Carawine Resources
LIMITED ACN 611 352 348

ASX AND MEDIA RELEASE

21 December 2017

SIGNIFICANT OUTCROPPING COBALT-MANGANESE ANOMALY IDENTIFIED

KEY POINTS

- Cobalt-manganese mineralisation defined in outcrop over a 1 km strike at the Xmas prospect
- Contact zone confirmed as source of large historic surface cobalt lag anomaly
- Historic rock chip sampling returned results up to 0.31% cobalt and 55.8% manganese
- Two new exploration licence applications extend regional strike potential to over 50km
- Further geological mapping and sampling planned for Q1 2018

Minerals explorer **Carawine Resources Limited ("Carawine" "the Company") (ASX:CWX)** is pleased to announce it has confirmed the presence of a potentially significant cobalt-manganese target at its Oakover project in Western Australia's Eastern Pilbara region, identifying the source of a large surface cobalt anomaly at the historic Xmas prospect.

Carawine Managing Director David Boyd said confirmation of the cobalt-manganese outcrop as the source of the lag anomaly raises the potential of the region to host significant cobalt-manganese mineralisation. Carawine recently applied for two new exploration licences to cover the Xmas host formation and extend its dominant tenement position in the region.

"It's encouraging to finish the year with such strong results and increase our footprint in the region," Mr Boyd said. "We're looking forward to 2018, with Xmas one of a number of cobalt and copper targets within the Oakover Project that we plan to follow up with additional ground work."

CRA Exploration identified the Xmas prospect in the early 1990s, defining a 3km long by 0.75km wide area of anomalous cobalt from 100ppm up to 4,930ppm (0.5%) and manganese from 2.7% to 34.5% in surface lag samples (Figure 1, Appendix 1). Subsequent geological mapping identified a discontinuous lens of massive to brecciated cobalt-manganese mineralisation exposed for more than 1 km of strike along a clearly defined stratigraphic contact, coincident with the eastern edge of the lag anomaly. Selective rock chip samples of these outcrops returned values ranging from 25ppm up to 3,140 ppm (0.31%) Co, and 0.03% to 55.8% Mn (Table 1, Figure 1, Appendix 1), confirming the contact zone mineralisation as the source of the lag anomaly.

Table 1: Xmas prospect historic rock chip manganese sample results.

Sample	Co (ppm)	Mn (%)	Zn (ppm)	Ba (ppm)	Zn (ppm)	Sample description
3681030	**3,140**	28.4	2,320	8,650	2,320	Massive manganese
3681321	**1,060**	55.8	319	7,680	319	Manganiferous siltstone
3681357	**1,520**	22.4	2,160	5,950	2,160	Massive manganese
3681369	**1,190**	21.1	1,660	4,250	1,660	Manganiferous dolomite
3681391	**604**	8.4	2,140	2,760	2,140	Massive and brecciated manganese
3681409	**25**	0.03	8	644	8	Yellow-green quartz rich manganese
3681414	**205**	5.4	42	896	42	Weathered manganese breccia

