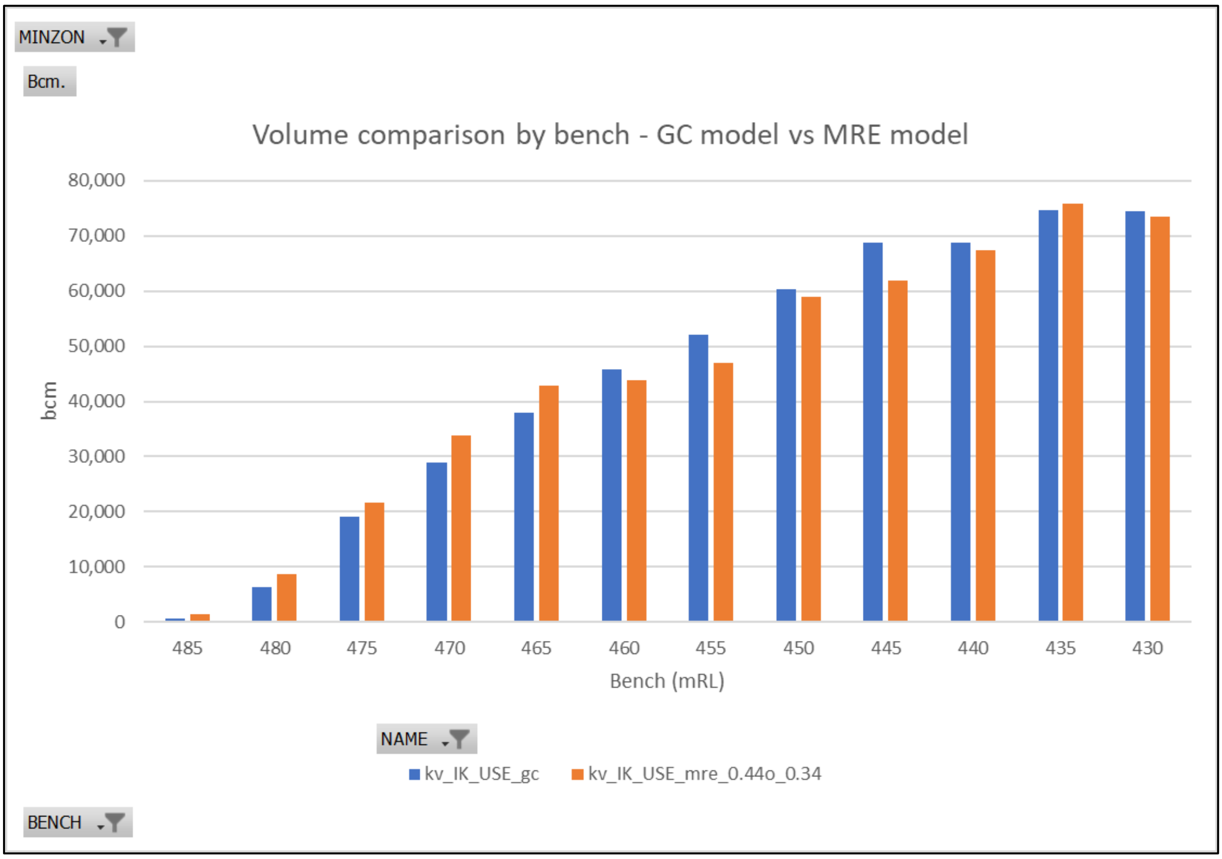
For grade shell wireframes, which was tested prior to the 2020 MRE update, they proved too constrained and result in a large amount of unmodelled mineralisation when compared to the GC model.

With the availability of close spaced production data (5 m x 5 m), a good quality GC model and reconciliation data from the start of mining to date, CSA Global developed an alternative way to model mineralisation volumes in the Upper Zone using Indicator Kriging.

The workflow is summarised as follows:

- Broad structural orientations were identified in the drillhole assay data, and were informed by the following data:
    - Structural orientation data for veining and faulting based on trench mapping and oriented core
    - Surface mapping of vein and fault traces
    - Presence of silicification and veining
    - A nominal 0.3 g/t Au lower cut-off grade for defining trends in the dataset.

  The domains represent a spectrum from steeply dipping east-west structures to shallower dipping north-south structures, with sub-domains defined along this spectrum in various orientations.
- Surfaces were used to define mineralisation orientation trends identified using 5 m x 5 m GC drilling and in-pit observations to inform geometry. The surfaces were extended into the wider spaced (25 m x 25 m) drilling using closed spaced observations to inform interpretation.
- Fourteen wireframes were created, containing a mixture of mineralised and waste material.
- To define the indicator, grade compositing was used to define intercepts that exceed a given grade (0.45 g/t Au) and minimum true thickness (2.5 m) using CompSE in Datamine™. The grade of 0.45 g/t Au was chosen as it represents one of the natural cut-offs between mineralisation and waste and it aligns more readily with the reporting cut-offs used in the MRE, allowing for some dilution. Intercepts that met the criteria were coded 1 and those that did not were coded 0.
- Variograms on the indicator field were modelled per domain, to inform the continuity model used in Ordinary Kriging. Nuggets were very low, and two structures were modelled, with a short scale structure between 5 and 20 m depending on domain and approximately 40 m in the longer scale structure.
- The indicator variable was estimated into 1 m x 1 m x 1 m blocks using Ordinary Kriging, using search ellipses informed by Dynamic Anisotropy based on the surfaces digitised in the broad domains, representing the structural trends. Small blocks were chosen to provide required resolution for both estimation of the indicator and back-flagging of data for use in grade estimation but was not used for subsequent grade estimation.
- The volume was defined through iteratively checking volumes derived from application of probability and slope of regression thresholds against the mineralisation volume of the GC model within a common volume wireframe (GCAREA=1), Figure 14-38.
- Figure 14-5 shows an example of the comparisons reviewed, where volumes by 5 m bench were compared between the GC and the MRE model. The objective was to choose a probability and slope of regression threshold that most closely aligned with the grade control model in that area, providing confidence that the MRE model estimated using wider spaced exploration data could reliably predict tonnes and grade.
- The probability threshold chosen was 0.44 and the slope of regression chosen was 0.34. That is, blocks that meet or exceed an estimated probability of 0.44 and slope of regression of 0.34, was defined as the mineralisation volume for the Upper Zone for use in grade estimation.



Bcm.	**NAME**	
BENCH	**kv_IK_USE_gc**	**kv_IK_USE_mre_0.44o_0.34**
485	611	1,407
480	6,365	8,644
475	19,174	21,619
470	28,852	33,838
465	37,871	42,870
460	45,758	43,848
455	52,084	46,954
450	60,303	58,999
445	68,722	61,984
440	68,812	67,333
435	74,570	75,823
430	74,363	73,436
Grand Total	**537,484**	**536,755**
Volume Difference MRE w.r.t. GC		-0.14%

Figure 14-5: Volume comparison by bench – GC model vs MRE model (GCAREA=1)
Source: CSA Global, 2020

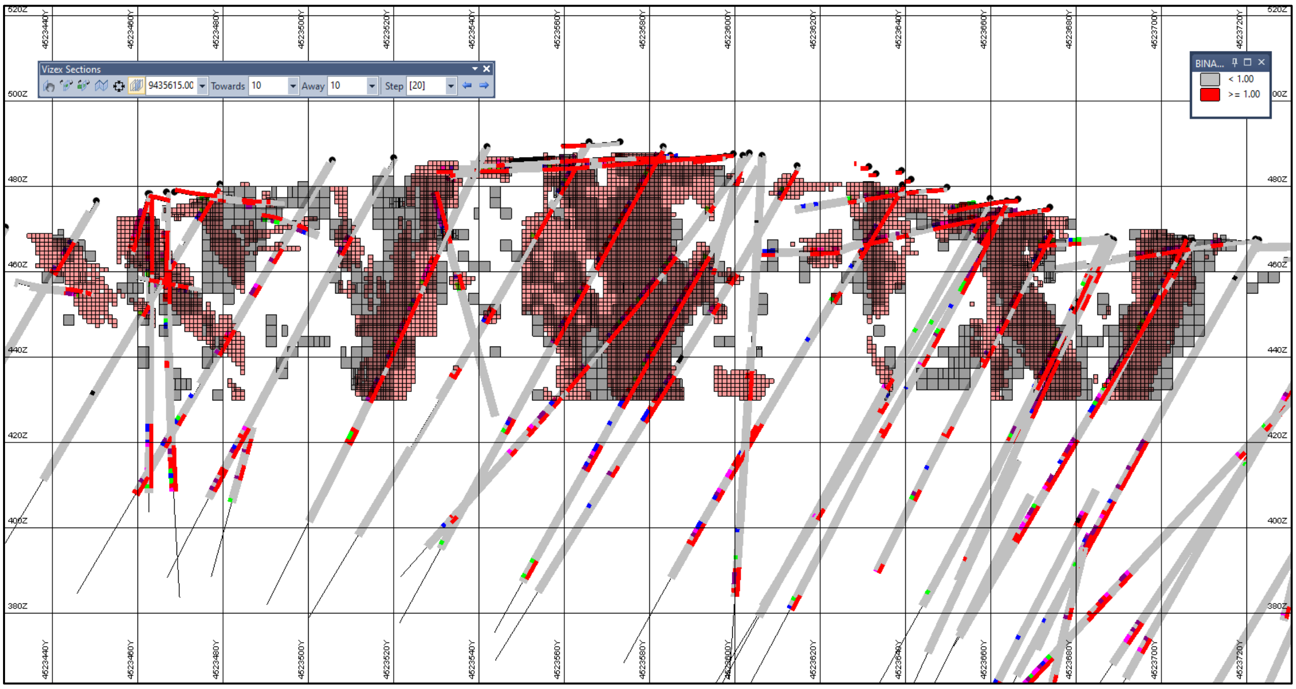


Figure 14-6: Cross section (9435615 mN) showing drilling (CompSE intercepts in red), GC model (black) and MRE mineralisation defined through Indicator Kriging (red)

Source: CSA Global, 2020

Views of the mineralisation domains in the Upper Zone and the Wall Zone domain are presented in Figure 14-7.

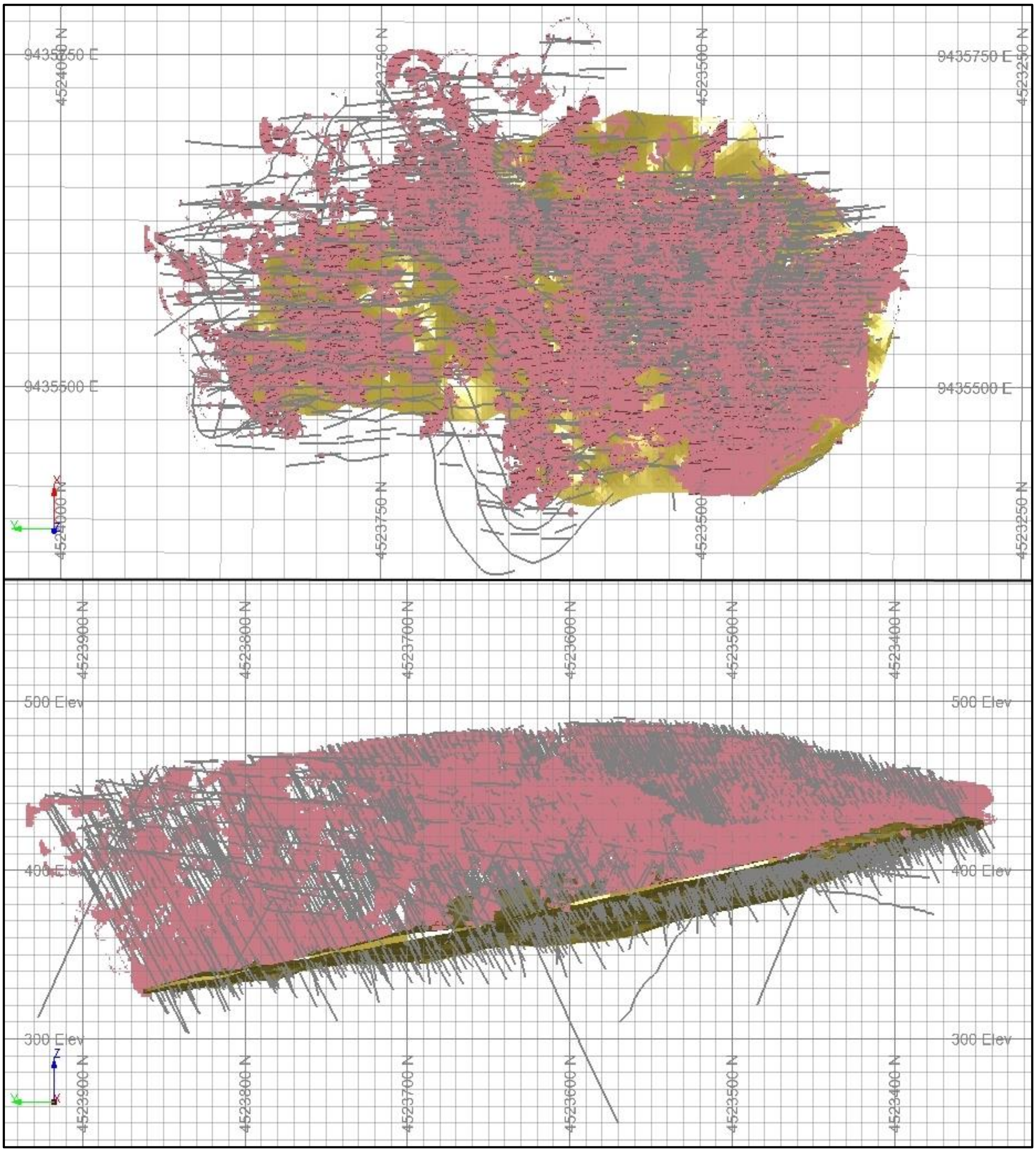


Figure 14-7: View of Upper Zone and Wall Zone domains

Ore volume used to back flag samples for Upper Zone (IK_USE=1) in pink. Wall Zone (brown); top image in plan facing east, bottom image looking east.

Source: CSA Global, 2020

Basement Zone

The interpretation of the basement mineralisation was completed in Leapfrog (Figure 14-8) using the interval selection function and structural trends. The following criteria was used to interpret, and wireframe model the spatial limits of the mineralisation:

- Lithology belonging to the detachment fault material
- Lithology belonging to the metamorphic basement material

- A nominal 0.3 g/t Au lower cut-off grade.

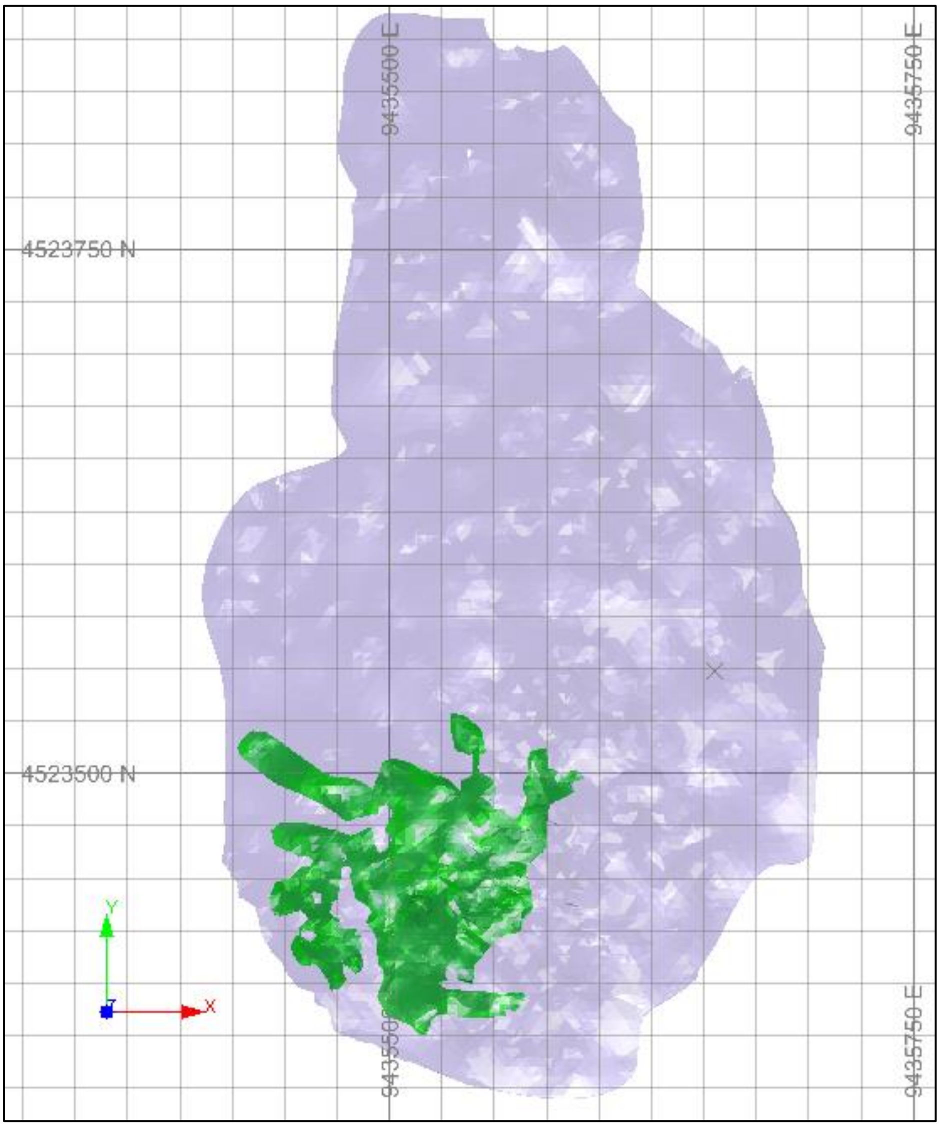


Figure 14-8: Plan view – Basement Mineralisation (green), beneath and relative to the Wall Zone mineralisation (purple)
Source: CSA Global, 2020

These volumes were then used to inform a further refinement of the mineralisation interpretation using a more restrictive extrapolation modelling technique, ensuring a reduction in the inclusion of waste material. GC data, where available, was included in the interpretation of the wireframe.

Overburden

Wireframes of the historical mined spoils (mineralised overburden) were generated by DPM in Leapfrog and were provided to CSA Global for review. There were seven areas above the Upper Zone domains and used a combination of drillhole logging and surface mapping (Figure 14-9).

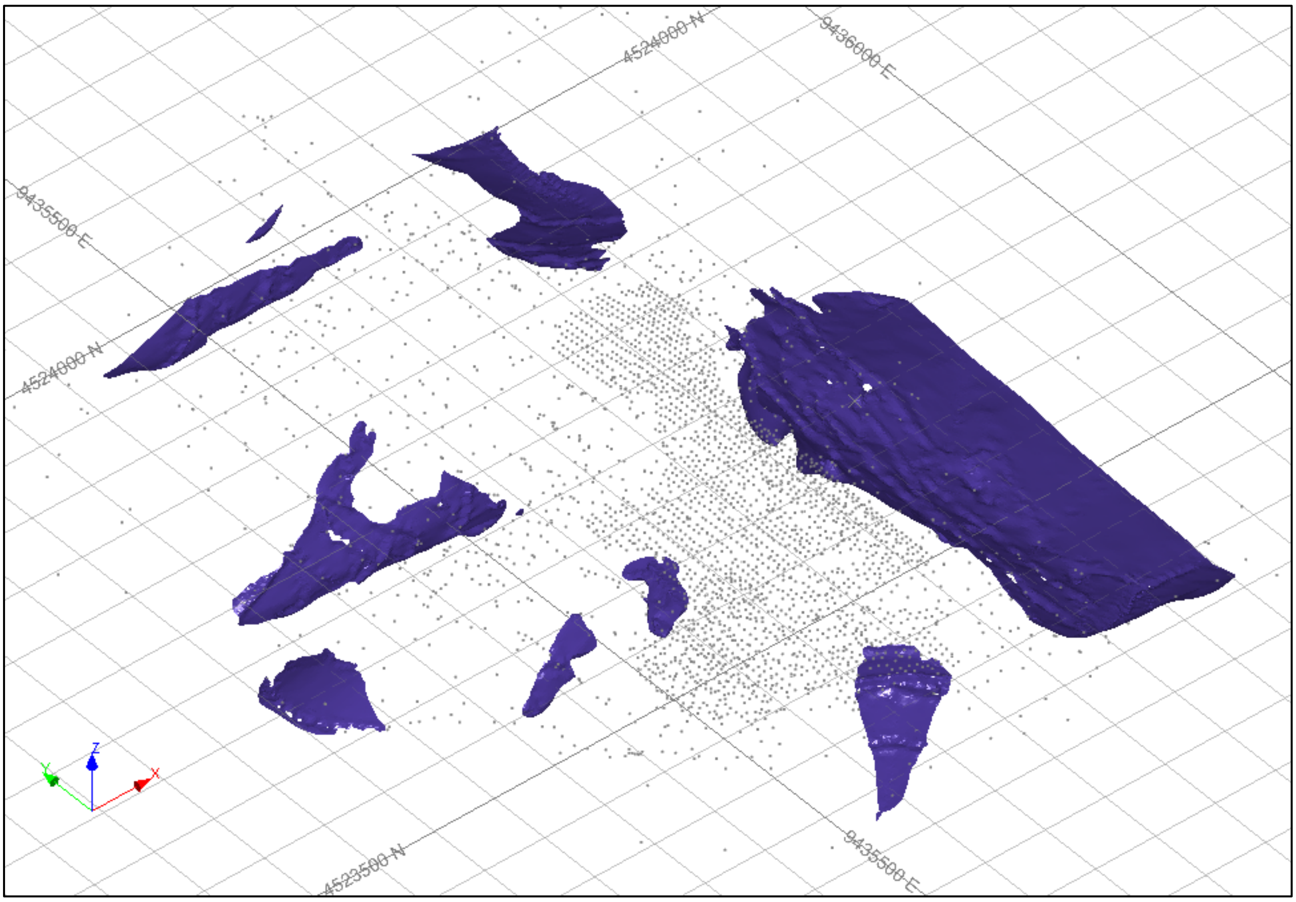


Figure 14-9: Oblique view – looking northeast; spoils/mineralised overburden domains (purple) and drill collars (grey)
Source: CSA Global, 2020

14.3 Statistical Analyses

14.3.1 Contact Analysis

Contact analysis for Au g/t between the modelled mineralisation and waste were carried out to assess the nature of the domain boundaries by graphing the average grade with increasing distance from the domain boundary.

The contact between the upper boundary of the Wall Zone and lower boundary of the Upper Zone was identified as being gradational. This is supported by observations in the core, where the lithology contact and mineralisation is strongly transitional where the vertical Upper Zone structures intersect the Wall Zone. Figure 14-10 shows the contact analysis results. A one-way semi-hard boundary was set up whereby 3 m of composites from the steeply dipping Upper Zone were included in the Wall Zone domain composites. No composites from the Wall Zone were used in the estimation of the Upper Zone since it would result in high grade smearing.

Additional contact analysis was carried out to assess the nature of the domain boundaries within the mineralised volumes across weathering profiles. Based on the results of the boundary analysis for these profiles, the boundaries were interpreted to be soft. A noticeable increase in grades within close proximity (0-5m) to the transitional/fresh boundary was noted. However, the boundary appears as a gradational contact overall. The boundary analysis between oxidation zones within the Upper Zone is shown in Figure 14-11.

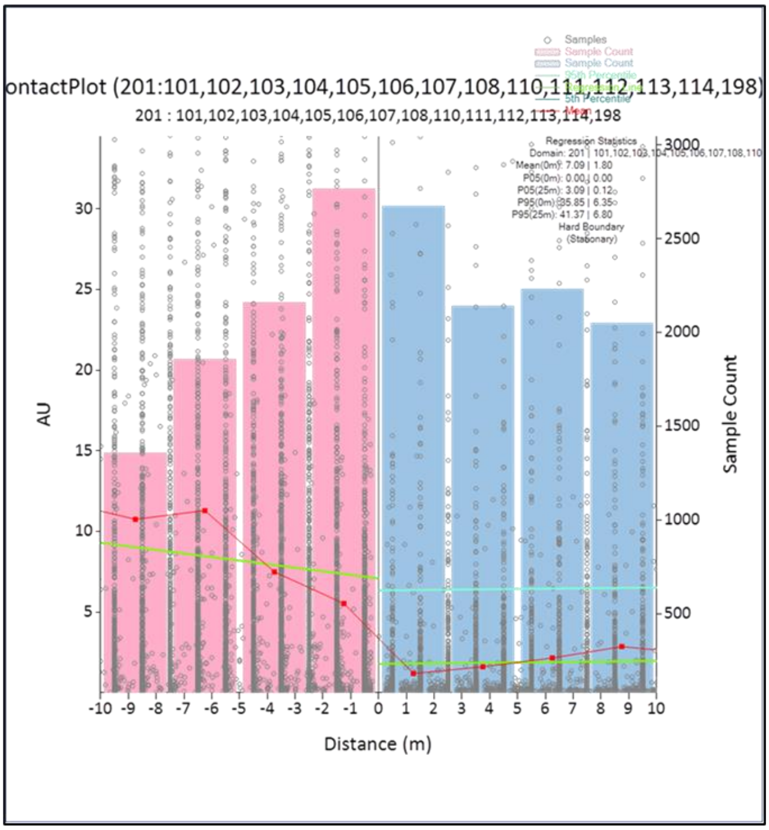


Figure 14-10: Wall Zone – contact analysis between upper Wall Zone contact and the Upper Zone
Source: CSA Global, 2020

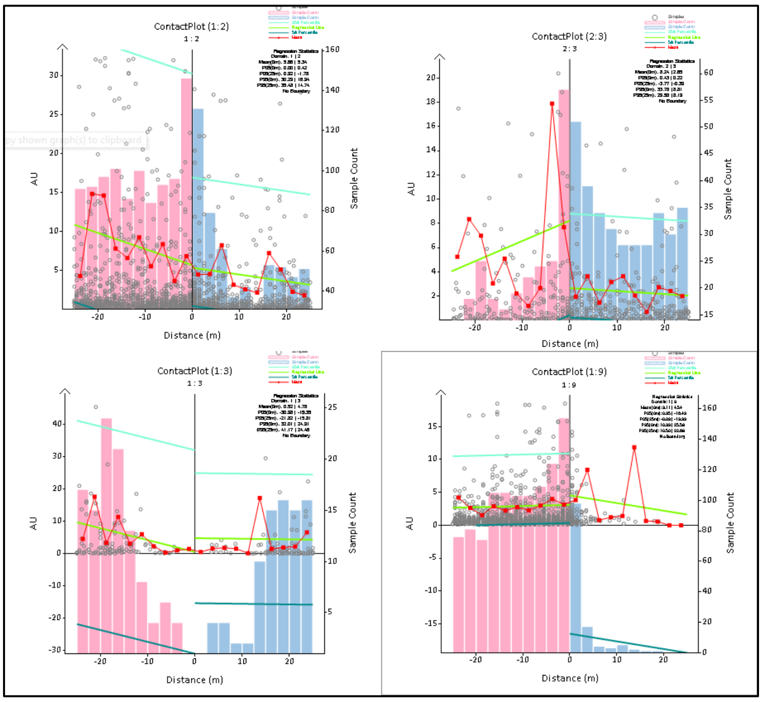


Figure 14-11: Upper Zone – contact analysis between oxidation units
Source: CSA Global, 2020

14.3.2 Data Flagging and Naïve Statistics

Samples were coded by geological and mineralisation domains, voids and oxidation. Grade control data (GC) was included for statistical evaluation. A summary of the domain codes during geostatistical analysis and estimation is shown in Table 14-5.

Table 14-5: Data field flagging and description

Field	Code	Description
OXID	1 2 3	Strongly oxidised Weakly oxidised Fresh/Sulphide
MINZON	101-108,110-114 and 198 201 301 to 307 401 9999	Mineralisation in Upper Zone Mineralisation in Wall Zone Overburden (ancient) Basement Mineralisation Waste
NZONE	1 2 3 4 5 6 99	Mineralised Upper Zone Mineralised Wall Zone Overburden Basement Zone Fault Gauge/Sediments Embankment Undefined waste
LITH	100 200 300 400	Basement Sedimentary breccia and sandstone package Embankment Wall Zone
VOID	1 2	OID – High Confidence OIS – Low Confidence

The naïve statistics for the MRE data, per domain (MINZON), are given in Table 14-6. Based on visual review and geostatistical analysis, each individual domain within the Upper Zone shows different grade populations and was estimated using hard boundaries.

Table 14-6: MRE dataset – naïve statistics per domain

Zone	Domain (MINZON)	Variable	No. of samples	Minimum	Maximum	Mean	Variance	CV
Upper Zone	101	Au	2,464	0.01	848.00	4.27	927.23	7.13
		Ag	2,350	0.16	895.00	2.75	462.96	7.82
	102	Au	773	0.02	129.50	1.80	68.03	4.58
		Ag	729	0.30	190.00	2.13	66.51	3.82
	103	Au	1,426	0.01	158.00	1.62	47.77	4.28
		Ag	1,349	0.03	241.00	2.25	113.52	4.74
	104	Au	6,235	0.01	740.65	3.42	474.31	6.37
		Ag	5,888	0.03	260.00	1.98	63.35	4.03
	105	Au	1,689	0.01	560.00	2.52	385.02	7.80
		Ag	1,606	0.03	168.00	1.80	48.44	3.88
	106	Au	1,438	0.01	396.00	2.33	346.35	7.99
		Ag	1,376	0.03	160.00	1.39	62.51	5.69
	107	Au	1,304	0.01	431.00	2.91	276.89	5.73
		Ag	1,121	0.33	156.00	1.95	53.43	3.75
	108	Au	1,011	0.01	91.40	1.79	42.86	3.67
		Ag	971	0.49	29.00	1.30	4.91	1.71
	110	Au	428	0.01	98.00	1.86	75.75	4.69
		Ag	420	0.20	37.80	1.50	15.19	2.60
	111	Au	415	0.01	24.40	0.90	7.32	3.02
		Ag	398	0.03	10.00	1.00	1.41	1.19
	112	Au	1,295	0.01	91.30	0.48	9.53	6.39
		Ag	1,213	0.03	32.00	0.96	2.70	1.71
	113	Au	417	0.01	72.99	1.72	57.91	4.43
		Ag	376	0.20	29.00	1.28	5.73	1.87
	114	Au	522	0.05	154.79	5.17	198.30	2.72
		Ag	469	0.50	64.00	2.63	22.09	1.79
	198	Au	24,248	0.01	660.50	0.56	48.85	12.57
		Ag	23,075	0.01	207.00	0.84	9.99	3.75
Wall Zone	201	Au	4,126	0.01	350.00	7.59	363.27	2.51
		Ag	4,053	0.00	141.00	4.64	65.12	1.74
Basement Mineralisation	401	Au	209	0.01	122.80	2.03	86.97	4.61
		Ag	206	0.03	47.00	1.53	17.22	2.72
Overburden	301	Au	314	0.01	49.80	1.59	18.95	2.75
		Ag	301	0.18	22.60	1.19	3.54	1.59
	302	Au	2	0.19	0.27	0.23	0.00	0.25
		Ag	1	0.50	0.50	0.00	0.00	0.00
	303	Au	19	0.06	0.31	0.17	0.01	0.42
		Ag	18	0.50	1.00	0.53	0.01	0.22
	304	Au	17	0.07	6.16	0.81	2.51	1.96
		Ag	17	0.50	3.00	0.88	0.67	0.93
	305	Au	114	0.02	4.68	0.34	0.48	2.07
		Ag	108	0.50	5.00	1.11	0.82	0.81
	306	Au	37	0.05	3.75	0.38	0.51	1.91
		Ag	37	0.50	3.00	0.70	0.38	0.88

14.3.3 Composite Statistics

Sampling was undertaken at variable sampling lengths within the deposit, but the majority was 1 m or less in mineralisation 1 m was chosen as the composite length since it was the dominant mean sampling length.

For the Wall Zone, residuals were removed due to apparent grade bias associated with smaller-length composites. Residuals were retained in the smaller overburden and basement mineralisation domains. There were no residuals for the Upper Zone domains because the compositing method used adjusted the composite length, while keeping it as close as possible to 1 m.

Composite statistics for the Wall Zone, Upper Zone, Basement Mineralisation and Overburden are presented in Table 14-7. The Wall Zone statistics includes the one-way soft boundary imposed between the upper boundary of the Wall Zone domains and the lower boundary of the Upper Zone (3 m).

Table 14-7: MRE data – composite statistics per domain

Zone	Domain (MINZON)	Variable	No. of samples	Minimum	Maximum	Mean	Variance	CV
Upper Zone	101	Au	1,293	0.02	180.00	6.64	479.92	3.30
		Ag	1,207	0.25	130.00	4.04	180.30	3.32
	102	Au	410	0.05	50.00	2.88	46.92	2.38
		Ag	379	0.50	60.00	3.10	34.56	1.90
	103	Au	647	0.01	70.00	3.19	60.40	2.44
		Ag	597	0.03	70.00	3.51	65.16	2.30
	104	Au	2,502	0.01	400.00	8.31	819.02	3.44
		Ag	2,276	0.19	150.00	4.01	114.96	2.67
	105	Au	672	0.01	130.00	6.44	295.24	2.67
		Ag	653	0.50	35.00	3.91	38.16	1.58
	106	Au	405	0.03	160.00	6.71	492.83	3.31
		Ag	344	0.50	90.00	3.57	143.08	3.35
	107	Au	820	0.05	100.00	3.97	134.83	2.92
		Ag	657	0.50	50.00	2.61	34.91	2.26
	108	Au	367	0.04	91.40	4.86	102.99	2.09
		Ag	327	0.49	29.00	2.33	12.37	1.51
	110	Au	221	0.08	40.00	3.08	49.12	2.28
		Ag	221	0.20	18.00	2.10	12.17	1.66
	111	Au	118	0.03	24.40	2.72	18.86	1.60
		Ag	117	0.50	10.00	1.65	3.30	1.10
	112	Au	336	0.01	40.00	2.63	29.95	2.08
		Ag	301	0.50	20.00	2.52	9.70	1.24
	113	Au	174	0.01	72.99	4.91	115.18	2.19
		Ag	146	0.50	29.00	2.74	16.26	1.47
	114	Au	427	0.06	89.58	5.77	136.94	2.03
		Ag	380	0.50	64.00	3.03	25.49	1.67
	198	Au	4,037	0.01	80.00	2.59	51.99	2.79
		Ag	3,562	0.15	150.00	2.09	52.01	3.45
Wall Zone	201	Au	4699	0.01	189.00	6.92	271.26	2.38
		Ag	4602	0.03	141.00	4.41	59.43	1.75
Basement Mineralisation	401	Au	212	0.01	30.00	1.54	16.18	2.61
		Ag	208	0.03	34.40	1.48	12.44	2.38
Overburden	301	Au	344	0.01	15.00	1.41	6.99	1.87

Zone	Domain (MINZON)	Variable	No. of samples	Minimum	Maximum	Mean	Variance	CV
		Ag	327	0.34	22.60	1.21	3.57	1.56
	302	Au	3	0.19	0.27	0.24	0.00	0.19
		Ag	1	0.50	0.50	0.00	0.00	0.00
	303	Au	25	0.06	0.45	0.18	0.01	0.52
		Ag	23	0.50	1.00	0.52	0.01	0.20
	304	Au	24	0.07	6.16	0.69	1.78	1.95
		Ag	24	0.50	3.00	0.85	0.49	0.82
	305	Au	147	0.02	4.68	0.43	0.56	1.72
		Ag	138	0.50	5.00	1.08	0.71	0.78
	306	Au	38	0.05	1.00	0.28	0.10	1.16
		Ag	38	0.50	3.00	0.76	0.51	0.94

14.3.4 Top Cut Analysis

Grade cutting (top cutting) was applied to reduce the local high grading effect of anomalous high-grade samples in the grade estimate. In cases where individual samples would unduly influence the values of surrounding model cells, without the support of other high-grade samples, top cuts are applied. These top cuts are quantified according to the statistical distribution of the sample population.

