

# Quarterly Report

27 January 2022



**Great Western**  
EXPLORATION

## Quarterly Activities Report for the Quarter ended 31 December 2021

### Summary

- Yandal West Project: Geophysical interpretation and modelling of an EM survey has identified six high priority, discrete, conspicuous, shallow drill ready interpreted VMS or sulphide associated lode gold targets
- Thunder Copper-Gold Target: Reverse Circulation (RC) drilling has now been completed at the Thunder Copper-Gold Target. Drilling intersected broad zones of hydrothermal alteration within pyritic black shale. Assay results are expected during the March 2022 Quarter
- Golden Corridor: The initial field work programme is now well underway at the Golden Corridor Project including the completion of an initial Ultrafine+ soil sampling programme prior to Christmas
- Fairbairn Base Metal Project: Great Western is preparing its initial work programme that will include a high-resolution airborne magnetics survey and stereoscopic geological mapping over the Project area
- Firebird Gold Project: Great Western is preparing its initial work programme that will include infill and extensional soil sampling, mapping and follow up drilling targeting both the geochemical anomalies and the highly prospective structural targets
- Yerrida South Project: A broad spaced regional reconnaissance Ultrafine+ soil sampling programme has now been completed
- Geological review, planning and field work activity continues in respect of a number of Great Western's other projects

Great Western Exploration Limited (ASX: GTE) ("the Company", "Great Western") is pleased to provide its Quarterly Activities Report for the Quarter ended 31 December 2021 (December 2021 Quarter).

### Yandal West Project (GTE 100% (E53/1369) and GTE 80% (E53/1612 & E53/1816))

The Yandal West Project is located within the world class Yandal greenstone belt, approximately 55km north of the historical Bronzewing gold mine and 60km south of Jundee gold mine.

