



**CASSIUS**  
MINING LIMITED

ASX : CMD



**BREAKING NEW GROUND  
IN A PROLIFIC GOLD RICH REGION**

# Introduction to Cassius Mining Limited

## GBANE IS A NEW DISCOVERY IN A PROLIFIC NEW GOLD BELT

- Breaking new ground in the underexplored Birimian Nangodi Greenstone Belt of the Upper East Region of Northern Ghana also favoured by Gold Fields and Cardinal
- Sits directly adjacent to the operating high grade Shaanxi Gold Mine, while also along-strike from Cardinal's 6.5 moz Namdini Gold Project
- Developed strong relationships in-country - Government and Local Community engagement

## LARGE, SHALLOW MINERALISED SYSTEM DEFINED OVER 1.3 KM STRIKE LENGTH

- Multiple mineralised zones defined over a combined strike length of 1.3 km forming a broad zone (400 metres wide) of narrow, stacked veins to a vertical depth of (at least) 200 metres
- Extensive artisanal workings cover more than 4 km along strike in a zone up to 500 metres wide with numerous untested targets associated with the principal structures

## TARGETED EXPLORATION PROGRAMS

- Gbane is underexplored with shallow cover, preserving the opportunity for Cassius
- To date, Cassius has undertaken systematic exploration (including 17,300 metres of drilling) across the central part of the Gbane Project Licence Area (effectively 20% of the total licence area) since early 2017
- In April 2018, a high resolution aerial magnetic & radiometric survey was flown across the entire Gbane Project Licence Area, to enhance structural modelling and guide highly targeted advanced exploration – results are pending



# Corporate Snapshot

## Capital Structure (7 May 2018)

Ordinary Shares on Issue	261.2m
Unlisted Options	21.7m
Current Share Price	\$0.065
Market Capitalisation	\$17.0m
Cash	\$2.2m
Debt	Nil

## Board

James Arkoudis	CEO
Anthony Karam	Managing Director
Wayne Kernaghan	Director & Company Secretary
David Chidlow	Project Technical Director

## Shareholder Breakdown (7 May 2018)

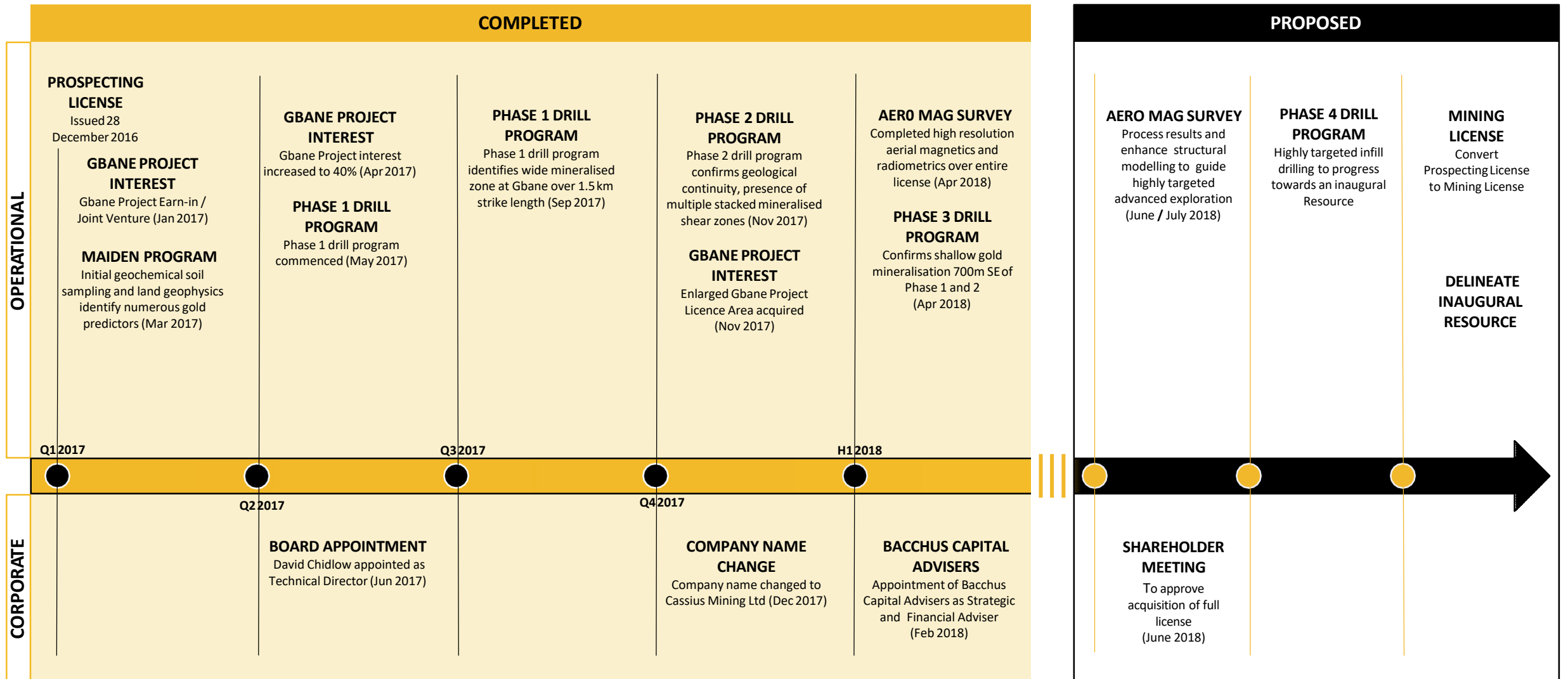
Board & Management	16.8%
Top 40 Shareholders	73.0%

## Key Service Providers

<b>Technical Consultant</b>	<b>Strategic &amp; Financial Adviser</b>
 <b>srk consulting</b>	 <b>BACCHUS</b> Capital Advisers
<b>Drilling Contractor</b>	
 <b>GEODRILL</b> <small>Exploration Drillers in West Africa</small>	



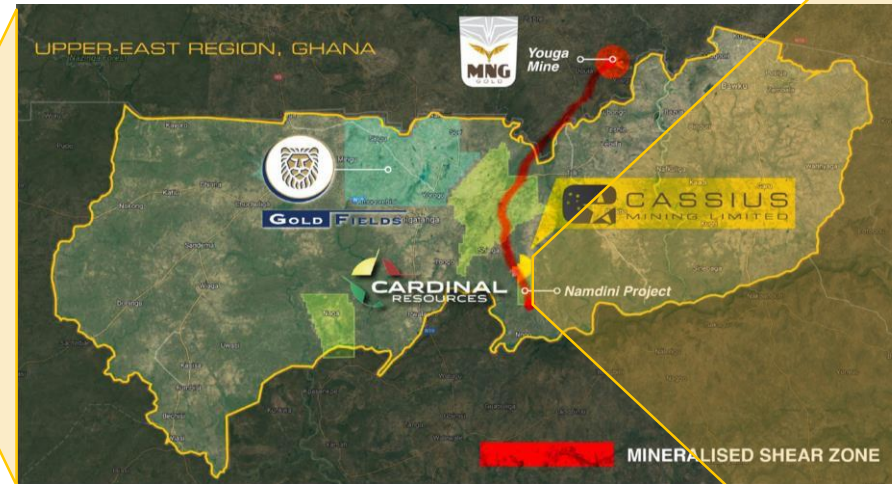
# Achievements to Date & Outlook for 2018-19