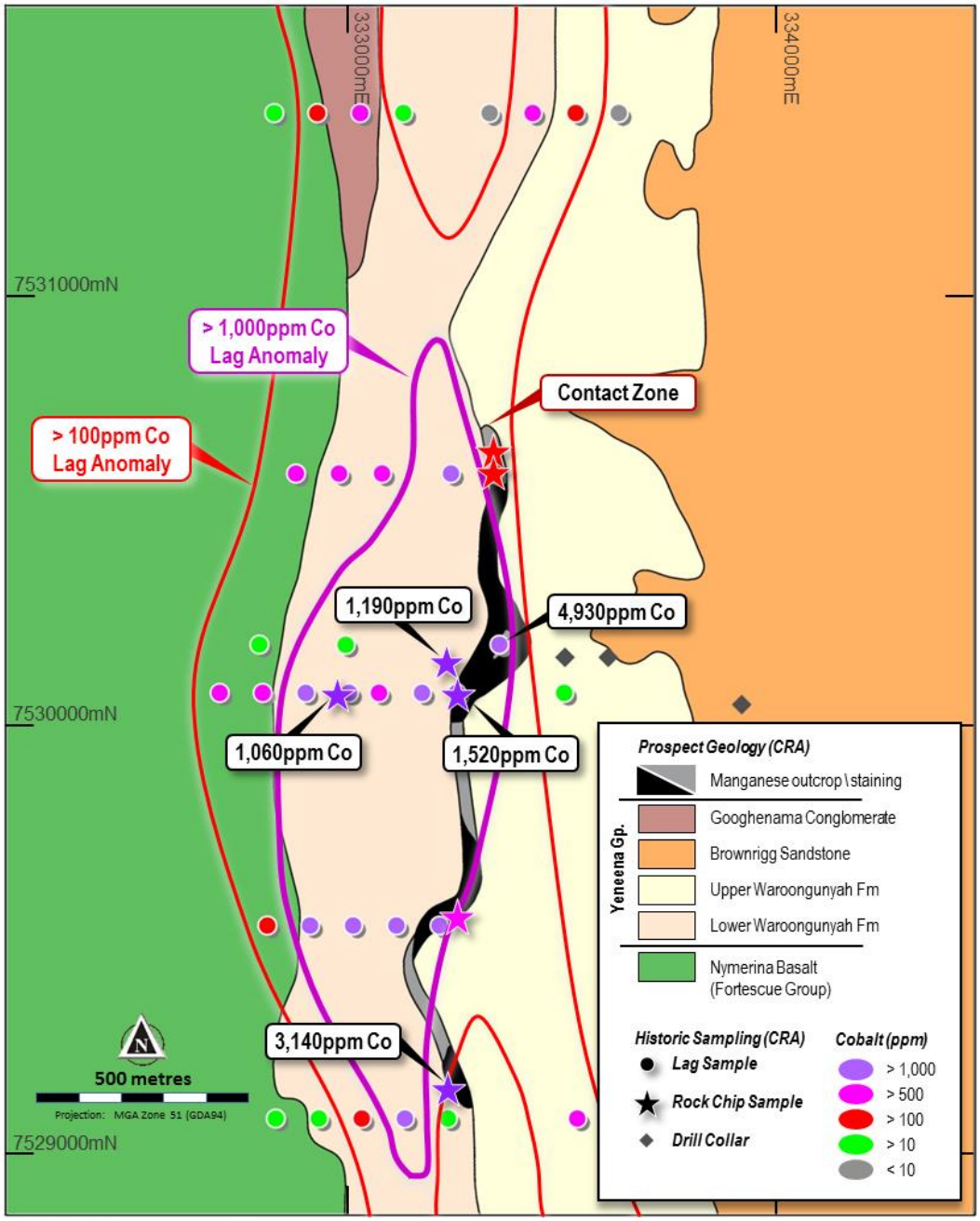

Figure 1: Xmas prospect geology, lag and rock chip sample plan.

The discontinuous lens of massive to brecciated cobalt-manganese mineralisation at Xmas occurs at a transitional contact between the Upper and Lower Waroongunyah Formation, marking a change from dolomite, dolomitic sandstone and siltstone (Lower) to white to pale grey-yellow weathered, bleached siltstone with rare gritty sandstone interbeds (Upper) (Figure 1). Cobalt-manganese deposits such as that targeted at Xmas are a recognised source of cobalt, with potential for straightforward beneficiation and relatively simple metallurgical recovery processes.

Lag sampling at the Xmas prospect undertaken by CRA Exploration involved collecting the -2mm and +1mm soil fraction at each sample location. The strong correlation between high cobalt and high manganese assay values, and a clear association with elevated barium and zinc values, suggest potential for supergene enrichment of these elements in the near surface weathering profile within the lag anomaly (Table 1, Figure 1, and Appendix 1). Subsequent work by CRA did not test this potential, with a single line

comprising 2 RC and one diamond holes drilled to the east of the outcrop. Further work will be required to determine the extent of this enrichment.

As the Xmas prospect is at an early stage of evaluation, the next phase of work planned will comprise geological mapping, rock chip sampling and geophysics (reprocessing historic data, and acquisition of new data), to establish targets for drill testing both at Xmas and potentially for repeats within the host formation. This work will be completed in parallel with advancing a number of copper and cobalt prospects in the Oakover project, including at Western Star where recent IP survey results indicated the potential for depth extensions of high grade surface copper and cobalt mineralisation (see ASX announcement dated 19 December, 2017).

Based on the results of the work at Xmas, the Company has recently applied for two new exploration licences, one to the east and south of the Xmas prospect, and the other further north, in order to secure tenure over more than 50km of strike of the prospective Waroongunyah Formation (Figure 2). Additional regional exploration will therefore concentrate on discovering repeats of the Xmas mineralisation within this unit.

