



## ASX RELEASE

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ASX: TMX

## Great Western – Scoping Study Update & Onsite Gold Processing

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**Terrain Minerals Limited (ASX: TMX)** is pleased to provide the following update on its Great Western Gold Project.

At the request of Terrain Minerals (Terrain), CSA Global undertook the process of updating the 2017 scoping study for the Great Western deposit located 76km North of Leanora along Goldfield Highway. CSA Global used Whittle open pit optimisation software to test a range of mining scenarios, all returning positive undiscounted cash flows.

Based upon earlier studies by CSA Global, that focused the optimisations on the Measured and Indicated material with onsite gravity processing only (no CIL). The comparison scenarios, that included Inferred material, showed increases of only approximately 10% in undiscounted cash flows, highlighting the minimal impact the Inferred material has on the project economics.

The optimisation parameters from CSA Global 2017 Scenario 5 have remained unchanged, except for the updated processing cost. Due to the high-level nature of the study, and the volume of tonnes involved, all cash flows are shown undiscounted.

Due to the higher grade of the deposit the option to toll treat may still be a viable option for Terrain or others. As reported Terrain is currently discussing options to advance Great Western that include the outright or partial sale, various JV arrangements or self-mining. Discussion's continue with multiple groups who have registered interest and now have the completed CSA report.

## Optimisation Parameters

Optimisation parameters were selected by CSA Global using a combination of current/typical industry costs and recent gold pricing. Terrain provided CSA Global with technical reports and wage and power costs of \$20/t for a 250,000 tpa gravity gold circuit, including crushing. CSA Global added 20% to this figure to account for maintenance, consumables, spares and reagent costs, to arrive at a figure of \$24/t as seen in table 1 below.



A variety of scenarios, were used in the optimisation to test the viability of the Great Western deposit. Terrain indicated to CSA that onsite treating is the preferred processing option for this deposit. The parameters that change from scenario to scenario are gold price, and resource classifications used in the optimisation.

The 2017 Resource model supplied to CSA Global contains 15% Inferred material, the scenarios were also optimised on Measured and Indicated material to provide the best basis for further work leading towards a JORC 2012 Ore Reserve statement.

SCENARIO	GOLD PRICE	MINING		MILL PROCESSING			OPTIMISATION CLASSIFICATION S
		DILUTION	RECOVERY	COST	HAULAGE	RECOVERY	
1	\$1,600/oz	10%	95%	\$24/t	\$0/t	85%	MEA + IND
2	\$1,600/oz	10%	95%	\$24/t	\$0/t	85%	ALL
3	\$1,500/oz	10%	95%	\$24/t	\$0/t	85%	MEA + IND
4	\$1,500/oz	10%	95%	\$24/t	\$0/t	85%	ALL
5	\$1,700/oz	10%	95%	\$24/t	\$0/t	85%	MEA + IND
6	\$1,700/oz	10%	95%	\$24/t	\$0/t	85%	ALL