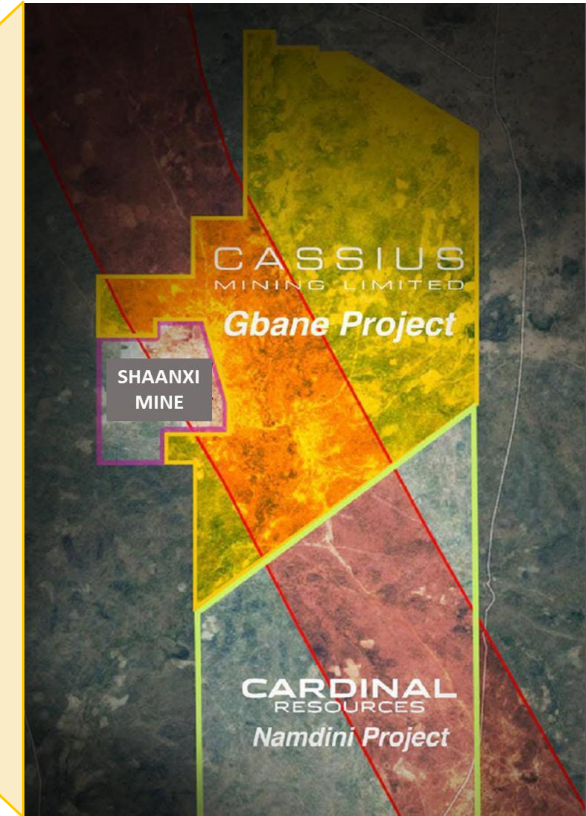
# Gbane Project – At the Heart of a Multi-Million Ounce Region

## GBANE PROJECT OVERVIEW

- Wholly owned Gbane Project Licence Area covers 13.79 km<sup>2</sup> within the Upper East Region, Northern Ghana <sup>(1)</sup>
- Gbane sits in the highly prospective Birimian Nangodi Greenstone Belt and is relatively unexplored with shallow cover, preserving the opportunity for Cassius
- Directly adjacent to the operating high-grade Shaanxi Gold Mine, while also along-strike from Cardinal's Namdini Project (5km south-east of Gbane)
- Cassius is undertaking a targeted advanced exploration strategy, led by its highly experienced in-country team in conjunction with SRK Consulting UK technical support



Location of Gbane Project Licence Area



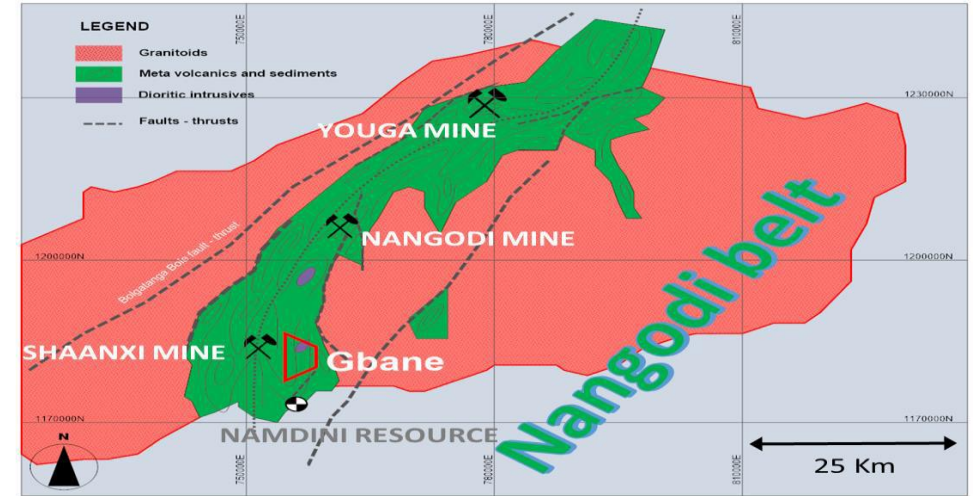
(1) Acquisition of enlarged Gbane Project Licence Area conditional on shareholder approval

# Gbane Project – Mineralisation Style

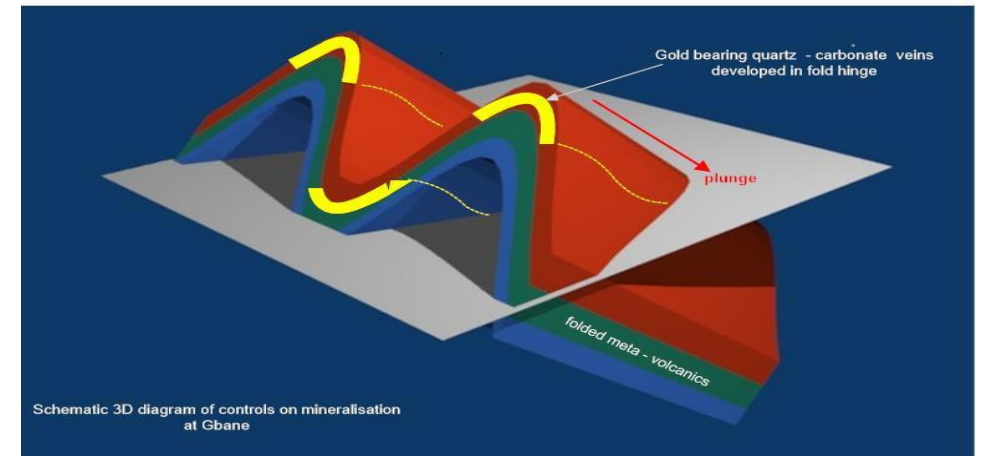
## GBANE IS ANALOGOUS TO BOTH THE NEIGHBOURING SHAANXI GOLD MINE AND CARDINAL GOLD RESOURCE

- In SRK's opinion, Phase 1 & 2 drilling identified mineralisation is analogous in alteration style, veining and intensity of shearing to the adjacent operating high-grade Shaanxi Gold Mine
- In addition Phase 3 drilling identified mineralisation is more analogous to the massive intrusive stockwork style of the neighbouring Cardinal resource
- The Gbane Project occurs at a similar stratigraphic level to both Shaanxi and Cardinal, and is believed to occupy a similar structural position in a series of tight, isoclinally folded intermediate volcanics and pyroclastics
- Gbane mineralisation is associated with shearing along the margins of the greenstone belt and contacts between the metasediments, metavolcanics and intrusives
- The higher grade targets for gold mineralisation in Phases 1 & 2 are thought to be associated with shear and structurally-hosted fold hinges in the meta-volcanics, forming narrow but extensive shoot like bodies plunging to the west – the adjacent Shaanxi Gold Mine is exploiting these shoots with known veins extending into Gbane
- Phase 3 gold mineralisation appears to be present from surface similar to the Cardinal stockwork model

***Our advanced exploration priority is to identify these major fold hinge locations in the Nangodi Greenstone Belt. Targeted drilling will follow the high resolution aerial magnetic survey.***



Schematic Diagram of Nangodi Belt, North Ghana



Schematic 3D Diagram of Carbonate Veins Developed in 'Fold Hinges'

