CARBINE RESOURCES
LIMITED

ASX / MEDIA ANNOUNCEMENT **7 April 2022**

Maiden Drilling at Muchea West Silica Sand Project Confirms High Grade Eastern Area

HIGHLIGHTS

- **Results received from drill program testing the higher grade (99.7% - 99.9% SiO_2) Eastern Area**
- **Results confirm the grades from previous drilling, and includes intercepts such as:**

  MW0077 – 15m @ 99.81% SiO_2, 222 ppm Fe_2O_3 and 154 ppm Al_2O_3 from 1m

  MW0092 – 20m @ 99.69% SiO_2, 450 ppm Fe_2O_3 and 313 ppm Al_2O_3 from 1m

  MW0127 – 17m @ 99.70% SiO_2, 350 ppm Fe_2O_3 and 260 ppm Al_2O_3 from 1m

  MW0142 – 21m @ 99.76% SiO_2, 329 ppm Fe_2O_3 and 310 ppm Al_2O_3 from 1m
- **233 holes drilled along existing tracks for 1,892m producing 1,088 samples**
- **Widenbar and Associates engaged to complete maiden Mineral Resource Estimate**
- **Independent Metallurgical Operations to undertake process studies on excess sample material**
- **Program of Work application underway for 2022 drilling program**

Carbine Resources Limited (ASX: CRB) (the Company) is pleased to provide results for its maiden drilling program at its 100% owned Muchea West Silica Sands Project, Western Australia (**Muchea West, the Project**).

Muchea West has the potential to host a substantial, high grade, low impurity silica sand deposit. The potential final processed grade is significant as it meets all the specifications for flat and container glass markets and for foundry glass at the top end of silica sand consumption market and the upper price ranges for these products.

Peter Batten, Managing Director, stated *"Carbine is delighted with the results. Carbine believes the quality of the Muchea West Silica Sand Project is exceptional and these results confirm that. This is not a matter of discovering sufficient material for a commercial operation, but more selecting the first development location and defining the product within that location.*

"The overall size and quality of the Muchea sand dune system ranks highly in the silica sand market".

Carbine's first drilling program at Muchea West since acquisition of the Project in July 2021 has succeeded in meeting all expectations of:

- advancing the information available at the time of acquisition;
- identifying the area best suited for a Mining Licence application; and
- providing sufficient data to undertake an initial Mineral Resource Estimate in order to commence mining studies.

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MUCHEA WEST SILICA SAND PROJECT

Location

The Muchea West Project is located approximately 40km north-northeast of Perth and approximately 500m to the west of the town of Muchea. Direct access from the tenure is via the Tonkin Highway thence via farm tracks and fence lines. Both the Tonkin Highway and the Moora-Kwinana Railway provide a direct connection with the Kwinana Bulk Terminal.

The Project is underlain by the Bassendean Sand Formation, which extends over large areas of the Swan Coastal Plains of the Perth Basin from about 23 km north of Jurien, to about 15km southwest of Busselton. The Bassendean Sand Formation is considered to have a maximum thickness of about 45 m, and the unit is found as a strip parallel to the coast, having a width of about 10-20 km, and its western edge about 5-10km inland

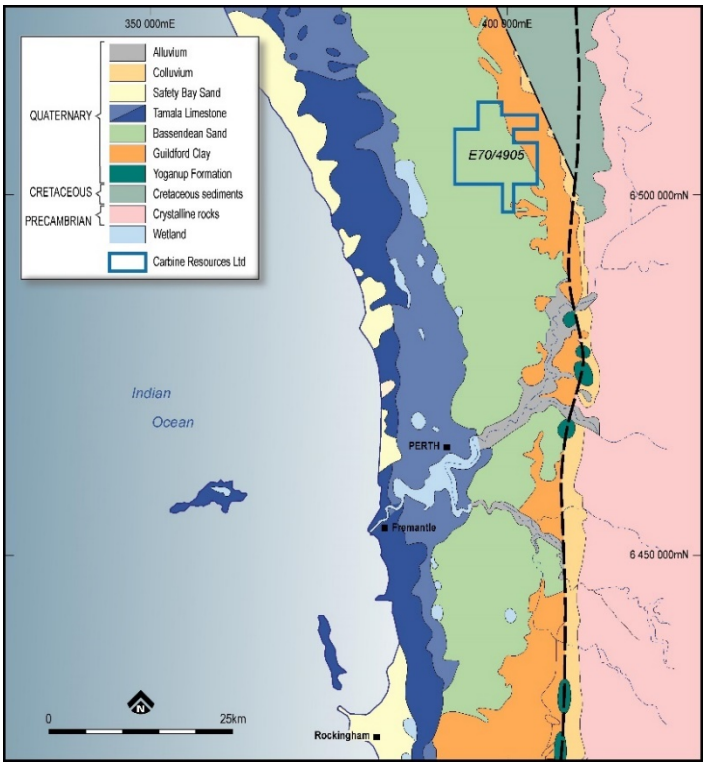

Figure 1: Location/Geology Plan

Previous Exploration Undertaken

The region surrounding the Project has been explored for both silica sand and mineral sands.

A total of 82 vacuum drill holes were completed by Australian United Silica Corporation Pty Ltd (**Ausco**). Previously the area within the tenement has been drilled for water and this drilling resulted in 28 water bores.

Current Exploration Activities

The program consisted of a total of 233 vacuum drill holes which were drilled at nominal 50m spacing on five drill lines along existing tracks (as shown in Figure 2 below) within the tenement area. This drilling was completed by Strataprobe Pty Ltd.

Each of the 233 holes intersected white sand profiles as expected in a dune system. The drill depths were designed to terminate 3m above the modelled surface of the 2019 watertable. Due to the exceptional wet seasons for 2020 and 2021 and the early drilling date (immediately following the wet season) the watertable was significantly higher than the modelled surface and only 30 of the 233 holes reached planned depth and 11 holes were short by more than 10m.

