



## **Avnel Gold Materially Improves Economics of Kalana Main Project in Optimisation of Definitive Feasibility Study**

**ST. PETER PORT, GUERNSEY, January 09, 2017** - Avnel Gold Mining Ltd. (TSX:AVK) ("Avnel" or the "Company") is pleased to announce the results from an number of optimisation programs for Avnel's fully permitted Kalana Main Project in south-western Mali, for which a Definitive Feasibility Study ("DFS") was published on March 30, 2016.

The Optimised Feasibility Study ("OFS") results indicate an increase of 25% in the after-tax NPV to \$321 million, at a 5% discount rate, compared to \$257 million estimated in the DFS and an improvement in the after-tax internal rate of return (IRR) to 50%, compared to the 38% IRR in DFS at a gold price of \$1,200/oz.

The OFS does not incorporate any changes to the project's underlying National Instrument ("NI") 43-101 compliant Mineral Reserves and Resources and the production profile and the mining plan of the project outlined in the DFS remain unchanged, but as a result of the optimisation process, the project's cost structure has been reduced.

Initial capital expenditure has been lowered by \$25 million to \$171 million and, accounting for pre-commercial production revenue generated from processing historic tailings from the existing underground Kalana Gold Mine, the net funding requirement to commercial production, including contingency, is estimated at \$139 million, approximately \$24 million lower than previously estimated in the DFS.

Howard Miller, Chairman and CEO, stated "The optimised feasibility programs demonstrate significant financial improvements in the Kalana Main Project and on a sensitivity basis indicate attractive returns even at gold prices materially below the current spot price".

Mr. Miller added "With the improved results from the optimisation, Avnel is in advanced discussions on project debt financing for a substantial portion of the required capital and is also considering other strategic alternatives to advance the Kalana project to production and maximise value for shareholders."

### **Feasibility Study Highlights**

The key performance indicators reported in this news release are based upon 100% ownership of the Kalana Main Project. All amounts are in United States dollars ("\$") unless specified otherwise.

***Project Economics***

Economic Metrics (\$1,200/oz Gold)	DFS	OFS
Pre-tax NPV @ 5%	\$345 m	\$434 m
Post-tax NPV @ 5%	\$257 m	\$321 m
Pre-tax NPV @ 8%	\$266 m	\$341 m
Post-tax NPV @ 8%	\$196 m	\$250 m
Pre-tax IRR	44%	62%
Post-tax IRR	38%	50%
Undiscounted Payback Period	1.2 years	1.1 years

OFS Economic Metrics	Low Case	Base Case	High Case
Gold Price	<u>\$1,000/oz</u>	<u>\$1,200/oz</u>	<u>\$1,400/oz</u>
Pre-tax NPV @ 5%	\$212 m	\$434 m	\$656 m
Post-tax NPV @ 5%	\$154 m	\$321 m	\$482 m
Pre-tax NPV @ 8%	\$162 m	\$341 m	\$520 m
Post-tax NPV @ 8%	\$116 m	\$250 m	\$381 m
Pre-tax IRR	39%	62%	83%
Post-tax IRR	31%	50%	66%
Undiscounted Payback Period	1.6 years	1.1 years	0.9 years

***Mineral Reserves and Resources***

The optimised feasibility study does not incorporate any changes to the project's underlying National Instrument ("NI") 43-101 compliant Mineral Reserves and Resources.

***Mine Production and Operating Costs***

The production profile and the mining plan of the project outlined in the DFS remain unchanged, but as a result of the optimisation process, the project's cash operating cost over the Life of Mine ("LOM") has been reduced by 9%. For the first five years, the cash operating cost has been reduced to \$427/oz, making the project highly profitable even at materially lower gold prices.

The key changes to the assumptions in the DFS are:

- 28% reduction in fuel cost attributable to no customs duty paid on imports
- 10% lower plant power cost due to hybrid power plant and lower fuel costs
- 3% lower mining costs owing to optimised haulage design in the later years of the mine life

Costs		DFS	OFS		DFS	OFS	
		First 5 Years			Life Of Mine		
Cash Operating Cost	\$/oz	\$460	\$427	-7%	\$648	\$592	-9%
All-in Sustaining Cost	\$/oz	\$589	\$561	-5%	\$784	\$730	-7%

### **Capital Expenditure**

Economic Metrics	DFS	OFS
Initial Capex to Commercial Production	\$196 m	\$171 m
Net Funding to Commercial Production (Including Tailings Net Revenue)	\$163 m	\$139 m
Sustaining Capex	\$123 m	\$122 m
Total Capex	\$319 m	\$294 m

- Initial capital expenditure lowered by \$25 million to \$171 million
- Once accounting for pre-commercial production revenue generated from processing historic tailings from the underground Kalana Gold Mine, the net funding requirement to commercial production, including contingency, is estimated at \$139 million.

