10 October 2022



Level 2 10 Outram Street West Perth WA 6005

Weelarrana Manganese Project Update Drilling to Commence - Mineralisation Extended

HIGHLIGHTS

- Further rock chip samples confirm and extend outcropping Manganese mineralisation at Mn Area 3 mineralisation encountered a further 600m east from previous sampling
- Rock chip samples and mapping identifies new Manganese mineralisation south of Mn Area 3 at Mn Area 4
- Cultural & Heritage survey covering Mn Area 1 to 4 completed and heritage clearance to conduct exploration drilling received over all 4 areas
- PoW approval for a drill program at Mn Area 1 received with drilling imminent
- Heritage agreements for tenement applications E52/4046, 4071 and 4072 signed tenement grant expected early 2023
- Field inspection of recently granted tenement E 52/3981 identifies subcropping goethite-chalcedony fault breccia associated with regionally extensive Ilgarari Fault with rock chip grades to 2.44ppm Ag and 0.18 ppm Au returned
- New tenement application (E 52/4173) made surrounding E 52/3981 to cover the extension of the Ilgarari Fault to the west and east

Pantera CEO, Matt Hansen, commented:

"We are delighted to have received Cultural & Heritage approval for the commencement of drilling programs at Weelarrana and to have identified a further area of outcropping manganese mineralisation.

We believe this area holds great potential for the discovery of high-grade manganese mineralisation.

The upcoming drill program will be the first time the manganese mineralisation within the tenement area has been drill tested, and with the high grades reported in the rock chip samples, we look forward to the results of the maiden drill program."





Pantera Minerals Limited (ASX:**PFE**) ("**Pantera**" or the "**Company**") is pleased to announce that the Company has received Cultural & Heritage approval, allowing for the commencement of drilling, with Pantera identifying multiple high grade manganese targets at Weelarrana, located 70km south of Newman in West Australia's Pilbara region.

Weelarrana Manganese Project - E 52/3878

Rock Chip Results

- A further 12 rock chip samples were taken from Mn Area 2, 3 and the newly identified Mn Area 4 see Figure 1
- Mn Area 2 had a further three rock chip samples taken with one sample returning **11.5% Mn**
- Mn Area 3 had a further six rock chip samples taken with five samples ranging from 13.0% Mn to 43.6% Mn. Outcropping manganese mineralisation was further identified 600m to the east of the previously identified mineralisation
- Mn Area 4 had three rock chip samples taken with two samples ranging from 12.5% Mn to 38.2% Mn. Figure 2 shows the subcropping manganese mineralisation identified at Mn Area 4 with manganese mineralisation observed over a strike of 280m



Figure 1- Weelarrana Manganese Project E 52/3878 showing location of outcropping high grade manganese mineralisation and rock sample locations with updated Mn assay results



• All rock chip samples taken for manganese are shown in Table 1 and are taken from outcropping Ilgarari Formation, which is the host for manganese mineralisation at the Element 25 Ltd Butcherbird deposit¹ (ASX:E25)

1. See ASX E25Announcement: Pre-Feasibility Study Highlights Robust, Short Time Start-up Opportunity - 19 May 2020.



Figure 2 - Outcropping massive, botyroidal manganese mineralisation at Mn Area 4 (sample location WR0027Mn - 35.2 % Mn)

- Since tenement grant of E 52/3878 in late 2021 Pantera has identified four prospective areas for manganese mineralisation with a total of 34 rock chip samples taken to delineate the outcropping manganese
 - Mn Area 1 has been mapped as a continuous outcrop of bedded manganese mineralisation over a strike length of 800m with a variable thickness of between 2 and 5m with rock chip Mn grades from 11.9% Mn to 43.6% Mn
 - Mn Area 2 has been mapped as a semi continuous outcrop of bedded manganese mineralisation over a surface area of 600m by 60m with rock chip Mn grades from 11.5% Mn to 30.8% Mn
 - Mn Area 3 has been mapped as sporadic outcrops of massive manganese mineralisation over a surface area of 1200m by 450m with rock chip Mn grades from 13.0% Mn to 43.6% Mn