A total of 1,088 samples were transported to Intertek Genalysis Laboratories.

Figure 2: Drill Collar Plan

Results

Results from Carbine's maiden drill program have confirmed the grades from previous drilling, and includes intercepts such as:

- MW0077 – 15m @ 99.81% SiO_2, 222 ppm Fe_2O_3 and 154 ppm Al_2O_3 from 1m
- MW0092 – 20m @ 99.69% SiO_2, 450 ppm Fe_2O_3 and 313 ppm Al_2O_3 from 1m
- MW0127 – 17m @ 99.70% SiO_2, 350 ppm Fe_2O_3 and 260 ppm Al_2O_3 from 1m
- MW0142 – 21m @ 99.76% SiO_2, 329 ppm Fe_2O_3 and 310 ppm Al_2O_3 from 1m

Of the 233 holes completed, 85% of the drillholes returned profiles in excess of 99.5% SiO_2 and only 3 holes returned profiles with less than 99.0% SiO_2.

All 315 holes drilled on the Project to date display the exceptional high grade and quality of the Muchea sand deposits.

The overall grades returned confirm the selection of the eastern side of the tenement for first resource drilling with grades in line with expectations of a raw SiO_2 grade in excess of 99.7% and moderate levels of Fe_2O_3 and Al_2O_3 as expected from the 2019 drilling results. The average Fe_2O_3 levels for the 2021 drilling were consistent with the 2019 drilling (0.029% v 0.025%) but the Al_2O_3 averages were considerably lower (0.077% v 0.028%).

Carbine has already displayed that, at these levels of Fe_2O_3 and Al_2O_3, the Muchea West silica sand can, by a simple attrition process, produce a final product that exceeds the requirements set for the high purity silica sand market (ASX Announcement 29 July 2021).

The 2019 drilling program was designed with a nominal depth of 10m for each hole with only 4 of the 82 holes exceeding this depth and then only to between 15 and 20m. The 2021 drilling was designed to test the complete white sand profile of the project with a maximum planned depth of 23m in a number of holes. Despite the higher than normal watertable the deepest holes in this program reached 22m.

The full profile at Muchea West is from surface to a level 3m above the watertable, as defined in 2019. Drilling stops the moment the watertable is intersected irrespective of planned hole depth. This a condition of the licence but also a practical limit as a vacuum system will not lift wet sand.

Carbine's procedure is to reject the surface 1m (ie from 0m to 1m) when sampling. This reflects the practice of setting aside the portion of the profile containing all the botanical material to be used for rehabilitation. Elsewhere at Muchea the critical depth of this material has been shown to be from 0m to 0.4m.