# Gbane Project – Exploration To Date

## EXPLORATION PROGRAMS CARRIED OUT SINCE EARLY 2017

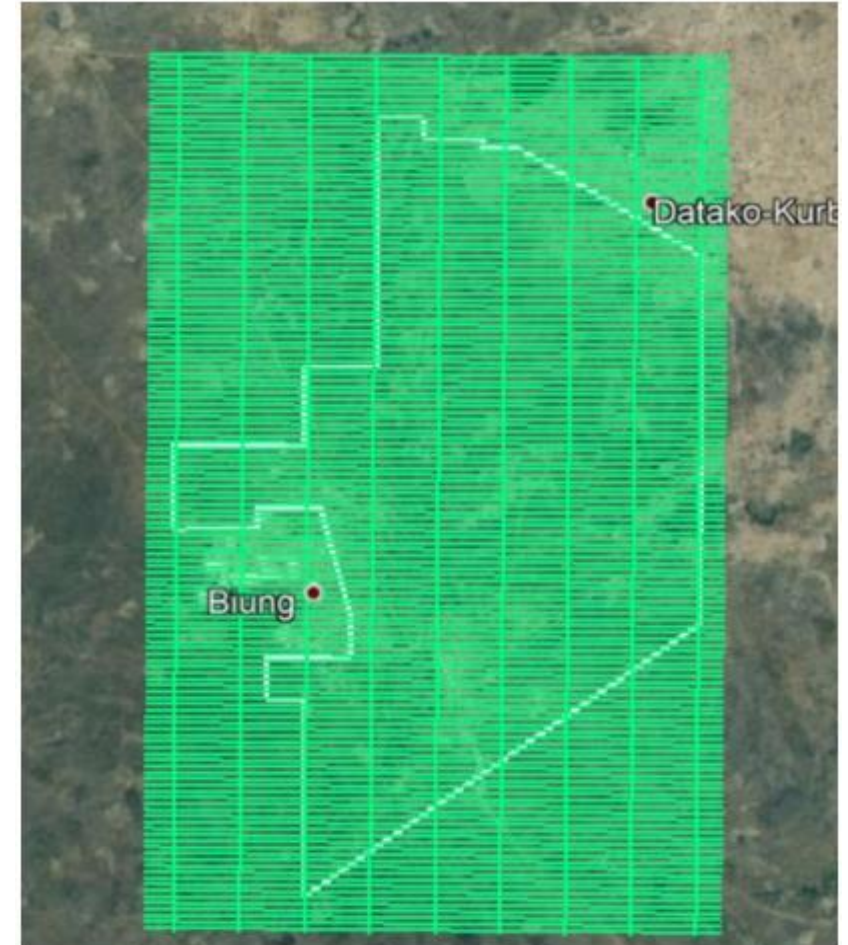
- Until recently, systematic exploration has been carried out by Cassius' in-country and technical team across the central part of the Gbane Project Licence Area only (effectively 20% of the total licence area)
- Exploration activities carried out since early 2017 (when Cassius first acquired an interest in Gbane) have included:
  - Field mapping at a scale of 1:1000
  - Mapping of all known artisanal workings
  - Rock chip sampling over the Gbane Project Licence Area
  - Geochemical soil sampling and land magnetics over approximately one-third of the Gbane Project Licence Area (mainly the western half of the licence)
  - Three phases of RC and Diamond drilling (approximately 17,300 metres) to understand controls on surface mineralisation identified at Gbane
  - Detailed structural analysis of the mineralisation controls based on oriented core and field mapping
  - More recently, a high resolution aerial magnetic and radiometric survey has been flown across the entire Gbane Project Licence Area for the first time – the results of this survey are pending



# Gbane Project – Next Phase of Exploration

## HIGH RESOLUTION AERO-MAG & RADIOMETRIC SURVEY COMPLETED

- A high resolution aerial magnetic and radiometric survey was conducted in April 2018 across the entire Gbane Project Licence Area for the first time using the world's only 3-axis heli gradiometer, capable of generating very high definition results
- 689 line kms were flown based on 50 metre line spacings normal to the main strike of mineralisation (with approximate 500 metre overlap to licence boundaries)
- The survey is being used for:
  - Revision of ground mapping
  - Targeting higher grade fold hinges of shallow plunging ore shoots and saddle reef structures for follow-up diamond drilling
  - Identifying lower grade, higher tonnage mineralisation within narrow vein stock-works associated with Phase 3 intrusives for future exploration
  - Identification of new target areas for future exploration
- Results of the survey are expected by early / mid June after which Cassius' technical team will formulate the forward exploration activity



Aerial magnetic and radiometric survey plan  
(overlain on Cassius' license)



# Gbane Project – Next Phase of Exploration (cont'd)

## PROPOSED 2018-19 EXPLORATION WORK PROGRAM

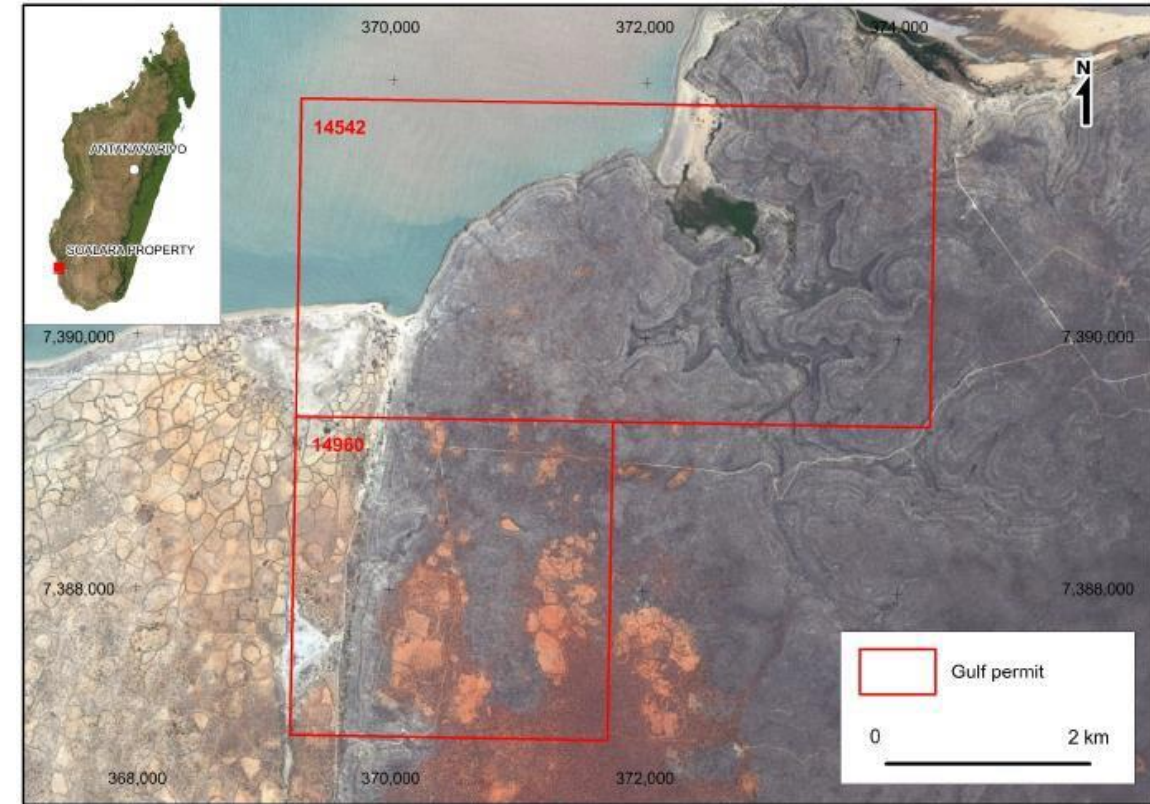
- Revision of ground mapping to include the results of the aerial magnetic data to aid geological interpretation
- Highly targeted diamond drilling on the higher grade more continuous veins already drilled, to locate the fold hinges of shallow plunging ore shoots or saddle reef structures for maximised intercept width and grade, based on magnetics results / mapping / drilling results to date
- Drilling of lower grade, higher tonnage mineralisation associated with narrow vein stockworks associated with intrusives
- Identification of new target exploration areas based on combined geological mapping and geophysics:
  - Follow up target areas using low cost, grid based, shallow Auger or Aircore drilling
  - Follow up of any anomalous geochemistry in the Auger / Aircore program with targeted diamond drilling



