# Perseus Mining Updates Edikan's Life of Mine Plan

29.08.2018 | GlobeNewswire

PERTH, Aug. 28, 2018 - <u>Perseus Mining Ltd</u>. (&ldquo;Perseus&rdquo; or the &ldquo;Company&rdquo;) (TSX & ASX: PRU) is pleased to announce details of its updated Life of Mine Plan (&ldquo;LOMP&rdquo;) for its Edikan Gold Mine in Ghana, West Africa (&ldquo;Edikan&rdquo;).

Figure 1: Edikan Gold Mine layout

Figure 2: Edikan Gold Mine - scheduled monthly material movement ex-pit (volumes)

Figure 3: Edikan Gold Mine – yearly tonnes and grade to Mill

Figure 4: Edikan Gold Mine – yearly Gold Production by Pit

## **HIGHLIGHTS**

- Perseus has updated its LOMP for Edikan from July 1, 2018, following a re-estimation of Mineral Reserves. Proved and Probable Mineral Reserves total 44.7 million tonnes of ore, grading 1.09 g/t gold and containing 1,566,000 ounces of gold as at June 30, 2018.
- Comparisons of Edikan's Mineral Resource models against ore delineated by grade control since January 2017 indicate that the Mineral Resource estimates on which the Mineral Reserves are based are reliable predictors of ore tonnes and grades. Ore loss and dilution are allowed for in the estimate of Mineral Reserves based on recent mine to mill reconciliation results.
- Estimated total gold production of 1,084,000 ounces over the current 6 year mine life is 93% of the amount estimated for the corresponding period in the previous LOMP. The reduction is largely a result of net changes in cost, throughput rate and run time impacting cut-off grade and pit design.
- The updated LOMP assumes a revised mining strategy from January 2019 involving use of a single mining contractor, mining at a reduced rate of total material movement compared to the February 2017 LOMP. Mining will not be as selective as in the past as experience has indicated that selectively mining and processing high grade ore does not generate superior cash flows. All other costs, recoveries and mill throughput rates and run times have been updated to reflect recent performance.
- Gold production averages 181,000 ounces per annum over Edikan's current 6 year mine life with
  the production profile altered relative to the previous LOMP due to the change in mining strategy, which
  distributes the total material movement and associated mining costs, the amount of ore mined and the
  grade of the ore available to be fed to the mill, more evenly over the life of mine.
- Forecast weighted average all-in site costs including all direct production costs, royalties, waste stripping costs and sustaining capital expenditure ("AISC") are US\$950 per ounce over the remaining life of mine. Over the life of mine, this represents a 10% increase in average AISC relative to the previous LOMP, resulting mainly from production of 7% fewer ounces, cost inflation on contracted mining costs, fuel and labour. Forecast sustaining capital costs (including the cost of site rehabilitation) are included in the estimate of the AISC, and total US\$31.9 million or US\$29 per ounce.
- Edikan's revised LOMP forecasts the generation of strong positive after-tax cash flow totalling approximately US\$264 million (or A\$0.34per share at an A\$:US\$ exchange rate of 0.75), assuming a flat spot gold price of US\$1,250 per ounce for the remaining mine life.
- The updated LOMP is reflected in the full year production and cost guidance for the Perseus group included in the Company's Financial Report for the year ended June 30, 2018 published on August 29, 2018.

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Chief Executive Officer and Managing Director, Jeff Quartermaine said:

&Idquo; Having successfully brought our second operating mine, Sissingue, on stream earlier this year, we have achieved a level of operational flexibility that has enabled us to think strategically about how we execute our business at Edikan. Instead of focusing on satisfying expectations of Edikan that were created in a different market environment, we have designed a mine plan that seeks to maximise the production of profitable ounces rather than maximise ounces of gold produced at this mine.

While our updated plan does result in lower gold production and revenue in the short term (and higher production and revenue later in the mine life), it also allows us to reduce our short-term operating costs at Edikan by more than the decrease in revenue, thus increasing our cash flow at an important time in our growth cycle.

The cost pressures that companies like Perseus face from a range of sources are immense, and the updated life of mine plan for Edikan announced today seeks to address these pressures and positions Perseus in a way that it can continue to deliver growth for shareholders without recourse to the equity capital market."