 Mn Area 4 has been mapped as sporadic outcrops of massive manganese mineralisation over a surface area of 280m by 70m with rock chip Mn grades from 12.5% Mn to 35.2% Mn

Heritage Survey and Heritage Agreements

- The Cultural & Heritage survey of the proposed drill program areas at Mn Areas 1 to 4 as well as an access track connecting all four areas was completed in early September
- Heritage clearance of the proposed exploration works has now been granted with some conditions which Pantera will abide by
- A single heritage agreement for Pantera tenement applications E 52/4046, 4071 and 4072 has now been executed and Pantera anticipates the grant of these tenements early in 2023
- Pantera greatly appreciates the continued positive collaboration with the Karlka Nyiyaparli Aboriginal Corporation and the local traditional owners of the Weelarrana area

Drill Program Mn Area 1

- A 1200m RC drill program has PoW approval to test the outcropping manganese mineralisation at Mn Area 1, with drilling to be conducted on 50m centres along five 200m long drill lines
- Drilling is expected to occur imminently now that Cultural & Heritage clearance for the exploration works has been received
- Assay results from the drill program are expected in December

Ilgarari East - E 52/3981 Exploration Commenced

- Field reconnaissance of newly granted E 52/3891 has commenced with a series of historic RAB drill lines inspected for access and outcropping geology
- A subcropping goethite-chalcedony fault breccia is exposed over a strike of 50m was encountered along a historic RAB line. Two rock chip samples taken returned anomalous silver and gold grades with one sample returning **2.44ppm Ag** and **0.18 ppm Au**. The two rock chip samples are also anomalous in Scandium and Antimony which are indicative of a hydrothermal system along the fault. Figure 3 shows the location of the rock chip samples taken from E 52/3981 and Table 2 shows the sample details





Figure 3 - Anomalous silver and gold rock chip samples - E 52/3981

- The fault breccia appears to be associated with the regionally extensive Ilgarari Fault of which there is 3.5km of strike within E 52/3981
- A soil and rock chip sampling program are planned to follow up the anomalous rock chip results

Ilgarari East - New Tenement Application E 52/4173

• A 63-block exploration tenement application surrounding E 52/3891 has been made by Pantera, which covers the extension of the Ilgarari Fault to the south-west and north-east and covers approximately 35km of strike of the fault





Figure 4 - Tenement application E 52/4173 at Ilgarari East showing location of the Ilgarari Fault and the granted tenement E 52/3981



WELLARANA PROJECT BACKGROUND

Located within the Proterozoic Collier Basin some 80 km south of Newman, Western Australia, the Weelarrana Project covers 958 km² of tenure considered prospective for manganese and precious metal mineralisation. All tenements cover either Ilgarari Formation manganiferous shales or Backdoor Formation manganiferous shales which are known to host economic manganese mineralisation at Element 25's Butcherbird Deposit (ASX:E25) and Firebird Metals Hill 616 Deposit (ASX: FRB).

Despite the presence of two significant manganese deposits the area covered by Pantera tenements has been under explored for manganese. Pantera aims to systematically explore for manganese within the two known stratigraphic hosts as well as assess and explore the tenure for structural hosted precious metal mineralisation.



Figure 5 - Weelarrana Project tenement location plan

- END -



This release is authorised by the Board of Directors of Pantera Minerals Limited.

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Competent Person's Statement

The information in this announcement that relates to geology and exploration results and planning was compiled by Mr. Nick Payne, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and is Head of Exploration for Pantera. Mr Payne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Payne consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

All parties have consented to the inclusion of their work for the purposes of this announcement. The interpretations and conclusions reached in this announcement are based on current geological theory and the best evidence available to the author at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however might be, they make no claim for absolute certainty. Any economic decisions which might be taken on the basis of interpretations or conclusions contained in this presentation will therefore carry an element of risk.



