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## Turquoise Hill announces Definitive Estimate

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Turquoise Hill Resources Ltd. (“Turquoise Hill” or the “Company”) announced the completion and delivery by Rio Tinto of the Definitive Estimate, which refines the analysis contained in the feasibility study underlying the Company’s Oyu Tolgoi Technical Report (“OTTR20”) dated and filed on August 28, 2020. The results of the Definitive Estimate include:

- a revised base case project development capital cost estimate of \$6.75 billion<sup>1</sup>
- confirmation that sustainable first production is forecast to occur in October 2022<sup>1</sup>
- verification that all surface infrastructure required for sustainable first production is now complete
- an increase in Hugo North Mineral Reserves of 10Mt, 0.18Mt contained copper and 0.07Moz contained gold

The level of work and scope of the review were completed to an accuracy range of -5% to +10%, but given the uncertainty of COVID-19-related risks and other business case risks the go-forward capital expenditure estimate and schedule set out in the Definitive Estimate, as approved by the Company’s board, are at a -10% to +15% level of accuracy. The Definitive Estimate assumes COVID-19 related restrictions in 2021 that are no more stringent than those experienced in September 2020. Should COVID-19 constraints continue beyond 2021, or should the COVID-19 situation escalate further in 2021 leading to tougher restrictions, additional costs and schedule impacts may arise. TRQ understands that the business case risks identified by Rio Tinto relate to: Government approvals of the Oyu Tolgoi feasibility study (OTFS20) and supporting documents; achievement of certain milestones identified in the amended Power Source Framework Agreement (“PSFA”); and implementation of the Memorandum of Understanding (“MOU”) between Turquoise Hill and Rio Tinto relating to funding.

The Definitive Estimate is yet to be considered and approved by the board of directors of Oyu Tolgoi LLC. In the interim, Turquoise Hill is committed, over the coming months, to working closely with Erdenes Oyu Tolgoi LLC (“Erdenes”), the Government of Mongolia, Rio Tinto and Oyu Tolgoi LLC:

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<sup>1</sup> Key assumptions underlying this information remain materially aligned with OTTR20.

- to address the concerns of Erdenes and the Government of Mongolia with respect to the reasons for the cost overruns and delays to the underground development announced in 2019, including through the independent review being overseen by a Special Committee of the Oyu Tolgoi LLC board as announced on December 1, 2020;
- to support the achievement by Oyu Tolgoi LLC and the Government of Mongolia of their joint PSFA milestones, including reaching agreement on a power purchase agreement for a state-owned power plant by March 31, 2021 and securing agreement on an extension of Oyu Tolgoi LLC's existing power import arrangements by March 1, 2021;
- to seek clarity and stakeholder alignment on the criteria to be satisfied prior to commencement of the “undercut”<sup>2</sup> (such as confidence in commissioning dates for the materials handling system and the extension of power import arrangements), and ensure that such criteria are met in a timely manner; and
- to secure stakeholder alignment on, and timely implementation of the proposed re-profiling of Oyu Tolgoi LLC's existing project loans and the raising of supplemental senior debt (as contemplated by the MOU), as well as Turquoise Hill's preferred strategy of prioritising debt and/or hybrid financing to meet Oyu Tolgoi's funding requirements.

“The Definitive Estimate confirms the economics detailed in the OTTR20 we announced in August,” stated Ulf Quellmann, Chief Executive Officer of Turquoise Hill. “TRQ continues to work closely with our valued partners, Erdenes and the Government of Mongolia, as well as Oyu Tolgoi and Rio Tinto to deliver the underground development and realise the full potential of Oyu Tolgoi for the benefit of all stakeholders.”

## **Operational Update**

The schedule optimisation and design updates contained within the Definitive Estimate revise the development capital to \$6.75 billion and confirm sustainable production by October 2022, which are broadly in line with Turquoise Hill's previous disclosures. The Definitive Estimate includes a contingency on the to-go capital of approximately 13% as well as a four-month schedule contingency to sustainable first production. These estimates now include the known and forecast impacts of COVID-19. As part of the Definitive Estimate, open pit optimisation work has been updated with an updated phase sequence that accelerates copper production, improving value for the overall operation.

