Tinka Reports Positive PEA for the Ayawilca Zinc Project After-Tax NPV8% of US$363M and IRR of 27% Initial Capex of US$262M

02.07.2019 | CNW

VANCOUVER, July 2, 2019 - Tinka Resources Limited ("Tinka" or the "Company") (TSXV & BVL: TK) (OTCPK: TKRFF to announce positive results from the Preliminary Economic Assessment ("PEA") prepared for its 100%-owned Ayawilc project in central Peru. The PEA was prepared in accordance with National Instrument 43-101 Standards of Disclosure Projects ("NI 43-101") by Amec Foster Wheeler Peru S.A. (Wood) as principal consultant, Transmin Metallurgical Cons RPA Inc. The PEA provides the initial economic assessment for an underground ramp-access mine development with tonnes per day processing plant.

View PDF version.

PEA Highlights

- After-tax $NPV_{8\%}$ of US$363 million and pre-tax $NPV_{8\%}$ of US$609 million using metal prices of US$1.20/lb zinc, U silver, and US$0.95/lb lead on a 100% equity basis;
- Initial Capex of US$262 million with after-tax IRR of 27.1% and pre-tax IRR of 37.2%;
- 21-year mine life with average head grades of 6.05% zinc, 18.3 g/t silver, 67.1 g/t indium, and 0.25% lead;
- Average annual production of approximately 101,000 tonnes of zinc recovered in concentrate and approximately ounces of silver in a silver-lead concentrate;
- Leverage to zinc price: 20% increase in zinc price increases after-tax $NPV_{8\%}$ to US$606 million;
- Numerous opportunities identified for potential economic improvement & exploration upside.

Note: The PEA is preliminary in nature and includes inferred mineral resources that are considered too speculative geo have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and t certainty that the preliminary economic assessment will be realized. Mineral resources are not mineral reserves and do demonstrated economic viability.

Tinka's President and CEO, Dr. Graham Carman, stated: "We are very pleased with the results of the PEA, which is ba mid-sized underground mining case of 5,000 tonnes per day and relatively modest initial capital. The PEA shows that th Zinc project, which is located in one of the world´s most prolific polymetallic belts, is shaping up to be one of the best ne development projects in the Americas with strong economics and a long mine life of over 20 years. The excellent PEA major milestone and justify the continued advancement of Ayawilca towards production while exploration drilling is cont the aim of discovering additional high grade zinc resources."

Financial Summary	Pre-tax	After-tax
NPV (8% discount rate)	US$609 million	US$363 million
IRR	37.2%	27.1%
Payback period	2.2 years	3.1 years
Pre-production capital expenditure (Capex)[1]	US$261.9 million	
Sustaining Capex	US$144.6 million	
Life of Mine (LOM) Capex	US$406.5 million	
Closure Cost (5.0% of LOM Capex)	US$20.3 million	

Notes: [1] Includes contingencies of US$45 million.

Operating Summary	
Processing plant throughput	5,000 t/day
Average annual zinc concentrate production	201,500 dmt/year
Average annual lead-silver concentrate production	7,570 dmt/year
Average annual silver in lead concentrate	905,700 oz/year
Net Smelter Return from zinc and lead concentrates	US$4,002 million
Mining costs	US$36.66/t
Processing costs	US$6.44/t
G&A costs	US$5.48/t
Total Operating Costs (Opex)	US$48.57/t

Notes: dmt = dry metric tonne

Metal Prices & Exchange Rate Assumptions	Input value
Zinc Price	US$1.20/lb
Lead Price	US$0.95/lb
Silver Price	US$18/oz
NSR Cut-off value	US$65/t
Exchange Rate - Peruvian SOL/USD	3.3
Total material processed (LOM)	38.2 million tonnes
Mine Life	21.1 years