Cutting strategy was applied based on the following:

- Skewness of the data
- Probability plots
- Spatial position of extreme grades.

Histograms, probability plots and the locations of outliers were reviewed for Au and Ag within each individual estimation domain to determine the top-cut. The uncut and top-cut statistics for Au and Ag in the MRE dataset per estimation domain where top-cuts were imposed within the Wall Zone and Upper Zone are shown in Table 14-8 and Table 14-9.

Table 14-8: MRE data – top cut statistics per domain – Au

Zone	MINZON	No. of samples	Top cut	No. of samples cut	Uncut mean	Cut mean	% metal cut
Upper Zone	101	1,293	180	12	8.45	6.64	-21%
	102	410	50	4	3.36	2.88	-14%
	103	647	70	2	3.38	3.19	-6%
	104	2502	400	2	8.56	8.31	-3%
	105	672	130	3	7.38	6.44	-13%
	106	405	160	3	8.01	6.71	-16%
	107	820	100	4	4.65	3.97	-14%
	108	367	-	0	4.86	-	-
	110	221	40	4	3.77	3.08	-18%
	111	118	-	0	2.72	-	-
	112	336	40	4	3.12	2.63	-16%
	113	174	-	0	4.91	-	-
	114	427	80	4	6.06	5.77	-5%
	198	4037	80	14	3.09	2.59	-16%
Wall Zone	201	4765	189	7	6.97	6.88	-1%

Table 14-9: MRE data – top cut statistics per domain – Ag

Zone	MINZON	No. of samples	Top-cut	No. of samples cut	Uncut mean	Cut mean	% metal cut
Upper Zone	101	1,207	130	7	4.90	4.04	-18%
	102	379	60	2	3.49	3.10	-11%
	103	597	70	4	4.23	3.51	-17%
	104	2276	150	2	4.10	4.01	-2%
	105	653	35	7	4.45	3.91	-12%
	106	344	90	3	3.98	3.57	-10%
	107	657	50	3	2.92	2.61	-10%
	108	327	-	0	2.33	-	-
	110	221	18	5	2.40	2.10	-13%
	111	117	-	0	1.65	-	-
	112	301	20	3	2.69	2.52	-6%
	113	146	-	0	2.74	-	-
	114	380	-	0	3.03	-	-
	198	3562	150	3	2.12	2.09	-1%

14.3.5 Variography

While there is good correlation between Au and Ag, separate variograms were modelled for Au and Ag. Variograms were modelled in Supervisor™ software using exploration and GC composites. The composite data was transformed to a normal score distribution to facilitate model fitting and back transformed for use in grade estimation. Nuggets were modelled from the downhole variograms, where the lag was set equal to the composite length of 1 m.

Two variogram models were fitted to the dominant mineralisation trends in the Upper Zone for both Au and Ag datasets. The first honouring the steeply dipping vertical East-West trends in terms of maximum continuity, and the second the shallow dipping North-South fault linkage structures between the vertical domains. The mineralisation is less continuous than the Wall Zone above which is reflected in shorter ranges. Both the Au and the Ag variograms show a higher nugget within the shallower dipping structures. The vertical structures were modelled on the domain (ESTZON 101), which gave robust variograms which were representative of the overall E-W mineralisation. The shallower dipping N-S mineralisation was modelled on ESTZON 198 which included all grade composites not captured in the vertical structures.

Example variograms from main domains are presented in Figure 14-12 to Figure 14-23. The variogram parameters are detailed in Table 14-10.

The nugget modelled for the Upper Zone domains was high, reflecting high grade variability in these complex domains, with the vast majority of the variability within the first 15 m. Maximum ranges were in the region of 40 m.

The nugget modelled for the wall domain was lower, reflecting the more continuous nature of mineralisation in that domain. Longer structure ranges were up to 80 to 100 m.

The variogram model fitted the basement mineralisation has a direction of maximum continuity which dips shallowly to the north corresponding to the geometry of mineralisation. The mineralisation is less continuous than the Wall Zone above which is reflected in shorter ranges. The Ag data has low continuity with a relatively high nugget and short ranges.

A variogram model for Au and Ag respectively was calculated from the largest overburden domain (301) and used for all six of the overburden domains. The variogram is almost isotropic because the overburden is not a geological domain, but the nugget and ranges reflect the spatial variance of the data.

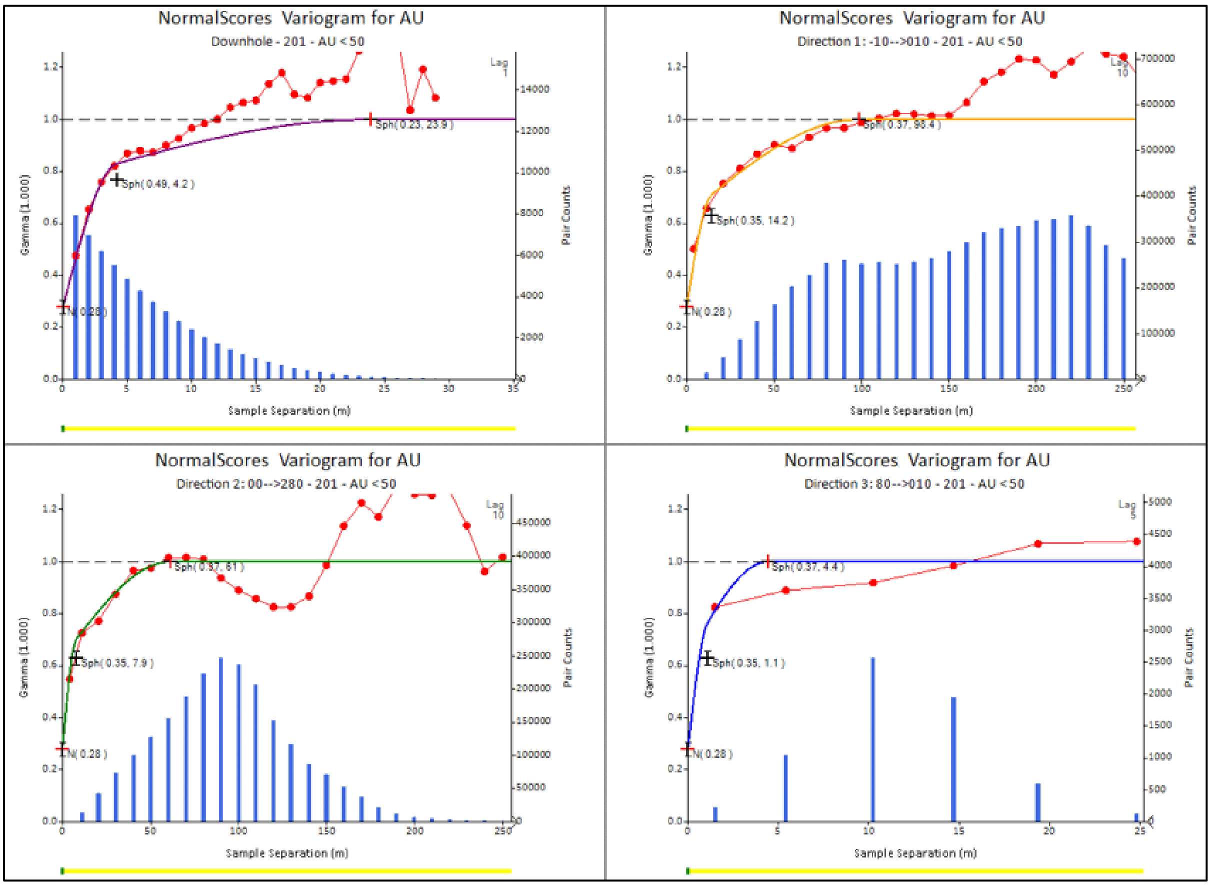


Figure 14-12: Wall Zone Au variogram (VREFNUM = 2011)
Source: CSA Global, 2020

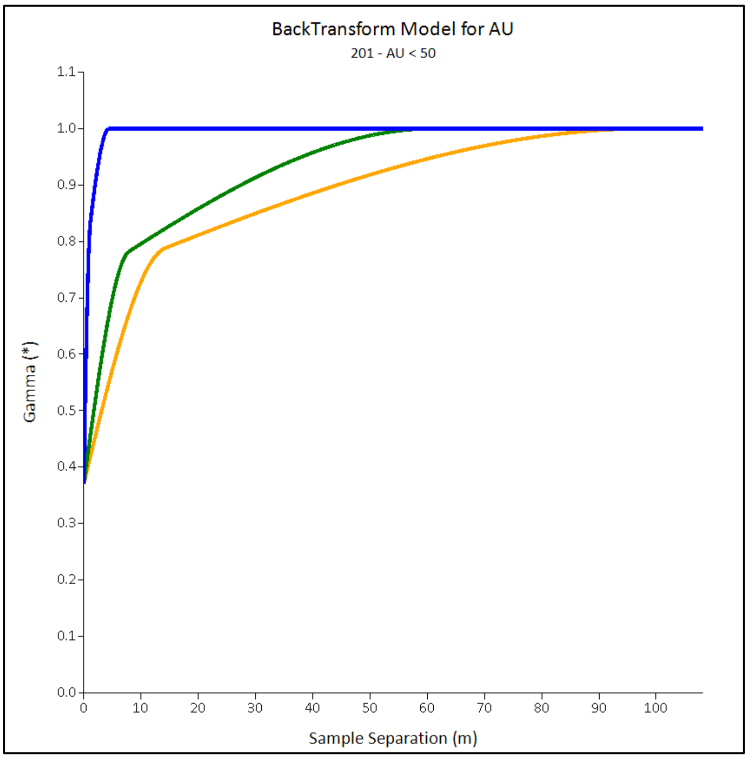


Figure 14-13: Back transformed Au variogram model for Wall Zone (VREFNUM = 2011)
Source: CSA Global, 2020

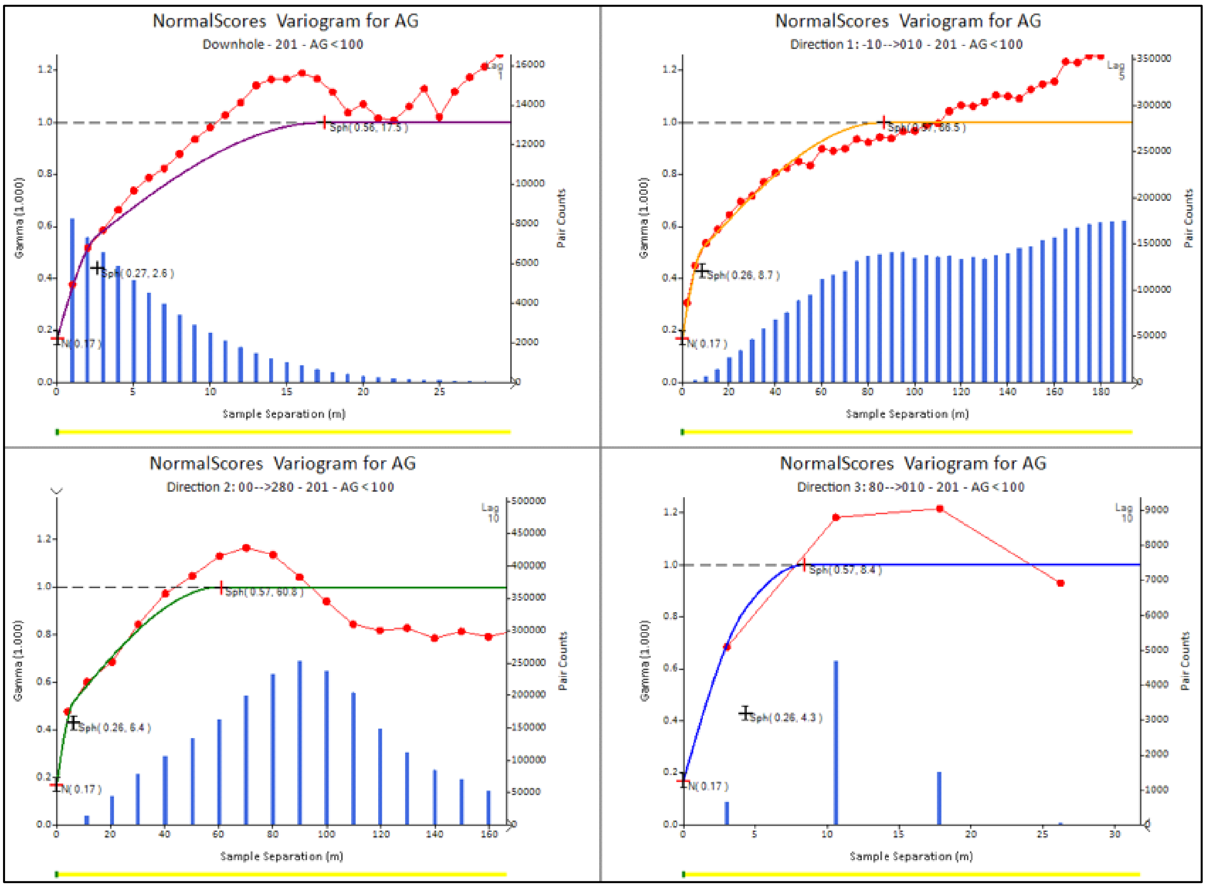


Figure 14-14: Wall Zone Ag variogram (VREFNUM = 2012)
Source: CSA Global, 2020

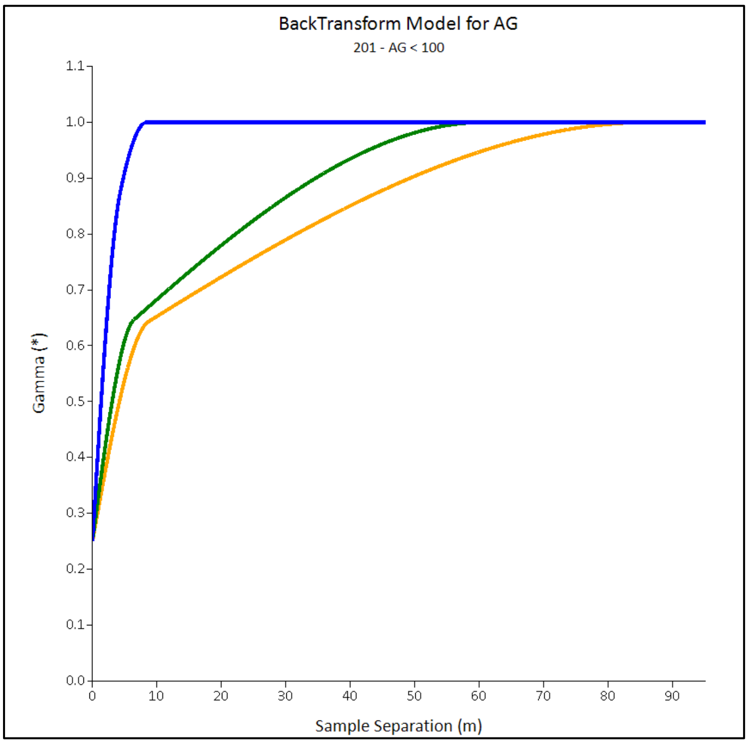


Figure 14-15: Back transformed Ag variogram model for Wall Zone (VREFNUM = 2012)
Source: CSA Global, 2020

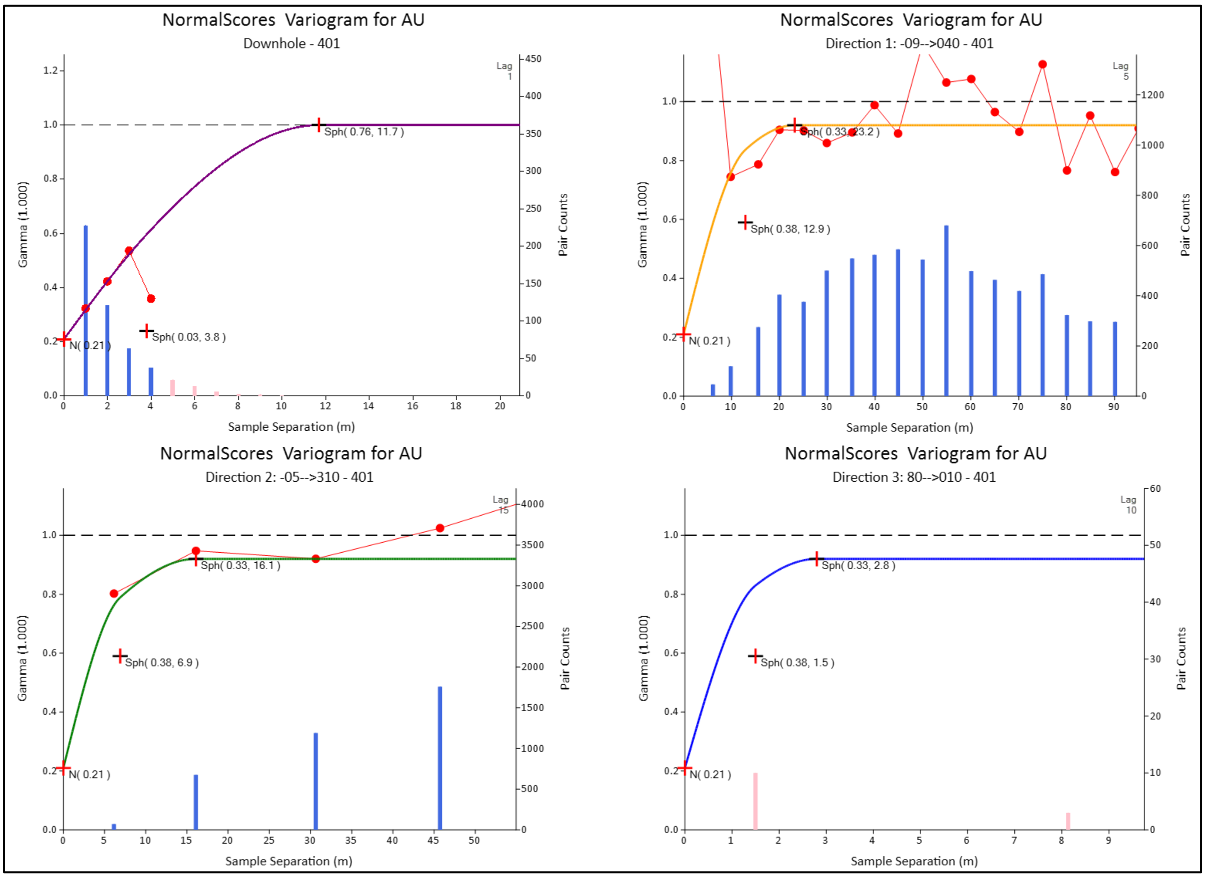


Figure 14-16: Basement mineralisation Au variogram (VREFNUM = 4011)
Source: CSA Global, 2020

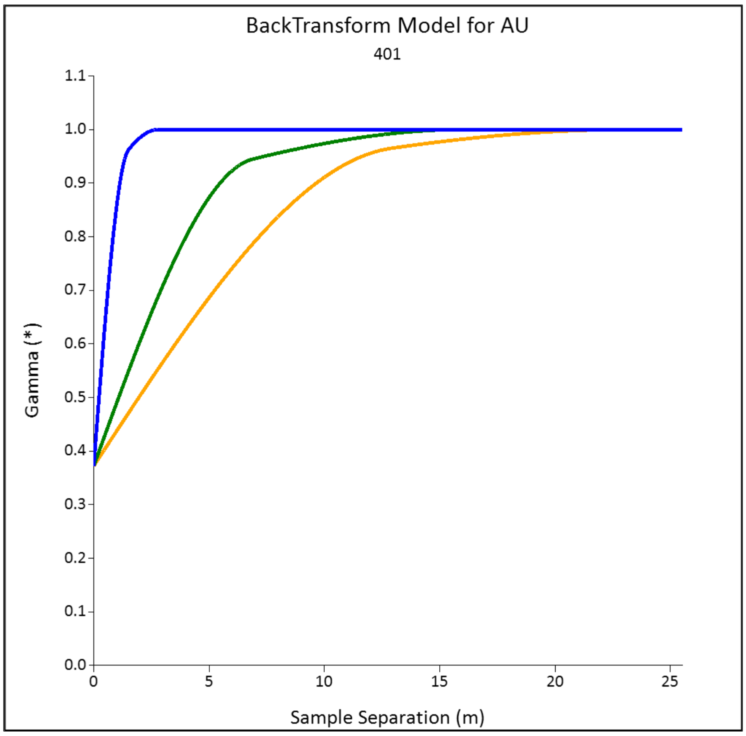


Figure 14-17: Back transformed Au variogram model for Basement mineralisation (VREFNUM = 4011)
Source: CSA Global, 2020

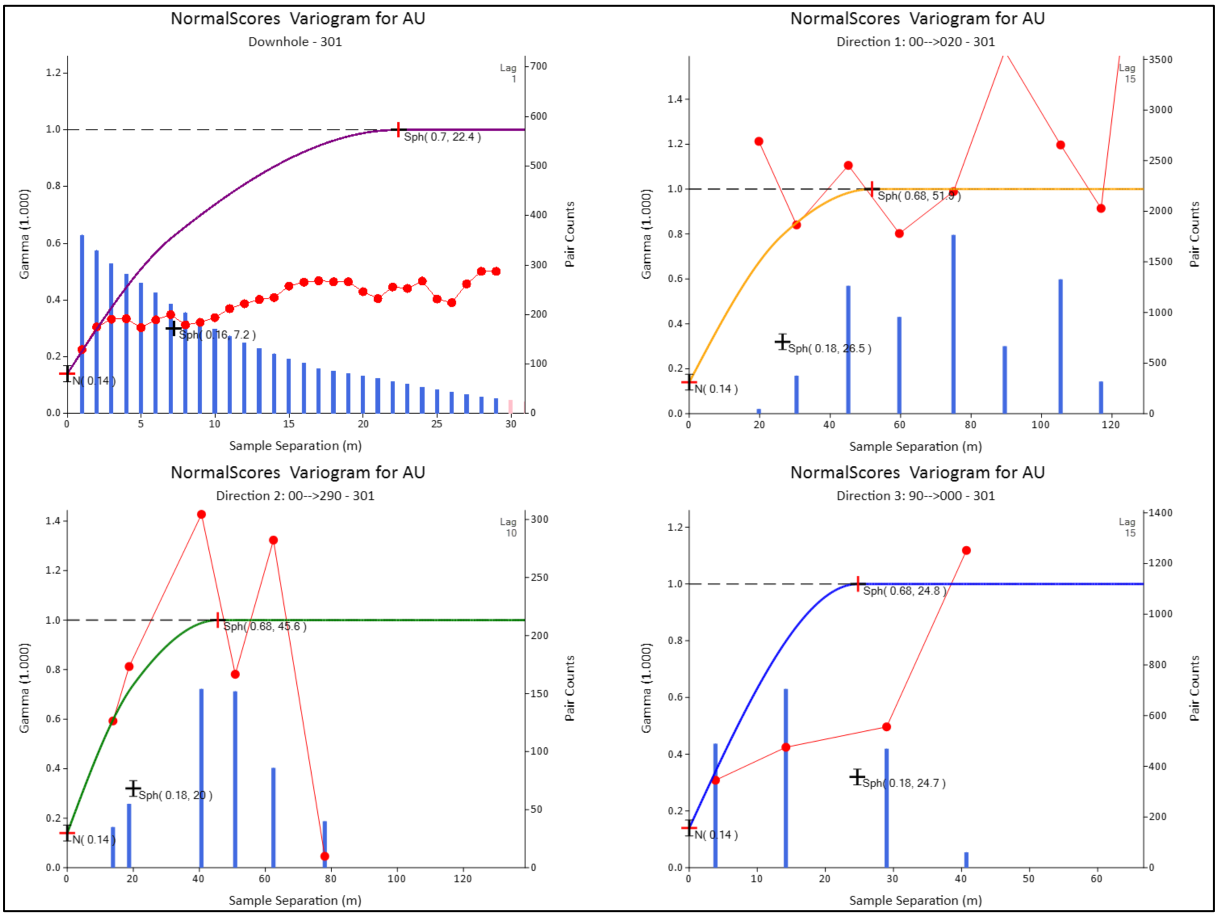


Figure 14-18: Overburden mineralisation Au variogram (VREFNUM = 3011)
Source: CSA Global, 2020

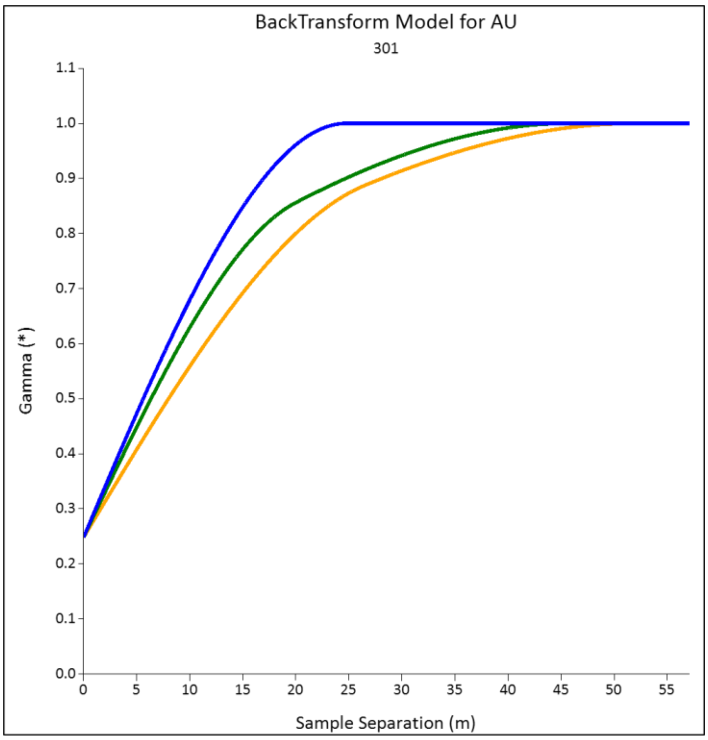


Figure 14-19: Back transformed Au variogram model for Overburden mineralisation (VREFNUM = 3011)
Source: CSA Global, 2020

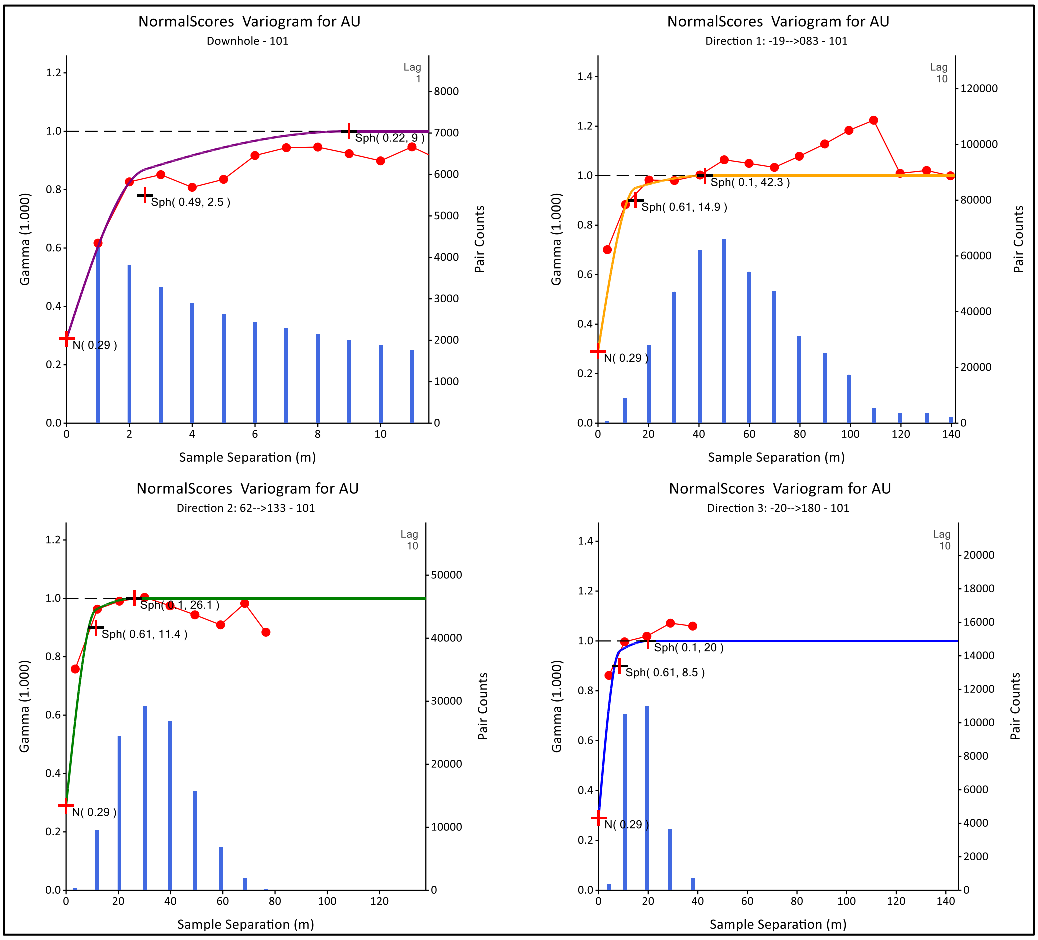


Figure 14-20: Upper Zone ESTZON 101 experimental normal score variogram
Source: CSA Global, 2020

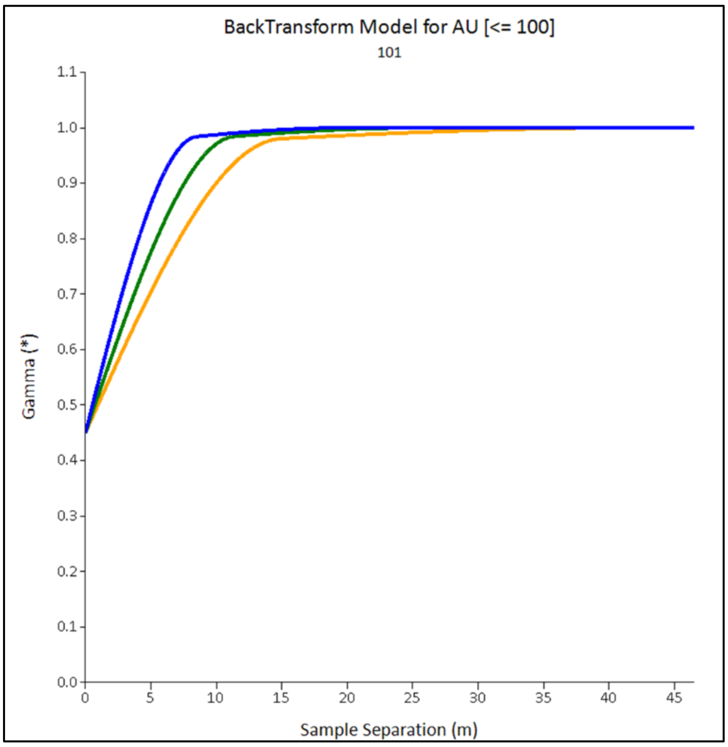


Figure 14-21: Upper Zone ESTZON 101 back-transformed variogram

Source: CSA Global, 2020

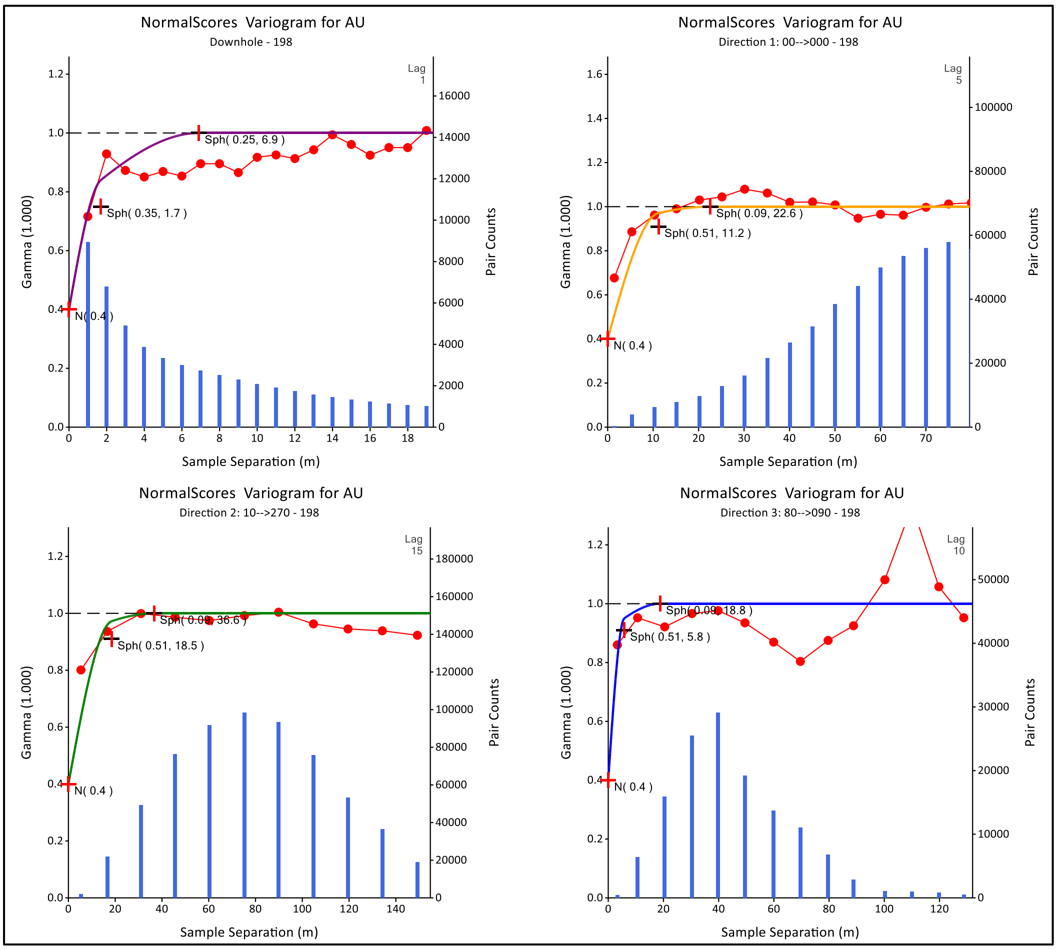


Figure 14-22: Upper Zone ESTZON 198 experimental normal score variogram

Source: CSA Global, 2020

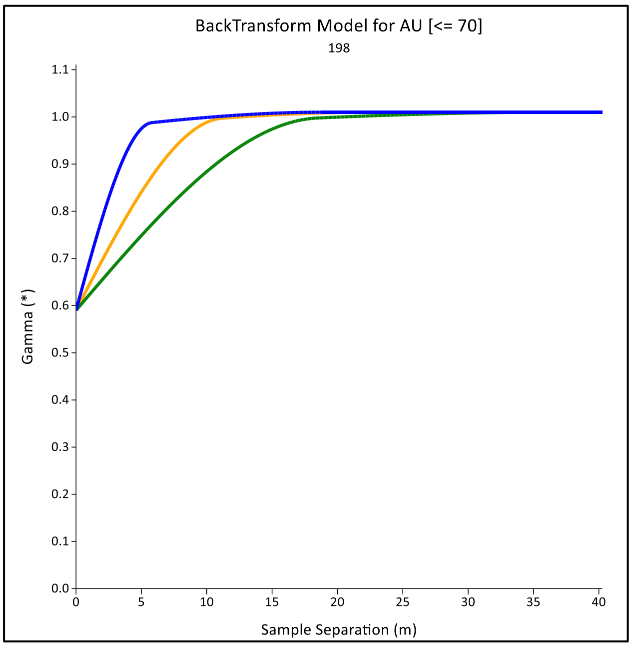


Figure 14-23: Upper Zone ESTZON 198 back-transformed variogram

Source: CSA Global, 2020

Table 14-10: Variogram parameters

Zone	Variable	Minzon	Datamine rotation	Datamine axis	Nugget	Structure 1		Structure 2	
						Sill	Range	Sill	Range
Upper Zone	Au	101-108 and 110-114	180	3	0.45	0.51	14.9	0.04	42.3
			110	1			11.4		26.1
			-160	3			8.5		20
		198	90	3	0.58	0.38	11.2	0.04	22.6
			10	1			18.5		36.6
			180	3			5.8		18.8
	Ag	101-108 and 110-114	180	3	0.43	0.48	14.2	0.09	37.6
			110	1			15.9		23.4
			-160	3			10.7		16.1
		198	90	3	0.6	0.38	9.9	0.02	23
			10	1			13.5		30.4
			180	3			5.5		15.8
Wall Zone	Au	201	10*	3	0.37	0.36	14.2	0.27	98.4
			10*	1			7.9		61
			-90*	3			1.1		4.4
	Ag	201	10*	3	0.25	0.33	8.7	0.42	86.5
			10*	1			6.4		60.8
			-90*	3			4.3		8.4
Basement Mineralisation	Au	401	10	3	0.37	0.49	12.9	0.14	23.2
			10	1			6.9		16.1
			-60	3			1.5		2.8
	Ag	401	10	3	0.48	0.23	10.8	0.29	39.2
			10	1			12.9		21.1
			-90	3			1.1		2.2
Overburden	Au	All domains	0	3	0.25	0.38	26.5	0.37	51.9
			0	1			20		45.6
			-70	3			24.7		24.8
	Ag	All domains	0	3	0.32	0.35	28.9	0.33	47
			0	1			22.3		38.6
			-70	3			23.1		23.2

**Variograms locally rotated to honour dynamic anisotropy rotations for Upper Zone, Wall Zone and Basement Mineralisation.*

14.3.6 Bulk Density

Statistical analysis of the BD data for the Ada Tepe deposit was undertaken to determine appropriate density assignments for Mineral Resource grade-tonnage reporting. Initial investigations based on the geological logging codes concluded that the modelled geological constraints allowed for appropriate grouping of the BD data.