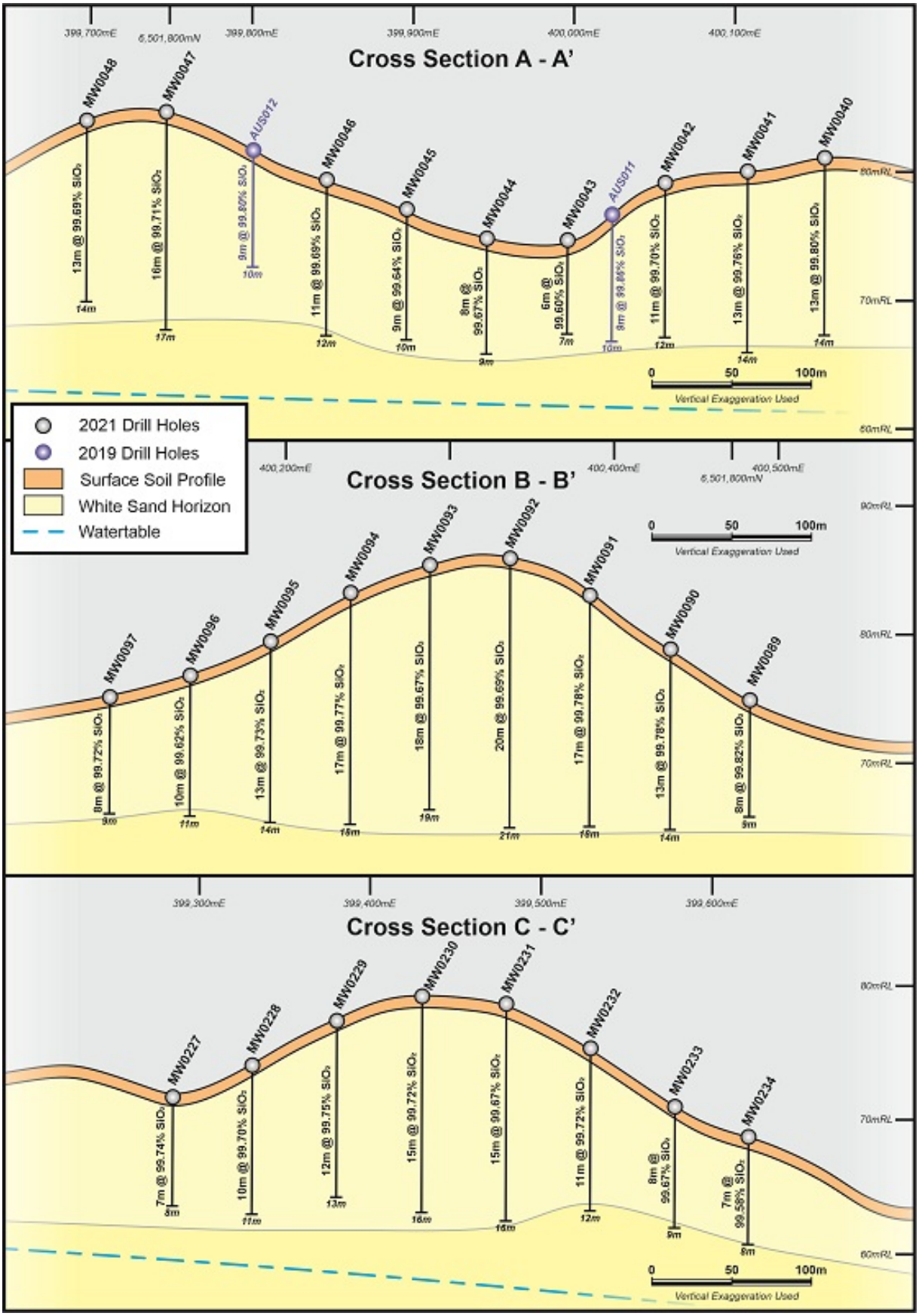

Figure 3: Cross sections (see Figure 2)

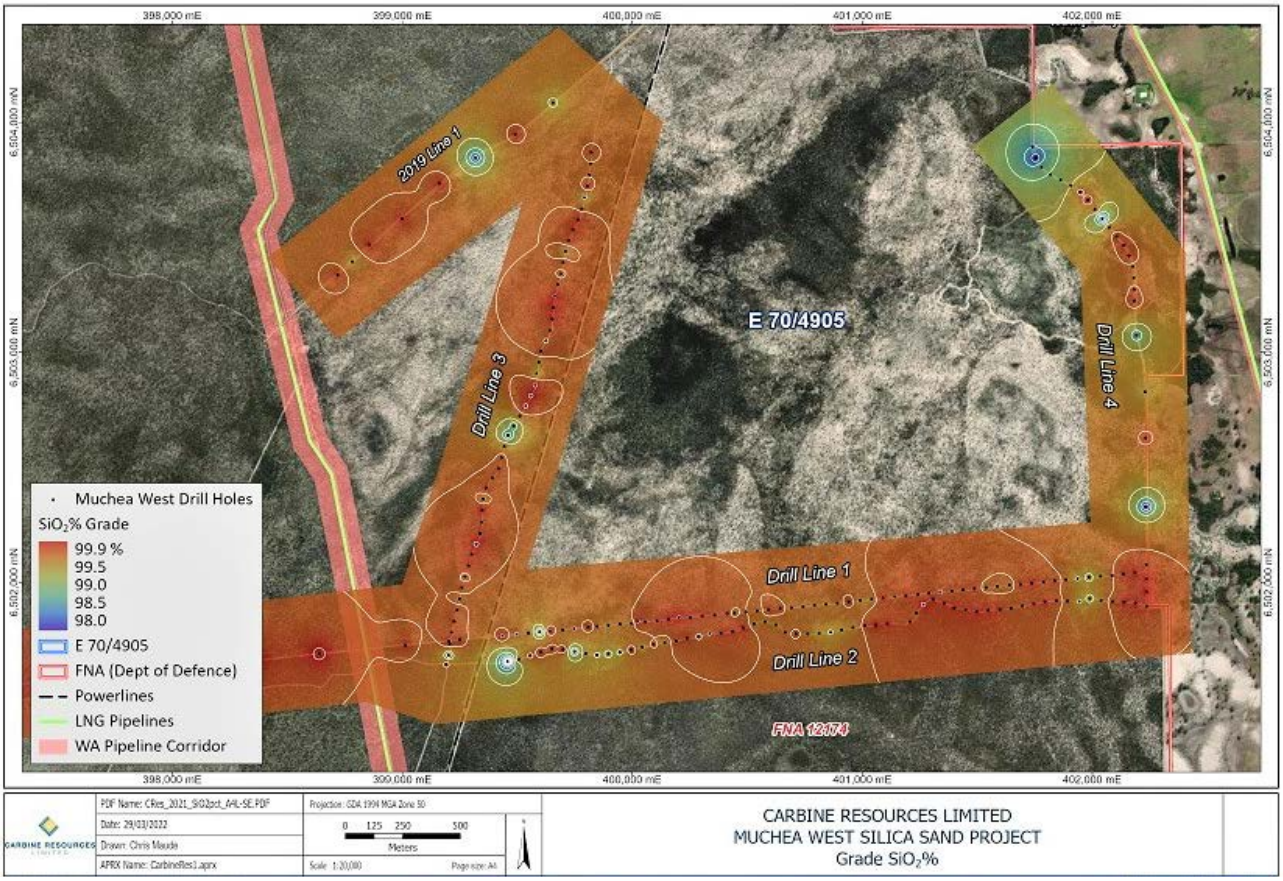

Figure 4: SiO_2 average hole grade distribution

Studies

A number of studies have been commissioned by Carbine to further progress the Muchea West Project and to advance towards a Mining Licence application.

Drill lines 1 and 2 (Figure 5) are spaced close enough for the sample results to be used to complete a Mineral Resource Estimate (**MRE**) within the JORC 2012 guidelines.

To this end, Widenbar and Associates have been engaged to undertake the MRE. The Principal Geologist, Lynn Widenbar, is a Member of the AusIMM and a competent person for this style of deposit.

Independent Metallurgical Operations (IMO) are undertaking beneficiation process optimisation studies utilising the drill samples produced from the recent programme and, if necessary, the samples from the earlier 82 holes completed prior to Carbine's acquisition of the Muchea West Silica Sand project.

Final product from these trials will be available to Carbine to allow for the commencement of discussions regarding offtake from any future operation.

PGV Environmental have been contracted to commence a botanical survey as a prerequisite for the lodging of a Program of Work (**PoW**) with the Department of Mines, Industry Regulation and Safety (**DMIRS**). Terrestrial Ecosystems are conducting fauna surveys and other contracts to complete the PoW process will be awarded in the near future.