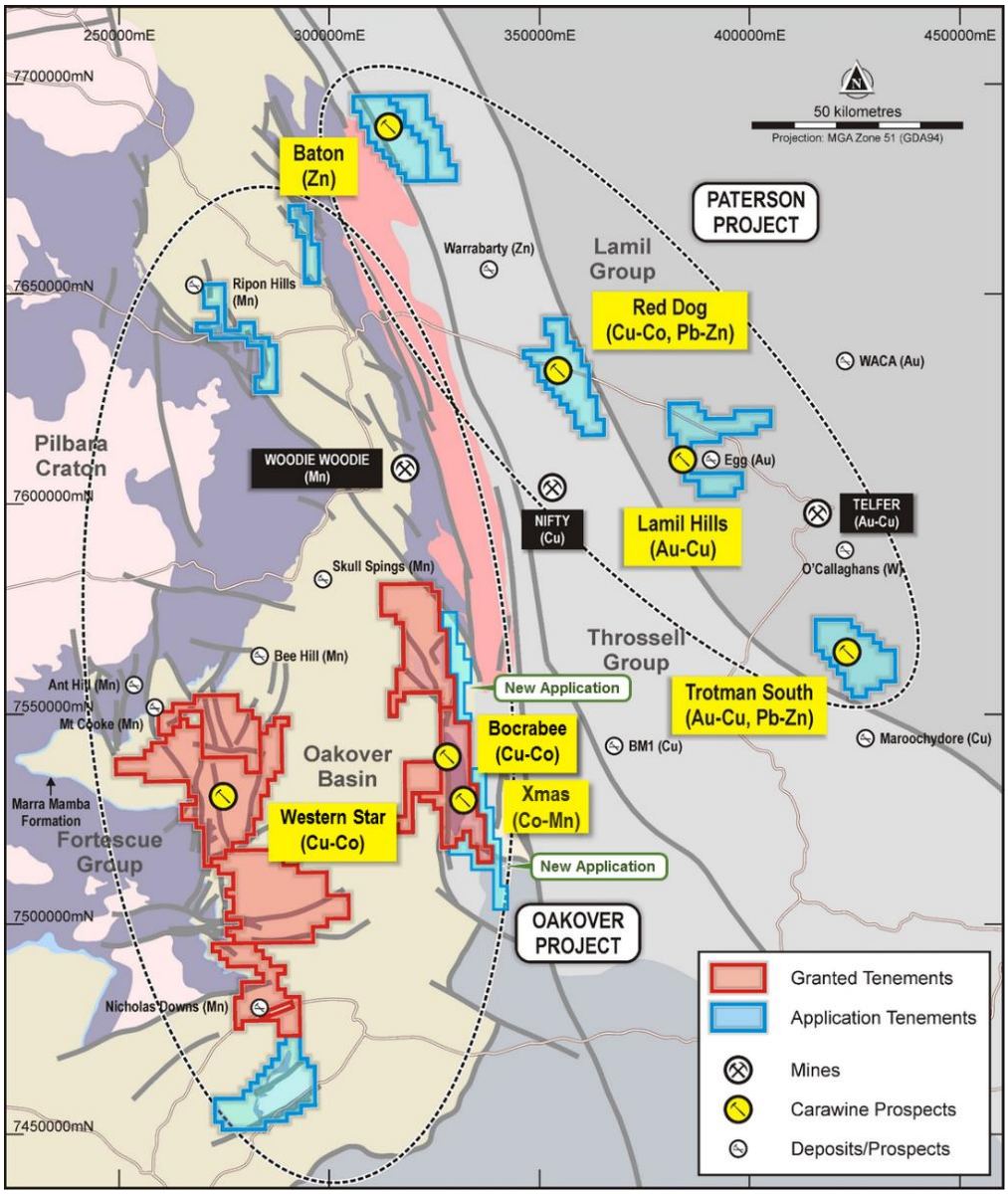

Figure 2: Oakover and Paterson Project tenement location plan, with location of the Xmas prospect and new tenement applications.

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COMPLIANCE STATEMENTS

REPORTING OF EXPLORATION RESULTS

The information in this announcement that relates to Exploration Results is based on information compiled by Mr David Boyd, a Competent Person who is a Member of the Australian Institute of Geoscientists (AIG). Mr Boyd is a full-time employee and Managing Director of Carawine Resources Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities 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' ("JORC Code (2012)"). Mr Boyd consents to the inclusion in this Report of the matters based on his information in the form and context in which it appears.

PREVIOUSLY REPORTED INFORMATION

This announcement includes information that relates to Exploration Results prepared and first disclosed under the JORC Code (2012). The information was extracted from the Company's previous ASX Announcements as follows:

- Western Star DDIP results: "Significant IP Anomaly Identified Beneath Surface Copper Cobalt Mineralisation" 19 December, 2017
- Initial public offer Prospectus: "Carawine Resources Prospectus" 12 December, 2017

Copies of these are available from the ASX Announcements page of the Company's website: www.carawine.com.au

The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements. The Company confirms that the form and context in which the competent person's findings are presented have not been materially modified from the relevant original market announcements.