# Soalara Project – Highly Sought-after Limestone Project

## SOALARA PROJECT OVERVIEW

- Soalara Limestone Project is a 100%-owned asset, located on the South Western coast of Madagascar
  - Two contiguous permits that cover an area of 18.75 km<sup>2</sup>, granted for exploitation of limestone over a 40 year period
- Location on coast provides strong prospect for bulk exportation
  - Limestone assumed to be suitable for manufacture of cement and lime, with potential for supply of glass making
- In 2016 SRK was engaged to undertake an independent technical review of the high grade project
  - Estimated an exploration target of 491 - 818Mt of limestone with purity of high to very high <sup>(1)</sup>
- Based on the SRK report, the Company believes that with a successful drilling program and the development of a Pre-Feasibility Study, the Project could achieve a potential JORC compliant Resource
- During the March 2018 quarter, the Company received enquiries around a possible joint venture or industry trade sale of Soalara



Location map of the Soalara Limestone Project showing the position of the Exploration Licences

***The Company has received enquiries around a possible joint venture or industry trade sale of the Company's limestone asset***

(1) Based on calculation on a 5 km<sup>2</sup> area, a 60m thickness of limestone and by applying a density of 2.4 t/m<sup>3</sup>

# Cassius Mining – Proposed 2018-19 Milestones

## PRIORITY TO RANK, DRILL AND EVALUATE TARGETS

... CONVERT PROSPECTING LICENSE TO MINING LICENSE

... DELINEATE AN INAUGURAL RESOURCE



Aerial magnetic and radiometric survey



Results of aerial magnetic and radiometric survey generates structural information and targeted drill location targets



Highly targeted diamond drilling to locate fold hinges of shallow plunging ore shoots or saddle reef structures



Delineation of lower grade, higher tonnage mineralisation associated with narrow vein stockworks



Conversion of Prospecting License to Mining License



Delineate an inaugural Resource



# APPENDIX

# Experienced Board & Strong In-Country Team

## Corporate

### **JAMES ARKOUDIS** **CEO**

James has been working in the gold mining sector in Ghana for the past 4½ years. Previously he was a commercial Lawyer in Australia with over 20 years experience in practice. He has developed a comprehensive expertise in Ghanaian Mining Law, Licensing and practice. He has previously served on the Board of ASX listed mining companies.

### **ANTHONY KARAM** **MANAGING DIRECTOR**

Anthony has been working on this project for over 4 years, including extensive periods in Ghana. He has previously held senior board positions with ASX listed companies in both the mining and technology sectors. Anthony has 20 years experience as a commercial lawyer, and has been engaged as a corporate adviser to a number of ASX listed companies and large privately owned businesses.

### **WAYNE KERNAGHAN** **DIRECTOR & COMPANY SECRETARY**

Qualified chartered accountant with over 30 years spent as a resource executive, working as Finance Director and Company Secretary for ASX listed mining companies, as well as being an Investment Manager in Australia and the UK. Member of the Institute of Chartered Accountants in Australia and a Fellow of the Australian Institute of Company Directors and a Chartered Secretary.

## In-Country

### **DAVID CHIDLOW** **PROJECT TECHNICAL DIRECTOR**

Over 35 years experience in the resources sector, adds valuable exploration, development and project management expertise to the Board, with a successful drilling and geological background.

### **ANDREW HEAD** **PROJECT MANAGER**

Over 18 years project management experience with capability leading teams delivering complex construction projects and programs. Involved in mining civil projects & exploration programs for Avocet, SMG Global, Randgold, Middle Island Resources, Ampella Mining across Africa.

### **ANDREW CRISPE** **PROJECT MANAGER**

Project geologist, resource development manager, as well as construction supervisor and OH&S adviser, with over 32 years experience in the Australian mining industry. Established NuPower's maiden phosphate resource (in NT), and oversaw the drilling of numerous Atlas Iron deposits.

### **WILLET ANGONGO** **CHIEF GEOLOGIST**

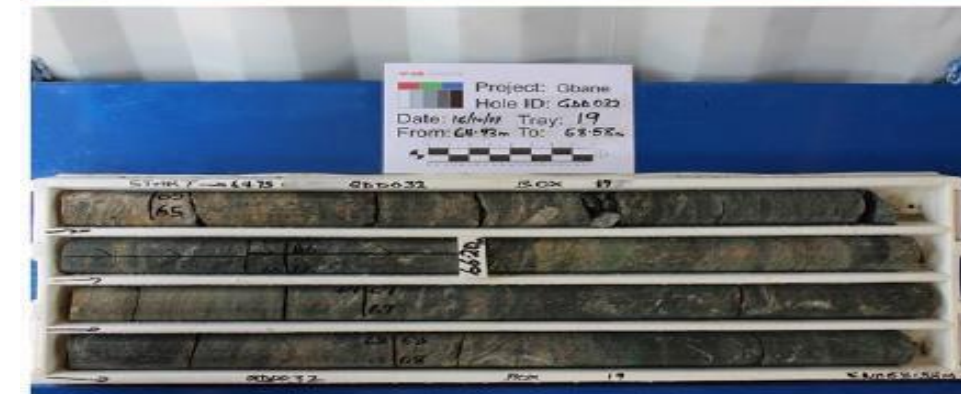
Professional geologist with over 25 years experience, working predominantly in Ghana and South Africa. Most recent role prior to this project being a management role as Chief Geologist UG in the AngloGold Ashanti Obuasi Mine, Ghana.



# Gbane Project – Mineralisation Style

## PHASE 1 & 2 MINERALISATION IS ANALOGOUS TO THE ADJACENT HIGH-GRADE SHAANXI GOLD MINE

- Gold mineralisation is associated with a series of discontinuous quartz-carbonate veins hosted in a series of low angle (30-40°) mylonitic and highly altered shear zones hosted in mainly volcanics and pyroclastics of intermediate to base composition
- Controlling shear zones are not simple tabular sheets but can vary in thickness from a few metres to tens of metres wide, often occurring from very near surface to depths of (at least) 200 metres
- Higher-grade mineralisation occurs in narrow (< 1 metre wide) quartz carbonate veins developed within the shear zones with lower-grade mineralisation occurring in the surrounding altered wall rocks
- Visible gold has been identified in core although it is generally fine grained and not visible