CSA Global reviewed these assumptions in the December 2018 MRE update by further subdividing these geological zones based on mineralised vs waste material. Minor differences observed between the mean density values for the waste and mineralised material in the Upper Zone conclude that the previous grouping of BD values is appropriate. No material differences were identified for the Wall Zone in the updated dataset. CSA Global has therefore used the values determined in the previous study, with the inclusion of values for the basement waste rock.

Table 14-11 displays summary statistics of the BD values grouped by the modelled ore and waste zones within primary lithological boundaries and subdivisions of the weathering profile. The statistics for these data groupings can be summarised as follows:

- Very few data are available to determined robust mean density values for oxidised basement rocks or overburden, but this is not considered a material issue given the small amount of mineralisation in the basement.
- The histogram plots indicate the BD data for each of the data groupings (with sufficient data) are normally distributed with most of the BD values being within 5% to 10% of the mean density reported for each data group.
- There is little to no difference between the mean and median BD values reported for each data group (with sufficient data).
- It is considered that the mean BD value reported for the overburden material of 2.24 t/m^3 (based on 43 data values) is too high for unconsolidated breccia conglomerate material. A 2.0 t/m^3 BD value was selected as being more appropriate and was applied for reporting overburden Mineral Resources.
- For material within void wireframes (Section 14.2.3), to account for the fact that it is a mixture of voids, clay and fractured material, the given density has been discounted by 40%. This is based on pit observations to date but has not been quantified due to the difficulty of getting representative samples. The volume of material is not significant, representing less than 1,000 ounces mostly in the Upper Zone.

Table 14-11: Summary statistics of BD data grouped by major rock types and oxidation state

Zone	Oxidation	Number	Minimum	Maximum	Mean	Median	Standard deviation	CV
Overburden	Strong	43	1.94	2.50	2.24	2.25	0.13	0.06
	Weak	-	-	-	-	-	-	-
	Fresh	-	-	-	-	-	-	-
Upper Zone	Strong	2,089	1.52	2.93	2.27	2.27	0.17	0.08
	Weak	674	1.90	2.95	2.47	2.50	0.15	0.06
	Fresh	1,053	2.09	2.96	2.52	2.54	0.11	0.04
Wall Zone	Strong	66	2.04	2.63	2.34	2.33	0.13	0.06
	Weak	118	1.91	2.80	2.47	2.50	0.15	0.06
	Fresh	257	2.11	2.98	2.56	2.58	0.09	0.04
Basement	Strong	7	2.16	2.54	2.39	2.37	0.12	0.05
	Weak	20	2.19	2.92	2.48	2.49	0.17	0.07
	Fresh	554	2.04	2.97	2.59	2.61	0.15	0.06

The in-situ BD assigned is presented in Table 14-12.

Table 14-12: Block model BD assignments

Rock type	Oxidation	Density
Overburden	N/A	2.00
Breccia Conglomerate	Oxide	2.26
	Transitional	2.48
	Fresh	2.54
Wall Zone	Oxide	2.32
	Transitional	2.48
	Fresh	2.56
Basement	Oxide	2.16

Rock type	Oxidation	Density
	Transitional	2.48
	Fresh	2.59

14.4 Block Modelling

Table 14-13 presents the extents of the Ada Tepe block model. The Mineral Resource block model was developed using block dimensions of 5 m x 5 m x 5 m (X x Y x Z) with sub-blocking to 1 m in all dimensions for the purpose of providing appropriate definition of the topographic surface, geological and mineralisation zone boundaries.

Comparisons were made between the block model volumes and wireframe volumes, and the model was viewed visually against the wireframes to ensure they are well represented, and that coding is accurate.

Table 14-13: Block model dimensions

Dimension	Origin	Extent	Number	Block size	
				Parent	Sub-block
East	9,435,300	550	110	5	1
North	4,523,300	700	140	5	1
Elevation	280	230	46	5	1

The block model has been extensively validated against the geological model wireframes and the surface topography. The model has been validated by viewing in multiple orientations using the 3D viewing tools in Datamine StudioRM™.

Mineralisation wireframes were filled with model cells and the block model volume was compared to the mineralisation volume, per domain. The volumes are comparable and visual checks show good resolution on wireframe boundaries.

Two models were created – one to be used for estimation of grades using exploration data; the other for estimating grade using GC data. The GC area was defined using a wireframe created to define the extent of 5 m x 5 m GC drilling (Figure 14-24).

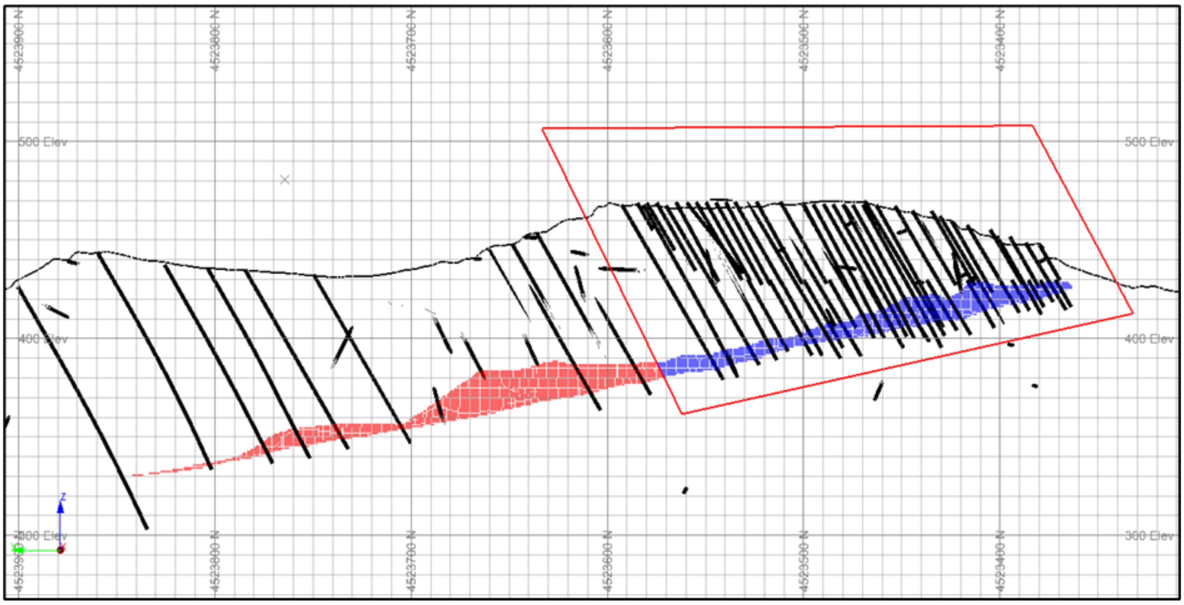


Figure 14-24: Cross section (looking east) showing GC (blue) and MRE (red) Wall Zone model defined by GC limit wireframe

Source: CSA Global, 2020

14.5 Grade Estimation

Two models were estimated using:

- Exploration data (EXP model)
- GC data (GC model) within a GC limit wireframe (Figure 14-24)

This is with a view to compiling a final model, with the part of the MRE supported by close spaced GC drilling using the GC model and the part supported by exploration data using the exploration model. The two models are kept separate until validation can be completed so as to assess how well the model is going to predict the future using wider spaced data, through comparison with the GC model. The final MRE model uses the GC model in the area of GC data so the most robust model is available for use in life of mine planning.

See Section 14.7 detail on compilation of the final Mineral Resource model.

14.5.1 Ordinary Kriging – Exploration Data

A block model prototype with parent cells of 10 m x 10 m x 5 m was attached to the EXP model to better align with the approximate 15 to 25 m drill spacing of exploration drilling.

Grades were estimated using Ordinary Kriging (OK) into parent cells, with subcells assigned the parent grade. Zonal control with a hard boundary between mineralisation domains was used in the grade estimation, with the exception of the Wall Zone, where a one-way, semi-hard boundary was used.

A three-pass search strategy was used with successively larger search ellipse ranges. Dynamic anisotropy was used to locally rotate the search ellipsoid in line with interpreted mineralisation orientations for the Upper Zone, Wall Zone and Basement Zone. Dynamic anisotropy was not applied to the overburden because there is no structure controlling the distribution of grade. Sample search neighbourhoods are presented in Table 14-14.

14.5.2 Ordinary Kriging - GC Model

The 5 m x 5 m prototype was used for the GC model, supported by close spaced 5 m x 5 m drilling.

Sample search neighbourhoods parameters applied to the GC area are presented in Table 14-15.

Overburden domains 302 and 306 used the GC dataset during estimation as there were significant proportions of the data in the GC drilling.

The basement mineralisation zone was estimated using the GC dataset only because it occurs within the GC area.

Table 14-14: MRE Model - Search neighbourhood parameters for Au and Ag by MINZON

Zone	MINZON	Variable	Search volume 1			Search volume 2			Search volume 3			Maximum per drillhole
			Ranges	Composites		Range	Composites		Range	Composites		
				Min.	Max.		Min.	Max.		Min.	Max.	
Upper Zone	ALL	Au	30 x 25 x 10	9	24	x 2	9	24	x 4	6	15	3
	ALL	Ag	30 x 25 x 10	9	24	x 2	9	24	x 4	6	15	3
	101, 103-105,112-113 & 198	S	30 x 25 x 10	8	22	x 2	8	22	x 4	4	12	2
	102,107-108 & 110	S	40 x 25 x 10	4	12	-	-	-	-	-	-	2
Wall Zone	201	Au	75 x 40 x 7	10	20	x 2	6	14	x 5	6	14	2
		Ag, S	75 x 40 x 7	8	20		6	14	x 5	6	14	2
Overburden	301,303,-305	Au, Ag	15 x 15 x 6	6	15	x 2	6	15	x 10	2	10	2

Table 14-15: GC Model - Search neighbourhood parameters for Au and Ag by MINZON

Zone	MINZON	Variable	Search volume 1			Search volume 2			Search volume 3			Maximum per drillhole
			Ranges	Composites		Range	Composites		Range	Composites		
				Min.	Max.		Min.	Max.		Min.	Max.	
Upper Zone	101, 103-105, 107-108, 110-113, 198	Au	25 x 20 x 10	9	24	x 2	9	24	x 4	6	15	3
	102, 106 & 114	Au	25 x 20 x 10	9	24	x 2	9	24	x 4	6	15	2
	ALL	Ag	25 x 20 x 10	9	24	x 2	9	24	x 4	6	15	3
	ALL	S	25 x 20 x 10	8	22	x 2	8	22	x 4	4	12	2
Wall Zone	201	Au	15 x 10 x 5	10	20	x 2	6	14	x 5	6	14	2
		Ag	10 x 10 x 5	6	18	x 2	4	12	x 20	4	12	2
Basement Mineralisation	401	Au, Ag	20 x 15 x 3	4	14	x 2	4	10	x 4	4	10	2
Overburden	302, 306	Au, Ag	15 x 15 x 6	2	8	x 2	4	6	x 10	2	10	2

14.6 Validation

Validation of the block model was completed for both the EXP model and GC models, using their respective input data. Validation was completed through evaluation of the following:

- Visual validation – plan, section, 3D views
- Swath plots – grade trends along eastings, northings and RLs
- Comparison of block grades and composite grades
- Comparison of the EXP model vs GC model for the Upper and Wall zones.

14.6.1 Visual Validation

The block models were visually reviewed section by section and in 3D to ensure that grades in composites were reflected in the block models. Generally, the estimates compare well with the input data, with an acceptable level of smoothing. Example cross sections are presented in Figure 14-25 to Figure 14-27.

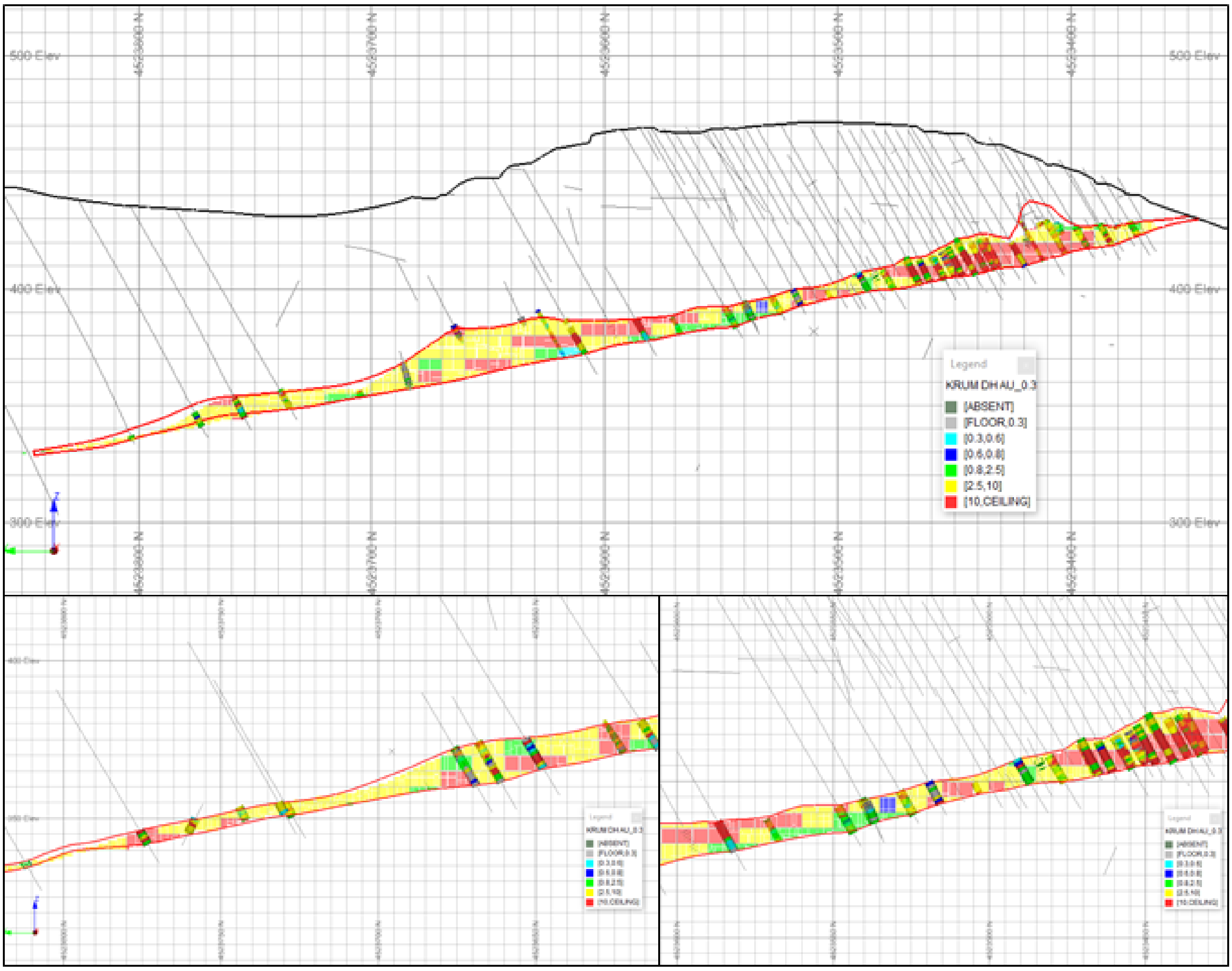


Figure 14-25: Vertical section view (looking east) – Wall Zone Au g/t grade model and composites
Source CSA Global, 2020

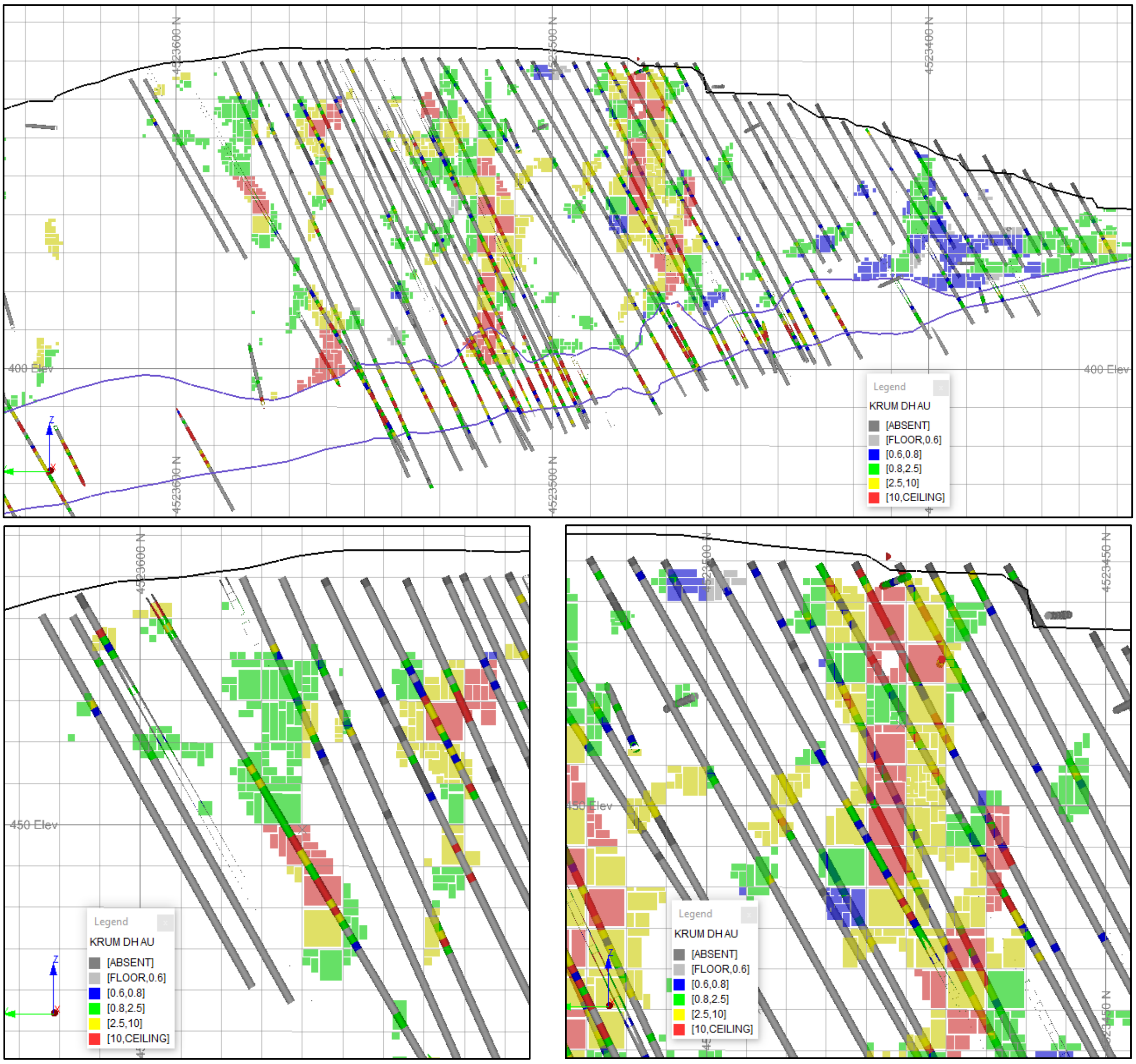


Figure 14-26: Vertical section view (looking east) – Upper Zone Au g/t grade model and composites
Source CSA Global, 2020

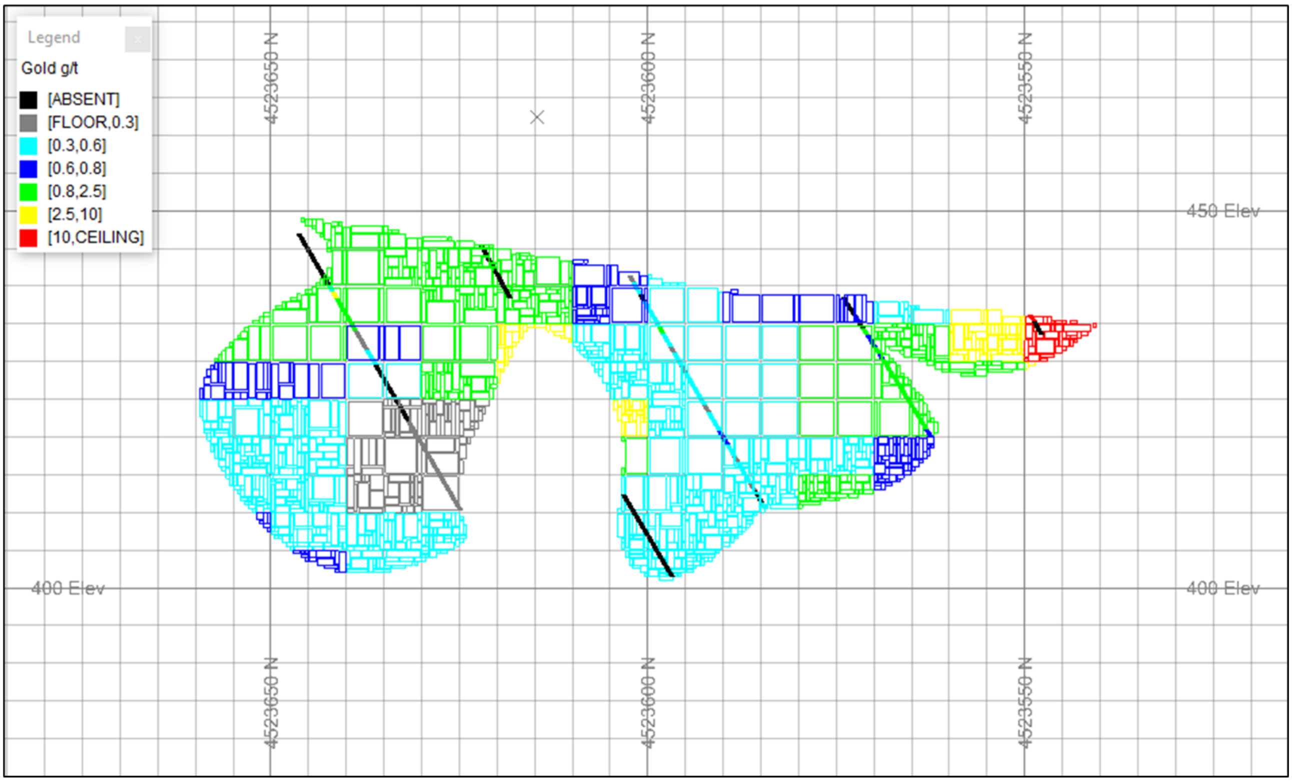


Figure 14-27: Vertical section view (looking east) – Basement Mineralisation Au g/t grade model and composites
Source CSA Global, 2020

14.6.2 Mean Statistics – Block Model vs Composites

Statistical validation was performed on individual domains as well as globally against the composite data for the both the EXP and GC model. The global validation is presented in Table 14-16 and Table 14-17.

Variance between mean composite and block grades for the Upper Zone, Wall Zone were within 2% and within 5% for the basement mineralisation zone for both Au and Ag.

Overburden validated less well globally, which can be attributed to less data available for use in the estimate, though individual domains validate better. The overall poorer validation of overburden is reflected in the lower confidence applied during classification. The poorer validation is attributed to a number of causes:

- Wireframe volumes of overburden are large relative to the number of data since the wireframes have been created based both on logging and on field mapping. Extrapolation of grades from drilling into unsampled volumes has led to larger differences in mean grades between composites and blocks. However, visual review supports estimated grades where supported by drilling.
- Intervals that have poor recovery, although small in number throughout the deposit, is disproportionately higher in the overburden, which is understandable due to the nature of the material.

Overall, overburden makes up approximately 2% of the metal so the poorer validation statistics are not considered material.

Table 14-16: EXP model – mean grade comparison for Au, Ag

Zone	Mean composites		Mean blocks		% difference	
	Au	Ag	Au	Ag	Au	Ag
Upper Zone	4.35	2.44	4.41	2.75	2%	13%
Wall Zone	6.02	3.95	5.55	3.82	3%	0%
301 Overburden	1.47	1.23	1.45	1.24	1%	0%
303 Overburden	0.18	0.53	0.19	0.50	10%	-5%
304 Overburden	0.56	0.74	0.53	0.77	-6%	4%

Zone	Mean composites		Mean blocks		% difference	
	Au	Ag	Au	Ag	Au	Ag
305 Overburden	0.43	1.05	0.51	1.13	19%	7%

Table 14-17: GC model – mean grade comparison for Au, Ag

Zone	Mean composites		Mean blocks		% difference	
	Au	Ag	Au	Ag	Au	Ag
Upper Zone	4.65	2.62	4.62	2.66	-1%	1%
Wall Zone	8.49	4.96	8.41	5.08	-1%	2%
Basement Mineralisation	1.71	1.56	1.80	1.55	5%	0%
302 Overburden	0.47	0.65	0.50	0.96	7%	48%
306 Overburden	0.27	0.68	0.27	0.65	1%	5%

14.6.3 Swath Plots

Swath plots were generated to compare the model parent block grades and input composites (naïve and de-clustered) in spatial increments (easting, northing, elevation).

The plots show that the distribution of block grades honours the distribution of input composite grades. There is an acceptable level of smoothing evident, which is to be expected from the estimation method used, with block grades showing lower overall variance.

Figure 14-28 to Figure 14-35 show selected swath plots for the MRE and GC Models for Au, Ag.

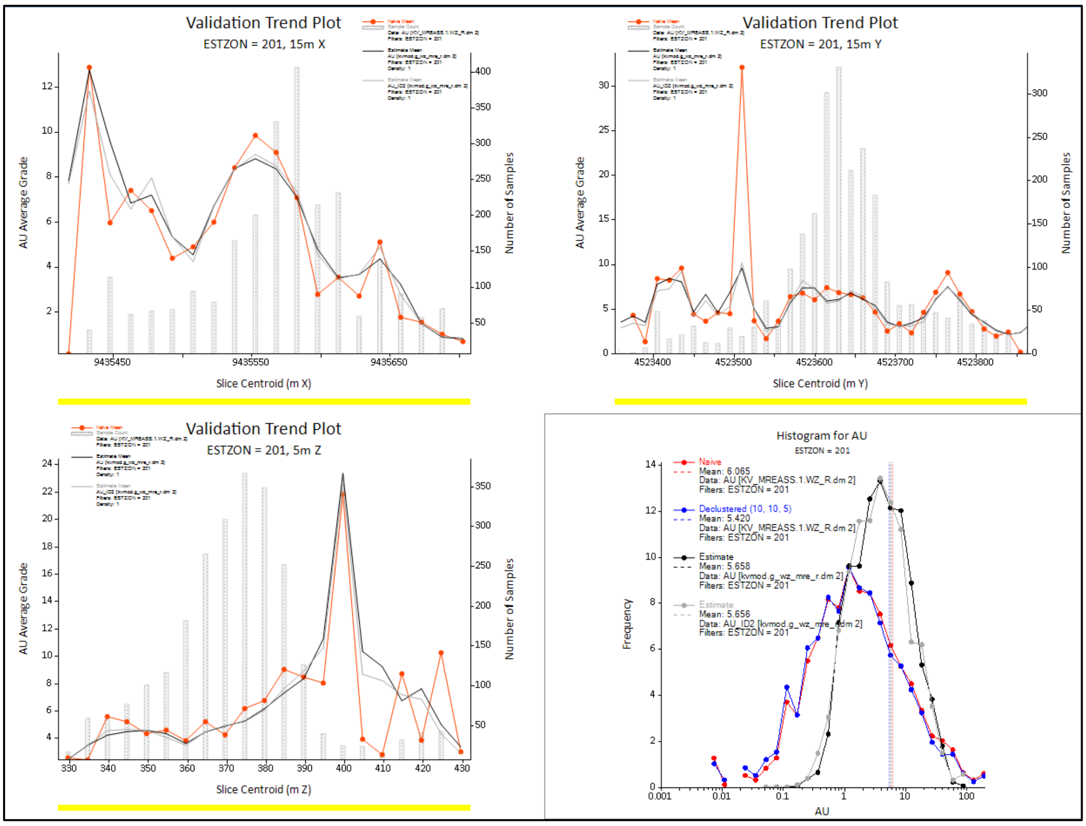


Figure 14-28: Swath plots and histogram for Au g/t in the Wall Zone MRE model
Note: Block model (black) vs composites (red), de-clustered composites (blue).
Source CSA Global, 2020

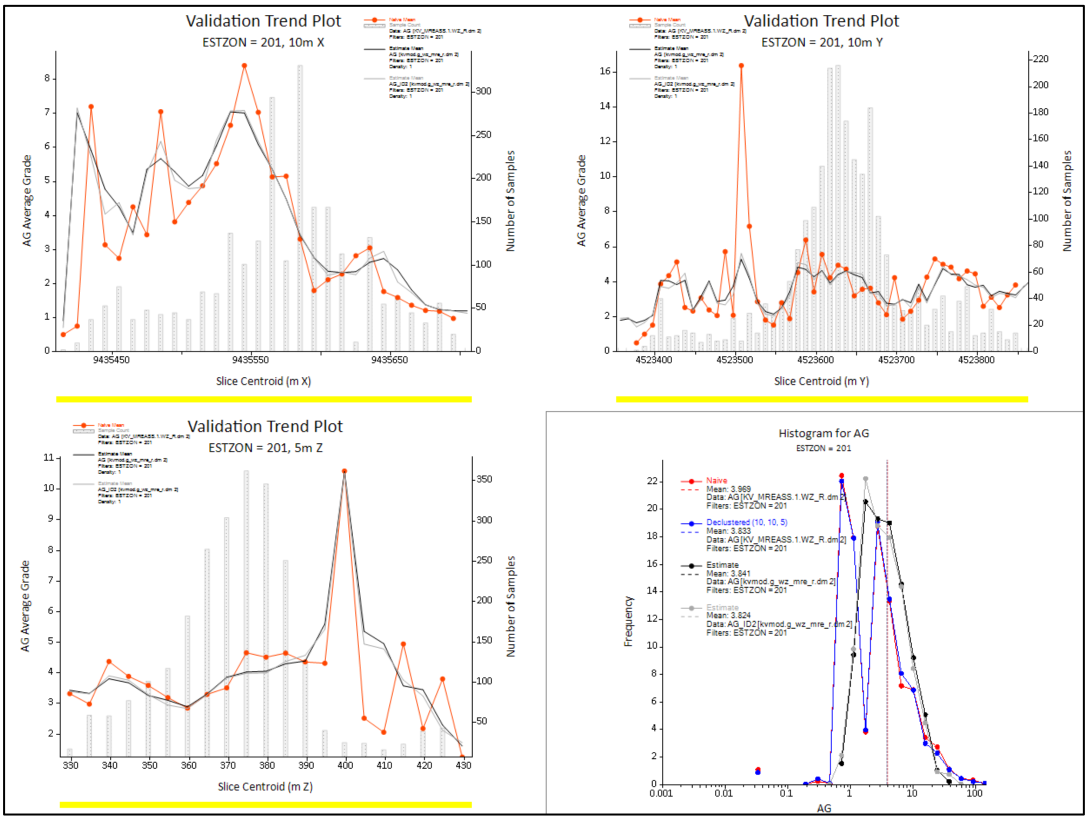


Figure 14-29: Swath plots and histogram for Ag g/t in the Wall Zone MRE model
Note: Block model (black) vs composites (red), de-clustered composites (blue).
Source CSA Global, 2020

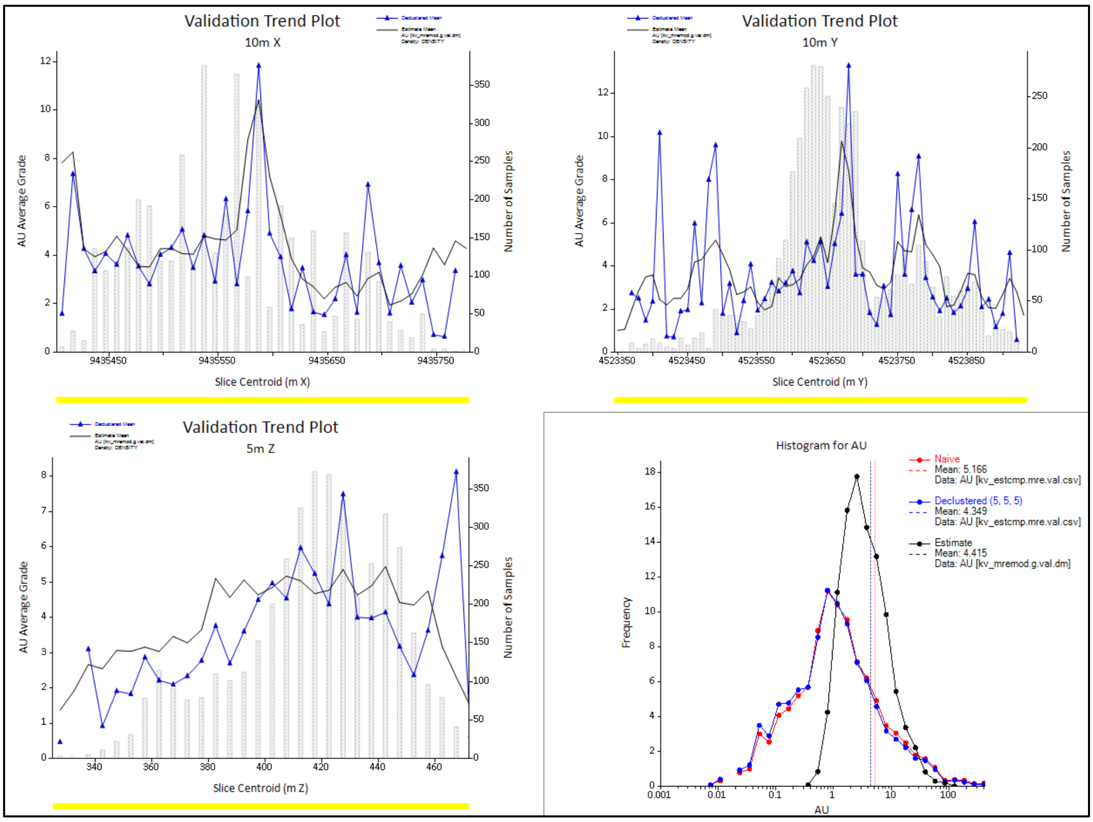


Figure 14-30: Swath plots and histogram for Au g/t in the Upper Zone MRE Model
Note: Block model (black) vs composites (blue).
Source CSA Global, 2020