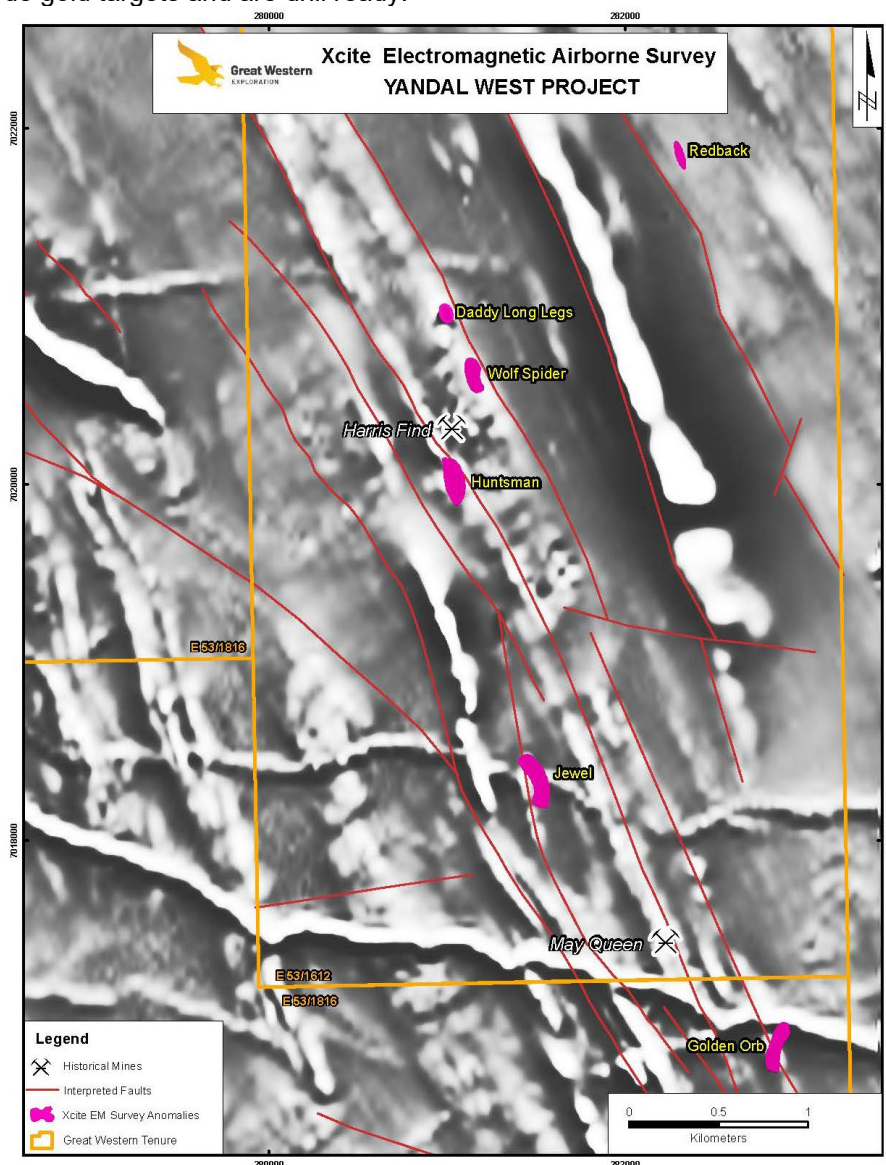


Over the last year a thorough desktop study and third-party geochemistry review was completed across the Project. In addition, a number of field reconnaissance surveys have been undertaken and in consultation with Great Western's geophysical consultants at Newexco, an airborne geophysical programme was completed with an airborne EM (Xcite™) survey flown across the Project during the September 2021 Quarter, with results now received<sup>1</sup>.

During the December Quarter 2021, six high priority EM anomalies have been defined following processing and interpretation of the survey (refer Great Western announcement dated 25 October 2021<sup>2</sup>).

The high priority EM anomalies (See **Figure 1**) have a geophysical signature that is consistent with an accumulation of sulphides. The anomalies sit within a regional volcanic succession that includes basalts, high mg basalts, ultramafics, felsic volcanics and cherts, proximal to HFSE granites, are shallow (<55m below surface), and are both conspicuous and discrete.

The six high priority EM anomalies are interpreted to be very exciting potential VMS or sulphide associated lode gold targets and are drill ready.



**Figure 1. Location of Six High Priority EM anomalies and Historic Gold Mines over TMI 1st VD at the Yandal West Project**

Drill planning for an RC programme at the Yandal West Project to test all six priority one targets is now well progressed, with drilling planned for the first half of CY2022.

## Thunder (100% Great Western)

During the December Quarter 2021 Great Western Exploration Limited (ASX: GTE, “Great Western”) completed an RC drilling campaign at the 100% owned Thunder Copper-Gold Target (See **Figure 2**), 112kms from Sandfire’s (ASX: SFR) DeGrussa copper-gold operation.

Great Western completed 11 RC holes for 1,452 metres drilled to an average depth of 132 metres to test the EM anomaly at Thunder and the Ultra Fine + soil anomalies. Samples are now at ALS Laboratory for multi element analysis.

The drilling at Thunder intersected broad zones of hydrothermal alteration comprising mostly of hematite, silica and  $\pm$  pyrite (“alteration”). The very fine-grained nature of the alteration makes it difficult to confidently identify each separate mineral and quantify in the field however, pyrite was recognised.



**Figure 2.** Drilling was completed by Hagstrom Drilling at the Thunder Copper-Gold Target

Great Western has now made applications for additional tenure covering the extension of the northwest trending copper-gold anomalism that has been highlighted by the infill and extensional Ultrafine+ soil sampling programme.

The next stage of exploration across the Thunder Copper-Gold Target will be planned once assay results have been received. The Company looks forward to providing further updates as results become available.

Assay results from the drilling at Thunder are expected during the March Quarter 2022.



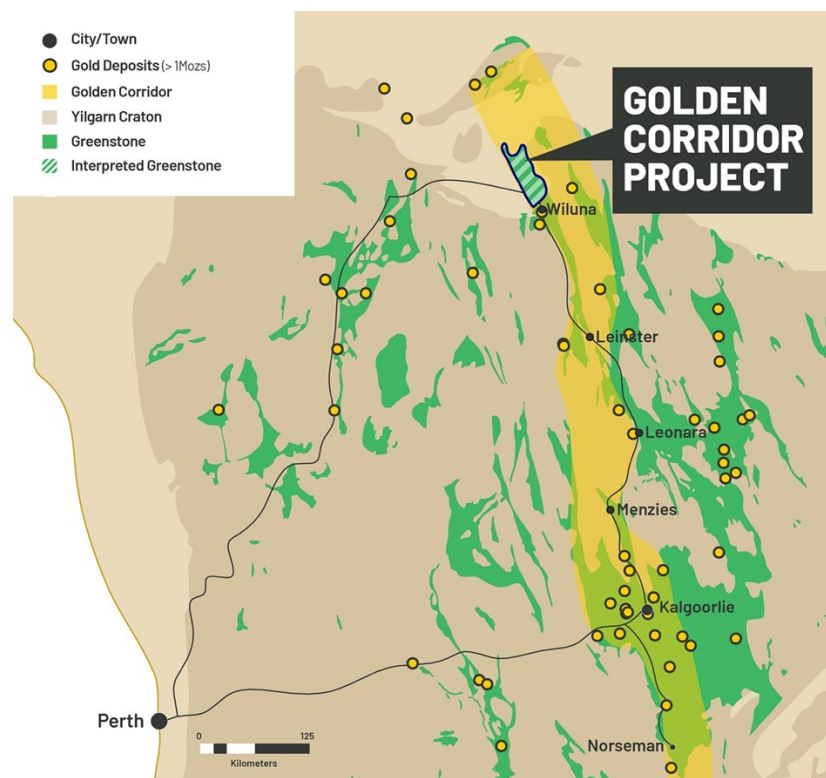
# The Golden Corridor Project (100% Great Western)