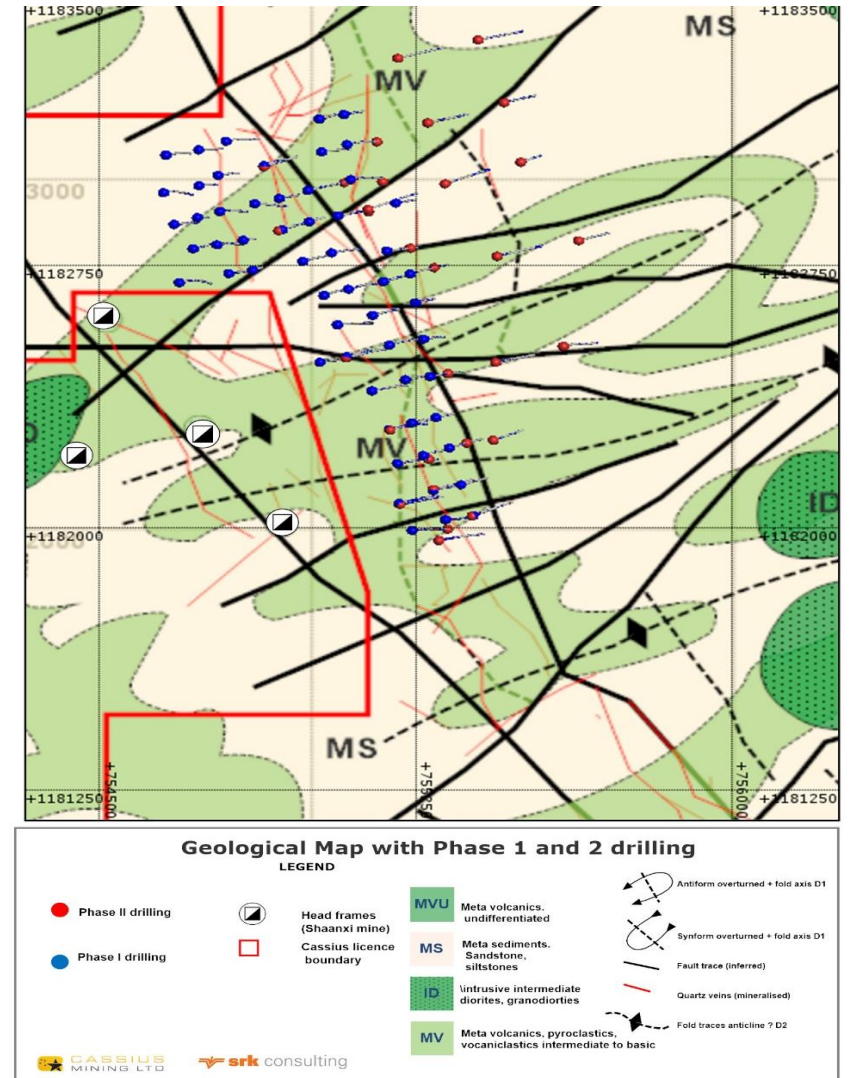


# Gbane Project – Exploration To Date

## PHASE 1 & 2 DRILL PROGRAMS

- Phase 1 and 2 programs were carried out in mid-2017 and concentrated on the central part of the Gbane Project Licence Area adjacent to the operating gold mine with approximately 200 x 150 metre spacing
  - 8,637 metres RC (58 holes)
  - 6,286 metres DD (32 holes)
- Cassius has successfully identified 26 mineralised and altered shear-vein zones with excellent geological continuity confirmed along strike length
- Mineralisation has been defined over a combined strike length of 1.3 km forming a broad zone (400 metres wide) of narrow, stacked veins from very shallow to a vertical depth of (at least) 200 metres
- Individual mineralised shear-veins vary in width from 2 metres to 20 metres (averaging approximately 4 metres wide), and may repeat themselves at frequent intervals in the stratigraphic sequence
- The geological map opposite shows all RC and DD holes from both Phases 1 and 2

**Cassius has drilled approximately 17,300 metres to date in three programs at Gbane, effectively covering only 20% of the consolidated Licence Area**