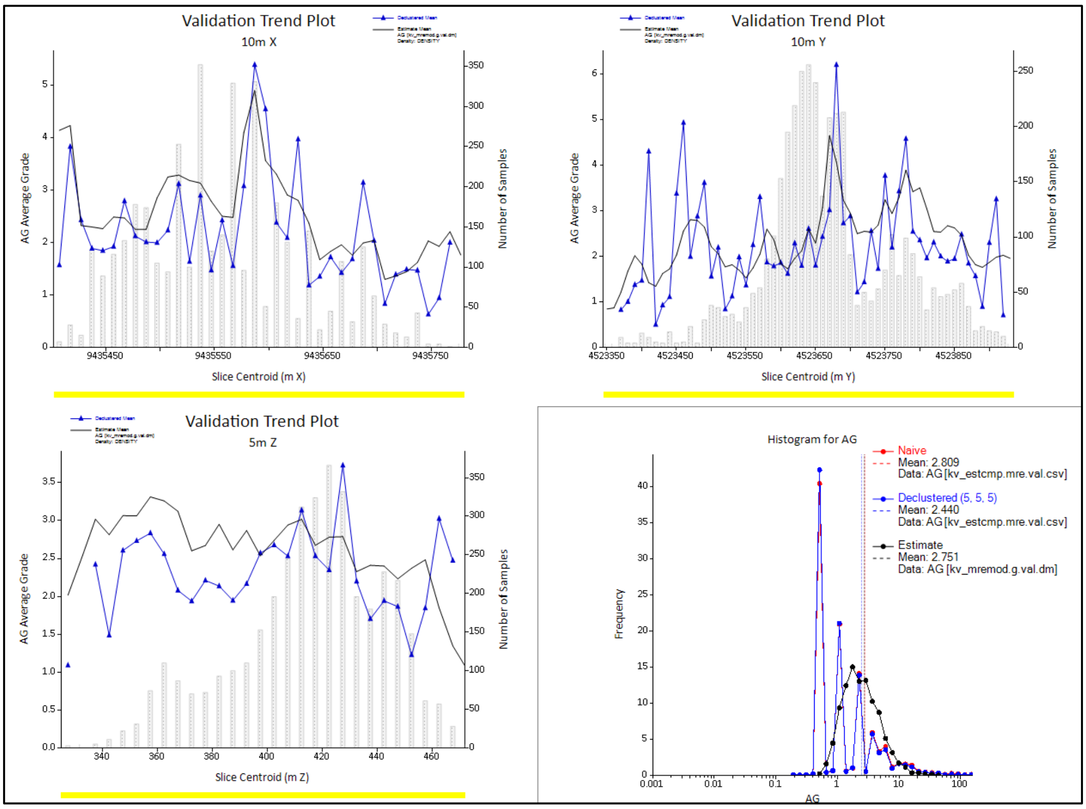


Figure 14-31: Swath plots and histogram for Ag g/t in the Upper Zone MRE Model
Note: Block model (black) vs composites (blue).
Source CSA Global, 2020

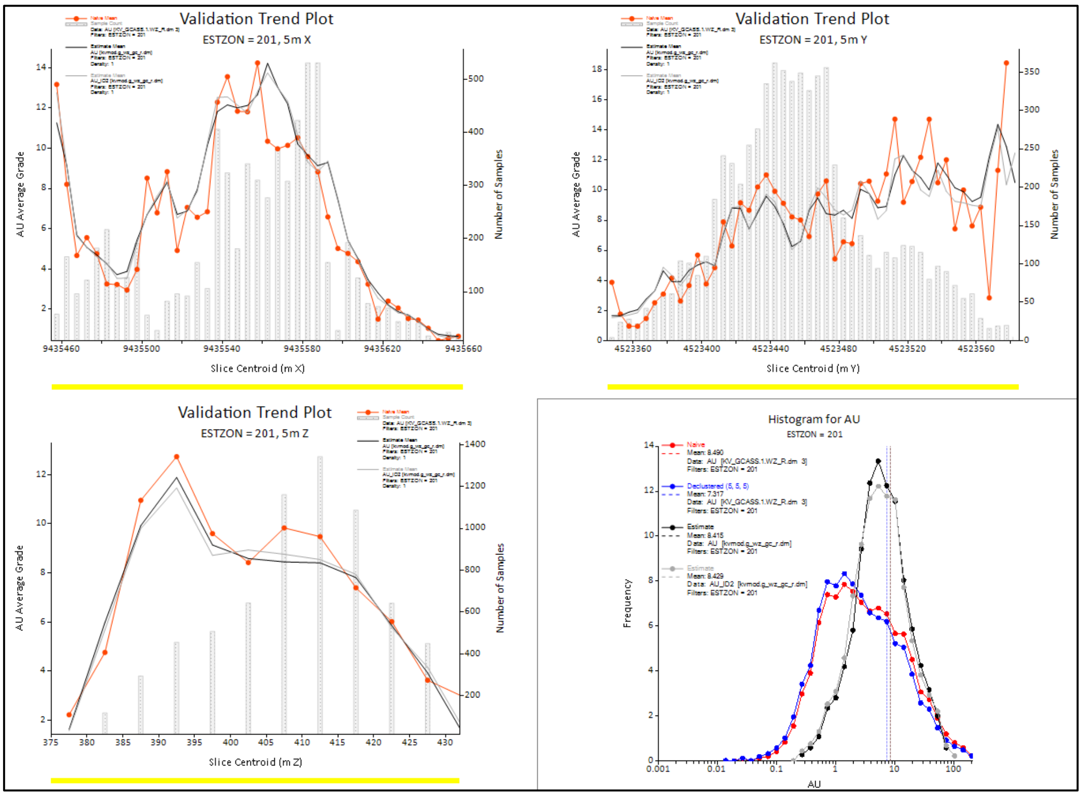


Figure 14-32: Swath plots and histogram for Au g/t in the Wall Zone GC model
Note: Block model (black) vs composites (red), de-clustered composites (blue).
Source CSA Global, 2020

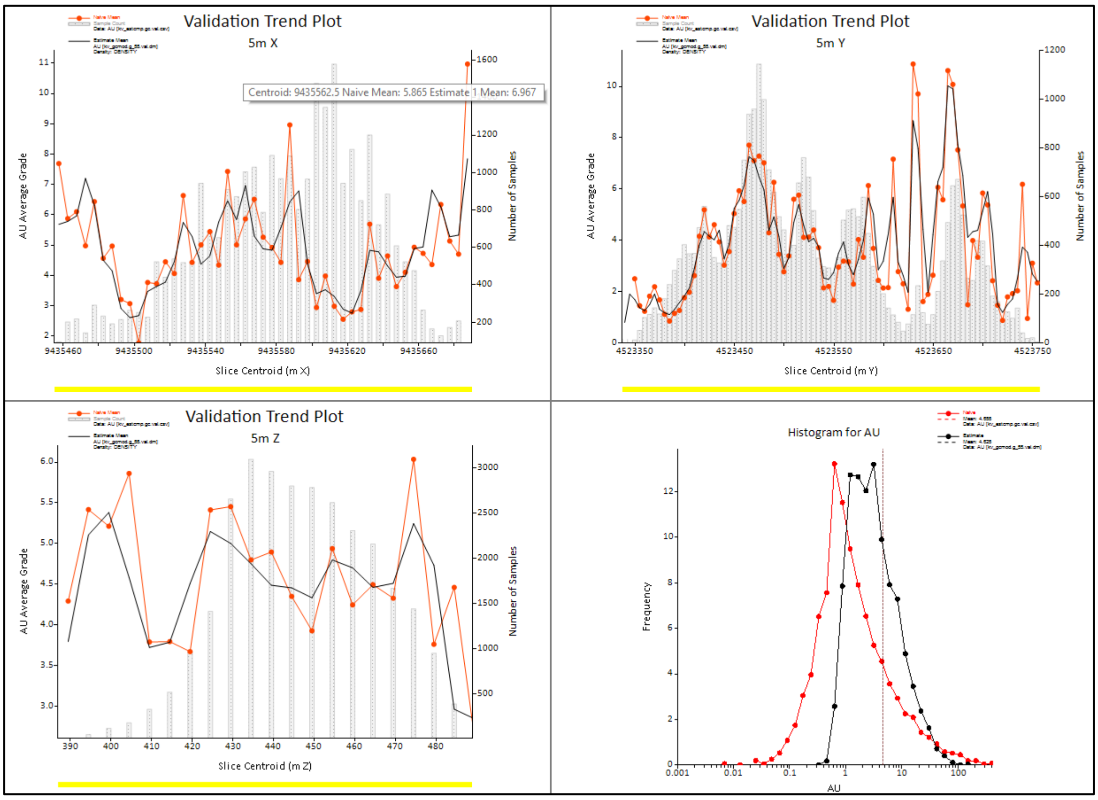


Figure 14-33: Swath plots and histogram for Au g/t in the Upper Zone GC Model

Note: Block model (black) vs composites (red).

Source CSA Global, 2020

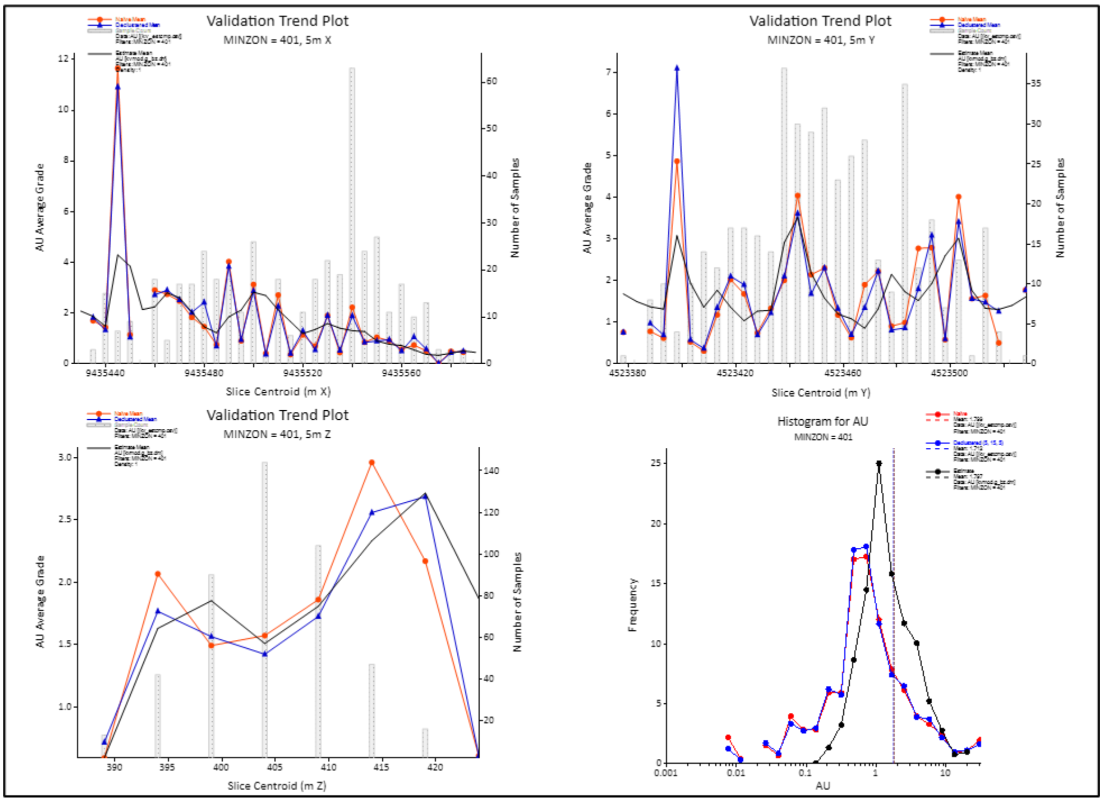


Figure 14-34: Swath plots and histogram for Au g/t in the Basement Mineralisation model

Note: Block model (black) vs composites (red), de-clustered composites (blue).

Source: CSA Global, 2020

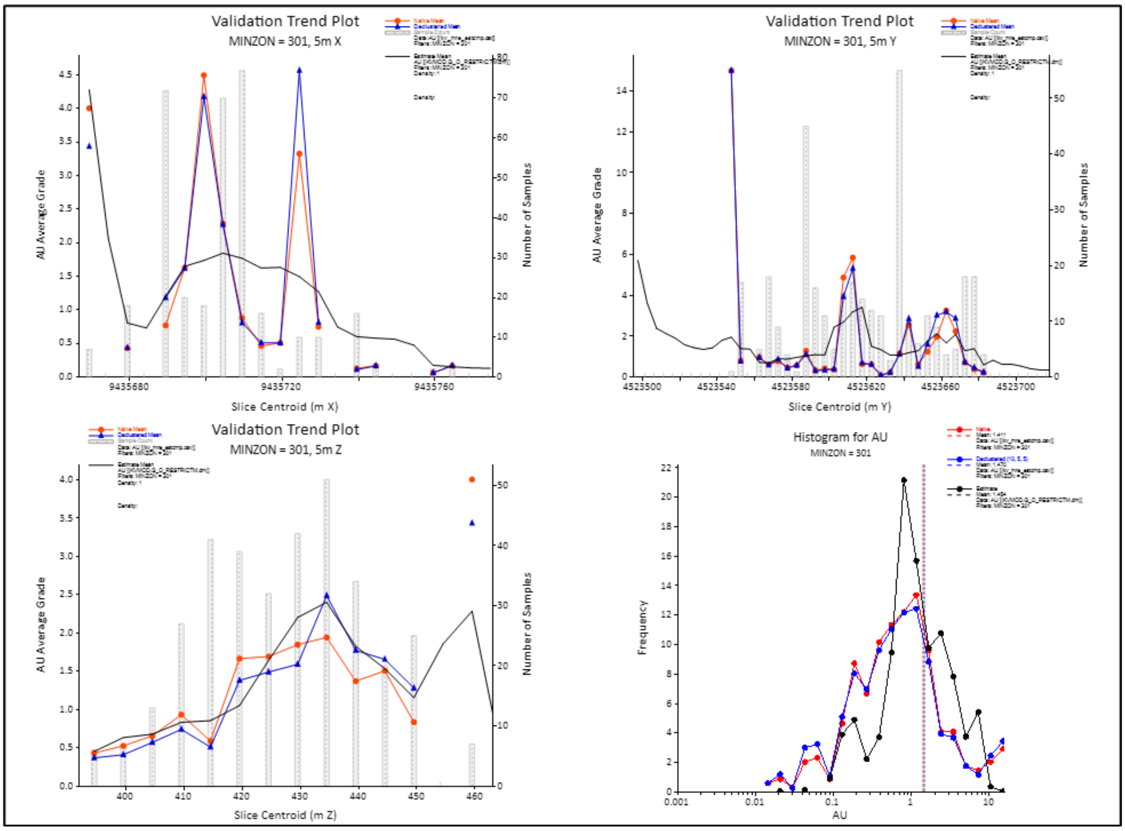


Figure 14-35: Swath plots and histogram for Au g/t in Overburden domain 301
Note: Block model (black) vs composites (red), de-clustered composites (blue).
Source: CSA Global, 2020

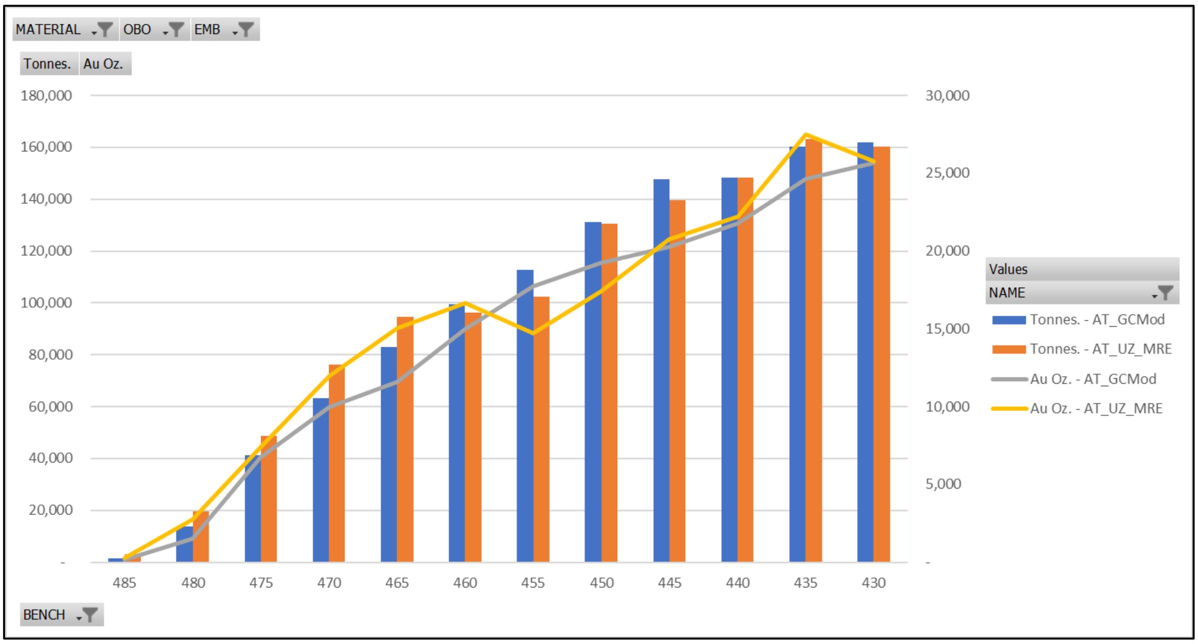
14.6.4 Grade Control Model Comparison

The final Mineral Resource model for Ada Tepe comprises the GC model in the GC area, and the EXP model outside of the GC area, which is informed by wider spaced data, which represents the majority of the Mineral Resource. To benchmark and assess the performance of the parts of the resource model which uses only exploration data, the EXP model was compared against the GC model.

Metal, tonnes and grade were compared within a common area in both the grade control and resource model (GCAREA=1). The common volume is shown in Figure 14-38.

The results show close reconciliation on tonnes, grade and metal basis. For the Upper Zone, the GC model used in production predicts slightly lower tonnes (2%) and grade (3%) compared to the EXP model, with metal reconciling to within 5%. Metal, tonnes and grade comparisons by bench for the Upper Zone are presented in Figure 14-36.

For the Wall Zone, the GC model used in production predicts lower tonnes (2%) and higher grade (7%) compared to the EXP model, with metal reconciling to within 5%. Metal, tonnes and grade comparisons by bench for the Upper Zone are presented in Figure 14-37.

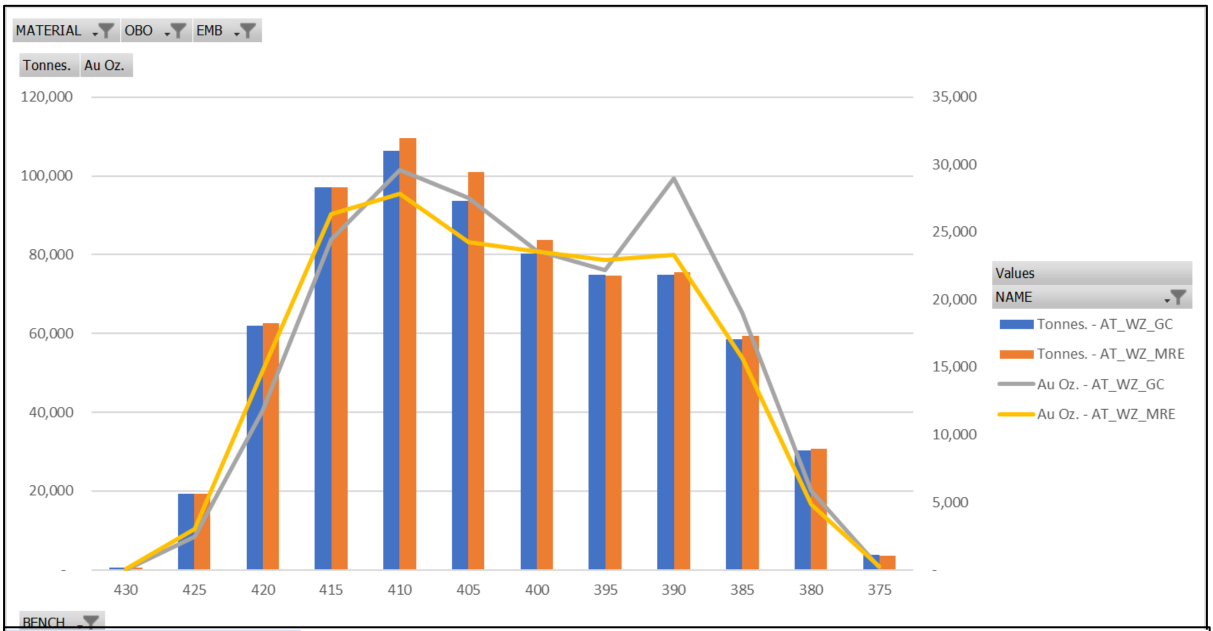


MATERIAL (Multiple Items)
OBO (Multiple Items)
EMB (Multiple Items)

BENCH	Tonnes. AT_GCMod	Tonnes. AT_UZ_MRE	Au Oz. AT_GCMod	Au Oz. AT_UZ_MRE	Au g/t AT_GCMod	Au g/t AT_UZ_MRE
485	1,373	3,180	178	258	4.04	2.52
480	13,744	19,522	1,510	2,780	3.42	4.43
475	41,154	48,817	6,739	7,404	5.09	4.72
470	63,258	76,258	9,955	11,986	4.89	4.89
465	83,129	94,526	11,614	15,044	4.35	4.95
460	99,488	96,123	15,009	16,676	4.69	5.40
455	112,574	102,537	17,746	14,715	4.90	4.46
450	131,119	130,511	19,234	17,415	4.56	4.15
445	147,567	139,494	20,268	20,731	4.27	4.62
440	148,218	148,206	21,758	22,229	4.57	4.67
435	160,294	163,268	24,612	27,469	4.78	5.23
430	162,025	160,331	25,636	25,777	4.92	5.00
Grand Total	**1,163,943**	**1,182,773**	**174,259**	**182,484**	**4.66**	**4.80**
		2%		5%		3%

Figure 14-36: Upper Zone – comparison of tonnes, metal and grade in GCAREA=1 (0.6 g/t Au cut-off)

Above – tonnes (bars) and metal (line); Below – table showing tonnes, metal, grade by bench.
Grade control model – blue bars, grey lines; Resource model – orange bars, yellow lines.
Source: CSA Global, 2020



MATERIAL	(Multiple Items)
OBO	(Multiple Items)
EMB	(Multiple Items)
VOID	(Multiple Items)

	Values	NAME				
	Tonnes.		Au Oz.		Au g/t	
BENCH	AT_WZ_GC	AT_WZ_MRE	AT_WZ_GC	AT_WZ_MRE	AT_WZ_GC	AT_WZ_MRE
430	608	608	28	50	1.46	2.55
425	19,242	19,398	2,456	3,012	3.97	4.83
420	61,957	62,523	11,779	14,714	5.91	7.32
415	97,017	97,036	24,380	26,252	7.82	8.41
410	105,914	109,128	29,563	27,826	8.68	7.93
405	93,573	100,879	27,540	24,238	9.15	7.47
400	79,698	83,174	23,567	23,471	9.20	8.78
395	74,905	74,772	22,197	22,937	9.22	9.54
390	74,828	75,607	28,947	23,331	12.03	9.60
385	58,630	59,420	18,970	15,667	10.06	8.20
380	30,306	30,629	5,873	4,814	6.03	4.89
375	3,763	3,640	203	280	1.68	2.39
Grand Total	**700,441**	**716,813**	**195,503**	**186,590**	**8.68**	**8.10**
		2%		-5%		-7%

Figure 14-37: Wall Zone – comparison of tonnes, metal and grade in GCAREA=1 (0.8 g/t Au cut-off)

Above – tonnes (bars) and metal (line); Below – table showing tonnes, metal, grade by bench

Grade control model – blue bars, grey lines; Resource model – orange bars, yellow lines.

Source: CSA Global, 2020

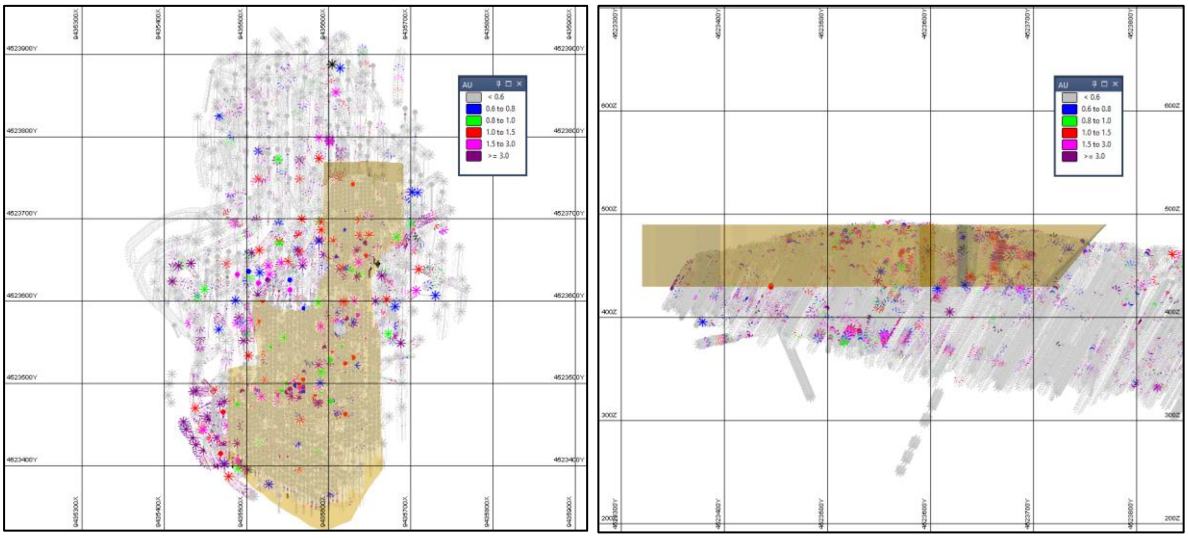


Figure 14-38: Limits of grade control area (GCAREA=1). Left – plan view; Right – looking west
Source: CSA Global, 2020

14.7 Mineral Resource Model Compilation

Having validated both the GC and EXP models, the final Mineral Resource model was compiled using both models and a GC wireframe limit (GC=1) used to define the limits of the 5 m x 5 m drilling to create the most robust model possible for life of mine planning. The EXP model took precedence outside the GC limit wireframe, while the GC model took precedence within it.

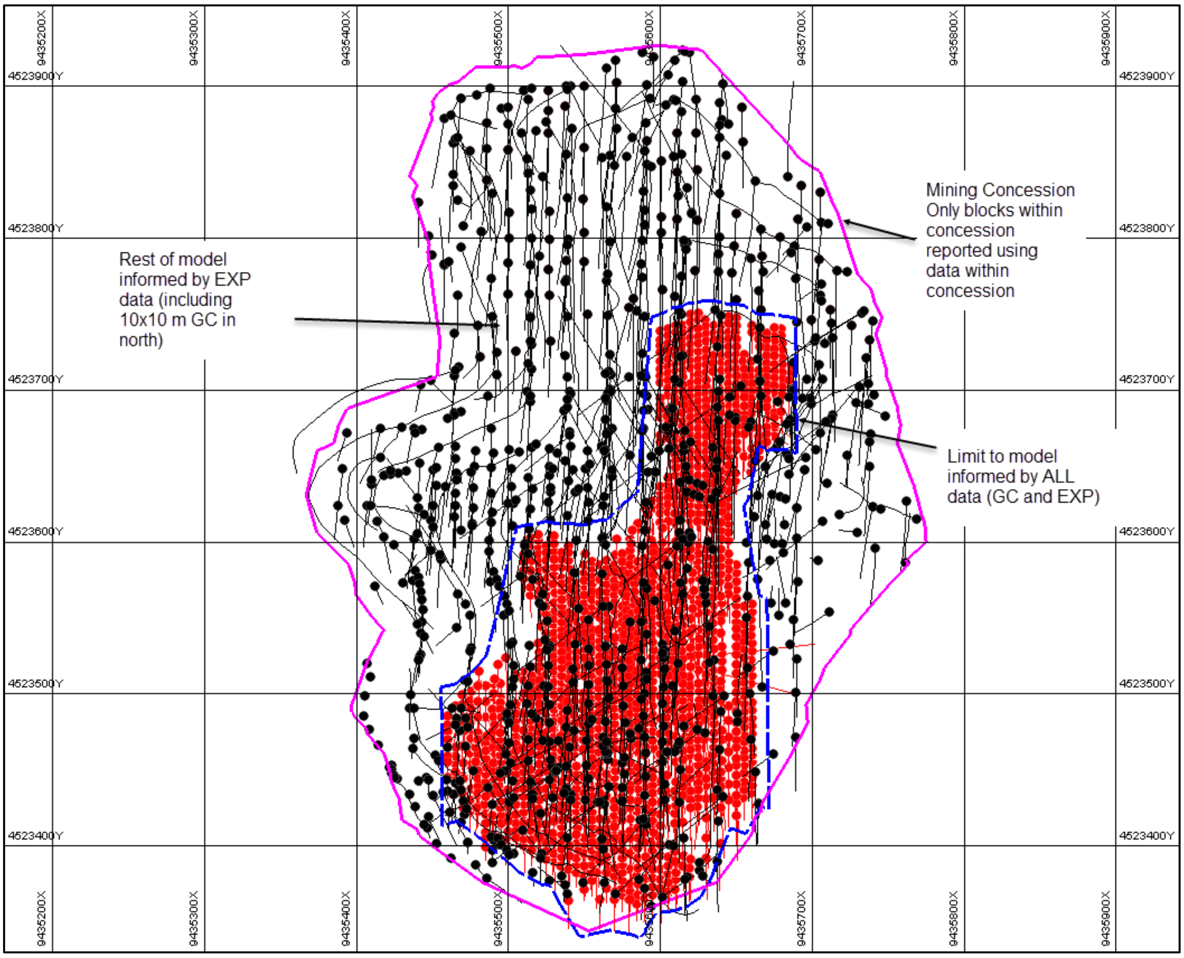


Figure 14-39: MRE model – plan view of extents EXP and GC model influence
Source: CSA Global, 2020

14.8 Mineral Resource Classification

The Mineral Resource has been classified as Measured, Indicated and Inferred Mineral Resources under the guidelines of the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators NI 43-101.

The classification level is based upon an assessment of the understanding of the key mineralisation controls for the deposit, geological and mineralisation continuity, drillhole spacing, confidence in data and QAQC results, estimation quality, and an analysis of available density information. How the model performs against the GC production model and dig strings has also informed resource classification. Only material that have reasonable prospects for eventual economic extraction have been classified as Mineral Resources.

The drill spacing is sufficient to allow the geology and mineralisation zones to be modelled. Reasonable consistency is evident in the orientations, thickness and grades of the mineralised zone.

Confidence in data is high, informed by good drilling and sampling procedures and QAQC results, and close correlation between exploration and GC drilling in terms of grades and thicknesses.

The quality of the estimate has been evaluated through review of slope of regression and kriging efficiency.

The data informing in-situ dry bulk density is considered reliable for the majority of zones. The only exceptions to this are the overburden where the density derived from data of 2.24 t/m^3 was considered too high for this semi-consolidated material, and the density used was 2.00 t/m^3. In addition, the density of 'voids' which can be more accurately described as a mixture of clay, fractured zones and voids, was discounted by 40%, which was not measured, but rather based on in-pit observations. 'Voids' make up less than 1,000 oz of Measured and Indicated Mineral Resources. Therefore, the uncertainty in grade and density behaviour in these zones is considered immaterial to the Mineral Resource as currently estimated.

Measured Mineral Resources:

- The Wall Zone has been classified as Measured Mineral Resources due to the highly continuous nature of the mineralisation and the adequate drill density of 15 m x 15 m across the entire domain.
- The part of the Upper Zone that is covered by GC drilling (predominantly 5 m x 5 m, with some small areas covered by 12.5 m x 12.5 m drilling) has been classified as Measured Mineral Resources.
- In general, Measured Mineral Resources have Slopes of Regression greater than 0.70.
- Close reconciliation with the GC model used in production.

Indicated Mineral Resources:

- Upper Zone blocks informed by drilling at a nominal 15 m x 15 m drill density.
- Basement mineralisation blocks informed by 5 m x 5 m drill spacing.
- Results of the EXP model vs GC model benchmarking in the Upper Zone provided confidence that the model estimated using wider spaced exploration data can reliably predict.

Inferred Mineral Resources:

- Blocks located at the periphery of the Upper Zone where drill hole density drops off and estimated blocks are informed by lower sample numbers.
- Overburden blocks.

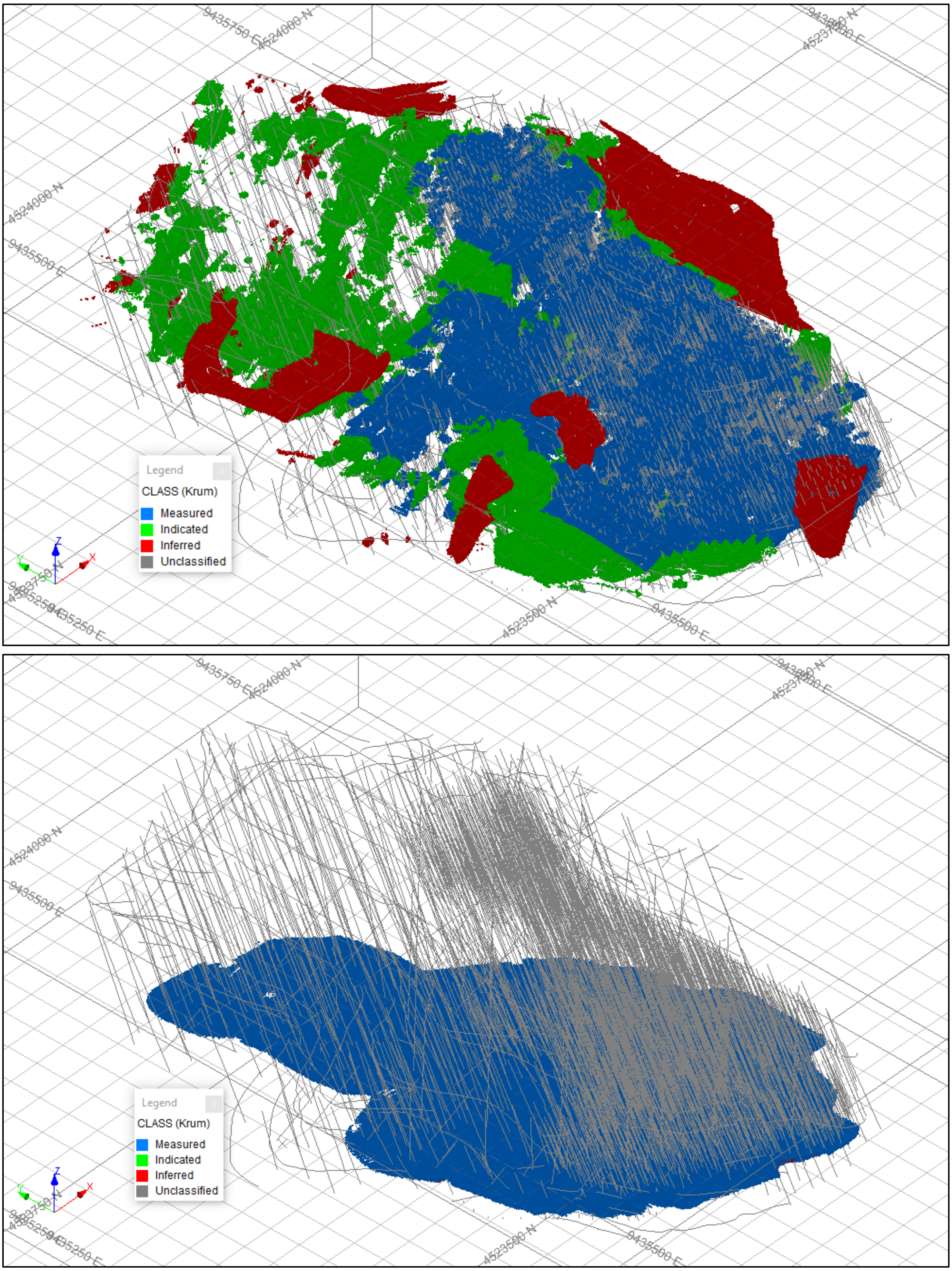


Figure 14-40: 3D view of the classified Resource for the Upper Zone (above) and Wall Zone (below)
Source: CSA Global, 2020

14.9 Mineral Resource Reporting

The MRE for the Ada Tepe Gold Mine is presented in Table 14-18. The Mineral Resources are reported exclusive of Mineral Reserves, and as such there is only a small amount of Inferred Mineral Resources remaining in the Upper Zone and Overburden. The MRE is reported at a cut-off of 0.6 g/t Au which is supported by current mining and mining studies. The Mineral Resource is constrained within a pit.