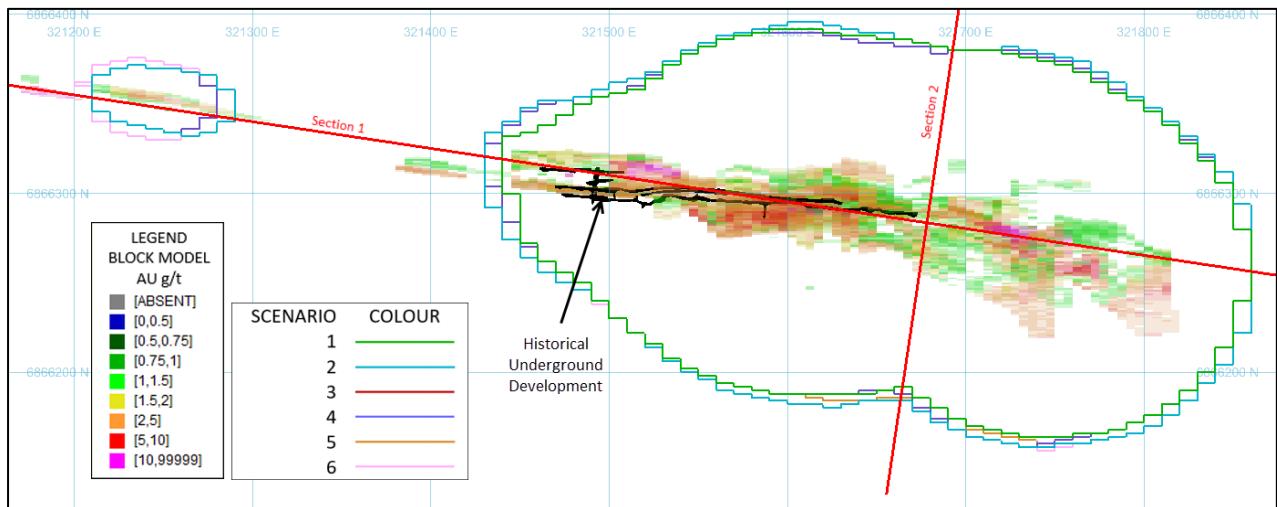
**Table 1:** Optimisation scenarios

SCENARIO	ORE PROCESSED					OUNCES	WASTE	STRIP	UNDISCOUNTED CASH FLOW
	TONNES	AU g/t	MEA	IND	INF	RECOVERED	TONNES	RATIO	
1	381,200	3.0	33.8%	66.2%	0.0%	31,400	6,557,500	17.2	All Positive
2	465,300	2.8	28.1%	57.6%	14.3%	35,600	7,237,400	15.6	"
3	372,800	3.1	34.4%	65.6%	0.0%	31,200	6,501,200	17.4	"
4	436,000	2.9	29.5%	57.6%	12.9%	34,100	6,732,600	15.4	"
5	404,600	2.9	32.1%	67.9%	0.0%	32,200	6,756,700	16.7	"
6	488,300	2.7	26.9%	58.7%	14.4%	36,000	7,254,100	14.9	"

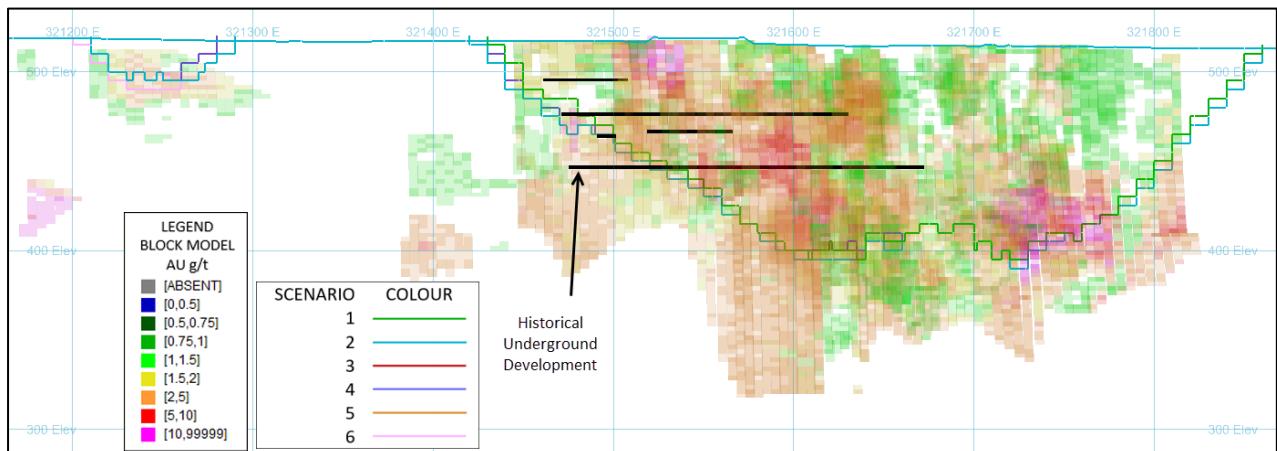
**Table 2:** Scenario output results for select pit shell. (due to early nature of report the positive cash flow numbers are not quoted due to reporting rules)