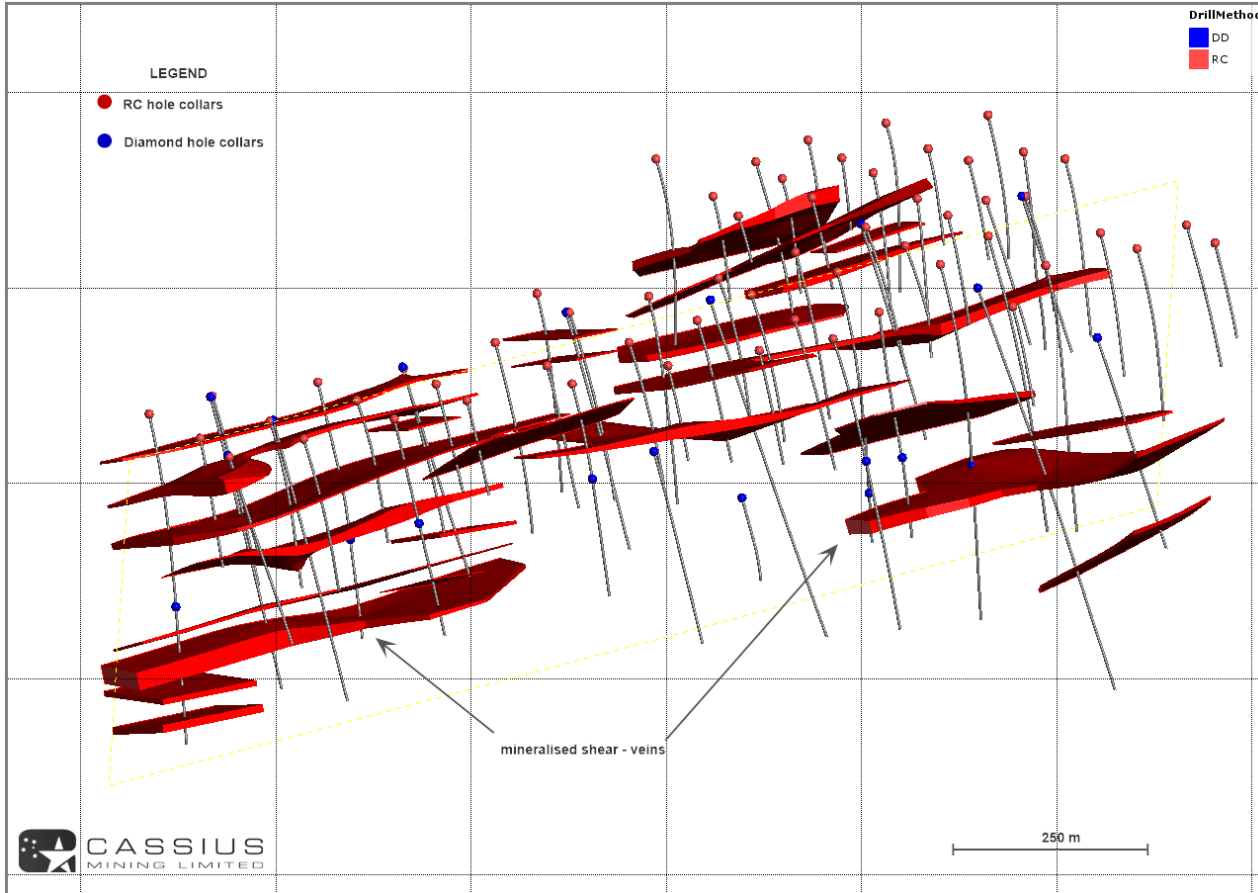


Geology Map of Gbane Project with Phase 1 and 2 Drilling

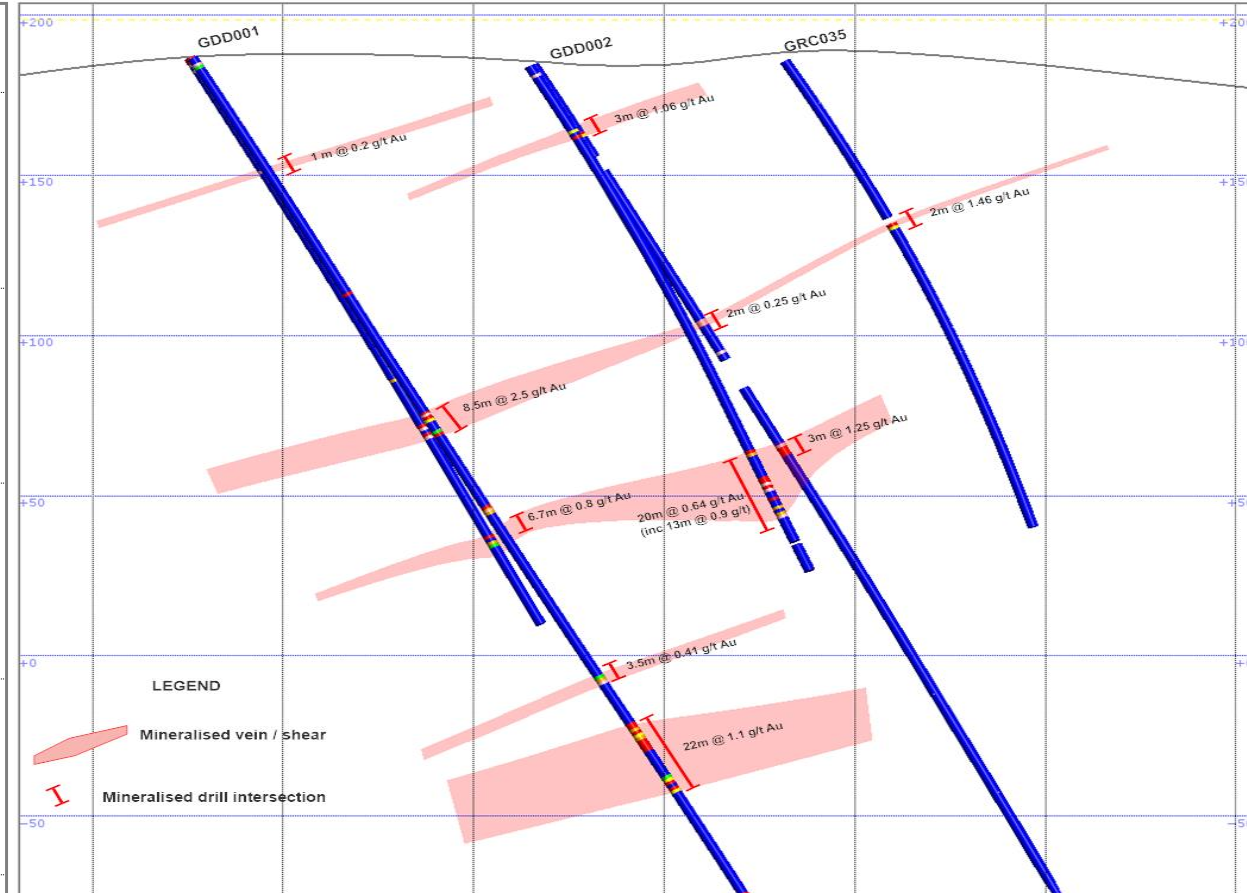
# Gbane Project – Exploration To Date (cont'd)

## PHASE 1 & 2 DRILL PROGRAMS

- To date, 26 mineralised and altered shear-vein zones have been identified with excellent geological continuity confirmed along strike length



3D View of Identified Stacked Mineralisation Shear Zones



Gold Grade and Mineralised Widths (Phase 1 holes only)



# Gbane Project – Exploration To Date (cont'd) as announced previously on the ASX

## SIGNIFICANT PHASE 1 DRILL RESULTS

Hole Number	Interval (m down hole)	Length (m)	Grade (g/t)	Vertical Depth (m)
GDD 001	123-135m	12m	2.40	110m
GDD 001	238-248m	10m	2.90	200m
GDD 001	258-263m	5m	0.90	230m
GDD 002	136-139m	3m	2.33	120m
GDD 008	306-309m	3m	2.33	250m
GDD 009	21-25m	4m	2.30	15m
GDD 010	13-19m	6m	6.85	10m
GDD 010	185-190m	5m	6.16	160m
GRC 002	143-147m	4m	1.52	120m
GRC 014	122-126m	4m	1.70	100m
GRC 015	28-33m	5m	1.28	20m
GRC 017	114-118m	4m	2.57	95m
GRC 017	125-131m	6m	1.42	100m
GRC 036	11-15m	4m	2.10	8m
GRC 043	149-154m	5m	1.51	130m
GRC 055	130-134m	4m	2.30	115m

Significant Gold Intersections >1 g/t for RC and DD holes

## SIGNIFICANT PHASE 2 DRILL RESULTS

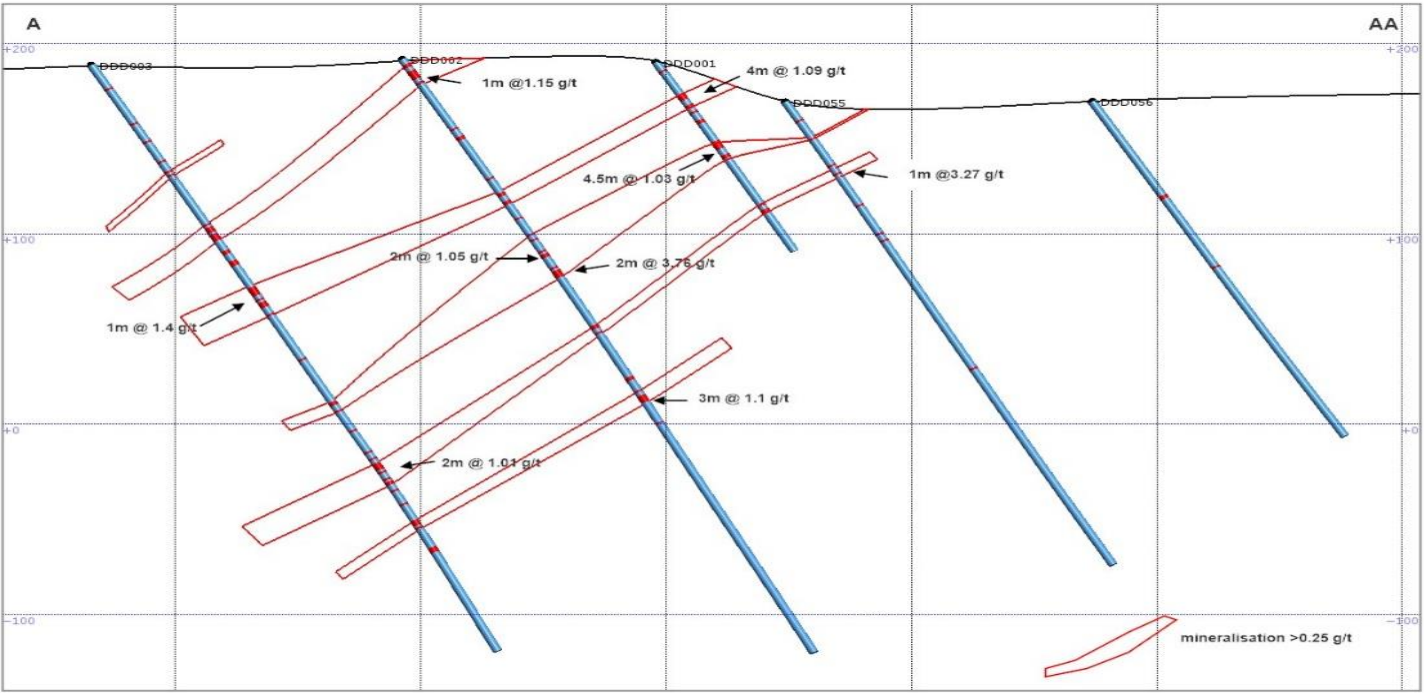
Hole Number	Interval (m down hole)	Length (m)	Grade (g/t)	Vertical Depth (m)
GDD 011	11-12m	1m	29.10	8m
GDD 012	47-48m	2m	2.95	40m
	55-60m	5m	1.78	50m
GDD 015	90-91m	1m	2.45	75m
GDD 016	7-8m	1m	2.65	5m
	60-61m	1m	4.56	50m
	63-64m	1m	3.64	52m
GDD 017	26-28m	2m	3.12	20m
	49-50m	1m	1.57	40m
	118.7-119.6m	0.9m	1.13	100m
GDD 018	79-82m	3m	1.86	70m
GDD 020	0-1m	1m	1.67	1m
GDD 023	106-107m	1m	4.12	85m
GDD 024	43-44m	1m	1.82	30m
	138-139m	1m	1.73	120m
GDD 025	22-23m	1m	17.27	18m
GDD 028	70-71m	1m	1.78	60m
GDD 029	125-126m	1m	1.39	105m
	134-135m	1m	1.49	110m
GDD 032	1-2m	1m	1.38	2m
	64-65m	1m	1.39	50m
	68-73m	5m	2.89	55m
	164-165m	1m	1.33	150m
	200-201m	1m	3.27	180m