Further mine design analysis undertaken as part of the Panel 0 update has modified and finalised the pillar location to the South of Panel 0. This update minimises production exposure to stability risks associated with the lower fault, increases the overall mineral reserves and consequently decreases mineral resources due to the reclassification, as follows:

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<sup>2</sup> The commencement of the “undercut,” currently scheduled for mid-2021, is a key milestone, signifying the point at which caving operations and drawpoint construction activities must continue uninterrupted.



Hugo North Deposit Underground Mineral Reserves as at December 14th, 2020								
Classification	Ownership	Mineral Reserves				Contained Metal		
		Tonnage	Cu	Au	Ag	Copper	Gold	Silver
		(Mt)	(%)	(g/t)	(g/t)	(Mt)	(Moz)	(Moz)
Probable	Oyu Tolgoi LLC	412	1.5	0.29	3.1	6.2	3.9	41
Probable	Entrée LLC	38	1.6	0.54	3.7	0.6	0.7	4.5
Total Probable		450	1.5	0.32	3.2	6.8	4.5	46

Notes to the Mineral Reserves:

1. CIM Definition Standards (2014) are used for reporting of Mineral Reserves.
2. Totals may not match due to rounding to two significant figures in line with industry best practice.
3. Net Smelter Return (NSR) values used for estimating Mineral Reserves are based on forecast long-term copper, gold, and silver prices of 3.08 US\$/lb, 1,292 US\$/oz, and 19.00 US\$/oz, respectively.
4. Assumptions for smelting refining and treatment, charges, deductions, and payment terms, concentrate transport, metallurgical recoveries and royalties are included in the NSR values.
5. For the Hugo North Mineral Reserves, an NSR shut off value of 17.84 US\$/t is used to determine the point at which each underground drawpoint is closed. This NSR value is based on estimated mining, processing and G&A costs which range from 17.27 US\$/t to 17.90 US\$/t across the five different ore types.
6. The Hugo North Probable Mineral Reserves are derived from a combination of Measured and Indicated Mineral Resources.
7. The effective date of the Hugo North Mineral Reserves is December 14, 2020.
8. The Shivee Tolgoi and Javkhilant licenses are held by Entrée LLC. The Shivee Tolgoi and Javkhilant Licenses are planned to be operated by Oyu Tolgoi LLC. Oyu Tolgoi LLC will receive 80% of cash flows after capital and operating costs for material originating below 560 m, and 70% above this depth. TRQ holds a 7.9% interest in Entrée LLC.
9. The term Entrée LLC refers to ownership by the proposed joint venture arrangement between Oyu Tolgoi LLC and Entrée LLC.

Hugo North Mineral Resources as at December 14th, 2020								
Classification	Ownership	Mineral Resources				Contained Metal		
		Tonnage	Cu	Au	Ag	Copper	Gold	Silver
		(Mt)	(%)	(g/t)	(g/t)	(Mt)	(Moz)	(Moz)
Measured	Oyu Tolgoi LLC	58	1.9	0.49	4.2	1.1	0.9	7.8
	Entrée LLC	-	-	-	-	-	-	-
	All Hugo North	58	1.9	0.49	4.2	1.1	0.9	7.8
Indicated	Oyu Tolgoi LLC	398	1.3	0.34	3.1	5.3	4.3	40
	Entrée LLC	87	1.6	0.54	4.1	1.4	1.5	11
	All Hugo North	484	1.4	0.38	3.3	6.7	5.8	52
Total Measured + Indicated	Oyu Tolgoi LLC	455	1.4	0.36	3.3	6.4	5.2	48
	Entrée LLC	87	1.6	0.54	4.1	1.4	1.5	11
	All Hugo North	542	1.4	0.39	3.4	7.8	6.7	59
Inferred	Oyu Tolgoi LLC	765	0.8	0.28	2.4	6.1	6.9	59
	Entrée LLC	167	1.0	0.36	2.8	1.7	1.9	15
	All Hugo North	932	0.8	0.29	2.5	7.8	8.8	74

Notes to the Mineral Resources:

1. CIM Definition Standards (2014) are used for reporting of Mineral Resources.
2. The Mineral Resources exclude Mineral Reserves.
3. Totals may not match due to rounding to two significant figures. This results in differences to previously reported figures but is in line with industry best practice.