The material changes leading to the reduction of initial capital expenditure compared to the DFS are summarised below:

- EPC contract has improved capital estimate of overall plant and infrastructure cost, leading to a reduction in the contingency estimate provided in the DFS
- The power plant supply has been changed to an over the fence provider eliminating the capital cost of the owner purchased power plant
- The oxygen plant supply has been changed to a service provider owned and operated plant eliminating the capital cost of the owner purchased oxygen plant
- The decision to introduce a mineral sizer to crush saprolite ore in Phase 2 increased capital cost but is partially offset by the deferral of the jaw crusher and ROM system to Phase 3.

### ***Construction Schedule***

*Key project milestones after start of construction:*

- Month 13: Commence pre-strip
- Month 15: Commence processing tails through new carbon-in-leach ("CIL") section of the plant
- Month 19: Commence hot commissioning of mill
- Month 22: Commercial production

The project construction time table will be reduced by 3 months. On completion of Phase 1, existing tailings will be processed using the CIL and gold recovery circuits. The DFS assumed Phase 1 would be complete in month 17 and the optimised schedule is 15 months. On completion of Phase 2, the mill will be commissioned to process saprolite ore. The DFS assumed Phase 2 would be complete in month 22 and the optimised schedule is 19 months. The improved construction schedule has an economic benefit for the project.

### ***Processing Flow Sheet***

The OFS incorporates certain design refinements undertaken since the release of the DFS, including the removal of standby cone crusher (saving \$0.8 million) and the addition of a mineral sizer (adding \$1.4 million).

These minor changes will serve to de-risk ore handing at the project in the event of exceptional rain fall. Further, the changes provide increased flexibility for different character of saprolite ore from Kalanako or other satellite deposits. We view the likelihood of additional saprolite ore feed from nearby deposits to be high.

The DFS proposed saprolite would pass through a jaw crusher prior to milling. Fresh ore would also pass through the jaw crusher and then be crushed in a secondary crushing circuit. As fresh ore will not be milled until, at the earliest, month 30 of the project, the capital expenditure for the run of mine bin, jaw crusher and secondary crusher will be postponed from Phase 2 to Phase 3.

### ***Hybrid Power Plant and Contract***

As part of the optimisation process, Avnel advanced discussions with an international power provider, KPS Africa (Pty) Ltd, to the mining industry to provide an "over the fence" power supply based on a hybrid plant utilizing fossil fuel and solar energy sources. The power provider will fund the project capital and charge the company a rate per kWh. The capital cost, including sustaining capital in the DFS was significantly reduced to provide only for civil works.

For the first 5 years operating cost per kWh will be impacted by the recovery of capital investment. The project predicts that 20% of the power requirements will be generated from the solar plant, leading to significant cost reductions and a lower environmental impact. Project risk is reduced by the power provider being contracted for the operation and maintenance of the power plant, plus the risk of any higher fossil fuel prices.

DRA provided KPS with detailed power requirements to enable KPS to design and cost the hybrid power plant and provide Avnel with a commercial proposal that has been used in the optimisation model.



KPS is a Pacific Energy group business. Pacific Energy Limited (ASX: PEA) is an ASX-listed energy supply business and owns and operates 20 power stations with a total power generation capacity approaching 239MW. KPS has been delivering its resource sector clients, including some of the world's biggest mining companies, 'off-grid' power supply solutions for in excess of 25 years. Detailed contract negotiations are complete subject to legal reviews.

### ***Resettlement Action Plan***

The OFS shows an increase in resettlement related capex of \$2 million from the DFS. The additional funds are to provide enhancements to homes for those affected by the village relocation.

### ***EPC Contract***

Avnel has agreed in principle to appoint a Joint Venture of DRA Mineral Services and Group 5 Projects (Pty) Ltd. to be the Engineering, Procurement and Construction ("EPC") contractor for the project. The EPC covers Phase 1 and Phase 2 of the gold plant construction to enable the processing of the existing tailings and saprolite ore. Phase 3 will enable the processing of fresh rock and will be implemented as an EPCM contract.

The capital cost for the plant and infrastructure was reviewed based on the EPC (Phases 1 and 2) and EPCM (Phase 3). The capital cost including contingency, provided by Avnel is in line with the DFS capital estimate.

### ***Mining optimisation***

Snowden Mining Industry Consultants reviewed the mining schedule and optimised the haulage profiles for the later years of the mine life. This resulted in a decrease in mining cost by \$20 million over the life of the mine.

As part of the ongoing optimisation of the project, an in-depth review of fuel costs was commissioned. During this effort, the complex fuel price structure in Mali was further reviewed in the context of the provisions of Mali's 1999 Mining Code. The study concluded that under the 1999 Mining Code, the operation will continue to be exempt from excise duty (TIPP). Currently fuel is purchased from suppliers in Bamako (Mali) who have paid customs duty to deliver stock to Bamako. The price invoiced to SOMIKA includes customs duty that can be reclaimed by SOMIKA. There are major delays in refunds being received, currently 3 years outstanding. When SOMIKA's consumption is sufficient to enable a vendor to import fuel directly to mine site, the vendor will invoice SOMIKA the price excluding customs duty. This is the practice at most major fuel consumers in Mali. The feasibility study was based on a conservative estimate that assumed a price including customs duty, given the low oil prices at the time of the DFS. At current fuel prices delivered in Mali and an exchange rate of CFA600/\$, the price excluding duties is 28% lower than the DFS estimate. The change in fuel price reduces mining costs by \$62 million, approximately 9%, over the LOM.