Reasonable prospects for eventual economic extraction ("RPFEE") are supported through a pit optimisation run using metal prices of US$1,400/oz Au and US$17/oz Ag. The boundaries of the aforementioned pit shell constrained a very similar volume the Mineral Reserve constraining pit design. As such, final reporting was conducted using the Mineral Reserve constraining pit design.

Table 14-18: Mineral Resource Statement – Ada Tepe Gold Mine

Dundee Precious Metals – Ada Tepe Gold Mine Mineral Resource Estimate effective as at 31 July 2020 (reported at a 0.6 g/t Au cut-off)					
Resource category	**Tonnes (Mt)**	**Au (g/t)**	**Ag (g/t)**	**Metal content**	
				Au (Moz)	**Ag (Moz)**
Measured	0.00	0.00	0.00	0.000	0.000
Indicated	0.00	0.00	0.00	0.000	0.000
Total Measured + Indicated	**0.00**	**0.00**	**0.00**	**0.000**	**0.000**
Inferred	0.32	2.09	1.51	0.021	0.015

Notes to the Mineral Resource statement:

- Figures have been rounded to reflect this is an estimate.
- Measured, Indicated and Inferred Mineral Resources have been reported in accordance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards published on May 10, 2014.
- Estimates of Measured and Indicated Mineral Resources are reported exclusive of those Mineral Resources modified to produce Mineral Reserves.
- The MRE has been prepared by CSA Global who are independent of DPM.
- Mineral Resources are based on a gold cut-off grade of 0.6 g/t for the Upper Zone and Overburden and of 0.8 g/t for the Wall calculated using metal prices of US$1,400/oz Au and US$17/oz Ag and are effective as at July 31, 2020. There are no Mineral Resources remaining in the Wall zone.
- The Mineral Resource is effective as at 31 July 2020.
- Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- Mineral Reserves and Resources may be subject to legal, political, environmental and other risks and uncertainties.

14.10 Comparison with Previous Estimates

A comparison has been made between the current Mineral Resource and the 2013 Mineral Resource, reported in the 2014 NI 43-101 (re-filed in 2017). The comparison has been made on Mineral Resources inclusive of Mineral Reserves, to more transparently document changes, since the 2013 Mineral Resource was reported inclusive of Mineral Reserves.

The waterfall chart in Figure 14-41 tracks total metal changes from the 2013 to 2020 (inclusive of Mineral Reserves), for Measured and Indicated Mineral Resources are as follows.

The changes to Measured and Indicated Mineral Resources are as follows:

- The production depletion is 0.181 Moz based on depleting the 2013 model using the 31 July 2020 pit survey.

- There have been minor density changes, resulting in a 0.004 Moz increase. Minor density changes assigned largely around the changes in definition of strongly, weakly oxidised and fresh material.
- An increase of 0.032 Moz is informed by new infill drilling in the north. The change in volume definition/grade estimation methodology in the Upper zone may also have contributed to this, but it is believed to be limited because the increase seen here impacts both Wall Zone and Upper Zone (where there has been no change in grade estimation methodology for Wall Zone).
- There are no cut-off grade changes between 2013 and 2020.
- An increase of 0.009 Moz attributed to remodelling (wireframing) of the Wall Zone.
- A decrease of 0.021 Moz attributed to the pit shell constraint, used to support reasonable prospects for eventual economic extraction.

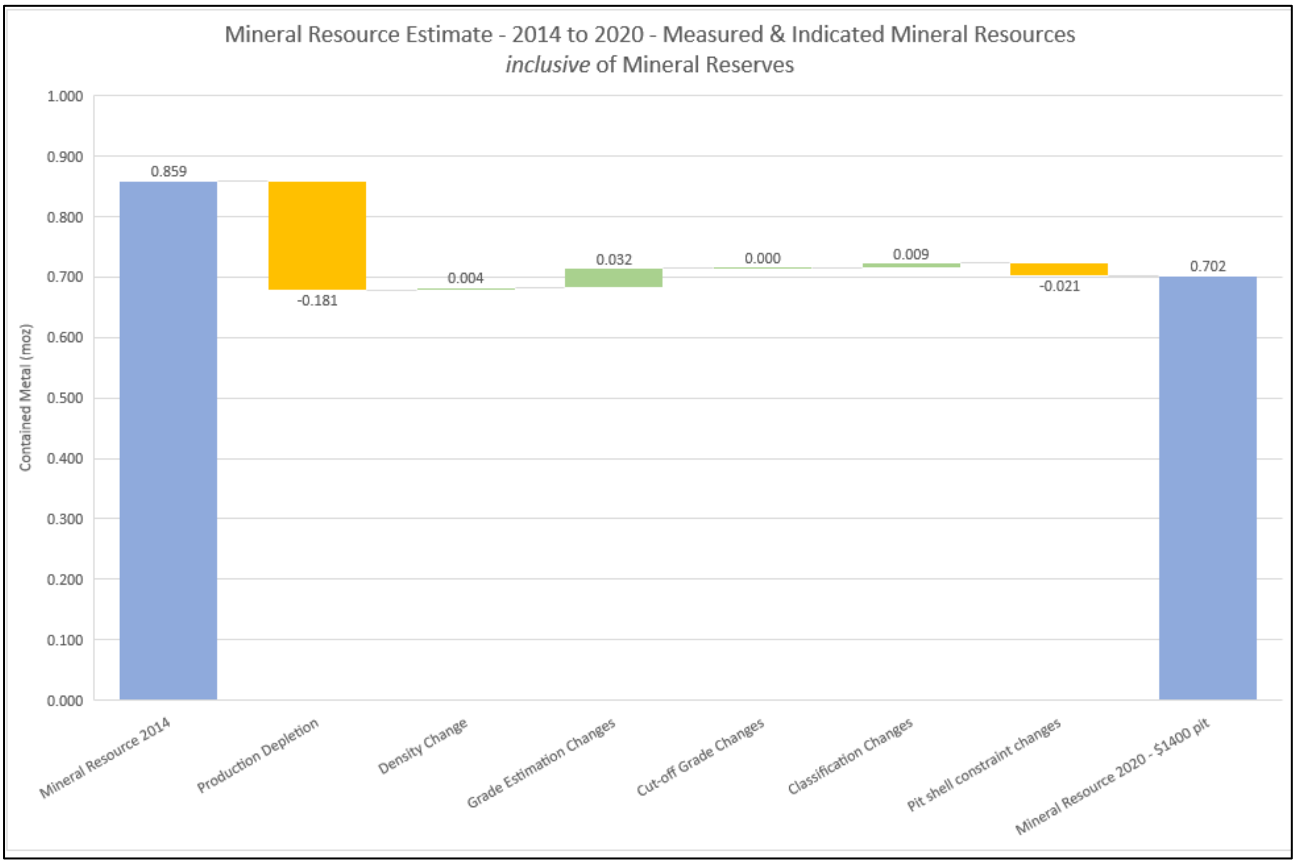


Figure 14-41: Waterfall Chart showing changes in metal (Au Moz) from the MRE in 2014 to the current MRE
Note: reported inclusive of Mineral Reserves for comparison purposes.
Source: CSA Global, 2020

The most material change is not in metal, but rather in grade-tonnage breakdown, particularly in the Upper Zone. This zone in the 2013 MRE was estimated using Multiple Indicator Kriging and estimated higher tonnes and lower grades than that seen in production. Considerable work was put into the mineralisation interpretation of the Upper Zone in the current MRE to use all available information including structural trends derived from pit mapping, and benchmarking volumes against those used in the GC model which uses 5 m x 5 m drilling (Section 14.2.4). The result is equivalent metal, but lower tonnes and higher grade, which is supported by production data.

Upper Zone tonnes have decreased by 37%, but Au grade has increased by 56% and Ag grade has increased by 58%. This has led to a 1% change in contained gold and no change in contained silver.

Wall Zone tonnes have decreased by 14%, but Au grade has increased by 25% and Ag grade has increased by 50%. This has led to a 7% increase in contained gold and a 29% increase in contained silver.

Overall, there is an increase in metal classified as Measured Mineral Resources (45%), and a corresponding decrease in Indicated Mineral Resources due to the availability of production data and close space GC drilling. The grade of Inferred Mineral Resources has increased substantially, increasing the metal, however Inferred Mineral Resources remain a very small part of the Mineral Resource (when reported inclusive of Mineral Reserves for comparison purposes).

All changes are supported by 5 m x 5 m production data and benchmarking of the Mineral Resource model against the GC model to better predict tonnes and grades moving forward. Table 14-19 presents the tabulation of the comparison, reported inclusive of Mineral Reserves, for direct comparison purposes.

Table 14-19: Comparison with previous estimate (inclusive of Mineral Reserves)

Dundee Precious Metals – Ada Tepe Gold Mine **Comparison between current MRE (2020) and previous MRE (2013)**							
Material	**Resource category**	**Model**	**Tonnes (Mt)**	**Au (g/t)**	**Ag (g/t)**	**Metal content**	
						Au (Moz)	**Ag (Moz)**
Upper Zone and overburden (cut-off 0.6 g/t Au)	Measured	2020 MRE	1.89	4.76	2.65	0.289	0.161
		2013 MRE	1.13	3.46	1.91	0.125	0.069
		% Difference	**68%**	**38%**	**39%**	**131%**	**133%**
	Indicated	2020 MRE	1.17	4.79	3.06	0.180	0.115
		2013 MRE	3.88	2.86	1.70	0.357	0.212
		% Difference	**-70%**	**68%**	**80%**	**-50%**	**-46%**
	Total Measured + Indicated	2020 MRE	3.07	4.77	2.81	0.471	0.278
		2013 MRE	5.01	2.99	1.75	0.482	0.281
		% Difference	**-39%**	**60%**	**60%**	**-3%**	**-2%**
	Inferred	2020 MRE	0.32	2.09	1.51	0.021	0.015
		2013 MRE	0.31	1.31	1.06	0.013	0.011
		% Difference	1%	59%	43%	63%	40%
Wall Zone and basement (cut-off 0.6 g/t Au)	Measured	2020 MRE	1.63	7.69	4.81	0.403	0.252
		2013 MRE	1.74	6.32	3.27	0.353	0.183
		% Difference	**-6%**	**22%**	**47%**	**14%**	**38%**
	Indicated	2020 MRE	0.02	2.76	1.96	0.002	0.001
		2013 MRE	0.18	4.28	2.38	0.024	0.014
		% Difference	-87%	-35%	-18%	-91%	-89%
	Total Measured + Indicated	2020 MRE	1.65	7.62	4.76	0.406	0.254
		2013 MRE	1.91	6.13	3.19	0.377	0.196
		% Difference	**-13%**	**24%**	**49%**	**8%**	**29%**
	Inferred	2020 MRE	0.00	6.60	2.60	0.000	0.000
		2013 MRE	0.01	0.87	0.88	0.000	0.000
		% Difference	**-**	**-**	**-**	**-**	**-**

14.11 F0a Reconciliation – 2013 (MIK) and 2020 (OK) MRE vs Grade Control Model

The performance of the 2020 MRE was evaluated against the Grade Control (GC) model by running a reconciliation of the pit to date using the 2020 MRE against the current GC model (F0a).

The previous 2013 MRE was estimated using MIK and was not optimised for higher gold grade cut-offs used in mine production. A poorer reconciliation was expected with respect to tonnes and grade. The overall ounces, however, were broadly in line (within 10%) with the grade control model.

The current 2020 MRE was estimated using wireframes and indicator estimated volumes and Ordinary Kriging. The workflow used to estimate the MRE and GC models are closely aligned and therefore, there is a close alignment of the 2020 MRE with the GC model in terms of tonnes, grade and metal of material mined in the pit-to-date. As at 31st July 2020, only Upper Zone material has been mined. Figure 14-42 and Figure 14-43 show the reconciliation of the 2013 and 2020 MRE's against the GC model.

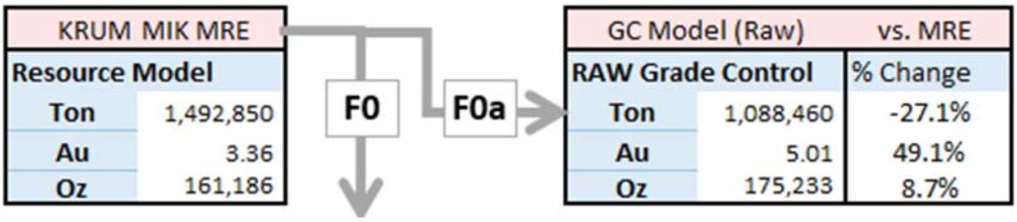


Figure 14-42: 2013 MIK MRE vs GC Model
Source: CSA Global, 2020

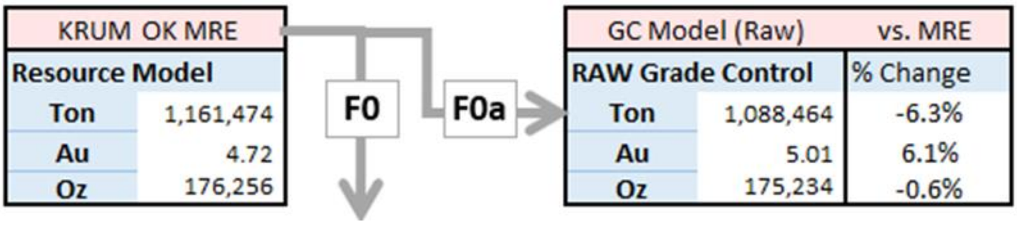


Figure 14-43: 2020 OK MRE vs GC Model
Source: CSA Global, 2020

The results indicate a closer reconciliation on a metal basis from 8.7% to -0.6% from the 2013 MIK MRE to the 2020 OK MRE respectively. The 2020 MRE has a much closer alignment in the Au grade to within 6.1% compared to underestimation of 49.1% for the MIK MRE. The estimation of tonnes is also considerably closer to the GC model to within 6.3% from 27.1%. The 2020 OK MRE reconciles well against the GC model, and therefore suggests a significantly more accurate estimate in terms of tonnes and grade. This bears significant importance at Ade-Tepe considering the need for accurate tonnes predictions for short to medium term mine planning.

14.12 Other Relevant Factors

Mineral Resources are not Mineral Reserves. The Qualified Person is not aware of any environmental, permitting, legal, socio-economic, marketing or political factors that could materially impact the Mineral Resource. The risk attached to other factors identified are summarised in Table 14-20 and the overall risk to the Ada Tepe Mineral Resource is considered low.

Table 14-20: Summary of other relevant factors

Factor	Risk	Comment
Sample collection, preparation and assaying	Low	DPMKr have good procedures and data management practices in place and risk associated with sample collection, preparation and assaying is low.
QAQC	Low	No issues of concern have been identified.
Geological data and mineralisation model	Moderate	Upper Zone mineralisation is complex. Volume estimation through Indicator Kriging has been benchmarked against GC model and reconciliation is currently very good. As production moves out of oxide and into fresh, this must be monitored.
Grade estimate	Moderate	The wireframes have been interpreted with a reporting cut-off in mind. Therefore, any changes to cut-off, either increasing or decreasing may result in different volumes being interpreted. Some low-grade areas have been included in Wall Zone mineralisation which has resulted in over-estimation of grade. A risk review has identified that this impacts <1% metal and is therefore not material.
Tonnage estimate	Low	There are sufficient density measurements from core to assign reliable in-situ dry bulk density to the Mineral Resource. Uncertainty exists in the density of overburden due to the semi-consolidated nature of this material and in voids, where the discount in density assigned is based on in-pit observations rather than quantitative measurements However, the volume of this material is very low and overburden is classified as Inferred Mineral Resources to reflect lower confidence in grade and tonnage estimates.
Mineral Resource upgrading and extension	Low	The Mineral Resource is geologically constrained to the Upper Zone and the Wall Zone. There is very limited mineralisation in the basement zone and low likelihood of Mineral Resource expansion.
Economic factors including mineral processing	Low	Ada Tepe is currently in production. While clay content has had a limited impact plant recovery, the plant is operating to within design criteria, and geometallurgical studies currently underway on characterising the clay content represent an opportunity for optimisation.
Accuracy of the estimate	Low	While no simulation studies have been undertaken to quantitatively evaluate accuracy at Ada Tepe, the close reconciliation between the EXP model and GC model means Mineral Resources informed by wider spaced data should be low risk, assuming no change in mineralisation character moving away from current production areas.
Overall rating	**Low**	**The current MRE carries low uncertainty and risk due to the level of close spaced drilling available and production data.**

15 Mineral Reserve Estimates

The mining method is a conventional open cut, drill, blast, load and haul operation, using hydraulic excavators and haul trucks to mine the material. The mining equipment is owner operated and maintained under a contract with the equipment supplier.

The mine planning update consisted of a pit optimisation followed by open pit design, long term production scheduling and cost estimation. The main differences in relation to the previous study were: (a) the use of updated economic parameters such as metal prices, metallurgical recoveries, royalty and discount rate; and (b) adoption of Mineable Shape Optimiser ("MSO") diluted block model, used to account for operational mine dilution and expected level of selectivity. The MSO model has been developed to simulate dig string boundaries from the MRE model, based on mining parameters, to produce a diluted block model suitable for open pit optimisation and mine planning. The key inputs to the MSO process are mining flitch height of 2.5 m, preferred mining direction of east-west, ROM and stockpile gold cut-off grades (0.6, 0.8, 1.0 and 2.5), minimum practical dig block mining width – perpendicular to the mining direction of 3 m and dig block advance increments – parallel to the mining direction of 5 m. The pit optimisation analysis is based on a gold price of US$1,250/oz and silver price of US$17/oz. The optimisation process is discussed in Section 16.

The open pit was designed taking into consideration the geotechnical recommendations by Golder Associates UK (2013). The updated slope design has also taken into consideration the weathered rock material in the northeast corner of the pit, near the surface, and the presence of historical waste dumps in the southeast corner of the pit, also near the surface.

Four incremental pushbacks were designed to: (a) give early and consistent access to the Wall Zone material; and (b) to ensure the provision of sufficient waste rock in the early stages of the operation to enable construction of the cells on the IMWF. Consideration has also been taken into account of the restricted stockpile area for both ROM and low-grade material. The mine plan considers a mill throughput of 90 tph and 105 tph for the Wall Zone and Upper Zone respectively till end of 2021 and thereafter capped to 90 tph for the remaining mine life. This gives a mine life of approximately six years, with maximum annual rock movement of 3.0 Mt. Low-grade material, between 0.6 g/t and 1.0 g/t, is stockpiled on a separate area with a maximum capacity of 0.5 Mt. Much of this is planned to be delivered to the process plant in the latter years of the mine's life.

The estimated Mineral Reserve figures are presented in This Mineral Reserve estimate has been determined and reported in accordance with the NI 43-101, Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014.

Table 15-1. The numbers are appropriate for the purpose of public reporting in that they provide an acceptable prediction of the material available to mine.

This Mineral Reserve estimate has been determined and reported in accordance with the NI 43-101, Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014.

Table 15-1: Ada Tepe deposit – Mineral Reserves Estimate (DPM, 2020) effective as of 31 July 2020

Ada Tepe Mineral Reserve estimates as of 31 July 2020						
Category	**Tonnes (Mt)**	**Grade (g/t)**		**Metal content (Moz)**		
		Au	**Ag**	**Au**	**Ag**	
Proven						
Upper Zone	1.10	3.67	2.12	0.130	0.075	
Wall Zone	1.69	6.61	4.17	0.358	0.226	
Stockpile						
Subtotal Proven	**2.79**	**5.45**	**3.36**	**0.488**	**0.301**	
Probable						
Upper Zone	1.32	3.54	2.36	0.151	0.100	
Wall Zone	0.03	4.46	2.85	0.005	0.003	
Stockpile	0.12	3.77	2.55	0.014	0.010	
Subtotal Probable	**1.48**	**3.58**	**2.38**	**0.170**	**0.113**	
Proven and Probable						
Upper Zone	2.42	3.60	2.25	0.280	0.175	
Wall Zone	1.72	6.57	4.15	0.363	0.229	
Stockpile	0.12	3.77	2.55	0.014	0.010	
TOTAL	**4.26**	**4.80**	**3.02**	**0.658**	**0.414**	

Notes:

- Mineral Reserves have been estimated using a cut-off of 0.6 g/t Au for the Upper Zone, and 0.8 g/t Au for the Wall Zone.
- Long-term metal prices assumed for the evaluation of the Mineral Reserves are US$1,250/oz for Au and US$17/oz for Ag.
- Mineral Reserves include mining depletion as of 31 July 2020.
- Probable ore includes stockpile inventory as of 31 July 2020.
- Error may occur due to rounding.

The Mineral Reserves at Ada Tepe have been estimated by including a number of technical, economic and other factors as outlined in the above text. A change to any of the inputs would therefore have some effect on the overall results. Concerning mining and metallurgical factors, it is CSA's belief that sufficient work has been done by DPM to ensure that these are not likely to have any significant or material effect on Mineral Reserves. However, CSA Global relies on information as presented in Section 3 of this Technical Report in regard to legal and environmental considerations.

16 Mining Methods

16.1 Mining Methods and Equipment

The mine planning and Mineral Reserve estimation process principally comprises of pit optimisation, mine design, and mine scheduling.

The mining methods used at the Ada Tepe pit are conventional excavator and truck methods typical for this type and style of gold-silver mineralisation. Drilling and blasting of ore and waste is conducted over bench heights of 5 m and explosives are delivered to the hole by the drill and blast contractor. Hydraulic excavators are used to achieve good selectivity in conjunction with good blasting practice and mine to a 2.5 m flitch height. Ore and waste are generally loaded to 40-tonne capacity off-highway haul trucks to a run-of-mine ("ROM") stockpile or to the IMWF.

3-Dimensional high precision global positioning system ("3D HPGPS") guidance is installed on the mining excavators and dozers. This allows high precision excavation at the ore waste boundaries and improved floor control.

A blast movement monitoring system has been implemented since the first ore blast in July 2018 to date. The geology and survey team continue to monitor all blasts with blast movement monitoring to ensure ore loss, dilution and misclassification are minimised. A summary of the equipment in use at Ada Tepe is tabulated below in Table 16-1.

Table 16-1: Ada Tepe mining equipment as of 31 July 2020

Item	Model	Units
Excavator	CAT 352 F	3
Excavator (IMWF)	CAT 336 F	2
Rigid Truck	CAT 770 G	4
Articulated Truck	CAT 745 C	7
FEL	CAT 988 K	1
Bulldozer	CAT D8 T(*2)/D6 T	3
Grader	CAT 120M2	1
IT (tool carrier)	CAT 938 K	1
Drill Rig[1]	Furukawa HCR1200	2

[1] *Contractor owned drill rig*

All the production fleet is principally sourced from Caterpillar. In addition to the main equipment units there are graders and water trucks as well as various support and service equipment in use. Mining operations are conducted in two 8.0-hour shifts per day. The mining production rate is about 3 Mtpa total material.

16.2 Geotechnical Pit Slope Parameters

The Ada Tepe pit is mined as multiple phases in a series of pushbacks from the current mining face position expanding towards the north. The geotechnical slope criteria are based on a technical memorandum by Golder Associates UK (Golder, 2014).

Golder geotechnical slope stability analysis assessed critical sections throughout the pit to determine a factor of safety ("FOS") both on an overall slope and bench scale. The conclusion of the slope stability analysis was that slopes cut in historical mine waste in the eastern wall failed to meet the minimum design acceptance criteria of a FOS of 1.3. Following assessment of the materials and potential stable geometries, the design recommendations listed in Table 16-2 were made for areas of the pit cut in weak material to provide an acceptance FOS.

Additionally, it was found that slopes cut in fresh conglomerate material returned safety factors which exceeded the design criteria (with FOS values typically being >2.0) and as such, slope geometries were provided with a view to increasing the overall slope angle.

The design recommendation that were made following completion of the analysis are in Table 16-2, with design zones identified in (Figure 16-1).

Table 16-2: Slope design guidelines – final walls

Sector	Slope section	Inter-ramp angle (°)	Bench height (m)	Bench face angle (°)	Berm width (m)
1 – Yellow	Lower	46	15	65	7.5
	Upper (Blue)	27	15	35	7.5
2 – Green	Lower	49	15	70	7.5
	Upper (Blue)	27	15	35	7.5
3 – Red	N/A	49	15	70	7.5

Source: Golder, 2014

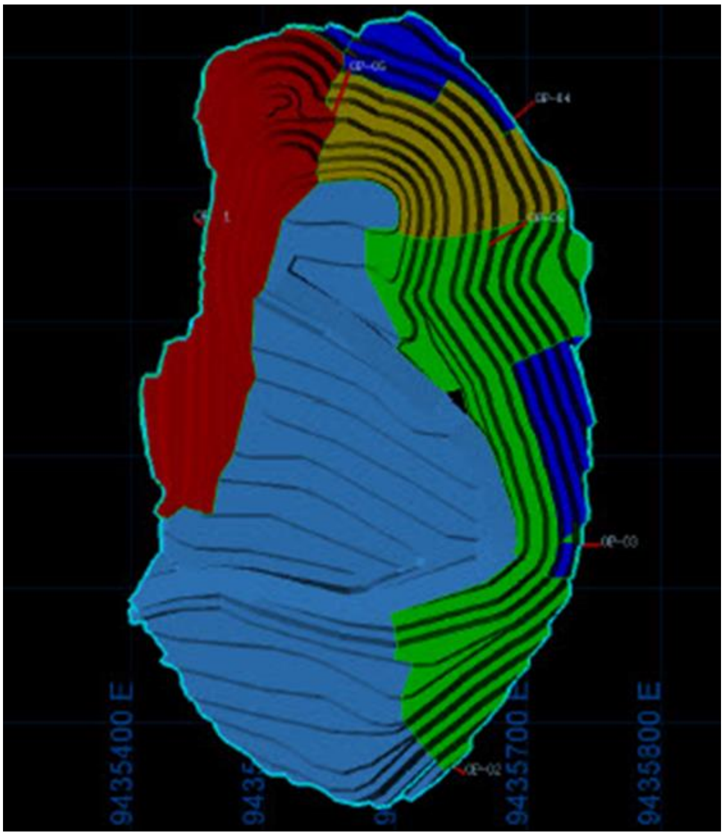


Figure 16-1: Geotechnical zones at Ada Tepe

Areas depicted in dark blue indicate areas that Golder Associates identify as having low factor of safety .
Source: Golder, 2014

The interim phased pit designs slope parameters are summarised in Table 16-3. The design criteria for these interim walls has been based on the existing pit design configurations.

The ultimate pit design follows Golder's criteria as shown in Table 16-2 (above), while the pushback designs follow the interim wall slope design guidelines (Table 16-3, below) for the northern pit face.

Table 16-3: Slope design guidelines – interim walls

Zone	Inter-ramp angle (°)	Bench height (m)	Bench face angle (°)	Berm width (m)
Weathered	40	10	60	6
Fresh	43	10	65	5

Source: DPM, 2020

16.3 Pit Optimisation

A pit optimisation exercise was undertaken by DPM using Dassault System's GEOVIA Whittle software. Pit optimisation has been undertaken on an MSO diluted block model (CSA Global, 2020) using appropriate slope angles, process recovery factors, costs and long-term gold price of US$1,250 per troy ounce. Only Measured and Indicated classified Mineral Resources have been considered as ore in the pit optimisation. Inferred Mineral Resources have been considered as waste rock.

The input parameters for the pit optimisation are summarised in Table 16-4. Mining costs are varied related to the level of weathering. Processing costs are dependent on ore type. The slope design parameters are outlined in Table 16-2 and reflect the various geotechnical slope domains and inter-ramp angles. No allowances have been included for haulage ramps as pit access is along the footwall, which is expected to follow the orebody and be shallower than the maximum inter-ramp angles.

Table 16-4: Pit optimisation parameters

Parameters	Units	Input
Macro		
Discount rate	%	7.5
Capacity constraints		
Milling	ktpa	850
Mining	ktpa	3,500
Metal price		
Metal price Au	US$/oz	1,250
Selling costs		
Concentrate grade	g/t Au	600
Off-site concentrate costs (Freight, treatment, penalty and refining charges)	US$/dmt conc	435
Au payable deduction	%	2.25
Royalty	%	2.78
Mining costs		
Strongly oxidised	US$/t	3.00
Weakly oxidised	US$/t	3.40
Fresh	US$/t	3.50
Processing costs		
Wall Zone	US$/t ore	16.81
Upper Zone	US$/t ore	15.77
Other costs		
General and administrative	US$/t ore	9.75
IMWF	US$/t ore	7.12
Processing recovery		
Au	%	85
Cut-off – marginal		
Wall Zone	g/t Au	1.1
Upper Zone	g/t Au	1.0
Cut-off – Bulgarian		
Wall Zone	g/t Au	0.8
Upper Zone	g/t Au	0.6

Although lower cut-off grades are required to comply with Bulgarian state mandated cut-off grades (0.8 g/t Au and 0.6 g/t Au cut-off for the Wall Zone and Upper Zone, respectively), the pit optimisation and reporting of results are based on the marginal cut-off unless otherwise specified.

The pit optimisation provides a series of nested pit shells by factoring input revenue estimates. The nested pit shells generated with various revenue factors are analysed on a present value and incremental basis to determine the optimal pit shell to be utilised as a guide to ultimate pit design. Smaller nested pit shells are also useful as a guide to stage or phase the pit design.

The pit optimisation results were used to guide the ultimate pit design and pit limits. The pit optimisation analysis is based on a gold price of US$1,250/oz and results are illustrated in Figure 16-2. Ore material is above the marginal cut-off grade, whilst low-grade material is between the Bulgarian and marginal cut-off grades. The pit shell with a revenue factor (US$1,400) was selected to guide the engineered pit design. Summary pit optimisation results for select revenue factor pits are shown in Table 16-5.

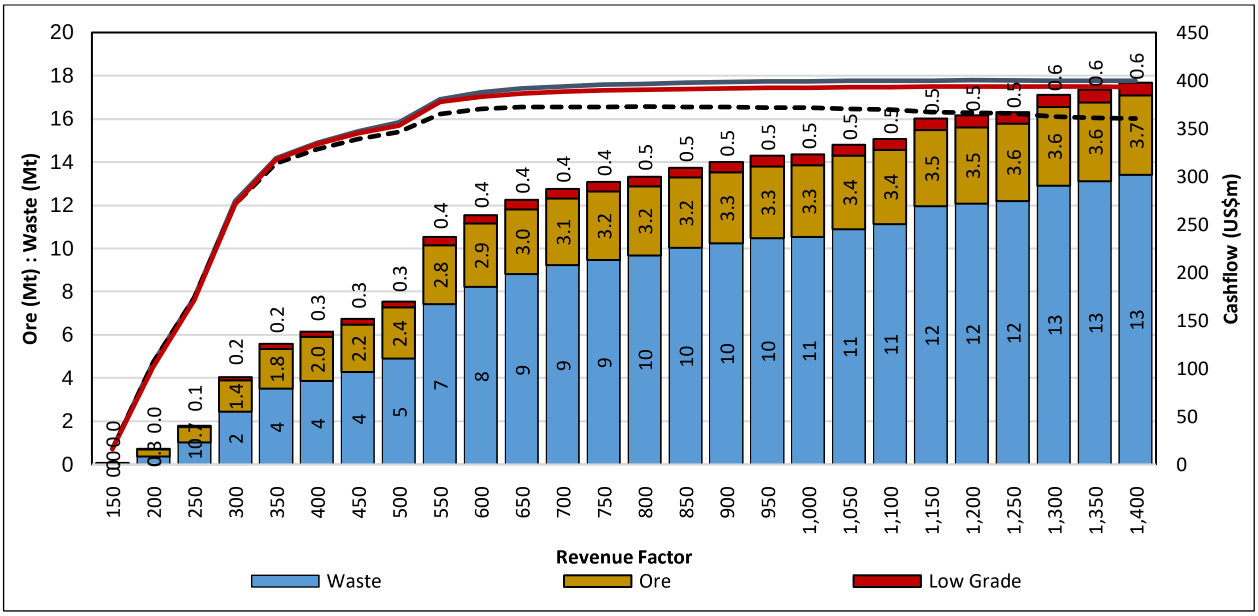


Figure 16-2: Open pit optimisation results, Source: DPM, 2020

Table 16-5: Pit optimisation results – selected revenue factors. The pit shell with a revenue factor (US$1,400) was selected to guide the engineered pit design.

Scenario parameters	Units						
Pit	**#**	**5**	**9**	**15**	**21**	**23**	**26**
Revenue factor	**%**	**28%**	**44%**	**68%**	**92%**	**100%**	**112%**
	US$/oz Au	**350**	**550**	**850**	**1,150**	**1,250**	**1,400**
Ore							
Total	kt	1,842	2,755	3,248	3,520	3,563	3,670
	g/t Au	7.38	6.36	5.88	5.61	5.56	5.47
	g/t Ag	4.10	3.70	3.52	3.41	3.39	3.35
	koz Au	437	563	614	635	637	645
	koz Ag	243	327	367	386	388	395
Physicals							
Rock	kt	5,348	10,162	13,280	15,481	15,768	17,086
Waste	kt	3,507	7,408	10,032	11,961	12,205	13,417
Stripping ratio	kt:kt	1.9	2.7	3.1	3.4	3.4	3.7
Ore	kt	1,842	2,755	3,248	3,520	3,563	3,670
Recovered metal							
Au recovery	%	85%	85%	85%	85%	85%	85%
Ag recovery	%	60%	60%	60%	60%	60%	60%
	oz Au	371	478	522	540	542	548
	oz Au	146	196	220	231	233	237
Bulgarian cut-off							
Upper Zone	kt	218	357	433	496	502	531
	g/t Au	0.79	0.79	0.79	0.78	0.78	0.78
	g/t Ag	0.85	0.88	0.89	0.91	0.91	0.91
	koz Au	6	9	11	13	13	13
	koz Ag	6	10	12	15	15	16
Wall Zone	kt	6	16	29	40	44	47
	g/t Au	0.93	0.93	0.93	0.92	0.92	0.92
	g/t Ag	1.04	1.07	1.16	1.17	1.20	1.21
	koz Au	0	0	1	1	1	1
	koz Ag	0	1	1	2	2	2

16.4 Pit Design

The selected economic pit shell was used to drive the pit design work. The pit design was checked against the Whittle shells to ensure they match reasonably well. The design difference is minimal with less than 3% loss in ore and less than 1% change in total tonnage. This is considered reasonable considering the requirement for ramps and other practical mining considerations.