The Golden Corridor Project comprises some 60km strike of the Agnew-Wiluna greenstone belt, located in the northwest of the Kalgoorlie Terrane and along strike to the north of the Wiluna Mining Centre. The Kalgoorlie Terrane or “Golden Corridor” extends from as far south as Kambalda, through Kalgoorlie to as far north as Plutonic (see **Figure 3** below) and is host to many of the largest gold deposits in Australia and the majority of Western Australia’s past and present gold production. While the vast majority of the Golden Corridor’s greenstone belts have been extensively drill tested, Great Western’s 60km strike length of interpreted greenstone belt, including granted leases and leases under application, is practically untested.

The prospectivity of the region north of Wiluna where Great Western’s Golden Corridor Project is located, was also identified by pmd\*CRG research into the 3D architecture of the Yilgarn Craton<sup>3</sup> that noted, *“The architecture of the Golden Corridor may partly explain why the Kalgoorlie Terrane is so well endowed. The unifying theme appears to be the relationship between major faults and regional anticlinoria, with periodic undulations or perturbations resulting in elongate domes. The Golden Corridor stretches from Kambalda possibly to Plutonic, with locations under thin cover providing new opportunities for exploration (i.e. north of Wiluna).”*

Previous RC drilling by Great Western at its Finlayson Gold Target<sup>4</sup> which sits 70km North of Wiluna, at the northern end of the Golden Corridor Project intersected a sequence of dolerite and ultramafic with wide zones of shearing and strong alteration that includes sulphides. This greenstone package of rocks was intersected under shallow cover. While gold was intersected at only immaterial gold grade, the broad zones of favourable host rock and alteration indicate that these structures are large and are prospective for gold along strike.

All tenure at the Golden Corridor Project has now been granted. A regional exploration programme is now underway across the Golden Corridor Project including the completion of an initial Ultrafine+ soil sampling programme prior to Christmas



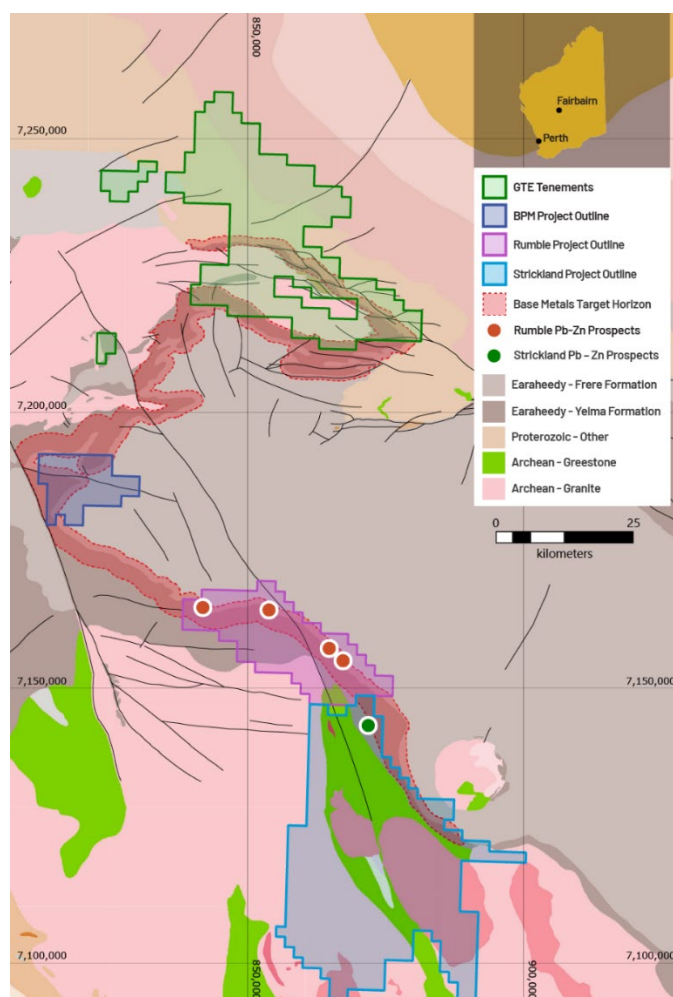
**Figure 3.** The Golden Corridor Project is located within the Kalgoorlie Terrane (“Golden Corridor”), Australia’s most prolific gold belt