FORWARD LOOKING AND CAUTIONARY STATEMENTS

Some statements in this announcement regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "predict", "foresee", "proposed", "aim", "target", "opportunity", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this report are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. So there can be no assurance that actual outcomes will not materially differ from these forward-looking statements.

ABOUT CARAWINE RESOURCES

Carawine Resources Limited is an exploration company whose primary focus is to explore for, and ultimately develop, economic gold, copper and base metal deposits within Australia. The Company has four gold, copper, cobalt and base metal projects, each targeting high-grade deposits in well-established mineralised provinces throughout Australia.

JAMIESON PROJECT (Au-Cu, Zn-Au-Ag)

The Jamieson Project is located near the township of Jamieson in the central eastern Victorian Goldfields and comprises granted EL5523, covering an area of 34 km^2 and containing the Hill 800 gold and Rhyolite Creek zinc-gold-silver prospects. In June 2017, the Company entered into the Jamieson Agreement to earn an interest of 100% in the Jamieson Project.

Hill 800 was discovered by New Holland Mining NL (New Holland) in 1994, following sampling of outcropping gold-rich gossans, with drilling returning results with significant widths and high gold grades. The prospect is a volcanic-hosted massive sulphide (VHMS) gold-copper system with similar host rock, age and mineralisation style to the 1.5Moz Henty gold deposit in Western Tasmania. The Rhyolite Creek Prospect, located about 5km south of Hill 800, was discovered in 2008, with diamond drilling intersecting a zone of strong alteration and sulphide mineralisation returning high grade zinc, gold and silver from an interpreted seafloor VHMS system.

OAKOVER PROJECT (Cu-Co)

Located in the highly prospective Eastern Pilbara region, the Oakover Project comprises seven granted exploration licences and three exploration licence applications with a total area of about 2,655km^2, held 100% by the Company. The Oakover Project is centred on the Proterozoic Oakover Basin, prospective for copper, cobalt, manganese and iron. At Western Star the Company is developing a significant carbonate-hosted copper target. Numerous additional historic copper and cobalt prospects will be evaluated along with the area's potential for significant manganese, and to a lesser extent, iron mineralisation.

PATERSON PROJECT (Au-Cu, Cu-Co)

The Paterson Project, situated in the Paterson Province at the eastern edge of the Pilbara Craton, is dominated by Proterozoic age rocks of the Rudall Metamorphic Complex and the overlying Yeneena Supergroup. The Paterson area is host to the Telfer Au-Cu deposit, and the Nifty and Maroochydore stratabound Cu-(Co) deposits. Carawine's Paterson Project comprises five exploration licence applications over an area of about 989km^2 across four regions: Lamil Hills, Trotman South, Red Dog and Baton.

FRASER RANGE PROJECT (Ni-Cu-Co)

The Fraser Range Project includes the Red Bull, Bindii, Big Bullocks and Similkameen tenements, prospective for magmatic nickel-sulphide deposits such as that at the Nova nickel-copper-cobalt operation. Carawine has a joint venture with Independence Group NL (IGONL), who currently hold a 51% interest in the Tenements and can earn an additional 19% interest by spending $5 million within 5 years. As a dedicated nickel explorer with a long term commitment to the region, the Company considers IGO is well placed to carry the Project forward, providing the Company with significant exposure to exploration success in the Fraser Range.

ASX Code:	CWX	Market Capitalisation:	A$12.9m
Issued shares:	55m	Cash (at listing, excluding IPO costs):	A$7m