PEA Mine Plan – 5,000 Tonnes per Day Underground Mining Operation

The PEA for the Ayawilca Zinc Zone is based on an underground mine operating at a mining rate of 5,000 tonnes per day for a mine life of 21.1 years. For the purposes of the PEA, production is assumed to commence in 2023 following 18 months of construction and commissioning. This initial mine plan is based on mining a total of 8.4 million tonnes Indicated Resources (grading 6.95% Zn, 0.18% Pb and 15.8 g/t Ag) plus 29.8 million tonnes Inferred Resources (grading 5.79% Zn, 0.27% Pb, and 19.0 g/t Ag) over the life of mine ("LOM") using an NSR cut-off value of US$65/t (of the 11.7 Mt Indicated and 45.0 Mt Inferred Resources at a US$55/t NSR cut-off value). The zinc-rich mill feed will be trucked to the surface via a one-way-traffic ramp system connecting two mine portals to the underground infrastructure and accessing production areas starting at West and South Ayawilca.

Processing of the zinc mineralization will be through a standard crushing and grinding circuit followed by froth flotation, concentrate thickening and filtration. The mine operation will produce two concentrates: a zinc concentrate which is anticipated to assay 50% zinc based on metallurgical test work; and a lead concentrate which is anticipated to assay 50% lead and between 2,750 and 5,930 g/t silver (calculated on assays and based on similar base metal operations). About half of the tailings will be thickened and sent to a surface tailings storage facility, while the remainder will be mixed with cement and used as structural backfill in the underground operations.

Based on preliminary mine plan analysis including resource geometry, the scale of the deposit and grade distribution, room and pillar ("R&P") and post-pillar mining ("P&P") methods were selected.

The estimated operating costs, over the life of the Project, are as follows:

Operating Costs per Mining Method (Opex)

Description	Cost per Tonne Processed
Mining – Room & Pillar	US$38.06
Mining – Post & Pillar	US$35.29
Average Mining Cost	US$36.66
Process Plant	US$6.44
G&A (US$10M/yr)	US$5.48
Total Operating Cost	US$48.58

The major components of the initial capital expenditures of US$261.9 million include US$76.3 million for the processing plant, US$34.3 million for on-site infrastructure, US$43.1 million for mine equipment and underground pre-production development, US$14.7 million for off-site infrastructure, and US$6.7 million for a starter tailings storage facility direct costs. Contingencies in the capital costs total US$44.5 million. The major components of sustaining capital are US$109.7 million for mining equipment and underground development, and US$34.9 million for tailings management over the 21.1 year mine life.

Capital Cost Item	Initial (US$ M)	Sustaining (US$ M)	Total (US$ M)
Mining & mine development	43.1	109.7	152.8
Process plant	76.3	-	76.3
On-site infrastructure	34.3	-	34.3
Off-site infrastructure	14.7	-	14.7
Tailings storage facility	6.7	34.9	41.6
Indirect + Owner costs	42.3	-	42.3
Contingencies	44.5	-	44.5
TOTAL PROJECT	261.9	144.6	406.5
CLOSURE COSTS			20.3

Metallurgical Recoveries and Off-Site Charges

As reported in the Company's news release on June 5th 2019, metallurgical testing of samples from Ayawilca indicate that a zinc concentrate grading 50% zinc can be produced with 92% of the zinc recovered to the concentrate. The lead metallurgy has been assumed based on similar operations. The lead concentrate is expected to assay 50% lead and between 2,750-5,930 g/t silver. Most of the silver is expected to report to the lead concentrate and be payable, while silver is not expected to be payable in the zinc concentrate. The

zinc concentrate is expected to be a marketable concentrate with no deleterious elements other than an iron penalty. Concentrate grade assumptions and recoveries for the principal metals are provided in the table below.

Composite Head Grade, Metallurgical Results and Recoveries

Product	Average Grade LOM					Metallurgical Recoveries (%)			
	Zinc (%)	Indium (g/t)	Lead (%)	Silver (g/t)	Zinc Equiv. (%)	Zinc	Indium	Lead	Silver
Feed grade	6.05	67.1	0.25	18.3	6.77*	100	100	100	100
Zinc Concentrate	50.0	555	0 to 0.1	0-100		92	92	0	0
Lead Concentrate	4.0		50.0	3,721**		0	0	85	85

* Zinc Equivalent (%) = NSR/15.39. See NSR Calculation below

** Silver grades were calculated for the PEA and range from 2,750 to 5,930 g/t

Off-site charges include road transport of concentrates either to the local port of Callao, Peru, or a local smelter. For the purposes of the PEA, 75,000 tonnes per year of the zinc concentrates are assumed to be delivered directly to a local smelter and the remainder of the concentrates (averaging 126,750 tonnes per year) are assumed to be shipped to overseas smelters. All of the lead concentrates are assumed to be shipped overseas. Off-site charges include treatment charges, refining charges, and iron penalties at smelter.