# Fairbairn Base Metal Project (100% Great Western)

Great Western has a very large strategic land position in the rapidly evolving Earraheedy Basin, interpreted to sit within the same geological setting as the recent discoveries by Rumble Resources Limited (ASX: RTR) and Strickland Metals Limited (ASX: STK), the 100% owned “Fairbairn Base Metal Project” (see **Figure 4**).

Great Western has some 960km<sup>2</sup> of prospective base metals tenure at the Fairbairn Base Metal Project, on granted leases and leases under application. Fairbairn is almost completely unexplored with only a very small amount of historical exploration completed by companies exploring for diamonds, the majority of which focused on the southwestern corner of the Project.

Great Western is preparing its initial work programme that will include a high-resolution airborne magnetic survey and stereoscopic geological mapping over the Project area. Rumble Resources and Strickland Metals have demonstrated that airborne and surface geophysics are very effective tools in target generation.



**Figure 4.** The Fairbairn Base Metal Project is located within the Earraheedy Basin, 170 kilometres north of Wiluna, 110km northeast from the DeGrussa copper deposit, and 60km north of Rumble Resources (ASX:RTR) recent discovery at Chinook

# Firebird Gold Project

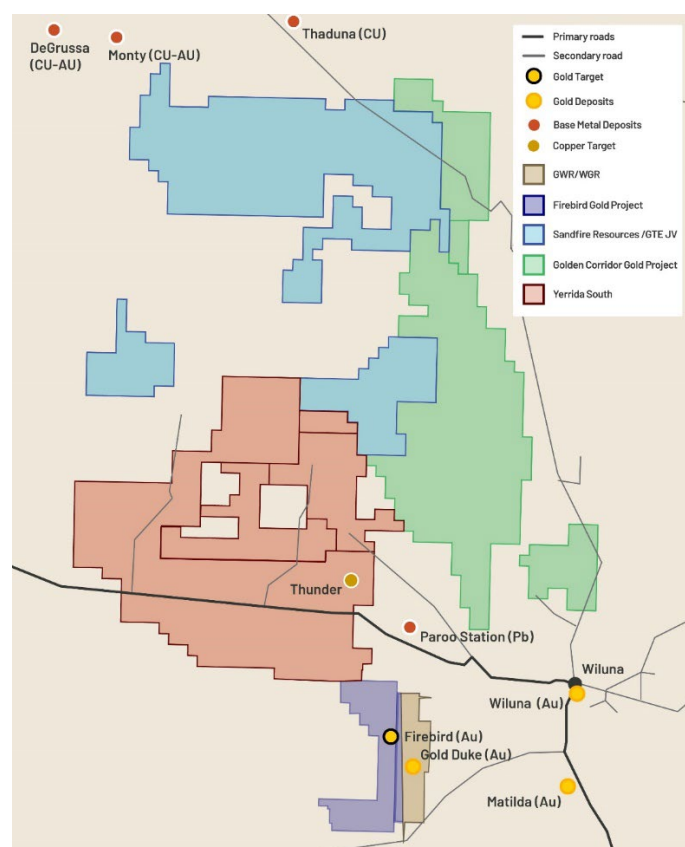
(GTE/Jindalee Resources Limited (JRL) JV GTE earning 80%)

The Firebird Gold Project ("Firebird") is located 4kms west of Western Gold's (ASX: WGR) Gold Duke Project and 30kms south-west of Wiluna in WA. Within Firebird is a large strong gold-in-soil anomaly located in a prospective geological setting with a strike over 2.1km and up to 350m wide<sup>5</sup>. The anomaly comprises several higher-grade zones (Au >6 ppb with peak Au of 20ppb) that are interpreted to be co-incident with underlying NNW-SSE trending structures. The eastern zones also display an association with arsenic which is a common feature of Archaean lode gold deposits in general and gold deposits in the Wiluna district in particular.