Appendix 1: Sample listings

Lag sample results

Company	Report	Sample	Easting	Northing	Ag ppm	As ppm	Ba ppm	Bi ppm	Ca ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Eu ppm
CRA	a40181	2762803	332798	7530193	1.32	29	1670	1.49	346	252	57.9	741	78	3
CRA	a40181	2762804	333355	7530193	0.67	11	16400	0.7	1380	897	4930	24	247	17
CRA	a40181	3681292	333006	7530081	0.25	30	13900	0.8	1110	640	2970	90	169	11.9
CRA	a40181	3681324	333076	7530081	0.25	31	7780	0.8	2570	490	768	180	83	4.78
CRA	a40181	3681326	333176	7530081	0.25	30	10200	0.8	840	2680	1090	150	116	5.82
CRA	a40181	3681330	333256	7530081	0.25	40	12000	0.2	10900	990	1810	40	110	11.5
CRA	a40181	3681335	333506	7530081	0.25	56	6890	1.2	2320	36.7	12	630	27	1.08
CRA	a40181	3681381	332906	7530081	0.25	42	10200	1.2	760	510	1550	160	135	7.4
CRA	a40181	3681382	332806	7530081	0.25	37	11900	2	1490	1510	950	290	113	10.8
CRA	a40181	3681385	332706	7530081	0.25	40	9660	1.2	710	1120	894	600	79	5.08
CRA	a40181	3681386	333016	7529540	0.25	68	17500	2.6	900	780	2320	260	364	4.96
CRA	a40181	3681387	332916	7529540	0.25	29	23900	1	6250	720	2100	230	211	8.42
CRA	a40181	3681389	333116	7529540	0.25	19	34500	1.2	2910	2020	2870	70	238	15.4
CRA	a40181	3681390	333216	7529540	0.25	36	30400	1	9180	1170	2030	160	108	12.2
CRA	a40181	3681393	333036	7529091	0.25	39	3570	1.6	1610	340	197	590	75	2.54
CRA	a40181	3681394	332936	7529091	0.25	41	1910	1	1690	140	63	290	53	2.2
CRA	a40181	3681395	332836	7529091	0.25	22	378	0.6	510	92.6	31	190	50	1.52
CRA	a40181	3681396	333136	7529091	0.25	43	21700	0.8	1740	1480	2290	150	337	11.5
CRA	a40181	3681397	333236	7529091	0.25	43	1840	1.4	1560	160	46	470	65	2.08
CRA	a40181	3681403	333536	7529091	0.25	32	3830	0.6	1050	1540	721	160	130	4.28
CRA	a40181	3681404	332983	7530591	0.25	37	6750	1	2740	880	713	240	94	4.7
CRA	a40181	3681405	333083	7530591	0.25	34	9970	0.8	1650	1130	951	240	77	5.1
CRA	a40181	3681406	333243	7530591	0.25	46	12700	1	1670	680	1080	250	57	7.3
CRA	a40181	3681408	333343	7530591	0.25	37	366	0.8	570	48.6	214	210	28	1.1
CRA	a40181	3681416	332883	7530591	0.25	28	11500	1.2	470	840	896	400	73	6.62
CRA	a40535	2762802	332998	7530193	1.41	32	1680	1.46	341	198	52.1	716	78	2
CRA	a40535	3681283	333132	7531430	0.25	74	346	1.8	980	68.2	23	680	28	1.32
CRA	a40535	3681284	333032	7531430	0.25	28	17900	1.4	850	2580	990	270	70	7.84
CRA	a40535	3681285	332932	7531430	0.25	25	6530	1.6	240	1170	227	350	87	4.14
CRA	a40535	3681286	332832	7531430	0.25	10	1220	0.2	770	120	45	130	217	1.56
CRA	a40535	3681287	333332	7531430	0.25	50	2080	2	290	41.7	6	620	20	0.94

Company	Report	Sample	Easting	Northing	Ag ppm	As ppm	Ba ppm	Bi ppm	Ca ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Eu ppm
CRA	a40535	3681288	333432	7531430	0.25	56	7400	0.8	700	1360	650	360	80	4.92
CRA	a40535	3681289	333532	7531430	0.25	144	2720	1.2	360	370	407	560	39	2.32
CRA	a40535	3681290	333632	7531430	0.25	72	5420	2.4	630	47	7	810	20	1.18
CRA	a40535	3681388	332816	7529540	0.25	29	6450	0.6	2290	280	230	340	56	3.1

Lag sample results (continued)