## UPDATED LIFE OF MINE PLAN FOR EDIKAN GOLD MINE

### 1. OVERVIEW

The updated LOMP for Edikan involves mining and processing of ore from five open pits (Refer to *Figure 1* below) based on optimisation, design and scheduling using a gold price of US\$1,200 per ounce and input parameters based on Perseus's operating experience including costs from recently executed supply contracts.

Figure 1: Edikan Gold Mine layout

http://www.globenewswire.com/NewsRoom/AttachmentNg/4525fe89-feed-4155-93b2-de3a2dd40444

Based on the LOMP, the key forecast operating statistics for Edikan are summarised below in *Table 1 below*.

Table 1: Overview Key Parameters of the updated LOMP

Parameter	Units	Total
Ex-Pit Mining		Life of Mine
Total ore + waste mined	Mt	116.2
Waste mined	Mt	86.3
Ore mined	Mt	$29.9^2$
Head grade	g/t gold	1.09
Strip ratio	t:t	2.9
Processing		
Quantity ore processed	Mt	39.22
Head grade processed	g/t gold	0.98
Contained gold	'000 ounces	1,240
Gold recovery rate	%	87.5
Gold production	'000 ounces	1,084
Operating and Capital Costs		
Average mining costs	US\$/tonne mined	3.81
Average processing costs	US\$/tonne processed	9.42
Average general & administration ("G&A) costs	US\$/tonne processed	2.39
Production costs	US\$/ounce	835
Royalty	US\$/ounce	85

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Sustaining capital	US\$/ounce	29
All-in site costs	US\$/ounce	950

### Notes:

- 1. Perseus has a financial year that ends on June 30.
- 2. The LOMP excludes the Esuajah South Ore Reserve, but all other Ore Reserves are included consistent with Table 5. It is based on June 2018 face positions
- 3. Includes Ore mined ex-pit plus Ore drawn from ROM stockpile and Heap Leach pads.

## 2. COMPARISON OF KEY PARAMETERS RELATIVE TO THE FEBRUARY 2017 EDIKAN LOMP

The updated LOMP differs to the prior version of the LOMP released in February 2017, as shown below in *Table 2*.

Table 2: Comparative Analysis of Key Parameters

Parameter	Units	2017 LOMP <sup>1</sup>	2018 LOMP <sup>2</sup>	% Change
Mining				
Total ore + waste mined	Mt	117.3	116.2	-1
Waste mined	Mt	85.4	86.3	+1
Ore mined	Mt	31.8	29.9	-5
Head grade	g/t gold	1.02	1.09	+6
Strip ratio	t:t	2.7	2.9	+4
Processing				
Average quantity ore processed	l Mt/year	6.7	6.5	-3
Head grade processed	g/t gold	1.02	0.98	-4
Contained gold	'000 ounces	1,322	1,240	-6
Gold recovery rate	%	85.6	87.5	+2
Gold production	'000 ounces	1,132	1,084	-4
Average gold production	'000 ounces/ year	189	181	-4
Operating and Capital Costs				
Average mining costs	US\$/tonne mined	3.27	3.81	+16
Average processing costs	US\$/tonne processed	9.27	9.42	+2
Average Site G&A costs	US\$/tonne processed	2.08	2.39	+15
Production costs	US\$/ounce	740	835	+13
Royalty	US\$/ounce	81	85	+5
Sustaining capital	US\$/ounce	25	29	+16
All-in site costs	US\$/ounce	846	950	+12

# Notes:

- 1. FY2018 omitted from 2017 LOMP for comparison purposes
- 2. LOMP commences July 1, 2018 and ends May 31, 2024.
- 3. The LOM Plan is based on June 2018 face positions.

## 3. MINERAL RESOURCES AND ORE RESERVES

The updated global Measured and Indicated Mineral Resource for Edikan is now estimated as 84.9 Mt grading at 1.10 g/t gold, containing 3,025 koz of gold as shown in *Table 3*. The Mineral Resource includes the Esuajah South Underground Resource, which is not included in the current LOMP.

A further 6.8 Mt of material grading at 1.25 g/t gold and containing a further 267 koz of gold are classified as Inferred Resources. Details of these estimates are shown below in *Table 4*.