The ultimate and phase pits were designed following the slope geotechnical criteria and selected pit shell. Four phased pushbacks were used for the LOM plan. All pits were designed on a 5 m mining height. The ultimate pit was designed with 15 m bench heights and 7.5 m berm widths following the slope design guidelines reported in Table 16-2 (above). The interim northern pit walls in the initial three pushbacks were designed with 10 m bench heights as shown in the parameters listed in Table 16-3 (above).

The operating pit design parameters are listed in Table 16-6. Road and ramp parameters have been designed for Caterpillar ("CAT") 770G rigid trucks and CAT 745C articulated dump trucks which are currently used on site.

Table 16-6: Pit design parameters

Parameter	Units	Value
Haulage width	m	20
Max in-pit ramp gradient	%	10
Minimum mining width	m	25
Pushback width	m	150

The ultimate pit stage is illustrated in Figure 16-3 with the four pit phases in Figure 16-4. The pit is approximately 350 m in width and 580 m in length at its widest points and 125 m in depth.

The mining operation is planned to be carried out via three intermediate and a final fourth pushback (Phases 1 to 4). Mining of the pushbacks is developed towards the north, reaching the final design limit in the south, east and west for each of Phases 1 to 3 (Figure 16-4). The final pit is up to 115 m deep and has a width at surface of more than 350 m. The elevation of the deepest bench in the fourth pushback is 340 mRL and the maximum elevation of the pit benches is 455 mRL.

The pushbacks are designed with 20 m-wide ramps to allow more space at the bottom of the pit. The pit ramp exits the pit at the southwest edge.

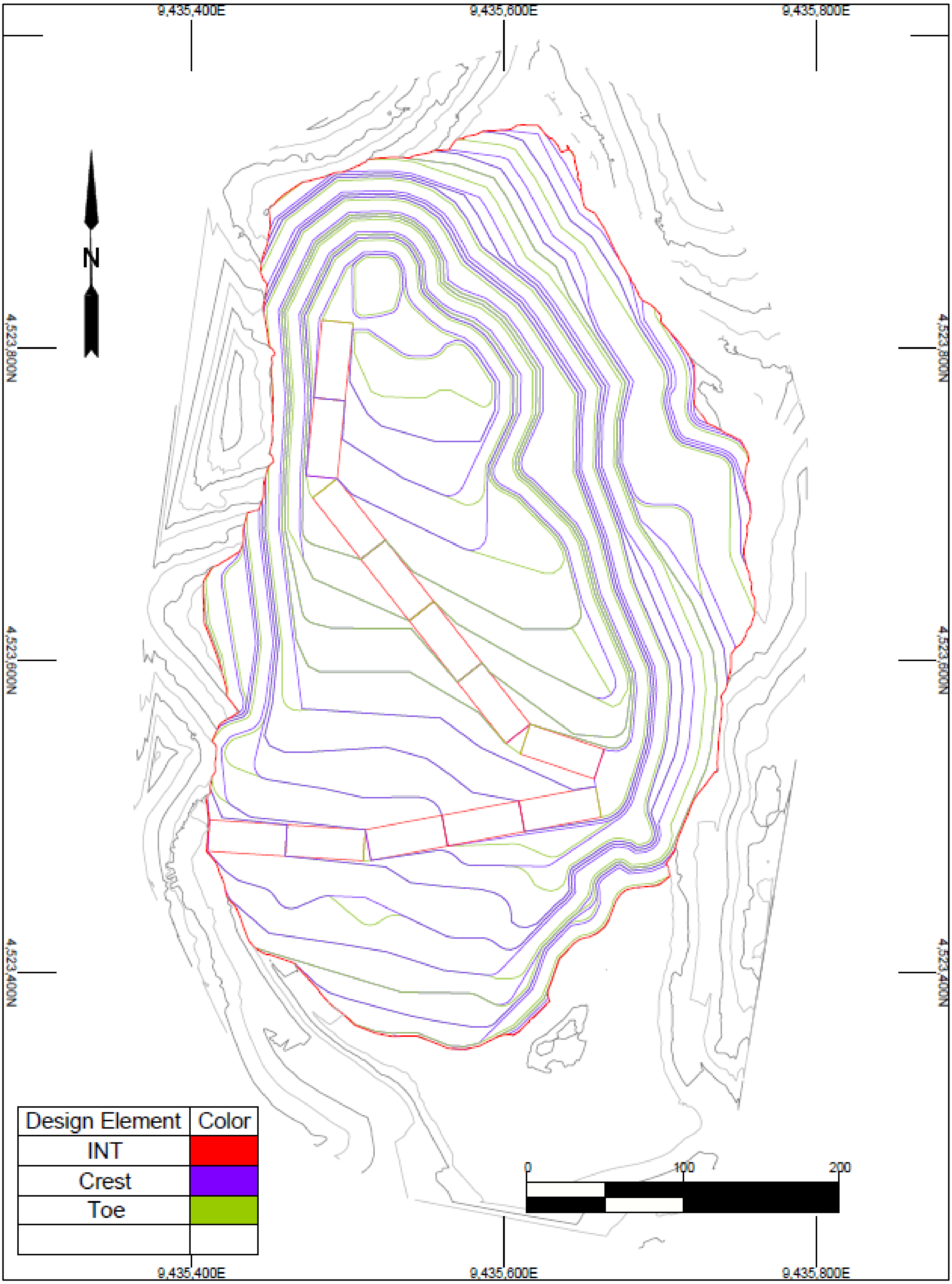


Figure 16-3: Open pit design – ultimate pit

Source: DPM, 2020

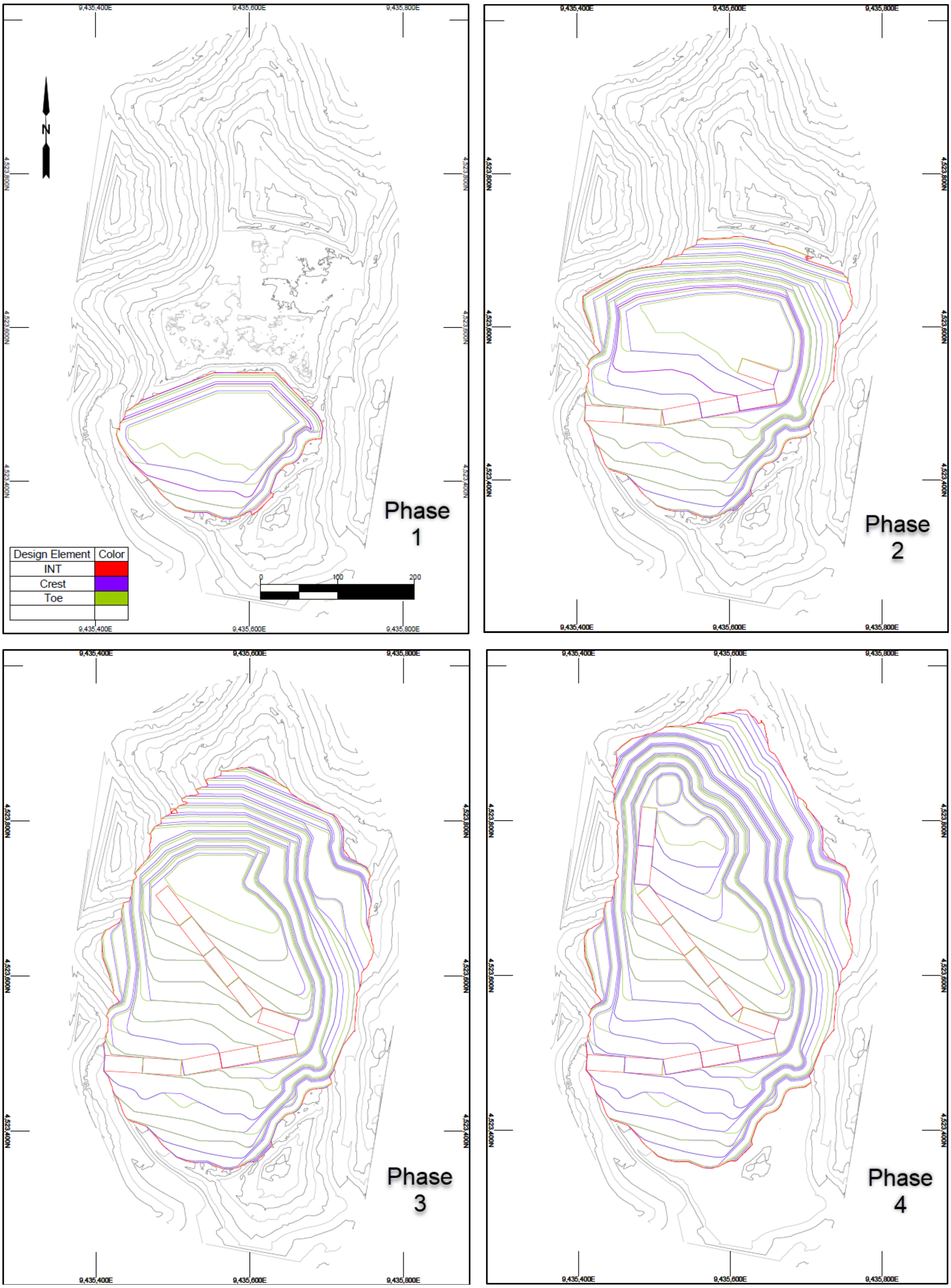


Figure 16-4: Open pit design – phase 1 to phase 4

Source: DPM, 2020

16.5 Production Scheduling

The LOM plan mill feed tonnage and grade estimates are based only on Measured and Indicated Mineral Resources. Inferred Resources are included in the waste rock quantities. The LOM production schedule is constrained by shovel (500 tph) capacity with additional constraints summarised in Table 16-7 on an annual basis. The key objective for the schedule is to meet the mill feed target while utilising the available shovel loading capacity. Stockpiling of lower-grade ore is used to bring forward high grade mill feed.

Table 16-7: Mine planning constraints

Planning parameters	**Units**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
CAT 352F							
Fleet size	#	2	2	2	2	2	2
Weekdays	days	260	260	260	262	261	261
Weekends	days	105	105	105	104	104	104
Hours per day	hours	16	16	16	16	16	16
Available hours	hours	4,160	4,160	4,160	4,192	4,176	4,176
Availability	%	90%	90%	90%	90%	90%	90%
Utilisation	%	80%	80%	80%	80%	80%	80%
Work hours	hours	2,995	2,995	2,995	3,018	3,007	3,007
Productivity	tph	500	500	500	500	500	500
Loading capacity	**kt**	**2,995**	**2,995**	**2,995**	**3,018**	**3,007**	**3,007**

The production schedule is down in Table 18-8. The schedule is shown from January 2021, with Phase 1 and Phase 2 mined first, followed by Phase 3 and Phase 4. Approximately 475 kt of ore at 3.80 g/t Au and 2.52 g/t Ag is forecasted to be mined from August to December 2020 and is not shown in the schedule below.

Phase 1 will be completely mined out in Q1 2022 and Phase 2 will be completed in 2024. In 2022, approximately 221 kt of rock is mined from the upper benches of Phase 3 and Phase 4 pits to allow for sufficient mining space. Phase 3 pit will be completely depleted in Q2 2025 leaving only Phase 4 to feed the mill.

Table 16-8: Production schedule summary – annual

LOM Plan	Units	2021	2022	2023	2024	2025	2026	Total
MINE								
Wall Zone	**kt**	**343**	**222**	**447**	**307**	**277**	**109**	**1,706**
Au	g/t	8.31	7.45	7.91	5.35	4.32	5.46	6.73
Ag	g/t	4.19	4.51	4.89	3.80	3.22	3.58	4.15
Metal – Au	kg	2,849	1,658	3,541	1,644	1,198	595	11,485
Metal – Ag	kg	1,436	1,003	2,187	1,166	894	390	7,076
Upper Zone	**kt**	**680**	**420**	**266**	**203**	**340**	**170**	**2,079**
Au	g/t	3.50	3.36	3.76	4.62	2.91	2.64	3.45
Ag	g/t	2.07	2.02	2.30	2.48	2.37	2.54	2.22
Metal – Au	kg	2,383	1,413	999	938	988	450	7,171
Metal – Ag	kg	1,408	850	610	503	807	433	4,610
Total mined ore	**kt**	**1,023**	**643**	**713**	**510**	**617**	**279**	**3,785**
Au	g/t	5.12	4.78	6.37	5.06	3.54	3.74	4.93
Ag	g/t	2.78	2.88	3.92	3.27	2.76	2.95	3.09
Metal – Au	kg	5,232	3,071	4,540	2,582	2,187	1,045	18,656
Metal – Ag	kg	2,843	1,853	2,797	1,669	1,701	823	11,687
Milled ore	**kt**	**882**	**749**	**749**	**679**	**617**	**279**	**3,955**
Au	g/t	5.29	5.07	6.22	4.09	3.54	3.74	4.84
Ag	g/t	2.90	2.95	3.80	2.79	2.76	2.95	3.04
Metal – Au	kg	4,666	3,797	4,661	2,777	2,187	1,045	19,133
Metal – Ag	kg	2,554	2,206	2,849	1,893	1,701	823	12,026
Gold-silver concentrate produced	**dmt**	**6,652**	**5,488**	**6,707**	**3,958**	**3,100**	**1,479**	**27,384**
Au recovery	%	85.53	86.7	86.3	85.5	85.1	84.9	85.88
Ag recovery	%	61.15	62.0	62.9	55.1	51.9	51.8	58.81
Metal – Au	kg	3,991	3,293	4,024	2,375	1,860	887	16,431
Metal – Ag	kg	1,562	1,368	1,792	1,042	883	426	7,073
Au	g/t	600	600	600	600	600	600	600
Ag	g/t	235	249	267	263	285	288	258
METALS								
Gold (troy oz)	**koz**	**128**	**106**	**129**	**76**	**60**	**29**	**528**
Silver (troy oz)	**koz**	**50**	**44**	**58**	**33**	**28**	**14**	**227**
Waste mined (t)	kt	1,983	2,332	2,276	2,488	2,374	392	11,844
Total material (t)	kt	3,005	2,975	2,989	2,998	2,991	671	15,629
Strip ratio (t:t)	t:t	1.94	3.63	3.19	4.88	3.85	1.40	3.13

The pit progress maps are illustrated below, between Figure 16-5 and Figure 16-8.

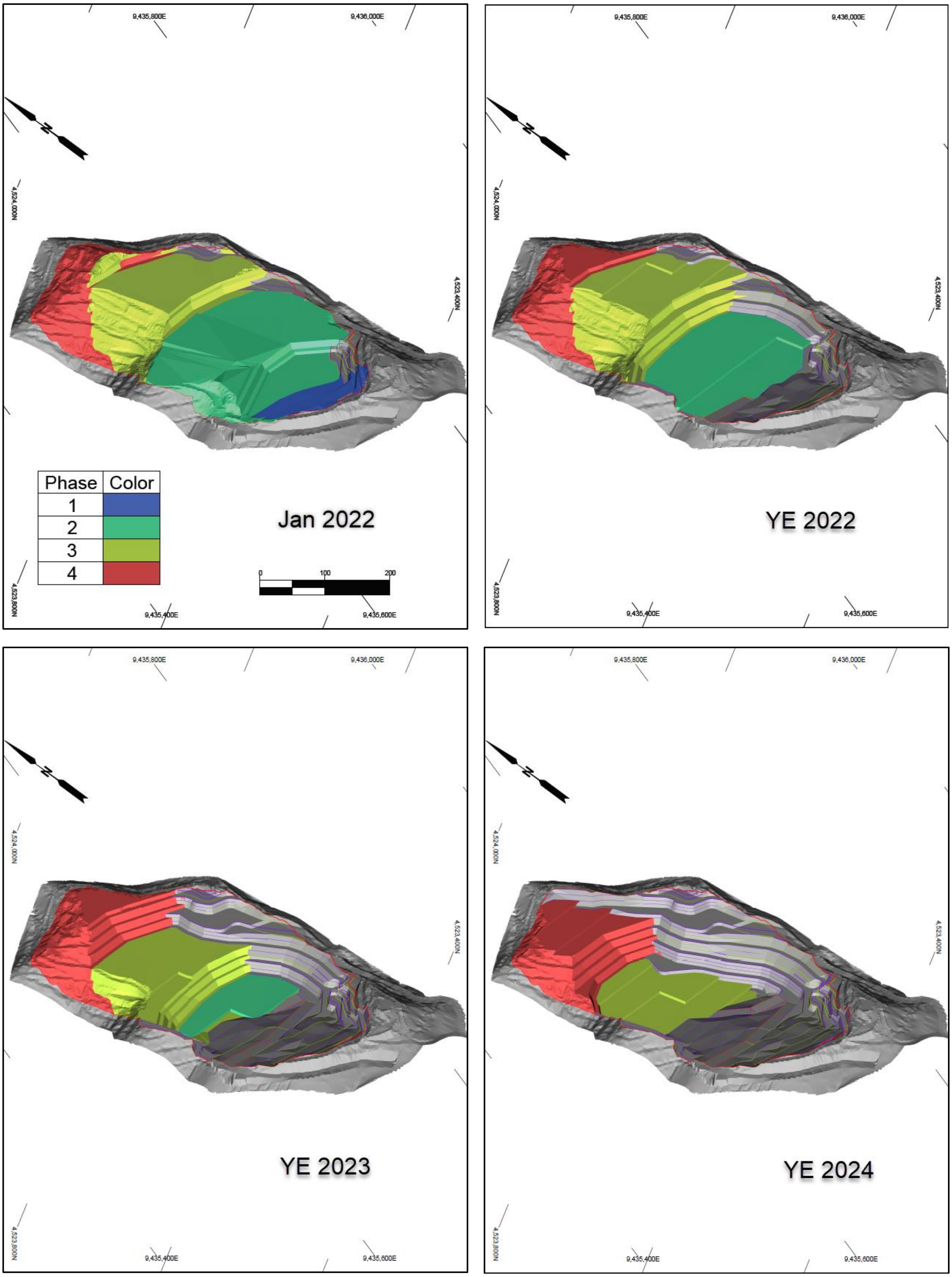


Figure 16-5: Annual period progress maps YE 2021 to YE 2024 (isometric view)
Source: DPM, 2020

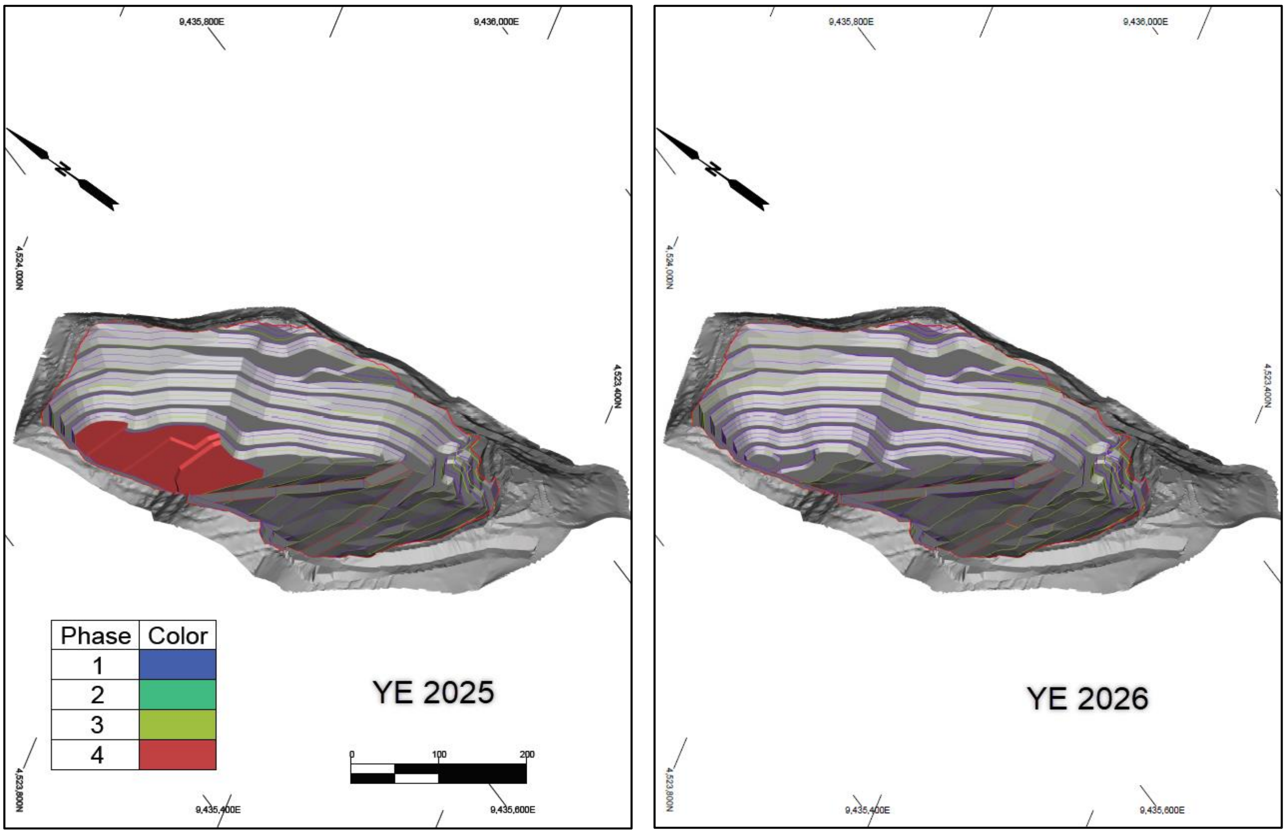


Figure 16-6: Annual period progress maps YE 2025 to YE 2026 (isometric view)
Source: DPM, 2020

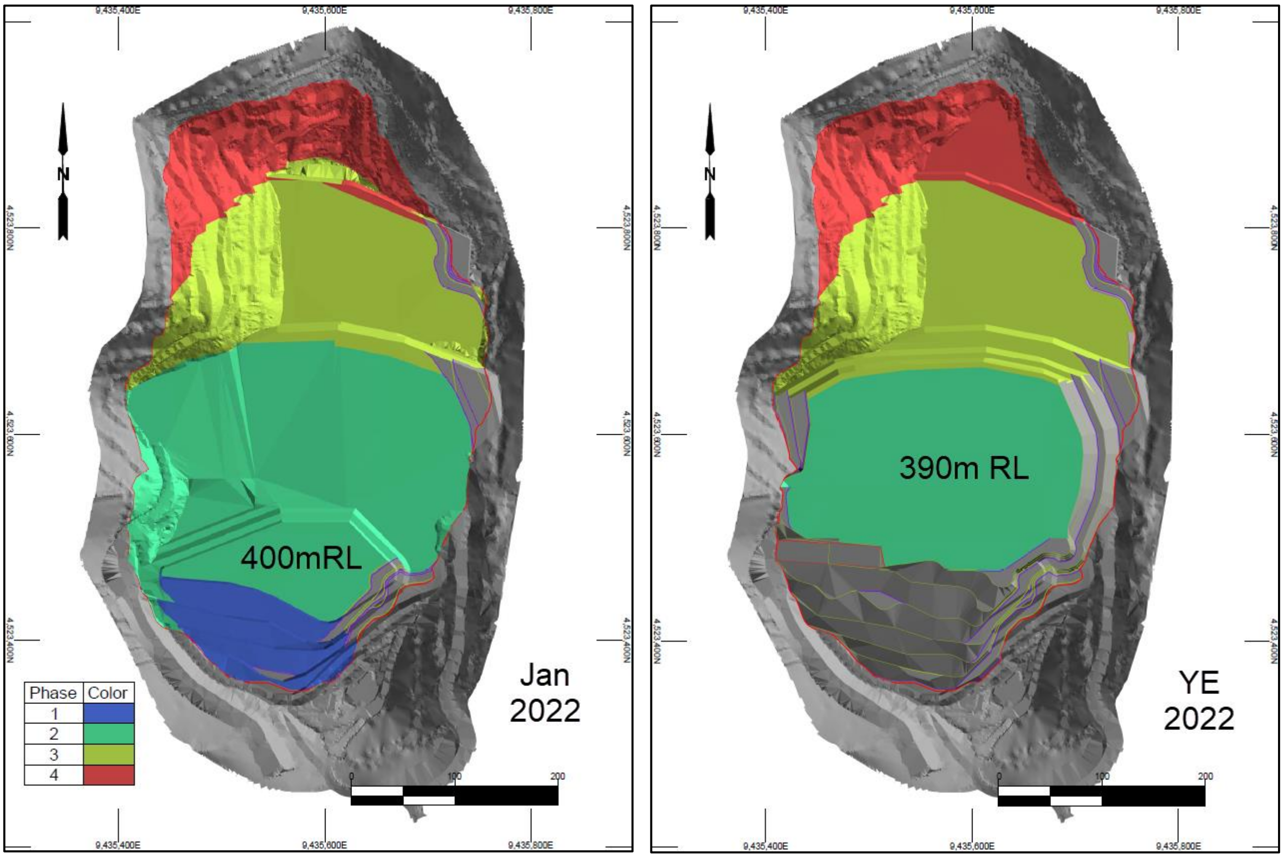


Figure 16-7: Annual period progress maps YE 2021 to YE 2022 (plan view)
Source: DPM, 2020

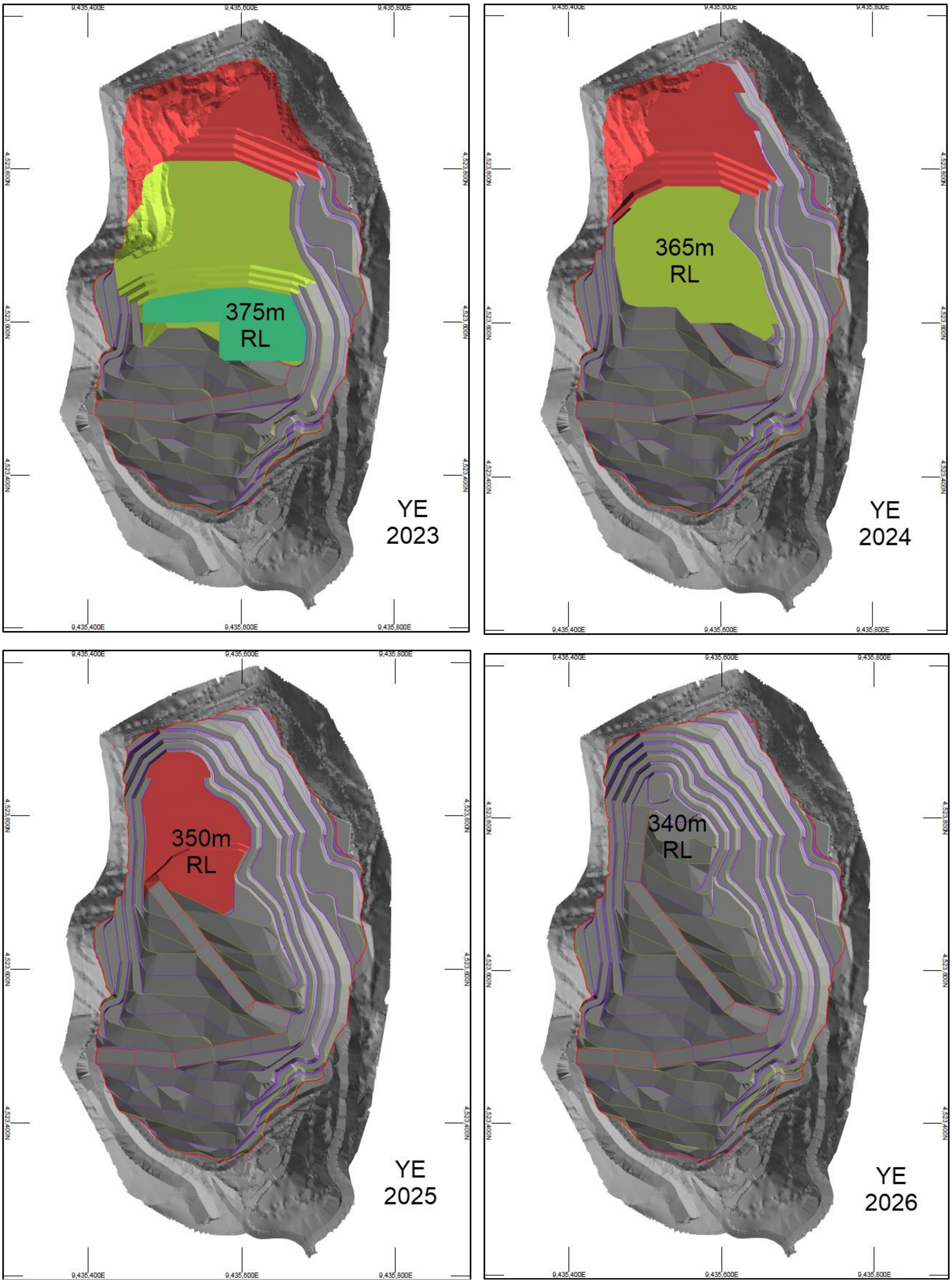


Figure 16-8: Annual period progress maps YE 2023 to YE 2026 (plan view)
Source: DPM, 2020

17 Recovery Methods

17.1 Recovery Methods and Process Design - Introduction

The 2012 mining study project described a mine and process facility with design treatment rates of nominal 0.85 Mtpa and 1.1 Mtpa. The process flowsheet incorporated a relatively fine (P_{80} of 30 µm) primary grind, recovery of the precious metals by flotation, and the tailings being thickened and co-deposited with the mining waste in an IMWF. No changes were made to the original concepts; however, the base assumptions for each of different components were interrogated to ensure the optimum production through the life of the operation.

The mine plan was optimised to advance the processing of the wall ore (the highest-grade material, but also the hardest) as much as practicable (Section 16). An iterative series of plant trade-off studies based on this occurred throughout the design optimisation phase in 2012 between DPM's project consultants, AMEC Engineers, and the owner's team. The outcome formed the basis for the final design (Macromet, Process Design Review, April 2013), and this sought to minimise the equipment requirements while maximising the production profile throughout the life of the operation. All aspects of the project were considered in this process which has enabled the plant equipment and overall infrastructure requirements to be optimised. From the engineering perspective, the requirement to achieve the relatively fine primary grind from the relatively hard ore types present presented several challenges and were the subject of considerable study during the design phase.

17.2 General Design Basis

The Ada Tepe process plant and associated service facilities handles ROM ore from the mine and produces a gold-bearing concentrate for shipment to a smelter. The process encompasses crushing and grinding of the ROM ore, followed by froth flotation to produce a gold-bearing concentrate. Tailings is thickened to a sufficient density to enable deposition in the IMWF.

The process plant design is based on a metallurgical flowsheet with unit operations that are well proven in mineral processing operations worldwide. The key criteria for equipment selection have been the suitability for duty, reliability, and ease of maintenance. The plant layout provides ease of access to all equipment for operating and maintenance requirements while maintaining a compact footprint.

The key project and ore-specific criteria for the plant design are:

- Treatment of a maximum of 0.85 Mtpa of ore for each year of operation.
- Operation of the crushing plant on a 12 hours per day basis; mill operations on a 24 hours per day basis. Surge capacity is provided in a 3,000-tonne capacity silo located between the circuits.
- Design plant availability of 91.3% with standby equipment in critical areas.
- Sufficiently automated plant control to minimise the need for operator interface on a continuous basis but allow manual override and control if required

17.2.1 Design Criteria Summary

The important design parameters used as the basis of the plant unit processes are summarised in Table 17-1 (Ref. Process Criteria Document – KGP100-2000-1100-DSC-0001).

Table 17-1: Ada Tepe – process design criteria

Criteria		Units	General	
Ore throughput	Maximum annual	tpa	850,000	
Design recovery (range)	Master composite basis	Au %	85.0 (83.5 - 88.7)	
		Ag %	70.0 (54.6 - 77.8)	
Primary grinding	Grind size, P_{80}	µm	30	
Flotation circuit – stages	Rougher/Scavenger	stages	8	
	First cleaner, cleaner scavenger	stages	9	
	Second cleaner	stages	4	
Concentrate regrind	Grind size, P_{80}	µm	15	
Final concentrate	Design	g/t	200	
	Expected	g/t	650	
			Upper	**Wall**
LOM		t	4,611,315	1,593,000
Plant availability	Design	%	91.3	
	Nominal throughput	tph	105	90
Design feed grades	Gold	g/t	3.7	6.7
	Silver	g/t	2.1	3.5
Physical characteristics	Impact Work Index	kWh/t	12.5	16.1
	Rod Mill Work Index	kWh/t	16.1	22.8
	Ball Mill Work Index	kWh/t	17.0	20.0
	SAG Power Index (range)	minutes	45–96	76–149
JKMRC functions	A and b		49.5 and 1.24	83.5 and 0.35
	Average UCS	MPa	29	117
	Abrasion Index	g	0.28	0.60
Tailings thickening	Thickener flux	$t/m^2.h$	0.641	
	U/F, design solids density	%w/w	56	
	Maximum measured	%w/w		68

17.3 Circuit/Mechanical Equipment Selection

17.3.1 Grinding Circuit

The original comminution circuit design was based upon a conventional SAG/Ball Mill circuit (“SABC”), with a third stage of grinding incorporating a vertical stirred mill – selected to take advantage of the more efficient energy utilisation these types of mill offer compared to conventional ball mill inefficiencies at the finer end of the grind size range.

Several trade-off studies were carried out investigating alternative comminution circuit options. Final selection was a single stage SAG mill in closed circuit with cyclones producing a product P_{80} of 125 µm, followed by two stirred mills operating in parallel. The combination of a conventional SAG and ball mill proved to be the most cost effective (both capital and operating) circuit. Single-stage primary mills are not unusual in this application; however, the successful performance of the single-stage SAG mill at DPM’s Chelopech operation generated a high level of confidence in the approach (Jobson et al., 2012).

Actual plant throughput will be limited by the percentage of the Wall component in the ROM ore feed treated in any one year.

17.3.2 Flotation Circuit

The 2012 mining study design incorporated the flowsheet developed from the extensive test program completed at SGS and the subsequent FLEET circuit modelling program. This specified the equipment required to achieve the predicted metal recovery for the two throughput options being considered for the project at that time. The first iteration of the plant design undertaken in 2012 incorporated the mining study conventional tank cell design for the flotation circuit, which was the base case for the first round of capital cost analysis. One of the subsequent trade-off studies included a layout comparison of the conventional mechanically agitated tank cells to that of and a new style of flotation cells marketed by Woodgrove Technologies known as the Staged Flotation Reactor ("SFR").

In parallel to the Ade Tepe testwork program, DPM incorporated a production size unit of an SFR into the current Chelopech cleaner circuit in mid-2012. This offers some significant advantages over conventional "tank" cell designs, including reduced floor area requirement, reduced circuit operating costs (power and air demand), together with some process advantages in most applications (Woodgrove Technologies, February 2013).

Because of overall site layout restrictions space in the plant area was at a premium, and the study outcome confirmed some of the advantages claimed, but of particular importance to the project was the potential reduction in floor area (approximately 30% of the original flotation circuit footprint), DPM elected to continue with the SFR approach and these units have been incorporated in the final design.

17.4 Process Plant

17.4.1 Process Flowsheet

The overall process flowsheet is illustrated in Figure 17-1.