4. The Hugo North deposit is reported using a cut-off grade of 0.41% copper equivalent (CuEq) which is based on the assumption that the deposit will be mined via an underground caving mining method.
5. The CuEq formula is:  $CuEq = Cu + ((Au \times 35.7175) + (Ag \times 0.5353)) / 67.9023$ .
6. The metal prices used in determining the CuEq formula are: 3.08 \$/lb for copper, 1,292 \$/oz for gold and 19.00 \$/oz for silver.
7. The metallurgical recoveries used in determining the CuEq formulae are: Copper 93%, Gold 80%, Silver 81%.
8. The effective date of the Hugo North Mineral Resources is December 14, 2020.
9. The Shivee Tolgoi and Javkhlant licenses are held by Entrée LLC. The Shivee Tolgoi and Javkhlant Licenses are planned to be operated by Oyu Tolgoi LLC. Oyu Tolgoi LLC will receive 80% of cash flows after capital and operating costs for material originating below 560 m, and 70% above this depth. TRQ holds a 7.9% interest in Entrée LLC.
10. The term Entrée LLC refers to ownership by the proposed joint venture arrangement between Oyu Tolgoi LLC and Entrée LLC.
11. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Turquoise Hill confirms that all material assumptions and technical parameters underpinning the mineral resource and mineral reserve estimates in OTTR20 continue to apply and have not materially changed.

Drilling, data collection and analysis is complete for Panel 0 and near completion for the northern area of Panel 2. The focus is now on Panel 1 and the southern portion of Panel 2 and this work is planned to continue through 2021 and into 2022. A design update for the north and central areas of Panel 2 is expected in H2'21. In addition, broader studies for the remaining areas of Lift 1 and assessments of pillar recoverability are progressing.

Panel 1 and Panel 2 (which are required to support the ramp-up to 95,000 tonnes of ore per day) are currently subject to further studies, with initial recommendations expected by mid-2021. These studies will also consider options and associated costs to recover the copper contained within the pillars added to the mine design of Panel 0.

Preparatory activities for the resumption of sinking of Shaft 3 and Shaft 4 are underway. In the first week of December, shaft sinkers completed quarantine and travelled to site. Vendor representatives to support the commissioning of sinking equipment have also arrived on site. Progress at the site remains materially consistent with assumptions made in the Definitive Estimate.

On November 11, two cases of COVID-19 were reported in Ulaanbaatar. As a consequence, the local authorities took steps to minimise transmission, implementing curfew restrictions that included a temporary halt on domestic flights impacting travel to and from the Oyu Tolgoi mine site. Limited flights resumed to Oyu Tolgoi on December 9 and in-country case numbers are easing significantly. Although Oyu Tolgoi's open-pit operations and underground project continue, with no cases recorded at site, additional COVID-19 restrictions are in place and COVID-19 tests are being conducted to allow personnel to travel to site.

Disclosure of information of a scientific or technical nature in this press release in respect of the Oyu Tolgoi mine was approved by Jo-Anne Dudley (FAusIMM(CP)), Chief Operating Officer of the Company. Jo-Anne Dudley is a "qualified person" as that term is defined in NI 43-101.

## About Turquoise Hill Resources

Turquoise Hill is an international mining company focused on the operation and continued development of the Oyu Tolgoi copper-gold mine in Mongolia, which is the Company's principal and only material mineral resource property. Turquoise Hill's ownership of the Oyu Tolgoi mine is held through a 66% interest in Oyu Tolgoi LLC (Oyu Tolgoi); Erdenes Oyu Tolgoi LLC, a Mongolian state-owned entity, holds the remaining 34% interest.