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Table 3: Edikan's Measured and Indicated Mineral Resources –June 30, 2018<sup>7, 8, 9</sup>

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Deposit	Deposit Type	Measure	a Resou	irces	Indicated	1 Resour		Resource	es	
		Quantity	Grade	Gold	Quantity	Grade	Gold	Quantity	Grade	Go
		Mt	g/t gold	l '000 oz	Mt	g/t gold	'000 oz	Mt	g/t gold	&ls
AF Gap <sup>1, 2, 3</sup>	Open Pit	7.8	1.00	253	11.1	0.95	338	19.0	0.97	59
Fobinso <sup>1, 2, 3</sup>	Open Pit	1.0	1.15	37	4.1	0.98	130	5.1	1.01	16
Esuajah North <sup>1, 2, 3</sup>	Open Pit	6.7	0.95	206	9.4	0.90	272	16.2	0.92	47
Fetish <sup>1, 2, 3, 4</sup>	Open Pit	6.8	1.04	228	11.7	0.96	363	18.5	0.99	59
Bokitsi South <sup>1, 2, 3</sup>	Open Pit	8.0	2.64	67	0.6	2.23	43	1.4	2.47	110
Sub-Total	Open Pit	23.2	1.06	791	37.0	0.96	1,146	60.2	1.00	1,9
Esuajah South <sup>5</sup>	U/ground	8.5	1.9	533	6.3	1.7	353	14.8	1.8	87
Heap Leach <sup>6</sup>	Stockpile				4.3	0.6	89	4.3	0.6	89
Stockpiles	Stockpile	5.7	0.67	121	-	-	-	5.7	0.67	12
Total		37.3	1.19	1,445	47.6	1.03	1,588	84.9	1.10	3,0

# Notes:

- 1. Based on January 2017 Mineral Resource models constrained to US\$1,800/oz pit shells.
- 2. Depleted to June 30, 2018 mining surfaces.3. 0.4g/t gold cut-off grade applied.
- 4. Includes Bokitsi North lode.
- 5. 0.7g/t gold cut-off grade applied.
- 6. At zero cut-off grade.
- 7. All Mineral Resources are current as at June 30, 2018.
- 8. Mineral Resources are inclusive of Mineral Reserves.
- 9. Rounding of numbers to appropriate precisions may have resulted in apparent inconsistencies.

Table 4: Edikan's Inferred Mineral Resources – June 30, 2018<sup>6, 7</sup>

	Inferred Resources			
Deposit	Deposit Type	Quantity	Grade	Gold
		Mt	g/t gold	'000 oz
AF Gap <sup>1, 2, 3</sup>	Open Pit	0.1	1.04	4
Fobinso <sup>1, 2, 3</sup>	Open Pit	0.9	1.21	35
Esuajah North <sup>1, 2, 3</sup>	Open Pit	<0.1	1.12	1
Fetish <sup>1, 2, 3, 4</sup>	Open Pit	0.5	0.98	14
Bokitsi South <sup>1, 2, 3</sup>	Open Pit	0.6	1.13	20
Esuajah South <sup>5</sup>	Underground	4.7	1.3	192
Total		6.8	1.25	267

# Notes:

- 1. Based on January 2017 Mineral Resource models constrained to US\$1,00/oz pit shells.
- 2. Depleted to June 30, 2018 mining surfaces.
- 3. 0.4g/t gold cut-off grade applied
- 4. Includes Bokitsi North lode
- 5. 0.7g/t gold cut-off grade applied.
- 6. All Mineral Resources are current as at June 30, 2018.
- 7. Rounding of numbers to appropriate precisions may have resulted in apparent inconsistencies.

The updated Edikan Ore Reserve which is summarised below in Table 5 is estimated at 44.7 million tonnes of ore, grading 1.09 g/t gold and containing 1,566 koz of gold and is based on the re-estimated Edikan Mineral Resources as at June 30, 2018 and updated pit optimisation, design and scheduling of the Open Pit resources and Esuajah South Ore Reserve based on underground mining methods. Table 5 reports the Ore

05.05.2025 Seite 4/7 Reserves by category, deposit and type, above variable cut-off grades. The classification categories of Proved and Probable under the JORC Code are equivalent to the CIM categories of the same name (CIM, 2010).