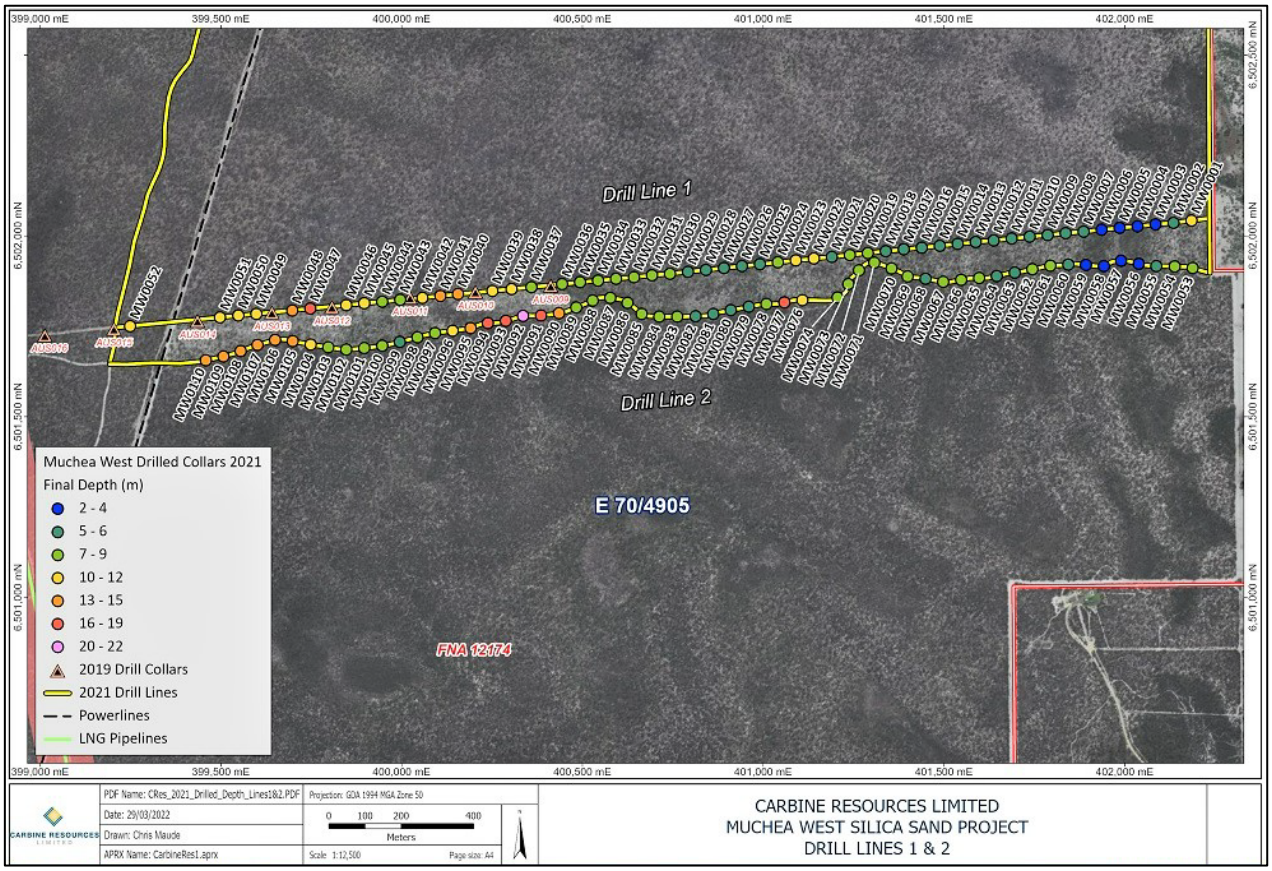

Figure 5: Drill spacings Lines 1 and 2

Figure 6: Chip trays:- MW0077, MW0092, MW0127, MW142

Proposed Exploration

The results of this first drilling campaign completed by Carbine will define the second and definitive campaign of resource drilling. The work required to allow Carbine to apply for access and approval of this PoW has commenced or is being put in place.

Carbine will commence drilling at Muchea West after permission is granted by all relevant parties and a survey has been completed to clear the drilling locations. The optimum period for this drilling is April to May 2022.

The proposed phase 2 drill program is for up to 1,000 holes and 10,000m.

The completion of this drilling will feed into a Definitive Feasibility Study that will include Resource/Reserve estimations, final processing options, transport and infrastructure studies and the production of bulk samples for potential client engagements.

At the completion of this process Carbine expects to be in a position to apply for a Mining Licence and Mining Approvals.

Summary

Carbine is progressing with its proposed exploration budget and schedule, having completed its first drill campaign and commenced the scoping studies for resource estimations and processing.

The results of these studies will outline the potential economic parameters to be derived from a future operation at Muchea West and allow Carbine to commence discussions necessary for the development of the project.

Work is underway to gain access for the second, and definitive, drill campaign with expectations for completion in H1, 2022.

This announcement is approved for release by the Board of the Company.