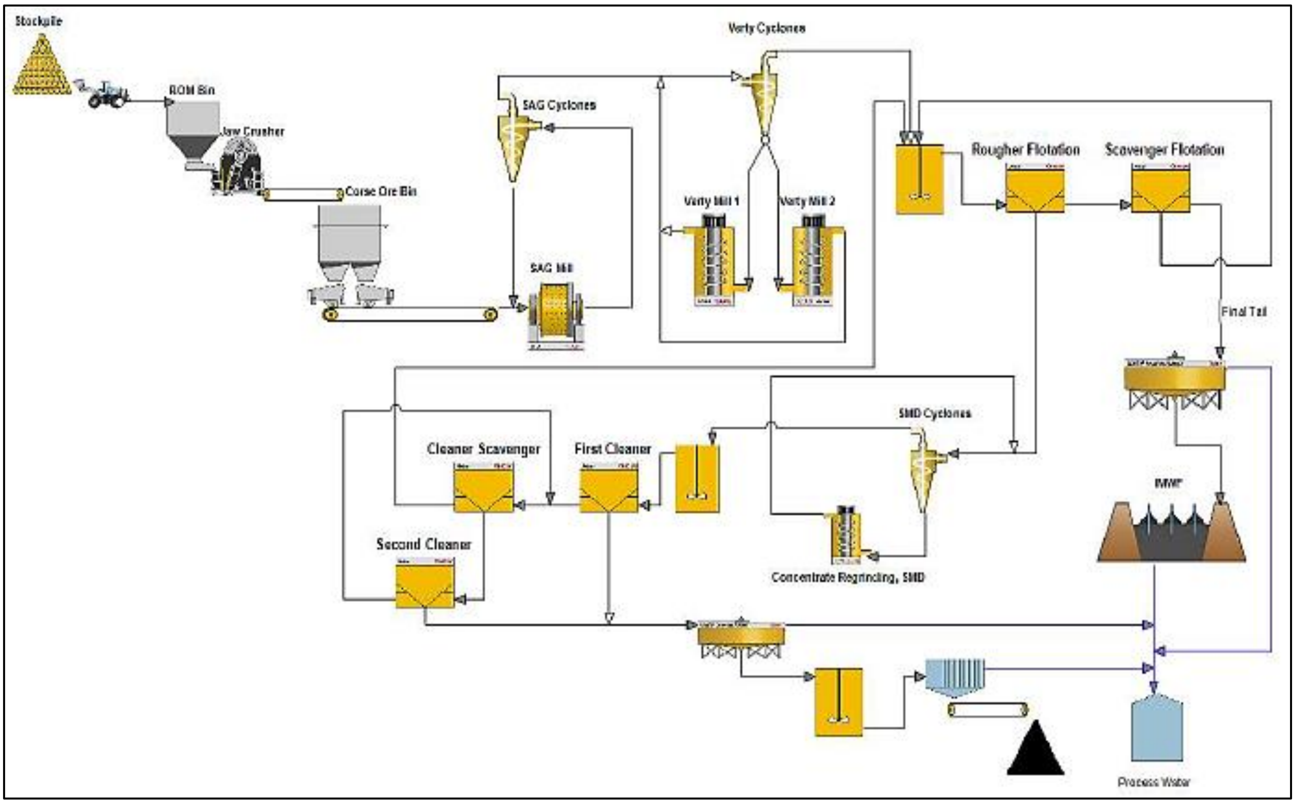


Figure 17-1: Overall plant flowsheet
Source: DPM, 2020

17.5 Process Description

The Ada Tepe processing facility was designed to recover very fine free gold and silver from oxide host rock by flotation to a high-grade concentrate for off-site precious metals refining.

Two main ore types are present within the orebody (i.e. Upper Oxide and Wall), where the latter represents a much lower proportion of mill feed tonnes but at considerably higher precious metals grades. Some general LOM average characteristics of the two ore types employed for the process plant design are summarised in Table 17-1.

The information presented in Table 17-1 indicates that the silicified Wall material is considerably harder and much more competent than the brecciated Upper Oxide ore types. Whilst the Wall ore type represents around 20% of total mined tonnes, the higher-grade results in that ore type representing approximately 33% of the total feed gold content. Current mining production is limited to Upper Oxide material only, and Wall ore is not due for introduction to the plant until early 2021.

In general, the process plant is designed to be operated under the following conditions:

- Primary crushing of ROM ores to a design P_{80} size of 110 mm with subsequent crushed ore storage in the Coarse Ore Bin with 24 hours live capacity. The crusher is designed to operate for 12 hours per day at 80% utilisation for a throughput rate of 263 dry tph.
- The grinding and flotation circuits are designed to operate for 8,000 hours per annum, which is equivalent to 91.3% overall utilisation. Due to the quite different comminution characteristics of the two mined ore types, varying proportions of each during the LOM and a capital cost reduction exercise completed during April 2013, a variable range of grinding circuit throughputs was adopted for the final design. Depending upon the proportion of the harder Wall material, the design grinding circuit throughput ranges from 105 tph (~99% Upper Oxide) to 90 tph (~36% Wall) and varies for every month of operation over the eight-year mine life.
- Crushed ore is reclaimed to a single-stage Metso SAG milling circuit equipped with pebble crushing (SAC). The SAG mill is a 6.71 m (22’) diameter by 3.96 m (14’) EGL unit equipped with a 3,000 kW (6.6 kV) variable speed drive (“MVVVF”) motor. The SAG mill is designed to operate within a ball charge envelope of 6% to 15% and reduce the 110 mm F80 material to a P_{80} size of 125 µm in closed circuit with the Primary Classification bank of six 400 mm hydrocyclones (four operating).
- SAG mill discharge is screened and washed via a trunnion mounted trommel to produce a feed stream to the pebble crushing circuit. The pebble crusher is a Sandvik CH320 hydroset type cone crusher designed to reduce 30% of the SAG mill feed throughput to a P80 size of 13 mm for recycle to the SAG mill via the feed conveyor system.
- SAG milling circuit cyclone overflow reports to a vibrating trash screen where the undersize is directed to the Primary Regrind Classification system, a bank of twelve 250-mm diameter hydrocyclones (nine operating). The system cyclone overflow, at a design P_{80} size of 30 µm, is directed to the Rougher flotation circuit. The underflow stream is gravity transferred to two Metso vertimill 1250WB regrind mills (932 kW installed each) operating in parallel and with mill discharge streams recycled to the classification feed system in closed circuit.
- Primary regrind circuit cyclone overflow is transferred to the rougher flotation circuit comprised of a conditioning tank, four rougher SFRs operating in series and flotation tails and concentrate pumping systems.
- The rougher tail stream is transferred to the scavenger flotation circuit which is comprised of four SFRs and associated tails and concentrate pumping equipment. The general, design and separate nature of the two vessels for the SFRs is illustrated in Figure 17-2. Scavenger concentrate is recycled to the head of the rougher flotation circuit whilst the tail represents the final waste stream of the flotation circuit and is directed to the final tailings thickening area.
- The rougher concentrate stream reports to the Concentrate Regrind Classification system comprised of a bank of five 150 mm diameter hydrocyclones (two operating). The system cyclone overflow, at a design

P_{80} size of 15 µm, is directed to the Cleaner 1 flotation circuit. The underflow stream is gravity transferred to a Metso Stirred Media Detritor (SMD-355-E) regrind mill (355 kW installed) with the discharge from this mill returned to the classification feed system in closed circuit.

- The Cleaner 1 flotation circuit is comprised of a Conditioning Tank and two SFRs operating in series. The combined concentrate forms part (50% design) of the final concentrate stream and the tails is directed to the Cleaner Scavenger flotation circuit.
- The Cleaner Scavenger flotation circuit is comprised of five SFRs operating in series with the concentrate stream reporting to the Cleaner 2 flotation circuit and the tails recycled to the Rougher Conditioning Tank.
- The Cleaner 2 flotation circuit is made up of four SFRs operating in series with the concentrate combined with the Cleaner 1 concentrate to form the final concentrate and is transferred to the Concentrate Thickener. The Cleaner 2 tail stream is recycled to the cleaner scavenger flotation circuit feed.
- The 4 m diameter high rate Concentrate Thickener receives the combined Cleaner 1 and Cleaner 2 concentrate streams, and the underflow is transferred to the Concentrate Filter Feed Tank whilst the thickener overflow stream reports to the process water system. Final concentrate is dewatered to a design moisture content of around 20% via an automated vertical plate pressure filter and packaged as final product in a semi-automated bagging and weighing unit.
- Final scavenger flotation tail is transferred to the Tailings Thickener, a 16.5 m diameter “deep cone” unit fitted with an underflow shearing system to reduce thickened discharge (at a design density of 56% solids) slurry viscosity for easier pumping. Thickener underflow is directed to one of two on-site IMWFs (north and south) for the co-deposition of both mine waste and process plant thickened tailings.
- Several separate water systems are operated over the entire site with process water and raw water the two main processing area water types.
- Several reagents are used to enhance the flotation characteristics of the contained gold, including:
  - Copper sulphate activator ($CuSO_4.5H_2O$)
  - Potassium amyl xanthate (“PAX”) collector
  - Aero 238 Promotor (to be replaced with Aero 209 or similar in 2020 due to recent EU restrictions)
  - Cytec F-549 Frother
  - Sodium silicate dispersant ($NaSiO_2$).

Figure 17-2: Scavenger SFRs
Source: DPM, 2020

The processing facility is controlled by a state-of-the-art Process Control System located in a central Control Room and assisted by closed circuit monitoring cameras ("CCTV"). Associated database historian systems allow for the storage and retrieval of a wide range of Process Control System parameters and manipulation to produce mass-metals.

An image of the Control Room arrangement is shown in Figure 17-3.

Figure 17-3: Control Room overview

Source: DPM, 2020

17.6 Plant Performance

The Ada Tepe process plant was commissioned in April 2019 and ramped up to nameplate production in September 2019. Various production data (from start-up month) for Ada Tepe are available to demonstrate that the plant has achieved nameplate capacity, and design metallurgical performance. Figure 17-4 shows that the Ada Tepe processing facility reached nameplate throughput rate and target gold recovery after only six months into commercial production.

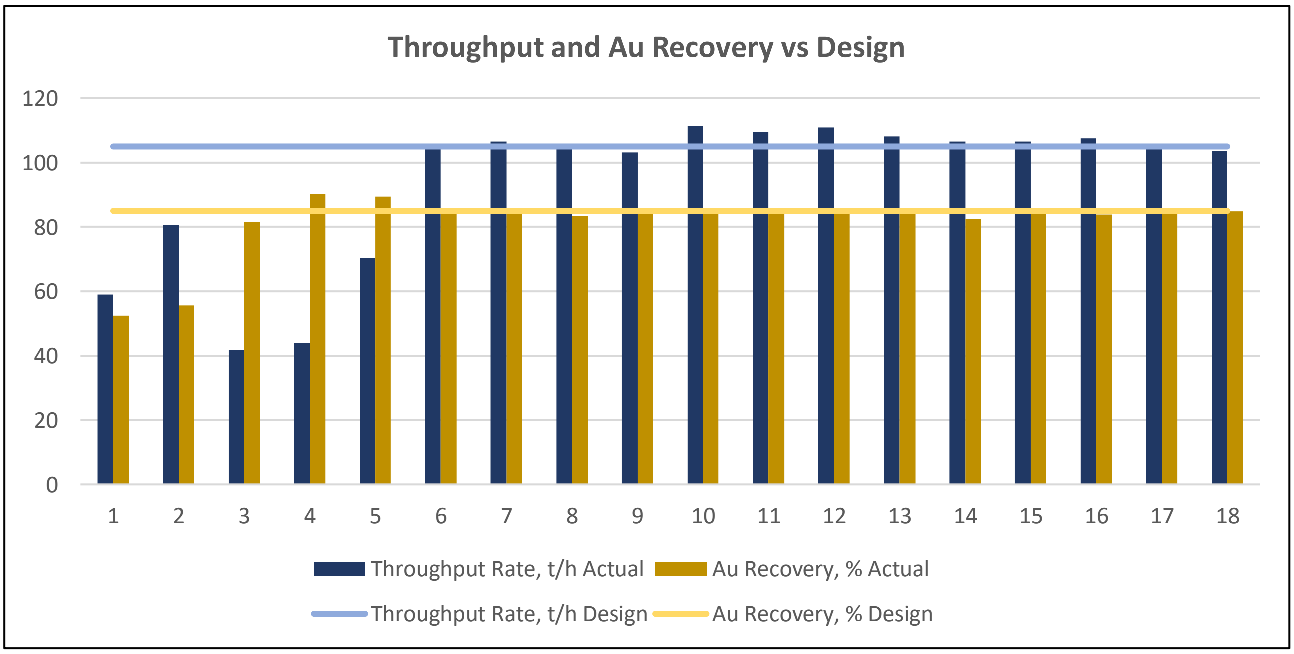


Figure 17-4: Production data

Source: DPM, 2020

A summary of the monthly key performance indicators of the process plant since commissioning are shown in Table 17-2.

Table 17-2: Process Plant key performance indicators

Period	Monthly averages			Feed grade (g/t Au)	Au produced (oz)
	Utilisation (%)	Throughput (tph)	Recovery (% Au)		
Apr–Aug 2019: Ramp-up	67.1	73.1	81.36	4.42	20,443
Sep–Dec 2019: Stable production	94.4	105.0	85.24	4.65	36,750
Jan–Sep 2020	96.0	103.4	84.53	5.04	92,688

The actual plant performance to date, in terms of throughput and gold recovery to concentrate, supports the assumptions used in the current Mineral Resource/Reserve estimate.

17.7 Future Production Performance

Having reached steady state full production, during the second half of 2019, further process plant optimisation opportunities relate to:

- On stream gold analyses for various flotation streams allowing real-time flotation control and optimisation – planned for Q4 2020.
- Advanced process control and further automation of the various circuits – planned for 2021.
- Developing a geo-metallurgical model based on the outcomes of a detailed geo-metallurgy test program for the Ada Tepe deposit which would further increase the ore body knowledge and link it to plant performance. This would allow for further process optimization through improved planning, prediction and control of the mining operation, feed blending and plant control. Planned for 2021.
- Potential flotation circuit modifications to get the most out of the SFRs currently delivering higher than designed selectivity and upgrade ratios.
- Developing a "digital twin" model of the plant that allows economic optimisation of the entire operation in real-time (or near real time) and with the simulation capabilities of digital twin to choose process control best options – planned for 2021/2022.

17.8 Current and Projected Requirements for Energy, Water and Process Materials

The processing power consumption to date has been 45.5 kWh/t and it is expected that this would increase to around 47.5 kWh/t once the harder Wall Zone material is blended into the plant feed in 2021. The main process consumables and reagent consumption to date is shown in Table 17-3. Optimisation initiatives to reduce these consumption rates will likely be offset by blending in the Wall Zone material, resulting in a plant feed of greater hardness, abrasiveness and higher gold grade from 2021 onwards. Freshwater consumption to date of 0.150 m^3/t is expected to remain in that range over the LOM. All the energy and consumable requirements have been included in the operating costs for the LOM financial forecasts (2021 – 2026).

Table 17-3: Reagent and grinding media consumption

Item	Unit	Consumption
Collector	g/t	310
Promoter	g/t	31
Activator	g/t	121
Dispersant	g/t	1 083
Flocculant	g/t	126
Frother	g/t	21
SAG grinding media	kg/t	0,66
Vertimills grinding media	kg/t	1,35

18 Project Infrastructure

18.1 Integrated Mine Waste Facility

18.1.1 Background and Site Selection

The concept of a conventional slurry disposal facility as proposed in the 2005 mining study has been replaced with an IMWF which receives both the thickened tailings and the mine waste rock from the Ada Tepe pit. The tailings storage location was revised to minimise land use and the environmental footprint. Two sites were initially identified for a potential IMWF, located north and south of the open pit, respectively. Preliminary capacity assessments as well as optimisation of the mine and road layout resulted in selection of the south site.

18.1.2 General Description

The IMWF allows the placement of thickened tailings into cells constructed from mine waste rock. The mine waste rock provides strength required for overall stability and also internal drainage. Water reporting to the underdrain is pumped to the Raw and Process Water Reservoir ("RPWR") located southwest of the open pit. The IMWF is constructed within two small valleys, being operated as two separate facilities early in the life of the mine and later merging into a single facility as operations progress. Rehabilitation of the lower slopes of the IMWF has begun during the early stages of mine operation and continues throughout the LOM through to closure.

The IMWF structures required for commencement of mining operations are constructed from the soil and rock excavated to create the platform for the process plant and the roads on the mine site. The mine waste rock is trucked from the open pit to the IMWF, dumped and spread to construct containment cells for the tailings. Tailings is thickened in the tailings thickening plant to the optimum amount and then conveyed by pumps and pipelines to the containment cells. The IMWF is a fully drained facility and will have only short-term superficial surface water ponding at any time during its operation. A system of under-drains has been constructed along the axis of each small surface water channel in the footprint of the IMWF and these drains discharge to one of two sumps located at the toe of the facility.

Assessment of liquefaction potential of tailings has been conducted, showing a stable facility within the required Factors of Safety for both static and pseudo-static/seismic event conditions. The assessment reinforced the requirement for adequate drainage measures within both the tailings and waste within the IMWF, which is currently being executed. The properties of the tailings being generated from the process have been compared against the design testing, and there is ongoing validation through testing of tailings from both the process plant and in-situ.

The IMWF is constructed from the bottom up, with mine wastes placed on starting platforms at the bottom of the valley at approximately 300 m above sea level ("masl") elevation and then progressively built up in benches during the mine life to elevation 440 masl. This allows the lower, completed sections of the facility to be reclaimed and closed progressively during the life of the mining operation.

Given the economic parameters used for the current LOM Plan, 15.6 Mt of mine waste rock and 5.3 Mt of tailings will be stored within the IMWF over eight years during the life of the mine.

A dual reservoir system has been developed which has resulted in the mine being able to adopt a zero-discharge water management strategy. The two reservoirs are the RPWR and the Stormwater Overflow Reservoir ("SWOR"). These two reservoirs are adjacent to each other and have differing functions with regards to water management, these being management of process water and storage of stormwater and pit inflows, respectively.

18.1.3 Closure and Rehabilitation

Closure of the Ada Tepe IMWF will involve conventional practice for mine waste facilities.

Drainage into the IMWF is collected in an under-drain system that prevents the build-up of a water table within the rock and tailings. Water draining from or through the IMWF will exit at the toe of the ravines. During operations, water reporting to the sumps at the toe of the ravines will be pumped to the RPWR prior to clarification for use for mill make-up. Following operations, the chemical and sediment characteristics of the water reporting to the sumps will be monitored. When the discharge is of an acceptable condition, drainage will be allowed to enter the river directly.

The IMWF is constructed from the bottom up, with horizontal benches at 10 m vertical intervals with the intervening slope constructed at 2.5H: 1V. During operations, the external faces of the completed portions of the IMWF can be covered with topsoil and vegetated. This means the majority of the IMWF can be rehabilitated prior to the end of the mining operations.

18.2 Water Management

The water management plan is central to maintaining an appropriate environmental and operational performance for the mine. The principle adopted for site water management is to intercept and divert away water flowing towards operational areas and intercept water in contact with operational areas. This contact water may then be used in the operations or discharged in line with discharge consents. The process plant sources its water mainly from recycle of decant water. Make-up water is taken from a borehole well to located approximately 0.3 km southwest of the process plant near the Krumovitsa River.

The water management plan has been developed to ensure minimum impact on the surrounding community users. To manage the water balance across the site a dual water storage system is used. This system is composed of a RPWR and a SWOR is used to collect and temporarily store water. The dual reservoirs have a capacity of 130,450 m^3.

In wet years where there is an excess of water, a Reverse Osmosis Water Treatment Plant is available. This Reverse Osmosis Water Treatment Plant treats water to Drinking Water Standard (EU/ BG Regulation No. 9, 2001) and discharges downstream of Ada Tepe, 7 km from site.

All surface water within the processing facilities area is collected in a channel that diverts the water into two site water reservoirs, and this water is then be pumped back to the RPWR. The groundwater and surface water reporting to the open pit is collected in a sump and pumped directly to the SWOR. Rainfall that infiltrates into the IMWF and the water expelled from the tailings during consolidation is directed to an underdrain system. These drains discharge to one of the two sumps located at the toe of the facility. The collected water is pumped to the RPWR. The IMWF is a fully drained facility and does not contain a permanent water pond.

Groundwater from the IMWF is intercepted by a Grout Injection Curtain which runs between the IMWF and the Krumovitsa River. The intercepted water is pumped into the adjacent sumps, and then pumped to the RPWR for use in the process.

18.2.1 Water Supply

The water balance is negative on an annual basis. For that reason, a supplementary source of freshwater has been allowed for in the form of a borehole well located southwest of the process plant near the Krumovitsa River, and all rainfall runoff and consolidation water from the IMWF is captured and recycled.

18.3 Communications

The mine site is linked to the public network in the town of Krumovgrad using a fibre optic cable which supports both data and voice communications. A repeater system provides the infrastructure to enable hand-held and mobile radio sets to communicate around the site.

18.4 Access Road and Processing Plant Construction

The access road to the processing plant is an existing secondary paved road approximately 2 km in length which runs from Zvanarka through Pobeda, two small villages located near by the site. This secondary road connects with the main road leading to the town of Krumovgrad. In anticipation of increased traffic on the section of the secondary road between Zvanarka and Pobeda, seven pull-over areas are incorporated into the existing road to facilitate vehicle passing. The road has been upgraded to accommodate heavy vehicles. A second portion of the access road from the paved road to the processing plant follows an existing road for approximately 950 m. This new portion of the road has been widened and sealed to minimise dust emission.

On site a 950 m long road connects to an exit of the mine open-pit and provides access to the crusher area. The main section of this road is comprised of a 20 m wide running surface with 2 m high x 3 m wide berms located on the down slope side of the road.

The IMWF access roads provide access from the open pit to the two embankment dams. One road is 1.9 km length and connects the open pit with the north embankment construction site. A second road, 760 m long, connects to the south embankment construction. It has been surfaced with gravel, maintained by frequent grading and sprinkled with water for dust control as necessary.

18.5 Effluent

Sewage from the various plant site buildings is dealt with by means of a packaged Tertiary Wastewater Treatment System. Waste such as hydrocarbons from equipment maintenance and chemical waste from the laboratory is stored and collected by contractors who remove from site and dispose of in accordance with the applicable regulations. Office waste and waste from the meals areas is collected by a Municipal company that disposes of the waste materials in a solid Municipal landfill site.

18.6 Fuel Storage and Distribution

Diesel fuel is supplied to process equipment, light vehicles, the mining fleet and mobile plant and equipment. All fuel required at the plant site is delivered in tanker trucks by commercial suppliers. Light vehicles equipped with small tanks are available for refuelling mobile equipment on location. The fuel storage area is bunded to prevent spillage of fuel contaminating the site area or watercourses. Minor quantities of petrol required are obtained from local fuel distributors.

18.7 Vehicle Washdown Facilities

A vehicle washdown facility exists adjacent to the diesel fuel refuelling area. It comprises of a bunded concrete slab sloping to a settling sump. Captured rainfall and diesel spillage from the adjacent diesel refuelling facility are also directed to this sump. A sump pump transfers dirty water to an oil/water separator.

18.8 Power Supply and Reticulation

The plant electrical power is supplied by a local power authority via an underground high voltage cable supplied from the local Krumovgrad 110 kV/20 kV substation. A 20-kV main substation is established at the plant site to facilitate power distribution to various areas within the plant. Within the main substation, a tariff metering system has been established to allow for reading of whole of plant power consumption.

18.9 Buildings

Infrastructure buildings are classified as either architectural, control rooms or industrial. Architectural buildings include administration offices and ablution facilities. Control rooms include the crusher control room and the main process plant control room. Industrial buildings include workshops, warehouses and buildings that house process equipment.

The assessment of building requirements has been based on the number of personnel required in each area and the functions required in each area. These buildings are constructed of steel, reinforced concrete, blockwork, or brick. Roofing and cladding are made using corrugated steel and elevated floors from steel or reinforced concrete. Local construction materials have been used to the maximum extent possible.

18.10 Fire Protection

Fire protection consists of the provision of fire hydrants, sprinklers, fire hose reel cabinets and fire extinguishers placed strategically around the facilities in accordance with the requirements of the relevant regulations. Firefighting water is supplied from a dedicated volume in the freshwater reservoir. Water is gravity fed to firewater pumps at the process plant. Jockey, duty and diesel-powered standby pumps are provided.

Various types of fire extinguishers are provided in areas where water as a means of fire control is undesirable. These include motor control centres and control rooms.

18.11 Security

All persons entering the Process Plant and mine facilities areas are required to pass through the continuously manned boom gate adjacent to the administration building on the access road. Security guards located within the administration building control all entry and exit of vehicles and personnel. Search and inspection of personnel, bags and items leaving the plant is carried out at this facility.

A stock fence has been constructed around the operation's facilities including the process plant, Integrated Mine Waste Facility, mine, RPWR and SWOR. Additional secondary fencing has been constructed around the SWOR and Emergency Disposal Pond. Security fencing with lockable access gates is installed locally around the remote pumping facilities and electrical facilities.

Additional security fencing has been placed around the process plant yard where the concentrate is stored and additional access permissions enforced. All security fencing around the key areas is 2.4 m high wire chainmesh (cyclone type) fencing with four-strand barbed wire.

19 Market Studies and Contracts

19.1 Contracts

A contract is in place for Ada Tepe concentrates for 100% of production until the end of 2024.

Gold concentrate has been produced steadily for over 1 year and the quality has been approved by several smelters following the receipt and processing of trial lots. These trial lots were arranged as part of a competitive bidding process with several smelters to determine the best arrangement for DPM. As an outcome of this process, DPM secured a multi-year agreement for the sale of 100% of concentrate production from Ada Tepe and, therefore, concentrate sales are fully in place for the next several years. Commercial terms, including payable metals, treatment charges, refining charges and any penalties that may be applicable, are fixed over this period. These terms are market-based and within industry norms, having been established as part of the competitive process.

Logistics agreements are in place to deliver the concentrate from Ada Tepe to the customer with rates within the normal range for these types of agreements. DPM does not hedge a material quantity of its production. A prepaid sales transaction was put in place several years ago against a portion of the Ada Tepe production and the Company is currently delivering gold credits against this prepaid sales arrangement, which will be completed in December 2020.

19.2 Markets

Markets for gold concentrates produced by the Ada Tepe Mine are readily available.

Following the expiration of this agreement, DPM expects that it will be able to secure a contract or contracts for Ada Tepe concentrates over the remaining mine life at similar terms and conditions. This expectation is based on DPM's knowledge of the market for this product and the terms received from various customers for during the competitive process outlined above. Gold concentrates can be sold to copper smelters and there is abundant demand for this type of material.

Gold prices used in the model use DPM's internal price outlook, which is based on consensus market price forecasts.

The Qualified Person supports this assumption.

20 Environmental Studies, Permitting and Social or Community Impact

20.1 Environmental Impact Assessment

Under Bulgarian environmental regulations, the mining projects are required to comply with an EIA process as a key part of project permitting. The content and depth of the EIA is compliant with the Bulgarian Environmental Protection Act. The Bulgarian environmental legislation is fully harmonised with the EU one.

The EIA systematically assesses project impacts in relation to the physical, biological and human environmental components, taking account of activities that take place during the construction, operation and closure phases. Consideration was also given to alternative options for technology (mining, processing, and waste management) and to the location of facilities (process plant, IMWF and RPWR).

The EIA report comprised of two major appendices. The first one is the Assessment on the Compatibility of Conservation Objectives of the Protected Zone Eastern Rhodope and Protected Zone Krumovitsa with the Investment Proposal. This assessment has been prepared pursuant to the Bulgarian Law on Biodiversity, and the Regulation on Requirements for Conducting a Compatibility Assessment between Plans, Programs, Projects, as well as Investment Proposals and the Conservation Objectives of Protected Zones. Assessment of compatibility of the investment proposal with the object and purpose of protected areas is done according to the requirements of the European ecological network (Natura 2000).

The second appendix of the EIA is The Mining Waste Management Plan. This was developed in connection with the Underground Resources Act ("URA"), SG 23/12.03.1999, last amendment and elaboration in SG 78/8.09.2020 and the Regulation on the Specific Requirements to Mining Waste Management, SG 10/6.02.2009.

The Bulgarian Minister of Environment and Waters has signed a Resolution No.18-8, 11/2011 approving the EIA for the Company's Ada Tepe project in Bulgaria. The resolution is in force and all requirements are applied.

The European Commission has published in 2014 a report and a case study on the permitting procedure and compatibility of activities with the Natura 2000 requirements, aiming at improving these processes in Europe. The Compatibility Assessment of the Krumovgrad Project was published as one of 12 case studies for best practices on the continent.

20.2 Community Impacts, Including Air Quality

The setting of the Ada Tepe mine site is rural; the site being located 3 km from a small town with no significant pre-existing sources of industrial emissions that could affect people's health and enjoyment of the environment. The mine operation is source of emissions that are important in relation to community health and amenity, including gases, fumes, dust, noise and blasting vibration. The nature of these emissions is well understood and specific mitigation against non-fugitive and fugitive emissions, such as dust and noise are in place according to the air quality management plan as well as environmental processes and procedures. The Company's mitigation strategy is appropriately adopted, so that no significant impact is expected to the local community in relation to their health or enjoyment.

It is however likely that from time to time, a local nuisance impact will be experienced by adjacent communities, particularly regarding dust during dry, windy weather. Such impacts are managed by good operational practices such as regular irrigation, real-time meteorological monitoring coupled with an effective community liaison scheme.

Site traffic during construction and operation has led to a significant increase in trucks on local public roads. The Company has developed and implements a traffic management plan with specific mitigation measures.

Mitigation measures and constant monitoring are in place with focus on managing vehicle routing and site access.

Health of the workforce is protected by industry-standard measures to limit exposure to harmful emissions and (where that is not possible) utilisation of personal protective equipment.

20.3 Surface Water

The region is located within a climatic belt that experiences both Mediterranean and Southern Bulgarian (Central European) climatic influences with most rain (and occasional snow) in the winter period. Rainfall tends to be experienced as marked events and surface water flows therefore show great variation. The mine site is drained by the Krumovitsa River which flows at the foot of Ada Tepe, past the town of Krumovgrad. This river is part of a system that crosses into Greece about 50 km downstream from the site. Water quality is relatively good and lacks evidence of industrial pollution. The town of Krumovgrad sources its supply from alluvial gravels below the riverbed. The abstraction points are protected by a sanitary protection zone.

Operational activities are a potential source of contamination of surface water and disturbance of surface water flows. However, currently there is no observable deviation from the background parameters typical for the region. Operational activities employed to mitigate against surface water impacts include the following strategies:

- Thickening of the tailings before discharge to the IMWF and recycling of the supernatant water, which reduces evaporation losses (compared to deposition of tailings in a conventional tailings management facility)
- Recycling of the mine and IMWF drainage waters back into the process
- Water supply scheme that maximises use of recycled water and minimises the draw of freshwater from site area inflows
- Maximising recycling and minimising environmental discharge, targeting towards "zero discharge"
- Development and implementation of environmental management plan that includes procedures for spill avoidance, containment and treatment as well as various housekeeping measures that are in line with international best practice
- Progressive closure and rehabilitation of the IMWF which protects erosion of the slopes and reduces suspended solids in rainwater and dust in the ambient air
- Maintenance and operation in design parameters of both wastewater treatment plants.
- Topsoil storage depots for rehabilitation and maintaining grass over them
- A Reverse Osmosis Water Treatment Plant is available for treating captured surface runoff.

All mitigation strategies are in place and there is no significant impact on surface water flows or quality. Other surface water users (including communities, businesses and wildlife) are not significantly affected by DPMKr operations. The Company has a wide-ranging water monitoring program to ensure this and results are reported on an annual basis to the competent authorities in Bulgaria and Greece.

20.4 Groundwater

The mine site and adjacent land is underlain by Palaeogene rocks that contain no significant aquifers. Local communities draw groundwater from shallow wells and as noted above, the town of Krumovgrad sources its water from the Krumovitsa Valley alluvial aquifer about 3 km from Ada Tepe. Mining at Ada Tepe and abstraction of water for the Project will have no significant impact on groundwater resources. The mitigation measures, especially relating to water management generally and management of wastes, in particular, are forecast to prevent groundwater contamination in the short and long term (post-closure). The IMWF Grout Injection Curtain and pumping system prevents groundwater from the IMWF entering the Krumovitsa groundwater system.

The Company obtained Permit No. 31530328/04.03.2013 for abstraction of groundwater resources through construction of new water abstraction facility – one tube-and-shaft well with drainage branch, located on land plot No. 000281 on the land of Skalak village, Krumovgrad Municipality, Kardzhali District. The permitted annual abstraction quantity is 70,000 m^3. The permit is in force and valid for 10 years.

20.5 Soils and Land Ownership

Soils are in general low in fertility and very shallow over the hilly areas. The chemistry of the soils appears to reflect underlying geology and mineralisation and there are indications of certain areas having naturally elevated levels of heavy metals, including arsenic. These levels are not significant having regard to potential for pollution of surrounding land (e.g. by dust blown during soil stripping operations), but existing soils geochemistry is an important consideration for re-use of soils recovered from the stripping of operational areas in rehabilitation activities.

The operational areas are mainly on state forest land. The rehabilitated ground will be forested and will ultimately be classified as either recreational or as natural conservation land.

20.6 Wildlife

The mine site is located within a region well documented as containing a very diverse and interesting terrestrial ecology. Various sites and areas have designated protected status, but none of these lie within proximity of the Ada Tepe mine site and all fall outside a nominal area of influence.

The entire project area lies within the footprint of Natura 2000 protected site known as BG 0001032 Rhodopes East under Council Directive 92/43 on the Conservation of Natural Habitats of Wild Fauna and Flora. Furthermore, BG 0002012 Krumovitsa, which is a protected site under Council Directive 79/409/EEC for the Conservation of Wild Birds, is near the project area.

Compatibility Assessment, performed for all habitats and species, was completed as an integral part of EIA report (2010). The results from this Compatibility Assessment concluded that the project is compatible with the goal of safeguarding protected sites.

DPMKr has developed and implements a biodiversity action plan which is currently applied in order to assure that all protected species maintain a sustainable population and to reduce any impacts caused by operational activities. The Company performs specific monitoring of protected species on an annual basis. Their populations are closely monitored and if necessary corrective measures will be taken to support them.

20.7 Cultural Heritage

Archaeological investigations, walkover surveys and literature research indicated the presence of numerous sites of archaeological interest in the vicinity of the mine. A few of these sites have been directly affected by land take for the project and were carefully studied before operations commenced. No archaeological objects of significant expositional or architectural value were found during excavations.

It is possible that other sites will be discovered during operation, and these will be dealt with in full consultation with the appropriate the authorities.

In 2010, DPMKr signed a Frame Agreement with the National Archaeological Institute at the Museum of the Bulgarian Academy of Science for provision of archaeological observation at Ada Tepe, throughout the LOM. This Frame Agreement is amended every year with a relevant annual agreement for archaeological observation, which is one of the DPMKr's obligations within the Concession agreement with the Ministry of Energy.

20.8 Social Impacts

As part of the permitting process an Environmental and Social Impact Assessment was conducted ("ESIA"). Based upon the outcomes of the ESIA, a Social Management Plan ("SMP") was put in place at the earliest stage and followed during project development and construction. As a living document, the SMP is being followed during operation to ensure implementation of coherent and integrated strategic initiatives targeted towards sustainable economic and social benefits.

Several commitments have been made by the company to the Municipality of Krumovgrad in the areas of direct employment. This includes job creation initiatives such as encouragement of local businesses facilitated through a US$5 million Small and Medium Enterprises ("SME") financing facility, funding of a Community investment development programme, improvement of municipality infrastructure, re-building of a lodge and bungalows at a new recreation area approved by the Municipality and taking care for archaeological finds.

The management team has worked with the local community and authorities to ensure sustainable development of the local communities during operation and after mine closure. As part of DPM's approach, a Memorandum of Understanding ("MOU") was signed in 2015 to facilitate the continuation of open consultations with the local community. Under the MOU, the parties agreed to combine their efforts and act as partners to promote sustainable benefits for the residents of the Krumovgrad Municipality through cooperation for economic and social development, small and medium business development, healthcare and education.