Sample	Fe pct	K ppm	La ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Th ppm	Ti ppm	U ppm	W ppm	Zn ppm	Lag Condition
2762803	46.7	512	41.5	455	3680	3.49	174	33	758	45.8	0.95	43.8	7540	2.9	0.55	58	poor
2762804	16.9	36400	58.4	3480	181000	3.35	727	2050	1790	188	1.57	19.7	2530	82	3.49	1330	fair
3681292	17.6	13700	43.8	3410	167000	2	490	1430	1320	140	1.4	17.7	1970	51.9	7	1020	Poor
3681324	28.2	13000	120	3720	77000	4	360	220	610	125	2	20.6	2390	9.95	9	346	Poor
3681326	28.2	12000	110	1990	122000	4	630	376	590	315	1.4	21.7	1050	16.5	7.5	1320	Fair
3681330	11.8	10100	250	1710	345000	3.5	760	604	620	35	0.8	11.3	590	24.1	4.5	2380	Fair
3681335	45.1	500	21.3	1050	2570	2.5	630	8	520	60	3.8	37.8	4630	2.1	2.5	28	Good
3681381	21.1	14300	34.2	2380	125000	3.5	420	610	1990	150	2	17.9	2230	13.6	8.5	548	Poor
3681382	33.3	11100	130	4530	69500	5	240	410	820	130	3.6	20.8	4160	11	9.5	209	Poor
3681385	48.8	6400	91	1300	85600	3.5	250	186	940	160	3.6	34	5500	8	7	275	Poor
3681386	18.5	12900	55.7	2060	155000	3.5	510	700	1170	870	4.2	23.4	2940	6.75	23	652	Poor
3681387	20.4	10100	110	5440	170000	4.5	670	772	1160	145	2	15.1	2910	4.8	9	448	Poor
3681389	9.15	14100	200	4170	233000	2	670	672	770	240	1.8	14.9	1650	27.4	22	486	Poor
3681390	21.9	9200	110	3260	155000	3	470	260	440	165	2.6	31.6	2200	15.6	11	376	Poor
3681393	44.8	4100	58.1	1090	33100	3	140	80	590	135	4.8	39.9	5720	5.5	7	78	Fair
3681394	40	11300	61.6	2990	16300	3	210	42	690	60	3	24.6	3690	7.15	13	86	Fair
3681395	26.6	9200	33.4	12600	4540	2	600	50	550	20	1.2	11.5	3240	2.25	2.5	156	Good
3681396	17.8	22700	150	2700	196000	4	420	510	630	210	1.8	19.4	2090	25.5	11	440	Fair
3681397	40.7	4800	73.6	1500	23000	4.5	170	90	600	75	4.6	33.3	4780	3.35	7.5	82	Fair
3681403	31.6	12400	84.8	3150	42700	2	300	502	600	125	2.8	17.7	1640	12.4	5.5	694	Good
3681404	32.2	9300	77	3580	105000	3.5	330	250	790	105	2.6	24.4	2450	12.9	6.5	668	Fair
3681405	30.2	10800	95.4	1960	134000	3.5	360	292	670	145	2.4	21	1830	15.2	6.5	866	
3681406	40.7	13300	78.7	2880	79700	4	410	274	960	150	2.8	20.2	1900	13.7	9	656	
3681408	51.3	5100	17	2200	4690	2	210	176	1050	50	2.2	10.9	890	11.6	2.5	912	Good
3681416	41.4	6900	67.6	2120	58700	5	740	228	1000	180	3	28.2	8000	5.25	5	206	Good
2762802	46.7	250	37.6	455	3870	3.26	174	33	760	43.6	1.62	44	7910	2.93	0.93	109	good

Sample	Fe pct	K ppm	La ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Th ppm	Ti ppm	U ppm	W ppm	Zn ppm	Lag Condition
3681283	445000	1300	38	1030	1630	3	80	16	720	50	4.2	59.5	5310	2.5	6	39	Poor
3681284	373000	4500	87.6	2090	70400	7	730	94	980	110	2	23.5	4360	5.7	4	102	Poor
3681285	426000	1000	39.2	600	19600	4	200	28	840	40	2.4	27.8	5470	2.7	3.5	66	Poor
3681286	352000	1000	22.8	890	1220	3	200	52	1150	10	0.2	6.25	5680	2.2	0.5	131	Poor
3681287	482000	1000	19.4	440	585	2.5	200	6	550	45	3.6	47.2	5760	2.05	4	31	Poor
3681288	218000	6000	110	1140	202000	2.5	480	240	510	145	3	54.4	2200	22.3	2	1400	Good
3681289	337000	6700	28.9	1430	37500	2.5	330	306	750	160	6	59.2	2650	8.35	4.5	1170	Fair
3681290	464000	700	19.1	580	796	3	370	6	530	55	5.2	61.1	5190	2.35	4.5	21	Poor
3681388	400000	4200	63.7	11300	17600	3.5	830	88	830	45	2.2	17.1	3440	2.35	3	120	Poor