Significant Gold Intersections >1 g/t for DD holes

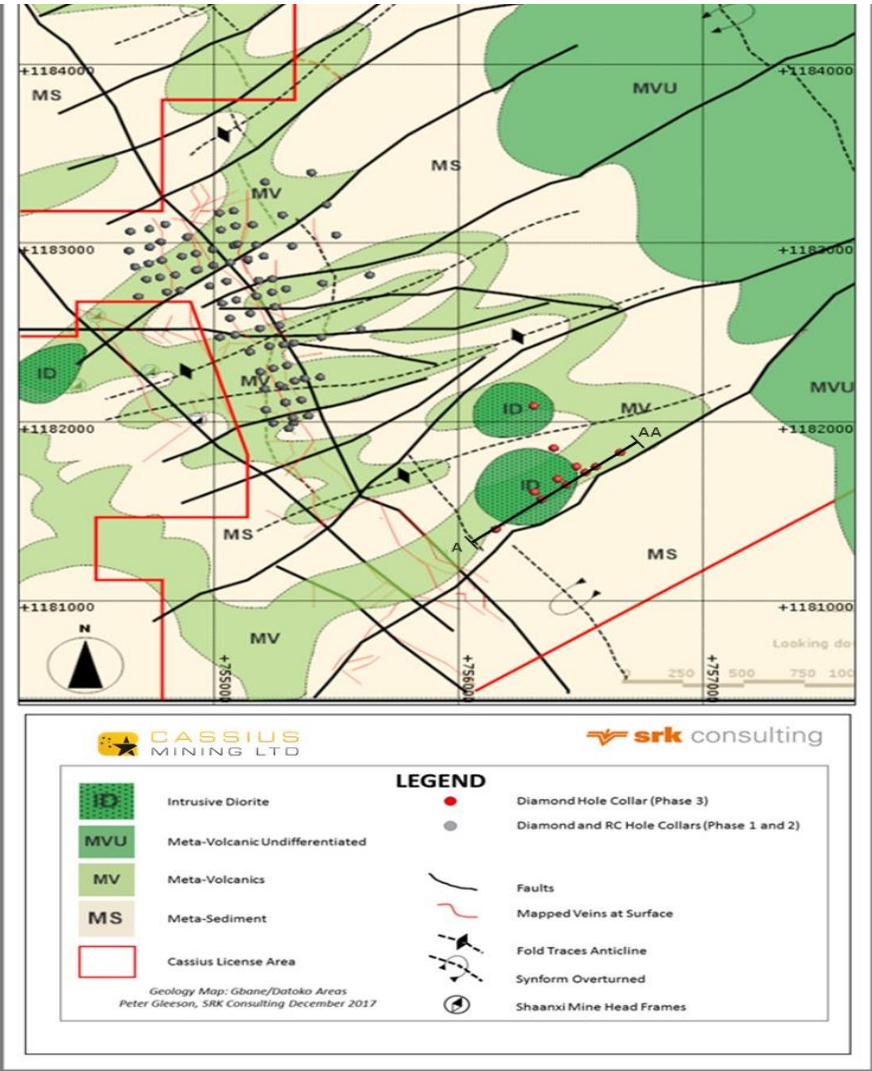
# Gbane Project – Exploration To Date (cont'd)

## PHASE 3 DRILL PROGRAM

- Phase 3 drilling (2,421 metres, 11 holes) was conducted in late 2017, approximately 700m south-east of Phases 1 and 2, and was designed to intersect mineralisation, geology and structure in intrusive diorites and fold limbs of adjacent metavolcanics
- The mineralisation style was similar to Phases 1 and 2 with the added presence of much wider lower grade gold mineralisation associated with dioritic intrusions surrounding the narrow, higher grade quartz carbonate veins and shears over wide, shallow intervals from surface



Cross-section A-AA showing mineralised intercepts & interpreted zones



Geology with Phase 1-3 drillhole collar locations

# Gbane Project – Exploration To Date (cont'd) as announced previously on the ASX

## SIGNIFICANT PHASE 3 HIGH GRADE DRILL RESULTS

Hole Number	Interval (m downhole)	Length (m)	Grade (g/t)	Vertical Depth (m)
DDD 001	20-24	4	1.09	17
	48-52.5	4.5	1.03	32
	56-57	1	1.24	44
	90-91	1	1.44	72
DDD 002	10-11	1	1.15	8
	81-83	2	1.05	65
	86-88	2	3.76	67
	203-206	3	1.10	162
DDD 003	150-151	1	1.40	120
	241-243	2	1.01	192
DDD 007	2-3	1	8.09	1.6
	23-24	1	1.42	18
DDD 010	15-17	2	1.30	13
	164-165	1	1.35	131
DDD 055	43-44	1	3.27	34
DDD 061	57.8-60	2.2	2.21	52
	76-77	1	1.00	60
	93-95	2	1.29	74
	168-172	4	1.14	134
DDD 062-1	258-259	1	2.37	206
	134-135	1	1.08	107
	192-193.7	1.7	1.84	152
DDD 063	230.7-232.3	1.6	1.32	184
	77-78.3	1.3	1.12	61
	157-158	1	1.09	125

Significant High Grade Gold Intersections >1 g/t for DD holes

## SIGNIFICANT PHASE 3 LOW GRADE DRILL RESULTS

Hole Number	Interval (m downhole)	Length (m)	Grade (g/t)	Vertical Depth (m)
DDD 001	18-38	20	0.30	15
	48-60	12	0.54	41
	86-96	10	0.27	73
	0-16	16	0.24	0
DDD 002	77-90	13	0.78	65
	105-136	31	0.10	89
	199-210	11	0.35	169
DDD 003	92-123	31	0.15	78
	126-154	28	0.15	107
	202-259	57	0.12	171
DDD 007	1-4	3	2.73	1
	22-27	5	0.35	19
DDD 010	0-17	17	0.21	0
	24-29	5	0.28	20
	163-167.7	4.7	0.32	139
DDD 055	22-44	22	0.19	19
DDD 061	57-60	3	1.63	48
	76-79	3	0.36	65
	93-95	2	1.29	79
	163-172	9	0.59	139
DDD 062-1	255-260	5	0.49	217
	192-192.6	4.6	0.71	163
	227-237	10	0.41	193
DDD 063	76-85	9	0.25	65
	141-161	20	0.20	120