Table 5: Edikan Gold Mine Proved and Probable Mineral Reserves as at June 30, 20183, ⁶ ⁷

		Proved			Probable	)		Proved +	- Probab	ole
Deposit	Deposit Type	Quantity	Grade	Gold	Quantity	Grade	Gold	Quantity	Grade	Gold
		Mt	g/t gold	koz	Mt	g/t gold	koz	Mt	g/t gold	koz
AF Gap <sup>1,</sup> ⁴	Open Pit	4.3	1.09	150	4.7	1.11	169	9.0	1.10	319
Fobinso1,⁴	Open Pit	0.2	1.22	7	0.5	0.98	17	0.7	1.05	24
EsuajahNorth <sup>1,</sup> ⁴	Open Pit	3.0	1.07	103	4.6	0.99	148	7.6	1.02	250
Fetish <sup>1,</sup> ⁴	Open Pit	4.7	1.09	164	7.7	1.00	248	12.4	1.03	412
Bokitsi South <sup>1,</sup> ⁴	Open Pit	0.5	2.72	42	0.1	2.60	10	0.6	2.70	52
Sub-total	Open Pit	12.6	1.15	466	17.7	1.04	591	30.3	1.08	1,057
Esuajah South	U/ground				4.9	1.99	312	4.9	1.99	312
Heap Leach⁵	Stockpile				3.8	0.6	76	3.8	0.6	76
ROM Stockpiles <sup>2</sup>	Stockpile	5.7	0.67	121				5.7	0.67	121
Total		18.3	1.00	587	26.4	1.15	979	44.7	1.09	1,566

#### Notes:

- 1. Based on June 2018 Mineral Resource estimate which is depleted to June 30, 2018.
- 2. Based on stockpile balance as at June 30, 2018.
- 3. All Mineral Reserves current as at June 30, 2018.
- 4. Variable gold grade cut-off based on recovery of each material type in each deposit: Oxide 0.40 0.55 q/t, Transition 0.55 0.75 q/t and Fresh 0.50 0.60 q/t.
- 5. Based on 0.40 g/t gold grade cut-off.
- 6. Inferred Mineral Resource is considered as waste, t:t.
- 7. Rounding of numbers to appropriate precisions may have resulted in apparent inconsistencies.

Proven and Probable Mineral Reserves are found within the economic limits of five discrete open pits, an underground project (not currently included in the LOMP) and stockpiles that have been designed based on Measured and Indicated Mineral Resources that incorporated all available Resource drilling results, mining, processing and general and administration costs derived from recent operating experience, and a gold price of US\$1,200 per ounce.

# 4. GOLD PRODUCTION PROFILE

With the aim of maximising the return on funds employed at Edikan, the mining sequence of the pits along with mill feed profile has been optimised and scheduled. The result of this scheduling is that the gold production profile and resulting cash flows from Edikan remain strong for the remainder of the mine life. (Refer to Figures 2, 3 and 4 below.)

Figure 2: Edikan Gold Mine - scheduled monthly material movement ex-pit (volumes)

http://www.globenewswire.com/NewsRoom/AttachmentNg/f173c975-5f5b-4396-834a-456a2d098724

Figure 3: Edikan Gold Mine – yearly tonnes and grade to Mill

http://www.globenewswire.com/NewsRoom/AttachmentNg/6090299b-9676-4072-a820-519a3f42a2f5

Figure 4: Edikan Gold Mine – yearly Gold Production by Pit

http://www.globenewswire.com/NewsRoom/AttachmentNg/5e426e7e-0ede-42f9-bebc-281cdec21e40

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While the development of the Esuajah South deposit is not currently included in Edikan's production profile, the risk/return equation relating to the development of this deposit using underground mining techniques would change in a higher gold price environment and therefore development of this deposit may be included in future versions of the LOMP.

## 5. IMPROVED OPERATING EFFICIENCIES

In 2016, Perseus invested heavily in upgrading key elements of Edikan's process plant and also establishing standby power generating capacity to ensure continuity of operations irrespective of the availability of power from the national electricity grid. These works were largely completed in the December 2016 quarter and were intended to enhance the Company's ability to deliver the updated LOMP. Plant performance since then confirm that forecast run time, throughput rates and gold recovery rate are readily achievable.

Assumed average annual processing throughput rate of ore is 6.9Mtpa, with throughput rates variable by material type and deposit. The processing circuit involves single stage crushing, semi-autogenous grinding, gravity recovery, flotation, regrind and CIL. Run time, which is the product of availability and utilisation, is forecast to average 92.6% for the remaining life of mine. The process metallurgical recovery for gold is fixed by material type in each deposit. Gold recovery rates range from 59.5-69% for oxide ore and 87-90% for primary ore. The variable recoveries are a function of differing metallurgical properties of ores from different deposits. Recovery by pit and ore type are as shown in *Table 6*.