Rock chip sample results

Company	Report	Sample	Easting	Northing	Description	Ag ppm	Al ppm	As ppm	Au ppm	Ba ppm	Bi ppm	Ca ppm	Ce ppm	Co ppm
CRA	a40181	3681030	333236	7529162	Massive Mn rare strongly fe rich silt tr. white Zn oxides	0.17	10000	11	0.0025	8650	0.16	123000	442	3140
CRA	a40181	3681321	332976	7530081	Strongly Mn coated siltstone	0.24	44500	3	0.0025	7680	0.22	704	418	1060
CRA	a40181	3681357	333256	7530081	Massive Mn from lens	0.14	4660	11	0.0025	5950	0.05	152000	338	1520
CRA	a40181	3681369	333233	7530152	Grey dolomite lens within the Mn lens	0.12	6810	13	0.0025	4250	0.11	160000	666	1190
CRA	a40181	3681391	333256	7529562	Massive and brecciated Mn on sst/ dolomite boundary	0.05	7710	180	0.0025	2760	0.05	76900	140	604
CRA	a40181	3681409	333340	7530591	Yellow green qtz rich mn	0.05	3640	3	0.0025	644	0.18	640	7.5	25
CRA	a40181	3681414	333343	7530641	Weathered Mn breccia	0.05	14900	29	0.0025	896	0.16	919	39	205

Rock chip sample results (continued)

Sample	Cr ppm	Cu ppm	Fe ppm	K ppm	La ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Nb ppm	Ni ppm	P ppm	Pb ppm	Pd ppm	Pt ppm	Th ppm	U ppm	V ppm	Zn ppm	Zr ppm
3681030	76	147	28800	10300	137	5350	283700	10	1280	5	979	887	7.83	0.0025	0.025	44	12.8	159	2320	26
3681321	20	162	17800	54200	47	1870	55800	5	675	5	378	1030	10.2	0.0025	0.025	5	20.2	52	319	113
3681357	19	87	44000	11400	58	6130	223700	5	780	5	542	672	0.5	0.011	0.025	5	10.9	51	2160	18
3681369	23	120	33300	10100	48	4380	211300	5	660	5	510	331	12.4	0.01	0.025	5	12	85	1660	21
3681391	23	108	244000	4380	57	6240	84000	5	387	5	610	409	2	0.008	0.025	5	18.9	326	2140	21
3681409	19	8	45500	590	5	384	328	16	144	5	131	453	9.29	0.0025	0.025	5	1.68	54	76	8
3681414	25	27	463000	8100	22	2990	5380	5	387	5	199	807	14	0.0025	0.025	5	11	147	690	42

Coordinate system is GDA 94 MGA zone 51, determined by handheld GPS accuracy +/- ~30m

Appendix 1: JORC (2012) Table 1 Report

Historic information sourced from CRA Exploration Reports A40181: "Annual Report Year Ending February 1994, Bocrabee E45/1310-1314, E46/302-303, WA, SF1-09 by P.D. Agnew, October 1993. Report to the WA Department of Minerals and Energy" and A40535: "Final Report for Exploration Licences E46/302, 303, E45/1310, 1311, Bocrabee 1, 2, 3 and 4,Balfour Downs SF1-09 by P.D. Agnew, February 1997. Report to the WA Department of Minerals and Energy."

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 (eg 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.* *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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.*	• Industry standard reconnaissance sampling methods have been employed. • Lag samples were collected from surface with a broom and dustpan from a radius of 10m-50m from each sample site, and sieved to collect the -2mm / +1mm fraction, collecting between 0.5kg and 5kg samples. • Lag samples therefore have selectively sampled only a particular size fraction. • Rock chip samples were collected as 2kg to 5kg at each site, with manganiferous material selectively sampled.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by*	• Not Applicable

Criteria	JORC Code explanation	Commentary
	what method, etc).	
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.*	• Not Applicable
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Lag and rock chip samples were geologically logged and described with comments.
Sub-sampling 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 sub-sampling 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.*	• Lag samples were collected from surface with a broom and dustpan from a radius of 10m-50m from each sample site, and sieved to collect the -2mm / +1mm fraction, collecting between 0.5kg and 5kg samples. • Lag samples therefore have selectively sampled only a particular size fraction. • Rock chip samples were collected as 2kg to 5kg at each site, with manganiferous material selectively sampled. • These are industry standard methods for reconnaissance level exploration
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is*	**Lag samples** • Analysed by Multilabs in Welshpool, WA