In addition, a number of highly prospective structural targets have been identified within the Project area along strike to the north and south from the gold in soil anomaly. Derived from aeromagnetic data, these targets are interpreted as ultramafic/BIF sequences similar to those observed at the Gold Duke Project. These targets will be prioritised in the upcoming surface sampling programme.

The large untested soil anomaly was identified to sit on the boundary of 100% Great Western owned tenure. Great Western has secured the additional tenure to the east covered by the untested soil anomaly in a joint venture with Jindalee Resources Limited (ASX:JRL). Firebird is now made up of three granted tenements, E53/1894 (100% GTE), E53/2027 (100% GTE) and E53/2129 (GTE earning 80%) (see **Figure 5**). Discussions with the traditional owners of the land that covers the Firebird Project are ongoing.

Great Western's initial field work programme at the Firebird Gold Project and the broader Project area will include infill and extensional soil sampling, mapping and follow up drilling targeting both the geochemical anomalies and the highly prospective structural targets.



**Figure 5.** Firebird Gold Project in relation to the WGR's Gold Duke Project and GTE's Yerrida South, Golden Corridor & Sandfire JV projects

## Yerrida South Project (100% Great Western)

The Yerrida South Project Area is located 40kms west of the Wiluna Gold Mine along the Goldfields highway and 50kms south-south-east of Sandfire's (ASX: SFR) DeGrussa copper-gold operation. The Project Area sits within the southern half of the Yerrida Basin which is currently being actively explored by Sandfire Resources (see **Figure 5**) on their 100% owned tenure, and on SFR-GTE Yerrida North Joint Venture ground, and also by DGO Gold (ASX:DGO). Great Western believes this significant land holding (1,670 km<sup>2</sup>) is highly prospective for copper, gold, nickel and other base metals.

Great Western has now completed a broad spaced regional reconnaissance Ultrafine+ soil sampling programme, at a nominal 1600m x 800m spacing with a tighter 800m x 800m grid used over areas interpreted from regional datasets and historical work as having higher prospectivity.

Great Western will plan a follow field work programme at Yerrida South once all assays have been received and interpreted from the initial stage of Ultrafine+ soil sampling. The follow up field work programme is likely to include infill Ultrafine+ soil sampling, mapping and geophysical surveys prior to drilling.

## Yerrida North JV (Sandfire Resources earning 70%)

During the December Quarter 2021, Sandfire Resources Limited (ASX: SFR) ("Sandfire") collected 174 lag samples within the Yerrida North joint venture tenements. The samples consisted of 163 non-magnetic lag and 11 magnetic lag samples. (see **Figure 6**).

These samples form part of a 1,000m x 1,000m grid pattern aimed at providing a wide-scale, first-pass overview of regolith geochemistry overlying the historically underexplored Killara Volcanics of the Yerrida Basin.

Previous geophysical work has aided in enhancing definition of conductive units and targeting of conductive anomalies throughout the Yerrida Basin. Key geological structures which may contribute to prospective mineralisation and/or enhanced fluid convection pathways were also able to be more accurately delineated and targeted.

Mapping programs have aided in further understanding of Yerrida Basin geology, which is comprised of the Windplain Group (Killara Formation tholeiitic basalts, dolerites, lithic sandstone and chert breccia) and Mooloogool Group (Doolgunna and Thaduna Formations arkosic and lithic sandstone, quartz wacke, minor conglomerate, siltstone and mudstone. Notable host to the prospective "Ravelstone" Formation) (see **Figure 7**).

Results from the lag samples taken in December will be analysed when received. A moving loop EM programme targeting anomalous soil results within the sampling area is expected to be completed in the March Quarter 2022.