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## Contact

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## Forward-looking statements and forward-looking information

Certain statements made herein, including statements relating to matters that are not historical facts and statements of the Company's beliefs, intentions and expectations about developments, results and events which will or may occur in the future, constitute "forward-looking information" within the meaning of applicable Canadian securities legislation and "forward-looking statements" within the meaning of the "safe harbor" provisions of the United States Private Securities Litigation Reform Act of 1995. Forward-looking statements and information relate to future events or future performance, reflect current expectations or beliefs regarding future events and are typically identified by words such as "anticipate", "could", "should", "expect", "seek", "may", "intend", "likely", "plan", "estimate", "will", "believe" and similar expressions suggesting future outcomes or statements regarding an outlook. These include, but are not limited to, statements and information regarding: the arbitration proceedings, including the potential benefits, timing and outcome of the arbitration proceedings; the expectations set out in the OTTR20; the timing and amount of future production and potential production delays; the timing of commencement of the undercut, as well as the timing and achievement of other key milestones; statements in respect of the impacts of any delays on the Company's cash flows; expected copper and gold grades; the merits of the class action complaint filed against the Company; liquidity, funding sources, funding requirements and planning and the status and nature of the Company's ongoing discussions with Rio Tinto and its subsidiaries with respect to future funding plans and requirements (including as contemplated by the MOU); the amount of any funding gap to complete the Oyu Tolgoi Project; the amount and potential sources of additional funding; the Company's ability to re-profile its existing project debt in line with current cash flow projections; the amount by which a successful re-profiling of the Company's existing debt would reduce the Company's currently projected funding requirements; the Company's and Rio Tinto's understanding regarding the raising of supplemental senior debt and the Company's ability to raise supplemental senior debt; the Company's and Rio Tinto's understanding regarding the process for identifying and considering other funding options; the Company's and Rio Tinto's understanding regarding the scope and timing for an equity offering by the Company to address any remaining funding gap; the Company's intention to prioritise funding by way of debt and/or hybrid financing over equity funding; the Company's expectation of the anticipated funding gap; the timing of studies, announcements and analyses; status of underground development; the mine design for Panel 0 of Hugo North Lift 1 and the related cost and production schedule implications; the re-design studies for Panels 1 and 2 of Hugo North Lift 1 and the possible outcomes, content and timing thereof; expectations regarding the possible recovery of ore in the two structural pillars, to the north and south of Panel 0; the possible progression of SOPP and related amendments to the PSFA as well as power purchase agreements; the timing of construction and commissioning of the potential SOPP; sources of interim power; the potential impact of COVID-19 on the Company's business, operations and financial condition; capital and operating cost estimates; the content of the definitive estimate; mill and concentrator throughput; the outcome of formal international arbitration proceedings; anticipated business activities, planned expenditures, corporate strategies, and other statements that are not historical facts.

Forward-looking statements and information are made based upon certain assumptions and other important factors that, if untrue, could cause the actual results, performance or achievements of the Company to be materially different from future results, performance or achievements expressed or implied by such statements or information. There can be no assurance that such statements or information will prove to be accurate. Such statements and information are based on numerous assumptions regarding present and future business strategies, local and global economic conditions, and the environment in which the Company will operate in the future, including the price of copper, gold and silver; projected gold, copper and silver grades; anticipated capital and operating costs; anticipated future production and cash flows; the anticipated location of certain infrastructure in Hugo North Lift 1 and sequence of mining within and across panel boundaries; the availability and timing of required governmental and other approvals for the construction of the SOPP; the ability of the Government of Mongolia to finance and procure the SOPP within the timeframes anticipated in the PSFA, as amended; the willingness of third parties to extend existing power arrangements; the status of the Company's relationship and interaction with the Government of Mongolia on the continued operation and development of Oyu Tolgoi and Oyu Tolgoi LLC internal governance; the status and nature of the Company's ongoing discussions with Rio Tinto and its subsidiaries with respect to future funding plans and requirements (including as contemplated by the MoU) as well as the commencement and conclusion of the arbitration proceedings, including the potential benefits, timing and outcome of the arbitration proceedings.