DPMKr aims to benefit all of it's stakeholders – shareholders, employees, contractors, local communities, Bulgarian people and the government. Among some of the measurable impacts are:

- Direct employment – Based on an equal gender opportunities approach, 90% of the recruited workforce come from Krumovgrad municipality. DPMKr's operations formed the core of a significant increase in employment rate in the region. This increase includes not only staff employed directly by DPMKr (291), but also indirect and induced jobs.
- Consumption effect – DPMKr employees receive remunerations that provide a favourable environment for induced economic effects and local business development, which otherwise would not be present.
- Strategic community investments – As per the MOU, the Krumovgrad Municipality receives an annual community investment to develop local infrastructure, education and healthcare.
- Micro, Small and Medium-size Enterprise Fund - established in 2019, the fund supports local start-ups and businesses to promote local entrepreneurship. Nine projects, all approved and funded, have generated over 20 new jobs not related to mining.
- Value to national government – This includes royalties, duties, VAT, excise taxes, individual income taxes, corporate tax, social security, health insurances and other taxes paid directly by DPMKr and its employees.
- Value to local government – A proportion of royalties, tax payments and as well as a custom-made local fund are specifically directed to the local government to promote entrepreneurs.
- Socio-economic effects – Besides taking the multiplied socio-economic effect of direct jobs, investments in the local community of Krumovgrad account for direct and indirect investments in education, health, infrastructure, sports, culture, etc.
- Improved levels of safety awareness in the local community.
- Additionally, DPMKr has initiated environmental and public infrastructure rehabilitation in close proximity to the mine site.

20.9 Permitting

The Mine site has all required permits for operation. A construction permit for the main operational site was issued in 2016. A final operational permit was issued in 2019. All other major permits and construction permits (discharge pipeline, new part of the access road, existing road, pump station etc.) were issued and entered into force within the period between 2016 and 2019.

20.10 IMWF Site Monitoring

The IMWF operation is based on an IMWF Control and Monitoring Plan and an Emergency Risk Assessment, which are also part of the overall Mine Waste Management Plan. The Plan and the Assessment provide the technical details of each IMWF component plus guidelines for control and monitoring.

DPM has developed and adopted a Tailings Management Standard, which covers all development phases from planning, design through construction, operation, closure and post-closure where applicable, of tailings management facilities at all DPM-controlled locations. This standard sets out the company the requirements on top of the local regulatory ones.

The monitoring of the facilities is a combination of visual observations and measurements. All collected information is analysed and interpreted to assess the efficiency, safety and stability of the facilities and include:

- Routine daily monitoring – by visual observation and records
- Compliance monitoring – by regular measurements and data reviews against a set of criteria included in the Control and Monitoring Plan
- Environmental monitoring – by identifying the qualitative parameters of surface water, groundwater, decant water, and the disposed tailings.

All observations and measurements are documented, interpreted and analysed. The reviews of all data collected as part of the IMWF monitoring process (including data of all facilities under the IMWF system) are conducted at several levels and with different frequency, these include:

- Operational analysis conducted by the Company's engineering team
- Quarterly and annual data reviews by an independent, international company. This consists of an overall review of operational data, compliance monitoring, water monitoring and stability assessments. The summarised data is compiled as a report and presented to the operational team with conclusions and recommendations. This includes verification that the IMWF operates according the best international practices
- Regulatory compliance reviews are conducted to monitor the IMWF compliance against the Control and Monitoring Plan, Bulgarian and EU regulatory requirements
- Twice per year, committee reviews complete a compliance assessment based on reports and other documents by government regulators, local municipalities, universities, government experts, designers, and consultants. This is to ensure compliance with Bulgarian legislation.

20.11 Closure Plan and Rehabilitation

Closure of the IMWF is a progressive process and commences whilst the mine is operating. The IMWF is constructed from the bottom up with horizontal benches at 10 m vertical intervals with the intervening slope constructed at 2.5H:1V. During operations, the external faces of the completed portions of the IMWF are covered with topsoil and vegetated. This means that the majority of the IMWF will be covered and reclaimed prior to the end of the mining operations. The rehabilitation of the slopes of the IMWF is currently in progress for the bench on level 360.

All drainage into the IMWF is collected in an underdrain system that prevents the build-up of a water table within the waste rock and tailings. Following operations, the chemical and sediment load reporting to the sumps is monitored. Water draining from or through the IMWF will be collected and treated in the existing wastewater treatment plant. Monitoring and maintenance of the facility is included as active and passive care within the closure and rehabilitation plan.

The financial guarantee for closure and rehabilitation of the site was determined as part of the Closure and Rehabilitation Plan. Total cost estimate for closure of the site and IMWF, plus rehabilitation, is BGN 10.3 million (approximately US$6.17 million). In November 2020, the financial guarantee was renewed for a year.

21 Capital and Operating Costs

21.1 Introduction

Ada Tepe is the first greenfield mine in Bulgaria in the last 40 years. The mine site is located approximately three kilometres south of the town of Krumovgrad in south-eastern Bulgaria.

While using a conventional open pit mining, crushing, milling and flotation processing circuit, production employs innovative methods for water management and mining waste management. The mine produces a high grade gold concentrate which is then transported for further treatment.

Commercial production at Ada Tepe was achieved in June 2019 with ramp-up to full design capacity achieved in the third quarter of 2019. As at June 30, 2019, construction of the project was complete. The capital cost for this project was approximately US$164 million, compared to the original estimate of US$178 million.

The capital and operating costs have been developed using actual cost and performance, applied to the projected mine and processing plan. presents the total sustaining capital of 43.46 US$ M associated with ongoing operations for the life of the mine, as well as estimated closure and rehabilitation costs.

Table 21-1 presents the total sustaining capital of 43.46 US$ M associated with ongoing operations for the life of the mine, as well as estimated closure and rehabilitation costs.

Table 21-1: Capital Cost Summary

Item	Unit	LOM
IMWF	US$ M	22.20
Other Sustaining capital	US$ M	14.47
Closure and rehabilitation costs	US$ M	6.79
LOM capital expenditure	**US$ M**	**43.46**

21.2 Operating Costs

The average estimated total cash cost per tonne of ore processed for the LOM is US$46.15/t treated, as presented below in Table 21-2.

Table 21-2: Operating Cost Summary

Item	Unit	LOM
Mining cash cost per tonne of ore	US$/t ore	11.47
Processing cash cost per tonne of ore processed	US$/t ore	17.33
Royalty per tonne of ore processed	US$/t ore	6.46
Admin cash cost per tonne processed	US$/t ore	10.90
Total cash cost per tonne of ore processed	**US$/t ore**	**46.15**
Total cash cost/z AuEq (1), (2)	US$/oz AuEq	373
On-site cash cost/oz Au (1), (3), (4)	US$/oz	346
Cash cost/oz Au sold, net of by-product credits (1), (4)	**US$/oz**	**386**

Notes:

(1) Cash costs are reported in US$, although majority of costs incurred are denominated in non-US$, and consist of all production related expenses including mining, processing, services, royalties and general and administrative.

(2) Refer to the "Non-GAAP Financial Measures" section of DPM Management's Discussion and Analysis (MD&A) for the three and nine months ended 30 September 2020 for more information regarding reconciliations of these Non-GAAP measures.

(3) Cash cost per ounce of gold sold, net of by-product credits, represents cost of sales, less depreciation, amortisation and other non-cash expenses, plus treatment charges, penalties, transportation and other selling costs, less by-product silver revenues, divided by the payable gold in concentrate sold.

(4) AuEq is based on metal prices of 1250 US$/oz Au and 17 US$/oz Ag.

22 Economic Analysis

22.1 Introduction

This section describes the mine economics under conditions applicable for its development and operation, and discloses economic analyses based on changes in key parameters.

The analysis has been conducted on a site basis only and, consequently, does not include corporate overheads or head office costs.

Mining and processing data and capital and operating costs are drawn from other parts of the Technical Report and combined with the site's fiscal regime in an economic model that calculates normal measures of economic return, such as NPV, and reports key production statistics for the mine. This section describes the mine economics under conditions applicable for its development and operation, and discloses economic analyses based on changes in key parameters.

22.2 Assumptions

In calculating the LOM returns, the following fundamental assumptions were made:

- Metal prices of US$1,250/oz for gold and US$17/oz for silver will be maintained throughout the life of the project
- Metal price and currency hedging is excluded.

22.3 Currency, Escalation and Exchange Rates

Analysis has been conducted in United States dollars (US$) rather than Bulgarian Lev (BGN), since it is considered the standard currency for the owner of the project.

Base exchange rates used for the evaluation of the project are:

- US$ 1.12/EUR
- BGN 1.95583/EUR

Effects of significant shifts in these exchange rates are considered as part of the sensitivity analysis in Section 22.5. The analysis has been conducted excluding escalation of both metal prices and capital and operating costs.

22.4 Taxation

The financial analysis has been conducted after tax. The taxation of corporate income and profits is governed by the Corporate Income Tax Act ("CITA"). Under CITA, all resident companies and partnerships, as well as permanent establishments of non-residents, are liable to corporate income tax of 10%. This tax was deducted from the expected cash flows.

22.5 Summary of Results

The relevant LOM assumptions and results are presented in Table 22-1 to Table 22-4.

Table 22-1: Production summary

Production and revenue (2021 to 2026)		
Item	**Unit**	**LOM**
Mined ore		
Total quantity of ore mined	t	3,785,290
Waste mined	t	11,843,790
Gold grade	g/t	4.93
Silver grade	g/t	3.09
Milled ore		
Total quantity of ore milled	t	3,954,939
Gold grade	g/t	4.84
Silver grade	g/t	3.04
Metallurgical recoveries		
Gold recovery	%	85.88
Silver recovery	%	58.81
Metal content		
Gold in concentrate produced	oz	528,259
Silver in concentrate produced	oz	227,403

Table 22-2: Revenue and operating surplus (2021 to 2026)

Production and revenue (2021 to 2026)		
Item	**Unit**	**LOM**
Total net revenue	US$ M	696
Site EBITDA	US$ M	509
NPV at 5% discount rate	US$ M	391

Table 22-3: Cash flows (2021 to 2026)

Cash flows (2021 to 2026)		
Item	**Unit**	**LOM**
Total pre-tax cash flow	US$ M	475
Corporate taxation	US$ M	27
Total after-tax cash flow	US$ M	448

Table 22-4: LOM economics

LOM economics (2021 to 2026)		
Item	**Unit**	**LOM**
NPV at 5% discount rate	US$ M	391

22.6 Sensitivity Analysis

Sensitivity analysis has been conducted to assess the effects of changes in key parameters upon the NPV. The analysis encompasses the range of ± 10% and 20% of the following key parameters:

- Gold price
- Aggregate operating costs
- Exchange rate (US$/EUR).

In assessing the sensitivity, each of these parameters is varied independently of the others. Combined beneficial or adverse variations in any of these parameters will therefore have a more marked effect on the economics of the project than the individual variations considered.

The sensitivity analysis to assess the effects of changes in key parameters upon NPV, after taxation in this case, is presented in Table 22-5.

Table 22-5: LOM sensitivity analysis – after taxation

Gold price	Price (US$/oz)	NPV at 0% (US$ M)	NPV at 5% (US$ M)	NPV at 7.5% (US$ M)
-20%	1,000	360	318	300
-10%	1,125	404	355	334
0%	1,250	448	391	368
10%	1,375	491	428	401
20%	1,500	534	464	434
Aggregate operating costs	**US$/t of ore processed**	**NPV at 0% (US$ M)**	**NPV at 5% (US$ M)**	**NPV at 7.5% (US$ M)**
-20%	36.92	483	420	394
-10%	41.54	465	406	381
0%	46.15	448	391	368
10%	50.77	430	377	354
20%	55.39	413	363	341
Exchange rate	**US$/EUR**	**NPV at 0% (US$ M)**	**NPV at 5% (US$ M)**	**NPV at 7.5% (US$ M)**
-20%	0.90	468	409	384
-10%	1.01	458	400	376
0%	1.12	448	391	368
10%	1.23	437	383	359
20%	1.34	427	374	351

The current outbreak of novel Coronavirus (COVID-19) and any future emergence and spread of similar pathogens could have an adverse impact on global economic conditions. The crisis may continue or worsen which may adversely impact the Company's operations, and the operations of its suppliers, contractors and service providers, the ability to obtain financing and maintain necessary liquidity, the demand for and ability to transport the Company's products and its ability to advance its projects and other growth initiatives.

The outbreak of COVID-19 and resulting global upheavals in various countries have caused significant volatility in commodity prices. The outbreak and its declaration as a global pandemic caused companies and governments around the world to impose sweeping restrictions on the movement of people and goods, including social distancing measures and restrictions on group gatherings, isolation and quarantine requirements, closure of business and government offices, travel advisories and travel restrictions. Governments in relevant jurisdictions may introduce new, or modify existing, laws, regulations, orders or other measures that could impact the Company's ability to operate or affect the actions of its suppliers, contractors and service providers. While some restrictions have been lifted in the jurisdictions in which the Company operates, should restrictions be re-imposed and/or additional measures be implemented, and/or should the responses of companies and governments be insufficient to contain the impact of COVID-19, this may lead to further economic downturn that may adversely impact the Company's business, financial and results of operations. While these effects are expected to be temporary, the duration of the business disruptions internationally and related financial impact cannot be reasonably estimated at this time.

Similarly, the outbreak of COVID-19 may also continue to affect financial markets, may adversely affect the Company's ability to raise capital, and may cause continued interest rate volatility and movements that may make obtaining financing or extending existing credit facilities more challenging or more expensive or unavailable on commercially reasonable terms or at all.

In particular, if any number of employees or consultants of the Company or any key supplier become infected with COVID-19 or similar pathogens and/or the Company is unable to source necessary replacements, consumables or supplies or transport its products, due to government restrictions or otherwise, it could have a material negative impact on the Company's operations and prospects, including the complete shutdown of one or more of its operations.

Furthermore, an outbreak of COVID-19 at the Company's operations could cause reputational harm and negatively impact the Company's social license to operate. The COVID-19 pandemic has also increased cybersecurity and information technology risks due to the rise in fraudulent activity and increased number of employees working remotely. Although the Company has not experienced any material disruptions to its operations to date, as a result of measures it has taken, there is no assurance the Company will remain unaffected by the current COVID-19 pandemic or potential future health crises. The situation is dynamic and changing day-to-day. The Company will continue to work actively to monitor the situation and implement future measures as required to mitigate and/or deal with any repercussions that may occur as a result of the COVID-19 outbreak and global pandemic.

23 Adjacent Properties

The nearest adjacent property held by another company is the Rosino property, approximately 20 km due east from the Ada Tepe Mine and currently held by a joint venture between Velocity Minerals and Gorubso-Kardjali AD. Furthermore, Gorubso-Kardjali AD holds the Sedefche exploration licence to the west of the Ada Tepe where they are exploring for gold.

24 Other Relevant Data and Information

24.1 Legal Framework

24.1.1 Company Information

DPMKr is a joint stock company, solely owned by Dundee Precious Metals Krumovgrad BV, a subsidiary of Dundee Precious Metals Inc. Canada. BMM was incorporated in September 1997. DPM acquired all shares in the Company from its previous owner on September 30, 2003.

24.1.2 Business Legislation

The Constitution of the Republic of Bulgaria from July 1991 proclaims and establishes guarantee mechanisms for the main principles of the market economy as the inviolability of the private property, free business initiative, equal conditions for performing economic activities, for all individuals and legal persons.

The Bulgarian Commerce Act governs the legal organisational forms of corporate business entities, and the rules applicable to each form, in respect of incorporation procedures and documents, capital and shares, shareholders, management bodies, resolutions, administration, mergers, liquidation and insolvency. Investors are free to choose the legal form of presence in Bulgaria among all types of commercial companies and partnerships envisaged by Bulgarian legislation, as well as to register as sole traders (natural persons). Limited liability company (“OOD”) and joint-stock company (“AD”) are the most often chosen types of commercial companies. Regardless of the selected legal-organisational form, the investor must announce both, the initial formation and subsequent changes, with the Commercial Register at the Registry Agency of Bulgaria.

24.1.3 Mining Legislation

The Underground Resources Act regulates the conditions and the procedures for prospecting, exploration and mining of underground Mineral Resources located on the territory of the Republic of Bulgaria, the continental shelf and the exclusive economic zone in the Black Sea.

The Underground Resources Act came into force in March 1999 and has been amended several times since its promulgation, with the last amendment in September 2020, in force from September 2020. This act established the objects over which mining concessions may be granted and setting forth the conditions and the procedure for granting concessions.

24.1.4 Taxation

The taxation of corporate income and profits is governed by the Corporate Income Tax Act (“CITA”). In connection with the accession of Bulgaria to the EU on 1 January 2007, a new CITA was adopted to meet the necessity of harmonisation of Bulgarian taxation legislation with the requirements of the European directives concerning direct taxation. Under CITA, all resident companies and partnerships, as well as permanent establishments of non-residents, are liable to corporate income tax of 10%. Certain types of income originating from Bulgaria and payable to foreign entities, or individuals, are subject to a withholding tax amounting from 5% to 10%.

CITA establishes rules for defining the taxable income, for applying corporate income tax exemption, for loss carry-over, thin capitalisation, and withholding tax.

According to Value Added Tax Act most of goods and services are subject to a 20% value added tax (“VAT”) rate. Any person, legal or physical, resident or non-resident, who has a taxable turnover of at least BGN 50,000 during the preceding 12 months, is obliged to register for VAT purposes. Only VAT registered persons may charge VAT on taxable supplies and recover input VAT charged to them.

24.1.5 Customs Duties

Customs duties are payable on the importation of goods and products to Bulgaria. Following Bulgaria's accession to the EU and gaining full member status on 1 January 2007, a number of changes and specific developments occurred in the foreign trade and customs regime, in regard to exports and imports of goods. More specifically, the new developments concerned the direct application of Community acquis, which regulates the common procedures, tariff and non-tariff measures (prohibitions and restrictions) on exports and imports of goods "to" and "from" non-member states and uniform customs control instruments.

The Single Market of the EU was built over the course of three decades in compliance with the founding documents. As a full EU member, Bulgaria also became an equal participant in the Single Market of the EU. Likewise, domestic legislation in the respective areas was brought into conformity with the legislation of the Community – the acquis Communautaire. Bulgaria is also a member of the World Trade Organization ("WTO").

The Bulgarian customs legislation is harmonised with the European one. The imports of products are subject to customs duties at rates determined in the Customs Tariff approved by the Government. At its accession to the EU, Bulgaria eliminated the customs duties in its trade with the other EU Member States and started applying the Common Customs Tariff of the EU in its trade with non-member states.

The Common Customs Tariff requires levying of the same duties on products, imported from third countries. It is used by the EU as an instrument for regulation of international trade. The EU keeps adapting the Common Customs Tariff to the results of negotiations for tariff reduction within the framework of the General Agreement on Tariffs and Trade, recently applied by the WTO.

Bulgaria has preferential tariff agreements (free trade agreements) with the EU, European Free Trade Associated ("EFTA") and Central European Free Trade Associated ("CEFTA"), Turkey, Israel, Macedonia, Albania, Serbia and Montenegro, which may result in certain tariff rates being reduced or eliminated. The preferential tariff rates apply to products originating from the respective party to the agreement and are subject to submission of an evidence of origin.

24.1.6 Relief or Deferral of Customs Duties

Generally, the customs duties and import VAT are payable at the time of the importation. However, there are some customs procedures and arrangements under which products could be imported into Bulgaria without need of immediate payment of customs duties. Such procedures include:

- Inward processing: An approval can be obtained from the customs authorities, subject to certain conditions, that goods be imported into Bulgaria without payment of customs duties for the purposes of their processing and subsequent re-exportation.
- Warehousing procedures: An approval from the customs authorities could be obtained such that goods are imported free of customs duties and stored in warehouses in Bulgaria, until needed for the purposes of the business. If the goods are subsequently re-exported, no customs duties are payable. If the goods are placed on the Bulgarian market, all custom duties are due, but the payment of such can be deferred until the goods are withdrawn from the warehouse.
- Temporary imports: In some cases, assets can be imported into Bulgaria without immediate payment of customs duties, for the purposes of them being used in Bulgaria and subsequently re-exported. Certain professional equipment could be temporarily imported without payment of customs duties. Upon importation of such equipment, the custom duties that are due are deposited with the State as a guarantee. If the goods are subsequently re-exported, a certain percent of the custom duties is due (3% per month of warehousing). If the goods are placed on the Bulgarian market, all custom duties are due plus interest, but the payment of such can be deferred until the goods are withdrawn from the warehouse. Other assets could be temporarily imported with a partial relief from customs duties.

24.1.7 Social Security/Health Insurance Contributions

The main legal instruments in the field of social security and health insurance regimes are the Social Security Code and the Health Act. Legislation requires that all employees are covered by the social security system. The system includes coverage for a group of social risks, which are general illness, work accidents, occupational diseases, maternity, disability, unemployment and retirement. Every employee, who was employed for more than five working days, or 40 working hours, during a calendar month, have to be secured against all social risks, for the period of employment.

The social security/health insurance contributions are based on the employee gross monthly remuneration. However, the legislation provides for a minimum and a maximum limit of the amount, used as a base for calculating the social security/health insurance contributions. The minimum amount depends on two factors a) the code of economic activity under company's registration and b) group of professions divided by organisational levels in which the particular position falls into. The minimum amount varies for different professions. The maximum amount for 2020 is BGN 3000. These amounts are usually reviewed every year.

24.2 Foreign Investment

24.2.1 National Treatment

The Investment Promotion Act ("IPA") provides for national treatment to foreign investors, which means that foreign investors are entitled to perform commercial activities in the country under the same provisions applicable to Bulgarian investors, except where otherwise provided by law. In particular, this principle covers the whole range of economic and legal forms of activities for accomplishing entrepreneurial businesses. The national treatment of foreign investors allows for the possibility of foreign investors to participate in the process of privatisation and acquisition of shares, debentures, treasury bonds and other kinds of securities.

24.2.2 Most Favoured Nation Status

Bulgaria is signatory to a number of bilateral treaties on promotion and mutual protection of foreign investment which provide, further to the national treatment regime, for the most favoured nation status of the investment made by entities and individuals, from one of the contracting countries on the territory of the other contracting country.

24.2.3 Priority of International Treaties

According to the Bulgarian Constitution any international treaty, which has been ratified according to a procedure established by the Constitution, which has been promulgated, and which has entered into force for the Republic of Bulgaria, shall be part of the domestic law of the land. Any such treaty shall take precedence over any conflicting standards of domestic legislation. This guiding principle finds expression in the treaties for protection of foreign investments, and especially, in the agreements for the elimination of double taxation regulations.

The international treaties on mutual protection of foreign investment always include an extended concept of a foreign direct investment, and the application of this concept has priority over the Bulgarian legislation. National treatment applies to foreign investors, which means that foreign persons are entitled to invest in Bulgaria under the terms and conditions provided to Bulgarian investors, except as otherwise is provided by law.

24.2.4 Guarantees against Adverse Changes of the Legislation

The IPA stipulates in Article 23 that foreign investment made prior to legislative revisions imposing statutory restrictions solely on foreign investments shall be governed by the legal provisions which were effective at the moment of implementation of the said investment.

The Underground Resources Act provides in Article 63 for protection of investments, in prospecting and/or exploration and concession activities, against changes in the legislation which result in the restriction of rights to, or material damages for, the holder of prospecting and exploration permits or mining concessions. In cases where such changes have been adopted, the permit or concession holder upon request thereby the terms and conditions of the concluded contract shall be amended so as to restore his rights and interests in conformity with the initially concluded contract.

24.2.5 Institutional Framework

In accordance with the latest amendments of the IPA, the Bulgarian Foreign Investment Agency, established in 1995, was transformed into an agency under the supervision of the Ministry of Economy, and renamed as the Invest Bulgaria Agency. Currently, the basic function of the Agency is to support the Minister of the Economy in the implementation of the State policy for encouragement of investments.

The key function of the Agency is to assist companies in the investment process. It provides to prospective investors updated information about site identification and selection, support with the application for investment incentives, contacts with suppliers and prospective business partners, liaison with central and local government, branch chambers and non-government organisations.

24.2.6 Investment Incentives under the IPA and Commerce Act

Foreign investors are entitled to incorporate Bulgarian companies, to invest in Bulgarian companies, to acquire and to own Bulgarian companies and assets, and to freely transfer that ownership and other contractual rights. No restrictions are imposed on foreign ownership and participation in Bulgarian companies. Foreign entity may own 100% of a Bulgarian registered company. There are no restrictions on the amount of capital that can be invested in a Bulgarian company.

Earnings and profits may be repatriated after payment of liabilities due to the State, and capital can be repatriated upon cessation of the investment, or upon winding-up the business. All enterprises with foreign investments must take the form of business entities pursuant to the Bulgarian Commercial Act.

Foreign legal entities may register branches, if they have been registered abroad and are entitled to carry out business activities. Under the national law, a branch is a part of the main company but with a different seat. No authorised capital is needed for its opening.

Foreign persons may also set up representative offices registered at the Bulgarian Chamber of Commerce and Industry. The representative office, however, may not carry out commercial activities.

A joint venture is a company formed jointly by a Bulgarian and a foreign partner. The size of the foreign participation is not limited. Joint ventures must take the form of any of the business organisations stipulated in the Commerce Act.

25 Interpretation and Conclusions

25.1 Summary

DPMKr conducted detailed exploration of the Ada Tepe prospect between 2000 and 2004. A total of 52.9 km of drilling, and 18.3 km of surface trenching was completed, with more than 66,000 individual assay intervals and 5,700 bulk density determinations. Since then, some additional 91 km of RC drilling has been undertaken as part of pre-production grade control.

There is a strong level of confidence in the data on which the Mineral Resource is based. Benchmarking of Upper Zone mineralisation volumes against the GC model has resulted in a more reliable grade-tonnage scenario - significantly lower tonnes and higher grades modelled compared to the previous MRE.

The mine plan shows a high conversion of Mineral Resources to Mineral Reserves at the cut-off grades selected. The extent of the data collected through this exploration program and the quality control standards used provide the basis for a high level of confidence for this project. Furthermore, the project has been demonstrated to be technically and commercially viable.

25.2 Geology and Sampling Procedures

During site visits by CSA Global in 2013, 2014, 2015, 2016 and 2017 and 2019 meetings have been held with DPM staff. Data and procedures were reviewed in the mine office, open pit operations, processing plant and SGS laboratory. Conclusions based on these site visits were that procedures are consistent with good mining industry practice.

25.3 Geological Model

CSA Global believes the current understanding of geology and mineralisation controls is good, and that the current MRE model adequately predicts the in-situ grades and tonnes realised during open pit development and mine production. Good comparison between the grade control model, sampling and drilling data with the MRE model, demonstrates the robustness of the MRE model.

25.4 Assay QAQC

Conclusions from the QAQC results for Au and Ag exploration sample analysis are summarised below:

- The QAQC procedures implemented at Krumovgrad were adequate to assess the accuracy and precision of the assay results obtained.
- No fatal flaws were noted with respect to cross contamination or assay accuracy (blank or standard analysis respectively). CSA Global noted that accuracy and precision exhibited by SGS Chelopech was, at times, poorer than the other laboratory results, however no significant bias was noted and CSA Global considered that the Au and Ag CRMs analysed by the SGS – Chelopech laboratory to be accurate and appropriate for Mineral Resource estimation studies.
- CSA Global concluded that for the purpose of Mineral Resource estimation, acceptable levels of precision with no significant bias for both Au and Ag were reported for all the sampling stages analysed.
- Relatively high levels of inter-laboratory precision were evident for the Au analyses between primary and umpire laboratories. In addition, there was no evidence of bias between the compared datasets.

A review of the quality control data for the grade control drilling was completed for Au and Ag assays. Data from RC drill holes drilled between 2017 and 2020 were reviewed.

- No failures were noted in the preparation blanks and therefore no issues are expected with respect to cross contamination.
- Au CRM results were mostly accurate with no significant bias or failures. Ag low grade CRMs have multiple bias issues, but these are attributed to the imprecision of the assay methods at low grades.

- Acceptable levels of precision have been exhibited for Au duplicate pairs with SGS_BO having the poorest precision for field duplicates and laboratory duplicates. Ag pairs were mostly low grade, but where pairs were greater than ten times the lower detection limit, precision was mostly acceptable.

25.5 Database Validation

Project data are housed in an acQuire relational database which has inbuilt validation criteria, constraints and triggers to ensure that all data in the database are validated and meet these criteria. Verification checks are also completed by DPM on surveys, collar coordinates, lithology, and assay data. Data undergoes further validation by CSA Global through a series of Datamine loading macros.

An audit of the DPMKr database was completed by CSA Global and the overall conclusions were that the database was well maintained, good practices appeared to have been followed, and data in the database should be fit for purpose for downstream work.

The QP has reviewed the reports and believes the data verification procedures undertaken on the data collected from DPMKr adequately support the geological interpretations and the analytical and database quality, and therefore supports the use of the data in Mineral Resource and Mineral Reserve estimation.

25.6 Bulk Density

CSA Global concludes that the in-situ dry bulk density data is collected using appropriate sampling methods and analysis procedures. Investigations based on the geological logging codes concluded that the modelled geological constraints allowed for appropriate grouping of the BD data. CSA Global reviewed these assumptions in the July 2020 MRE update by further subdividing these geological zones based on mineralised vs waste material. Minor differences observed between the mean density values for the waste and mineralised material in the Upper Zone conclude that the previous grouping of BD values is appropriate. No material differences were identified for the Wall Zone in the updated dataset. CSA Global has therefore used the values determined in the previous study, with the inclusion of values for the basement waste rock.

25.7 Mineral Resource Estimation

A total of 2,510 holes for 149,850 m were used in the update to the Ada Tepe MRE.

Grade (Au and Ag) was estimated into parent cells of all domains using Ordinary Kriging using a three-pass search strategy. Mean dry bulk densities were assigned based on lithology, mineralisation and oxidation. 3D geology (including lithostratigraphy and structure) and oxidation models were constructed.

Validation of the estimated model using swath plots, histograms and probability plots of inputs and outputs and visual validation of cross sections showed that estimated block grades reflect the grade tenor of input data.

The block model was classified in accordance with CIM guidelines as Measured, Indicated and Inferred Mineral Resources. The MRE is reported exclusive of Mineral Reserves.

25.8 Process Plant and Infrastructure

Plant operating data indicates that the Ada Tepe processing facility is currently achieving nameplate production, and design gold and silver recoveries to saleable concentrate. Future mine production will include a higher percentage of more harder wall material in the plant feed. This will result in a decrease in plant throughput rate from 105tph down to 90tph as per the latest LOM production and processing plan. The IMWF design and construction schedule based on the updated LOM plan waste quantity and tails volume indicates sufficient available tailings storage throughout the LOM.

Future plant performance optimization opportunities include the installation of an on-stream analyzer allowing for further advanced control and automation of the floatation circuit to stabilize and improve recovery performance.

25.9 Mine Operations

The successful establishment and construction of the project has resulted in a viable mining operation that has reached its design capacity and realised several planned milestones. The established operational approach is indicated to continue to deliver the production and results of the LOM Plan.

On an after tax basis, based on US$1,250/oz price for gold and US$17/oz for silver the after-tax NPV is US$391 million at a discount rate of 5%.

No risks are considered to be fatal flaws in the context of the Ade Tepe Operation, although continuing actions to improve the risk profile will be undertaken.

25.10 Qualitative Risk Assessment

Table 25-1 summarises the areas of uncertainty and risk associated with the project, informed by the conclusions summarised above, and recommendations discussed in Section 26.

Table 25-1: Project-specific risks

Project risk area	Summary	Outcome	Mitigation
Geology and data management	Upper Zone mineralisation is complex. Volume estimation through Indicator Kriging has been benchmarked against the current good performance of the GC model in production.	Performance may change as mining moves from predominantly oxide to fresh.	As production moves out of oxide and into fresh, performance must be monitored to ensure assumptions remain valid.
Mineral Resource estimation	The wireframes have been interpreted with the current reporting cut-offs in mind.	Any changes to cut-off, either increasing or decreasing may result in different volumes being interpreted, data being selected and therefore tonnes and grades being estimated.	If a broader spectrum of cut-off grades are of interest, a non-linear estimation method is recommended.
Mining	The Upper Zone mineralisation is highly complex and exhibits a high nugget component and significant short-range grade variability.	Misallocation of ore and waste. Unplanned dilution within feed.	Continue to ensure that RC grade control drilling is undertaken ahead of mining, preferably one year ahead. Careful mining practices to minimise dilution, such as the use of BMM and HPGPS guided excavators should continually be used during ore extraction.
Processing	No significant risks		
Waste and Tailings Management	Shortage of waste available from Pit for constructing tailings cells, or excessive volume of tailings, due to misalignment between design and actual waste/tailings mass balance	Alternative local and/or imported waste required. Periods of lower plant throughput or plant stoppage to allow	Detailed life of mine plan showing waste and tails production indicate that cell construction schedule allows sufficient available volume for tails throughout the life of mine. This schedule is progressively reviewed and adjusted as the mine progresses to account for as-built situation.

Project risk area	Summary	Outcome	Mitigation
			Contingency tailings storage capacity available.
Force majeure (including COVID-19 outbreak)	Could affect labour and supply chain which could impact capital and operating costs. Could affect obligations under the concession and exploration contracts	Could impact on the mining and exploration schedule	Managing inventories and reviewing alternative supply options should any disruptions occur. Focus on managing outbound supply chains, including, by considering multiple sale and transportation outlet. Written notice to MoE for temporary suspension of the concession contract for the period of Force majeure. Additional agreements for extending the exploration contract terms and extension of other contracts for land use.

26 Recommendations

The following recommendations are made in relation to the Ada Tepe mine operations:

26.1 Assay QAQC

- Some missing samples (with low or no recoveries) had been assigned a waste grade of 0.001g/t Au in the DPM database, CSA Global treated these samples as missing rather than waste samples and the adjustment was carried through into the DPM database. CSA Global recommend any future samples with low or no recoveries are investigated thoroughly to determine their correct grade assignment.

26.2 Geology and Mineral Resources

- Characterisation of 'voids' are recommended to ensure they are adequately mapped, and that grade and density relationships are well understood.

26.3 Mining and Processing

- Continue with the following activities:
  - Training and development of the technical workforce to further optimise and improve management and operational practices.
  - Reconciliation, with particular focus on comparisons as mining commences into fresh material to ensure assumptions remain valid, with respect to the Mineral Resource model and the MSO parameters used in estimation of dilution and ore loss in the Mineral Reserve model.
  - Careful monitoring of the IMWF and continued management of the waste and tailings placement process according to the design principles.
  - Focus on continuous improvement and application of appropriate innovations to operational activities – including the installation of an online analyser, allowing for improved flotation control performance.
- Implement the further process plant optimization opportunities to improve flotation performance and provide increased process control measures to ensure 'steady state' operations.
- Based on the results from the geo-metallurgical orientation program, continue the geo-metallurgy test program and model development for the Ada Tepe deposit to further increase the ore body knowledge and linking it to plant performance. This would allow for further process optimization through improved planning, prediction and control of the mining operation, feed blend and plant control.
- Grade control drilling should continue ahead of mining, to ensure sufficient time for grade control modelling, planning and scheduling. For 2021, DPMKr has planned 215,000m of RC grade control drilling with a total cost including drilling, assays, labor and materials of approximately US$11.0 million. The planned drilling will ensure all of pushback 2 and parts of pushback 3 & 4 are sufficiently tested for grade control purposes.
- Continue to work actively to monitor the COVID-19 pandemic and implement further measures as required to mitigate and/or deal with any repercussions that may occur as a result of the outbreak.

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