Off-site Charges

Description	Zinc Concentrate	Lead-Silver Concentrate
Transport to Port/Local Smelter	US$35/wmt	US$35/wmt
Port Charges	US$17.5/wmt	US$17.5/wmt
Shipping to overseas smelter (FOB)	US$45/wmt	US$45/wmt
Local smelter Treatment Charge (TC)	US$190/dmt	-
Overseas smelter* Treatment Charge (TC)	US$170/dmt	US$150/dmt
Smelter Refining Charge (RC)	-	US$1.50/oz
Iron Penalty	US$7.50/dmt	-

Notes: wmt = wet metric tonne. dmt = dry metric tonne

* Assumes a US$20/t credit for high indium values in the zinc concentrate, expected to be around 550 g/t In

NSR Calculation

The mine plan for the PEA was based on a Net Smelter Return (NSR) cut-off value of US$65 per tonne, which is higher than the NSR cut-off value used for previous resource estimates and higher than the US$48.58 operating cost per tonne assumed in the PEA.

The prices and NSR factors for each metal utilized in the NSR calculation are presented in the table below.

Metal Prices and NSR Factors

Metal	2019 PEA		Nov. 26 2018 Resource Estimate	
	Metal Price Assumptions	NSR Factor	Metal Price Assumptions	NSR Factor
Zinc (Zn)	US$1.20/lb	US$15.39	US$1.15/lb	US$15.34
Lead (Pb)	US$0.95/lb	US$12.25	US$1.00/lb	US$4.70
Silver (Ag)	US$18.00/oz	US$0.44	US$15.00/oz	US$0.22
Indium (In)	-	-	US$0.30/g	US$0.18

NSR for the PEA was calculated using the following formula:

NSR (US$) = [Zn(%)*US$15.39+Pb(%)*US$12.25+Ag(g/t)*US$0.44].

NSR factors are different to those used for the Nov. 26, 2018 mineral resource estimation, as shown in the above table. Metal price assumptions are marginally different, while indium was not considered as payable for the PEA due to low current indium prices. However, a US$20/dmt credit is assumed for high indium zinc concentrates sent to overseas smelters. The difference in the NSR factor for lead is the result of higher recovery of lead and higher lead grade in the concentrate.

Sensitivities

The Ayawilca Zinc Project is highly leveraged to zinc price. A 20% increase to the price of zinc results in an after-tax $NPV_{8\%}$ of US$606M, an increase of US$243M over the base case PEA scenario.

Opportunities and Exploration Potential

The Ayawilca Zinc Zone has not been fully delineated and is open in several directions, including to the east and northeast. Exploration drilling is currently ongoing.

Opportunities for additional value on the Ayawilca property not captured in the PEA include:

1. Potential for expansion of Zinc Zone resources at Central, South, East, Zone 3, and Camp areas through addition
2. The Tin Zone, which was not included in the PEA because it requires additional metallurgical work, offers significa exploration potential as the resource remains open in several directions;

3. The Colquipucro silver oxide deposit is amenable to open pit mining methods, but was not included in the PEA be believed to require higher silver prices to potentially be economic. However, the prospects of economic extraction improve if a zinc mine is built on the property;
4. A number of untested exploration targets on the Company's 170 km^2 area of mining concessions that comprise th property.