For further information, please contact:

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COMPETENT PERSON'S STATEMENT

The information in this report that relates to the exploration results is based on, and fairly represents, information and supporting documentation compiled by Mr Peter Batten, who is a director of the Company. Mr Peter Batten is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience relevant to the style of mineralisation and types of deposits under consideration and to the activity which is being undertaken 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 Batten consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

CARBINE RESOURCES LIMITED

Appendix 1: Significant Intercepts

Hole ID	Line No	From (m)	To (m)	Thickness (m)	Grade % SiO_2	Fe_2O3	Al_2O_3
MW0040	1	1	14	13	99.80	0.018	0.017
MW0041	1	1	14	13	99.76	0.028	0.027
MW0047	1	1	17	16	99.71	0.043	0.043
MW0048	1	1	14	13	99.69	0.023	0.038
MW0077	2	1	16	15	99.81	0.022	0.015
MW0090	2	1	14	13	99.78	0.034	0.029
MW0091	2	1	18	17	99.79	0.024	0.023
MW0092	2	1	21	20	99.69	0.045	0.031
MW0093	2	1	19	18	99.68	0.073	0.029
MW0094	2	1	18	17	99.77	0.040	0.024
MW0095	2	1	21	20	99.74	0.044	0.023
MW0105	2	1	15	14	99.81	0.031	0.025
MW0107	2	1	15	12	99.80	0.027	0.020
MW0108	2	1	15	14	99.74	0.036	0.029
MW0109	2	1	14	14	99.69	0.069	0.036
MW0110	2	1	15	13	99.59	0.033	0.479
MW0127	3	1	18	17	99.71	0.035	0.026
MW0128	3	1	16	15	99.69	0.023	0.026
MW0140	3	1	19	18	99.76	0.033	0.017
MW0141	3	1	22	21	99.71	0.079	0.032
MW0142	3	1	22	21	99.77	0.033	0.021
MW0143	3	1	17	16	99.63	0.028	0.033
MW0156	3	1	14	13	99.71	0.049	0.023
MW0157	3	1	17	16	99.39	0.028	0.016
MW0158	3	1	18	17	99.75	0.069	0.023
MW0230	5	1	16	15	99.72	0.038	0.023
MW0231	5	1	16	15	99.67	0.054	0.027

Appendix 2: Drillhole Collars

All holes are vacuum holes drilled vertically
Coordinates are MGA94_50

Hole_ID	LineID	EMGAz50	NMGAz50	RL	Final Depth
MW0001	1	402184.71	6502042.38	72.65	10
MW0002	1	402135.07	6502036.43	68.16	5
MW0003	1	402085.31	6502031.56	66.65	4
MW0004	1	402035.55	6502026.68	66.49	4
MW0005	1	401985.78	6502021.80	66.20	3
MW0006	1	401936.02	6502016.93	67.07	4
MW0007	1	401886.26	6502012.05	68.17	5
MW0008	1	401836.50	6502007.17	68.51	5
MW0009	1	401786.74	6502002.30	68.47	6
MW0010	1	401736.98	6501997.42	68.98	6
MW0011	1	401687.21	6501992.54	69.23	6
MW0012	1	401637.45	6501987.66	68.76	5
MW0013	1	401587.69	6501982.79	68.96	5
MW0014	1	401537.93	6501977.91	69.01	5
MW0015	1	401488.19	6501972.82	69.27	5
MW0016	1	401438.45	6501967.72	69.50	5
MW0017	1	401388.71	6501962.62	69.71	6
MW0018	1	401338.97	6501957.52	70.12	6
MW0019	1	401289.23	6501952.42	70.57	7
MW0020	1	401239.49	6501947.32	72.68	9
MW0021	1	401189.76	6501942.21	78.28	6
MW0022	1	401140.02	6501937.11	78.59	12
MW0023	1	401090.28	6501931.96	74.72	10
MW0024	1	401040.55	6501926.76	72.25	8
MW0025	1	400990.82	6501921.56	70.80	6
MW0026	1	400941.10	6501916.36	70.52	6
MW0027	1	400891.37	6501911.17	70.59	6
MW0028	1	400841.64	6501905.97	70.68	6
MW0029	1	400791.91	6501900.77	70.96	6
MW0030	1	400742.17	6501895.63	71.65	7
MW0031	1	400692.41	6501890.80	71.85	7
MW0032	1	400642.64	6501885.97	71.97	7
MW0033	1	400592.88	6501881.13	71.63	7
MW0034	1	400543.11	6501876.30	71.76	7
MW0035	1	400493.34	6501871.47	72.20	7
MW0036	1	400443.58	6501866.63	72.52	7
MW0037	1	400358.72	6501858.39	74.99	9
MW0038	1	400303.81	6501853.06	77.11	11
MW0039	1	400251.03	6501847.93	78.17	12

Hole_ID	LineID	EMGAz50	NMGAz50	RL	Final Depth
MW0040	1	400155.89	6501838.70	81.19	14
MW0041	1	400107.39	6501833.98	79.83	14
MW0042	1	400056.95	6501829.09	79.12	12
MW0043	1	399995.68	6501823.14	74.37	7
MW0044	1	399945.92	6501818.30	74.81	9
MW0045	1	399896.15	6501813.47	76.92	10
MW0046	1	399846.39	6501808.64	79.23	12
MW0047	1	399746.86	6501798.97	84.66	17
MW0048	1	399697.09	6501794.14	83.86	14
MW0049	1	399597.56	6501784.47	79.03	10
MW0050	1	399547.79	6501779.64	79.87	11
MW0051	1	399498.03	6501774.81	80.69	12
MW0052	1	399249.20	6501750.64	79.58	11
MW0053	2	402187.48	6501911.26	74.85	9
MW0054	2	402137.76	6501915.35	72.05	9
MW0055	2	402087.78	6501916.55	68.12	5
MW0056	2	402038.39	6501922.66	66.84	4
MW0057	2	401989.41	6501930.99	66.47	3
MW0058	2	401942.55	6501916.95	66.89	4
MW0059	2	401892.97	6501919.55	67.94	4
MW0060	2	401843.43	6501920.33	69.29	6
MW0061	2	401793.57	6501917.10	71.43	8
MW0062	2	401744.57	6501907.45	70.57	7
MW0063	2	401695.35	6501898.84	68.68	5
MW0064	2	401646.32	6501889.27	68.01	5
MW0065	2	401596.92	6501883.46	70.12	7
MW0066	2	401547.38	6501878.24	70.95	8
MW0067	2	401498.07	6501872.55	70.43	7
MW0068	2	401448.86	6501881.37	70.60	6
MW0069	2	401399.46	6501888.29	71.26	7
MW0070	2	401354.72	6501910.40	71.41	7
MW0071	2	401307.27	6501925.67	71.43	7
MW0072	2	401265.23	6501904.46	72.40	8
MW0073	2	401235.10	6501866.28	72.32	8
MW0074	2	401206.14	6501829.55	72.17	7
MW0076	2	401107.97	6501822.55	81.56	12
MW0077	2	401058.73	6501816.23	79.60	16
MW0078	2	401009.23	6501811.47	73.61	8
MW0079	2	400959.91	6501803.82	70.38	6
MW0080	2	400910.79	6501794.48	70.29	5
MW0081	2	400862.00	6501784.00	70.30	5
MW0082	2	400812.62	6501778.24	70.58	5