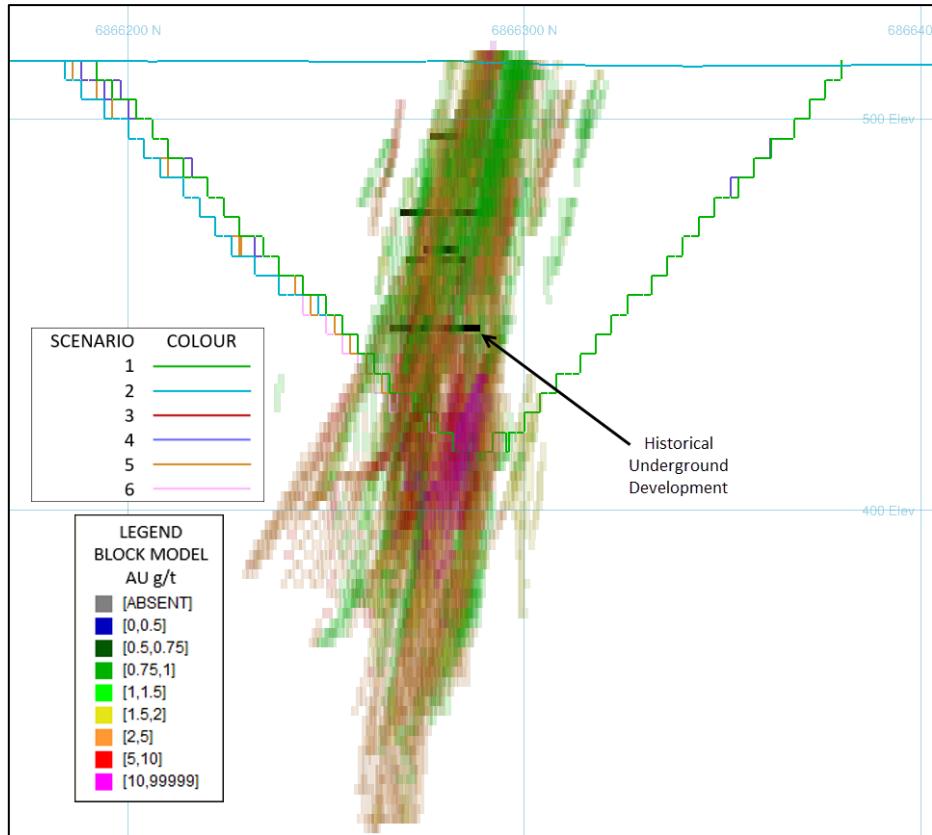
Figure 1 through to 3 show representative sections of the selected pit shells. All figures have the historical underground development wireframe displayed in black. The Figure 1 plan view shows the section lines, surface intersection of the shells, and the block model displaying gold grade above 1.0 g/t. Figure 2 and Figure 3, are vertical sections of the pit shells with the block model displaying gold grade above 1.0 g/t. Figure 4, shows the same sections with the block model displaying the Resource class to highlight the proportion of each material class in the scenarios.



**Figure 1:** Plan view showing AU>1.0 g/t, pit shell intersections at 515 mRL and pit shell section lines

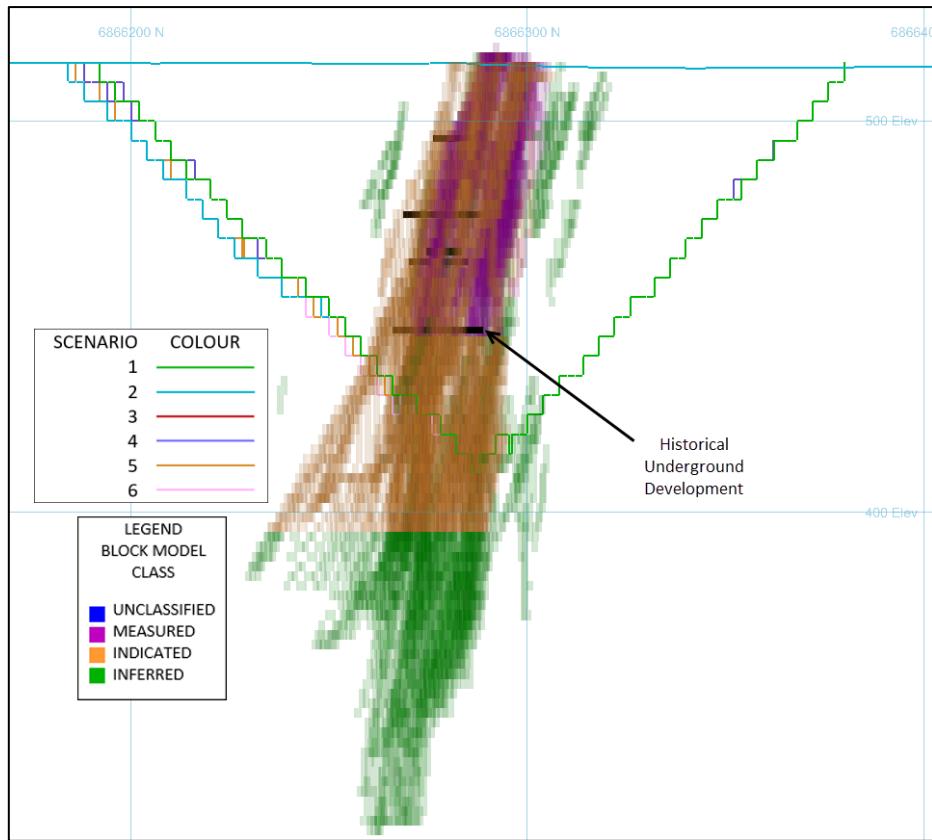


**Figure 2:** Section 1 – Pit shell intersections for all scenarios with block model grade AU>1.0 g/t



**Figure 3:**  
AU>1.0 g/t

Section 2 – Pit shell intersections for all scenarios with block model grade



**Figure 4:** Section 2 – Pit shell intersections for all scenarios with block model Resource class and AU>1.0 g/t

Figure 4 highlights the resources categories and highlights further drilling is required to upgrade deeper mineralisation and is required to test the open depth extensions.