Snowden Mining Industry Consultants were responsible for the mining optimisation for both an owner mining ("OM") option and a contract mining ("CM") option. Avnel provided the data related to fuel price in Mali including customs duty after detailed discussions with fuel suppliers and other mining operations. Snowden applied the revised fuel cost to the mining cost estimate.

DRA Mineral Services were responsible for the revised process flow sheet and operating plant cost estimate. DRA retained the gold recovery parameters as per the DFS. DRA provided KPS with detailed power requirements to enable KPS to design and cost the hybrid power plant and provide Avnel with a commercial proposal that has been used in the optimisation model.

DRA Mineral Services and Group 5 JV submitted an EPC proposal for Phases 1 and 2 and EPCM for Phase 3.

### ***Contractor Mining Considerations***

Avnel is considering the option of undertaking contract mining. This is not included in the optimisation of the DFS. Any decision to employ contract mining would be subject to further negotiations with mining contractors, as well as additional due diligence from both Avnel and any project lender.

Snowden Mining Industry Consultants reviewed budget pricing from two mining contractors. One contractor offered suitable mining equipment for the selective mining of the Kalana Main Project. The contractor provided an open book cost estimate with a proposed profit margin. The open book cost was close to the owner mining estimate providing confidence in the owner mining estimate. The contractor mining option is based on the contractor mining cost plus a profit margin and a \$3 million site establishment capex cost. Avnel has provided additional funding for mining management and survey staff to develop mine plans and contractor management. The Mine Chief Geologist will be responsible for grade control as described in the DFS.

Capital expenditure for mining equipment was \$96 million in the DFS with \$29 million expended prior to commercial production. Project funding would be reduced by implementing contractor mining, although at a higher operating cost than owner mining over the life of mine. A comparison of the key project metrics for the owner mining and contract mining options is set out in the table below.

<b>Costs &amp; Financial Metrics</b>	<b>DFS</b>	<b>OFS Owner Mining</b>	<b>OFS Contract Mining</b>
Plant	\$111 m	\$91 m	\$91 m
Mining	\$11 m	\$11 m	\$16 m
Infrastructure	\$36 m	\$35 m	\$35 m
Fleet	\$103 m	\$103 m	\$7 m
Other	\$58 m	\$54 m	\$54 m
<b>Total Capex (LOM)</b>	<b>\$319 m</b>	<b>\$294 m</b>	<b>\$203 m</b>
Cash Operating Cost	\$648/oz	\$592/oz	\$659/oz
All-in Sustaining Cost	\$784/oz	\$730/oz	\$755/oz
Pre-tax NPV 5%	\$345 m	\$434 m	\$419 m
Post-tax NPV	\$257 m	\$321 m	\$309 m
Pre-tax NPV 8%	\$266 m	\$341 m	\$331 m
Post-tax NPV 8%	\$196 m	\$250 m	\$243 m
Pre-tax IRR	44%	62%	69%
Post-tax IRR	38%	50%	55%



### ***Qualified Person***

The following qualified persons, as that term is defined in NI 43-101, have prepared or supervised the preparation of their relevant portions of the technical information described above the related technical report to be filed:

Mr. Allan Earl, Associateship in Mining Engineering, FAusIMM of Snowden Mining Industry Consultants is an independent Qualified Person as defined by NI 43-101. Mr. Earl has reviewed and approved the contents of this news release.

Mr. Glenn Bezuidenhout, NDT Ex. Met, FSAIMM, Process Director for DRA Projects (Pty) Ltd., is an independent Qualified Person as defined by NI 43-101. Mr. Bezuidenhout has reviewed and approved the technical contents of this news release.

Mr. Stephanus J.P Coetzee, B.Sc (Honours) Environmental Management, PR. Sci. Nat, Director of ABS Africa (Pty) Limited is a Qualified Person as defined by NI 43-101. Mr. Coetzee has reviewed and approved the contents of this news release.

Mr. Roy Meade, B.Sc (Honours) Mining Engineering and Professional Engineer (UK), President of Avnel Gold Mining Limited is a Qualified Person as defined by NI 43-101. Mr. Meade has reviewed and approved the contents of this news release.

### **CAUTIONARY STATEMENTS**

#### **Forward-Looking Statements**

This news release includes certain "forward-looking statements". All statements, other than statements of historical fact, included in this release, including the future plans and objectives of Avnel Gold, are forward-looking statements that involve various risks and uncertainties. There can be no assurance that forward-looking statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Important factors that could cause actual results to differ materially from Avnel Gold's expectations include, among others, risks related to international operations, the actual results of current exploration activities, conclusions of economic evaluations and changes in project parameters as plans continue to be refined as well as future prices of gold and silver, as well as those factors discussed in the section entitled "Risk Factors" in Avnel Gold's Annual Information Form, which is available on SEDAR ([www.sedar.com](http://www.sedar.com)). Although Avnel Gold has attempted to identify important factors that could cause actual results to differ materially, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

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*No stock exchange, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.*