Hole_ID	LineID	EMGAz50	NMGAz50	RL	Final Depth
MW0083	2	400762.69	6501776.29	71.52	7
MW0084	2	400712.70	6501777.08	71.93	7
MW0085	2	400663.82	6501784.09	72.09	7
MW0086	2	400624.74	6501815.07	71.75	7
MW0087	2	400577.19	6501828.53	71.59	7
MW0088	2	400528.73	6501821.50	72.17	7
MW0089	2	400482.71	6501802.09	74.44	9
MW0090	2	400435.41	6501786.59	78.86	14
MW0091	2	400385.92	6501779.78	83.05	18
MW0092	2	400335.97	6501778.52	85.97	21
MW0093	2	400287.97	6501764.76	85.37	19
MW0094	2	400238.64	6501758.59	83.19	18
MW0095	2	400190.85	6501745.04	79.35	14
MW0096	2	400141.43	6501737.90	76.81	11
MW0097	2	400091.91	6501731.09	75.09	9
MW0098	2	400043.30	6501719.45	74.15	7
MW0099	2	399994.94	6501706.75	73.80	6
MW0100	2	399946.09	6501696.32	73.97	8
MW0101	2	399896.56	6501689.65	74.37	7
MW0102	2	399846.74	6501685.64	74.86	7
MW0103	2	399797.28	6501691.88	75.52	7
MW0104	2	399747.94	6501699.95	78.60	11
MW0105	2	399698.82	6501709.29	82.75	15
MW0106	2	399649.49	6501711.94	82.99	13
MW0107	2	399601.37	6501698.38	83.33	15
MW0108	2	399554.42	6501681.28	83.87	15
MW0109	2	399506.62	6501666.86	83.09	14
MW0110	2	399457.83	6501656.00	81.49	15
MW0111	3	399821.22	6503870.07	75.93	10
MW0112	3	399817.28	6503820.29	75.93	10
MW0113	3	399813.28	6503770.64	75.56	10
MW0114	3	399804.31	6503721.63	75.76	10
MW0115	3	399792.54	6503673.04	76.08	10
MW0116	3	399779.91	6503624.66	77.39	10
MW0117	3	399765.93	6503576.66	77.74	12
MW0118	3	399741.11	6503533.60	77.17	11
MW0119	3	399723.28	6503486.96	77.04	11
MW0120	3	399708.96	6503439.16	78.79	12
MW0121	3	399699.24	6503390.33	78.82	11
MW0122	3	399688.74	6503341.48	78.46	11
MW0123	3	399676.03	6503293.12	79.16	12
MW0124	3	399662.02	6503245.12	78.89	11

Hole_ID	LineID	EMGAz50	NMGAz50	RL	Final Depth
MW0125	3	399656.46	6503195.49	79.54	13
MW0126	3	399651.56	6503145.73	82.08	14
MW0127	3	399642.41	6503096.67	86.21	18
MW0128	3	399624.35	6503050.29	85.21	16
MW0129	3	399603.36	6503005.72	79.09	11
MW0130	3	399593.73	6502956.67	75.44	7
MW0131	3	399584.60	6502907.54	76.83	8
MW0132	3	399577.35	6502858.08	79.55	11
MW0133	3	399558.76	6502811.79	81.50	13
MW0134	3	399536.64	6502766.95	80.56	13
MW0135	3	399511.81	6502723.64	77.31	9
MW0136	3	399484.80	6502681.75	75.44	7
MW0137	3	399459.14	6502638.93	75.13	6
MW0138	3	399444.41	6502591.20	76.49	8
MW0139	3	399431.56	6502542.88	81.19	13
MW0140	3	399418.85	6502494.56	86.93	19
MW0141	3	399391.12	6502453.53	89.83	22
MW0142	3	399364.58	6502411.42	89.25	22
MW0143	3	399352.67	6502363.03	86.32	17
MW0144	3	399346.58	6502313.41	80.96	13
MW0145	3	399344.47	6502263.50	78.13	8
MW0146	3	399338.31	6502214.03	78.42	10
MW0147	3	399321.40	6502167.11	78.22	10
MW0148	3	399301.01	6502121.47	77.91	8
MW0149	3	399287.58	6502073.40	78.60	9
MW0150	3	399273.17	6502025.53	78.57	9
MW0151	3	399259.05	6501977.61	78.74	8
MW0152	3	399249.48	6501928.53	78.18	7
MW0153	3	399238.11	6501879.85	77.66	7
MW0154	3	399226.04	6501831.33	77.71	9
MW0155	3	399214.14	6501782.77	78.96	11
MW0156	3	399207.00	6501733.43	82.04	14
MW0157	3	399201.66	6501684.02	84.73	17
MW0158	3	399192.10	6501645.45	85.47	18
MW0159A	4	401739.01	6503893.37	65.34	2
MW0159B	4	401739.01	6503893.37	65.34	3
MW0160A	4	401752.63	6503845.43	65.27	2
MW0160B	4	401752.63	6503845.43	65.27	3
MW0161	4	401779.39	6503804.13	64.92	3
MW0162	4	401818.10	6503772.91	64.64	3
MW0163	4	401862.13	6503749.35	64.52	3
MW0164	4	401906.50	6503726.32	64.83	3