Criteria	JORC Code explanation	Commentary
	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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• First wet sieved to remove silt and organic matter. • Samples analysed as follows: ICP-MS Ag, As, Bi, Ce, Co, Eu, La, Mo, Pb, Sb, Th, U, W; ICP-OES Ba, Ca, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, P, Ti, Zn. **Rock chip samples** • Analysed by Analabs in Welshpool, WA • Samples dried, crushed and pulverised to -180#, then a 300g split taken and fine pulverised • Samples analysed as follows: ICP-MS Ag, Pb, U; ICP-OES Al, Ba, Bi, Ca, Ce, Co, Cr, Cu, Fe, K, La, Mg, Mn, Mo, Na, Nb, Ni, P, Th, V, Zn, Zr; Fire Assay AAS: Au, Pd, Pt; Hydride AAS: As. • Standard industry practices were used in the collection and assaying of samples. The assay data have sufficient quality for the reporting of Exploration Results in the form and context of this report.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• Data is documented by CRA Exploration in Mines Department Reports • No assay data have 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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	• Sample locations were surveyed by a hand held GPS +/-30m, at the time of sample collection. • RL was not recorded and is not relevant to surface point samples. • Coordinates reported are MGA Zone 51. • Location data is considered to be of sufficient quality for reporting of Exploration Results.
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.*	• Selective sampling based on field observation and outcrops identified as hosting potential for mineralisation. • Should not be considered representative of the rock mass as a whole. • See figures in body of the report for locations.

Criteria	JORC Code explanation	Commentary
	Whether 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.* *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.*	• Samples are representative only of the material sampled, and should not be considered representative of the rock mass as a whole.
Sample security	*The measures taken to ensure sample security.*	• No measures taken regarding sample security have been reported however this is not considered a high risk given the Project location.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• Not Applicable

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Statement	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.*	• Xmas is within Exploration Licence E46/1099, 9km east northeast of Canning Well on the Balfour Downs 1:250,000 map sheet, approximately 200km northeast of Newman in Western Australia. The tenement was granted to Carawine Resources Ltd on 15 May 2017. Subsequently it has been transferred to. The tenement is due to expire on 14 May 2022. • There are no known impediments to obtaining a licence to operate in the area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• Results reported here were from work done and reported by CRA Exploration from 1992-1994.
Geology	*Deposit type, geological setting and style of mineralisation.*	• The Oakover project is situated within the Oakover Basin, a sedimentary basin occurring along the eastern margin of the Archean Pilbara Craton. The geological setting of the Oakover Basin has been described by various workers in published and unpublished reports, as

Criteria	Statement	Commentary
		follows: Flat-lying to gently dipping Carawine Dolomite (2.6 Ga) of the Archean Hamersley Group dominates the centre of the Oakover Basin and is conformably overlain by the Pinjian Chert Breccia, representing a weathering product formed from sub aerial exposure dissolution and collapse of the dolomite. At the base of the Carawine Dolomite, defining and exposed in places along the western and eastern margins of the basin, are gently to moderately dipping basalt, basaltic volcanoclastic (Fortescue Basalt) and shale and chert (Jeerinah Formation) units of the older Fortescue Group (2.7 Ga) in the Hamersley Group. Along the south eastern margins of the Oakover Basin, conglomerate, sandstone, siltstone and dolomite of the 850 Ma Tarcunyah and Yeneena Groups in the Officer Basin (equivalent of the Nifty Copper Mine host Broadhurst formation) unconformably overlie the Manganese Subgroup, or Fortescue Group, marked at its base within the Company's tenements by the Googenhama Conglomerate and Waroongunyah Formation. • The Xmas prospect is centred on a discontinuous lens of massive to brecciated manganese oxides and silicates exposed along more than 1km of strike within the Waroongunyah Formation. In the prospect area the Waroongunyah Formation and Googhenama Conglomerate unconformably overlies Fortescue Group Nymerina basalt. Manganese mineralisation is at the transition from lower Waroongunyah red brown gritty dolomitic sandstone and siltstone to upper Waroongunyah buff brown and white dolomitic siltstone, laminated dolomite and fine grained dolomitic grainstones. It appears to infill brecciated dolomitic siltstone, and in places is present as pods of massive manganese oxide and silicate.
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 drill holes:* *easting and northing of the drill hole collar*	• Not Applicable

Criteria	Statement	Commentary
	elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar *dip and azimuth of the hole* *down drill hole length and interception depth* *drill 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 (eg 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.*	• Not Applicable
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 drill hole angle is known, its nature should be reported.* *If it is not known and only the down drill hole lengths are reported, there should be a clear statement to this effect (eg 'down drill hole length, true width not known').*	• Not Applicable
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.*	• See body of the report.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not*	• All information considered material to the reader's understanding of

Criteria	Statement	Commentary
	practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	the Exploration Results has been reported.
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.*	• All information considered material to the reader's understanding of the Exploration Results has been reported.
Further work	*The nature and scale of planned further work (eg 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.*	• Further work is detailed in the report.