Sample ID	Easting	Northing	Mn %	Fe %	Al2O3 %	Р%
WR0023Mn	796569	7339598	3.69	9.88	6.65	0.14
WR0024Mn	796585	7339567	11.47	7.08	3.30	0.09
WR0025Mn	796612	7339520	7.46	6.69	3.68	0.10
WR0026Mn	793399	7340594	8.04	56.88	3.21	0.06
WR0027Mn	793470	7340746	35.18	21.97	4.23	0.03
WR0028Mn	793537	7340823	12.49	49.53	5.48	0.06
WR0029Mn	794066	7341568	38.29	7.83	3.89	0.33
WR0030Mn	793668	7341578	31.76	13.74	5.23	0.39
WR0031Mn	793368	7341777	34.93	14.44	3.27	0.49
WR0032Mn	793079	7341734	43.64	8.61	2.81	0.40
WR0033Mn	792813	7341293	12.99	17.27	7.52	0.65
WR0034Mn	792763	7341238	5.68	46.70	3.27	0.28

Table 1- Mn Rock chip sample location and laboratory assay results (GDA94 MGAz50)

Sample ID	Easting	Northing	Ag ppm	Au ppm	Sc ppm	Sb ppm
WR0006S	787472	7318225	2.44	0.18	51.46	112.26
WR0007S	787447	7318213	0.13	0.014	16.94	27.60

Table 2- Ag-Au Rock chip sample location and laboratory assay results (GDA94 MGAz50)

JORC Code Table 1 – Pantera Minerals Exploration Update

Section 1 Sampling Techniques and Data

Criteria in this section apply to all succeeding sections

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down-hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	 All rock chip samples were collected from insitu outcropping material Rock chip sample sizes varied from 0.5 kg and 2kg
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	 The samples taken are considered to appropriately represent the surface manganese mineralisation
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	 The Mn rock chip samples were whole crushed and then pulped. The pulped samples were then submitted for standard 18 element XRF analysis for Mn at Intertek in Perth Elements assayed for are: Al₂O₃, BaO, CaO, Cr₂O₃, Cu, Fe₂O₃, K₂O, MgO, Mn, Na₂O, P₂O₅, Pb, SO₃, TiO₂, V₂O₅, Zn and LOI The Ag-Au rock chip samples were whole crushed and then pulped. The pulped samples were then digested in a 4 Acid Digest before being analysed by the for 48 element ICP-MS analysis. Elements assayed for are: Ag, Al, As,



Criteria	JORC Code explanation		Commentary
		•	Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, Zn and Zr Gold was determined by standard 50g Fire Assay.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	•	No drilling was performed
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	•	No drilling was performed
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	•	No drilling was performed
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	•	No drilling was performed
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	•	Each rock chip sample was geologically described and recorded in a digital Rock Chip Register
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	•	Logging of rock chip samples is both qualitative and quantitative
	The total length and percentage of the relevant intersections logged.	•	No drilling intersections are reported
Sub-sampling techniques	If core, whether cut or sawn and whether quarter, half or all core taken.	•	No drillcore was taken
and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	•	Each sample was whole crushed and pulverised with approx. 100g submitted for standard XRF analysis with 1 to 2g of sample submitted for 4 Acid Digest with a ICP-MS finish
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	•	The sampling preparation technique of homogonising the entire rock chip sample is considered appropriate for the reporting of exploration results
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	•	The entire rock chip sample was crushed, split then pulverised. The pulverised material was split and sub-sampled to produce a 100g sample for XRF assay or 1-2g samples for ICP- MS assay
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.	•	Every 10 th sample was split twice to produce a duplicate for assay
	Whether sample sizes are appropriate to the grain size of the material being sampled.	•	Sample size is considered appropriate to the grain size of the manganese mineralisation
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	•	The assaying method and laboratory procedures are considered appropriate for the reporting of manganese and silver-gold rock chip results The assay method is considered a total method given the sample was whole crushed and pulverised and for silver-gold fully digested
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the	•	No geophysical or handheld tools were used