Significant Low Grade Gold Intersections >0.1 g/t for DD holes

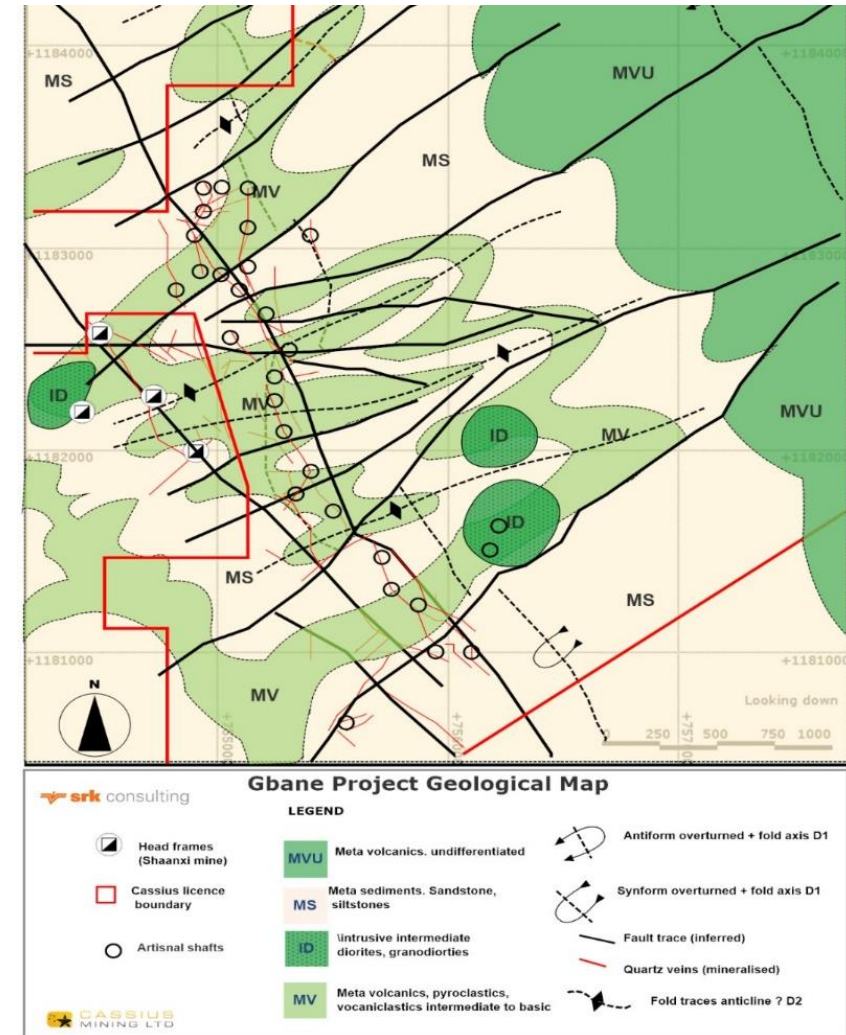
# Gbane Project – Artisanal Workings

## ARTISANAL WORKINGS INDICATIVE OF EXTENSIVE MINERALISATION

- Extensive artisanal workings occur around the village of Tarkwa and adjacent to the operating Shaanxi gold mine, following the main Nangodi trend for at least 3 kms in a NNW-SSE direction along the western border of the Gbane Project Licence Area
- The east of the Gbane Project Licence Area is covered by shallow to deeper soils obscuring much of the outcrop with little evidence of artisanal workings
- However, newly developed artisanal workings have been identified in the north-east corner of the licence (close to the village of Datoko) in the approximate position of a prominent NNE-SSW trending shear that marks the edge of the Nangodi belt, which suggests the eastern margins of the belt should be considered prospective
- The artisanal workings are generally isolated around single narrow high grade quartz-carbonate veins plunging within the overall shear zone (generally between 3 to 6 metres wide), often associated with a strong arsenic in soil anomaly
- Grab samples from artisanal workings show gold grades ranging between 40 to 0.2 g/t



Artisanal Workings Located in Gbane Project



Geological Map of Gbane Project Showing Known Artisanal Vein Working Trends (in red)

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## DISCLAIMER

The purpose of this presentation is to provide general information about Cassius Mining Limited (the “Company”). Unless otherwise stated herein, the information in this presentation is based on the Company’s own information and estimates may also contain information that has not been independently verified by the Company. This presentation does not constitute or form any part of any offer or invitation to sell or issue, or any solicitation of any offer to purchase or subscribe for, any securities in the Company in any jurisdiction. No representation or warranty, express or implied, is made by the Company that the matters stated in this presentation will be achieved or provide to be correct. Except for statutory liability which cannot be excluded, the Company, its officers, employees and advisers expressly disclaim any responsibility for the accuracy or completeness of the material contained in this presentation and exclude all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person based on any information in this presentation or any error of omission. Recipients of this presentation should make their own independent assessment and determination as to the matters covered in this presentation.

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## COMPETENT PERSON STATEMENT

The information in this presentation that relates to Exploration Targets and Exploration Results is based on information compiled by Peter Gleeson who is a Member of the Institute of Materials, Minerals, and Mining, a ‘Recognized Professional Organization’ (RPO) including in the list of promulgated by the ASX from time to time. Peter Gleeson is a consultant working for SRK Consulting (UK) Ltd and has been engaged by Cassius Mining Limited to prepare documentation for the Gbane Project. He has sufficient experience which is related to the style of mineralization and type of deposit under consideration and to the activity which has been undertaken, to qualify as Competent Person as defined by the 2012 edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”, Peter Gleeson consents to the report being issued in the form and context in which it appears.

The information in this presentation that relates to Exploration Targets and Exploration Results is based on information compiled by Dr Davis Jefferson who is a Member of the Institute of Materials, Minerals and Mining, a ‘Recognized Professional Organization’ (RPO) including in the list promulgated by the ASX from time to time. Dr Jefferson is a consultant working for SRK Exploration Services Ltd and has been engaged by Cassius Mining Limited to prepare documentation for the Soalara Limestone Property. He has sufficient experience which is related to the style of mineralization and type of deposit under consideration and to the activity which has been undertaken to qualify as Competent Person as defined by the 2012 edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”, Dr. Jefferson consents to the report being issued in the form and context in which it appears.



**CASSIUS**  
MINING LIMITED

**ASX: CMD**

## **CONTACT US:**

**CEO**

**James Arkoudis**

T. +61 2 9321 7943

E. [james@cassiusmining.com](mailto:james@cassiusmining.com)

**Managing Director**

**Anthony Karam**

T. +61 2 9321 7941

E. [anthony@cassiusmining.com](mailto:anthony@cassiusmining.com)

**Director / Company Secretary**

**Wayne Kernaghan**

T. +61 2 8226 3323

E. [wayne@cassiusmining.com](mailto:wayne@cassiusmining.com)

**AUSTRALIAN OFFICE**

Level 7, 99 Macquarie Street

Sydney NSW

2000 Australia

T. +61 2 8226 3323

**GHANA OFFICE**

H/No. 4, 9<sup>th</sup> Street,

Adjiringanor, P.O. Box

GP17867, Accra, Ghana

T. +233204318484

+233302540231

**[cassiusmining.com](http://cassiusmining.com)**

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