Hole_ID	LineID	EMGAz50	NMGAz50	RL	Final Depth
MW0165	4	401947.19	6503697.76	66.41	5
MW0166	4	401980.36	6503660.57	65.97	4
MW0167	4	402011.57	6503621.50	65.80	4
MW0168	4	402042.77	6503582.44	65.46	4
MW0169	4	402074.11	6503543.47	65.77	4
MW0170	4	402105.31	6503504.41	67.00	6
MW0171	4	402135.57	6503464.62	67.65	6
MW0172	4	402160.27	6503421.15	67.36	6
MW0173	4	402174.93	6503373.65	67.13	5
MW0174	4	402179.89	6503323.89	68.03	7
MW0175	4	402181.79	6503273.97	67.64	6
MW0176	4	402182.44	6503223.97	65.89	4
MW0179	4	402192.18	6503074.76	64.70	3
MW0184	4	402229.93	6502828.79	65.16	3
MW0188	4	402231.06	6502628.79	68.43	7
MW0194	4	402232.75	6502328.80	65.54	3
MW0199	4	402234.15	6502078.80	69.98	8
MW0200	4	402234.58	6502015.72	72.43	10
MW0201	4	402235.03	6501959.50	71.78	9
MW0202	4	402235.52	6501897.44	69.84	10
MW0203	5	399275.87	6508289.03	69.85	7
MW0204	5	399276.27	6508239.03	69.19	6
MW0205	5	399276.66	6508189.03	68.33	5
MW0206	5	399277.06	6508139.03	68.56	5
MW0207	5	399277.45	6508089.03	69.25	6
MW0208	5	399277.85	6508039.03	70.51	7
MW0209	5	399278.24	6507989.03	71.02	7
MW0210	5	399278.64	6507939.04	71.27	7
MW0211	5	399279.04	6507889.04	71.95	8
MW0212	5	399279.43	6507839.04	73.25	9
MW0213	5	399279.83	6507789.04	74.44	11
MW0214	5	399280.22	6507739.04	73.53	10
MW0215	5	399280.62	6507689.04	71.76	8
MW0216	5	399281.02	6507639.05	71.55	8
MW0217	5	399281.41	6507589.05	73.36	10
MW0218	5	399281.81	6507539.05	75.62	12
MW0219	5	399282.20	6507489.05	75.18	11
MW0220	5	399282.60	6507439.05	73.44	10
MW0221	5	399282.99	6507389.05	73.45	10
MW0222	5	399283.39	6507339.05	72.86	9
MW0223	5	399283.79	6507289.06	71.86	8
MW0224	5	399284.18	6507239.06	71.63	8

Hole_ID	LineID	EMGAz50	NMGAz50	RL	Final Depth
MW0225	5	399284.58	6507189.06	71.54	8
MW0226	5	399284.97	6507139.06	71.44	8
MW0227	5	399286.03	6507089.38	71.64	8
MW0228	5	399330.55	6507071.16	74.00	11
MW0229	5	399380.18	6507065.13	77.30	13
MW0230	5	399429.81	6507059.09	79.15	16
MW0231	5	399479.45	6507053.06	78.55	16
MW0232	5	399529.08	6507047.02	75.26	12
MW0233	5	399578.72	6507040.98	71.00	9
MW0234	5	399619.39	6507020.59	68.79	8
MW0235	5	399625.91	6506972.44	69.39	7
MW0236	5	399626.27	6506922.44	69.96	8
MW0237	5	399626.64	6506872.45	69.44	7
MW0238	5	399627.00	6506822.45	69.28	7
MW0239	5	399627.36	6506772.45	70.13	7
MW0240	5	399627.72	6506722.45	71.58	8
MW0241	5	399628.08	6506672.45	72.33	9
MW0242	5	399628.44	6506622.45	72.50	9
MW0243	5	399628.80	6506572.45	74.03	10
MW0244	5	399629.16	6506522.46	76.17	13
MW0245	5	399629.52	6506472.46	76.81	13
MW0246	5	399629.88	6506422.46	74.10	11
MW0247	5	399664.74	6506407.31	74.91	11
MW0248	5	399714.74	6506407.46	74.43	11
MW0249	5	399764.74	6506407.60	71.54	8
MW0250	5	399814.74	6506407.75	70.14	7
MW0251	5	399864.74	6506407.90	69.89	7
MW0252	5	399914.55	6506408.40	69.55	5

Appendix 3: JORC Code, 2012 Table 1 - Muchea West Silica Sand Project
Section 1 Sampling Techniques and Data

Criteria	JORC Code exploration	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 downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • 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.	• Aircore Vacuum drilling and sampling was completed in December 2021. • All sand samples were collected via a cyclone in a plastic tub and homogenised, rotary split into a larger sample bag (~3kg) and 2 smaller subsamples. Sampling was carried out at 1 m intervals. • One of the subsamples is prepared for laboratory and the other is retained for repeat analysis and QA/QC purposes. The bulk sample is retained for later metallurgical test work. Drilled samples for each 1 m interval were also placed into chip trays. • The first metre of all the drill holes is mainly the humus layer and not considered for lab analysis. • The samples were analysed by Intertek Genalysis Laboratories. • Major and trace elements in exception to SiO_2 were analysed using a four-acid digest followed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP-OES) analysis.
Drilling techniques	• Drill type (e.g. core, reverse circulation, openhole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	• A total of 233 air-core drill holes were drilled to varying depths, with the deepest hole ending at 22m. • Aircore Vacuum drilling was undertaken using a tractor mounted drill rig. All holes were drilled vertically.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • 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.	• Each sample bag was weighed to determine the indirect record of sample recovery. • All the samples were visually checked for recovery, moisture and contamination. • The sample splitter and cyclone are cleaned regularly to prevent sample contamination.
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.	• All the holes were logged by a geologist. Sand colour, roundness, sorting and composition was recorded. • Logging was qualitative in nature.

	• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged	• All logged results were plotted in a spreadsheet. All the Chip tray samples for each hole were photographed.
Subsampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all subsampling stages to maximise representivity of samples. • 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. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• Two sub-samples weighing ~1 kg were collected using rotary split. The remainder was retained for metallurgical test work. • Subsample collected from every 2m were composited and submitted to Intertek Genalysis Laboratories in Perth for drying and pulverization in a zircon bowl and disk pulveriser. • QC procedures involved the use of certified and non-certified reference materials and field duplicates. The field duplicates have accurately reflected the original assay. • Sample sizes are considered appropriate to correctly represent the bulk tonnage mineralisation based on the style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and assay value ranges for silica sand.
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. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the 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.	• 2m composite samples were submitted to the Intertek Genalysis Laboratory in Perth. The assay method for multi-element analysis consisted of a four-acid digest including hydrofluoric, nitric, perchloric and hydrochloric acids in Teflon beakers, with inductively coupled plasma (ICP)-optical (atomic) emission spectrometry finish. Silica is reported by difference. • Laboratory QAQC includes the use of internal standards using certified reference material, laboratory duplicates and pulp repeats. The field duplicates have accurately reflected the original assay. Certified standards have generally reported within acceptable limits. A full analysis of all the quality control data has been undertaken. • No geophysical tools were utilised for the exploration.
Location of data Points	• Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used.	• The position of the drill holes were located using a GPS in MGA coordinates with the expected relative accuracy. Down hole surveys have not been carried out as drill holes are less than 25 m in depth and drilled

	• Quality and adequacy of topographic control	vertically through the predominantly flat lying sand deposits. • The collars have been located in UTM, MGA94, Zone 50K co-ordinates. • The topographic surface was based on LiDAR digital elevation model obtained from the DWER, Western Australia.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • 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. • Whether sample compositing has been applied	• The drilling was spread evenly across the project area. A total of 233 drill holes were drilled at nominal 50m spacing on six drill lines along existing tracks. • The adopted spacing for the drilling investigation was sufficient based on the geological continuity of the sand formation being tested, and sufficient to be applied for resource estimation • All samples were taken at even 1 m intervals, and compositing of every 2m was required for assays.
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. • 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.	• The vertical air-core drilling program has systematically covered the areas of interest within the tenement, It only covers some sections of an extensive dune system. • The orientation of the drilling (vertical) is approximately perpendicular to the sub-horizontal mineralisation and is unlikely to have introduced any significant sampling bias. • No sampling bias has been identified in the data.
Sample security	• The measures taken to ensure sample security	• All samples have been bagged and removed from site and are under the care of the senior field assistant and stored at a secure Subiaco storage unit.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• There has been no audit or review of the drilling, sampling or analysis at this time.

Section 2: Reporting of Exploration Results

Criteria	JORC Code exploration	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, 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.	The drilling was completed on E70/4905, a granted Exploration Licence. 100% owned by Australian United Silica Corporation Pty Ltd. The tenement area falls within the Whadjuk People claim (managed by SWALSC). No impediments on a licence to operate at time of reporting.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	The region surrounding the Project has been explored for both silica sand and mineral sands. Between 1986 and 2005 ACI Operations Pty Ltd (ACI) owned and operated a silica sands mine within the tenure producing 7,000 to 10,000t of silica for container glass applications.
Geology	• Deposit type, geological setting and style of mineralisation.	The tenement is underlain by the Bassendean Sand, which extends over large areas of the Swan Coastal Plains of the Perth Basin from about 23 km north of Jurien, to about 15km southwest of Busselton. The Bassendean Sand is considered to have a maximum thickness of about 45 m, and the unit is found as a strip parallel to the coast, having a width of about 10-20 km, and its western edge about 5-10km inland. The Bassendean Sands is typically clean, well-rounded and well sorted. At depth, it is commonly brown to dark brown with high iron contents, however closer to the surface the sand is cream/white. The physical, chemical and mineralogical characteristics of the Bassendean Sands can vary considerably, resulting in variation in the quality of the sand regionally as well as locally. In general, the Bassendean Sands is covered with very little or no overburden.
Drill hole 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	All exploration results for drilling completed during December 2021 are available on the company website. Significant intercepts have been included in this release. The drillhole locations are presented in Figure 2 and the Drillhole Collar Table.

	- elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar - dip and azimuth of the hole - downhole length and interception depth - hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case	
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. • Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	Weighted average grades were calculated at a minimum of 98% SiO2 cut-off grade Not applicable as a mineral resource is being reported. No metal equivalents have been reported.
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • 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 downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').	All drill holes are vertical and intersect the tabular, flat lying mineralisation orthogonally, and represent close to true thickness.
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 drillhole collar locations and appropriate sectional views.	Relevant diagrams have been included in this report.
Balance 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 sand deposit is consistent and the grades of all samples vary by less than 2%. Mean average results have been reported for SiO2, Fe2O3 and Al2O3.
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,	Groundwater was intersected in some holes. Holes were terminated on encountering the water table.

	geotechnical and rock characteristics; potential deleterious or contaminating substances.	
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). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	Planned to conduct further drilling in potential target areas.