Next Steps

Based on the positive initial PEA, the Company intends to continue to advance the Ayawilca Zinc Project towards production. Next steps will include:

1. Continuing exploration drilling with the aim of expanding the Zinc Zone resources, especially in high grade areas;
2. Obtain the required permits for infill drilling to support a Prefeasibility Study. This process has already begun and to take the remainder of 2019. Further expansion of the drill permits will be required in 2020 in order to test explo targets outside of the current drill permitted areas;
3. Optimization studies will be completed to evaluate potential economic improvements, including higher metallurgic (for both Zn and Pb) and a reduction in the iron content in the zinc concentrate;
4. Additional geotechnical data is required to evaluate more advanced mine planning studies, including potentially h throughput options than contemplated in the PEA;
5. High indium grades in the zinc concentrate represent a potential value-add, although limited value was applied in indium. Further technical and marketing studies will be carried out to evaluate how additional value may be deriv indium as part of a future mining operation;
6. Conduct mineralogical and metallurgical studies on the Tin Zone resources in order to evaluate the economic pot these resources.

A National Instrument 43-101 Technical Report will be filed on SEDAR within 45 days.

Mineral Resources

The table below outlines the Indicated and Inferred Mineral Resources estimates (Nov. 26, 2018) used in the PEA, including those that are not included in the mine plan. The Base Case resource is highlighted in bold, which assumes a cut-off value of US$55/t NSR. As noted above, the metal prices and cut-off used in the mine plan are slightly modified from the resource estimation.

Sensitivity Analysis - Ayawilca Zinc Zone Tonnage and Grade Report by NSR Cut-off Value – November 26, 2018

Class	NSR US$/t Cut-off	Tonnage (Mt)	ZnEq%	Zinc %	Lead %	Indium g/t	Silver g/t
Indicated	40	13.6	7.4	6.3	0.16	75	15
	50	12.4	7.9	6.7	0.17	80	15
	55	11.7	8.1	6.9	0.16	84	15
	60	10.8	8.5	7.2	0.16	89	16
	70	9.4	9.2	7.7	0.15	99	16
	80	7.9	10.0	8.4	0.15	111	17

Class	NSR US$/t Cut-off	Tonnage (Mt)	ZnEq%	Zinc %	Lead %	Indium g/t	Silver g/t
Inferred	40	52.7	6.2	5.2	0.24	60	17
	50	48.1	6.5	5.4	0.24	64	17
	55	45.0	6.7	5.6	0.23	67	17
	60	41.5	7.0	5.8	0.23	70	18
	70	33.9	7.6	6.4	0.22	78	18
	80	26.9	8.3	6.9	0.22	86	20

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.

2. Mineral Resources are reported above a cut-off NSR value of US$55/t. The Base Case resource is highlighted in bold.

3. The NSR value was based on estimated metallurgical recoveries, assumed metal prices and smelter terms, which include payable factors, treatment charges, penalties, and refining charges. Metal price assumptions were: US$1.15/lb Zn, US$300/kg In, US$15/oz Ag, and US$1.0/lb Pb. Metal recovery assumptions were: 90% Zn, 75% In, 60% Ag, and 75% Pb. The NSR value for each block was calculated using the following NSR factors: US$15.34 per % Zn, US$4.70 per % Pb, US$0.18 per gram In, and US$0.22 per gram Ag.

4. The NSR value was calculated using the following formula:
NSR = [Zn(%)*US$15.34+Pb(%)*US$4.70+In(g/t)*US$0.18+Ag(g/t)*US$0.22].

5. The ZnEq value was calculated using the following formula: ZnEq = NSR/US$15.34.

6. Numbers may not add due to rounding.

7. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.

Qualified Person Statements

Technical information related to the PEA contained in this news release has been reviewed and approved by William Colquhoun, FSAIMM, Principal Metallurgical Consultant with Amec Foster Wheeler (Perú) S.A., a Wood company (Wood). Mr. Colquhoun is a Fellow of the South African Institute of Metallurgy and a registered Professional Engineer of the Engineering Council of South Africa with 32 years' experience. Edwin Peralta, P.E., SME Registered Member and a Qualified Person as defined in National Instrument 43-101 – Standards of Disclosure for Mineral Projects, is a Senior Engineer with Wood Mining and Metals USA with 23 years of experience.