## Conclusion

All pit shell optimisation scenarios analysed return positive undiscounted cash flow, indicating that the Great Western deposit is likely to be a viable deposit for a small scale open cut mining operation.

The conclusions of this report are made based on the latest Mineral Resource model (DataGeo, 2017) which accounts for estimated depletion from historical underground workings.

Installing a small gravity recovery facility onsite, to mine and treat ore onsite is indicated to be a viable scenario. With limited capital costs which are under review, which cover processing plant, site establishment, contractor mobilisation, and permitting, it is likely that this option will return a reasonable return on invested capital.



## Onsite Gold Processing Studies

As part of the preliminary scoping studies, Terrain has been examining both toll treatment options and onsite processing options.

Terrain has previously appointed consulting metallurgist Mr Adrian Hall of Metallurgy Matters to design and cost onsite gravity milling solutions for Great Western. His concepts and designs have been based on the following early stage assumptions:

- Gravity recovery of ~85%
- ~400,000 ton of material\*
- Grade ~2.9g/t\*\*
- 25 to 40 ton per hour milling capacity

**Gravity Recovery\*\*\*** has been based on these early stage results:

SAMPLE	Weight (g)	Au (ppm)	Gravity Au %
GW MET 01	309.5	77.6	90.36
GW MET 02	316.3	198	92.36
GW MET 03	313.6	25.1	80.83

Gravity Recovery Amdel 16/07/2009

**Quote:** from Amdel report 16/07/2009 "Surprisingly a significant amount of "free gold" was recovered at this stage".

The option of onsite processing is attractive and potentially has a number of advantages over batch treating at third party plants. One of the principle advantages is the potential to create a constant cash flow rather an erratic one that may result from third party treatment in batches. The proposed onsite gravity processing design (No CIL circuit) has the potential to lower Opex costs.

Preliminary work suggests gravity tails are amenable to CIL processing and possibly other viable processing alternatives or on-selling of this material. No economic studies have been carried out on this material to date.

As this early stage, metallurgy work has indicated the gold is of a course nature, which suits the suggested onsite gravity treatment option. This also eliminates potential metal reconciliation issues often encountered when utilising third party plants.

Hall has suggested the following conceptual on-site lay-outs illustrated in Figure 5 and Figure 6:



**Figure 5:** Sepro Systems 75t/h three stage crushing circuit



**Figure 6:** Sepro Systems 40 tph grinding and gravity plant (dual stream mills and centrifugal

The additional cost of earth work and other establishment costs could be reduced by securing used machinery such as track mounted crushes and screens which will also reduce earth works. As smaller plants will also be considered so to better align processing with production rates.



This scoping level work and the results will be used in further studies, including detailed pit design work and preparation of an Ore Reserve.

#### **Footnotes:**

**\*~ 400,000 ton material** The material estimate has been taken from several in-house scoping level studies of various pit designs and the recent JORC 2012 compliant mineral resource. Refer to ASX Announcement released on 24/08/2015.