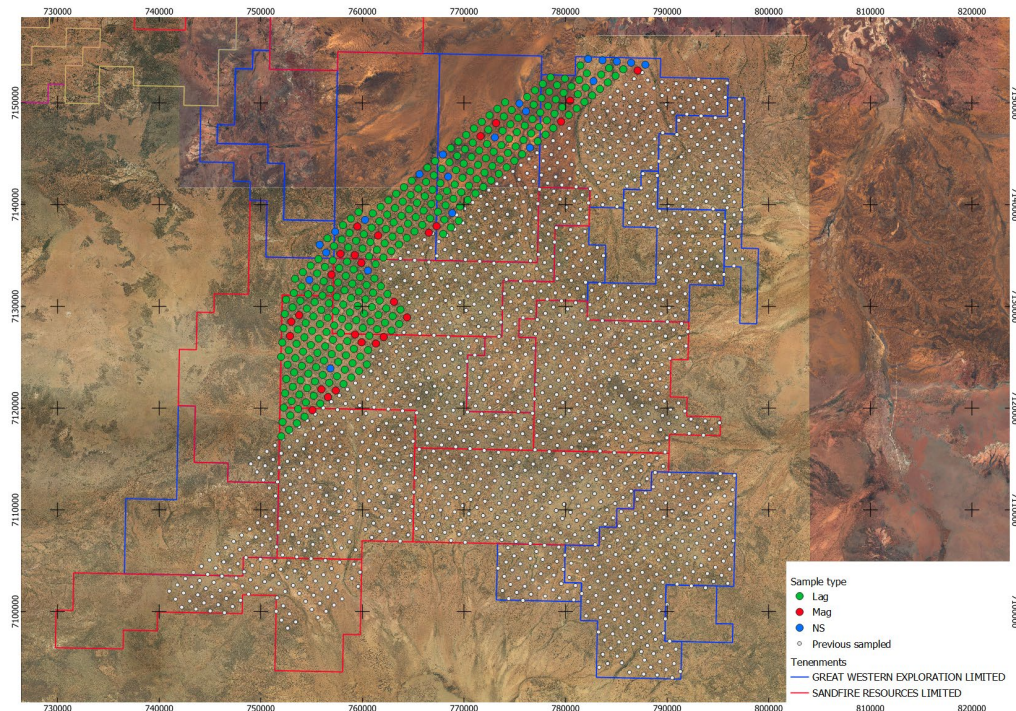
As previously advised, Sandfire reached its minimum expenditure commitment in late 2019, by spending \$1.7 million over three years. Great Western looks forward to the continued exploration being undertaken by Sandfire under the JV, where field works continue prior to potential drill testing.

Under the terms of the joint venture, Sandfire can earn a 70% interest by sole funding exploration to define a mineral resource of at least 50,000 tonnes of contained copper or copper equivalent under the JORC 2012 code. Great Western is free carried until that time. Sandfire can then choose to earn a further 10% by sole funding the completion of a Feasibility Study (as that term is defined in the JORC Code 2012 Edition) sufficient to justify a decision to mine.

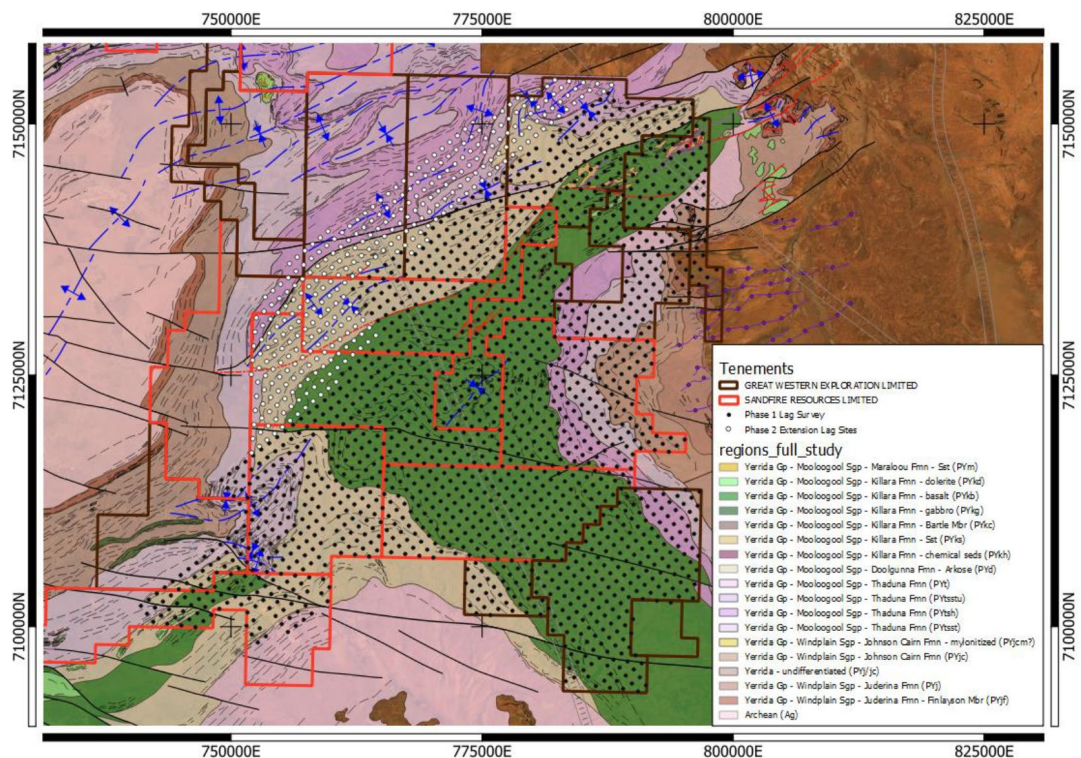
Pursuant to the joint venture agreement, Sandfire's earn-in is subject to it maintaining the joint venture tenements in good standing and meeting all statutory expenditure conditions relating to the joint venture tenements. During the September Quarter 2021, Sandfire advised the Company that eight of the joint venture tenements (see Appendix 1: Tenement Schedule at 31 December 2021) are the