The Mineral Resources disclosed in this press release were estimated by Ms. Dorota El Rassi, P.Eng., and Mr. David Ross, P.Geo., both employees of RPA and independent of Tinka. By virtue of their education and relevant experience, Ms. El Rassi and Mr. David Ross are "Qualified Persons" for the purpose of National Instrument 43-101. The Mineral Resources were classified in accordance with CIM Definition Standards for Mineral Resources and Mineral Reserves (May, 2014). Both Ms. El Rassi, P.Eng. and Mr. David Ross, P.Geo. have read and approved the contents of this press release as it pertains to the disclosed Mineral Resource estimates.

The metallurgical and recovery inputs have been reviewed and verified by Mr. Adam Johnston, FAusIMM, CP (Metallurgy) of Transmin Metallurgical Consultants, Lima, a Qualified Person as defined by National Instrument 43-101. Mr Johnston has 25 years of mineral processing experience and is a Fellow of the Australasian Institute of Mining and Metallurgy.

Dr. Graham Carman, Tinka's President and CEO, reviewed, verified and compiled the technical contents of this release. Dr Carman is a Fellow of the Australasian Institute of Mining and Metallurgy, and is a Qualified Person as defined by National Instrument 43-101.

Data verification and quality control and assurance

RPA visited the Ayawilca property, reviewed the sampling and preparation methods, QA/QC methods and results, and sample chain of custody procedures; and performed independent resource database verification tests. Details on the database verification work are provided in a RPA Technical Report dated January 9, 2019. RPA is of the opinion that the procedures are appropriate and the resource database is suitable to estimate Mineral Resources.

About Tinka Resources Limited

Tinka is an exploration and development company with its flagship property being the 100%-owned Ayawilca carbonate replacement deposit (CRD) in the zinc-lead-silver belt of central Peru, 200 kilometres northeast of Lima. The Ayawilca Zinc Zone contains 11.7 Mt of Indicated Resources grading 6.9% zinc, 0.2% lead, 15 g/t silver and 84 g/t indium, and 45.0 Mt Inferred Resources grading 5.6% zinc, 0.2% lead, 17 g/t silver and 67 g/t indium. The Ayawilca Tin Zone contains an Inferred Mineral Resource of 14.5 Mt at 0.63% tin, 0.21% copper and 18 g/t silver. The Colquipucro silver oxide deposit contains 2.9 Mt of Indicated Resources grading 112 g/t silver (for 10.4 Moz Ag) and 2.2 Mt Inferred Resources grading 105 g/t silver (for 7.5 Moz Ag) in high grade lenses within a preliminary open pit shell using a $46/t NSR cut off (November 26, 2018 release).

On behalf of the Board,

"Graham Carman"
Dr. Graham Carman, President & CEO

Forward Looking Statements: Certain information in this news release contains forward-looking statements and forward-looking information within the meaning of applicable securities laws (collectively "forward-looking statements"). All statements, other than statements of historical fact are forward-looking statements. Forward-looking statements are based on the beliefs and expectations of Tinka as well as assumptions made by and information currently available to Tinka's management. Such statements reflect the current risks, uncertainties and assumptions related to certain factors including, without limitations, statements about strategic plans, including timing, extend and success of future operations and work programs, capital expenditures, discovery and production of minerals, price of metals and currency exchange rates, community relations, government regulation of mining operations, environment and permitting, timing of geological reports and the preliminary nature of the PEA and the Company's ability to realize the results of the PEA. Should any one or more of these risks or uncertainties materialize, or should any underlying assumptions prove incorrect, actual results may vary materially from those described herein. Forward-looking statements are based on the reasonable assumptions, estimates, analysis and opinions of management made in light of its experience and perception of trends, current conditions and expected developments, and other factors that management believes are relevant and reasonable in the circumstances at the date such statements are made. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that cause results not to be as anticipated. There can be no assurance that such information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking statements. The Company does not undertake to update any forward-looking statements, except in accordance with applicable securities laws.

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this news release

View original content to download
multimedia:http://www.prnewswire.com/news-releases/tinka-reports-positive-pea-for-the-ayawilca-zinc-project-after-tax

SOURCE Tinka Resources Ltd.

Contact
Investor Information: www.tinkaresources.com; Rob Bruggeman 1.416.884.3556, rbruggeman@tinkaresources.com; Company Contact: Mariana Bermudez 1.604.699.0202, info@tinkaresources.com