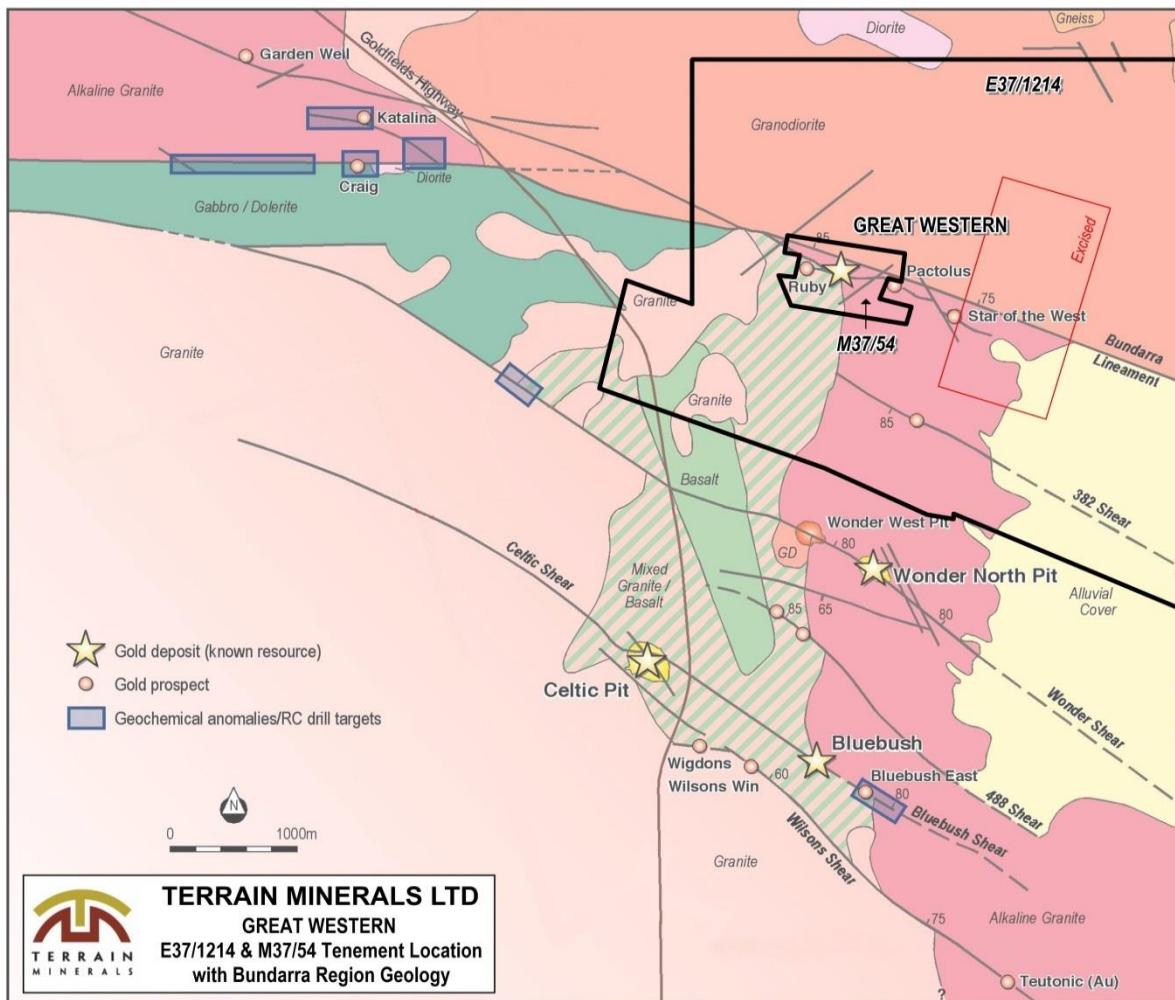
**\*\*Grade ~2.9g/t** Grades are from an undiluted resource estimation, and various in-house pit designs at scoping study level and the JORC 2012 compliant resources; Refer to Announcement released on 24/08/2015 – “Great Western Gold Resource, Now JORC 2012 Compliant & Project Update”.

**\*\*\*Gravity Recovery** Sample material is presentive of oxide and transitional material of limited volume. Additional bulk testing is required. This material will be collected from the drilling campaign announced on the 03/10/2016.

#### **About Great Western:**

The 100% owned project is located 68km north of Leonora and 1km from the Goldfields Highway on Weebo pastoral leases and forms part of the historic Wilsons Patch mining area (Figure 7). Terrain considers it as an advanced opportunity which is possibly still open down plunge and along strike to the west.

The current model envisages that exploration for the down plunge extensions to the known mineralisation underneath the current pit limits, will most likely be conducted from anticipated cash flow.



**Figure 7:** Great Western project location map highlighted in Black

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## **ABOUT TERRAIN MINERALS LIMITED:**

Terrain Minerals Limited (ASX:TMX) is a minerals exploration company with a Western Australian based asset portfolio consisting of:

- **Great Western** 100% TMX (Au)- near term development opportunity, resource estimation and economic study have shown positive outcomes. Work is now underway to prepare data and work towards getting all mining approvals;
- **Great Western advancement process** is underway with multiple groups who have registered interest in Great Western. These groups have indicated various agendas that included full or partial sale, joint venture and funding arrangements. The board will consider all proposals and has not ruled out mining Great Western itself and continuing regional exploration to add to its gold inventory.
- **Project Review:** Terrain Minerals is currently searching and has been assessing potential projects: Gold, Cobalt/copper Lithium and industrial minerals in Australia, Africa, South America and Asia also including other regions. Several jurisdictions of interest have now been identified. All economic commodities are being considered as indicated in previous Quarterly reports.