Criteria	JORC Code explanation		Commentary		
	analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.				
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	•	After every 10 th assay a standard of known grade was assayed. Also, each 9 th sample was a field duplicate At the completion of the assaying the results of the standards and duplicates were assessed to determine if any sample or assay bias could be detected		
Verification of sampling	The verification of significant intersections by either independent or alternative company personnel.	•	Senior Pantera personnel verified the assay results		
and assaying	The use of twinned holes.	•	No drilling was performed		
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	•	All the assay data was electronically transferred to the companies database		
	Discuss any adjustment to assay data.	٠	Assay data has not been adjusted		
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	•	All rock chip samples were recorded by the field geologist using a Garmin 65s handheld GPS. Accuracy is assumed to be +/- 2m in x, y and z		
	Specification of the grid system used.	•	GDA94 MGA Zone 50 as the grid system		
	Quality and adequacy of topographic control.	•	No topographic control was used		
Data spacing and	Data spacing for reporting of Exploration Results.	•	The data spacing is appropriate for Exploration Results		
distribution	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied	•	No Resource Estimation has been conducted		
	Whether sample compositing has been applied.	•	No sample compositing has been applied		
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	•	It is not known if the orientation of rock chip sampling at Weelarrana has created a sampling bias. The results of the rock chip sampling should be considered indicative of the surface manganese and silver-gold mineralisation		
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	•	No drilling was performed		
Sample security	The measures taken to ensure sample security.	•	The samples were hand carried by Pantera staff from Weelarrana to Perth and then hand carried and delivered to the Intertek in Maddington		
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	•	The company has not performed an audit of sampling technique or data		

Section 2 Reporting of Exploration Results Criteria in this section apply to all succeeding sections

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties,	• The Weelarrana tenements consist of two granted and five applications covering approximately 958 sq. km. All of these tenements fall on pastoral stations and have native title agreements in place. Two tenement



Criteria	JORC Code explanation	Commentary
	native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	applications fall partially within the Jigalong Aboriginal Reserve for which a Mine Entry Permit will need to be issued to access the portions of the tenement within the reserve. Beau Resources retains a 2% Gross Value Royalty for all minerals, metals and products recovered and sold from within the tenement boundary of E 52/3878.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	 Most of the past exploration work within the Weelarrana Project area including soil and rock chip sampling, Auger drilling and RAB drilling has been conducted by Pilbara Manganese, Laconia Resources, Shaw River Resources and Sipa Resources. The reports are available on the West Australian Mines Department WAMEX open file library.
Geology	Deposit type, geological setting and style of mineralisation.	 The Weelarrana Project covers a portion of the Mesoproterozoic Bangemall Basin with the project sitting entirely within the Bangemall Group including sandstone/quartzite/conglomerate of the Calyie Sandstone and shale/argillite units of the Ilgarari and Backdoor Formations which are known Mn mineralisation hosts. Manganese mineralisation within the area is strataform and primary in deposition with supergene enrichment and occurs within bedded argillite of the Ilgarari Formation which outcrops through the centre of the project area. Manganese mineralisation appears to be preferentially developed at the contact between the Calyie Formation and Ilgagari Siltstone within the area as being fault hosted and associated with chalcedony veining however to date no deposits of economic significance have been recorded
Drillhole Information	 A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: easting and northing of the drillhole collar elevation or RL (elevation above sea level in metres) of the drillhole collar dip and azimuth of the hole down hole length and interception depth hole length. 	 No drilling for manganese has been performed on the two granted tenements. No drilling for silver-gold has occurred within the area
Data aggregation methods	 In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. 	 Rock chip samples are reported as whole rock percentages. No cut off grades have been applied.
Relationshi p between mineralisati on widths and intercept lengths	 If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known'). 	 No drilling for manganese has been performed on the two granted tenements. No drilling for silver-gold has occurred within the area



Criteria	JORC Code explanation	Commentary
Diagrams	 Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	Rock chip sample location and assay grades are shown.
Balanced reporting	 Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	• The report has been prepared to highlight the main targets and positive drillhole observations and rock chip results based on current and past exploration within the project areas. Not all exploration results are shown for practical purposes.
Other substantive exploration data	 Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. 	• Exploration work to date within the Weelarma Project and Ilgarari East area has largely been of a preliminary or reconnaissance nature. The company is aware of regional scale aeromagnetic surveys and geological mapping program, soil sampling and wide spaced RAB drilling undertaken by past explorers and has access to versions of the data that is available in reports and has assessed most of this data.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Near future exploration plans for Weelarrana and Ilgarari East are discussed in the release.