Table 6: Metallurgical recoveries by material type and pit

Recovery by Ore Type (%)

Deposit	Oxide	Transition	Fresh
AF Gap	61.0	73.4	0.88
Fobinso	61.0	73.4	0.88
Bokitsi	69.0	78.0	87.01
Fetish	61.0	73.4	90.0
Esuajah North	61.0	73.4	90.0
Heap Leach	67.0	-	-

<sup>&</sup>lt;sup>1</sup> Average value, the recovery for Bokitsi is variable based on the input grade

## 6. FUTURE CASH FLOWS AND SENSITIVITY ANALYSIS

Based on Edikan's revised LOM gold production and cost parameters, the net after tax cash flows forecast to be generated by the mine from July 1, 2018, at US\$1,250 per ounce gold price, are estimated to total US\$264 million or A\$0.33 per share (assuming an A\$:US\$ exchange rate of 0.75).

The sensitivity analysis shown below in *Table 7* summarises the sensitivity of Edikan's net after tax cash flows to movements in the gold price.

Table 7: Sensitivity Edikan's After Tax Cashflow to gold price movements

## Gold Price

US\$1,100/ounce US\$1,200/ounce US\$1,250/ounce US\$1,300/ounce US\$171 million US\$233 million US\$264 million US\$294 million A\$0.22/share A\$0.30/share A\$0.33/share A\$0.38 / share

Within an expected short-term gold price trading range of US\$1,100 per ounce to US\$1,300 per ounce, the projected cash flows of the mine remain robust and capable of materially contributing to the development funding of Perseus's next growth project, namely the Yaouré Gold Mine, located in Côte

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To discuss any aspect of this announcement, please contact:

Managing Director: Jeff Quartermaine at telephone +61 8 6144 1700 or email

jeff.quartermaine@perseusmining.com;

Media Relations: Nathan Ryan at telephone +61 4 20 582 887 or email

nathan.ryan@nwrcommunications.com.au (Melbourne)

# Competent Person Statement:

All production targets for the Edikan Gold Mine referred to in this report are underpinned by estimated Ore Reserves which have been prepared by competent persons in accordance with the requirements of the JORC Code. The information in this report that relates to the Mineral Resource and Ore Reserve estimates for the Edikan deposits was first reported by the Company in compliance with the JORC Code 2012 and NI43-101 in a market announcement released on 29 August 2018. The Company confirms that it is not aware of any new information or data that materially affect the information in that market release and that all material assumptions underpinning those estimates and the production targets, or the forecast financial information derived therefrom, continue to apply and have not materially changed. The Company further confirms that material assumptions underpinning the estimates of Ore Reserves described in &Idquo; Technical Report — Central Ashanti Gold Project, Ghana" dated 30 May 2011 continue to apply.

## Caution Regarding Forward Looking Information:

This report contains forward-looking information which is based on the assumptions, estimates, analysis and opinions of management made in light of its experience and its perception of trends, current conditions and expected developments, as well as other factors that management of the Company believes to be relevant and reasonable in the circumstances at the date that such statements are made, but which may prove to be incorrect. Assumptions have been made by the Company regarding, among other things: the price of gold, continuing commercial production at the Edikan Gold Mine and the Sissingué Gold Mine without any major disruption, development of a mine at Yaouré, the receipt of required governmental approvals, the accuracy of capital and operating cost estimates, the ability of the Company to operate in a safe, efficient and effective manner and the ability of the Company to obtain financing as and when required and on reasonable terms. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used by the Company. Although management believes that the assumptions made by the Company and the expectations represented by such information are reasonable, there can be no assurance that the forward-looking information will prove to be accurate. Forward-looking information involves known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any anticipated future results, performance or achievements expressed or implied by such forward-looking information. Such factors include, among others, the actual market price of gold, the actual results of current exploration, the actual results of future exploration, changes in project parameters as plans continue to be evaluated, as well as those factors disclosed in the Company's publicly filed documents. The Company believes that the assumptions and expectations reflected in the forward-looking information are reasonable. Assumptions have been made regarding, among other things, the Company's ability to carry on its exploration and development activities, the timely receipt of required approvals, the price of gold, the ability of the Company to operate in a safe, efficient and effective manner and the ability of the Company to obtain financing as and when required and on reasonable terms. Readers should not place undue reliance on forward-looking information. Perseus does not undertake to update any forward-looking information, except in accordance with applicable securities laws.

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