Certain important factors that could cause actual results, performance or achievements to differ materially from those in the forward-looking statements and information include, among others: copper, gold and silver price volatility; discrepancies between actual and estimated production; mineral reserves and resources and metallurgical recoveries; development plans for processing resources; the accuracy of the definitive estimate review; public health crises such as COVID-19; matters relating to proposed exploration or expansion; mining operational and development risks, including geotechnical risks and ground conditions; litigation risks, including the outcome of the class action complaint filed against the Company; regulatory restrictions (including environmental regulatory restrictions and liability); Oyu Tolgoi LLC or the Government of Mongolia's ability to deliver a domestic power source for the Oyu Tolgoi project within the required contractual time frame; communications with local stakeholders and community relations; activities, actions or assessments, including tax assessments, by governmental authorities; events or circumstances (including strikes, blockades or similar events outside of the Company's control) that may affect the Company's ability to deliver its products in a timely manner; currency fluctuations; the speculative nature of mineral exploration; the global economic climate; dilution; share price volatility; competition; loss of key employees; cyber security incidents; additional funding requirements, including in respect of the development or construction of a long-term domestic power supply for the Oyu Tolgoi project; capital and operating costs, including with respect to the development of additional deposits and processing facilities; and defective title to mineral claims or property. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements and information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. All such forward-looking statements and information are based on certain assumptions and analyses made by the Company's management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believes are reasonable and appropriate in the circumstances. These statements, however, are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements or information.

With respect to specific forward-looking information concerning the continued operation and development of Oyu Tolgoi, the Company has based its assumptions and analyses on certain factors which are inherently uncertain. Uncertainties and assumptions include, among others: the timing and cost of the construction and expansion of mining and processing facilities; the timing and availability of a long-term domestic power source (or the availability of financing for the Company or the Government of Mongolia to construct such a source) for Oyu Tolgoi; the ability to secure and draw down on the supplemental debt under the Oyu Tolgoi project financing facility and the availability of additional financing on terms reasonably acceptable to Oyu Tolgoi LLC, Rio Tinto and the Company to further develop Oyu Tolgoi as well as the status and nature of the Company's ongoing discussions with Rio Tinto and its subsidiaries with respect to future funding plans and requirements (including as contemplated by the MOU); the potential impact of COVID-19; the impact of changes in, changes in interpretation to or changes in enforcement of, laws, regulations and government practices in Mongolia; the availability and cost of skilled labour and transportation; the obtaining of (and the terms and timing of obtaining) necessary environmental and other government approvals, consents and permits; delays, and the costs which would result from delays, in the development of the underground mine (which could significantly exceed the costs projected in OTTR20 and the definitive estimate); projected copper, gold and silver prices and their market demand; and production estimates and the anticipated yearly production of copper, gold and silver at Oyu Tolgoi.

The cost, timing and complexities of mine construction and development are increased by the remote location of a property such as Oyu Tolgoi. It is common in mining operations and in the development or expansion of existing facilities to experience unexpected problems and delays during development, construction and mine start-up. Additionally, although Oyu Tolgoi has achieved commercial production, there is no assurance that future development activities will result in profitable mining operations.

Readers are cautioned not to place undue reliance on forward-looking information or statements. By their nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, which contribute to the possibility that the predicted outcomes will not occur. Events or circumstances could cause the Company's actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. Important factors that could cause actual results to differ from these forward-looking statements are included in the "Risk Factors" section in the Company's AIF, as supplemented



by the "Risks and Uncertainties" section of the Q3 2020 MD&A.

Readers are further cautioned that the list of factors enumerated in the "Risk Factors" section of the AIF and in the "Risks and Uncertainties" section of the Q3 2020 MD&A that may affect future results is not exhaustive. When relying on the Company's forward-looking statements and information to make decisions with respect to the Company, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Furthermore, the forward-looking statements and information contained herein are made as of the date of this document and the Company does not undertake any obligation to update or to revise any of the included forward-looking statements or information, whether as a result of new information, future events or otherwise, except as required by applicable law. The forward-looking statements and information contained herein are expressly qualified by this cautionary statement.