subject of a plaint application by a third party in the Warden's Court. The outcome of this plaint application is unknown at the date of this report. The Company, with the support of Sandfire, intends to seek orders in the Warden's court for the dismissal of the plaint applications.



**Figure 6.** Phase 1 1km x 1km spaced lag program (white dot – completed September Quarter 2021), extension lag program (green, blue and red dots - completed December Quarter 2021) and tenure coloured by company overlain on ESRI Satellite Image.



**Figure 7.** Gavin Daneels regional Geology map overlain with Phase 1, 1km x 1km spaced lag program (complete September Quarter 2021), extension program (white dots – Completed December Quarter 2021) and tenure coloured by company.



# Corporate

## ASX Additional Information

- ASX Listing Rule 5.3.1: Exploration & Evaluation Expenditure during the December 2021 Quarter was \$797,000. Full details of exploration activity during the December 2021 Quarter are in this report.
- ASX Listing Rule 5.3.2: There were no substantive mining production and development activities during the December 2021 Quarter.
- ASX Listing Rule 5.3.5: Payments to related parties of the Company and their associates during the December 2021 Quarter: \$80,000 in aggregate is for the Managing Director's salary as per the remuneration package disclosed when the Managing Director was appointed in 2020.

**Authorised for release** by the board of directors of Great Western Exploration Limited.

Tony Walsh  
Company Secretary  
Great Western Exploration Limited  
Tel: 08 6311 2852  
Email: [enquiries@greatwestex.com.au](mailto:enquiries@greatwestex.com.au)

## References

- 1 EM Survey Defines Discrete, Conspicuous and Shallow VMS Targets at Yandal West – ASX Announcement – GTE.ASX – 6/10/2021
- 2 Two Additional Priority One VMS Targets, Daddy Long Legs and Redback, Defined at Yandal West – ASX Announcement – GTE.ASX – 25/10/21
- 3 3D Geological models of the Eastern Yilgarn Craton, Project Y2. Predictive Mineral Discovery Cooperative Research Centre (“pmd\*CR”) 2004 (A collaborative research initiative involving CSIRO, Geoscience Australia, AMIRA and Universities)
- 4 Finlayson Assays & Copper Ridge Drilling – ASX Announcement – GTE.ASX – 21/04/2021
- 5 Large Strong Gold Anomaly at Firebird Gold Project – ASX Announcement – GTE.ASX – 11/10/2021
- 6 Copper Ridge Assays Enhance Regional Prospectivity at Yerrida South – ASX Announcement – GTE.ASX – 18/08/2021

## Competent Person Statement

*The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr. Thomas Ridges who is a member of the Australian Institute of Mining and Metallurgy. Mr. Thomas Ridges is an employee of Great Western Exploration Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr. Ridges consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## Appendix 1: Tenement Schedule at 31 December 2021

Project	Tenement	Status	Holder	Ownership	Comments
Atley	E 57/1130	Live	Great Western Exploration Limited	100%	
Atley	E 57/1131	Live	Great Western Exploration Limited	100%	
Atley	E 57/1160	Live	Great Western Exploration Limited	100%	
Atley	E 57/1161	Live	Great Western Exploration Limited	100%	
Atley	E 57/1162	Live	Great Western Exploration Limited	100%	
Atley	E 57/1164	Live	Great Western Exploration Limited	100%	
Atley	E 57/1165	Live	Great Western Exploration Limited	100%	
Atley	E 57/1166	Pending	Great Western Exploration Limited	100%	
Atley	E 57/1204	Pending	Great Western Exploration Limited	100%	
Fairbairn	E 69/3443	Live	Vanguard Exploration Ltd	100%	100% Owned Subsidiary, Extension of Term Pending
Fairbairn	E 69/3810	Pending	Great Western Exploration Limited	100%	
Fairbairn	E 69/3899	Live	Great Western Exploration Limited	100%	
Fairbairn	E 69/3903	Pending	Great Western Exploration Limited	100%	
Fairbairn	E 69/3906	Pending	Great Western Exploration Limited	100%	
Forrestania South	E 74/603	Live	Western Areas Ltd	10%	Free Carried To PFS
Firebird	E 53/2129	Live	Jindalee Resources Limited	0%	JV with Jindalee Resource Ltd, GTE Earning 80%
Golden Corridor	E 51/1855	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 51/2033	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 51/2046	Live	Great Western Exploration Limited	100%	
Golden Corridor	E51/2010	Live	Great Western Exploration Limited	90%	Westex Resources Free Carried to BFS
Golden Corridor	E 53/1983	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 53/2124	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 53/2138	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 53/2139	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 53/2141	Live	Great Western Exploration Limited	100%	
Golden Corridor	E 53/2142	Live	Great Western Exploration Limited	100%	
Lake Way Potash	E 53/1949	Live	Great Western Exploration Limited	100%	
Lake Way Potash	E 53/2017	Live	Great Western Exploration Limited	100%	
Lake Way Potash	E 53/2026	Live	Great Western Exploration Limited	100%	
Lake Way Potash	E 53/2146	Live	Great Western Exploration Limited	100%	
Yandal West	E 53/1369	Live	Vanguard Exploration Ltd	100%	100% Owned Subsidiary
Yandal West	E 53/1612	Live	Diversified Asset Holdings Pty Ltd	80%	Diversified Free Carried To BFS, Extension of Term Pending

Project	Tenement	Status	Holder	Ownership	Comments
Yandal West	E 53/1816	Live	Diversified Asset Holdings Pty Ltd	80%	Diversified Free Carried To BFS
Yandal West	E 53/2206	Pending	Great Western Exploration Limited	100%	Competing Application
Copper Ridge	E 51/1727	Live	Great Western Exploration Limited	100%	
Copper Ridge	E 51/1734	Live	Great Western Exploration Limited	100%	Extension of Term Pending
Copper Ridge	E 51/1856	Live	Great Western Exploration Limited	100%	
Copper Ridge	E 53/1894	Live	Great Western Exploration Limited	100%	
Copper Ridge	E53/2156	Pending	Great Western Exploration Limited	100%	
Yerrida South	E 51/1732	Live	Great Western Exploration Limited	100%	Extension of Term Pending
Yerrida South	E 51/1733	Live	Great Western Exploration Limited	100%	Extension of Term Pending
Yerrida South	E 51/1993	Live	Great Western Exploration Limited	100	
Yerrida South	E51/2062	Pending	Great Western Exploration Limited	100%	
Yerrida South	E51/2063	Pending	Great Western Exploration Limited	100%	
Yerrida South	E 53/2027	Live	Great Western Exploration Limited	100%	
Yerrida South	E 53/2077	Live	Great Western Exploration Limited	100%	
Yerrida South	E 51/2068	Pending	Great Western Exploration Limited	100%	
Yerrida South	E 53/2196	Pending	Great Western Exploration Limited	100%	
Yerrida South	E 51/2078	Pending	Great Western Exploration Limited	100%	
<b>Joint Venture with Sandfire Resources Limited (1)</b>					
Yerrida North JV	E 51/1324	Live	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1330	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1560	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1712	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1723	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1724	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1728	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1746	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1747	Live (2)	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1819	Live	Great Western Exploration Limited	100%	Sandfire Earning 70%
Yerrida North JV	E 51/1827	Live	Great Western Exploration Limited	100%	Sandfire Earning 70%

Notes

- (1) Pursuant to clause 3 (e) of the Farm-in Letter Agreement between Sandfire and the Company dated 10 April 2017, Sandfire's earn-in is subject to it maintaining the joint venture tenements in good standing and it meeting all statutory expenditure conditions relating to the joint venture tenements.
- (2) These eight tenements are the subject of a plaintiff application by a third party in the Warden's Court. The outcome of this plaintiff application is unknown at the date of this report. The Company, with the support of Sandfire, intends to seek orders in the Warden's court for the dismissal of the plaintiff applications.